LaserWriter Plus: How to Print with DOS WordPerfect

This article has been archived and is no longer updated by Apple.

Some people have had problems printing from WordPerfect 5.0 to a LaserWriter Plus. The software is running on a DOS computer with a LocalTalk PC Card installed. The LaserWriter Plus is also on the network.

AppleShare PC or Trading Post from LaserTools is required to print to a LaserWriter directly from a PC application, like WordPerfect 5.0. The application must have its own drivers for either PostScript or Epson printers. If an Epson driver is not available, a text printer driver will work.

The software that comes with the LocalTalk PC Card is a set of tools and utilities. These are not meant to provide the print services, like printing from an application, provided in AppleShare PC.

The configuration steps for printing with these products are well-documented in their respective manuals and should present no problems. The actual printing is up to the word processor. The steps necessary to print, once the LocalTalk software is installed, are based solely on the application that created the document. If there are problems after the LaserWriter has been correctly connected from the AppleShare PC DA, and the application has been set to use its PostScript driver, usually the problem is due to the implementation of the particular driver belonging to the application.

Consider the following example. If AppleShare PC has been configured to use the LPT1 port and is set for PostScript, the application only needs to be configured to use its PostScript driver and to print to the LPT1 port. All printing commands, options, and steps are the application's at that point. In fact, the LocalTalk PC Card and AppleShare PC are only passing along the information to the LaserWriter. They are not interfering with the print commands at all.

If AppleShare PC has been configured to use the LPT1 port and is set for Epson emulation, the application only needs to be configured to use its Epson driver and, once again, to print to the LPT1 port. In this case, the PC will probably print slowly, because AppleShare PC is intercepting the Epson printer commands generated by the application's Epson driver and converting them to PostScript before passing it to the LaserWriter.

Make sure you know how to connect the LaserWriter to an LPT printer port with AppleShare PC and how to select the appropriate PostScript driver for a LaserWriter and an LPT port. The process is the same from the application side whether directly connected or not. The only difference is that the usual DOS configuration of a PC communications port is replaced with the AppleShare PC configuration. The AppleShare PC only needs to be configured once, because AppleShare PC can be set to connect to the printer on each startup.

WordPerfect 5.0 has been successfully tested with an IBM PC and AppleShare PC. The only exception is with pre-REV 47 LaserWriter boards. This is because the WordPerfect PostScript driver takes advantage of some optimized PostScript routines found in the LaserWriter Plus and later PostScript LaserWriters (REV 47 ROMs) and is not compatible with the earlier ROMs.

The steps for printing from WordPerfect 5.0 are as follows:

1) Install the LocalTalk PC Card and connect to the desired LaserWriter.
2) Install AppleShare PC.
3) Execute the DA application or use the hot key.
4) Connect the LaserWriter.

5) Choose PostScript for the printing mode.
6) Exit from the DA.

This is where the WordPerfect application takes over:

1) Execute WordPerfect.
2) When ready to print, press Shift F7.
3) Select S for select printer.
4) Type 3 for Edit printer connection.
5) Type 2 for Additional Printers.
6) Move the highlighted cursor to the Apple LaserWriter Plus driver.
7) Press Return.

The Fonts should be loaded into the driver.

8) Press Return after selecting the Font options when they appear.
9) Press Return again after selecting the printer name and PORT connection.
10) Press Return after selecting the name of the printer connection from above.
11) Type 1 for full document print.

There are several intermediary steps depending on what options are chosen, but these are the basics. The WordPerfect setup has nothing to do with the connection, except choosing THEIR LaserWriter Plus Driver and selecting the same port as configured in the AppleShare PC DA. The same steps are true when selecting another type of printer driver.

The default port for WordPerfect is LPT1. The default Port in AppleShare PC is LPT3. It does not matter which one is changed as long as both are the same.

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LaserWriter IISC: Uses QuickDraw, Not PostScript

This article has been archived and is no longer updated by Apple.

Printing to a LaserWriter IISC sometimes seems to takes a long time (for example, one customer reported that from Excel the average is about 4 minutes per page). This relative slowness is a result of the printing process used by the LaserWriter IISC. Rather than interpreting PostScript commands (as is done by the LaserWriter IINT and LaserWriter IINTX), the LaserWriter IISC creates QuickDraw to a Raster image. This is essentially a bitmap of the screen image. QuickDraw printing is much slower than PostScript, and no speed increases are available.

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LisaDraw: 2.0 Stationery

This article has been archived and is no longer updated by Apple.
Paper torn off the 2.0 LisaDraw stationary pad is 8 pages wide. To make a pad with fewer pages: select the preferred Drawing Size, draw a box, circle, line, etc, with lines white, shades none. Save your document, then select Make Stationary Pad from the File/Print menu. Throw away your old stationery pad if you wish.
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Apple Data Modem 2400: Q & A from LAN Minds Training

This article is a question and answer session concerning the Apple Data Modem 2400. It takes care of questions the Technical Resources LAN Minds training left unanswered.

This article has been archived and is no longer updated by Apple.

1) What is the maximum speed through the pass-through port?

The maximum speed is 57.6kbps. This is gated by the Serial Communications Controller (SCC) chip.

2) Are there any compatibility problems with Shiva's NetSerial?

There shouldn't be be, if the NetSerial package supports standard modems. However, we are checking with the test

3) Can Apple post a list of other MNP modems, and state whether they are compatible with these modems?

This modem is compatible with all MNP level 1-9 modems. It will only negotiate a 4 or lower link, no matter what is calling. MNP is a standard that clearly defines handshakes and data transmission. It is compatible with Relay Technology (formerly MicroCom), Telebit, and Codex, the major MNP vendors. In this case, the product should be compatible with anyone who correctly implements the standard.

4) Can the modem be used with Hypercard?

Yes, serial XCMDs and the modem commands in HyperCard work.

5) Direction: In the LAN Minds' writeup on the Apple Data Modem 2400 (Volume 2, Section 18), there is reference to the Microcom Network Protocol (MNP) classes. In Class 1, states that this protocol defines half-duplex transmission. There is also a statement to the effect that because the modem lacks the Clear to Send (CTS) and Request to Send (RTS) lines, the modem does not support Class 1. This reason was incorrect.

The MNP specifies a half and full-duplex protocol, but not hardware half and full duplex. These are two different uses of the same words. The hardware half and full duplex defines the modulation mechanism for communication between modems. MNP half and full-duplex defines the communication protocol on a modem-to-modem basis (not on computer-to-modem basis as implied in the writeup).

In class 1, this protocol specifies that an 8-byte block is sent out and that the modem waits for a response before sending the next block. Class 2 permits four successive 8-byte blocks to be sent out. On the receiving end, an acknowledgement is sent as each block is received. When the originating modem gets an acknowledgement it adds the next block to the list to be sent. Thus, there are always be four blocks in a queue waiting or being transmitted. With class 2, if a block is not full, it will wait until it is full.

Class 1 alone is not supported in the Apple Data Modem 2400. Although the design does not support this level only, it is the basis for the other classes.

Also note that half and full duplex is also interchangably used with the echo

function set in the terminal software. This usage of the word refers to the echoing of character from the modem back to the host computer.

Article Change History:
22 July 1993 - Company title changed from MicroCom to Relay Technology.

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MacX: High Level X Display Server Description (1/95)

This article provides a high level X display server description.

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MacX is an X display server for the Macintosh Operating System. MacX 1.2 complies with the X Window System, Version 11, Release 4. It also supports failure of individual client requests (as opposed to the whole server) and the inclusion of DECW$CURSOR and DECW$SESSION fonts.

MacX lets multiple X11-compliant clients share the Macintosh display. Unlike other X display servers, MacX has many built-in functionality with the X display server. These function include:

* X window manager with Macintosh Finder-like appearance
* Font manager
* Color namer
* Remote command

The font manager handles the cataloging of X (Adobe's Bitmap Distribution Format - BDF), DECwindows and Macintosh fonts. BDF fonts, the format used by the X Consortium to distribute fonts, needs to be complied before they can be used by MacX. The font manager has a built-in font complier.

Also, the font manager lets you assign alias names to fonts. This particularly useful with the X fonts, because the X font naming convention is quite lengthy. This allows for a convenient means for referencing fonts.

The color namer lets you assign a name to a color selected via the standard color wheel dialog box (the same one from Control Panel). This alleviates the need for a user to define a color with RGB values. It also uses an easy-to-remember name to reference a particular color.

From MacX, remote commands can be sent to hosts on the network. Remote commands issued from MacX can be saved to a document and used again at a later time. A host informational status window is provided to find out status about commands requested via MacX.

In addition, MacX has two operating modes, rooted or rootless. Each mode has a color and monochrome support. While in the rooted mode, another X window manager can be requested to manage client windows attached to these rooted windows. These rooted windows can be defined to be up to 2048 by 2048 pixels in size. In the rootless mode, the client windows have a Macintosh Finder "look and feel" like a Macintosh title bar with a close (kill client) box. The client windows appear to be like any other window on the desktop.

Because the Macintosh has only a single button mouse, the three-button mouse, which is very popular in the X world, is mapped to the arrow keys on the keyboard. Arrow keys perform the arrow function and option-arrow perform a three-button mouse operation or visa versa.

MacX connects to the network via the Macintosh Communications Toolbox. MacX supports TCP/IP, ADSP and TSSNet (DECnet) tools.

Article Change History:
30 Jan 1995 - Reviewed for technical accuracy and changed title.

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MacX: LAN Minds Training Q & A

This article is a question and answer session concerning MacX. It takes care of questions the Technical Resources LAN Minds training left unanswered.
This article has been archived and is no longer updated by Apple.
1) What is the difference between the MacX X display server versus other X display servers? In particular, what are the feature difference?

Although it is a display server, MacX has X window-manager capabilities that provided Macintosh-like user interface. It has many user-friendly interfaces like font and color managers to make it easier to work with X.

MacX has two modes, rooted and rootless windows. Effectively, these two modes can provide four displays. With rooted windows, other X window managers can be launched to handle the client windows within the rooted window. The rootless windows provide Macintosh-like windows that appear on the desktop.

Because MacX runs on the Macintosh hardware platform, all the other Macintosh applications are also available for use. MacX is MultiFinder-compatible.

The key factors in comparing X display servers are the following: screen size and resolution, type and speed of the processor, the availability of a graphics coprocessor, RAM configuration and expandability, color support, and price.

2) It seems like the MacX is more than just an X display server. What client functions are built in?

As far as client-like function, Finder-like X window manager, and a utility to show samples of a font type are built into MacX. Cut and Paste on the Macintosh side is already implemented as part of the Macintosh. MacX also has a color namer and the remote command startup facility. The "rootless" style and the ability to support display area larger than that present on the physical screen are also extensions to the normal functionality.

3) Are there any third parties developing the three-button mouse for the Macintosh?

To locate a vendor's address and phone number, use the vendor name as a search string. These companies manufacture compatible three-button input devices:

* Logitech, Inc.
- MouseMan (mouse)
- TrackMan (trackball)
Both are compatible with Macintosh OS, A/UX, and MacX

* Mouse Systems Corp.
- A3 Mouse
- A3 Trackball
Both are compatible with Macintosh OS, A/UX, and MacX

* Advanced Gravis Computer Technology Ltd.
- Gravis SuperMouse
Compatible with Macintosh OS, A/UX, MacX, X11, and SoftPC

4) Is there any capability to cut and paste graphic information?

Cut and paste of graphic information is available. It probably will be a simple cut and paste of pixmaps -- not object-oriented graphics (like MacDraw) -- only bits that are rendered already (like MacPaint). Refer to the MacX 1.2 Manual.

5) An engineer indicated some X window managers are hardware dependent. Are there X window managers that will not work with MacX?

We are not aware of any X window managers that are hardware dependent. We don't know of any window managers that will not work with MacX. MacX has been used with uwm (Universal Window Manager), twm (Tom's window manager), mwm (Motif Window Manager), and olwm (Open Look Window Manager).

6) What is the relationship between DECWindows and MacX? How do they work together? What do you need to make them work together?

MacX is an X11 display server, just like any other X display server. DECWindows is a name for a broad range of X software. It includes a display server for DEC's Ultrix (UNIX), VAX/VMS and MS-DOS machines, client applications, and programming tools.

If DECwindows can interoperate with X11-conformant servers, it can interoperate with MacX. MacX is shipped as a part of the VAX/VMS Services for Macintosh product and includes the completely DECwindows font set, but this is not required to run DECwindows clients. If the DECwindows fonts are not present, either font name aliases or changes on the VAX side can be easily made to permit MacX to work with

DECwindows anyway.

You don't need anything special to make them work together, other than the possible requirement for font aliases listed above.

There is one known compatibility problem. It appears the most significant bit is reversed in the client used to display the Digital logo. When shown on MacX, eight-bit bands of information is reversed. The exact problem has not been identified in either the MacX or DEC client.

7) Will the ability of extending the X Window standard display server and clients create compatibility problems in the field?

The X11 protocol permits clients to ask whether the server supports particular extensions by name. Properly written clients might fall back on a different strategy if extensions they normally use don't exist. But yes, there can be "compatibility" problems, if this is not the case.

8) Does the toolkit that MacX uses conform to a standard toolkit like Xtk?

This question is based on a misunderstanding. The Xtk code runs on the CLIENT side. It specifies a way of programming user interfaces in the CLIENT program. MacX (or any other X11 server) simply draws what the client asks for. There is no "toolkit" in MacX.

9) Is there any graphic model being used in MacX (like Display Postscript)?

The name is "The X Window System" according to "X protocol version 11". MacX conforms completely to these specifications, except as outlined in the appendixes of the manual. (In some very small ways, MacX diverges slightly.)

10) Is it possible to change the window types available in the Set Window Type menu?

No. Only the five show can be selected. "Client Specified" means the client specifies one of the ones shown (1 through 5).

11) What are the official names of the X Window System?

The official names of the software from MIT is:
- X
- X Window System
- X Version 11
- X Window System Version 11
- X11

Note: Phrases like "X.11", "X-11", and "X-Windows" are explicitly excluded and should NOT be used to describe the X Window System.
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The SMB File Transfer Utility: General Information

The SMB File Transfer Utility allows a Macintosh II to transfer files between an SMB server (named for the SMB (Server Message Blocks) protocol) and a Macintosh II over a Token Ring network. Apple File Exchange (AFE), translators (MS-DOS to/from Macintosh), and the Apple TokenTalk NB card are used to do this.

This article has been archived and is no longer updated by Apple.
Before installing the SMB File Transfer Utility, you must install the TokenTalk NB card and its associated software. Refer to the TokenTalk NB User's Guide for information on installation.

The Installer is used to set up the SMB File Transfer Utility. System resource version 6.0.3 is required and is included. Follow normal procedures to install the software. AFE is also needed to run the SMB File Transfer Utility. If AFE is not already present, install it, along with any translators that you may want, all in the same folder (the proper version of AFE is also included).

The SMB File Transfer Utility runs under AFE, supplying a desk accessory, called SMB Servers, to connect to an SMB server. To use the SMB File Transfer Utility, open AFE. This makes the SMB Servers DA available. The next step is to open the DA, which supplies a dialog box. This dialog box features four buttons:

- Connect--connects to an SMB volume that has already been added.

- Add--adds an SMB volume name to the volume list.

- Remove--removes an SMB volume name from the volume list.

- Disconnect--disconnects from an SMB volume that is already connected.

The dialog box also contains three windows:

- Workstation Name displays the name of your workstation.

- Select an SMB Volume displays a listing of the SMB volumes you have already added.

- Connected SMB Volumes displays a listing of the volumes already connected.

You must first choose a Workstation Name, which identifies your Macintosh II to the network administrator. The Workstation Name does not have to be set up on the server side. It is an optional security feature. Using the Add and Remove buttons, you can maintain a list of volumes available on the network. Unlike AppleShare, the SMB File Transfer Utility requires you to know the names of any servers that are going to be accessed. To access a volume, you must first mount it using the Connect button (Disconnect will sever a volume connection, as will leaving AFE). Once a volume is connected, you can use AFE to transfer files between a local volume and the connected server, or between two different connected server volumes. Up to six volumes on any combination of servers can be open at one time.

The SMB File Transfer Utility and the following documentation are bundled with the TokenTalk NB card.

- Apple SMB File Transfer Utility User's Guide. This guide includes an AFE usage section and the Appendix contains a list of translators available for AFE. (AFE is documented in the Macintosh Utilities User's Guide.)

- TokenTalk NB User's Guide.

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Apple Serial NB Card: General Information (6/95)

This article provides general information on the Apple Serial NB card.

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The Apple Serial NB card is an intelligent NuBus card that uses Apple's Macintosh Coprocessor Platform (MCP) architecture. It provides additional communications and processing capabilities to a Macintosh computer.

The card includes a Motorola 68000 processor operating at 10 megahertz and 512 kilobytes of random access memory (RAM), which is expandable to 1MB. Software for the MCP consists of MCP/OS, Apple IPC, and support software. MCP/OS and Apple IPC supports a multitasking distributed operating environment for communications and other real-time services on the same card.

The card uses two Zilog SCC chips to support a total of four serial ports. A 62-pin connector on the back of the card breaks the electrical signalling into the respective ports. These ports can be configured to operate as four RS-232-C ports, or as two higher speed ports (such as V.35) and two RS-232-C ports. The RS-232-C ports can operate at speeds up to 19.2 kilobits per second (Kbps). The higher speed ports are DMA-backed and can operate at speeds up to 64 Kbps. Cabling for this card comes in two flavors: the Hydra cable, which provides four RS-232-C connectors (M0128LL/A), and the V.35 cable (M0127LL/A), which provides one V.35 port and one RS-232-C port.

The Apple Serial NB card can support more than one networking protocol because of its multitasking operating system and multiple independent ports. The card can be installed in a Macintosh II serving as a gateway to other networks, such as SNA with the SDLC protocol and X.25 with the HDLC protocol. This card is designed to be a platform for various serial communications applications (initially, MacAPPC and MacX25). The features and capabilities of the card correspond to the AST serial communications card, which has been available for some time and which also can run the MacAPPC and MacX25 software. The memory expansion option was implemented to allow MacAPPC to serve a large number of users and to provide enough memory for a customer to run multiple applications.

The two cabling options were designed with MacAPPC and MacX25 in mind. The cables are available for purchase separately. Future software developed for the card may require new cables to be built.

The following documents contain details about the Apple Serial NB card or its technology:

- Apple Serial NB Card Installation Guide (included with the card)
- Apple Macintosh Coprocessor Platform Developer's Guide (available through APDA)

Article Change History:
06 Jun 1995 - Corrected V.35 cable part number.
17 Feb 1995 - Corrected typo.
13 Feb 1995 - Added cable part numbers.

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Apple IIe: No Daisy-chaining 3.5" to 5.25" Disk Drives

With an Apple IIGS or IIc, you can daisy-chain disk drives. This is not true with the Apple IIe.
This article has been archived and is no longer updated by Apple.
Two 5.25" drives can be run from one 5.25" controller card, but you need a separate 3.5" drive controller card if you add a 3.5" drive.
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Apple Scanner and Macintosh Start-Up Problems

This article has been archived and is no longer updated by Apple.

PROBLEM: The Apple Scanner and sometimes other SCSI devices when used with Macintosh IIcx, Macintosh IIx or Macintosh SE/30 sometimes do not allow the Macintosh to start up or system bombs may occur during SCSI data transfer from the scanner.

CURE: There are several ways to solve this problem: rearrange the SCSI chain, add a second terminator, add or remove a SCSI extension cable or remove the terminator from the chain. If there are other SCSI devices in the chain, change their positions within the chain. For example if the SCSI chain looks like this:

Macintosh -------Scanner--------HD40SC-------
Terminator

Rearrange the chain like this:

Macintosh -------HD40SC---------Scanner------
Terminator

If there are more devices changing the scanner location with another SCSI device should take care of the problem.

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Macintosh: Serial Port Configurations for Nonstandard Baud Rates

This article has been archived and is no longer updated by Apple.

Inside Macintosh, Volume II (pages 250-251) tells how to configure for eleven baud rates: 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 19200, and 57600.

Here's how to configure for other values.

For example, to obtain 38,400 baud rate on your serial port, the correct value to pass to SerReset is "1" for the baud rate constant.

Note that you can specify a given baud rate by making the serial driver control call with a control (csCode) of 13. The driver will return the closest baud rate that the serial driver will generate. This is documented in Inside Macintosh, Vol. II-254.

Some trivia:

The formula for figuring out the SerConfig baud rate constants is:

$$\text{Baud Rate Constant} = \frac{114709}{\text{Baud Rate}} - 2.0$$

For example, the baud rate constant for 9600 baud is:

$$\text{Baud Rate Constant} = \frac{114709}{9600} - 2.0 = 11.949 - 2.0 = 9.949 = 10$$

The 114709 figure comes from the SCC clock (3.670702 MHz) which comes from the system clock (15.6672 MHz), but doesn't divide down evenly because of the timing PALs (in fact 3.670702 = 15667200 /4 * 15/16, where the 15/16 is due to PAL timing). For the MacXL (Lisa), use 115200 instead of 114709.

Similarly, you can do a reverse calculation and find the baud rate, given a constant. Reversing the formula, you get:

$$\text{Baud Rate} = \frac{114709}{\text{Baud Rate Constant} + 2.0}$$

So, using the constant 10 (for 9600 baud), the formula gives

$$\text{Baud Rate} = \frac{114709}{10 + 2.0} = 9559.083$$

This isn't exactly 9600 baud. In fact the error percentage is:

$$1.0 - \frac{9559.083}{9600} = 1.0 - 0.996 = 0.426\%$$

If you try this with 38400, you get:

$$\text{Baud Rate Constant} = \frac{114709}{38400} - 2.0 = 2.987 - 2.0 = 0.987 = 1,$$

a baud rate of:

$$\text{Baud Rate} = \frac{114709}{\text{Baud Rate Constant} + 2.0} = 38236.333,$$

and an error percentage of:

$$1.0 - \frac{38236.333}{38400} = 1.0 - 0.996 = 0.426\%$$

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AppleShare PC 2.0 (Discontinued)

NOTE: AppleShare PC was discontinued by Apple in 1990.

Overview

AppleShare PC 2.0 is a revision of the existing AppleShare PC 1.2. This software allows MS-DOS machines to act as clients to an AppleShare File Server and to access print services provided on an AppleTalk network.
This article has been archived and is no longer updated by Apple.
New features

AppleShare PC 2.0 provides the same functionality as earlier versions with the addition of support for AppleTalk Phase 2 protocols and the Open Datalink Interface (ODI), which was designed by Novell in conjunction with Apple. ODI is a set of specifications that allow a separation between the network protocol stacks and the device drivers. These drivers are specific to a particular network medium such as LocalTalk, Ethernet, or Token Ring. In the past, with versions of AppleShare PC 1.1 and earlier, the network protocol stacks and Link Access Protocol drivers were integral. They could not be separated to provide support for third-party network cards and consequently, only the Apple LocalTalk card worked with AppleShare PC. Version 2.0 includes drivers for:

- 3COM's EtherLink II and EtherLink/MC (Microchannel)
- Three IBM 802.2 Token Ring cards
- Daystar's Microchannel LocalTalk Card
- Apple's LocalTalk card

Only those cards listed above have drivers included with AppleShare PC 2.0. Because Novell has published the ODI specifications, drivers for other network cards, such as Microchannel LocalTalk cards, will be provided by third-party vendors.

The AppleShare PC 2.0 installation program also has the ability to load only AppleShare File Services, only AppleShare Print Services, or both. This is useful when memory use is restricted. AppleShare PC 2.0 now includes additional batch files, which allow dynamic loading and removal of AppleShare File Services and Print Services.

Open Datalink Interface

Novell's Open Datalink Interface (previously called MLI/MPI) provides support for any number of network protocols (such as AppleTalk, AppleTalk Address Resolution, IPX, Netware, TCP/IP) working with any type of network media interface. This gives the user the ability to add or change network protocols without having to change network interface cards.

ODI also provides major benefits to third party developers by allowing them to write only one device driver for their card. The driver will then work with any set of network protocols. Because the AppleTalk Phase 2 protocol stack is being written to the ODI specification, AppleTalk services, such as the AppleTalk Filing Protocols and AppleTalk Print Access Protocols, can be used over any network card that has a device driver written to the ODI specification.

Communications between the protocol stack drivers (currently referred to as the MPI interface) and the network card drivers (currently referred to as the MLI interface) are handled by the Link Support Layer (LSL). Under the ODI specification, data packets need only be directed to the LSL instead of a specified device driver. The LSL then acts as a "postal service," which correctly directs inbound and outbound packets to the specified stacks and drivers. This means the system is responsible only for

directing data packets to the LSL instead of the full distance to the protocol stack or some specified driver.

Installation

The AppleShare PC installation software has been improved. In version 2.0, each step of the installation has on-screen instructions and is much more flexible in its options. For example, you can now select which services are to be loaded into memory. You can choose file services only, print services only, or both. You can also choose to load only the MLI drivers for certain network cards or to load the MLI drivers and the AppleTalk protocol stack.

When loading the selected modules into AppleShare PC 2.0, you can now calculate the amount of memory that will be used based on the options installed. Below is a table describing the memory requirements:

File and Print Services 117 - 126K
File Services only 91 - 100K
Print Services only 62 - 71K
AppleTalk and MLI driver(s) only 49 - 58K
MLI driver(s) only 13 - 22K
Add 57K to make the DA memory resident
Add 6 - 15K per additional MLI driver

The AppleShare PC 2.0 installation program presents a list of cards that have MLI drivers resident in the AppleShare PC installation directory. You can choose one or more MLI drivers corresponding to the cards installed. For some cards, such as third party Ethernet and Token Ring cards, additional questions will be presented in the installation, such as the settings of the card's DIP switches, DMA interrupt addresses, and IRQ settings. Refer to the card's user guide for the proper setting of these switches and addresses.

If multiple network cards are installed in a machine, the installer will ask which MLI driver to use as the default. To change MLI drivers after the default has been loaded, use the USE option of ANET.

New ANET Features

The ANET command interpreter, which performs functions similar to the DA through the command line and batch files, has several new subcommands. These new subcommands now support AppleTalk Phase 2 and ODI features. Below is the syntax of the four new ANET subcommands.

CONFIGURATION allows you to view configuration information about MPI stacks and MLI drivers.
CONFIGURATION [[ALL [STACKS | MLIDS]] | MPIstackname | MLIDname]

DEFAULT sets a new MLID as the default when AppleShare PC is started. DEFAULT with no parameters displays the current default MLID.
DEFAULT [MLIDname]

LIST displays all Apple TSRs, MPI stacks, and MLI drivers.
LIST [TSRS | STACKS | MLIDS | ALL]

REMOVE removes most Apple TSRs, MPI stacks, and MLI drivers from memory.
REMOVE ALL | modulename [modulename]...

STATISTICS allows you to view statistics from the Link Support Layer, MPI stacks, and MLI drivers.
STATISTICS [LSL | MPIstackname | MLIDname]
STATISTICS ALL [STACKS | MLIDS]

USE allows you to change the currently loaded MLID, card number (if an MLID supports more than one card in a machine), zone name, and/or suggested network

number.
USE MLIDname [#cardnumber] [Z(zonename)] [H(netnumber)]

AppleTalk Phase 2

AppleTalk Phase 2 is required for AppleShare PC 2.0 environments using Ethernet or Token Ring networks. For AppleTalk networks using only LocalTalk cabling, AppleTalk Phase 1 protocols are used.

One consideration to be taken into account when using AppleShare PC 2.0 in an AppleTalk Phase 2 environment: if an MS-DOS client is on a network with no routers and a router then comes up on the network, the AppleShare PC 2.0 client may be required to restart their machine. This is because on a Phase 2 network the zone and network number can be defined by the node if no routers are present. When the router appears on the network, it will define the zone and network numbers, which may conflict with those defined by the node (i.e. the AppleShare PC 2.0 client).

Compatibility

AppleShare PC 2.0 is compatible with MS-DOS 4.0, and all MS-DOS programs which were compatible with AppleShare PC 1.x.

Published Date: Feb 18, 2012

A/UX 1.1: Does Not Support 32-Bit QuickDraw

A/UX release 1.1 does not support 32-bit QuickDraw. There is no information about the contents of future versions of A/UX.
This article has been archived and is no longer updated by Apple.

```
32-bit QuickDraw is supported in A/UX 3.0.
```

Published Date: Feb 18, 2012

A/UX X11: How To Cut and Paste (6/93)

In A/UX X11 window System Release 4 under the "xterm" client application, you can click the mouse button to save text into the cut buffer.

This article has been archived and is no longer updated by Apple.
Here's how to cut and paste:

1) To cut text, use a click and drag technique as you do in the Macintosh OS. That is, you move the pointer to the beginning of text to be selected, press and hold the button, drag the mouse through the text to be included, and release the button. The selected text is highlighted and saved in the global cut buffer.

2) Once you have cut the desired text, move the mouse pointer to where the cut buffer is to be pasted.

3) Press the "left arrow" key to insert (paste) the text from the cut buffer as keyboard input in the xterm's window.

For more information, refer to the xterm(1) manual page, "pointer usage" paragraph. Release 3 users can also read appropriate sections of the "X11 User's Guide for A/UX.

Article Change History:
25 Jun 1993 - Revised to show new version, clearer title.
30 May 1989 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

TA40014_AUX_Limited_Support_for_the_Apple_SuperDrive__(TIL03967).pdf

A/UX 1.1: Limited Support for the Apple SuperDrive (9/94)

Article Last Reviewed: 21 September 1994

Does A/UX 1.1 support the Apple SuperDrive (formerly Apple FDHD)?

This article has been archived and is no longer updated by Apple.

No. Under A/UX 1.1, the SuperDrive functions as an 800K floppy disk drive; it cannot take advantage of the 1.4MB floppy disk drive supported under Macintosh OS at this time.

A/UX version 3.0 does indeed support the SuperDrive. This is the only solution.

Article Change History:
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

LisaList: Sorting

This article has been archived and is no longer updated by Apple.
People frequently use a Text format rather than a Number format for columns of numbers. LisaList, when sorting number formatted fields, sorts them in ascending or descending numerical order. When these numbers are formatted as text, they are sorted via a comparison of letters. This means that all of the numbers that start with 1 (10, 15, 100, 1000, etc.) sort together, the 2's are grouped together, and so on. The only way to reformat the information is to add another column with the proper format, then transfer the information. Sort orders and comparisons are discussed further in Appendix 4 of the LisaList manual.
Published Date: Feb 18, 2012

Macintosh SE: Hyphens and Asterisks Overwrite Icon Names

When I select a Finder icon, the name under the icon is selected and automatically written over with hyphens (-) or asterisks (*). The name field continues to fill until it reaches the maximum number of characters for the name field. A blinking cursor sits at the rightmost character.

This article has been archived and is no longer updated by Apple.
The problem can exist in any of these areas:

- Badly-formed asterisk and hyphen keycaps on the numeric keypad

- Keyboard or ADB hardware

- A faulty logic board

To diagnosis the problem, follow the above order.

First, check the hyphen or asterick keys on the numeric keypad. You may find them partially depressed. This occurs because of a tiny plastic protrusion left on some keycaps after manufacturing. Some troubleshooters have found this protrusion catching on the case just enough to produce characters, but not enough to be noticed at a glance. The fix is easy; remove the keycap(s) and shave off the plastic protrusion.

Second, if nothing is wrong with the keycaps, try changing the keyboard and cable.

Third, if the problem remains, change the logic board.

Published Date: Feb 18, 2012

Macintosh II: Pinouts for Sony CPD-1302 Color Monitor (8/94)

This article documents how to connect a Sony CPD-1302 display to a Macintosh.

This article has been archived and is no longer updated by Apple.
To hook a Sony Multiscan (CPD-1302) monitor to a Macintosh II, make an adapter cable from the video card to the monitor (which has a 9-pin D connector).

Here is the pin out description for the adapter cable, using the automatic sync-on-green configuration:

Macintosh Sony Signal
DB-15 Pin DB-9 Name
--- --- ---
1 1 Ground
2 3 Red
5 4 Green
9 5 Blue
15 8 HSync
12 9 VSync

Pins 7 & 10 can be tied together for VGA Extended Sense Code.

This allows the monitor to support 640x480 VGA and 800x600 SVGA resolutions.

Article Change History:
05 Aug 1994 - Changed pinouts to make it easier to connect to Macintosh computers which provide VGA support.

Support Information Services
Published Date: Feb 18, 2012

Macintosh II: Pinouts to Thomson UltraScan Monitor

This article has been archived and is no longer updated by Apple.

Here are the pinouts for connecting a Thomson 4375M Ultra Scan monitor to the Macintosh II video card:

Macintosh II	Thomson UltraScan	signal name
1	3	red video ground
2	2	red video
3	7	Composite TTL sync (negative going)
4	1	sync ground
5	4	green video+ Composite analog sync
6	5	green ground
9	14	blue video
13	15	blue ground

Published Date: Feb 18, 2012

AppleTalk Internet Router: Setup Considerations

This article has been archived and is no longer updated by Apple.

These are some items to keep in mind when setting up the AppleTalk Internet Router:

Memory Considerations

- In general 1MB of RAM is sufficient for running the router. However, you should consider the following exceptions:

- You must use 2MB of RAM when running the router concurrently with the AppleShare File Server. You can add memory beyond 2MB, but that only increases performance of the file server and not of the router. The reason is that the file server uses all additional memory for its RAM cache.

- It is recommended that you use 2MB of RAM to run the router and the AppleShare Print Server or the router and a mail server package concurrently. As long as you have 2MB of RAM, you can also run the router, the AppleShare File Server, and any single foreground application, like a print server.

- To avoid memory problems, do not use MacroMaker on a 1MB router machine.

- Be aware that having MacsBug (or any other debugger) active reduces the amount of memory available to the router. Do not run MacsBug on a 1MB router machine or on a router that is also running the AppleShare File Server.

- To avoid memory problems, do not use 32-bit QuickDraw on a 1MB router machine.

- Best use of memory can be obtained by minimizing the INITs and desk accessories that run concurrently with the router.

- Because of the way MultiFinder runs desk accessories, we recommend that you run the router in single Finder. MultiFinder runs desk accessories in the system heap. This means that when you use the router desk accessory under MultiFinder, you are more likely to run out of memory, because the router driver and any other concurrently running process take memory from the system heap.

Printing

Note that the following considerations refer to printing from the router machine. These considerations do not refer to a workstation printing, even if it reaches a printer through a router.

- Avoid background printing on a router machine. When Print Monitor opens a printer driver, it uses up memory; the router desk accessory may then run out of memory.

- Do not attempt 32-bit color printing from a router machine.

- Be aware that the 6.0 LaserWriter driver takes up much more memory than the 5.2 driver. Avoid using the 6.0 LaserWriter driver on a 1MB router machine. Also avoid using the 6.0 LaserWriter driver, when running the router and the AppleShare File Server concurrently.

INITs and Desk Accessories

- INITs and desk accessories are not always well-written. They sometimes use up memory behind the operating system's back. Try to live with as few of them as possible.

- Close unneeded desk accessories. This includes the Chooser, which would otherwise continually broadcast look-up requests on the network.

- Responder is OK when installed with the Router.

Upgrade Utility

- If a Phase 1 router is introduced to the internet after the routers have been running in Phase 2 mode with network ranges for at least 15 minutes, the Phase 2 routers issue an alert and do no conversion. You must restart the router Macintoshes with the Upgrade Utility installed to restart the conversion.

System Software

- The Router has been tested with System 6.0.3 and will be tested with future releases. Older systems are not recommended.

Hard Disks

- The Router is RAM based. A faster hard disk will not cause faster routing of packets. (Improvements can be seen when using a faster hard disk with the AppleShare File Server).

EtherTalk Card

- You should use a revision J or later EtherTalk card with the router.

- An improperly terminated EtherTalk card or a break in the EtherTalk cable causes the router to take a very long time to load. An EtherTalk card not connected to a cable must have a BNC "T" connector attached and terminators attached to the "T".

- Make sure your EtherTalk card is properly set for thick or thin Ethernet. If it is improperly set, no workstations or other routers on the network can communicate with the router.

Removal of AppleShare File Server

- The removal of AppleShare File Server software after installation of the Router/EtherTalk/TokenTalk software will remove the AppleTalk file from the System Folder. You must re-install either the router, EtherTalk 2.0, or TokenTalk 2.0 software.

Installation

- When using the router with TokenTalk, be aware that some customers were seeded with an AppleTalk Phase 1 (1.0) version of TokenTalk. You should remove TokenTalk 1.0, using the 1.0 Installer diskette, and then install TokenTalk 2.0.

- Be aware that some customers were seeded with an AppleTalk Phase 1 (1.0) version of the AppleTalk Internet Router. You should remove the 1.0 version, using the 1.0 installer diskette, and then install the 2.0 version. The ADEV files for the LocalTalk ports were renamed with the 2.0

version of the AppleTalk Internet Router. If you do not remove the 1.0 version of the router, the router setup window will show the old and new ADEVs, causing you to have 4 LocalTalk ports.

Published Date: Feb 18, 2012

ImageWriter II: Color Ribbon Issue

This article discusses and issue with the ImageWriter II color ribbon.
This article has been archived and is no longer updated by Apple.
When turning on the ImageWriter II, the carriage assembly moves to the left and then back to center. At this point, the color ribbon assembly rotates counter-clockwise, causing the ribbon frame assembly to drop. As the color ribbon assembly rotates counter-clockwise, it hits a small copper tab called the ribbon shift spring tab.

When this tab is hit, it causes the color ribbon assembly to reverse rotation and lift the ribbon frame assembly back up to its normal position. Using the carrier shaft as a reference axis, the tab is about 45 degrees from the axis.

If the tab gets pushed away from the carrier shaft more than 45 degrees, it is not in its proper position to reverse the rotation on the color ribbon assembly. Thus, the ribbon frame assembly remains down and will not come up to its proper position.

To cure this, push tab back towards the carrier shaft, until it causes the normal change of rotation and let the ribbon frame assembly come back up to its normal position.
Published Date: Feb 18, 2012

LaserWriter II: Specs for Paper and Transparencies

Article Change History

02/12//93 - UPDATED
* Vendor information:

This article contains information about papers, envelopes, labels, and transparencies for use with the LaserWriter II.
This article has been archived and is no longer updated by Apple.
The "LaserWriter II Owner's Guide" specifies the paper at:

"16-lb. to 20-lb. photocopy or typewriter bond (60 to 80 g/m2) in normal mode; up to 36-lb. (135 g/m2) stock in manual mode with face-up tray open. Accepts most letterhead and colored stock. Accepts medium-weight photocopy transparencies. Envelopes can be printed with manual feed or from the envelope cassette. Labels can be printed using manual feed."

Beyond this information, Apple has no documented specifications for paper requirements. However, the following information is also available in the Tech Info Library on AppleLink:

When choosing an acetate transparency for use in a LaserWriter II, it is important to consider the temperature of the printer's fuser roller, and the amount of time the acetate sheet is in contact with the roller.

The temperature of the LaserWriter II fuser roller varies from:

329 to 356 degrees Fahrenheit (165 to 180 degrees Centigrade)

An 8.5 by 11-inch sheet of paper or acetate takes approximately 5.8 seconds to travel over the fuser roller. This works out to be about 1.5 inches per second.

The LaserWriter II accepts medium weight photocopier transparencies like Scotch #503, catalog # 15921-3.

For sources, check the following:

James River Corporation, Pro-Tech Paper Division, specializing in papers, film, and adhesive labels for the LaserWriter

Products:
Pro-Tech Laser labels (white and clear)
Pro-Tech Laser envelopes (white)
Pro-Tech Laser bond paper (white and assorted colors)
Pro-Tech Laser transparency film

Avery, Avery and Dennison Divisions, paper products, specializing in transparencies and labels for the LaserWriter.

Products: Laser adhesive labels - 5260, 5261, 5262
Laser Transparencies - 5182 and 5282

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

AppleFax Software Version 1.2: Improvements and Functionality

Apple no longer provides AppleFax software, and it isn't compatible with System 7. If you're looking for fax software to use with System 7 and the AppleFax Modem, contact Delrina Technologies for software called "Fax Pro for Macintosh."

To locate a vendor's address and phone numbers, use the vendor name as a search string.

This article presents information about AppleFax 1.2 that was required for system software version 6.0.3.

This article has been archived and is no longer updated by Apple.
Here's a list of improvements made to AppleFax version 1.2:

* Version 1.2 of AppleFax firmware fixes incompatibility with some Group 3 facsimile machines and certain PBX phone systems.

* Software version 1.2 eliminates overlapping characters, which sometimes occurred with version 1.1. Also, the new version correctly transmits envelopes containing documents of differing page sizes.

* Version 1.2 greatly improves the performance of the "In care of" feature.

* AppleFax software version 1.2 is required for use with System 6.0.3 and is, therefore, required for operation on the Macintosh SE/30. Version 1.1 doesn't work with System 6.0.3 or future versions of system software.

Compatibility Testing

The AppleFax Modem conforms to the published CCITT Group 3 facsimile standard. All facsimile devices should conform to this standard to ensure complete compatibility with other facsimile devices. Apple has tested AppleFax with over 40 Group 3 facsimile machines from the major manufacturers. While no significant problems remained during testing, Apple doesn't guarantee that AppleFax always works with every Fax machine due to phone line and equipment variations.

AppleFax Functionality

The product must interact with the Macintosh system, applications software, and the public phone system, each of which can affect its performance and reliability. Some things to keep in mind regarding the AppleFax:

* AppleFax isn't intended to replace freestanding facsimile machines. If your work demands numerous Fax messages continually received, or if you must send a large number of handwritten documents, a Fax machine will work best. However, for Macintosh owners, AppleFax can be a terrific complement to their Fax machine.

* The AppleFax product is at its best when used as a Fax creation and transmission station. The image quality of an AppleFax document is much better than most other forms of Fax transmission.

* AppleFax provides convenience in automatically sending a document to multiple destinations or automatically sending documents while

unattended (for example, at night, when phone rates are least expensive). Most Fax machines are incapable of unattended document transmission.

* Macintosh data and program files can be transmitted between AppleFax stations even faster than using 2400-baud data modems.

* Just as with bit-mapped printing devices (the Apple ImageWriter II, for example), the performance of AppleFax improves when running on a faster Macintosh.

* AppleFax is tested and approved for sale and use only in the U.S. and Canada. The product is not designed for use with, nor approved by, any other countries' public telephone and telegraph agencies.

AppleFax software provides basic facsimile functionality for the majority of AppleFax users. It doesn't provide background operation (the ability to send and receive files while using another Macintosh application) or the Cut/Copy/Paste functions on received Fax images. If you require these features, look into a third-party software package.

Article Change History:
2 September 1993 - Updated with System 7 information.

Published Date: Feb 18, 2012

Apple II, IIe and IIc: Mini-Assembler

This note covers use of the Apple II, IIe and IIc mini-assembler only, not the II+. This is not a course in assembly language programming. For a reference on programming the 6502 microprocessor, refer to the Synertek Programming manual or any of the tutorials available. This note assumes the user has a working knowledge of 6502 programming and mnemonics.
This article has been archived and is no longer updated by Apple.
The Apple II mini-assembler is a programming aid aimed at reducing the amount of time required to convert a handwritten program to object code. The mini-assembler is basically a look-up table for opcodes. With it, you can type mnemonics with their absolute addresses, and the assembler will convert it to the correct object code and store it in memory.

Typing "F666G" will puts you in mini-assembler mode. While in this mode, any line typed in will be interpreted as an assembly language instruction, assembled, and stored in binary form unless the first character on the command line is a "$".

If the first character of a command line is a "$", the remainder of the line will be interpreted as a normal monitor command, executed, and control returned to the mini-assembler. To get out of the mini-assembler, press RESET.

If the first character on the line is blank, the assembled instruction will be stored starting at the address immediately following the previously assembled instruction. If the first character is not a blank nor a "$", the line is assumed to contain an assembly language instruction preceded by the instruction address (a hex number followed by a ":"). In either case, the instruction will be retyped over the line just entered in dis-assembler format to provide a visual check of what has been assembled.

The counter that keeps track of where the next instruction will be stored is the pseudo PC (Program Counter) and it can be changed by many monitor commands (eg. 'L', 'T', . . .). Therefore, it is advisable to use the explicit instruction address mode after every monitor command and, of course, when the mini-assembler is first entered.

Errors (unrecognized mnemonic, illegal format, etc.) are signalled by a "beep" and a caret ("^") will be printed beneath the last character read from the input line by the mini-assembler.

The mnemonics and formats accepted by the mini-assembler are the same as those listed by the 6502 Programmers Manual, with the following exceptions and differences:

1. All imbedded blanks are ignored, except inside addresses.

2. All addresses entered are assumed to be in hex (rather than decimal or symbolic). A preceding "$" (indicating hex rather than decimal or symbolic) is therefore optional, except that it should not precede the instruction address).

3. Instructions that operate on the accumulator have a blank operand field instead of "A".

4. When entering a branch instruction, the argument of the branch mnemonic should be the address of the target of the branch. If the destination address is not known at the time the instruction is entered, simply enter an address that is in the neighborhood, and later re-enter the branch instruction with the correct target address.

NOTE: If a branch target is specified that is out of range, the mini-assembler will flag the address as being in error.

5. The operand field of an instruction can only be followed by a comment field, which starts with a semicolon (";"). Obviously, the mini-assembler ignores the field and in fact will type over it when the line is typed over in disassembler format.

6. Any page zero references will generate page zero instruction formats if such a mode exists. There is no way to force a page zero address to be two bytes, even if the address has leading zeroes.

In general, to specify an addressing type, simply enter it as it would be listed in the disassembly. For information on the disassembler, see page 49 of the Apple II Reference Manual.
Published Date: Feb 18, 2012

Apple Access III: Addendum (6 of 7)

This article has been archived and is no longer updated by Apple.

BEFORE you execute Access III, you must execute SETPREFIX to set the prefix--for example, if the volume name of your ProFile is /PROFILE, then you must set the prefix to:

  /PROFILE

You MUST set the prefix with the SETPREFIX program. If you set the prefix with the Filer, only the Pascal prefix remains set, not the SOS prefix, so Access III will not be able to find the files it needs.

The prefix set with the SETPREFIX program does not interfere with the Pascal prefix; in fact, a different prefix may be set by each. But for the sake of consistency, we suggest that you always set the Pascal and SOS prefixes the same. To do so, set the Pascal prefix from the Filer, then set the same prefix with the SETPREFIX program.

When done, type:

  X
  Execute what file? APPLCOM/ACCESS3

Access III will now be run from the subdirectory. If you receive an error message, you probably haven't set your prefixes properly.

If the prefixes are correctly set, save the Set-Up settings: they will be loaded automatically the next time you execute Access III.

-->PROFILE AND BUSINESS BASIC

Use the Utility program to make a subdirectory on the ProFile called APPLCOM: select "Make a new subdirectory" from the File Handling Commands. Call this new subdirectory:

  /PROFILE/APPLCOM

This directory should have room for 25 files.

Press ESCAPE to return to the File Handling Commands menu, and then select "Copy files" from the File Handling Commands. Put the Access III master diskette into one of the Apple III disk drives, then type:

  /APPLCOM

and press the up-arrow. You will see displayed a list of the files on the Access III diskette on the right hand side of your screen. Press the up and down arrow keys to line up the selection arrow with the name of the file to be selected, and select it by pressing the right arrow. Select the following files from the diskette:

  ACCESS3.PROFILE
  ACCESS3.INV

After you have selected both files, press RETURN to accept the selection. For the destination ("To the files:") type:

  /PROFILE/APPLCOM/=

and press RETURN. The files you have selected will be transferred to the subdirectory on the ProFile.

The file ACCESS3.PROFILE is a small Business BASIC program that sets the prefix

and invokes Access III. You may need to change it if, for any reason, you have a differently-named subdirectory. To change ACCESS3.PROFILE, type:

```
)load /profile/applcom/access3.profile
)list
```

You will then see the following listing:

```
10 a$=PREFIX$
20 PREFIX$="/PROFILE"
30 INVOKE "APPLCOM/ACCESS3.INV"
40 PERFORM ACCESS3
50 PREFIX$=a$
60 END
```

If you want to shorten the typing required to run Access III, type:

```
)save /profile/applcom/access3
```

Doing so saves a new Business BASIC program called Access III in the subdirectory on your ProFile. It changes the name from ACCESS3.PROFILE to just ACCESS3.

The program works as follows:

```
Line 10 saves the old prefix.
Line 20 sets the prefix to the volume that contains the Access III
        subdirectory.
Line 30 brings Access III into memory, and
Line 40 starts it up. When you exit Access III,
Line 50 restores the prefix to its original value.
```

With this program, you don't have to worry about setting the prefix with the SETPREFIX program; just type:

```
)run /profile/applcom/access3
```

and everything will work correctly.

NOTE: If the volume name of your ProFile is different from "/PROFILE", you must change this Business BASIC program so that it sets the correct prefix. Just substitute the volume name of your ProFile in line 20 before saving the program with the new name.

Published Date: Feb 18, 2012

Macintosh II: Pinouts To Taxan Super Vision Monitor

This article has been archived and is no longer updated by Apple.

Here are the pinouts for connecting a Taxan Super Vision 770 monitor to the Macintosh II video card:

Macintosh II	Vision 770	signal name
1	6	red video ground
2	1	red video
3	4	Composite TTL sync (negative going)
4	9	sync ground
5	2	green video+ Composite analog sync
6	7	green ground
9	3	blue video
13	8	blue ground

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TA40026_Apple_II_Workstation_Card_No_Apple_IIGS_Support__(TIL04000).pdf

Apple II Workstation Card: No Apple IIGS Support (2/97)

Apple II Workstation Card: Apple IIGS Support (2/97)

This article discusses the Apple II Workstation card and Apple IIGS support.

This article has been archived and is no longer updated by Apple.

The Apple II Workstation Cards is not supported in the Apple IIGS because of the following reasons.

* When the Apple II Workstation Card is installed, only ProDOS 8 applications can run. The Workstation Card tells the server that it is an Apple IIe. Therefore, it will not work in a ProDOS 16 network environment. Typically, this means only the first 64K of memory will be used.

* The Workstation Card is not fully tested in this configuration and it is not supported by Apple.

Article Change History:
12 Feb 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

LaserWriter: How to Use with Colored Paper

This article has been archived and is no longer updated by Apple.

Some people have that some colored papers fade when used in a LaserWriter. Before committing to any type of paper, consider the manual's advice. Page 129 of the LaserWriter IINTX manual carries the following specifications for printing paper-based materials:

"16-lb. to 20-lb. photocopy or typewriter bond (60 to 80 g/m^2) in normal mode; up to 36-lb. (135 g/m^2) stock in manual mode with face-up tray open. Accepts most letterhead and colored stock."

Any paper that meets the above specifications and is designed for photocopier use should work properly and show no discoloration. The best method for determining if colored paper will discolor is to test it.

Note: The fuser generates temperatures between 165 and 180 degrees centigrade.

Published Date: Feb 18, 2012

MacWorkStation: Protocol-Based Communications Problem

This article has been archived and is no longer updated by Apple.

A developer of a TCP/IP network reports the following problem. Uploads of window or file contents are causing serious problems resulting in line drops. This occurs during EZ read Text (T008), Read Text (T009), Select Existing File (F017), and probably during EZ Read File Fork (F007) and Read File Fork (F008).

The developer is currently using the Simple ASCII transport layer (ID = 2) with 7 data bits. Unfortunately, data in the ranges <00>-<1F> and <80>-<FF> may be contained within windows or files. In particular, if there is a carriage return <0D> within the data, then the IBM mainframe front-end processor (FEP) takes this as an end-of-line character, sends the packet to CP, which sends the packet to the application, which processes it.

Meanwhile, MacWorkStation continues to send the remainder of the packet up until the final carriage return, which it uses to signal end-of-line. Unfortunately, the characters following the first carriage return cause CP interrupts, leaving the virtual machine in CP mode. After some number of interrupts, CP determines that the line is too noisy to continue and signals the FEP to drop it.

The problem here is that they are using a protocol in an unsupported fashion. The serial protocol driver (ID=2) that uses start and stop characters is not designed to support the transfer of binary data, or any data that might contain nonstandard characters. The best choice would be to use the serial driver (ID=1) that supports binary data and should be able to handle the transfer of carriage returns. If this is unacceptable, request a copy of the source for serial driver version 2.

Published Date: Feb 18, 2012

GS/OS: Corrupt File Changes Icons

A number of reports have appeared, concerning changing icons under GS/OS. For example, in the case of MultiScribe GS, instead of the pens and paper icon, the user sees the generic, diamond-shaped, system-defined application icon. The problem may be quite simple: one or more corrupted icon files.
This article has been archived and is no longer updated by Apple.
A number of reports have appeared, concerning changing icons under GS/OS. For example, in the case of MultiScribe GS, instead of the pens and paper icon, the user sees the generic, diamond-shaped, system-defined application icon. The problem may be quite simple: one or more corrupted icon files.

GS/OS (System Disk version 4.0) stores Finder icons in a file called FINDER.ICONS. Application/document icons are stored in files that typically end with .ICONS.

The Finder can match files to icons by any combination of three file identification fields. The icon can match by file type, AUX type, and filename. The Finder keeps a list of icon files. The first list the Finder reads is FINDER.ICONS from the start-up disk's ICON folder. Next, the Finder adds any other icon files it finds in the ICONS directory of inserted disks. Additional files are added to the front of the list so that FINDER.ICONS is always the last in the list.

When the Finder needs to match a file to an icon, it starts with the first icon in the list. A match can be made by an exact match or by use of a wild card. If all three fields in the icon match the file, the file is given that icon. If even one field does not match, the Finder tries again with the next icon in the list. The Finder continues to try to match icons with files until it reaches the last icon in the FINDER.ICONS file. This is the generic document icon. It will always match all three fields.

The loss of icons is probably due to a missing or corrupted .ICONS file. For MultiScribe, locate the .ICONS on the original MultiScribe disk. Copy the MultiScribe .ICONS file to the ICONS folder on the hard disk. On restart, the application should take on its proper icon. Once the icons are reattached to the application and the document, you should be able to double-click the document.

Locating and transferring the .ICON file for other applications, documents, and NDAs should also reattach the missing icons.

The icon representing the application ProDOS should appear as the generic application (paper and hand) icon. The icon of a 3.5-inch disk is assigned to represent disks inserted in 3.5-inch drives. Apple-distributed New Desk Accessories (NDAs) have the generic document (paper with folded corner) icon.
Published Date: Feb 18, 2012

GS/OS 4.0: Control Panel Date Problem

This problem describes a problem with GS/OS 4.0.
This article has been archived and is no longer updated by Apple.
When the Control Panel date is set to the 31st of any month, GS/OS 4.0 sets the date created/modified on files to "<No date>" or "$0000". There is currently no workaround.
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AppleSoft BASIC: Network Problems And Solutions

This article discusses four problem areas concerning AppleSoft BASIC and networks:

- Problems due to an incorrect file name.
- Problems caused by interrupts
- Problems with printer timeouts
- Problems with "LIST" and similar commands.

This article has been archived and is no longer updated by Apple.

Incorrect File Names

Occasionally, there are reports of difficulties printing or saving files using "BASIC.System" from within Aristotle. Problems can appear because of an incorrect file name. Note that the distribution disks do not contain a file with the name "BASIC.System". Rather, they show a file with the name "BASIC.SYSTEM". If "BASIC.System" is being called, and only "BASIC.SYSTEM" is available, a message stating that the file cannot be found is the response. If both the Aristotle designation and the filename are the same, there is no conflict.

Interrupt Problems

The only known problem when using Applesoft BASIC over the network concerns turning off interrupts from BASIC. If the BASIC program turns off the computer's interrupts, network difficulties occur. Interrupts are used by the network to prioritize communication with workstations. Should these interrupts be disabled, the network could "hang", because communication with the workstation is not possible.

Printer Timeout

If you issue the "PR#7" command, printed within 30 seconds, and issued "PR#0", then everything works fine. However, if you type "PR#7" and do not close after printing with a "PR#0", there's a problem. After about 2 minutes, when you try to print again, nothing happens. The printer times out. You must close the printer connection for everything to function correctly.

"LIST" And Other Printer Commands

Another printer issue has to do with the "LIST" command. For example, if, while trying to print a BASIC listing, you type "PR#7" and immediately type "LIST", you won't get a printout of the listing. The reason for this failure relates to how quickly you type "LIST". After you type "PR#7", it takes 3 to 5 seconds for the workstation and the networked printer to establish communication. If you type "LIST" before this communication link is completed, the command will not be recognized as input. As a result, the printout shows only two Applesoft prompts (the right bracket,"]").

To be assured that the computer accepts the "LIST" command (or any immediate command that causes printing), wait until the cursor returns to the screen after typing "PR#7", before entering the next command. This way, you know the network has "digested" the command. After finishing the print job, remember to close the printing session by typing "PR#0".

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AppleWorks to LocalTalk ImageWriter: Printing Problems

Some users have complained of an inability to print either from an Apple IIe or from an Apple IIGS across an LocalTalk network to an ImageWriter II when using AppleWorks.

All reported being able to print from BASIC using PR#7. Although the networks could have rather different configurations and software, these facts were the same.
This article has been archived and is no longer updated by Apple.
The difficulty in printing concerns the version of AppleWorks being run from the server. The ability to print from Applesoft indicates that the hardware is properly configured. AppleWorks 2.0 is not licensed for, nor designed for, running from an AppleShare server. For a version of AppleWorks licensed and designed for running from a server, use AppleWorks version 2.1N. Be sure, in AppleShare Admin under the Apple II menu, to set the user's account to the desired printer. The alternative would be to run AppleWorks 2.0 from a local disk.

The printing procedure is the same whether you start across the network or you startup locally. However, the network version of AppleWorks is required, if it is to be run from the server. Here is some background information, relative to this inquiry.

- Aristotle has no effect on the ability to print from AppleWorks.
- The location of ATINIT differs when on a server (as compared to a local disk). On the server, ATINIT should be in the folder assigned to the user. For example: ProDOS.SERVER/USERS/(_user's name_)/SETUP/ATINIT.
- The name of the System.APPS subdirectory is not critical, as long as a consistent name is used throughout the network.
- The WWSS file is not necessary for the operation of AppleWorks.

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TA40033_Televideo_Terminal_Emulators_for_the_Macintosh_(TIL04008).pdf

Televideo Terminal Emulators for the Macintosh

This article has been archived and is no longer updated by Apple.

As of May 1989, the only Televideo terminal emulation packages for the Macintosh are for the Televideo 950 and the Televideo 925. The Televideo 924 was not in evidence. Palantir's "InTalk" package for 925 emulation did not work.

However, if you need to log onto a Honeywell host that requires the Televideo 924, you can use the Telescape programmable terminal emulation package, you can program in the escape sequences for the 924. The emulation works fine except for one thing: Telescape has no facilities for video attributes, such as half-bright, colors, blinking, underlines, and so on.

Telescape uses the standard Macintosh two-bit video display. This setup makes programming intensity and color impossible. Supposedly, the package supports underlines, but not flashing characters. Intensity and color are available on the Macintosh II display, but new software will have to be written specifically for the system.

Published Date: Feb 18, 2012

MacTCP: Recommended DDP-IP Gateways

This article is about DDP-IP (Datagram Delivery Protocol/Internet Protocol) gateways. It presents an overview of TCP/IP and MacTCP and discusses DDP-IP gateways recommended for use with MacTCP.
This article has been archived and is no longer updated by Apple.

MacTCP

TCP/IP networks are widespread, especially in university, scientific, and engineering environments. UNIX systems have distributed TCP/IP as a standard.

MacTCP provides TCP/IP protocols to the Macintosh OS. It offers TCP/IP services (UDP, TCP, Domain name mapping) to applications. For example, a Telnet application for remote terminal service over a TCP/IP network would call MacTCP.

MacTCP is software only and runs over Ethernet. MacTCP also runs over LocalTalk, in which case a DDP-IP gateway is required.

DDP-IP Gateways

If you have an AppleTalk network and want to communicate with a TCP/IP network, you require a "DDP-IP" gateway. This gateway encapsulates TCP/IP packets into AppleTalk (DDP) packets for sending over the AppleTalk zone to the target Macintosh. In turn, the gateway receives encapsulated packets from the Macintosh and strips out the TCP/IP packet for forwarding to the TCP/IP target.

MacTCP supports the encapsulation process, so that a Macintosh on LocalTalk can access TCP/IP networks and services on a TCP/IP Ethernet. Three commercial sources for gateways are Apple Computer, Shiva, and Cayman. There is also Stanford University's KIP software, a noncommercial alternative. To locate a vendor's address and phone number, use the vendor name as a search string.

The Apple IP Gateway is Macintosh software which allows Macintosh computers using AppleTalk (Apple Remote Access, LocalTalk, or EtherTalk) to access IP services on an IP internet. MacTCP is required on both the client Macintosh and the gateway Macintosh.

The Shiva FastPath 5 is the latest version of their LocalTalk-EtherTalk bridge. KSTAR is the configuration and management software for the box; KSTAR offers DDP-IP gateway services.

The Cayman GatorBox is a LocalTalk-EtherTalk bridge, an NFS-AFP gateway, and a DDP-IP gateway.

Stanford University's KIP software provides DDP-IP gateway services among other things. It runs on the FastPath 2 from Shiva. It is NOT a commercial product and, therefore, is not supported. It currently requires UNIX daemons to configure the software. The only people who should try KIP are capable network engineers with UNIX knowledge, who require no support.

Users should choose commercially-supported software to ensure that their needs are met. The vast majority of users requiring a DDP-IP gateway should consider the Apple IP Gateway, Cayman GatorBox, or Shiva FastPath 4 (not 2 or 3) with KSTAR software.

References

MacTCP Administrator's Guide
The MacTCP Administrator's Guide is available through APDA.

MacTCP data sheets are available.

MacTCP first shipped in March 1989 and is available through APDA and Software Licensing. The current version of MacTCP is 2.0.6.

For more details, search the Tech Info Library under "APDA".
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TA40035_LisaList_Capacity_(TIL00401).pdf

LisaList: Capacity

This article has been archived and is no longer updated by Apple.
The capacity of LisaList depends on the amount of disk storage space available. But each record (row) has a specific capacity of 990 bytes, with 100 fields (columns) per record.

Note: files that fit on the 5-1/4 disk may be too large to fit on a 3-1/2" microdisk under release 2.0; however, Lisa Operating System 3.0 splits the document among many diskettes if necessary.
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MacPeak SCSI Drive: How to Use with an Apple IIGS

This article has been archived and is no longer updated by Apple.

Some people have had problems formatting a MacPeak external SCSI drive (normally for the Macintosh) from an Apple IIGS. One user, who had this problem, was working with an Apple IIGS with 1MB RAM, 3.5-inch and 5.25-inch floppy disk drives, and an Apple II SCSI card in slot 5.

The Apple IIGS recognizes the drive, but the format routine quits after running for about the same time it takes to format a ProDOS floppy and then crashes. A conflict between the SCSI card and the 3.5-inch drive causes this problem.

The 3.5-inch drive plugs into the SmartPort. The SmartPort is slot 5. To use the SCSI card in slot 5, you need to set slot 5 in the Control Panel to "Your Card". When the Control Panel is set in this way, the SmartPort is disabled, and the 3.5-inch drive is also disabled.

To use both the 3.5-inch drive and the SCSI drive on the Apple IIGS, place the SCSI card in a slot other than slot 3 (the 80-column display), slot 4 (the mouse connection), slot 5 (the SmartPort), or slot 6 (the 5.25-inch drive location). This leaves slots 1, 2, and 7 available. Slot 1 is often used for a printer, slot 2 is often used for a modem, and slot 7 is used for AppleTalk. Choose slot 1 if no printer is attached, slot 2 if no modem is attached, or slot 7 if AppleTalk is not in use. No matter which slot you choose, you must set the Control Panel to "Your Card" for that slot.

If, after reassigning slots, there is still difficulty formatting the MacPeak drive, there would appear to be an incompatibility between the SCSI card and the MacPeak drive. (MacPeak indicated that they do not support the use of their drives on the Apple II SCSI card.)

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HyperCard: Auto Hilite Problem

A user has reported a problem in HyperTalk, up to and including version 1.2.2.
This article has been archived and is no longer updated by Apple.
A button script cannot manipulate text that is selected in a field, if the button is set to Auto Hilite. When Auto Hilite is on, the text is deselected to flash the Auto Hilite attribute. Subsequently, the text is not reselected. Thus, the script has nothing to select.

For example, a user selects some text in card field. The button script takes the selection and displays it in another field.

```
on mouseUp
put selection into it
put it into card field show_me
end mouseUp
```

If you assign the button the Auto Hilite attribute, this technique will not work, because the button is highlighted before the text can be deselected and passed to the variable.

The following script uses a global variable and three handlers. It requires the Auto Hilite attribute of the button to be turned on. Because a "mouseWithin" message is generated before the button is highlighted, you can save the selected text before it is deselected. As a bonus, you can also save the selection and restore it when done.

```
on mouseWithin
global temp
put selection into item 1 of temp
put the selectedChunk into item 2 of temp
end mouseWithin

on mouseUp
global temp
put item 1 of temp into card field show_me
select item 2 of temp
end mouseUp

on mouseLeave
global temp
select item 2 of temp
end mouseLeave
```

This script provides the same result as the previous script. It uses no global variables and requires only one handler. As with the previous script, you must have the button's Auto Hilite attribute turned off. If you are running out of global variables, this routine is better than the previous script, because it has no global variables. However, the script is much slower.

```
on mouseDown
put the selection into temp1
put the selectedChunk into temp2
set hilite of me to true
repeat while the mouse is down
if PointInRect(the mouseLoc, the Rect of me) = true then
set the hilite of me to true
select temp2
else
set the hilite of me to false
select temp2
```

```
end if
end repeat
if PointInRect(the mouseLoc, the Rect of me) = true then
put temp1 into card field show_me
end if
set the hilite of me to false
select temp2
end mouseDown

Function PointInRect thePoint, theRect
if (item 1 of thePoint > item 1 of theRect) and *
(item 1 of thePoint < item 3 of theRect) and *
(item 2 of thePoint > item 2 of theRect) and *
(item 2 of thePoint < item 4 of theRect) then
return true
else
return false
end if
end PointInRect
```

*You must insert a "soft" return (Option-Return) at these locations. (Do not type these asterisks as part of the script.)

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LaserWriter IINTX: Printing in HP Emulation Mode (1 of 3) (2/95)

This article describes how to make a LaserWriter IINTX print the Pound Sterling character in Hewlett-Packard LaserJet Plus emulation mode. In doing so, it describes the difference between PostScript codes and ASCII character codes. It also gives step-by-step instructions for how to print from a LaserWriter IINTX in HP LaserJet Plus Emulation mode from an MS-DOS computer either via a serial connection or via AppleTalk. Part 2 covers troubleshooting, while part 3 is a table of the upper 128 ASCII characters for HP LaserJet Plus emulation.

This article has been archived and is no longer updated by Apple.
The LaserJet Plus emulation mode uses the ROMAN-8 symbol set used by the HP LaserJet. This is different from the standard LaserWriter character set. The LaserWriter PostScript characters are not really ASCII values, because they are mapped, character definitions and belong to a character set.

These values can be remapped, at will, to an output character. The standard LaserWriter set defines the Pound Sterling as character code 243. The ASCII value for the character is 187. Once again, the character code is not an ASCII value; it is a mapping reference used by PostScript. PostScript character codes are not available in the LaserWriter HP LaserJet emulation mode.

To print the sterling character, the following steps and information must
be taken into account.

There is a problem trying to print characters, like the Pound Sterling, in HP LaserJet emulation on the LaserWriter IINTX. If you are using a serial connection, the following instructions must be used.

The problem appears when printing the upper 127 ASCII characters and graphics (ASCII values 128 through 255). This is due to the serial port DIP setting of 7 data bits. To attain full emulation, configure the serial port as described in the steps below.

NOTE:
Currently, there is no available method of software switching back to PostScript or any other emulation mode once you leave the PostScript mode. The correct method is to change the DIP switch settings and wait 30 seconds. If you want PostScript, set switch 1 to the DOWN position. Wait 30 seconds and place the switch back to the UP position.

Printing in HP LaserJet Plus Emulation Mode from an MS-DOS Computer
==========

Step 1 - Connection

Connect a 25-Pin Serial Cable to the 25-pin serial port on the LaserWriter IINTX. Connect the other end to a serial port on the PC.

NOTE:
Most serial ports for PCs use a male DB-25 connector and the LaserWriter IINTX uses a female DB-25 connector. You need to use a straight pin-to-pin female-to-male DB-25 cable.

Step 2 - Switch Settings

While the LaserWriter IINTX is off, set the printer DIP switch settings to:

1 UP
2 DOWN
3 UP
4 UP
5 UP
6 DOWN

These switch settings place the LaserWriter IINTX in:

PostScript Batch Mode,
RS-232 9600 baud,
RS-422 9600 baud,
7 data bits, no parity check, 1 stop bit, with DTR/DSR handshake.

Step 3 - Power On

Turn on the LaserWriter IINTX and the PC. After a few seconds, the LaserWriter II will print a test page containing its current settings (listed above).

Step 4 - PostScript Code

The PostScript code that follows switches the LaserWriter II into LaserJet+ emulation mode.

Caution:

If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

NOTE:
The "%" characters and following comments are not necessary. Remove them when typing the program.)

- For DTR/DSR, from the DOS prompt, type:

```
COPY CON POST.TXT
%=============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver %Exits the printer server loop.
statusdict begin %Starts modifying settings.
9 0 3 setsccbatch %Turns off the RS-422 9600-baud port.
25 9600 68 setsccbatch %Sets the 25-pin RS-232 9600-baud port to 8 data
% bits.
5 setsoftwareiomode %Sets printer to HP LaserJet+ mode.
0 sethardwareiomode %Sets communications mode to serial.
end %This is the end of the mode switch routine.
systemdict/quit get exec %Forces an error to cause a system start test
% page.
(Control-Z) %The keyboard Control key and the Z key together.
% This ends text editing and saves the file.
%
% end PostScript Code
%=============================================================
```

- For XON/XOFF, from the DOS prompt, type:

```
COPY CON POST.TXT
%=============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver %Exits the printer server loop.
statusdict begin %Starts modifying settings.
9 0 3 setsccbatch %Turns off the RS-422 9600-baud port.
25 9600 64 setsccbatch %Sets the 25-pin RS-232 9600-baud port to 8 data
% bits.
5 setsoftwareiomode %Sets printer to HP LaserJet+ mode.
0 sethardwareiomode %Sets communications mode to serial.
end %This is the end of the mode switch routine.
systemdict/quit get exec %Forces an error to cause a system start test
% page.
(Control-Z) %The keyboard Control key and the Z key together.
% This ends text editing and saves the file.
%
% end PostScript Code
%=============================================================
```

Step 5 - Batch File

A batch file must be created to set up the PC communications port and to send the PostScript code to the printer.

From the DOS prompt, type:

```
COPY CON HPMODE.BAT
MODE COM1:96,N,8,1,P
MODE LPT1:=COM1
TYPE POST.TXT > LPT1
(Control-Z)
```

Step 6 - Change LaserWriter II to LaserJet+ emulation mode

Type HPMODE from the DOS prompt to set the LaserWriter IINTX to LaserJet+ emulation. The printer will internally switch from the PostScript Batch mode to LaserJet+ emulation, and, after a few seconds, it will print a test page displaying the new settings.

Your printer will now print graphics and text properly with the emulation provided by the Adobe PostScript ROMs. This fixes the problem of losing the eighth data bit for special text and graphics. This also fixes the problem of the "print screen" keyboard command not functioning.

Article Change History:
23 Feb 1995 - Added PostScript caution and reformatted.

Support Information Services

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LaserWriter IINTX: Printing in HP Emulation Mode (Part 2 of 3)

This article has been archived and is no longer updated by Apple.

Part 2 covers troubleshooting your setup for printing in HP emulation mode. (Part 3 covers the upper 128 ASCII characters for HP LaserJet Plus emulation.)

Troubleshooting

LaserWriter II will not print test page to indicate HP emulation mode:

Check cable connections to and the paper supply for the LaserWriter II. Turn off any spooler commands that may be running on the PC.

Check the PostScript file (POST.TXT) and the batch file (HPMODE.BAT) for any typing errors. If none is apparent, try retyping the PostScript code from scratch. If the LaserWriter II does not receive the PostScript code character-for-character, the mode change will not work.

Once the code has been retyped, send it to the LaserWriter II. If the LaserWriter II prints a test page, then all is well. If the LaserWriter II prints a page containing the PostScript code, it is in LaserJet+ emulation mode, but a test page will not be printed (there is an error in the PostScript code that instructs the LaserWriter II to print a test page, but the mode switch was successful). If the LaserWriter II does nothing, then start over from step 1.

LaserWriter II will not print from within an application:

Check the application's print settings to ensure that it is sending output to LPT1 or COM1. The application also must be set up to print to a LaserJet+ using Times, Helvetica, or Courier.

NOTE: When printing from DOS, always follow the print command with a "Control-D" A "Control-D" tells the LaserWriter II that the data transmission is complete and that printing can now begin. The best method is to create another text file with a "Control-D" inside.

Enter the following from the DOS prompt:

```
COPY CON D.TXT
(Control-D)
(Control-Z) or (F6)
```

Now, make a batch file to send the end-of-page marker to the printer. From the DOS prompt, enter:

```
COPY CON END.BAT
TYPE D.TXT > LPT1
(Control-Z) or (F6)
```

After doing a TYPE or Print Screen or DIR to the printer, just type END, and the printer will print any remaining data in the buffer.

If your print job does not have a Control-D (end-of-page) character, you must wait for your print job until a timeout, or until another job is printed that is larger than a page.

Printing to a LaserWriter IINTX in HP LaserJet Plus Emulation Mode Via AppleTalk from an MS-DOS Computer
---

1) Connection:

Connect a LocalTalk connector box to the appropriate port on the PC (an AppleTalk interface card must be installed inside the PC). Connect another LocalTalk connector box to the LaserWriter II. Using a LocalTalk cable, connect the two connector boxes together.

Note: If more devices are to be added to the AppleTalk network, consult the manual that came with the LocalTalk cables and connectors.

2) Switch Settings:

While the LaserWriter IINTX is off, set the printer DIP switch settings to:

1) UP
2) UP
3) DOWN
4) DOWN
5) UP
6) UP

These switch settings place the LaserWriter IINTX in:

HP LaserJet Plus mode
LocalTalk

3) Power On:

Turn on the LaserWriter IINTX and the PC. After a few seconds, the LaserWriter II will print a test page containing its current settings (listed above).

4) Using AppleShare PC, connect to the LaserWriter IINTX on the AppleTalk network. Set the LaserWriter for PostScript mode. This lets the ASCII characters from the PC be passed to the LaserWriter IINTX across LocalTalk.

5) Print to the LaserWriter IINTX as if it were directly connected to the LPT port selected in AppleShare PC.

Currently, there is no available method of software-switching back to PostScript or any other emulation mode once leaving the PostScript mode. The correct method is to change the DIP switch settings and wait 30 seconds. If PostScript is desired, switch 1 should be set to the DOWN position. Wait 30 seconds and place the switch back to the UP position.

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LaserWriter IINTX: Printing in HP Emulation Mode (Part 3 of 3)

This article has been archived and is no longer updated by Apple.

Part 3 gives a table of the upper 128 ASCII characters for HP LaserJet Plus emulation.

Upper 128 ASCII Characters for HP LaserJet Plus Emulation

128-160 blank
161 Agrave
162 Acircumflex
163 Egrave
164 Ecircumflex
165 Edieresis
166 Iacute
167 Idieresis
168 acute
169 grave
170 circumflex
171 dieresis
172 tilde
173 Uacute
174 Ucircumflex
175-178 blank
179 ring
180 Ccedilla
181 ccedilla
182 Ntilde
183 ntilde
184 exclamdown
185 questiondown
186 currency
187 sterling
188 yen
189 section
190 florin
191 cent
192 acircumflex
193 ecircumflex
194 ocircumflex
195 ucircumflex
196 aacute
197 eacute
198 oacute
199 uacute
200 agrave
201 egrave
202 ograve
203 ugrave
204 adieresis
205 edieresis
206 odieresis
207 udieresis
208 Aring
209 icircumflex
210 Oslash
211 AE
212 aring
213 iacute
214 oslash
215 ae

216 Adieresis
217 igrave
218 Odieresis
219 Udieresis
220 Eacute
221 idieresis
222 germandbls
223 Ocircumflex
224 Aacute
225 Atilde
226 atilde
227 Eth
228 eth
229 Iacute
230 Iagrave
231 Oacute
232 Ograve
233 Otilde
234 otilde
235 Scaron
236 scaron
237 Uacute
238 Ydieresis
239 ydieresis
240 pmacron
241 Pmacron
242 cedilla
243 dotlessi
244 caron
245 blank
246 emdash
247 quarter
248 half
249 ordfeminine
250 ordmasculine
251 guillemotleft
252 blank
253 guillemotright
254 plusminus
255 blank

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Apple IIGS Game Port Information

This article has been archived and is no longer updated by Apple.

Some questions have been raised as to whether one should attach a third-party device to the Apple IIGS game port that directly supplies +5 volts to the port and does not have a resistor for limiting voltage to the port. People fear that additional voltage without a resistor might short the logic board.

The truth is that even if the third-party device is actually shorting the logic board, it would not necessarily be caused by the lack of a current-limiting resistor.

Applying +5V through the device to the game port is not a problem, because the game port has +5V on it already. However, because the inputs from the game port go directly to a TTL device, voltages greater than +5V should not be applied to the port.

Joysticks and game paddles have a 270-ohm resistor connected from ground to the "Normally Open" side of the pushbutton switch. The "Normally Closed" side of the switch goes back to the game port, then to the logic board, and also to Signal Ground. This resistor limits the amount of current drawn from the power supply by closing the switch. It does not limit the current going back to the game port.

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LisaGraph: Copying From LisaCalc

This article has been archived and is no longer updated by Apple.

To copy rows from LisaCalc to paste into columns in LisaGraph (or columns into rows), make sure you select entire rows or columns by clicking on their headers. Selecting a random range of cells doesn't work. After pasting, cut or clear any superfluous information.

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AppleTalk Network Problem and Fix: A Case Study

This article has been archived and is no longer updated by Apple.

This article describes a problem with a school lab network and how the problem (after two attempts) was solved. The network has a PhoneNET backbone of 2100 feet with a repeater in the middle. Workstations include 25 Apple IIe systems, 3 Macintosh systems, 1 Apple IIGS, a few AppleTalk ImageWriter II printers, and one AppleTalk ImageWriter LQ printer. Devices are connected off of the backbone with RJ-11 jacks/wires as small trunks.

In the diagrams below, nodes (jack boxes on backbone) are the numbers 1 through 22. R denotes a Farallon repeater. "f.s." denotes a Macintosh SE with HD20 SC File Server.

```
1-2-3-4-5-6-7-8a=R=8b-9-10-11-12-13-14-15-16-17-18-19-20-21-22
                  |
                  f.s.
```

The problem was that prior to installation of the repeater, various Apple IIe systems would only intermittently be able to start up off of the server ("f.s." located at node 7); particularly, those toward the ends of the backbone.

Solution #1: Adding a Repeater

A repeater was installed by separating node 8 into 2 nodes (8a and 8b) and placing the repeater between the two nodes. While installing node 8, the engineer
noticed a loose, but electrically continuous connection, within the RJ-11 box. Thinking nothing of it, he installed the repeater and tightened the screws. All worked great--everyone gave all of the credit to the repeater (Farallon had said, all along, that we shouldn't need one with only 2100 feet of backbone. We had to try something, so we bought one.)

4-5 Weeks Later

A teacher's class was disrupted by a loud "popping" noise from an Apple IIe in her classroom. The screen inverted, became garbled, and returned to normal. Coincidentally, the network quit working, and machines could no longer start up on the network--everything went back to the way it was four or five weeks earlier.

This was too much of a coincidence and pointed to the repeater. (All the board, computer, and ohmmeter checks of the backbone tested fine.) Furthermore, after taking out the repeater, the engineer got a few more of the machines to start. All the machines within 700 feet of the repeater and the file server started up regularly.

After many hours of lost labor time and much frustration, the engineer took the only approach that he could think of to narrow down the cause of the problem; he asked for a replacement repeater. But once installed, there was no change. Additional tests, inspections, ohm checks, continuity checks, and termination checks failed to give a clue.

Solution #2: Damaged, Loose Wiring

Although the engineer had been warned repeatedly to make sure that there were no extra resistors on the network, after seeing the ohmmeter readings of the backbone, he defied logic and put another 100-ohm resistor where the highest resistance measurement was taken (node 15: 80.1 ohms with the repeater installed). The result: five more machines came up (nodes 16 through 20).

He decided to put in another resistor (maximum of four, now), and there was no further change. This came as a surprise, because node 20 now started with lightning speed (it was sluggish before), while node 21 just sat there looking "dumb." That's when it was clear that it was time to crawl along the wires again to see what was going on.

The loose wire idea came up, so an inspection was made of node 21. There it was. The pair of wires coming into the box (#21) had been damaged to the point that they were "broken" but not fully severed. This pair had been all but fully separated from the wiring posts. This fit the confusing symptoms of passing the ohmmeter checks, but possibly causing data reflections in an AC mode setting. After reconnecting the wires, all was fine. (Reflection checks still passed the requirements.)

The installation at the box did not have a complete plastic molding installed to protect the wires from the young students' feet. The wire had been kicked and stretched to the breaking point. A plan for molding installation is in the works.

The extra resistors were removed; everything worked fine, but a little slower on the ends. One resistor was placed at the high-resistance point again (node 18) with the result that the end units start up very fast (as if they were next to the server).

In retrospect, it appears that the repeater was not needed in the first place. Its installation could have been avoided if the wires had been tightened. (Reminder: ohmmeter checks can still test okay on bad or loose connections. It's the AC component, the +5V and -5V, that counts). However, the school is planning to add a new lab to the network and will eventually need the repeater anyway.

It appears that all of the other coincidences were merely coincidences. Most likely, a power surge occurred that disrupted the computers. The cable could have been kicked even before the surge, because the low traffic on the network at the time may have caused it to go unnoticed).

Published Date: Feb 18, 2012

LaserWriter IINT/NTX: How To Print Font Samples

This article has been archived and is no longer updated by Apple.

On the disks that come with the LaserWriter II printers is a program called "LaserWriter Font Utility." This program prints a sample of all fonts (in 12-point) in the LaserWriter and/or the hard disk attached to a LaserWriter IINTX. If you want to print the available fonts in multiple sizes, it is necessary to create your own font sample document.

Published Date: Feb 18, 2012

Macintosh IIcx: Some NuBus Cards Don‘t Fit

Does the smaller form factor of the Macintosh IIcx affect the size of Nubus cards? In other words, will cards designed for the Mac II fit inside a IIcx?

This article has been archived and is no longer updated by Apple.
There are two NuBus cards that have problems fitting in a Macintosh IIcx. Both are video cards: the SuperMac Spectrum 8-bit color card and Truevision NuVista 24-bit color card. Apple has been unable to verify whether or not the DCA MacIrma card fits properly in the Macintosh IIcx. We will try to provide more information as it becomes available.

Note: Any NuBus card designed to the physical specifications published by Apple will fit properly in a Macintosh IIcx.

Published Date: Feb 18, 2012

ImageWriter II: How To Print From Applesoft BASIC Over A Network

This article has been archived and is no longer updated by Apple.

To print to an ImageWriter II over a network using Applesoft BASIC follow this procedure:

1) Ensure that you have run the Chooser II to select the printer that you want to address.

2) This code can be used to allow Applesoft BASIC to communicate with the chosen ImageWriter II:

```
10 D$=CHR$(4)
20 Print D$; "PR#7"
30 Print "Hello Printer"
40 Print D$; "PR#0"
50 End
```

Published Date: Feb 18, 2012

TA40047_AUX_Cray_Connectivity__(TIL04025).pdf

A/UX: Cray Connectivity (6/93)

This article describes alternative solutions for A/UX to Cray connectivity.

This article has been archived and is no longer updated by Apple.
In general, A/UX 3.0 is a full implementation of AT&T System 5.2.2 (with Berkeley 4.3 extensions) UNIX Operating System. It is capable of multi-users and multitasking environments. It also provides many defacto standards, including TCP/IP communications protocol, Network File System (NFS) from Sun Microsystems, Berkeley networking services, and X Window System from MIT. As a result, A/UX can talk to almost any machine that any UNIX machine talks to. Here are some connectivity examples:

Ethernet Connection

If the remote machine (Cray) supports TCP/IP Ethernet, regardless of the type of operating system Cray is running, A/UX can talk to it via "telnet" or "rlogin" and use "ftp" for file transfer.

If the remote machine supports NFS, then either A/UX or the remote machine can be configured as an NFS server or NFS client.

If the remote machine supports X Window System, then both A/UX and the remote machine can run X server and/or X client applications on different displays, so that the two machines to share resources.

Serial Line Connection

A/UX supports two internal RS-232 serial ports for connecting to any RS-232 devices, like modems, regular terminals, and printers, hard-wired to another computer's RS-232 ports (PC, VAX, Cray, and so on). You can use "cu", "tip", or "kermit" (provided in A/UX) to connect your A/UX to the remote machine.

Since A/UX 3.0 (as did previous versions) supports SLIP (Serial Line Internet Protocol), if the remote machine also supports SLIP, SLIP might be another solution for doing remote connection and file transfer by using the underlying Internet network services, such as "rlogin", "telnet", "rcp", and "ftp".

Article Change History:
25 Jun 1993 - Revised for technical accuracy.
23 May 1993 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

MacDraw 1.9.5 & 1.9.6/LaserWriter 5.2 Conflict: Workaround

This article has been archived and is no longer updated by Apple.

This article describes a workaround for the conflict between MacDraw versions (1.9.5 and 1.9.6) and LaserWriter 5.2: If you get a system bomb when printing from MacDraw, try this:

   Select All
   Group
   Print
   Ungroup

This seems to eliminate system bombs and keeps you from having to "downgrade" the LaserWriter drivers across the network.

(Be careful when you ungroup after printing--click on an object to deselect the selected objects, or you accidentally can move all the objects in your document.)

Published Date: Feb 18, 2012

MacLink Plus: AFE-Compatible File Translation

This article has been archived and is no longer updated by Apple.

Some users have had problems with MacLink Plus from DataViz, Inc.; it doesn't work well with Apple File Exchange (AFE) and the Apple 5.25-inch drive. The reason is that earlier versions of MacLink Plus were created before these products were developed.

Prior to the introduction of AFE and the Apple 5.25-inch drive, the earlier versions of MacLink Plus were one of the few file transfer and conversion utilities for moving files between the PC and Macintosh. However, with the introduction of AFE, DataViz diversified its product line by introducing additional translators for AFE. The DataViz AFE translators should fulfill your customer's needs. They also support the Apple 5.25-inch drive.

MacLink Plus/translators v2.12 includes a library of over 46 different translation combinations that extend the translation capabilities of the Apple File Exchange utility. It provides automatic conversion of a file format and contents between a variety of normally incompatible applications.

Users with a number of PCs and Macintoshes should investigate connecting them via LocalTalk and then mounting the files to the desktop using TOPS.

For more details, search the Tech Info Library under "DataViz" and/or "TOPS".

Published Date: Feb 18, 2012

AppleShare PC: Won‘t run as an 8088 window in Windows/386

This article has been archived and is no longer updated by Apple.

Due to memory constraints, AppleShare PC will not run as an 8088 window in Windows/386. It will, however, run concurrently with Windows/386.

Published Date: Feb 18, 2012

LisaGraph: Two decimal places

This article has been archived and is no longer updated by Apple.
If you wish to have numbers with two decimal places on the X or Y axis, be aware that LisaGraph always rounds the numbers up to the first decimal place for any increment except .05.
Published Date: Feb 18, 2012

TA40052_LisaGraph_Customizing_the_X_axis_(TIL00404).pdf

LisaGraph: Customizing the X axis

This article has been archived and is no longer updated by Apple.
To customize the X axis, you must have a line graph or a scattergram graph selected. Customizing is described on pp. C89-C93 in the LisaGraph 1.0 or 2.0 manual, or p. 83 in the LisaGraph 3.0 manual.
Published Date: Feb 18, 2012

Macintosh: CloseView is Compatible with Pyro

Some users of CloseView -- a screen magnification program -- have had compatibility problems with various screen savers.

This article has been archived and is no longer updated by Apple.
CloseView users who need a screen-saver can use Pyro, from Fifth Generation Systems, Inc. CloseView and Pyro work well together.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
27 July 1993 - Company title updated from Fifth Generation Systems to Fifth Generation Systems, Inc.
2 August 1989 - Updated for technical accuracy.
Published Date: Feb 18, 2012

LocalTalk PC: No User or Document Name on Print Server Screen

This article has been archived and is no longer updated by Apple.

TOPIC ----------

When the users of the LocalTalk PC card spool documents to the AppleShare Print Server, the operation works fine and the documents print properly. However, the user name and the document name field on the print server screen are blank.

DISCUSSION ----------

Document and user name data are normally sent to the print server by the PostScript driver. As written, most of the drivers supplied with PC applications do not provide this information to the spooler. There is currently no way around this limitation.

Published Date: Feb 18, 2012

LaserWriter IINT/NTX: "COM1:" Port Error in Owner‘s Manual

There is an error in the LaserWriter IINT/NTX Manual (Apple part #030-3215-A) concerning the data bits for word length.

This article has been archived and is no longer updated by Apple.
The LaserWriter IINT/NTX Manual, in the section that tells how to use the LaserWriter II with MS-DOS applications (page 113) says to use the DOS MODE command to set the COM1: port to 7-bit word length. On page 120, the manual states that the default serial word length is 7 data bits.

These are errors. The COM1: port word length must be set to 8 bits, and the default serial word length is also 8 bits.

Published Date: Feb 18, 2012

Apple III: Converting "Three Easy Pieces" Files to Macintosh

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there a way to transfer files from the Apple III package "Three Easy Pieces" to an application on the Macintosh?

DISCUSSION ----------

Using an Apple File Exchange (AFE) translator, Three Easy Peices files can be converted into Microsoft Works files for the Macintosh.

Transfer the files from the Apple III onto a 3.5-inch disk -- use either an Apple IIe or Apple IIGS running AppleWorks. Read the files into AppleWorks from the 5.25-inch drive and save them to the 3.5-inch drive.

The Works-to-Works translator for Apple File Exchange moves files from AppleWorks into Microsoft Works, as long as the files are on a 3.5-inch disk and in the ProDOS format, since ProDOS and SOS formats are compatible.

Published Date: Feb 18, 2012

Apple II Family and Chooser: Frequently Asked Questions

This article contains frequently asked questions (FAQ) on the Apple II computer and the Chooser.
This article has been archived and is no longer updated by Apple.
Question: When I choose a printer is the choice saved on disk so that I do not need to use Chooser again?

Answer: Yes, the Chooser selection is saved to disk as the user exits Chooser.

Question: When I choose a printer do I need to use Chooser each time?

Answer: You do not need to use the Chooser each time you print. The Chooser is used only when changing printers.

Question: If the choice is saved is it saved on the current startup disk or on the disk Chooser resides on?

Answer: The printer choice is saved to the disk with Chooser on it.

Question: If the choice is saved is it saved only if the disk Chooser resides on is the current startup disk?

Answer: The choice is saved to the Chooser disk no matter where Chooser resides.

Question: If an AppleShare user who starts up over the network does not have a default printer assigned from the server, will their most recent choice be saved after powering down?

Answer: The last choice is saved as the user exits Chooser.

Question: If an AppleShare user who starts up over the network does not have a default printer assigned from the server, where is it saved?

Answer: This choice is saved on the server from which Chooser is run.

Question: Is there any difference in these characteristics between the Apple IIe and the Apple IIGS?

Answer: There are no differences between an Apple IIe and an Apple IIGS in these matters. The Chooser program is the same on both computers.

Notes:

1) The user's Chooser selection overrides the Server Admin default printer assignment.

2) GS/OS 5.0 uses the Control Panel for network choices. If GS/OS 5.0 is being used, the Chooser program is no longer needed.
Published Date: Feb 18, 2012

Apple IIGS: How To Print to Local & Network Printers

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is it possible to print to local printers from an Apple IIGS on an Apple II network?

The network in question has an Apple IIGS and an ImageWriter II in each work area. Each of these Apple IIGS systems is networked into a central office where they share a LaserWriter IINTX. Sometimes users need to print to the local printer, other times to the LaserWriter.

Can they do this while on the network without shutting down their machines and restarting with software locally? They are using network versions of AppleWorks with third party applications and E-mail.

DISCUSSION ----------

Printing both locally and over the network depends on the application's method of selecting a slot for printing.

AppleWorks does provide a method for assigning a printing slot, allowing three printers to be defined in the Printer Information screen. To do this:

1) Set up the printer specifications for the local ImageWriter printer in slot #1.

2) Set up an ImageWriter printer for slot #7. (This is for the ImageWriter Emulator used in the LaserWriter.)

3) Choose the desired printer by going to the Main Menu/Other Activities/ Printer Information screen and selecting a new Open-Apple-H printer.

If the third party programs allow a slot choice within the program, select slot #1 for the local printer and slot #7 for the network printer.

Prior to using a slot #7 printer (the network printer), use the Chooser application to select the appropriate network printer.

(NOTE: These descriptions assume the use of the printer port on the Apple IIGS.)

Published Date: Feb 18, 2012

DECmate III-to-Macintosh Connectivity

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Can documents can be transferred from a Macintosh connected to a DECmate III running CP/M-80?

DISCUSSION ----------

A DECmate III running CP/M-80 should have no difficulty moving ASCII text files to a Macintosh. As with the DECmate I and DECmate II, a serial connection is made between the DECmate and the Macintosh. This connection can be a direct machine-to-machine connection with a null modem cable, or a modem-to-phoneline-to-modem connection.

The XMODEM file transfer protocol was originally developed for the CP/M operating system. Nearly all of the CP/M communication programs provide support for the XMODEM protocol. Most Macintosh programs also support the XMODEM file transfer protocol. By running applications supporting XMODEM on both computers, a file transfer can be accomplished.

Published Date: Feb 18, 2012

AppleShare: Set Apple IIGS Startup Slot to 7 To Boot

This article has been archived and is no longer updated by Apple.

TOPIC ----------

What setting do I use in the AppleShare startup slot on an Apple IIGS?

I have been told that when setting the slots for an Apple IIGS AppleShare workstation the startup slot should be set to "Scan". Others have told me that startup slot should actually be set to 7. Which is correct?

DISCUSSION ----------

Since a Scan operation starts at slot 7 and works down the slots until reaching slot 1, setting the startup slot to "Scan" can work. If the ProDOS-prepared server is available as the Apple IIGS starts up, the booting takes place from the server.

However, should the server be unavailable as the Apple IIGS starts up, AND a startup disk is in an attached disk drive, booting takes place from that disk drive.

If booting only from the server is desired, then it is probably a good idea to set the startup slot to 7 to ensure that the boot process ONLY works across the network.

Published Date: Feb 18, 2012

LisaGraph: Changing Shades

This article has been archived and is no longer updated by Apple.
To change the shading on the bars or legends in your bar charts:

1. Paste the graph into LisaDraw

2. Ungroup the objects until the object you want to modify can be selected individually.

3. Shade the bars.

Published Date: Feb 18, 2012

TA40062_GSOS_AppleShare_Access_Over_Network_Bridge_(TIL04050).pdf

GS/OS 5.0: AppleShare Access Over Network Bridge

Does GS/OS 5.0 allow access to an AppleShare File Server through a bridge on the network?
This article has been archived and is no longer updated by Apple.
GS/OS 5.0 does provide network file services to an AppleShare File Server over bridges. This feature works like the Apple IIGS System Disk 3.1 or 3.2.

However, GS/OS 5.0 has the same limitations for network startup that exist with System Disk 3.1 or 3.2: network startup must take place within the physical network -- not across a bridge.
Published Date: Feb 18, 2012

HayesConnect 1.0C: Corrects Hang Problems of 1.0B

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I have a problem running the Hayes Modem serving software on our AppleShare File Server. Here is the configuration:

Server: Macintosh IIcx with 4MB RAM
Software: AppleShare 2.0.1
Timbuktu 2.0.1 f2
HayesConnect 1.0B

The system hangs in AppleLink and in MacTerminal communications. The server also hangs and has to be reset. Why?

DISCUSSION ----------

The problem is probably with HayesConnect, version 1.0B. Contact Hayes Technical Support group for an update to HayesConnect 1.0C, which should correct this problem.

For more information, search under: Hayes Microcomputer

Published Date: Feb 18, 2012

A/UX: Printing to LaserWriter IINT From AT&T 3B2 (1/96)

I am having a problem printing to a LaserWriter IINT from an AT&T 3B2 workstation.

I want to print from an AT&T 3B2 running System V Release 2. There are no extensions (Berkeley or otherwise), and there are no Macintoshes and no network involved in this configuration. I can "cat" a PostScript file through a port to the LaserWriter IINT without problems.

When I "lp" the file through the standard AT&T spooler and the same port, the LaserWriter IINT green light flashes for several minutes (about 3 to 5 minutes beyond what the cat takes). The green light eventually goes to steady state without printing anything. A check of the queue indicates that it was printed without error; however, there is no output.

I eliminated: the cabling, XON/XOFF, data/start/stop bits, parity, the PostScript file, the history of the LaserWriter IINT and the EEROM being set incorrectly, and also the returned Control-D (EOF) somehow interfering as the problem. There are no error messages or adverse log indications. I am now at 1200 baud to remove some possible problems associated with using 9600 baud.

I checked the output of the port between the cat and the LaserWriter IINT. It appears that the LaserWriter IINT is adding or changing something. I do not know exactly what because of the method used to observe and the lack of time to set up for another (and more revealing) test. I can say that it is different, and I assume this should NOT be the case.

What I don't know is:

1) Has anyone successfully connected the LaserWriter IINT to a 3B2 with a

vanilla AT&T System 5 "lp" spool/queue (no Berkeley extensions)?

2) How does their queue script read? Can I get a copy?

3) What is there about a standard lp queue that could add to or alter the

contents of a PostScript file passing through?

This article has been archived and is no longer updated by Apple.

A/UX is AT&T System V Release 2 -- the same as the customer's AT&T 3B2 system. If something works for the A/UX system, there should be a way to make it work with the AT&T 3B2. Apple has successfully connected LaserWriter IINTs to A/UX systems and used the A/UX lp print spooler. A/UX does not use the Berkeley extensions for printing.

When printing to a PostScript device, A/UX uses a script located in /usr/spool/lp/model/psinterface. The script used by the 3B2 should be similar, if not identical, to the A/UX version.

The PostScript file going to the printer must have a first line that begins with:

%!PS-Adobe-

or the LaserWriter IINT won't know what to do with it. Since using cat to send the file directly to the printer works fine, we can assume that the original file is OK and that the connection between the computer and the printer is good.

An error is most likely to be introduced when the psinterface script assigns a magic number to the file being printed. Normally, the magic number for a file is derived from the first few characters of the file, which are then matched against the /etc/magic file to return some information about the contents of the file.

However, the psinterface script assigns its own magic number to the file being printed. Psinterface cuts the first eleven characters from the file to be printed and uses a case statement to assign a magic number to the file. Depending on what that magic number is, psinterface does something different with the file.

In the A/UX version of psinterface, this section of the script reads as:

```
case "$magic" in

%!PS-Adobe-) rev=1 ;;
```

Check the 3B2 version of the script and see if these lines match. If they don't, try changing the 3B2 version to match the A/UX version.

Article Change History:

25 Jan 1996 - Changed title to reflect proper product name.

22 Aug 1995 - Made minor corrections.

08 Sep 1994 - Reviewed and reformatted.

Support Information Services

Published Date: Feb 18, 2012

LocalTalk PC Card: Available for MS-DOS, Not OS/2

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I want to place PCs running OS/2 on an LocalTalk network. Are there any LocalTalk network PC cards that support OS/2 at this time?

DISCUSSION ----------

Apple is unaware of any AppleTalk network PC cards with drivers for OS/2. The AppleTalk network PC card software from Apple contains only MS-DOS drivers.

DayStar Digital makes a MicroChannel version of an AppleTalk network PC card for PS/2 machines, but again, the DayStar card includes only MS-DOS drivers, not OS/2 drivers.

While either of these cards can be placed in an OS/2 system, the cards will be functional only under MS-DOS, since the accompanying software lacks the drivers for OS/2.

Published Date: Feb 18, 2012

AppleShare: Virus Can Attack Only User-Write-Accessible Volume

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Here are two questions about AppleShare volumes and viral infections.

DISCUSSION ----------

Q) If I partition a server hard disk into a read-only volume and a read-write volume, is it possible for the read-only volume to become infected if the read-write volume becomes infected?

A) No, a virus can attack only folders and files to which the user of the infected program has write access privileges.

Q) If I did some administrative work on the read-only volume -- that is, launched applications that made it write-able under the administrator account -- could a virus infect the volume that was once write-protected?

A) Yes, since the Administrator has write access privileges, so would the virus.

Published Date: Feb 18, 2012

HyperCard 1.2.2: Corrects Issue Creating 127th Field

HyperCard 1.0 exhibited a problem that prevented the construction of a 127th field and generated an "error 777" message, and also an "error 1170" when the message box contained the number 128.

Is there a solution yet?
This article has been archived and is no longer updated by Apple.
Yes. HyperCard 1.2.2 does not exhibit this problem.

For more information, search under "HyperCard" and "error" and "field."
Published Date: Feb 18, 2012

LaserWriter Driver 6.0: Defaults to Color

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I am using the new (v6.0) LaserWriter drivers with QMS printers. Printer options default to color/grayscale under these drivers (as opposed to black and white). This seems to slow printing. Is there any way to change this default?

DISCUSSION ----------

The primary focus for the LaserWriter 6.0 driver is color printing. This is why the color option is the default setting. There is currently no way to change the default setting to black and white.

Published Date: Feb 18, 2012

Macintosh-to-Modem Pool Through Rolm Phone System

This article tells how to cable a Macintosh from a Rolm phone system to access a modem pool.
This article has been archived and is no longer updated by Apple.
If you want to use a Macintosh from a Rolm phone system and access a modem pool on the switch, you need to provide DTR from the Macintosh. The standard cables do not provide this. You need to make a special cable with the following pinouts to provide the appropriate signalling:

DB-25 to DB-9
----- ----
1 8
2 5
3 9
7 3
20 6
8 7

Use a standard DB-9-to-DIN-8 cable to connect to the Macintosh.

Published Date: Feb 18, 2012

Macintosh II High-Resolution Video Card: New Features

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This article describes the new features of the Macintosh II High-Resolution video card.

DISCUSSION ----------

The Macintosh II High-Resolution Display Video Card is the cost-reduced replacement for the previous 4- and 8-bit Macintosh II Video Card (M0211 and M5640). This new card is sold in 4- and 8-bit configurations (M0322 and M0324, respectively).

This new release is fully compatible with the previous card when used with Apple's video drivers, monitors, and cable. Applications that make direct hardware calls may not work with the revised card. Also, third-party video cables may need to be changed (see item 2 below).

New Features

The following minor features were added to the card. They should not have a major impact on the typical use of these cards.

1. Monitor Type Detection

At startup, the High-Resolution Display Video Card senses the monitor type by sensing a previously unused signal line: pin 4 in the D-15 video connector. The selection is as follows:

SENSE 0 Monitor Type
(Pin 4)
1 or N/C NTSC Timing RGB video out
0 12- and 13-inch Monitor Timing

(Note: Some third-party cables may not be wired correctly to support this detection scheme.)

2. New Driver Level Control of RS-170 RGB Video

The card supports two RGB interlaced video resolutions:

- 512 by 384 pixel (default mode) and
- 640 by 480 pixels

To select the higher resolution, the system needs the new Monitor CDEV and Slot Manager supplied with the 32-bit QuickDraw, plus the correct cable configuration (see item 1). Selection is made by choosing the monitor icon (highlighted borders) connected to the Macintosh II High-Resolution Video Card and clicking on the Options button. A dialog box will appear with the options.

In addition, the card only produces RGB interlaced video in the 4- and 8-bit mode.

3. Enhanced Firmware

In addition to the scanning modes mentioned above, the card supports uncorrected gamma, has an integrated gamma directory, and implements a new set of driver calls to support these new features.

TA40070_Macintosh_II_HighResolution_Video_Card_New_Features_(TIL04059).pdf

Published Date: Feb 18, 2012

TA40071_LisaGraph_More_graphs_on_a_page_(TIL00406).pdf

LisaGraph: More graphs on a page

This article has been archived and is no longer updated by Apple.
If you want more than one graph on a page, paste the graphs into a LisaDraw document, then arrange them anyway you wish.
Published Date: Feb 18, 2012

TA40072_MacAPPC_and_MPW_Compatibility_Issues_(TIL04060).pdf

MacAPPC and MPW 3.0: Compatibility Issues

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This article discusses the compatibility of various versions of MacApp and MPW.

DISCUSSION ----------

MacApp 1.1.1 programmers should use MPW 2.0.2. Apple does NOT support developing with MacApp 1.1.1 under MPW 3.0.

MacApp 2.0b5 was designed for use under MPW 2.0.2. It is possible to tweak MacApp 2.0b5 to run with MPW 3.0, but this is also an UNSUPPORTED solution.

MacApp 2.0b9 does NOT support MPW 2.0.2, but DOES support MPW 3.0.

Published Date: Feb 18, 2012

AppleTalk Internet Router

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This article gives general information on the AppleTalk Internet Router. It includes common questions with answers.

DISCUSSION ----------

The AppleTalk Internet Router is a software router that interconnects AppleTalk networks, including LocalTalk, EtherTalk, and TokenTalk networks, to form an AppleTalk internet. The router moves data from one network to another transparently, so the internet functions like a single network. This means that users access file, print, and mail resources across the internet in the same way they access these resources on a single network.

The AppleTalk Internet Router is fully compatible with AppleTalk Phase 2. As specified in the AppleTalk Phase 2 protocols, you can use the AppleTalk Internet Router to assign a range of network numbers and a list of zone names to a single EtherTalk or TokenTalk network.

The AppleTalk Internet Router has four main purposes:

- It connects two to eight networks, allowing users access to services on other networks. The connected networks can be LocalTalk, EtherTalk, or TokenTalk networks.

- It isolates traffic on different parts of an internet. Although AppleTalk Phase 2 supports very large, single AppleTalk networks, performance can be improved by using a router to break up such a network. The router isolates local traffic and passes traffic onto the internet only when necessary.

- It creates zones that conceptually partition the internet, so that users can more efficiently access shared services.

- It enlarges a network that has reached its maximum length or number of devices. The number of devices per network is an issue for LocalTalk networks. The maximum length is an issue for LocalTalk networks and thin Ethernet networks.

The AppleTalk Internet Router runs on the Macintosh Plus, SE, SE/30, and Macintosh II family of computers. It runs transparently in the background of other processes running on the same system. You can run the router on a machine that is also running the AppleShare File Server, the AppleShare Print Server, and various electronic mail servers. To run the router on the same machine as one or more servers, you must have 2MB of memory.

The AppleTalk Internet Router ships with the "AppleTalk Internet Router Administrator's Guide". The guide has complete information on how to set up the router, when to create an internet, how to plan the physical layout, where to place a router, when to use a backbone network, and so on. It also gives advice on network numbering and zone names. Observing certain guidelines in identifying networks can help maintain order as the internet grows.

The AppleTalk Internet Router also ships with a document titled "AppleTalk Phase 2 Introduction and Upgrade Guide". This booklet describes AppleTalk Phase 2 for the lay person and describes how to upgrade an AppleTalk internet to Phase 2.

The Upgrade Utility will be packaged with the AppleTalk Internet Router for

a limited period. The Upgrade Utility permits AppleTalk Phase 2 and Phase 1 routers to operate on the same internet. Upgrading an AppleTalk internet to Phase 2 requires that all routers be upgraded to Phase 2 versions. However, it may not be feasible for customers with very large internets to upgrade all their routers at once. For this reason, Apple has written the Upgrade Utility that runs in the background of the AppleTalk Internet Router and enables that router (and its connected networks) to be part of an internet on which 1.0 routers still exist.

The Node Identification Utility also ships with the AppleTalk Internet Router. It enables you to determine which nodes on an internet have been upgraded to AppleTalk Phase 2.

Customers must buy a copy of the AppleTalk Internet Router for every machine that will run the software. Site licenses will not be available.

Questions and Answers on the AppleTalk Internet Router

Q. Does the AppleTalk Internet Router support TCP/IP or DECnet routing?
A. No. The AppleTalk Internet Router supports routing of AppleTalk protocols only. It can be run in parallel with a second non-Apple router that supports other network protocols.

Q. How many networks can be interconnected with the AppleTalk Internet Router?
A. The AppleTalk Internet Router allows from two to eight networks to be interconnected. By exchanging information with other routers on the internet, the AppleTalk Internet Router can learn about 1024 other networks in the internet. Each of these 1024 networks can contain multiple AppleTalk Phase 2 "virtual networks."

Q. How many zone names can I assign to one EtherTalk or TokenTalk network?
A. 256.

Q. How can I configure eight networks on the AppleTalk Internet Router?
A. You need to use a Macintosh II or IIx that handles up to six network cards and the two LocalTalk ports to be used by the router. You can use the router without a video card or monitor. To administer such a router, you can use the Timbuktu product from Farallon.

Q. Does the router degrade the performance of the AppleShare File Server or Print Server when run in the background?
A. Yes. The amount of degradation depends on the traffic passing through the router. Typically the router has to be extremely busy to noticeably affect server performance.

Q. Because the AppleTalk Internet Router is a Phase 2 router, will third-party router manufacturers need to upgrade their routers to communicate with Apple's router?
A. Yes. Apple has worked very carefully with all the major third-party router manufacturers. All of them plan to offer Phase 2 upgrades to their products.

Published Date: Feb 18, 2012

HyperCard: How To Determine HyperCard Field Line Count

This article has been archived and is no longer updated by Apple.

On occasion, HyperCard programmers need to know how many lines are in a field. There are two ways of looking at this question. One is how to determine the number of display lines in a field due to word wrap. The other thing you might want to know is how many return characters are in a field. HyperCard tells you this, if you ask how many lines are in the given field. The question of how many display lines are in a field is a bit more difficult. The script at the end of this article can get this information for you.

The script works by taking the given field, changing it to a scrolling field (if it isn't already), and then making the height of it the smallest multiple of the size of the text height greater than 50 pixels. This is done because the next step it does is to scroll from the top of the field to the bottom. If field is not at least 50 pixels high, it will not scroll.

Once HyperCard has scrolled to the bottom of the field, it can tell you how much text has been scrolled off. With this information, the size of the window, and the height of the text, you can calculate the number of lines.

The height of the field is made smaller, because if the visible field is not filled enough to scroll, there is no way to determine how much of the field (number of lines) has text in it. However, as stated above, the field also has to be tall enough to scroll. The combination of these two requirements means that the script below can determine the number display lines, if that number is greater than 3. If there are less than three lines, it tells you there are 3, anyway. Here's the script:

```
on mouseUp
put empty
lock screen

put the style of fld test into holdStyle
-- so you can reset the style
get the rect of fld test
put it into holdRect
-- so you can reset the rect

if the style of fld test does not "scrolling"
then
set the style of fld test to "scrolling"
add 15 to item 3 of it
-- to account for the scroll bar
end if

set the scroll of fld test to 0
-- get to the top
put (item 2 of the rect of fld test + 50) into item 4 of it
-- make the field as small as possible to account for small amounts
-- data and still scroll
set the rect of fld test to it

drag from item 3 of the rect of fld test - 8,item 2 of the rect of
fld test + 20 to item 3 of the rect of fld test - 8,item 4 of
the rect of fld test - 20
-- grab the thumb and drag to the end of the field

put the scroll of fld test + (item 4 of the rect of fld test - item
2 of the rect of fld test) into fldHeight
-- gives the height of the field in pixels
put fldHeight / the textHeight of fld test into numLines
```

```
-- gives the number of displayed lines
-- NOTE! this does not account for carriage returns in the field
put "the number of lines is" && numLines

set the style of fld test to holdStyle
set the rect of fld test to holdRect
unlock screen
end mouseUp
```

Published Date: Feb 18, 2012

TA40075_Apple_IIe_MIDI_Interface_by_Passport_Designs_(TIL04066).pdf

Apple IIe: MIDI Interface by Passport Designs

This article has been archived and is no longer updated by Apple.

Passport Designs, Inc. manufactures and sells a MIDI interface used by software developers as the standard for Apple IIe computers.

Passport also publishes two software packages, one for recording the MIDI keyboard performance and one for printing the keyboard performance as sheet music. MasterTracks is the name of the recording application. PolyWriter is the software used for printing the sheet music.

For more details, search the Tech Info Library under "Passport Designs, Inc."

Published Date: Feb 18, 2012

LocalTalk: PhoneNET and Surge Suppression Information

This article has been archived and is no longer updated by Apple.

Farallon, in its PhoneNET connector documentation, recommends that users not connect a LocalTalk connector directly to a twisted-pair backbone via a PhoneNET to LocalTalk adapter cable. The reason is that LocalTalk connectors don't have sufficient surge protection when connected directly to the phone line. The documentation says that the first connector out of the wall should be a PhoneNET connector. Then, it's safe to branch LocalTalk from that using the adapter cable.

Farallon incorporates a proprietary transformer and surge protection system into their connector modules. They do this because phone wire is not shielded and is subjected to RFI and EMI. Because LocalTalk cable is shielded, the same level of surge protection is not required in LocalTalk connectors. Connecting LocalTalk cable to PhoneNET via an adapter is not recommended, because it reduces the shielding effect at the cable. There are other reasons, including differences in impedance. Farallon's suggestion correctly interfaces phone wire to LocalTalk with a module that provides some form of surge suppression.

Published Date: Feb 18, 2012

Y-Term FTP: Converter Available for the Macintosh

This article has been archived and is no longer updated by Apple.

Y-term is a file transfer protocol used on some IBM mainframe computer systems. FutureSoft sells a program, called DynaComm, that provides the Y-term file transfer protocol for the Macintosh. The communication session must be initiated through an IBM 7171 or Series 1 protocol converter. The terminal that is emulated is a VT100.

For more details, search the Tech Info Library under "FutureSoft."

Published Date: Feb 18, 2012

Macintosh Pascal: Problem Copying Data to Text File

This article has been archived and is no longer updated by Apple.

There is a problem in Macintosh Pascal, version 2 and later. The "Output also to a file" option (the Preferences dialog in the Windows menu) allows all input and output in the TEXT window to be copied to a disk file. This option does not always work correctly. When you select this option, there is a risk of embedding garbage characters in the output file.

A workaround: create a disk file from within the program and write to it using the write procedure.

Published Date: Feb 18, 2012

HyperCard: How To Get Custom Drivers

This article has been archived and is no longer updated by Apple.

If you are looking for a HyperCard driver for a videodisk player or other multi-media device, you can go to a third-party for a custom driver. As an alternative, you can write your own using the HyperCard Videodisc ToolKit (available from APDA).

For drivers, various discs, and stackware, search the Tech Info Library for "The Voyager Company", "Optical Data", or APDA.

Published Date: Feb 18, 2012

A/UX: Output Is Lost in "term" and X11

Article Change History

08/31/92 - REVIEWED
*For technical accuracy

The following problem indicates a bug in A/UX. The following small program produces a list of 10,000 lines when run:

```
#include <stdio.h>

main()
{
int i;

for (i=1; i<10000; i++) {
printf ("i=%d\\n",i);
}
}
```

This works as expected when running on the console or as single process in "term". However, when this program is started three times in different windows of "term", the output is garbled. When tested under X11, the output is also garbled.

Tech Comm has verified this problem on both the Toolbox application "term" program and the X Window System "xterm" program. Some of the standard output of the program from the last window(s) are lost, if more than two windows (either created by "term" or "xterm") run the test program.

The problem can be reproduced and easily seen by outputting a longer string, like "i=====", through the printf() statement.

It seems that both "term" and "xterm" window programs have some limitation on the synchronization of each terminal emulation output. They just do the normal asynchronous terminal output.

However, you may use the "tee" pipe-fitting command to block the standard output on the display without losing any output. For example:

```
foo | tee [file]
```

This lets the output of the program "foo" be displayed on the standard output and/or copied to the file, if the optional file is specified.

This article has been archived and is no longer updated by Apple.
The problem described in this article has been submitted as a bug to A/UX Engineering.

Published Date: Feb 18, 2012

MPW: PixMap Color Issue

This article has been archived and is no longer updated by Apple.

A programmer has a PixMap with a Raster image that has 8-bit pixel values ranging from 0 to 127 and is using CopyBits with the SrcCopy mode. The foreground and background colors are correctly set. The color window has 128 animating colors reserved.

The question is what color table should be assigned to the PixMap? Does he need to use the color table generated by the PaleteToCTab call with the source palette being the palette of the color window?

A NIL handle results in a black and white image. (Note: With tolerant colors used instead of animating colors, the picture appears OK, but you can't animate the colors.)

You can create a similar problem without involving a PixMap. When you use animating entries in the palette, you always get a black and white picture. When you use tolerant entries, we get color. This is a similar problem.

A solution is to use calls to AnimateEntry as a replacement for SetEntryColor. When you use SetEntryColor with animating color entries, you always get black and white. When you use AnimateEntry to set an entry's color, you get color. Specifically:

```
SetPalette(mywindow, mypalette, false);
mycolor.red := 65535;
mycolor.green := 0;
mycolor.blue := 0;
AnimateEntry(mywindow, 2, mycolor);
ActivatePalette(mywindow);
PMForeColor(2);
PaintRect(myrect);
```

yields a red rectangle. If you replace the AnimateEntry call with a SetEntryColor call, you get a black rectangle. The code segment above assumes "mywindow" is a window pointer to a color window. "mycolor" is a variable of type rgbcolor. "mypalette" is a variable of type palettehandle. "myrect" is a variable of type rect.

Published Date: Feb 18, 2012

HyperCard: Method To Check Presence of XCMD

This article has been archived and is no longer updated by Apple.

Programmers have asked if HyperCard, has a way to check if an XCMD is installed in a stack? For example, you create a button that requires a certain XCMD to function. You distribute the button to other HyperCard users, but you don't know if they have the particular XCMD installed in their Home Card.

The fact is that HyperCard has no way to determine if a particular XCMD is present. However, it would be a simple matter to write an XFCN that would check for the presence of specific XCMDs and XFCNs. This XFCN would need to use Resource Manager calls, like GetNamedResource and ResError, to see if the XCMD was currently available.

Published Date: Feb 18, 2012

ImageWriter II: Condensed Printing from Macintosh

This article describes printing in a condensed mode on the ImageWriter II.
This article has been archived and is no longer updated by Apple.
If you want an ImageWriter II to print in a condensed font, you can define that through the DIP switches. However, when you are printing using the ImageWriter II driver from a Macintosh, the configuration is overridden by the driver software.

The Macintosh might support condensed print when draft mode printing is selected in the Print dialog box. However, the application doing the printing must support condensed printing. By default, the print drivers override the switch settings and turn off the condensed mode.

To have all applications print in condensed mode, you would have to patch the print drivers at the point where they actually override the switch settings of the ImageWriter II. This is unsupported and undocumented.

The best solution is to utilize a font which is condensed in nature.
Published Date: Feb 18, 2012

AppleShare 2.0.1: Multi-Launching Problem (2/95)

I was able to multi-launch these applications on an AppleShare 1.1 server:

MacDraw 1.9.6
MacDraw II
MacWrite 5.0
MacPaint 2.0
PageMaker 3.0.

After I upgraded the server to AppleShare 2.0.1, they don't multi-launch anymore, why not?

This article has been archived and is no longer updated by Apple.
We were able to multi-launch MacPaint 2.0, MacWrite 5.0, and MacDraw II using AppleShare 2.0.1. (We did not try the other applications.) These are the steps taken to get the Finder to allow the applications to launch multiple times:

Step 1
Copy the applications to a folder on an AppleShare 2.0.1 server.

Step 2
Using ResEdit 1.2b3, or later, turn on the shared bit of each application.

This is a point to double check. In at least two of the cases, a later check show the Shared bit was still not set; the operation did not take.) After you set the bit, quit ResEdit, relaunch ResEdit, and ensure that the bit stayed set.

Step 3
Make the folder containing the application a read-only folder. When the folder was not read-only, only MacDraw II would multi-launch; the other applications would not.

The flipping of the bundle bit should have no effect on whether an application will multi-launch. However, older versions of ResEdit did accidentally switch the shared and bundle bits, which may have been causing this problem. Make sure to use ResEdit 1.2b3 or later. We have verified that this version works.

IMPORTANT: Setting these bits is dangerous; these applications are not supported as multi-launch applications. The effects of multi-launching are unknown. Also, keep in mind possible licensing problems, because those applications are sold as single-user applications.

Article Change History:
10 Feb 1995 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

LisaProject: Connecting Tasks

This article has been archived and is no longer updated by Apple.

Be careful not to draw lines connecting task boxes in LisaProject sloppily. For example, if you have 3 tasks that are supposed to follow one another, don't draw a line directly from the first task to the third; otherwise, the middle task may incorrectly be assigned the start date of the first task. In such a case, the second task may appear connected to other tasks when it really isn't. To avoid this problem, first connect the second task to the first, then connect the third task to the second.

Published Date: Feb 18, 2012

Macintosh: How To Convert OfficeWriter Files

This article has been archived and is no longer updated by Apple.

If you want to convert files created in MS-DOS application "OfficeWriter" to the Macintosh, consider a product from DataViz, Inc. called MacLink Plus/Translators. This product is a series of translators between different word processing and other file formats. The translators are for use with the Apple File Exchange application that we ship with each machine on the Utilities 2 disk. The translators, include one for OfficeWriter. For more details, search the Tech Info Library under "DataViz".

Published Date: Feb 18, 2012

Apple IIGS: Known ImageWriter LQ and Bin Selection Problem

This article has been archived and is no longer updated by Apple.

Some LocalTalk users are unable to select paper bins on the cut-sheet feeder with the Chooser. These users get a "paper out" error message when using the LocalTalk ImageWriter LQ with an Apple IIGS. Yet, when the ImageWriter LQ is directly connected to the Apple IIGS, bin selection works fine. A typical system giving rise to this problem includes:

- an Apple IIGS with LocalTalk PC Card
- a LocalTalk ImageWriter LQ
- a cut-sheet Feeder

The problem appears to be with the LocalTalk interface for the ImageWriter LQ. The escape codes required for changing the bins get stripped from the packets sent to the ImageWriter. At this time, there is no known workaround for this problem.

Published Date: Feb 18, 2012

WordStar and LaserWriter: Page Dimension Problems

This article has been archived and is no longer updated by Apple.

A user has an IBM PC with LocalTalk PC Card and is running WordStar Professional 4.0. He wants to emulate an Epson printer using the LaserWriter program, without having to modify existing documents. He has run up against four problems:

- page width differences
- page length differences
- inability to print overstrikes
- lack of a ".sr" dot command

He prints through the LaserWriter program, using the WordStar option. The results are not good. Text is cropped about 3/8 inch from the right edge of page. Thus, many lines lose a few characters on right.

Second, the LaserWriter prints fewer lines per page than a dot-matrix printer (like an Epson) does. Thus, for each logical page printed, he gets one printed page full of text and a second page either blank or with a single line of text at the top of the page.

The improper cropping of text 3/8 inch from the right edge of the page (causing some characters to be "lost" off of the side of the page) may be caused by margin settings. More than likely, it is caused by switching font sizes within the document.

For example, if a 10-point Courier is chosen and Bold text is selected, the larger bold text may run off the side of the page. This is because the LaserWriter utility assumes that the 10-point Courier size is the size of ALL text within the document and will not take into account a larger text size, whether from bolding or simply using a different font size within the document.

If a line of text is typed, but due to the size of the actual printed text, it will not fit on the printed line, the rest of the characters will be cut as they print off of the right side of the page. The LaserWriter utility will position the text on the line and attempt to print it on the line in which the text appeared, regardless of whether or not the text actually fits on the line when scaled to the user's selected size. The only recourse is to limit the number of characters for those lines where the problem appears or, if the entire document is affected, to print with smaller text sizes.

Text cropped off of the bottom of the page is due to the same reasons as cropping lines.

The LaserWriter program does not implement the WordStar "overstrike" command. This command, basically, puts a backspace in the text. Neither is the ".sr" dot command present.

Published Date: Feb 18, 2012

WordStar and LaserWriter: Character Set Problems

This article has been archived and is no longer updated by Apple.

A user has an IBM PC with LocalTalk PC Card and is running WordStar Professional 4.0. He wants to emulate an Epson printer using the LaserWriter program, without having to modify existing documents. His question concerns how the international character sets 1 and 2 produce diphthongs (for example, the ae character).

Diphthongs, like AE or OE, are part of the standard LaserWriter character set (see page 255 of the PostScript Language Reference Manual from Adobe Systems Incorporated, published by Addison-Wesley, ISBN 0-201-10174). The standard LaserWriter character set and the unencoded character set can be mapped to a single font (see pages 254 and 255 of the "PostScript Language Reference Manual"). The symbol set (pages 256 and 257) cannot be mapped together with the standard LaserWriter character set or the unencoded character set into a single font.

Here are three questions with answers concerning dipthongs and fonts:

1) Does the Courier font include diphthongs?

Diphthongs are part of the standard LaserWriter character set and are included in the Courier font. Using the standard character set, the diphthongs (AE, OE, ae, and oe) are ASCII codes 225, 234, 241, and 250, respectively.

These characters are mapped to new positions using extended international character sets 1 and 2. Selecting either international character set 1 or 2 from the LaserWriter print options for WordStar documents will allow access to the AE and ae diphthongs at ASCII locations 146 and 145, respectively. See page 91, "Printing from extended character sets" in Appendix A. The OE and oe characters are in the same locations and can be accessed with the same codes as in the standard character set.

2) If the answer to number 1 is no, from which character set do the diphthongs come if one is printing in Courier with international 1 extended characters?

As stated in the answer to question 1, diphthongs are available through the Courier font.

3) If the answer to number 2 is a proportionally spaced font, like Helvetica or Times, how does the use of diphthongs from proportionally-spaced fonts from another font fit with your reasoning that symbol font characters cannot be remapped in this manner, because they are from another font and are proportionally spaced?

Neither Helvetica nor Times fonts, containing standard or unencoded characters, can be mapped with Symbol set characters due to the limitation restated in the question. This is because the Adobe PostScript command, which is used to merge character sets into a single font definition, is limited to the Standard LaserWriter and unencoded character sets.

Symbol set characters cannot be used with proportionally spaced fonts even though both use proportionally spaced graphic images because there is only one set of commands used for merging character sets into a font.

The limitation is not in the use of the commands (as in the hypothetical case of mapping proportional characters with proportional symbols), but in Adobe's limiting implementation of their commands. This causes the remapping not to work with Symbol set characters and standard LaserWriter

and unencoded character sets. This means that standard characters and unencoded characters are accessible within Helvetica and Times. Symbol set characters remain inaccessible from the same remapped font. Note: Character sets are not fonts. Fonts are the graphical images to which the character sets are mapped.

Published Date: Feb 18, 2012

WordStar and LaserWriter: Absent WordStar Features

This article has been archived and is no longer updated by Apple.

A user has an IBM PC with LocalTalk PC Card and is running WordStar Professional 4.0. He wants to emulate an Epson printer using the LaserWriter program, without having to modify existing documents. He has run up against the inability to print overstrikes and the lack of a ".sr" command

The factgs are that the LaserWriter program does not implement the WordStar "overstrike" command. This command, basically, puts a backspace in the text. Neither is the ".sr" dot command present.

ple FDHD) that restricts the media type to high-density disks.

DISCUSSION ----------

When using Apple File Exchange (AFE) and the SuperDrive, AFE does not recognize high-density disks formatted as 720K disks in the SuperDrive.

The SuperDrive does NOT recognize a disk as a high-density (1.44MB.) disk unless the disk has the "bonus" hole, which all high-density disks have. This is a hardware feature of the drive--not a limitation.

High-density media are physically different from the standard double-density media, and they are not compatible with each other. The hole prevents the incorrect use of high-density or double-density disks with the SuperDrive.

IBM systems and most compatibles will allow you to format a double-density disk as a high-density disk and vice versa. This is not the case here. There is no way to bypass this protection feature.

Published Date: Feb 18, 2012

Apple IIGS: Memory Requirements for AppleShare Networking

This article has been archived and is no longer updated by Apple.

The Apple IIGS requires 768K of memory to load all of the resources needed for network operation and all of the operating system and to still have room for applications. However, some users have reported running successfully with just 512K of RAM.

If you're running with 512K of RAM, and no problems have surfaced, you have been extremely lucky in the use of your networked Apple IIGS systems. The 512K configuration is not a supported environment for networked Apple IIGS systems. Should difficulties occur in the future, immediately increase RAM to 768K.

Published Date: Feb 18, 2012

TCP/IP: 3278 Terminal Emulation

Is there a 3278 terminal emulator that will work over a TCP/IP hardware connection, in the same way that asynchronous terminals are emulated by NCSA Telnet.
This article has been archived and is no longer updated by Apple.
There are three third-party vendors that we know of which provide what you are looking for. Here is what we know about them.

Attachmate's EXTRA! for Macintosh 2.0 is a TN3270 emulator that lets Macintosh users connect to mainframes over NetWare for SAA as well as over TCP/IP, FTP file transfer to IBM hosts. Also a new 3278 host-printer emulation lets you preview, format, and print terminal documents to AppleTalk printers.

5 PM TermOffice 3.0 from About Software provide a wide range of terminal emulations, including those for IBM mainframes; AS/400 midrange computers, and VAX, UNIX, Unisys, and Honeywell/Bull hosts.

The following information was taken from an AppleLink article in the "News" section of the "Third-Party Press Releases" folder. The article is called "Update to TCP/Connect: IBM TN3270 Terminal Emulation".

InterCon's TCP/Connect gives users access to the power of the Department of Defense networking standard TCP/IP. TCP/IP was developed so that computers of different types could communicate over a mixed-media network. TCP/IP offers a standard way to transfer files, emulate terminals, and other functions between dissimilar computers and operating systems.

Apple has announced support for TCP/IP with the introduction of MacTCP (a set of TCP/IP drivers for the Macintosh). InterCon supports MacTCP. IBM 3278 emulation is included in the TCP/Connect-Extended and in the TCP/Connect-3270 software packages. TCP/Connect features include Telnet, FTP, and varied hardware support:

Telnet
Telnet is an implementation of the standard, virtual-terminal protocol through which you log onto any Telnet-supporting host. Features included in TCP/Connect are:

Tektronix(TM) 4014 emulation
IBM 3278 emulation through TN3270 Protocol
DEC VT102 emulation
DEC VT240/241 graphics terminal emulation
Copy of graphics from any of the graphics terminals
Copy/Paste of text between sessions and other applications
Up to 20 simultaneous sessions
Scroll-back within the terminal window
User-defined macro keys

FTP
FTP, the File Transfer Protocol, lets you transfer files to and from remote hosts using a Macintosh. The remote host must have an FTP server in operation. ASCII, binary, and MacBinary transfers are supported.

Supported Hardware
Hardware supported by TCP/Connect include:

Macintosh Plus, SE, SE/30, II, IIx, and IIcx
Kinetics EtherSC(TM), EtherSE(TM), and EtherPort II
Dove FastNet II(TM), FastNet III(TM), Marathon LAN 020
3Com EtherLink II(TM), EtherLink/SE
Everex
Apple EtherTalk any EtherTalk compatible device

Including any LocalTalk to Ethernet gateways, like the GatorBox by Cayman Systems, and Kinetics FastPath devices.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

AppleShare Print Server: Out-of-Paper Message

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This is regarding the AppleShare Print Server. On page 53 of the Print Server's Admin Guide, it states that "If a printer is out of paper, or if the paper is jammed, a message appears not only in the status line of the print queue window but also on the screen of every workstation that's spooling a document to the print server."

We could not get a message or a beep from any of our workstations. The server was the only device that indicated that the printer was out of paper. Is the manual wrong? Could you clarify the situation for us?

DISCUSSION ----------

The "AppleShare Print Server User's Guide" states that error messages appear on the screens of all workstations that are spooling documents. Once the spooling process is complete, no messages are sent to the user. The print server starts making the connection to the printer as soon as it starts receiving data packets.

In many cases (especially those involving short documents, busy networks, or large networks), it is possible for the entire document to be spooled before the connection to the printer is established. This eliminates the reporting of any printer errors to the user. Once the server is aware of a problem with a spooled printer, all users who try to spool are notified of the problem when they try to print.

Published Date: Feb 18, 2012

Macintosh SE/30: Recommended Way To Connect Kodak DataShow

Article Change History

09/28/92 - REVIEWED
* For technical accuracy.

Connecting the Kodak DataShow to the Macintosh SE/30 created quite a controversy as to which chip and pin on the logic board contains the signal for the pixel clock.

This article has been archived and is no longer updated by Apple.
Initially, an article stated that pin 1 of UG6 was the correct location to find the pixel clock (according to the engineer who designed the logic board). Soon thereafter, Kodak recommended pin 1 of UG7.

A copy of the Macintosh SE/30 logic board schematics showed that both pin 1 of UG6 and pin 1 of UG7 are tied together and generate the same signal. In fact, several chips on the logic board, beside UG6 and UG7, generate the pixel clock signal. Engineers confirmed this with a continuity meter and verified a connection between pin 1 of UG6 and pin 1 of UG7. An oscilloscope also verified that the signals were identical.

Tech Comm engineers obtained a Kodak DataShow unit and successfully installed it on pin 1 of UG6 and pin 1 of UG7. Perhaps other factors caused the unsuccessful installations of the DataShow unit on UG6 and UG7. For example, perhaps pin 1 and pin 2 were shorted together. It is also possible that a good connection was not made between pin 1 and the DataShow interface.

Recommendation: Use pin 1 of UG7. This is for two reasons:

1) Pin 1 of UG7 is what Kodak recommends.

2) It is easier to install the DataShow connector on pin 1 of UG7.

Published Date: Feb 18, 2012

Macintosh II: Connecting to an Electrohome ECM 1310 Monitor

The Electrohome ECM 1310 has 4 inputs: Red, Green, Blue, and Composite Sync.
This article has been archived and is no longer updated by Apple.
Each of the four connectors on the monitor is BNC type. A cable can be made to direct-connect the Macintosh to the Electrohome, using RG59 75-ohm cable. Because the Electrohome can use the composite sync signal available on the green video pin of the Macintosh video card port, essentially only three video cables are needed. Each cable carries each of the video signals and its accompanying ground line.

Published Date: Feb 18, 2012

Macintosh: Where To Get Keystroke Recording Applications

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A NuBus developing VAR needs software that does keystroke recording and playback) for the debugging/QA process.

DISCUSSION ----------

MacroMaker (from Apple), QuicKeys, and Tempo II provide varying levels of keystroke recording; Tempo II also records mouse movements. Tempo II is probably the best solution for your customer, based on the information provided. For more information on Tempo II and QuicKeys, search the Tech Info Library under "CE Software" and "Affinity."

Published Date: Feb 18, 2012

Tech Tours: How To Unlock Tech Tour Stack

A user wanted to translate the Tech Tours for the Macintosh IIcx into Spanish, but found that the HyperCard stacks are locked. This article describes how to unlock such stacks.

This article has been archived and is no longer updated by Apple.

The Tech Tour stacks are locked to prevent accidental changing of the information contained in the stacks. We are not trying to prevent the information in the stacks from being used. To unlock the stack, hold down the Command key while pulling down the "File" menu. Select the "Protect Stack..." menu option. Click on the check box next to the phrase "Can't Modify Stack" and then set the user level to "Scripting". This makes it possible to edit the stack as normal.

Published Date: Feb 18, 2012

A/UX: AppleTalk Interface Script Error (8/94)

This article covers a small shell script documentation error--an inconsistent variable reference ("username" versus "title") found in the AppleTalk printer interface script.

This article has been archived and is no longer updated by Apple.
This is in the file you get when you define a printer with ADD_AT (AppleTalk printer connection). This is valid with A/UX 1.1.

In the interface directory, check the printer interface file you get. Check the comment line that looks like this:

```
# lpsched invokes the following command line; I marked the lines that
are incorrect with an ending of <<!!!!!:
#
# argv[0] is the interface program: interface/PRINTERNAME
# argv[1] is the request id: PRINTERNAME-#id
# argv[2] is the requesters id: USERNAME <<!!!!!
# argv[3] is the number of copies: #COPYS
# argv[4] is the list of options: -OPTIONS
# argv[5] is the list of files: /usr/spool/lp/request/PRINTERNAME..
#
# Now parse it.
#
seqid=$1
name=$2
title="$3" <<!!!!!
copies=$4
options="$5"
shift;shift;shift;shift;shift
```

The comment speaks about the username when the parameter is used for the title.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

A/UX: Bourne Shell Resource Loophole

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

The Bourne Shell has had a well-known and famous resource loophole since version 7. This article desribes it.

This article has been archived and is no longer updated by Apple.
The following line of code starts a big loop that exhausts memory after a while.

```
$<<`ls`
```

This yields messages like "Swap space running out, Needed xx pages", and you have to "kill" the program. The "kill" generates a core file that is LARGE. In most cases, the core file can't be dumped on the file system, due to lack of space.

Published Date: Feb 18, 2012

Macintosh-to-AT&T 3B2 Cable Pinout (9/94)

A company needs a cable to connect a Macintosh SE, Macintosh II, Macintosh IIx, or Macintosh IIcx to its AT&T 3B2. They want to go directly from the Macintosh (mini DIN-8) to an RJ45 female on the 3B2. This is not a dial-in situation. The 3B2 will be in close proximity to the Macintoshes.

This article has been archived and is no longer updated by Apple.
Currently, AT&T terminals direct-connect asynchronously through twisted-pair cabling with RJ45 plugs on each end. On the terminal side, the RJ45 plugs into a hardware flow control plug that snaps onto the back of the terminal. On the 3B2 side, the RJ45 plugs directly into one of the ports on the back of the 3B2. AT&T indicates that the pin configurations on the 3B2 are:

Pin # Transmission Type
----- -----------------
1 SG lead
2 CTS (?) lead
3 TxD lead
4 DTR lead
5 RXD lead
6 DCD lead
7 PG lead
8 RTS (?) lead

The Macintosh Mini DIN-8 port pins have the following correspondent functions required to use them for RS-232:

Mini DIN-8
Pin# Function RS-232 Pin#
---
1 HSKo (Handshake input) DTR 20
2 HSKi (Handshake output) DCD 8
3 TxD- (Transmit data, negative going component) TXD 3
4 GND (Chassis/Signal ground) GND 7
5 RxD- (Receive data, negative going component) RXD 2
6 TxD+ (Transmit data, positive going component) GND 7
7 GPi (General-Purpose input) NC
8 RxD+ (Receive data, positive going component) GND 7

According to AT&T 3B2 pin configurations with RJ45 plugs described above, you can make a cable with the following pinouts and signals for the direct connection between an AT&T 3B2 and a Macintosh SE, Macintosh II, Macintosh IIx, or Macintosh IIcx:

Macintosh AT&T 3B2
Mini DIN-8 RJ45
Signal (in/out) Pin# Pin# Signal (in/out)
--- --- --- ---
HSKo (out) 1 <-----> 4 DTR lead (in)
HSKi (in) 2 <-----> 2 CTS lead (out)
TxD- (in) 3 <-----> 3 TxD lead (out)
GND *4 <-----> 1 SG lead
RxD- (out) 5 <-----> 5 RXD lead (in)
TxD+ *6 <----->
GPi 7 <-----> No Connection
RxD+ *8 <----->

*There are many variations for connecting pins 4, 6, and 8, but the
basic intent is to bring all three of these pins to ground on the
Macintosh side. Connect Signal Ground to Chassis Ground if you want
a slightly better noise margin.

If the above configuration doesn't work, try the following cable connection:

HSKo (out) 1 8 RTS lead (in)

Currently, Tech Comm does not know of an Apple cable product that has been made for this particular configuration (Circular Mini DIN-8 <->

RJ45 plug).

However, if the standard RS-232 DB-25 connectors are directly used in AT&T 3B2, the Apple cable finished product number A2C0311, same as Part Number 590-0331 (beige color), or A2C0312, same as Part Number 590-0555 (smoke color), a circular Mini DIN-8-to-DB-25 cable, can be used for the connection between the 3B2 and the Macintosh.

Because the AT&T 3B2 is a UNIX-based system, any Macintosh under Macintosh OS can be connected via:

1) A direct serial line or a modem, and use MacTerminal as a VT100 terminal emulator to access the AT&T 3B2.

2) An Ethernet with EtherTalk card (for Macintosh II, Macintosh IIx, or Macintosh IIcx) or EtherPort SE card (for Macintosh SE), and use NCSA Telnet or MacTCP software to connect to the 3B2 machine. Of course, the 3B2 must have Ethernet TCP/IP capability.

A Macintosh II, Macintosh IIx, or Macintosh IIcx, running A/UX, also can be connected to a 3B2 machine via:

1) A direct serial line or a modem by using any UNIX communication software program, such as "cu", "tip", "uucp", or "kermit", to connect to the remote 3B2 machine.

2) An Ethernet with EtherTalk card (for Macintosh II, Macintosh IIx, or Macintosh IIcx) by using Internet protocols software, like "telnet", "rlogin", or "ftp". Of course, the 3B2 machine needs to have Ethernet TCP/IP capability.

Article Change History:
13 Sep 1994 - Reviewed. Changed title.

Support Information Services
Published Date: Feb 18, 2012

TA40102_HD_SC_and_HD_SC_Drives_Noise_Levels_(TIL04098).pdf

HD80 SC and HD160 SC Drives: Noise Levels

This article gives the noise levels for the HD80 SC and HD160 SC drives.

This article has been archived and is no longer updated by Apple.
The noise specifications for all of Apple 3.5-inch hard drives are the same. Measurements are taken 1 foot from the drive. At idle, the noise level is to be no greater than 45 dba. At seek, the noise level is to be no greater than 50 dba.

Published Date: Feb 18, 2012

Status of Switcher

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This article discusses the status of Switcher as of June 1989.

DISCUSSION ----------

1) Switcher was not a public domain product and has been discontinued.

2) It still is supported by Apple: Finder 5.3, System 3.2.

3) For most users, Switcher has been replaced by MultiFinder. However, it is still a viable option for Macintosh XL, Macintosh 512K, Macintosh 512Ke, and 1MB Macintosh Plus systems.

Published Date: Feb 18, 2012

Apple Access III: Addendum (7 of 7)

This article has been archived and is no longer updated by Apple.

REPORTED PROBLEM AND THEIR RESOLUTIONS

The following Access III Version 1.0 problems are fixed in version 1.1.

1) Access III V1.0 used from Business Basic does not abort the entry of the name of the file to transmit by pressing the ESCAPE key.

   Resolution in Version 1.1: fixed.

2) When used from Business BASIC, Access III prevents your system from running many programs, including the VOLUMES program.

   Resolution in Version 1.1: Fixed.

3) Pathnames for non-block files or devices were accepted as valid files to transmit.

   Resolution in Version 1.1: Only block file pathnames are accepted. The criteria used is: if there is a leading period, there MUST be an embedded slash.

4) Access III displays the open-apple character upon receiving the ASCII 127 character, a character used by many systems as a pad character.

   Resolution in Version 1.1: ASCII 127 is eliminated by the recording filter.

5) When prompted for the name of your file to be transmitted, the system indicated that pressing ESCAPE would abort--RETURN must also be pressed after pressing ESCAPE.

   Resolution in Version 1.1: The message states ESCAPE - RETURN is required.

6) It is easy to forget to turn on the recording filter, the typical way files are recorded.

   Resolution in Version 1.1: The recording filter is ON by default.

7) The recording file name couldn't be changed in version 1.0

   Resolution in Version 1.1: The Set-Up menu gives you the option to change the recording file name.

8) Access III does not decipher Pascal text files.

   Resolution in Version 1.1: Pascal text files are now recognized by their SOS file type code. The header is NOT transmitted, though all DLE sequences are correctly expanded.

9) The Version 1.0 manual states a backup disk is included in the package. One diskette, the master diskette is included in this package.

   Resolution in Version 1.1: Inclusion of a backup diskette is unnecessary as users are able to make their own backups.

Published Date: Feb 18, 2012

LisaProject: Resource Chart

This article has been archived and is no longer updated by Apple.
Resources listed on the Resource chart are sorted in the order they were entered, until you save and put away your project. They are then sorted from left to right as they appear on the chart. To sort your resources differently, create a task box at the left side of your project and enter the resources in the order you want. Save your document. When you redisplay your document, the resources are sorted in the same order as in the task box you created. Additions to the chart appear at the bottom of the resource chart.
Published Date: Feb 18, 2012

Altos Files: How to Transfer them to/from a Macintosh

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A customer wants to transfer (word processing) files from an Altos, running Altos Office Management System, to a Macintosh for page composition.

DISCUSSION ----------

The Altos Office Management System runs under the Xenix operating system, Microsoft's variation on UNIX. Xenix and UNIX store all data and applications in the same type of file. This file type may contain any ASCII value from 0 to 255. If the word processor can save a plain ASCII text file, Macintosh can accept the file with little work. However, if the word processor only creates files that also contain Control, Escape, or extended characters, these additional characters need to be removed before Macintosh can make use of the data in the file.

If the file does contain Control, Escape, or extended characters, a filter or translation program is needed to extract the plain text characters stored in the file. This can be accomplished on the Altos side or the Macintosh side. On the Xenix side, "sed" (the stream editor) can be used to change or eliminate unwanted characters. Also, on Xenix, the "strings" command can be used to extract only printable ASCII characters from a file. On the Macintosh side, utilities, like Vantage (McSink), can strip unwanted control characters from the file.

Moving either of these files to the Macintosh is relatively simple. Using a serial connection (direct serial port-to-serial port or two modems), the file can be moved with a standard file transfer protocol, like Kermit. You can also have Xenix "stream" or "print" the file to a serial port. If the Macintosh is set up to capture the data coming from the Altos serial port, the captured data can then be copied and pasted from the capture buffer. A capture buffer is provided in MacTerminal by selecting the Record Lines Off Top under the Commands menu.

Published Date: Feb 18, 2012

TA40107_AppleShare_PC_and_ThirdParty_LocalTalk_PC_Cards_(TIL04101).pdf

AppleShare PC 1.2 and Third-Party LocalTalk PC Cards

This article discusses AppleShare PC 1.2 and its compatibility with third-party LocalTalk PC Cards.

This article has been archived and is no longer updated by Apple.

AppleShare PC 1.2 has the potential for use with third-party LocalTalk PC Cards. However, the third-party manufacturers need to write new AppleTalk Link Access Protocol (ALAP) layers for their cards to integrate into the AppleShare PC environment.

Published Date: Feb 18, 2012

Macintosh: B-Tree Indexing Software

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Does Apple have anything comparable to B-trieve from Softcraft (sold by Novell)? Apparently, it gives C programmers access to retrieval functions for Novell file services?

DISCUSSION ----------

B-trieve is a B-tree indexing system for MS-DOS. Softcraft-Novell are planning to develop B-trieve for the Macintosh. When a Macintosh version is completed, both Macintosh and MS-DOS applications using B-trieve will be able to access the same files.

There are B-tree indexing products available for Macintosh. These are not specific to a Novell environment and will not work with Softcraft's B-trieve product.

- db_VISTA v. 3.0 is a database development environment using B-tree indexing in the C language from Raima Corp.

- C-Data Manager has B-Tree indexing with multiple keys from Database Technologies

- C-Tree File Handler provides low-level B+Tree utilities from Faircom

- Turbo Pascal Database Toolbox uses B-tree indexing methods from Borland International

For more details, search the Tech Info Library under "Raima", "Database Technologies", "Faircom", and "Borland".

Published Date: Feb 18, 2012

AppleShare: Apple II Practical Node Limits

How many Apple IIs can be started up from an Macintosh SE/30 AppleShare File Server? Theoretically, 50 nodes can be logged on to an AppleShare file server at a time, but what is the practical limit? I've never seen an Apple II network larger than about 30 nodes, so I can't really estimate the degradation in performance. Do you know of any sites running 40 or more Apple IIe or Apple IIGS systems off of one file server?

This article has been archived and is no longer updated by Apple.
With 1MB RAM, a Macintosh SE/30 allows 25 Apple II workstations to start up from the server at the same time. With 2MB RAM, the limit is increased to 50 Apple II workstations.

The practical limit for booting depends on the user's situation. For example, 20 Apple IIGS systems starting up at same time from the same server takes approximately 10 minutes, whereas 20 Apple IIe systems take about 4 minutes. The reason is that the Apple IIGS has more than 120K to load across the network, compared to about 20K for the Apple IIe.

The practical limit for workstations logged on to one server depends on the amount of activity taking place on the network. With low traffic, 50 users logged on at one time may be acceptable. As traffic becomes heavier, it is probable that the practical maximum number of active users will decrease.

Published Date: Feb 18, 2012

Macintosh-to-Texas Instruments System 1300 Connectivity

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A customer would like to use his Macintosh as a replacement for his Texas Instrument terminal, which is connected to a TI System 1300.

DISCUSSION ----------

Texas Instruments System 1300 runs the Xenix operating system. A terminal emulation package that supports VT100 will work well in this environment. MacTerminal is one telecommunication package that provides VT100 emulation on the Macintosh.

Published Date: Feb 18, 2012

TA40111_Apple_HD_Backup_K_InvisHDMainBob_Invisible_File_(TIL04107).pdf

Apple HD Backup 1.1: 800K "InvisHDMainBo3b" Invisible File

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Why does HD Backup version 1.1 create an 800K invisible file called "InvisHDMainBo3b". Do you have any idea why it should be so large?

DISCUSSION ----------

The "InvisHDMainBo3b" invisible file contains only 4 bytes of data and should be no larger than 2K. The file stores the date of the last backup.

Neither Tech Comm nor the programmer of HD Backup knows why the file would grow to 800K. If anyone in the field has experienced this problem and knows the cause, please AppleLink TECH.COMM.

Published Date: Feb 18, 2012

Macintosh SE/30: Third-Party Color Card Availability

Article Change History

09/28/92 - REVISED
* To include information on Micron Technologies.
02/09/93 - UPDATED
* Micron Technologies acquired by Xceed Technologies.

I'm looking for a color card for the processor-direct slot in the Macintosh SE/30 that supports the AppleColor High-Resolution 13-inch RGB Monitor. Do you know of any?

This article has been archived and is no longer updated by Apple.
SuperMac Technologies, and RasterOps make cards for the processor-direct slot in the Macintosh SE/30 that supports the AppleColor High-Resolution 13-inch RGB Monitor.

The SuperMac Spectrum Series II for the Macintosh SE/30 supports standard display resolutions of 640 x 480, 640 x 870, and 1024 x 768. The board supports 256 colors or grayscales at these resolutions. Monitors supported include the Apple High-Resolution 12-inch Monochrome Monitor, the AppleColor High-Resolution 13-inch RGB Monitor, the Apple Macintosh Portrait Display, and various SuperMac monitors.

The RasterOps Colorboard 108 SE/30 for the Macintosh SE/30 supports standard display resolutions of 640 x 480, 800 x 600, and 1024 x 768. The board supports 256 colors or grayscales at these resolutions. Monitors supported include the Apple High-Resolution 12-inch Monochrome Monitor, the AppleColor High-Resolution 13-inch RGB Monitor, and various RasterOps monitors.

In addition, Micron Technologies (acquired by Xceed Technolgoies) also makes both 8-bit and 24-bit color video cards for the SE/30.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

TA40113_Macintosh_IIcx_MacIrma_Compatibility_(TIL04109).pdf

Macintosh IIcx: MacIrma 1.2 Compatibility

This article discusses Macintosh IIcx and MacIrma version 1.20 compatibility.

This article has been archived and is no longer updated by Apple.
According to DCA (Digital Communications Associates, Inc.) support, version 1.20 or higher of the MacIrma software is required for compatibility with the Macintosh IIcx. There appears to be no problem with the actual fit of the board, itself. Apple has installed one in a Macintosh IIcx, and there were no problems. Contact DCA concerning upgrade policy and costs (if any).

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

LisaProject: Dates

This article has been archived and is no longer updated by Apple.

If your task box has questions marks instead of dates, you've set a scheduled date that caused the program to push the dates outside of the calendar range.

Published Date: Feb 18, 2012

Macintosh: Menu Bar Emulation for Multiple Monitor System

Can you create a Macintosh application that puts the menu bar on all of the monitors of a multiple monitor workstation, or does that break an "Inside Macintosh" rule? If you can, what is the maximum number of monitors?
This article has been archived and is no longer updated by Apple.
The Macintosh Toolbox does not provide a method for placing actual menu bars on multiple monitors. Only one monitor can have the menu bar.

It is possible to write an application that creates pop-up menus at the top of each monitor that emulate the menu bar while that application is running. Information on pop-up menus is on pages 241 and 242 of "Inside Macintosh Volume V" and "Tech Note #156."

An easy solution would be a third-party product, like POWERmenus from Magic Software. With it, you can display a hierarchical pop-up menu containing the same items as the real menu bar anywhere on any screen. This utility works with all applications.

There is another INIT utility called "Tear-Off Menus" (TOM) from AIP (Advanced Interface Programming). With TOM, a user can tear off either "pull-down" menus or the titles of the menus, which then can be activated in the same manner as standard menus. Menus also can be dragged across multiple monitors. You can also set TOM to automatically disable with applications that "misbehave". Some of these applications are specified (hard-coded). You can expand the list to include other applications that don't work correctly.

The product incorporates a serialization scheme for counting users on the network. So, if, for example, you want to have five people running TOM on one network, you need to buy a "large" enough license to support that number.

For more details, search the Tech Info Library under "Magic Software" and "Advanced Interface Programming."

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

TA40116_Macintosh_IIcx_New_MacIrma_Software_(TIL04111).pdf

Macintosh IIcx: New MacIrma Software

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Version 1.20 of MacIrma available

DISCUSSION ----------

Version 1.20 of MacIrma works with the Macintosh IIcx; previous versions did not work. Version 1.20 is available now. For upgrade information, contact Digital Communications Associates, Inc.

Search the Tech Info Library under "Digital Communications Associates".

Published Date: Feb 18, 2012

LaserWriter Family: How the Out of Paper Notification Works

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A customer has asked why the Macintosh no longer beeps when the selected LaserWriter is out of paper as it did with previous versions of printer drivers and PrintMonitor.

DISCUSSION ----------

The LaserWriter family of printers, in conjunction with Apple's printer drivers, still reports to the user when the LaserWriter is out of paper, if it is printing more than a single page.

The LaserWriter will image one page with a paper-out condition and not report the error to the user. For example, the LaserWriter is out of paper and no image is in the LaserWriters memory. A one-page print job is sent to the LaserWriter. The page is imaged, and no error is sent to the machine that sent the print job.

If a page has been imaged and another page or more than one page is sent to a LaserWriter with no paper, the machine that sent the print job will be notified that a paper-out condition has occurred.

Published Date: Feb 18, 2012

Apple Two-Page Monochrome Monitor: Supports 4 Gray Levels

How many gray levels does the Apple Two-Page Monochrome Monitor Video Card support?

This article has been archived and is no longer updated by Apple.

The Apple Two-Page Monochrome Monitor Video Card (M0260) supports four levels of gray in its standard configuration. The video card accepts additional video memory, which lets it support 16 levels of gray. The Video Memory Expansion Kit (M0213) is the same as for the standard Macintosh II Video Card.

Published Date: Feb 18, 2012

AppleTalk: Problem with FastPath and Network Number Setting

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Here's a question concerning bridges and "Net" numbers. We have a 40-node AppleTalk network with six printers, an IBM 3270 gateway (Netway 1000), and a Kinetics FastPath 4.

When the FastPath is up, everyone's "Net" number (according to Inter-Poll) is 92 (in the AppleTalk zone). The Zone name is "applek". When the Kinetics is brought down, the devices that were on "Net = 92" are still set to 92. The Zone name goes away. If we turn on something new, it gets a Net of 0 and no Zone name, as one would expect. So, with the FastPath down, we have no Zone name, but everyone who has started up since the FastPath went down has a Net number of 0, and everyone who was running when the FastPath went down has a Net number of 92. When someone with a Net number 0 tries to print to a LaserWriter with a Net number of 92, a message is received that states that it can't find the LaserWriter.

So far, the only solution we have found is to restart all of the machines that have a Net number greater than 0. This is not acceptable. For the gateway, this involves bringing down the line, recycling the box, reloading it, and bringing up the mainframe line.

Because the Kinetics can send a broadcast to say that there is a bridge and that everyone should join Net number "x" when the bridge goes down, how can we reset the Net number to 0 without shutting all of the machines off? Is there a utility that would accomplish the task?

DISCUSSION ----------

Apple Tech Comm knows of no way around this problem. Without a router, like the FastPath, operating on the network, there is no provision for getting (or setting) a network number on a machine. We are not aware of a utility that addresses this issue, and writing one would not be a trivial task.

If this is a recurring problem, the first issue that should be addressed is the FastPath going down so regularly. This should not be happening. When it does, bringing the FastPath up again would resolve the issue.

To address the window of time when the FastPath is down, you might consider setting the network number in the FastPath's configuration to zero. Although this will work for only one local network on an Internet, it would resolve the issue until the FastPath could be made to operate reliably.

Published Date: Feb 18, 2012

Ethernet Card: ROM Upgrade Is for Heavy Traffic Networks

This article has been archived and is no longer updated by Apple.

TOPIC ----------

There is a ROM upgrade available for the older Ethernet cards. Who should upgrade to the new ROMs?

DISCUSSION ----------

Those who should upgrade are those who are connected to heavy traffic networks. Given that it is difficult to exactly define how much traffic is heavy traffic, Apple Tech Comm suggests a conservative approach when deciding if a network has heavy use. If a network is having no problems, there is little reason to upgrade.

To upgrade, customers should contact their service providers. They should have a service notice in their Service Programs Binder detailing which cards need upgrading and how to do the upgrade.

Published Date: Feb 18, 2012

HyperCard: How to Debug "Too Much Recursion" Error Message

A user is having a "too much recursion" problem in a HyperCard stack that he is developing. The error occurs during a callback into HyperCard from an XCMD, which he wrote. He has checked his code for problems. Is there a way to determine what triggers the "too much recursion" message (like a traceback)?

This article has been archived and is no longer updated by Apple.
We are not aware of any trace-back facilities available for HyperCard. HyperCard, itself, does not have the type of tracing needed here. Further, we could not locate any third-party add-ons available to resolve this problem.

To debug a problem of this sort, put information from the scripts and XCMDs you are using into debugging fields. This information usually includes a line per handler or XCMD call that includes the parameters being passed. When the recursion problem occurs, you then can inspect the trace that you have effectively created.

Published Date: Feb 18, 2012

MacWorkStation 3.0: Exec Questions & Answers

This article answers the following questions about MacWorkStation 3.0:

1) Can I use SADE to debug my MacWorkStation exec modules?

2) Can I override MWS for mouse down events that are external to my_exec window contents?

3) For the grow window instruction, can I define size_rec?

4) Are exec construction rules the same as DAs in that the global data segment must = 0? If so, can I defeat some select global QuickDraw variables, such as ldgray and others?

5) I have written an exec that does not have a window. When a user generates a menu event, I trapped dosend, looked up record tp_exec_ref, and found that the xEvent field is 0 and has not recorded the modifier key.
This article has been archived and is no longer updated by Apple.
It is important to equate MacWorkStation exec modules with FKEYs, HyperCard XCMDs, or INITs, not desk accessories. This understanding leads directly to some of the answers below.

1) Question: Can I use SADE to debug my MacWorkStation exec modules?

Answer: Currently, SADE cannot be used for debugging code segments, like MacWorkStation exec modules, FKEYs, or XCMDs.

2) Question: Can I override MWS for mouse down events that are external to my_exec window contents?

Answer: The Mouse command is only passed when a mouse down event occurs in the exec's window. You may be able to trap some of the mouse down events, only if you don't want to handle the event yourself, by trapping all sends and passing them through. However, this works only for those events that MacWorkStation determines it needs to generate a message to the host. A different option would be to implement an event loop in an exec module that trapped all of the events and then somehow caused MacWorkStation to deal only with specific events. This would definitely not be a trivial task.

3) Question: For the grow window instruction, can I define size_rec?

Answer: This problem is similar to the one above in that MacWorkStation 3.0 does not provide access to this mechanism. This makes the process of intercepting and modifying this information difficult and likely to break in future releases of the product.

4) Question: Are exec construction rules the same as DAs in that the global data segment must = 0? If so, can I defeat some select global QuickDraw variables, such as ldgray and others?

Answer: Exec modules are restricted to a size of 32K, and they cannot access global data.

5) Question: I have written an exec that does not have a window. When a user generates a menu event, I trapped dosend, looked up record tp_exec_ref, and found that the xEvent field is 0 and has not recorded the modifier key.

Answer: xEvent is filled out only for the Active, Key, and Mouse commands passed to the Exec module.
Published Date: Feb 18, 2012

LisaProject 1.0 and 2.0: Resources

This article has been archived and is no longer updated by Apple.
Releases 1.0 and 2.0 of LisaProject do not allow resources to work on different tasks simultaneously. When your tasks do not have the dates you anticipated, rename your resources so that each resource has a unique name. For example, if "Joe" is working on two parallel tasks, rename the resource Joe 1 and Joe 2, so the program treats them as two different resources. Resources also impact the scheduling of tasks later on in the project, so keep an eye on them.

LisaProject 3.0 lets you schedule resources in parallel.
Published Date: Feb 18, 2012

Xerox XNS-to-Macintosh Connectivity Solutions

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there any way to connect a Macintosh to a Xerox network?

DISCUSSION ----------

There are at least two ways to connect a Macintosh to a Xerox network. You can connect a Macintosh to a Xerox network through Xerox's ITS (Interactive Terminal Service), a serial interface to an 8000 server. ITS acts as a bulletin board service for users with PCs to call in to and access mail, file, and print capabilities of the network. You could set up a NetSerial or equivalent and log on via a terminal emulator to get access to the services required.

The other solution uses an asynchronous terminal emulator (like VersaTerm Pro). Connect the Macintosh modem port to an asynchronous terminal server (like Bridge Communications CS/1, CS/100, or other) and have the terminal server provide the XNS protocol services.

Terminal servers, like the Bridge Communications devices, provide a wide range of Ethernet/XNS services. This, combined with the Macintosh power, creates a very cost-effective solution.

For more details, search the Tech Info Library under "Bridge Communications" and "VersaTerm".

Published Date: Feb 18, 2012

System 6.0.3: Don‘t Use on Mac II Without SuperDrive (9/95)

Here is a report of multiple oddities about System 6.0.3 when used on a 68020 Macintosh II with two monitors and MultiFinder. If you display source or work on the second screen, several applications (including MS QuickBASIC 1.0, MacDraw 1.9.6, Capilano's DesignWorks 1.11, and MPW 2.0.2 and 3.0) hang the machine when saving or quitting. Note that the save operation is NOT completed before the crash.

Also, mounting a new volume when the last active window was on the secondary monitor occasionally causes an unusually long mount time, on the order of several minutes. (This may be due to a difficulty with building the desktop file). The system also hangs at shutdown, but only following directory changes (as when you move a file from one folder to another).

Admittedly, there were several (four or five) standard INITs in the System Folders on both the machines where the problems occurred. These are probably not a factor, because the problem went away immediately after reinstalling System 6.0.2. Because these were true work sessions, not debugging sessions, the sequence of operations that may have caused the difficulties is uncertain.

This article has been archived and is no longer updated by Apple.
Apple Tech Comm has run and continues to run Macintosh IIs with multiple monitors under System 6.0.3 without experiencing the problems you reported. We have been running similar software and using it in similar fashions. This makes us suspect that there was some difference between your system configurations and ours.

If there was a problem with corrupted system software, removing and reinstalling the System and Finder would definitely have resolved the issue. It is possible for problems of this nature to manifest themselves on Macintosh IIs and not on Macintosh IIx or Macintosh IIcx systems.

Although you stated that the INITs you were using are fairly standard INITs, we have seen problems caused by INITs, which you would not suspect as being the culprits. It is possible that one of these INITs does not work properly with System 6.0.3 and that was the root of the problem.

Unless you have an Apple SuperDrive (formerly Apple FDHD) upgrade in your Macintosh II, there is no reason to be running System 6.0.3--System 6.0.2 has the same functionality.

The FDHD/SuperDrive upgrade is no longer available.

Article Change History:
15 Sep 1995 - Revised to show discontinued upgrade.

Support Information Services
Published Date: Feb 18, 2012

Tektronix 401x Terminal Emulator for Macintosh

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there a Tektronix 401x terminal emulator for the Macintosh that works over a TCP/IP connection?

DISCUSSION ----------

InterCon offers a TCP/IP Telnet/ftp product that supports VT240, Tektronix 4010/4014 graphics, and TN3270. Another solution is NCSA Telnet (version 2.2). This application also provides Tektronix 401x emulation, although it is not as well-advertised as InterCon's. NCSA Telnet is written by the National Center for SuperComputer Applications at the University of Illinois at Champaign-Urbana.

For more details, search the Tech Info Library under "InterCon" and "NCSA".

Published Date: Feb 18, 2012

LaserWriter: Adobe Font Metrics Information

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This article discusses how to set the actual size (the width and height) of the characters of the built-in fonts. These are the Adobe Font Metrics (AFM). The LaserWriter does not use true fonts for Bold, Italic, and so on. Instead it does some algorithmic calculation to create the these fonts from the plain typeface. This is where the discrepancies between the LaserWriter documents and some typesetting equipment appears. One typesetter uses the true Bold and Italics, and the LaserWriter uses algorithms. As a result, the documents are not quite the same.

DISCUSSION ----------

Within PostScript, the shape of each character used in a given font is described in the Metrics for the character. There is no size associated with the character, only a description of how the character is to be drawn. The size of a character is set within a PostScript program using the command "scalefont".

For example: /Times-Roman findfont 12 scalefont setfont

Complete information on how PostScript fonts are scaled is in the "PostScript Language Reference Manual, ISBN #0-201-10174-2", Chapter 5, section 5.2, Organization and Use of Fonts.

The actual PostScript fonts used in the LaserWriter ROMs are available from Adobe as downloadable. When using the LaserWriter fonts in PostScript, the font type must be declared (Bold, Italic, Demi, and so on). Here is a list of the proper font names for the LaserWriter Plus:

Times-Roman
Times-Bold
Times-Italic
Times-BoldItalic
Helvetica
Helvetica-Bold
Helvetica-Oblique
Helvetica-BoldOblique
Courier-Bold
Courier-Oblique
Courier-BoldOblique
Symbol
AvantGarade-DemiOblique
AvantGarade-BookOblique
AvantGarade-Demi
AvantGarade-Book
Bookman-DemiItalic
Bookman-LightItalic
Bookman-Demi
Bookman-Light
Helvetica-Narrow-BoldOblique
Helvetica-Narrow-Oblique
Helvetica-Narrow-Bold
Helvetica-Narrow
NewCenturySchlbk-BoldItalic
NewCenturySchlbk-Italic
NewCenturySchlbk-Bold
NewCenturySchlbk-Roman
Palatino-BoldItalic
Palatino-Italic

Palatino-Bold
Palatino-Roman
ZapfChancery-MediumItalic
ZapfDingbats

Published Date: Feb 18, 2012

TIFF: Caution - Not All TIFF Files are the Same

A user tried to copy a file created with MacView/AGFA Scanner for porting to Microsoft Windows, and it didn't work. Are there differences between the TIFF used on the Macintosh and the one used by Microsoft?

This article has been archived and is no longer updated by Apple.
The ability of applications to read TIFF files, created by another application, is based on the conformance of both applications to the TIFF specification, not the CPU type or operating system. Below is a copy of the TIFF Conformance Specification.

Conformance ----------

"Many of the application programs that read the contents of TIFF image files will not support all of the features described in this document. In some cases, little more than the default options will be supported. It is up to each organization to determine the costs and benefits associated with different levels of conformity. Therefore, claims of conformity to this specification should be interpreted with a certain amount of caution.

"It follows that the usage of this specification does not preclude the need for coordination between image file writers and image file readers. It is up to the application designer that initially writes a file in this format to verify that the desired file options are supported by the applications that will read the file."

To resolve this problem, contact the vendors of both products to confirm the conformance of the applications to the TIFF specification

Published Date: Feb 18, 2012

Apple II: Program To Recover Deleted Files

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there a way to recover deleted files on an Apple II under Apple DOS 3.3 and ProDOS?

DISCUSSION ----------

Central Point Software offers Copy II Plus, which allows deleted files to be restored in both DOS 3.3 and ProDOS--provided you have not written to the disk since the file was deleted.

For more details, search the Tech Info Library under "Central Point".

Published Date: Feb 18, 2012

AppleShare: What Determines the Volume Order In Chooser

This article has been archived and is no longer updated by Apple.

TOPIC ----------

On a server with more than one volume, what determines the order of the volumes in the Chooser log-on sequence?

When our office server had only one volume, it obviously was the at the top of the list. When we added a CD-ROM drive, it took the top spot in the volume list. When I recently added a second hard drive to make it three volumes, it was inserted after the CD-ROM and before the startup volume. The startup volume is still last on the list.

DISCUSSION ----------

Our tests and information provided by engineers involved in the development of the server revealed the following:

- At the server, devices are displayed in Finder order: startup volume first, followed by SCSI drives in descending order of SCSI address, followed by devices connected via the drive port in the order returned by the getVolInfo call.

- At the workstation, the devices are displayed in exactly the opposite order, placing the startup volume at the bottom of the list.

Published Date: Feb 18, 2012

AppleCD SC: Problem Mounting with Scanner and Macintosh IIx

This article has been archived and is no longer updated by Apple.

TOPIC ----------

When I had an Apple Scanner and AppleCD SC attached to a Macintosh IIx, I couldn't get the AppleCD SC to mount a disk. Instead, I'd get the standard DIBadmount dialog box, which would ask me if I wanted to initialize the disk. I'm certain the AppleCD SC and Apple Scanner were properly cabled and all software correctly installed.

DISCUSSION ----------

Apple Tech Comm has seen this problem, but cannot reliably reproduce it. In the past, we have been able to eliminate the problem by installing version 1.0 of the CD-ROM drivers, followed by reinstalling version 2.0 of the drivers. Recently, however, we learned that the problem could be caused by a faulty terminator. Replacing the terminator usually solves the problem.

Published Date: Feb 18, 2012

DataPoint: How to Transfer Files to Macintosh

Is there a way to transfer files from DataPoint to the Macintosh?
This article has been archived and is no longer updated by Apple.
Mainstay's Telescape offers ASCII text file transfer between DataPoint systems and Macintosh. You can also check with Opal Software Pty Ltd. (VIA Systems, Inc. distributes Opal products in the U.S.)

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

LisaProject: Scheduled dates

This article has been archived and is no longer updated by Apple.

When you enter a scheduled date for a task, LisaProject recalculates the dates to reflect it. However, if the date you entered is thought by the program to be illogical, LisaProject overrides it and enters its own date. The date is underlined just as if you had set it.

Published Date: Feb 18, 2012

Logic Analyzer Controller: Gould Solution for the Macintosh II

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This article describes Gould uses a Macintosh II as a controller for a multi-module logic analyzer.

DISCUSSION ----------

In the January issue of Electronic Design, a new product from Gould Electronics was reviewed. Gould manufactures high-performance superminis often found in defense, electronic-development environments.

The new product is a very sophisticated, multi-unit "mainframe" logic analyzer controlled via SCSI by a Macintosh II. The Gould unit is a device that houses up to four independent logic analyzer modules (hence, "mainframe"). Each unit contains an instrument that can monitor and record up to 384 inputs from a system under test. The mainframe houses up to four of these. Each unit can be used separately or in conjunction with one or more of the other, optional units, allowing simultaneous analysis of up to four separate computer systems.

Analyzers connect to the system under test with two types of probes: the 96-channel Pyramid, which can run up to 10-nanosecond resolution (100 MHz), or the 16-channel Magnifying Glass, which does 1-nanosecond resolution (1 GigaHertz). These probes are intelligent devices that can be reconfigured graphically by the host Macintosh.

The article suggests that Gould Electronics viewed the Macintosh as the solution to a massive problem: normal logic analyzers are very complex to set up, control, and interpret and require quite an investment in time and patience. The user is prompted with dialog boxes as he selects functions he wants to enable. Individual inputs on the probes can be reconfigured in this manner as needed. Many other features make it an useful analytical tool.

Although not cheap, this may be the instrument of choice for the high-tech defense electronics lab, or the graduate electronics/computer science department that prefers to spend more time teaching the concepts and less time teaching an instrument.

Published Date: Feb 18, 2012

Apple Video Displays are Non-Interlaced

This article has been archived and is no longer updated by Apple.

TOPIC ----------

An Apple user is looking at the new monitors and asked if they are interlaced. What is interlacing and do Apple Monitors have it?

DISCUSSION ----------

Interlacing is a technique used on character-based displays to create solid character text. It is also used on home television sets, the dominant standard in the United States being NTSC. Using alternate scan lines, the monitor performs high-speed retraces to create the illusion that the monitor has twice as many lines as it does. A major drawback of interlaced displays is their tendency to noticeably flicker thin horizontal lines, lines that are frequently used on the Macintosh interface.

Macintosh displays assign pixels to scan lines on a one-to-one basis eliminating the need for interlacing.

There are several third-party scan converters available for the Macintosh that will output Macintosh non-interlace video as interlaced. For more information search on "NTSC" or "interlace".

Published Date: Feb 18, 2012

AppleShare: Why is there Activity When Opening Local Folders?

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Some users have noticed that when you open the Macintosh System Folder on the startup disk, the AppleShare network traffic arrows flash (sometimes causing a very long delay in opening the System Folder). This, of course, does not happen when AppleShare volumes are not mounted. Why does this happen?

DISCUSSION ----------

When any folder is opened, the Finder checks the Creator of every file in that folder and looks in the Desktop file of the current volume to see if it can find a match. If there is no entry for that Creator type on the current volume, it continues to look through the Desktop file of each mounted volume until it finds an entry with a match to that Creator or until there are no more volumes.

Any file that appears in the Finder with the type of "document" when the folder is viewed by name or by date causes this to happen. This is because the Finder makes "document" the type, only if it doesn't have an entry for that Creator type in the Desktop file.

It is very common for applications to put files containing option settings in the System Folder. MacWrite and Microsoft Word both do this. MacWrite puts an unknown Creator type for that document. It, therefore, appears as "document" type. If you have any servers mounted whenever the System Folder is opened, selected, or redrawn, the servers are checked for an entry in the Desktop file matching the Creator type of the file.

Another case would be if you used an application on a server and created a document that you saved on your local disk. Whenever the folder containing that document is opened, the Finder searches the mounted volumes for the Creator of that document, because the local disk does not have an entry in the Desktop file to match it. Microsoft Word creates an options file, which is put into your System Folder, with the Creator type of Microsoft Word. It, therefore, shows up as a Microsoft Word file. If, however, you don't have Microsoft Word on your local disk because you used an application from the server, when you open the System Folder again, the mounted servers are searched.

Once an application is copied to a volume, the Creator type of that application is saved in the Desktop file of that volume. Even if that application is removed from the volume, there is still an entry in the Desktop file of that volume for that application's Creator type. When the Desktop file is rebuilt, the old Desktop file is thrown away, and a new one is created. Immediately after the Desktop is rebuilt, the Desktop file will contain entries for every application on that volume.

A file that was created by an application that is no longer on the volume may not cause the Finder to search the desktops of other volumes for a Creator type, if there is still an entry in the Desktop file of that volume. For example, if you have Microsoft Word on your local disk, create a document, and later throw Microsoft Word away, the Desktop still will have an entry for Microsoft Word. The Finder will not search the desktops of other volumes. If the Desktop is rebuilt, the local Desktop no longer will contain an entry for Microsoft Word, and the Finder, therefore, will search the desktop of any mounted volumes.

Published Date: Feb 18, 2012

Apple IIGS: Cannot Access 3COM Server

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A customer with an existing 3COM network wants to connect an Apple IIGS system and have access to the 3COM server. Is this possible?

DISCUSSION ----------

To connect an Apple IIGS to a file server, the file server must be an AppleTalk Filing Protocol (AFP) file server. 3COM's file server is not an AFP file server. Their file server can coexist with AFP file servers but does not function as an AFP device.

The reason the server must use the AFP for the Apple IIGS is because software must be installed into the AppleShare File Server Admin application before the Apple IIGS recognizes the server. Because the 3COM file server uses its own network filing protocols, the Apple IIGS will not recognize the 3COM server.

The Apple IIGS can be attached to a LocalTalk network that is connected to the 3COM server, but it will not be able to access the 3COM server. If there are LaserWriters on the LocalTalk network, the Apple IIGS can print to them.

Until 3COM's file server is seen as an AFP server by the AppleTalk, a way to provide file service from 3COM to the Apple IIGS seems unlikely.

Published Date: Feb 18, 2012

Macintosh-to-IBM 2780/3780 Connectivity

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Are you aware of any method for connecting a Macintosh to IBM 2780 and 3780 machines? Apparently, they are an old series of mainframe/mini. They take the BACS operating system and are used in the U.K. in the banking sector.

DISCUSSION ----------

Cleo Software's Mac-3780Plus SSM from Cleo Software is a complete, Macintosh hardware/software package designed to emulate an IBM 2780 or 3780 terminal.

Files can be transferred to any other micro, mini, or mainframe that supports the IBM 2780/3780 BSC (Binary Synchronous Communications or Bisynchronous) protocol. Files can be stored, processed, or printed. Files received from another 2780/3780 device can be printed, saved to disk, or displayed on the console.

The package has a menu format for

- interactive execution
- job file
- log file support for unattended operation
- a line trace monitor for diagnostics
- a "System" command for executing local programs without leaving communications.

For more details, search the Tech Info Library under "CLEO Software".

Published Date: Feb 18, 2012

Microsoft Windows: LaserWriter Compatibility

Is it true that Microsoft's "Windows" needs ROM 2.0 or greater present in the LaserWriter IINTX to function properly. Is there another issue here?

This article has been archived and is no longer updated by Apple.
The issue is not the version of the ROM but the version of PostScript residing in the ROMs. The original LaserWriters started with ROM version 1 or PostScript version 23. The second ROM set for the original LaserWriters is known as ROM version 2 or PostScript version 38. The third ROM set is known ROM version 3 or PostScript version 47.

The LaserWriter IINT and LaserWriter IINTX both use PostScript version 47. However, the ROMs in the LaserWriter IINT and LaserWriter IINTX have additions to the ROMs, which are in the original LaserWriters. The ROMs in the LaserWriter IINT and LaserWriter IINTX are considered ROM version 1.0 for the LaserWriter IINT and LaserWriter IINTX, although the PostScript version is 47.

Microsoft Windows requires PostScript version 38. In the older LaserWriters, version 38 of PostScript was also known as version 2 of the ROM.

The latest versions of Windows (Windows 2.11) and its PostScript driver (PostScript driver 3.1) do not suffer from this problem and will print to a LaserWriter II successfully.

Published Date: Feb 18, 2012

Apple Two-Page Monitor: Correction to Slot Info in Manual

The documentation for the Apple Two-Page Monochrome Monitor states that the video card must be the card closest to the power supply. Is this necessary, and, if so, why?

This article has been archived and is no longer updated by Apple.
The manual for the Apple Two-Page Monochrome Monitor is incorrect. You can put the video card in any slot. This statement will be removed from the manual in its next revision.

Published Date: Feb 18, 2012

TA40141_LisaProject_Duration_(TIL00414).pdf

LisaProject: Duration

This article has been archived and is no longer updated by Apple.
Make sure that when entering resources and durations, you TAB over to the next field, NOT space over to it. Otherwise, LisaProject assumes the duration to be zero.
Published Date: Feb 18, 2012

MultiTalk: No Longer Available for AppleTalk Network

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Abaton discontinued distribution of MultiTalk in late spring 1988. The following is a brief description of MultiTalk and known incompatibilities:

DISCUSSION ----------

MultiTalk lets AppleTalk network users share serial devices. It has four mini-circular-8 connectors: one for AppleTalk (RS-422) and three for RS-232. The RS-232 connectors support modems, scanners, plotters, printers, or protocol converters. The user can select from four ports when the modem port is logically selected, and there can be up to four MultiTalks per zone.

MultiTalk is incompatible with MacLink Plus, Switcher (intermittent), Telescape Pro.

MultiTalk fails to cause DTR to drop on disconnect when using VersaTerm.

Published Date: Feb 18, 2012

Macintosh-to-Oracle Connectivity

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This information is from Banyan about their Macintosh products:

DISCUSSION ----------

Banyan is now shipping a mail gateway between VINES Network Mail and CE Software QuickMail.

Banyan's Oracle Server for VINES will allow Macintoshes, running Oracle for Macintosh to connect into databases running on Apple servers.

Published Date: Feb 18, 2012

PostScript: How To Modify LaserWriter Character Sets

This article has been archived and is no longer updated by Apple.

TOPIC ----------

In each of the Adobe fonts contained in the ROMs of the LaserWriter IINT, there are three types of characters that some users (especially in high-end publishing) need. The three characters are: uppercase and lowercase "thorn", uppercase and lowercase "eth", and a "agoneck."

These characters cannot be seen in Key Caps but are printable from a PC connected to the LaserWriter IINT. When the PostScript code is sent directly to the printer, it works. However, the user needs to print from a word processor. When trying to print from Microsoft Word, the encoding vector in the Laser Prep file does not allow these characters. Here is additional information:

PostScript codes for characters (ref. ISO 6973)

/thorn 374 Octal
/THORN 354 Octal

/eth 342 Octal
/ETH 363 Octal

/agoneck 254 Octal

DISCUSSION ----------

According to PostScript documentation, and after having interrogated the LaserWriter's complete character sets, Apple Tech Comm has determined that the thorn, THORN, eth, ETH, and agoneck characters are not encoded by the Laser Prep file. However, the user can create these required characters by using one of two methods. The first method is the more complicated of the two and requires modifying the Laser Prep file with ResEdit.

Method #1

Any modifications to the System file and Laser Prep file should be made using copies of the files. Once the modifications have been successfully completed, then the original System file and Laser Prep file can be replaced with the modified files.

Using ResEdit, follow these steps to encode the required characters:

1) Determine what characters are currently available (using Key Caps), but seldom, if ever, used. These will be the characters that you will replace with the thorn, THORN, eth, ETH, and agoneck.

2) Using ResEdit, open the Laser Prep file and POST resource. Locate POST resource -8181 (this is the resource that encodes and maps special characters) and open it as type "STR#" using the "Open As..." menu item.

3) Starting at the 8th string, the special characters are encoded by name. Locate the characters, by name, that you determined were not used in step 1.

4) One at a time, select the name of the character to be substituted and type the name of the new character (thorn, THORN, eth, ETH, and agoneck).

5) Close the resource and the Laser Prep file and answer "YES" to save the changes.

6) Open the System file, select and open the FONT resource, and select the font(s) you want to display the thorn, THORN, eth, ETH, and agoneck characters.

7) Edit the substituted characters in the fonts to match the new characters.

8) Close the resource and the System file and answer "YES" to save the changes.

The Laser Prep file and System file now have been edited to allow the use of the thorn, THORN, eth, ETH, and agoneck characters. They will be recognized by all LaserWriter fonts.

Note: The LaserWriter must be initialized with this new Laser Prep file for the modified font dictionary to be invoked (turn the LaserWriter off and back on). Ensure that the system with the modified Laser Prep file is the first system to print to the printer.

Method #2

The second method is to use a third-party laser font utility. One of the more popular laser font utilities is Fontographer 2.4 from Altsys Corp. For more details, search the Tech Info Library under "Altsys Corp." Here is a description of Fontographer:

Fontographer is a professional outline font editor for the Macintosh computer and PostScript printers. Using Fontographer, you can create a professional-quality PostScript font in hours. When complete, your font can be printed on Apple's LaserWriter, LaserWriter Plus, or any PostScript-compatible device. The characters are defined with cubic Bezier curves and straight lines, so your characters look good at any size or resolution from 300 dot-per-inch laser printers to 2450 dot-per-inch typesetting machines.

Fontographer fonts work just like the standard
built-in LaserWriter fonts to give you fast, high-resolution printing. Bitmap fonts can be generated automatically. A copy of FONTastic font editor is included to perform the final fine-tuning of your bitmap fonts for screen display.

Published Date: Feb 18, 2012

Apple Presents..: Problem Installing on Corvus Net

This article has been archived and is no longer updated by Apple.

TOPIC ---

This article concerns a school lab consisting of Apple IIGS systems and a Corvus server running Constellation 3 software. The school was able to load the "Apple Presents Apple" disk on the server and run the program by making the following modifications:

1) They copied SYSTEM.PASCAL into the keyboard volume.

2) They modified the SYSTEM.LIBRARY by copying LONGINTI, TRANSCEN, and RTUNIT into the SYSTEM.LIBRARY.

They would like to load the "Apple Presents the Apple IIe, An Introduction" disk (Pascal-based, 1984, 691-0020-A) and run the program from the Corvus, too. The procedure they used for the "Apple Presents Apple" disk does not seem to work for this disk. What should they do?

DISCUSSION ---

There are several issues involved when installing the "Apple Presents.." (691-0020) disk on the Corvus network:

1) The disk they successfully installed was a Pascal 1.0 disk, while the one they are trying to install is Pascal 1.2-based.

2) Each of the "Apple Presents.." disks was created for a specific purpose and may or may not use a standard version of the Run Time system.

3) Here's the most important one: the SYSTEM.LIBRARY file for the "Apple Presents.." (691-0020) disk contains the following units:

Unit No.	Unit Name	Size
20	SHORTGRA	3144
21	SHORTGRA	18
26	INTROLIB	6598
27	INTROLIB	5696
25	TYPE1UNI	1518
23	TYPE2UNI	4426
24	TYPE3UNI	317

and the SYSTEM.LIBRARY file for the successfully installed "Apple Presents.." disk contains the following units:

Unit No.	Unit Name	Size
31	PASCALIO	2082
28	CHAINSTU	212
20	TURTLEGR	3108
21	TURTLEGR	18
22	APPLESTU	678
26	INTROLIB	2072
27	INTROLIB	1642

What does this mean to the school? Notice that both libraries contain two units named "INTROLIB". Unfortunately, the library used on the disk that they school was able to install on the network is private. That is, it has no interface section). This is a trick used by developers to protect their code.

Most of the "Apple Presents.." software was created under contract, and Apple doesn't own the code. If the school is still interested in installing both of these packages on the network, they should combine the two libraries using the INTROLIB from the "Apple Presents.." (691-0020) disk. This may or may not work; Tech Comm can't duplicate the Corvus network, because Corvus is out of business.

The school might also look at the "Apple Presents.." disks that come with the Apple IIc Plus. These packages are fairly generic and are ProDOS-based. The school may have better luck installing them on the network.

Published Date: Feb 18, 2012

ADA Programming Capabilities for the Macintosh

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there a compiler that provides ADA programming capabilities for Macintosh computers? Currently, the only two suppliers of such a product that I know of are Alsys and Meridian. The Alsys product currently runs under A/UX only. I understand that the Meridian product runs under Macintosh OS.

DISCUSSION ----------

AdaVantage is the product you're probably referring to. Note that it will become available from APDA in the future. For a more complete description of the product, contact Meridian or see the product description in the Macintosh Buyer's Guide: A Redgate Publication, Winter 1989.

AdaVantage Compiler 2.2

Minimum Configuration: Macintosh Plus, 2MB RAM, 20MB hard disk drive, MPW C.

The AdaVantage compiler provides ADA programming capabilities for Macintosh computers. An optional debugger and code optimizer are available.

Standard features:

- provides support for full generics, tasking, and separate compilation
- provides all standard packages
- implements most of the implementation-dependent system programming facilities (ANSI/MIL-STD-1815A Chapter 13)
- includes a set of library management tools that provide control over programming project organization and databases of compilation units
- includes auxiliary directory arrangements that permit separation of source code and compiler-generated files.

The optional Meridian AdaVantage Optimizer improves code output by providing constant expression evaluation, dead code removal, jump optimizations, common subexpression elimination, strength reduction, and unused program removal.

The optional Meridian AdaVantage Debugger provides an interactive source-level debugging capability. The debugger supports breakpoints, subprogram traces, single-stepping, subprogram callback traces, and full ADA variable reference syntax.

The AdaVantage compiler is supplied on four disks. Included are:

- the compilier
- a high-level linker
- library management tools
- standard support packages
- additional I/O packages
- run-time object libraries

For more details, search the Tech Info Library under "Meridian Software Systems".

Published Date: Feb 18, 2012

AppleTalk: Connecting to Phone Company New Advanced Services

A customer wants to route AppleTalk into what sounds like an ISDN circuit. Pacific Bell is offering a new service called "Advanced Digital Network" (ADN). This new topology is ready through central offices, and the charge has been approved by the California Public Utilities Commission.

The circuit end points require a third-party device called CSU/DSU (Customer Service Unit/Digital Service Unit).

1) Whose CSU/DSU works?
2) How do I get AppleTalk into the CSU/DSU?

This article has been archived and is no longer updated by Apple.
ADN is a new Pacific Bell Telephone service facilitating high-speed point-to-point communication. It is a 64K digitized voice or 56K bps data DDS (Digital Data Service) line incorporating new, digital, cross switches. These switches are better suited to high-speed digital transmissions than to sending digital information modulated on carrier signals over standard, public, telephone, voice-communication circuits. Note that this service is currently marketed under many different names by other common carriers.

DSU stands for "Data Service Unit," which is the interface to the ADN. It is somewhat analogous to a "digital" modem. The DSUs translate the computer's unipolar serial data to baseband bipolar signals. The DSU uses a DCE interface to communicate with the terminal, and then transmits the data in a special format over the ADN.

CSU ("Channel Service Unit") is sometimes required at the end of some links. The trend today is to incorporate the CSU into the DSU.

AT&T offers many types of DSUs/CSUs. They vary by the data rates they support for use in stand-alone or multiple-mount installations. Installations can run short distances point-to-point in a building or campus environment using LADS ("Local Area Data Sets"), using DSU units, CSU units or combinations of both. These units usually conform to EIA RS-232-C standards, with data and clock signals that meet CCITT V.35. The DSU DCE-to-terminal interface is full duplex.

Routing AppleTalk packets over ADN should be straightforward. You need an AppleTalk bridge between the Macintosh and DSU. Because the AppleTalk bridges are asynchronous, you also need a commonly-available, asynchronous-to-synchronous converter between the bridge and DSU. Among the bridges, only Telebridge supports data rates up to 57,600 bps; R-Server currently supports up to 19.2K bps. You could substitute an Ethernet bridge for the AppleTalk bridge above if using EtherTalk.

Apple uses many types of links, including Ethernet, LocalTalk, T-1, and fiber. We are not presently using ADN. Data rates can be much higher using T-1 or ISDN lines as compared to ADN.

ISDN lines are not yet a "tariff" service; they are not priced by the California Public Utilities Commission. This doesn't mean ISDN lines are not available. They are and are acquired via contracts, usually making them less cost-effective presently than other services. Additionally, ISDN interfaces are not yet commercially available for the Macintosh.

Because Pacific Bell offers intrastate service, the account may need to contact MCI or AT&T, for instance, to discuss interstate services.

TA40147_AppleTalk_Connecting_to_Phone_Company_New_Advanced_Services_(TIL04147)

For more details, search the Tech Info Library under "Shiva Corp".

Editor's note 22 June 1992: Removed reference to Solana Electronics.

Published Date: Feb 18, 2012

Motorola 2000-to-Macintosh Connectivity

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there any way to emulate a Motorola 2000 terminal?

DISCUSSION ----------

Terminals connected to the Motorola 2000 are very basic and can be configured for baud rate, data bits, stop bits, and parity. The port can be configured for either RS-232 or RS-422. It shouldn't require any special out-of-the ordinary protocols. All of this means that almost any multipurpose terminal emulation program for the Macintosh can be used to connect to a Motorola 2000.

Published Date: Feb 18, 2012

Ethernet Network: Multiple Protocols Issue

I want to use both AppleTalk and TCP/IP protocols on my Mac OS-based computer. Are there any known issues in using both at the same time over the same cable under A/UX? (That is, A/UX running TCP/IP via BNET on the same physical network as Macintosh computers using Mac OS with AppleTalk.)

Is this true of TCP/IP and AppleTalk under Mac OS, that is one Macintosh using AppleTalk and another running TCP/IP with either MacTCP control panel (classic networking), or TCP/IP control panel with Open Transport?

What will happen if I use the Kinetics EtherPort II card instead of the Apple EtherTalk card?
This article has been archived and is no longer updated by Apple.
You can successfully run AppleTalk and TCP/IP protocols over the same network. More specifically, A/UX machines running TCP/IP have coexisted peacefully with Mac OS machines on the same Ethernet cable. Note that "coexist" does not mean that the machines can communicate with each other. Coexistence means the ability to use both protocol stacks on the same network without packet corruption and data loss.

AppleTalk has been designed to be compatible in multiprotocol environments. MacTCP (with classic networking) or TCP/IP (with Open Transport), and AppleTalk also coexist peacefully on the same network.

The area in which you might see some difficulty is routers. Not all routers route both AppleTalk and TCP/IP packets. Therefore, if you need both packet types to be transmitted, you need to ensure that your routers or bridges are properly configured for handling all of your packet types.

Protocol incompatibilities are unlikely to be caused by the actual card used. An EtherTalk card and a Kinetics FastPath card should yield similar results in terms of being able to run multiple protocols over the same physical media.
Published Date: Feb 18, 2012

TA40150_LisaProject_Extra_Pages_(TIL00415).pdf

LisaProject: Extra Pages

This article has been archived and is no longer updated by Apple.
To get rid of extra pages in LisaProject, Save and Put Away the document, then redisplay it. The extra pages should be deleted.
If this doesn't work, try changing the print orientation (for example, change Portrait to Landscape), change it back, then save it and put it away. The extra pages should be gone when you reopen your document.
Published Date: Feb 18, 2012

AppleTalk: Network General "Sniffer" Functions as Line Monitor

This article has been archived and is no longer updated by Apple.

TOPIC ----------

What is available as an AppleTalk line monitor as a diagnostic tool for debugging network problems?

DISCUSSION ----------

Network General Sniffer provides an option for AppleTalk protocols. Sniffer, running on a portable PC, handles for various packet types and media. The following is an example of raw network data and the Sniffer decode.

- - - - - - - - - - - - - - Begin Dump - - - - - - - - - - - - - - - -

Following is a message dump of some traced broadcast messages:

```
12:52:44.34 8:0:89:a0:44:99 ff:ff:ff:ff:ff:ff 809b 46:
ff99 0100 1801 0101 0001 0899 3801 0100
0100 3802 0238 0300 3bb9 0000 0000 0000
12:52:54.26 8:0:89:a0:44:99 ff:ff:ff:ff:ff:ff 809b 46:
ff99 0100 1801 0101 0001 0899 3801 0100
0100 3802 0238 0300 3bb9 0000 0000 0000
12:52:56.86 8:0:89:a0:49:40 ff:ff:ff:ff:ff:ff 809b 46:
ffc0 0100 1801 0101 0001 08c0 3801 0000
0100 3802 0138 0301 3bb9 0000 0000 0000
```

(AppleTalk decode courtesy of the Network General Sniffer PA-1310 AppleTalk Protocol Suite option.)

```
- - - - - - - - - - - - - - - - - Frame 2 - - - - - - - - - - - - - - - - -
SUMMARY Delta T Destination Source Summary
M 2 0.0000 Broadcast KinetxA04499 RTMP R NET=1.0 Routing entries=5
RTMP:----- RTMP Data ----- RTMP:
RTMP: Net = 1.0
RTMP: Node id length = 8 bits
RTMP: Node id = 153
RTMP: Tuple 1 : Net = 14337.0, Distance = 1
RTMP: Tuple 2 : Net = 1.0, Distance = 0
RTMP: Tuple 3 : Net = 14338.0, Distance = 2
RTMP: Tuple 4 : Net = 14339.0, Distance = 0
RTMP: Tuple 5 : Net = 15289.0, Distance = 0
RTMP:
RTMP:[Normal end of "RTMP Data ".]

- - - - - - - - - - - - - - - - - Frame 3 - - - - - - - - - - - - - - - - -
SUMMARY Delta T Destination Source Summary
3 0.0000 Broadcast KinetxA04499 RTMP R NET=1.0 Routing entries=5
RTMP:----- RTMP Data -----
RTMP: Net = 1.0
RTMP: Node id length = 8 bits
RTMP: Node id = 192
RTMP: Tuple 1 : Net = 14337.0, Distance = 1
RTMP: Tuple 2 : Net = 1.0, Distance = 0
RTMP: Tuple 3 : Net = 14338.0, Distance = 1
RTMP: Tuple 4 : Net = 14339.0, Distance = 1
RTMP: Tuple 5 : Net = 15289.0, Distance = 0
RTMP:[Normal end of "RTMP Data ".]
```

- - - - - - - - - - - - - - - End Dump - - - - - - - - - - - - - - - - -

For more details, search the Tech Info Library under "Network General".

Published Date: Feb 18, 2012

Apple IIGS: How to Access the Clock

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I have a customer using Z-BASIC on his Apple IIGS under ProDOS, running as an Apple IIe. Although there no are toolbox calls for accessing the Apple IIGS clock from Z-BASIC, is there a way to do this from Z-BASIC with PEEKS and POKES or a machine language call?

DISCUSSION ----------

The preferred method is to use the ProDOS GET_TIME call. Note: You need ProDOS 8 version 1.2 or later to get the time on the Apple IIGS.

This method works on any Apple II running under ProDOS and with most Apple II-compatible clocks (because they all come with ProDOS patch routines). More information on the format of the GET_TIME call and other ProDOS commands is in the ProDOS Technical Reference Manual. The GET_TIME call is documented on page 71. Additional information is on page 99 and pages 104 through 106.

When the GET_TIME routine is called, the system date and time are placed into the documented locations. Using PEEKs, the data in those location can be extracted.

Published Date: Feb 18, 2012

Apple IIGS: How To Print to a LaserWriter

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A person using Music Writer software on an Apple IIGS wants to print to a LaserWriter IINTX in the Sonata font, which Music Writer uses. How do you do this? Can you use fonts other than Courier and Times with AppleWorks 2.0?

DISCUSSION ----------

Music Writer uses Pyware's own music font. It is similar to Adobe's Sonata font, but not from Adobe. The font is included with Music Writer. To print to any member of the PostScript LaserWriter family, make the usual ProDOS 16 or GS/OS printer choice. Then, from Music Writer, select the print command. The musical score then can be printed on the LaserWriter.

To use other fonts with AppleWorks requires PostScript programming knowledge. Beyond the changes mentioned, font selection for ProDOS 8 applications relies on changing the ImageWriter Emulator (IWEM) PostScript code. The font to be used is designated within the IWEM downloadable PostScript file.

For more details, search the Tech Info Library under "Pygraphics".

Published Date: Feb 18, 2012

TA40154_MARS_Multimedia_Color_Database_for_the_Macintosh__(TIL04153).pdf

MARS: Multimedia Color Database for the Macintosh (9/93)

I want to implement a database of color images that can be accessed locally or remotely. I'm flexible as to how these images can be input (scanned photos, videotape, and so on). Any suggestions?

This article has been archived and is no longer updated by Apple.
MARS (Multi-User Archival and Retrieval System) from MicroDynamics, Ltd. offers one solution. MARS can take input from any kind of document through an appropriate scanner. The documents are then stored on WORM (Write Once Read Many) optical disks. These documents can be used over and over again, but the original can never be changed.

The system also has OCR (Optical Character Recognition) capability, that lets you convert any digitized document to text and then edit it with a word processor. You can add these revised documents to the optical disk.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
2 September 1993 - Corrected company name.

Published Date: Feb 18, 2012

HyperCard: How to Configure for Modem Dialing

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Can the phone-dialing portion of HyperCard support 9600-bps modems? Also, can HyperCard dial out through an internal modem, like an Epic 2400?

DISCUSSION ----------

HyperCard's dial command is designed for voice-only calls. There is no support for data communications with the dial command.

If the 9600-bps modem is a Hayes command set-compatible modem, HyperCard can dial the modem.

The dial command is only applicable to the Macintosh speaker/audio port or to a modem attached to the serial port. HyperCard requires an XCMD or XFCN to recognize a NuBus modem.

If you want to do data communications after dialling, you need a different approach is required. The HyperCard Serial Communications Toolkit, available from APDA, makes HyperCard dialing and data communications possible.

Another option for data communications is a set of external commands and code resources called FITOS from MITEM Corporation. These include a number of different terminal emulators. The advantage of this package is that it handles everything except the actual information that would normally be presented to the user. You don't have to be concerned about the communications protocols used or the terminal formatting characters sent by the host. The possible disadvantage is that if it does not support the type of terminal that you need it to support, you have to deal with the terminal emulation yourself.

For data communications with NuBus modems, you need XCMDs and/or XFCNs designed for NuBus modems. Apple Tech Comm does not know of any XCMD or XFCN available for the internals modems.

For more details, search the Tech Info Library under "MITEM Corporation".

Published Date: Feb 18, 2012

Macintosh: How to Increase the Maximum Number of Open Files

How does one change the number of concurrent files open at the same time under the Macintosh OS?
This article has been archived and is no longer updated by Apple.
Important: Any modification to boot block information is not supported by Apple.

The SystemStartup information (for a Macintosh system or a file server), is stored in logical blocks 0 and 1 of an HFS startup disk. It contains the maximum number of files that can be open simultaneously. This is currently set to 10. The location for this parameter is $7A of logical block 0 on an HFS disk. The number at $7A (default is $000A or Decimal 10) serves as the parameter for files open at one time.

The number $000A (or Decimal 10), for instance, is proper for 128K and 512K systems. If the Macintosh is equipped with 1MB or more of memory, the system multiplies the number at $7A by four (that is, it becomes decimal 40) and uses the new number as the new file limiter.

You can use a disk editor, like FEdit, to change this number. The File Control Block Buffer and System Heap size will be calculated with the changed files open parameter upon restarting.

If you must raise this number, do it in small increments. Raising the number in location $7A, as some users have done, can force the system to set aside too much memory. This causes a system error, which, because it is unexpected, the system cannot handle. The result is a system lockup.

Tech Note 113 also relates to the topic.

Note: FoxBase allows a maximum of 48 open files, regardless of how many the Macintosh OS allows.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

8775 Terminal Emulator: None Yet Available for the Macintosh

Have you heard of Macintoshes connected to an IBM 8100 mini-computer using 8775 terminal?

This article has been archived and is no longer updated by Apple.
Apple Tech Comm does not know of any 8775 terminal emulators available for the Macintosh.

The 8775 Display Terminal is a high-function, single-station, cathode-ray tube, microprocessor-controlled terminal that provides a means of entering data to, and receiving data from, the 8100 Information System and System/370, 30XX, and 4300.

It is available in four models. The base 8775 offers equivalent function to 3276/3278 display units. The other models offer differing connection options.

Published Date: Feb 18, 2012

VAX: How To Print to a LaserWriter Connected to a Terminal

Many applications for VAX systems, such as All-in-1, let the host program print to a printer that is connected to the terminal. This is called pass-through printing and was a feature of the old VT102 terminals; it is still a part of the newest DEC terminals.

Is there a Macintosh terminal emulation product that allows a VAX program to access a networked LaserWriter in this fashion? There are several options for setting up a LaserWriter as a system printer, but is it also possible to emulate a printer that is connected to the user's terminal?

This article has been archived and is no longer updated by Apple.
There are some Macintosh terminal emulation products that echo the output being sent to the terminal to a printer. The printer support for this is limited to printers connected directly to the Macintosh acting as the terminal. This prohibits the use of the LaserWriter over AppleTalk for this purpose.

The type of printer for which this pass-through printing is intended is a printer that prints one character at a time as opposed to one page at a time. The LaserWriter prints one page at a time.

MicroPhone II from Software Ventures and Red Ryder 10.0 from The FreeSoft Company come close to providing this functionality. They have the ability to turn printing on and off. When printing is on, they buffer the output until you turn printing off. At that point, they send the output one page at a time to the LaserWriter.

Published Date: Feb 18, 2012

LisaProject: Start Date

This article has been archived and is no longer updated by Apple.
If your resource or task charts begin on a date other than the date set in your beginning milestone, then you've (most likely) created a task that has no predecessor, or you have encountered the "phantom task box" (very rare).

Large phantom task boxes have been discovered when the LisaProject document is copied and pasted into LisaDraw. The box has also been discovered in LisaProject just off the edge of the schedule. Since these task boxes are usually neither seen nor tied into the project, they take the start date as set
by the calendar. When they do occur, there seems to be no way to eliminate them from your LisaProject document.
Published Date: Feb 18, 2012

AppleFax Modem: How To Use as 9600-Baud Modem

This article has been archived and is no longer updated by Apple.

TOPIC ----------

The AppleFax Modem manual implies that the modem allows a Macintosh file to be transferred from one Macintosh to another Macintosh via two AppleFax Modems at 9600 baud. Is this accurate?

DISCUSSION ----------

Page 92 of the "AppleFax Modem User's Guide" states the following:

"If you want, you can use a communications application as long as you're communicating with another AppleFax Modem. A communications application lets you transmit Macintosh files, type messages back and forth, and use the modem commands described in Appendix B."

The manual goes on to say (on page 92) what communications parameters the AppleFax Modem requires for successful use a 9600-baud modem.

This means that the AppleFax Modem allows you to transmit Macintosh files (text files, MacPaint files, PICT files, and so on) to another Macintosh at 9600 baud as long as both modems are AppleFax Modems. It is not necessary for both AppleFax Modems to be using the same communications software as long they support the same transfer protocol.

The AppleFax Modem does support a subset of the Hayes "AT" command set. For more information on this, look in Appendix B, which starts on page 137.

Published Date: Feb 18, 2012

Macintosh: Using Wrong System Installer Causes Color Problems

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A user installs the System on a Macintosh IIcx attached to a color monitor with either 16 or 256 colors selected. The monitor shows a color desktop, but the Apple and Macintosh icons remains black and white. The typical diagnosis is a hardware problem with the monitor or video card.

DISCUSSION ----------

The problem lies with the choice of installation disks. Using the Utilities One disk to install the System instead of the System Tools disk causes this problem. The Utilities One disk contains the minimum Installer scripts, which do not include the color Apple icon, or the color Macintosh icon (which appears in the "Welcome to Macintosh" startup dialog), among other things.

Use the System Tools disk included in the new "Open Me First" package that ships with the Macintosh IIcx, not the Utilities One disk that is in the traditional place we have put system disks. This installs a complete system, including the color icons.

Published Date: Feb 18, 2012

A/UX 1.1: Solution for "loop:bad value" Error

A user gets the message

"loop:bad value"

before the Ethernet messages on A/UX startup. All Ethernet communications work well. Is this message related to Ethernet, or something else?

This article has been archived and is no longer updated by Apple.

This error message comes from the startup script BNET in /etc/startup.d. It can be caused by an incorrect entry in the /etc/hosts file for the loop address. The line for the loop address should look like this:

127.0.0.1 loop loo lo localhost Software_Loopback

Published Date: Feb 18, 2012

A/UX 1.1: "toolboxdaemon" Problem Solved

I can't seem to get the toolboxdaemon to run correctly in the release version. I have set the command in the inittab file to "once" and restarted. When I try to run HFX, I get messages saying that the toolboxdaemon seems to be dead and fatal toolbox error. I also tried the newunix toolbox command and restarted. That didn't help. Next, I put a command in the /etc/startup file to automatically run toolboxdaemon in the background. Everything seems OK until I quit from HFX. Instead of seeing the console screen, I get a series of tiny "windows" across the screen. I can type in commands, but I can't read them. What's wrong?

This article has been archived and is no longer updated by Apple.

The first error message appears when a toolbox application is started, and the toolboxdaemon is not running. The entry in the /etc/inittab file is correct when set to once, but the toolboxdaemon won't be started, unless the system is brought into multi-user mode with the command:

init 2

The reason for the tiny windows is that the system is running in color mode under the toolbox application and is trying to talk to a monochrome display (the A/UX console) when the error occurs. Try running the system in monochrome mode so that you can read the error message being sent to the screen.

Published Date: Feb 18, 2012

LaserWriter: How To Restore Factory Defaults

A user modified some of their LaserWriter's persistent parameters through PostScript commands. They would now like to restore all settings to the factory defaults. Is there a PostScript command to do this?

This article has been archived and is no longer updated by Apple.
There is no standard command within the PostScript language to reset all parameters to the default settings. However, it is possible to write a PostScript program that, when downloaded to the LaserWriter, resets each parameter individually to its default settings. Since a number of persistent parameters are product specific, this program would have to be modified for each LaserWriter model: the LaserWriter, LaserWriter Plus, LaserWriter IINT and NTX, and the Personal LaserWriter NT.

The LaserWriter IIf and IIg do have the ability to restore factory defaults through a single command. This is a device specific feature, and will not work on earlier LaserWriter models. The following PostScript program will restore the factory defaults of either a LaserWriter IIf or IIg.

```
0 serverdict begin exitserver
<< /FactoryDefaults true >> setsystemparams
systemdict begin
realtime 10000 add
{ dup realtime le { pop exit } if } loop
quit
```

To send this program to your LaserWriter, copy and paste it into a blank TeachText document. Save the result, and download it with the LaserWriter Utility's "Download PostScript File" feature.

Note that the user definable settings for push-wheel positions 6-9 will also revert to their defaults after the program is downloaded. This means you must be careful if the LaserWriter is connected to a LocalTalk network and you reset the defaults. If the default type for the mini-8 port at the current push-wheel setting isn't LocalTalk, reseting the defaults will disable your ability to communicate with the LaserWriter and can disrupt network traffic.

Published Date: Feb 18, 2012

A/UX 1.1: SCSI Block Access

A customer wants some information on block read/write functions in A/UX 1.1. She mentioned library files, like "ncr5380" and "ncr5380.h", as examples. Are there generic SCSI libraries?
This article has been archived and is no longer updated by Apple.
Apple Tech Comm could not locate generic SCSI libraries in the distributed A/UX binary. All device drivers and related routines are imbedded in the A/UX kernel. The only header files related to SCSI and the NCR 5380 SCSI chip are in the /usr/include/sys directory. These are:

ncr.h - interface to NCR 5380 SCSI chip
ncr5380.h - interface to NCR 5380 SCSI chip and SCSI manager
SCSI*.h - generic SCSI driver interface header files

As an alternative, the customer might get an A/UX Device Drivers Kit from APDA. The kit includes the driver source code files, routines, samples, and detailed information on how to build and install a device driver into the kernel.
Published Date: Feb 18, 2012

TA40166_LisaProject_Capacity_(TIL00417).pdf

LisaProject: Capacity

This article has been archived and is no longer updated by Apple.
The maximum capacity of a LisaProject document is 60 pages, or more than 2,500 tasks with over 100 resources per task. LisaProject release 1 and 2.0 allow you to enter up to 20 vacation days, while release 3.0 accepts up to 40.
Published Date: Feb 18, 2012

Macintosh: Databases with Graphics Capability

Article Change History

02/12/93 - UPDATED
* Fox Software, Inc. acquired by Microsoft Corporation

What database products for the Macintosh support a field type for vector graphic objects?

This article has been archived and is no longer updated by Apple.
We assume that what you mean by vector graphic objects is anything other than bitmapped objects. The PICT format is one example of a non-bitmapped graphics file. If our assumption is correct, then you have a few solutions. If this is not the case, we'll need to know specific details about the format of the graphic object and the application that created it. Even within a single file format there are often slight variations used by different applications that can cause strange incompatibilities, so it's difficult to give a simple answer to this kind of question.

PictureBase, from Symmetry Corp., is a database that manages pictures. It can store both bitmapped images and PICT images. It lets you pull up these images and search by keywords (which you input for each picture) or by words in the filename. No other kinds of data can be stored along with the picture.

FoxBase+/Mac, from Microsoft Corporation, also lets you store PICT images and bitmapped images. This is a full-blown database that handles pictures as a field type. It also has character, numeric, date, logical, and memo field types. This information can be manipulated in many ways, which is typical of a relational database management system.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

Apple IIGS: Printing to Legal-Size Paper From AppleWorks

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A user is having problems printing to a LaserWriter from AppleWorks (on an Apple IIGS). He can print on letter-size paper but not legal. He has a legal tray and has set the paper length to Legal in AppleWorks. Does AppleWorks on an Apple II support legal printing from a LaserWriter?

DISCUSSION ----------

If you print in an AppleWorks 2.0 and ProDOS 8 environment, the ImageWriter Emulator (IWEM) does not support legal-size paper; it supports only letter-size paper. IWEM is not alone; the LaserWriter Diablo 630 emulator does not support paper lengths longer than 11 inches.

However, if you try this in AppleWorks on an Apple IIGS with GS/OS environment, everything works smoothly and with the desired results. In addition, the user can select various fonts and styles in AppleWorks for more pleasing results.

Published Date: Feb 18, 2012

LaserWriter IINTX: Switching Modes Requires Using DIP Switches

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I have read that although it was possible to switch from PostScript to Diablo or LaserJet emulation via software on the LaserWriter IINTX, switching back to PostScript could be done only via the DIP switches due to a ROM problem. Is this still accurate?

DISCUSSION ----------

Unfortunately, yes. Switching back to PostScript from Diablo or LaserJet emulation can be done only by resetting the DIP switches. This is a known problem that Adobe and Apple are both working on.

Published Date: Feb 18, 2012

MacTCP: Comparison to Kinetics K-Talk

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is Mt. Xinu's K-Talk (formerly distributed by Kinetics) similar in function to MacTCP?

DISCUSSION ----------

Although you can achieve similar results from MacTCP and K-Talk, there are some differences that you should be aware of. MacTCP is software installed on individual Macintoshes while K-Talk is software installed on a UNIX host. MacTCP provides TCP/IP connections for a Macintosh while K-Talk provides AppleTalk connections for a UNIX host.

At the point the packets reach the host machine running K-Talk, there is no need for a translation to TCP/IP. The K-Talk package, running on the UNIX host, translates the AppleTalk messages directly into UNIX file system calls without any intermediate steps.

Published Date: Feb 18, 2012

Ethernet/LocalTalk: TCP/IP Packets and GatorBox

This article has been archived and is no longer updated by Apple.

TOPIC -----

The GatorBox is an Ethernet/LocalTalk bridge with NFS-to-AFP conversion. NFS runs over TCP/IP. AFP is an AppleTalk protocol. One would assume that the GatorBox takes NFS data in TCP/IP packets and converts them into AppleTalk packets with AFP suitable for AppleShare-style access via the Chooser. One also would assume that no TCP/IP is ever sent on to the LocalTalk side, and no AppleTalk on the Ethernet side, in this environment. Is this true?

DISCUSSION -----

On the LocalTalk side, the TCP/IP packets are encapsulated within AppleTalk packets by the router (the GatorBox) and shipped to the Macintosh. The Macintosh then interprets the TCP/IP "data" and does the necessary operations. In the environment specified, it is likely that no AppleTalk packets are being sent to the Ethernet, unless you are also using the GatorBox as an AppleTalk router.

Published Date: Feb 18, 2012

MacTCP: TCP/IP Encapsulation and DDP-IP Functionality

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Regarding DDP-IP functionality, is it true that MacTCP can send TCP/IP data embedded in AppleTalk packets (necessitating use of the DDP-IP gateway)? Can MacTCP direct TCP/IP packets directly on to an Ethernet (without a DDP-IP gateway)? Can K-Talk do this?

DISCUSSION ----------

Yes, this is a fair representation of the functionality provided by MacTCP. When you are on a LocalTalk-based network, the TCP/IP packets are encapsulated within AppleTalk packets. When you are on an Ethernet, MacTCP uses TCP/IP directly without the encapsulation.

K-Talk does not provide quite the same capability. The best way to understand K-Talk is that it is software that resides on a UNIX host and provides AppleTalk services for AppleTalk clients (usually Macintoshes).

Published Date: Feb 18, 2012

TA40173_Apple_EtherTalk_Card_Implementation_Described_(TIL04179).pdf

Apple EtherTalk Card: 802.3 Implementation Described

This article discusses Apple's implementation of 802.3.
This article has been archived and is no longer updated by Apple.
Apple's implementation of 802.3 on the EtherTalk card is compliant with the 802.3 version 1 standard without any deviation. That is, Apple does not buffer its packets.

Apple uses the National Semiconductor 802.3 chip set consisting of a DP 8390 Network Interface Controller, DP 8391 Serial Network Interface, and the DP 8392 Coaxial Transceiver Interface. Buffering is handled in the DP 8390.

Apple's implementation should not raise any technical concerns with regard to bridging Ethernet segments, because Ethernet is a separate LAN specification from the 802.3 standard. Our Ethernet standard is compliant with the Digital/Intel/Xerox specification for an Ethernet local area network.
Published Date: Feb 18, 2012

TA40174_Lisa_Monitors_(TIL00418).pdf

Lisa: Monitors

This article has been archived and is no longer updated by Apple.

Conrac: Conrac Corp.
600 N. Rimsdale Ave.
Covina, CA 91722
(213) 966-3511

What to request: 23" Black and White
Cabinet Model SNA-23/C
22.7 KHz horizontal line rate
60 Hz vertical field rate
Under scan adjusted so all 4 corners are visible
Modified for fast vertical retrace
20 MHz video amplifier

Electrohome: Electrohome (U.S.A.) Limited
250 Wales Ave.
Tonawanda, New York 14150
(716) 694-3332

What to request: EDP-57 Monochrome Projection monitor
Projects up to 15' diagonal screen
standard is green P1 phosphor, other phosphors available

Published Date: Feb 18, 2012

Macintosh-to-AT&T 6544/IBM 3174 Controllers Connectivity

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A customer has AT&T 6544 controllers. They are using IBM PCs (with Attachmate cards) to connect to the controllers to get to the mainframes. (The customer says that the wiring is twisted-pair.)

Is there a similar card available for a Macintosh II? Do you have any other suggestions on how to connect the Macintosh to the 6544 controller?

DISCUSSION ----------

The AT&T 6544 controllers are clones of the IBM 3174 controllers with AT&T-added functions for twisted-pair terminal connections and support. For all practical purposes, your customer's configuration can be approached as a connection to an IBM 3174.

This can be done through an AppleLine or other third-party product for 3174 support (like an Avatar or DCA 3270 Coax Card) and terminal emulation software (like MacTerminal and 3270 FT from Apple or other third-party products). There are a number of such products, and some are listed in Tech Info Library.

While coax connections to the 6544 controller are possible, you can also connect to the twisted-pair RJ-11 connectors. A Balun is needed at the male end of a coax connector, for converting the signal levels to that of RJ-11 wiring. The Balun is similar to that found on the AppleLine product. Baluns are listed in most data communications trade catalogs, like the Black Box Catalog.

For more details, search the Tech Info Library under "Black Box Corp".

Published Date: Feb 18, 2012

AppleShare Print Server: Printing Problems Can Be Bad Net

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Apple Tech Comm has received a number problem reports recently concerning to AppleShare Print Server 2.0. The problem is "double printing" a print job or not printing all pages of a long print job (more than 10 pages) and restarting the print job. Here are two examples:

Example #1

If the spooler is chosen, the job is accepted and starts to spool to the printer. If the job is less than 10 pages, the print process completes with no problems. If the print job is greater than 10 pages, the print spools to the printer and stops at about page 6, and the print job repeats (from page 1). Our guess is that the LaserWriter times out and the print spooler restarts the job.

Example #2

AppleShare Print Server seems to have a problem. When a single-page document is sent to print with multiple copies, it seems to double the print request. That is, request 25 copies, receive 50 copies.

There is no indication in the print queue that two jobs are being printed, nor is there any mention of it in the print log. The problem occurs when printing from several Macintoshes so I know it is not the software on one particular Macintosh that is at fault.

DISCUSSION ----------

It sounds as if the networks involved in these cases are poorly terminated. Poor termination can result in LaserWriters timing out. When connected to the print server, timing out prevents the print job from being closed out. Because the print server thinks the job failed before completion, it resends the entire job, which results in double printing. Apple Tech Comm has experienced the same problem and eliminated it by cleaning the network connections.

Published Date: Feb 18, 2012

Apple IIGS: How To Prevent Control Panel Access

Is there a way to lock the Control Panel on an Apple IIGS? If the Control Panel cannot be locked, is there a way to write an INIT to reset the PRAM to a predetermined setting?

This article has been archived and is no longer updated by Apple.
The disposition of this problem depends on whether you have a pre-1MB Apple IIGS computer or a 1MB Apple IIGS computer:

Pre-1MB Apple IIGS Computer

For older (pre-1MB Apple IIGS computers) you can, under ProDOS 16 and GS/OS, intercept the interrupt created by the Control Panel access keystroke. For these computers, you need to write an interrupt handler that accepts the Control Panel interrupt and disposes of it.

Startup programs, or INITs, are discussed in "Apple IIGS ProDOS 16 Reference" (ISBN 0-201-17754-4), published by Addison-Wesley. Pages 52 through 57 deal with the issues of boot initialization and the SYSTEM.SETUP subdirectory. Both issues are of importance to the creation of startup programs.

Interrupts and interrupt handlers are discussed in several places throughout the book. Use the index to review the issues connected with interrupts.

One shortcoming when using a startup program with ProDOS 16 or GS/OS concerns ProDOS 8 applications. When a ProDOS 8 application is executed, ProDOS also is executed, and, in the process, the INITs of ProDOS 16 or GS/OS are not active until ProDOS 16 or GS/OS is executed again.

1MB Apple IIGS Computer

The newer 1MB Apple IIGS computer has a jumper at W1 that disables the Control Panel. W1 is a two-pin jumper located on the logic board near the power supply.

Published Date: Feb 18, 2012

AppleFax Modem: Problems Receiving Data from Another Fax

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A user with an AppleFax Modem is having trouble receiving Faxes from another Fax machine (the Hitachi DEX 6000). He has the new ROMs and is running System 6.0.2 and AppleFax 1.2 software on a Macintosh II.

A Hitachi technical representative told him that our modem was responding with an "RTP", not the expected "MCF".

He says that when the DEX initiates the call, it waits a moment and then tells him there was an error in communicating. On the Macintosh side, the AppleFax Modem answers the call and seems to be receiving the Fax, but when he prints it, he just gets garbage.

DISCUSSION ----------

The "RTP" response sent by the AppleFax Modem is a request for retraining. The modem sends this request when the data sent by the calling Fax machine is corrupted during transmission. Phone line noise is one of the most common causes. The "RTP" response is a valid response according to the T.30 specification (the standard for Fax machine communications).

The "MCF" response expected by the DEX 6000 is a message confirmation response. This response is sent if the AppleFax Modem receives clean data from the phone line.

It appears that the DEX 6000 is sending a packet of information that is being corrupted by the phone lines. In response to the corrupted data, the AppleFax Modem is sending a request for retraining, which seems to be ignored by the DEX 6000. The AppleFax Modem continues to wait for the retraining that it has requested. The DEX 6000 apparently does not understand the "RTP" message, considers it an invalid response, and returns an error code to the DEX user.

Published Date: Feb 18, 2012

LocalTalk PC: Background Printing on AppleShare Not Supported

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A user has an AppleShare File Server and an MS-DOS machine using a LocalTalk PC Card. If he prints a file on LocalTalk (not on the server) in the background and, at the same time, tries to copy a file from the server to the MS-DOS computer, it bombs. He can do these separately, but not at the same time. Can you explain?

DISCUSSION ----------

We don't know how background printing is being attempted in this situation. The AppleShare PC or LocalTalk PC environment does not provide a method for background printing. If the customer is attempting the background operations via some MS-DOS utility, the customer is exploring an untested and unsupported environment.

For MS-DOS, the only solution Apple provides is print spooling, which is accomplished using the AppleShare Print Server. Background printing is not provided.

The difference is that print spooling is provided by a network-accessible device that can be used by several network users. Background printing is a process that takes place on an individual's workstation and is accessible by that workstation's user only.

Published Date: Feb 18, 2012

PC Terminal Emulation Over LocalTalk to VAX

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A customer has several AppleTalk network combinations (Macintoshes and PCs). They want to do terminal emulation on the PCs over the LocalTalk PC Card to a VAX. Do you know of any products that might handle this?

DISCUSSION ----------

TCP/Connect by InterCon supports MS-DOS machines attached to LocalTalk via any of the available cards and includes VT220 emulation. They also have a TCP/Connect for the Macintosh.

For more details, search the Tech Info Library under "InterCon Corp"

Published Date: Feb 18, 2012

MacAPPC: VTAM and NCP Supported

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This article discusses APPC support in particular versions of VTAM and NCP.

DISCUSSION ----------

Native PU 2.1 support is provided in VTAM Version 3 Release 2, NCP Version 4 Release 3, and NCP Version 5 Release 2.

One can, however, establish APPC connectivity under earlier releases of both products using a PU type 2 definition with many restrictions on the types of configurations supported.

These restrictions are:

1) Using a PU type 2 definition, the APPC node is relegated to the role of a SECONDARY logical unit. The APPC node defined as a PU type 2 CANNOT be a primary or negotiate roles.

2) The APPC node defined with a PU type 2 definition can have only ONE session with an application in the same subarea network. Parallel sessions and multiple sessions are NOT supported with a PU type 2 definition.

Therefore, you can run a MacAPPC node defined as a PU type 2 with earlier releases of VTAM and NCP with SINGLE SESSION, SECONDARY logical unit support only.

Please note that this restriction is NOT unique to MacAPPC only. All PU type 2.1 products (including System 3X and the IBM PC) share the same restrictions on sessions and logical unit roles in the VTAM/NCP environment.

Published Date: Feb 18, 2012

Lisa: Daisy Wheel Printer Settings

This article has been archived and is no longer updated by Apple.
Switch 1: 11100111
Switch 2: 10010000
Numbered 8 to 1; 1 = On, 0 = Off
Space Parity
Local
EXT/ACK Handshaking
9600 Baud
Paper out on
Duplex & Auto CR/LF off
Bi directional print on
ASCII Standard

Use a "Modem Eliminator" cable, part number 590-0029, in series with the interface cable.
Published Date: Feb 18, 2012

CD-ROM Review Is No Longer Published

This article has been archived and is no longer updated by Apple.

TOPIC ----------

IDG Communications is still in business. However, "CD-ROM Review" has discontinued publication. All of their subscribers were notified.

DISCUSSION ----------

CD-ROM Review, a monthly magazine, published CD-ROM lists each month. Recently, these lists were theme-based; that is, Government, business, under $500, Macintosh, and so on. This magazine has been one of the better sources of CD-ROM availability.

Published Date: Feb 18, 2012

LaserWriter Plus: 3.0 ROM, PostScript 47 Upgrade Available

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there a version 3.0 ROM for the LaserWriter Plus?

DISCUSSION ----------

Yes, version 3.0 of the LaserWriter Plus ROMs contains version 47 of PostScript. To determine if a LaserWriter Plus has 3.0 ROMs, look on the test page at the line graph. The version number of the ROMs is at the bottom left corner of the chart.

If a LaserWriter or LaserWriter Plus does not have version 3.0 ROMs (PostScript version 47), you can upgrade the printers with the LaserWriter Plus Kit (M0191).

Published Date: Feb 18, 2012

Two-Page Monochrome and Portrait Display Video Cards: Pinouts

Article Change History

09/28/92 - REVIEWED
* For technical accuracy.

What are the pinouts of the interface cards for the Two-Page Monochrome Monitor and the Portrait Display?

This article has been archived and is no longer updated by Apple.
Actually, the Two-Page Monochrome Monitor Video Card and the Portrait Display Video Card are the same cards with different clock crystals and ROMs. Here are the pinouts:

1 Ground
2 Vertical Sync
3 Sense Line 2
4 Ground
5 Composite Sync
6 Horizontal Sync
7 Ground
8 Sense Line 1
9 Sense Line 0
10 Ground

Published Date: Feb 18, 2012

Macintosh II Video Card: Problem Recognizing Other Video Cards

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I have a Macintosh II 8-Bit Video Card and one Macintosh II Portrait Display Video Card in a Macintosh IIcx. I've transported the Macintosh back and forth between two locations, one with an RGB monitor and the other with a Portrait Display monitor.

If the Portrait Display monitor is not connected, the Control Panel has no monitor selection and the Macintosh transfers all open windows and startup information (menu bar) to the RGB monitor. (This must be a new feature of the Portrait Display board only.) When I connect the Portrait Display and no RGB monitor, all of the information is output to the RGB card, and I cannot revert via the Control Panel.

It seems that only the Portrait Display Video Card senses if a monitor is connected. Can I make the RGB monitor disappear in the same way as the Portrait Display without pulling the card each time I transfer the Macintosh (my current strategy)?

Is this a new feature and will all new monitor boards have it?

DISCUSSION ----------

Yes, this is a new feature that has been included in the Macintosh II Portrait Display Video Card and the Two-Page Monochrome Monitor Video Card. This feature will most likely be included in all of our future video cards.

There is no way to modify the Macintosh II 1-Bit Video Card, 4-Bit Video Card, or 8-Bit Video Card to behave in this manner.

Published Date: Feb 18, 2012

Macintosh: Performance in High-RFI Environments

A user wants to put a Macintosh within three meters of medical equipment that generates sound waves up to 27.12 MHz. Can a Macintosh and an peripheral, like an ImageWriter or LaserWriter, work under these conditions without malfunctioning within a specified period?

The device is a CURAPULS 419; it generates HF signals as follows:

Generator frequency: 27.12 MHz
Intensity (continuous): HF max 400W
(pulsing): HF max 1000W
Pulse rate: about 400 microseconds
Pulse modulation: adjustable in 10 steps from 15-200 Hz

This article has been archived and is no longer updated by Apple.
The frequency and wattage of the CURAPULS are not unlike that of high-frequency radio waves output by ham radios. Ham radio high-frequency waves are approximately 15 meters peak-to-peak at 21 MHz, or 10 meters at 28 MHz; whereas, the CURAPULS is 12 meters peak-to-peak at 27 MHz (27.12 MHz). Typical ham radio power output is 2,000 watts PEP (peak envelope power) and 1,000 watts DC (direct current), while the CARAPULS's appears to be 1,000 watts PEP and 400 watts DC.

Many ham operators are also computer enthusiasts and successfully use both electronic devices simultaneously. The key to the CURAPULS's impact on the Macintosh is how the radio waves are radiated. That is, will waves radiate from a roof antenna, or (because it is a medical instrument) contained within a shielded space or focused wand? If the waves are directly focused at the Macintosh with a high volts-per-meter intensity, you may have difficulties.

Less hazardous symptoms of the high-frequency waves include distortion of the screen. Potentially more damaging symptoms include interference with reading and writing to disk drives.

Good shielding and grounding of the Macintosh and peripherals will reduce the effects of any symptoms. For instance, Macintoshes with internal drives are less susceptible to radio interference than external drives. Internal hard disks are less susceptible than external hard disks, which tend to have poorer shielding. External devices also have their own power cords, thereby making for a greater chance of ground loop interference.

Because Macintoshes aren't tested for susceptibility to external RFI, we cannot definitively state the amount of interference a Macintosh tolerates before problems may occur. Given the number of ham radio operators using computers near their antennas, and the similarity of the ham radio waves and the CURAPULS radio waves, it is not likely that there will be any major problems using the Macintosh while using the CURAPULS. However, be cautious; experiment with the location of the equipment using nonessential data. Such experiments might include a high number of read/write cycles to disks, followed by verification of data integrity.

Published Date: Feb 18, 2012

A/UX: CD-ROM Installation Issue

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

The README file on the A/UX CD-ROM installation floppy disc explains how to create space in the root file system. It says to remove the hard disk images of the manual pages and use the usr/catman files on the CD-ROM-based root&usr file system.

The last step is supposed to create a symbolic link, but the command contains an error that links the two catman directories together rather than symbolically providing the a_man and u_man files to the root file system.

The command as stated in README file:

ln -s /mnt/usr/catman /usr/catman

should be:

ln -s /mnt/usr/catman/* /usr/catman

Because of the permanent nature of the recommended changes, I strongly believe that the instructions should have the user create a dedicated mount point rather than using the /mnt mount point.

I believe that all Macintosh CD-ROMs should be mastered with the desktop icon closed as they are mounted. The A/UX 1.1 CD-ROM violates that common courtesy, and I hope the next version fixes that issue.

This article has been archived and is no longer updated by Apple.
Yes, you're right. It must use "ln -s /mnt/usr/catman/* /usr/catman" or the "man" will fail.

According to the previous remove commands in the README instruction, after finishing the 'rm -r /usr/catman/a_man' and the 'rm -r /usr/catman/u_man', the /usr/catman still remains a directory. Anything symbolically linked to the EXISTING directory will be created under that directory. Under this circumstance, the command:

ln -s /mnt/usr/catman /usr/catman

creates a symbolic link named "catman" under the /usr/catman directory.

Another comment on the 'ln -s' command: if the 'usr/catman' does not exist before using 'ln -s ...', the "/usr/catman" is created as a symbolic link to the /mnt/usr/catman directory.

Published Date: Feb 18, 2012

TA40189_Lisa_Daisy_Wheel_Printer_Error_Numbers_(TIL00420).pdf

Lisa: Daisy Wheel Printer Error Numbers

This article has been archived and is no longer updated by Apple.

Error Meaning

1199 DMP selected in Format for Printer
648 No modem eliminator cable or Preference not set properly
3056 Generic printer problem - check cables, paper, ribbon, etc.

Published Date: Feb 18, 2012

TCP/IP Packets: How AppleTalk Encapsulation Works

TCP/IP packets are encapsulated in an AppleTalk packet for transmission over an AppleTalk network (for example, LocalTalk). When a router ships this encapsulated packet to the recipient Macintosh, how does the Macintosh know how to strip off the TCP/IP packet surrounding the data?

The Macintosh must know how to strip off AppleTalk packet information to get at the data, but what happens to the TCP/IP packet stored within that? If something, like MacTCP, is installed, this could take care of it. However, how does the GatorBox manage this, because the Macintosh can use NFS servers as AFP servers with no additional software other than the AppleShare workstation drivers installed?
This article has been archived and is no longer updated by Apple.
As you stated, when the Macintosh receives TCP/IP packets encapsulated within AppleTalk packets, two steps are taken. The first is the stripping of the AppleTalk information and the passing of the enclosed data to the appropriate communications application or driver.

The second step is the interpretation of the TCP/IP packets by the receiving program. If you are using MacTCP, it handles the TCP/IP information in the same way that the AppleTalk drivers handle the AppleTalk information. If you are using an application that is not using MacTCP, like NCSA Telnet, then the application is responsible for providing the same functionality as that provided by MacTCP.

A GatorBox or similar device acts as a higher-level gateway. It translates NFS (Network File System) protocols into AFP (AppleTalk Filing Protocol) and presents it to a Macintosh. The Macintosh "sees" an AppleShare server and sends AFP requests to that server. These AFP requests are translated into NFS requests by the GatorBox software and are then sent to the host.
Published Date: Feb 18, 2012

AppleTalk: FastPath & GatorBox are Protocol Converter & Router

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is it true that a box, like the GatorBox and FastPath, can act in two modes, both operating at the same time if necessary?

DISCUSSION ----------

It is true that a FastPath (and a GatorBox) can be both a protocol converter and an AppleTalk router.

These modes are as a simple router and as a gateway. As a simple router, it takes AppleTalk packets from one physical network (like LocalTalk) and routes them to another physical network (like EtherTalk). As a gateway, it takes data from a TCP/IP network and converts it to AppleTalk protocols (encapsulating the TCP/IP packet in an AppleTalk packet) at the same time as sending from one physical network to another in the same manner as the router aspect.

A vocabulary note: A gateway performs protocol conversion, like AppleTalk to TCP/IP. A bridge connects two physical networks as one logical network. In AppleTalk terms, this would mean that both physical networks would have the same network number. A router connects two physical networks and maintains them as separate logical networks. In AppleTalk terms, this means that each network has different network numbers although they may or may not be in the same zone.

Published Date: Feb 18, 2012

Apple IIGS: Error 911 Is Too Many Sync Errors on ADB

This article has been archived and is no longer updated by Apple.

TOPIC ----------

On an Apple IIGS with the 0077B ROM installed using GS/OS, I occasionally run into a Fatal System Error ID=911. In one case, it happens when the I switch from MS-DOS (Applied Engineering, PC Transporter) to ProDOS. In another case, it occurs after shutting down the Control Panel. Running the Cortland Diagnostics does not locate the problem. Error ID=911 has to do with the Apple Desktop Bus.

DISCUSSION ----------

ID=911 means that too many sync errors occurred on the Desktop Bus. This problem has been identified but not fixed in currently produced logic boards. It has, however, been targeted for inclusion in future revisions.

Published Date: Feb 18, 2012

LaserWriter IINTX: Attached Hard Disk Can Slow Printing Speed

I have heard from Adobe Technical Support that adding a hard disk to a LaserWriter IINTX does NOT increase printing speed. Do we have any general or specific speed comparisons on the hard disk and LaserWriter IINTX configuration?
This article has been archived and is no longer updated by Apple.
Technically, adding a hard disk to a LaserWriter IINTX does slow down printing. This is because when searching the font list (ROM and disk-based), the system searches the entire list (even though the font may be in ROM) and sends one packet for each and every font. Further, the search continues through the list even after the desired font is found. Engineering is aware of this and is planning to fix it in a future revision.

When printing using a font not contained in the LaserWriter II ROM, the fastest printing is achieved once the font is held in the LaserWriter II RAM. Fonts downloaded from the System Folder result in the slowest printing. Printing with fonts stored on the hard disk falls somewhere in between.

Depending on the context of your discussions with Adobe Technical Support, their statements could be accurate. Most of the information we gathered in previous discussion.
Published Date: Feb 18, 2012

AppleFax Modem: Power Supply Pinouts

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I need the pinouts on the back of the AppleFax Modem for the power supply cable.

DISCUSSION ----------

The pin assignments in the cable:

Pin	Function
1	+12 volts
2	Earth Ground
3	Return
4	+12 volts
5	Return
6	-12 volts
7	+5 volts

The end view of the pin layout in the cable's connector looks like:

7 x x 6
3 x x 1
5 x x 4
x
2

Published Date: Feb 18, 2012

IBM 319X: Terminal Product Line Overview

This article has been archived and is no longer updated by Apple.

Throughout 1987 and 1988, IBM introduced a number of new display terminals. These new devices are functional equivalents to the 3X7X coaxial and 525X twin-axial devices. In June, 1988, IBM added to it's line of ASCII Asynchronous terminals.

There are some significant new features with the product line over the older 327X and 317X devices. Enhancements include color support on all models (previously restricted to mod 2 and 3 devices) and DFT support with 3194's.

The new graphics workstation supports a mouse. The recently discontinued light pen feature is back on selected mod 2 and 3 devices.

The new devices reduce the required "footprint" of 328X devices by about 50%. Newer electronics speed the processing of the displays, making the devices slightly faster that earlier products. These redesigns allow for printer buffering, pass through, and some other features (on selected models) which have been popular on 327X-compatible devices and ASCII terminals offered by third parties for many years.

IBM claims to have reduced the number of keyboard options from over 200 to three basic models. This is not quite true, as data entry and APL keyboards are still available. The new keyboards are waterproof. 319X series devices feature "auto dim screen savers" to reduce the amount of screen burn-in and and increase CRT life

The 319X line (except the 3193) also features built-in baluns. Baluns are used with a special IBM cable that has a keyed coaxial connector at one end and an RJ11 at the other. The following is a summary of the devices and features now offered by IBM.

The older 327X and 317X devices are no longer on IBM's price list. However, the 3290 gas-plasma display is still available.

The 319X 3270 replacements will operate on 3274, 3174 controllers, and 937X direct coaxial attachments except as noted in the special features section.

The 3196 and 3197 operate on System 3X or AS/400 direct attached twin-ax or the 5251-12 (with restrictions) and 5294 remote controllers, except as noted in the special features section.

Published Date: Feb 18, 2012

IBM 3151 ASCII Display Station Family

This article has been archived and is no longer updated by Apple.

This product line was introduced in June, 1988. These ASCII displays augment the already existing line of 316X ASCII displays. The model 310 and 410 feature plug in cartridges to implement optional terminal emulators and features, such as RS422A. 3708 enhancement mode allows pass through printing as a local or system printer to a display attached ASCII printer by seizing two LU's from the 3708 remote protocol converter. Three models are offered. The following table summarizes the features of each model.

	3151-101	3151-310	3151-410
Phosphor	Green	Green	Green or Amber
Keyboards	84 key	102 key (PC)	102 key (PC)
Screen Size	14 inch	14 inch	14 inch
Printer Port	yes	yes	yes
Screen Format	80x24	24x80	24x80 80x25 (3270 status) 28x80 (opt) 24x132 25x132 (3270 status) 28x132
	24x80	25x80 (3270 status)	25x80 (3270 status) 28x80 (opt) 24x132 25x132 (3270 status) 28x132
	24x132		
Connection Interface	RS232C	RS232C	RS232C RS422A (opt)
		RS422A (opt)	
Communications	50 to 38.4KBPS char/block/echo	50 to 38.4KBPS char/block/echo	50 to 38.4KBPS char/block/echo
Aux I/F	RS232C dedicated	RS232C daisy chain	RS232C daisy chain
Base emulators			
TeleVideo	910-925e	910-925e	910-925e
Lear Siegler	ADM3a/5	ADM3a/5	ADM3a/5
ADDS	Viewpoint A2	Viewpoint A2	Viewpoint A2
Hazeltine	1500	1500	1500
IBM		3101	3101
Plug-in cartridge emulators *		WYSE 50/50 DEC VT220/100/52 3708 enhance mode	WYSE 50/50 DEC VT220/100/52 3708 enhance mode
Base Price	$399 (1 year warr) $499 (3 year warr)	$525 (1 year warr) $555 (3 year warr)	$525 (1 year warr) $555 (3 year warr)

* Plug in cartridges range from $25.00 to $70.00 each.

Published Date: Feb 18, 2012

IBM 3191 Displays

This article has been archived and is no longer updated by Apple.

The IBM 3191 displays are functional replacements to the 3178 and 3278 class of devices. There are seventeen different models. Here are some of the highlights:

Displays and Phosphor for 3191 Displays

A series models feature 12-inch green phosphor screens and support mod 2 (24x80 with 1 status line) formats.

B series models feature 12-inch amber-gold phosphor screens and support mod 2 formats.

D series models have 14-inch green phosphor screens and support mod 2 and 3 (32x80 with 1 status line) formats.

E series models feature 14-inch amber-gold screens and support mod 2 and 3 formats.

L series displays have green phosphor 14-inch screens and support mod 2 and 3 formats.

3191's do not support graphics.

Keyboards

The three standard keyboards are offered. The 102 key keyboard is a PC keyboard with 24 function keys. The 104 key is a full, typewriter keyboard with 24 function keys and no numeric pad. The 122 is a full, typewriter keyboard with 24 function keys and a numeric pad. A fourth keyboard (Data Entry configuration based on a 104 key keyboard) is offered on the A40 and B40 display stations. Each keyboard is bundled with a display, so the second digit of the model number indicates which keyboard is in the bundle. The keyboard is waterproof and can be modified in setup mode. The keycaps can be removed and replaced for specific applications.

Special Features

The L series features a light pen. The D, E, and L series devices support an async "personal printer port" for local screen prints directly from the display. 3191's have internal baluns and use a special IBM cable with a special, keyed connector with a coaxial attachment at one end and an RJ11 on the other.

Pricing

The 3191 series devices are priced as follows (list price as of 8/17/88)
One- and three-year warranties are offered with all 3191's.

	1 yr warr	3 yr warr
A series	$1235	$1355
B series	$1290	$1355
D series	$1490	$1595
E series	$1490	$1595
L series	$1880	$2160

Internal Balun special cable $15.00

Published Date: Feb 18, 2012

IBM 3192 Displays

This article has been archived and is no longer updated by Apple.

The IBM 3192 displays are functional replacements for the 3279 and 3179 series display stations. There are 19 different models. Here are some of the highlights:

Displays and Phosphors

The 3192 C series has 14-inch color screens and supports mod 2 and 3 formats. The C series does not support graphics.

The D series features 15-inch screens with green phosphor and is available in mod 2, 3, 4 (43x80 with one status line), and 5 (27x132 and one status line) formats. The D series does not support graphics.

The F series features 14-inch color screens and supports mod 2, 3, 4, and 5 formats. The F series does not support graphics.

The G series features 14-inch color screens and is available in mod 2 and 3 formats. The G series supports graphics and replaces the 3279-S3G, 3179-G10, and G20 graphics display stations. These devices require GDDM version 1 release 4 or GDDM version 2 and the Presentation Graphics Feature (PGF) on the mainframe to operate in graphics mode.

The L series features 14-inch color screens and supports mod 2 and 3 formats. The L series features a light pen. The L series does not support graphics.

The W series features 15-inch screens with Black characters on a White background. This feature can be reversed (for IBM purists). The W series supports mod 2, 3, 4, and 5 formats. The W series does not support graphics.

Keyboards

Three, standard keyboards are offered. The 102 key keyboard is a PC keyboard with 24 function keys. The 104 key is a full typewriter keyboard with 24 function keys and no numeric pad. The 122 is a full typewriter keyboard with 24 function keys and a numeric pad. A fourth APL keyboard is offered for two models in the G series in 104 and 122 key formats. The keyboard is waterproof and can be modified in setup mode. The keycaps can be removed and replaced for specific applications. Each keyboard is bundled with a display. The second digit of the model number indicates which keyboard is in the bundle.

Special Features

All 3192 displays support the printer port feature. All 3192 C and L series devices support the Record/Play/Pause feature. This means the user can store up to 1500 characters and "play back" or modify these characters. The 3192 C and L series also support the "screen trim" feature. This lets you use the cursor to "box in" what will be printed on your personal printer. The 3192 C series is functionally compatible with the 3279 S2A, S2B, S2X, and the 3179-1. The G series supports the IBM Color Jetprinter (3852 model 2) off the printer port. The G series also supports the IBM 5277 Mouse, the IBM 6180-2, 6184, 7371, and 7372 Color Plotters via the IBM 3979 Expansion Unit. The G series displays cannot be attached to 3174 81R or 82R remote controllers.

3192s have internal baluns and use a special IBM cable * with a special keyed connector with a coaxial attachment at one end and an RJ11 on the other.

Pricing

The 3192 series devices are priced as follows (list price as of 8/17/88)
One and three year warranties are offered with all 3192's.

	1 year warr	3 year warr
C series	$1985	$2140
D series	$1880	$1985
F series	$2195	$2350
G series	$2925	$3135
L series	$2405	$2745
W series	$2090	$2245

* Internal Balun special cable is $15.00

Published Date: Feb 18, 2012

IBM 3193 Displays

This article has been archived and is no longer updated by Apple.

The 3193's are "image processing" devices. IBM "image processing" devices use predefined (fixed) graphics images. These images are treated like character sets and are called "graphics symbol sets." The 3193 product line is used on 370-architecture systems with specialized applications.

Displays and Phosphors

The 3193 features black on white displays with 15-inch screens. They support mod 2, 3, and 4 formats plus a 48X80 image-processing format. The 3193 screen is designed as a full-page display.

Keyboards

The 3193 supports the 102 and 122 key keyboards. The keyboard is waterproof, and can be modified in setup mode. The keycaps can be removed and replaced for specific applications.

Special Features

The 3193 does not support the printer port. The 3193's can support attachment of IBM 3117 and 3118 scanners.

Pricing

The 3193 series devices are priced as follows (list price as of 8/17/88) A one-year warranty is offered with the 3193.

Model 010 $2610
Model 020 $2610

Published Date: Feb 18, 2012

IBM 3194 "Advanced Function" Displays

This article has been archived and is no longer updated by Apple.

The 3194 is the most powerful of the nine models in the new display station product line. All 3194 display stations are capable of running in CUT or DFT mode. This represents a significant enhancement to the IBM display-station, product line. In the past, DFT mode was restricted to the 3290 gas-plasma display.

The 3194 is almost a PC system with an 8 mhz 80186 microprocessor, 640K of memory and a 720KB 3.5 inch floppy disk drive as standard features. However, there are many incompatibilities between a 3194 and an MS/DOS or OS/2 system. Please read the "Special Features" section before jumping to any conclusions about this product. It's quite sophisticated, but it's not an IBM PC.

Displays

The C series features a 12-inch color screen and supports mod 2 and 3 formats. The C series does not support graphics.

The D series features 15-inch green phosphor screens and supports mod 2, 3, 4, and 5 formats. The D series does not support graphics.

The H series features 14-inch color screens and supports mod 2, 3, 4, and 5 formats. The H series does not support graphics.

Keyboards

The three standard keyboards are offered. The 102 key keyboard is a PC keyboard with 24 function keys. The 104 key is a full, typewriter keyboard with 24 function keys and no numeric pad. The 122 is a full, typewriter keyboard with 24 function keys and a numeric pad. The keyboard is waterproof and can be modified in setup mode. The keycaps can be removed and replaced for specific applications. Each keyboard is bundled with a display, so the second digit of the model number indicates which keyboard is in the bundle.

Special Features

In addition to the standard 640K of memory, you can add a memory upgrade of an additional 192K. A 2MB 3.5 inch floppy drive is also available.

DFT support gives the user the capability of having five host sessions active at once. Four of these sessions can be 3270. With an optional async interface, one of these sessions can be with an ASCII/Async host. The Async feature uses VT100 terminal emulation. The device also supports two notepads and one local "utility session", used to customize the display, manage the diskettes, initiate file transfers, and do maintenance functions like traces, dumps, and patches. The 3194 does not do "windows" in the Macintosh sense, but instead toggles (using a "jump" key) from session to session and provides a "screen split" capability.

Another significant feature is the implementation of an open 3270 API interface on the 3194 products in DFT mode. This allows custom programming of the device allowing multiple host/multiple session capabilities transparent to the end user through application specific API programming (using IBM's HLLAPI). This lets the programmer create "composite" screens from multiple sessions to one or more host applications.

The API applications MUST be downloaded from the host. You cannot store these on the local floppy disk. Development of these custom applications can be done on an IBM PC with your favorite compiler using HLLAPI

extensions. This program is then compiled on the PC and uploaded to the host, which distributes it to the devices. A "Device Function Modifier" package is used to develop applications on the 3194 (if you don't want to use a PC). The applications are uploaded to the host for distribution to target 3194's.

The disk drive also lets you use DFT implementations on remote controllers which do not support downline loading of microcode (like the 3174-81R or 82R).

The 3194's operating system has a restricted user "shell." The 3194 does not run MS-DOS programs. It is intended for use in accounts where some local intelligence (for custom API programming) is desirable, but PC implementations are not. This puts control of the device firmly in the hands of MIS management, rather than in those of the end user.

The disk drive format is incompatible with OS/2 and MS/DOS storage formats, so forget about reading a 3194 disk on an MS/DOS or OS/2 compatible disk drive.

The device supports file transfers to IBM IND$FILE packages under MVS/TSO, VM/CMS, and CICS version 1 release 6 mod 1. You can use this file transfer capability to enhance the API programming and API functionality of the workstations. As the disk storage formats are incompatible with the MS/DOS or OS/2 product line, you cannot share this data with a MS/DOS or OS/2 compatible disk drive. The local Utility session capability lets the user initiate file transfers with IND$FILE mainframes. File transfers may also be initiated by a custom API program.

All 3194 displays support the printer-port feature. All 3194's support the Record/Play/Pause feature, through which the user can store up to 1500 characters and "play back" or modify these characters. 3194's have internal baluns and use a special IBM cable with a special keyed connector with a co-axial attachment at one end and an RJ11 on the other.

Pricing

The 3194 series devices are priced as follows (list price as of 8/17/88)
One-year warranties are offered with all 3194's.

C series $2495-$2695
D series $2195-$2395
H series $2895-$3095

Memory Upgrade $325
ASCII feature $325
Internal Balun special cable $15.00

Published Date: Feb 18, 2012

IBM 3196 and 3197 Displays

This article has been archived and is no longer updated by Apple.

The 3196 and 3197 displays are functional replacements for the 5251 and 5292 product line. These are twin-ax devices, intended for use on the System 3X and AS/400 product lines. There are four models in the 3196 line and seven models in the 3197 line. These devices do not display graphics.

Displays and Phosphor

The 3196 A series features 12-inch green phosphor screens, in 24x80 (with one status line) format. The 3196 B series features 12-inch amber-gold screens in the 24x80 (with one status line) format.

The 3197 C series features 14-inch color screens and supports 24x80 (with one status line) formats. The 3197 D series features 15-inch green phosphor screens and supports 24x80 (with one status line) and 27x132 (with one status line) formats. The 3197 W series features 15-inch black on white displays in 24x80 (with one status line) and 27x132 (with one status line) formats.

Keyboards

Both product lines support the 102 PC keyboard with 24 function keys and the 122 key keyboard with 24 function keys and a numeric pad. A data entry keyboard, based on the 122 key offering, is available on the 3197 D40. The keyboards are waterproof and have System 3X-oriented key caps.

Special Features

Both product lines support the Record/Play/Pause feature, through which the user to store up to 1500 characters and "play back" or modify these characters. The printer-port feature is available on the 3197 product line. The 3197 C series supports dual sessions, applications designed for the 5292 model 1 and 3179 model 2, and system printing through the printer port. All these workstations attach directly to a System 3X or AS/400. Remote attachment to a 5251-12 is supported only for 24x80 screen sizes. The 5251-12 does not support color. Remote attachment of 3196 models A20 and B20 are not supported on either remote controller. The remainder of the displays (including color) can attach to the 5294 remote controller.

Pricing

The 3196 and 3197 series devices are priced as follows (list price as of 8/17/88)

	1-yr warr	3-yr warr
A series	$1270	$1355
B series	$1270	$1355
C series	$1895	$2140
D series	$1795	$1985
W series	$2090	$2245

Published Date: Feb 18, 2012

Lisa: Error Numbers

This article has been archived and is no longer updated by Apple.
The most common error numbers are described both in the Lisa 1 Owner's Guide (Appendix 3, p. I7 and Appendix 6, p. I25), and in the Lisa 2 Owner's Guide (Appendix 3, p. G59, and on pp. C49-C58). These error messages usually simply indicate a general problem.

Other more specific error messages are located in the Workshop manual. There are three types of error numbers that can be displayed:

1. A single number: xxx

This may be located in the Workshop manual. The number means the error occured in code located in the Filer. The only exception is if the number starts with a 6 (e.g., 648), in which case the error is related to printing.

2. Two numbers: xxx/xxx

The first number refers to a location in the lower levels of the operating system; the second number is the error code. Sometimes these numbers are reversed, so it's best to look up both in the Workshop manual.

3. Three numbers: xxx/yyy/zzz

xxx: Indicates the system program that died.
yyy: The error number indicating why it died.
zzz: The actual code address where the error occured.

If you get one of these three-number codes and the first one happens to be a 1033, the second number indicates the problem:

Error	Meaning	Solution
7	I/O problem	reinstall software
10	Parity Error	replace memory
21, 22	program error	none
26, 27	bad source, bad	memory

Here are some other errors that occur during startup. These error numbers in 10700 range are usually accompanied by a crossed out Lisa. Following is a list of these errors:

Error	Meaning
10725	Damaged file system or file contents
10726	Profile error, problem with boot tracks
10727	Memory Error
10728	Boot file is missing or damaged
10729	"
10730	"
10731	"
10732	"
10735	"
10736	"
10737	"

If you encounter one of the above errors:

1. Reinstall the startup software. Refer to p. D50 in the Lisa 1 Owner's Guide, p. C24 in the Lisa 2 Owner's Guide or p. 160 in the Lisa (7/7) Office System manual.

2. If step 1 doesn't work, repair the hard disk, then repeat step 1.

3. If step 2 doesn't work, you may have bad Office System diskettes. Obtain another set, then try steps 1 and 2 again.

4. If steps 1 thru 3 haven't worked, you'll need to reload the software. First, though, erase the information currently stored on your hard disk.

To save documents store on your hard disk:

1. Connect your Profile, if you're using one, to another Lisa and save any files if you can. If you're using a Lisa 2/10, start up your system with another ProFile, then save your documents to it.

2. Then reinstall your software on the hard disk, erasing the present software.

Published Date: Feb 18, 2012

Lisa: Dot Matrix Printer -- Error Numbers

This article has been archived and is no longer updated by Apple.

Error Meaning

0 Not configured in Preferences
1199 2 DMP's configured in Preferences
1222 More than 1 DMP in Preferences.
1885 Profile timeout error
648 Parallel DMP on Serial A or B
3056 Generic printer problem - check cables, paper, ribbon, etc.

Published Date: Feb 18, 2012

HyperCard: How To Find Character Number in a Field

How can I return the "number" of the first character of a line in a HyperCard field?

Since each TextEdit Record contains an array containing the number of the first character of the line, I'd like to access that information.

This article has been archived and is no longer updated by Apple.
You can find the number of the first character of line x in a HyperCard field by using the following script:

```
if x = 1
then
put 1 into charNum
else
put (the length of line 1 to (x-1) of fld test) + 1 into charNum
end if
```

The only problem with the script is that HyperCard considers a line as a line only if it is terminated with a carriage return. Line endings that result from word-wrap in a field are not counted as lines.

For example, a field set to display eight characters wide is filled with 20,000 characters without a carriage return. The display shows approximately x lines, but HyperCard considers the field to only have one line.

Since HyperCard returns only a null-terminated string of characters as field contents, you cannot use an XCMD to retrieve the line-starts information.

Published Date: Feb 18, 2012

AppleShare Print Server: Extra Line Feeds on ImageWriter II

I'm printing to an ImageWriter II with AppleShare Print Server. With spooling and the sheetfeeder attached, I get additional line feeds at the top of the page. If I bypass spooling, it prints fine.

This article has been archived and is no longer updated by Apple.

With AppleShare Print Server versions 2.0 and 3.0, the print server supplied incorrect information to the client about the printer configuration. This caused the paper to advance before the start of the page and again at the end of the page.

AppleShare Print Server version 3.0.1 fixes the problem.

Published Date: Feb 18, 2012

HyperCard: Problem With Dial Command and Apple Personal Modems

This article has been archived and is no longer updated by Apple.

TOPIC ---

Where can I find the documentation for driving (play) telephone tones from HyperCard?

The application that I am working on requires talking to an audio response unit at a bank that automates bill paying. The remote machine talks using digitized audio requesting account code, password, and so on, expecting the user to type in appropriate responses from the telephone keypad. I want to automate this in HyperCard.

My Apple Personal Modem and the dial command appear to have limitations (perhaps just limited documentation) that prevent me from doing what's needed -- namely, to order the modem to dial a number with a ";" appended so that it remains off hook when a voice answers. Instead, the dial command appears to strip off this character.

Can the modem be used this way?

DISCUSSION ----------

Certain Apple Personal Modems, those with a serial numbers beginning with a C621301 to C745577, do not work properly with the HyperDialer stack.

The problem exists because one of Apple's vendors incorrectly substituted 2.3-ohm resistors for 4.7-ohm resistors, which altered some characteristics of the modem. The resistors are surface-mount type, numbered R106-107, with the following numbers on the resistors: 4R7 (incorrect) or 2R3 (correct).

Try to dial using a modem outside the range specified above. If the problem is not present in that situation, the original modem can be fixed by any Apple service provider.

Published Date: Feb 18, 2012

Lisa: Dot Matrix Printer -- Printing Landscape

This article has been archived and is no longer updated by Apple.

Printing landscape, normal resolution (low resolution) prints any of your documents 1/3 smaller than it appears on your screen.

Published Date: Feb 18, 2012

AppleShare: Why Macintosh Can‘t Launch From Server

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Why is it possible to boot from an AppleShare server with Apple IIGS, when it has never been possible to do that with the Macintosh?

DISCUSSION ----------

The design goals for the Macintosh are different from the design goals for the Apple IIGS. The size of a System file on the Macintosh can easily get to be very large; thus, it would take a long time to launch a large System file from an AppleShare server.

Also, since the Apple IIGS was intended for different purposes, being able to launch from the server was considered vital. This is not the case with Macintosh.

Because of the size of a Macintosh System file versus the size of an Apple IIGS or Apple IIe System file, it would take too long to launch a Macintosh from an AppleShare server.

Published Date: Feb 18, 2012

Source for Anti-Glare Screens

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I need an anti-glare filter for an AppleColor 13" RGB monitor. Where can I find it?

DISCUSSION ----------

Kensington Microware sells anti-glare filters for a variety of monitors, including the AppleColor 13" RGB monitor.

For more information, search under: "Kensington"

Published Date: Feb 18, 2012

AppleShare: AFP User Authentication Methods

This article has been archived and is no longer updated by Apple.

TOPIC ----------

In a test I did using Peek over the AppleShare network, I was able to identify both my name and password. Why?

DISCUSSION ----------

There are three defined user authentication methods available to AFP servers and workstations. The workstation indicates its choice of user authentication method (UAM) by giving the server a UAM string.

1) No user authentication: This method needs no specification. No user name or password information is required in the FPLogin call. The corresponding UAM string is 'No User Authent'. An example of this would be to log on as a guest.

2) Cleartext password: This method uses the UAM string of 'Cleartxt Passwrd'. The password is transmitted as clear text and is not encoded in any way. The User Info part of the FPLogin call consists of the user name followed by the user's password.

3) Random number exchange: This method is best used when a network is not secure from eavesdropping. This method uses the UAM string of 'Randnum Exchange'. If this method is not supported by the AFP server, the workstation will use the Cleartext password UAM. This is the method used by Apple workstation software when accessing an AppleShare file server.

The Apple workstation software uses the FPGetSrvrInfo call to find out what UAMs the server supports. This is done to determine what password UAM should be used. A way to find out what password UAM is supported is to use the AppleShare Chooser item and select a server. Next to the password field you will see either '(Scrambled)' or '(Clear text)'. If you see '(Clear text)', it means that the AFP server does not support the Random number exchange UAM.

Published Date: Feb 18, 2012

AppleCD SC: Cannot Play CD+G, or Other Formats

Can the AppleCD SC be modified to play this format? Can the pinouts on the SCSI be tapped to read the video signal and displayed on a monitor device?
This article has been archived and is no longer updated by Apple.
CD+G players have one laser (standard) that reads the music track and the graphics (G) track, then sends the signals to separate outputs.

The graphics are sent to an attached monitor. From what I have been told, any CD player can perform this task with proper circuitry.

The key to achieving this is the "proper circuitry". This proper circuitry (a chip set somewhat like the audio chip set in the AppleCD SC) must tap the signal coming directly from the laser, not a downstream location such as the SCSI connector. The laser controller must also be aware of the need to scan the graphics tracks as well as audio tracks. Since the circuitry is needed simply to find the graphics tracks, the graphics information is NOT available within the AppleCD SC.

Adding the graphics mode to any CD player requires the initial design to allow that mode. Since the AppleCD SC was designed and manufactured prior to the CD+G format becoming a reality, adding this feature is not possible: a completely new design would be required to support the CD+G disc format.

The same situation faces support for CD+V, CD+MIDI, CD+MIDI+G, CDI, and CD-DVI; each different disc format requires supporting circuitry to decode the appropriate digital information recorded on the disc.

Published Date: Feb 18, 2012

AppleShare PC: NetBIOS Interrupt Problem

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I am currently trying to run an IBM-XT as a gateway/router between the AppleTalk network and MS-DOS on Ethernet.

This is to support an electronic mail system for use in both the DOS and Apple environment.

The standard NetBIOS call is performed through INT 5Ch. When the Ungermann-Bass or Excelan network is started, this software interrupt is enabled as part of the standard Microsoft network software. AppleShare PC steals this interrupt away from the standard Microsoft NetBIOS.

This allows using the predefined network interface with AppleShare PC but does not allow it to coexist with the normal PC LAN software.

DISCUSSION ----------

AppleShare PC uses the standard Microsoft redirector that communicates with other processes via interrupt 5C. If a process similar to AppleShare PC does not properly share this interrupt with the other processes trying to get access to the redirector, the symptoms you describe occur. AppleShare PC has been written to coexist with other "interrupt 5C friendly" programs.

Try running AppleShare PC as the last of your startup programs. It will try to maintain the interrupt for another process that isn't as "friendly" in the use of interrupt 5C. This often works, because AppleShare PC looks at the previously installed vectors for that interrupt; when it gets information not belonging to it, it passes it along the chain to whoever was there before it.

Published Date: Feb 18, 2012

TA40213_LocalTalk_PC_Card_Only_Available_With_AppleShare_PC__(TIL04247).pdf

LocalTalk PC Card: Only Available With AppleShare PC 1.2

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there a way to get the LocalTalk PC card without buying AppleShare PC?

DISCUSSION ----------

As of May 15th, 1989, the LocalTalk PC Card is only available bundled with AppleShare PC v1.2.

The Apple part number of this bundle is B0040LL/A.

Published Date: Feb 18, 2012

Macintosh Computers: Anchor Pad Security Systems

This article has been archived and is no longer updated by Apple.
If you want to secure your Macintosh systems from theft, but want something other than the standard cable around the desk method, consider Anchor Pad International. They sell a variety of security systems for Macintosh computers.

For more information, search the Tech Info Library under "Anchor Pad International".

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TA40215_Lisa_Dot_Matrix_Printer_Printer_Buffer_(TIL00425).pdf

Lisa: Dot Matrix Printer -- Printer Buffer

This article has been archived and is no longer updated by Apple.
An in-line parallel printer buffer that works right out of the box is available from:

Practical Peripherals, Inc.
31245 La Baya Drive
Westlake Village, CA 91362
(213) 991-8200
Published Date: Feb 18, 2012

Macintosh: Desktop Media & the Making of Pencil Test (1 of 2)

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Companies who want to implement computer-generated video systems for their training and PR departments wonder whether to go with the Macintosh open, modular system or with an integrated system.

Some have seen non-Apple solutions that include a single, Amiga-based package with automated, three-dimensional, frame-by-frame generation of NTSC video sequences. The package also handles the problems of hiding window boarders/title bars, genlocking, and so on.

Most have seen the "Pencil Test" video and feel that the quality of this video is acceptable, but they were told from one of the other vendors that Apple invested incredible resources into creating "Pencil Test" and that the process used for "Pencil Test" was very time-consuming and inefficient.

What was the exact process for the creation of "Pencil Test"? How many people worked for how long to produce the video?

DISCUSSION ----------

There are advantages and disadvantages both to the totally integrated systems and the open modular systems. Totally integrated system's advantages include having hardware and software tied directly together and having one place to get support. Disadvantages include being locked into the one company's point of view about how to do things, working only with their tools, and, often, being locked into that company's software. An integrated solution on non-Macintosh systems is most likely pieced together from a variety of third-party products.

Open module systems offer one of the main advantages of Macintosh: integration. With the Macintosh consistency of user interface, different modules from different publishers have the familiar user interface. The best drawing program can be used with the best animation program while using the best video card.

There are standard graphics file formats that are used by animation applications. Also, graphic images can be copied and pasted among most Macintosh applications. For example, if a corporate logo is designed for publishing in Macintosh publishing programs, that logo can be brought into the Macintosh animation programs. The logo also can be used in programs for making 35mm slides or overhead transparencies. You don't need to redraw it or convert from one computer format to another.

Another advantage of having a modular system is the hardware. The current standard for graphics applications is 8 bits of data for each pixel or 256 colors at one time. Many hardware and software companies are now working on 32 bits of data for each pixel or more than 16,000,000 colors on screen at one time. In a modular environment, as technology progresses, the animation environment can progress by updating the portions that are necessary--not changing to something entirely different.

The basis of the MacroMind system is VideoWorks. VideoWorks II and Director has the ability to hide window boarders, title bars, and menu bar. MacroMind has also worked with other graphics companies to establish a standard file format for the exchange of animated sequences. This format is called PICS.

Aegis offers Showcase F/X for doing animated titles.

Certain Macintosh video cards, designed for outputting to NTSC, correctly handle all the issues concerned with placing Macintosh graphics on video tape, like overscan and genlock. The AST video board, the Mass-Micro Color-Space II,

ComputerFriends TV Producer, TrueVision NuVista cards with VIDI/O Box, and RasterOps ColorBoard 64NC all are boards that handle the proper placement of the graphic images for full-screen coverage and genlock.

There are other methods for moving Macintosh graphics to video tape. For example, RGB Technology has RGB/Videolink 400, 1400, and 1400A. These are video scan converters for the RGB output of the Macintosh II. One issue that normally surfaces with the NTSC boards is NTSC flicker. Flicker occurs because a television image is created by scanning alternate lines. When a computer graphic image is only one pixel wide, it is put on the screen only half of the time. This is what causes flicker. Video scan converters eliminate this interlace flicker.

For a Pencil Test-quality production, any system from any vendor requires similar amounts of time and resources to be spent. It is a simple equation in the computer animation business: Quality = Time + Resources.

Amiga animation and Pencil Test do not compare well. The Amiga solution uses 256 colors/8 bits per pixel, while Pencil Test uses 16,800,000 colors or 24 bits per pixel. Doing the shading used in Pencil Test on an Amiga results in a palette of a few main colors with many shades of those few colors. Also, be aware that many of the video products for the Amiga work at a resolution of 320 x 200 pixels. This is a fairly low-resolution graphics when compared to the Macintosh solutions using a minimum of 640 x 480 pixels. Using a product like RGB/Videolink 1400A, it is feasible to use pixel counts as high as can be purchased; that is, 2048 x 1024, 1024 x 1024, and so on.

Of interest, the developers of the top Amiga animation products are in the process of moving their applications to the Macintosh II. Many have completed the move.

Published Date: Feb 18, 2012

Apple DVD Player 2.0: How to Change the Size of the Viewer Window

This article discusses how to change the size of the Viewer window in Apple DVD Player 2.0 under Mac OS 9.

This article has been archived and is no longer updated by Apple.
To change the size of the Viewer window:

- Drag the lower-right corner of the Viewer window.
- Choose a size from the Video menu.
- Use a keyboard shortcut

Size options available from the Video menu:

Command	Choose it to	Keyboard Shortcut
Smallest Size	Set the Viewer window to its smallest size (160 x 120 pixels)	Command-0
Half Size	Set the Viewer window to half its normal size (360 x 240 pixels)	Command-1
Normal Size	Set the Viewer window to its normal size (640 x 480 pixels)	Command-2
Fill Screen	Set the Viewer window to use the entire screen, while preserving the aspect ratio of the movie, except for the menu bar	Command-3
Fill Screen Wide	Set the Viewer window to widescreen mode on widescreen displays. (The disc must be correctly manufactured for widescreen playback.)	Command-4
Present Video on Screen	Present the video using the entire screen, hiding the menu bar. To see the menu bar, move the pointer to the top of the screen.	Command-Option-P To change this key command, choose Preferences from the Edit menu and click the Hot Keys tab.

Published Date: Feb 18, 2012

Apple Color Plotter Pen Sources

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Can you recommend an alternative source for Color Plotter pens?

DISCUSSION ----------

Tech Comm knows of two suppliers: Yokogawa Corporation and Sun Remarketing.

For particulars, search the Tech Info Library under "Yokogawa" or "Sun Remarketing".

Published Date: Feb 18, 2012

Apple Scanner: Not Designed for High-End Publishing

Why doesn't the Apple Scanner support 256 shades of gray like the competition. When I took some scanned data to a publishing service for Linotronic output, I was told that my output was of poor quality and needed rescanning. I have two questions:

1) For Linotronic output, do third-party scanners, such as the Abaton (also known as MicroTek), have a technical advantage by offering 256 shades of grays instead of 16?

2) Will a ROM upgrade to the Apple Scanner address this issue in the future?
This article has been archived and is no longer updated by Apple.
The Apple Scanner isn't designed as a high-end scanner. It is an attractive, low-cost, entry-level scanner that is ideal for outputting to LaserWriters, using with HyperCard and OCR applications, capturing line art, for "draft" scans to assist in document layout, and so on.

To get the best scanned output from the Linotronic, it is best to use an 8-bit scanner. The disadvantage of 256 grayscale images is the incredible amount of disk space the scanned images consume. An 8- by 10-inch image at 300 dpi with 8 bits per sample, saved without using any compression scheme, consumes upwards of 8MB of disk space. This kind of density also requires a lot of time to scan and print. The average price of an 8-bit scanner is quite a bit more than the Apple Scanner, too!

To support a greater number of grayscales, like 256 on the Apple Scanner would require more than just a new ROM; it is more a limitation of the scanner hardware itself.

The Apple Scanner has been well received by customers and reviewers, but it isn't for everyone. You may be better served by another product.
Published Date: Feb 18, 2012

3270 Terminal Emulator with Asynchronous IND$FILE Transfer

Do you know of an asynchronous 3270 terminal emulator that also supports IBM's IND$FILE file transfer? Apple's FT/3270 software is a possible solution, but I want to avoid installing additional host software, if possible.

This article has been archived and is no longer updated by Apple.
Avatar's MacMainFrame DX supports asynchronous access to a 3270 mainframe, and their current release of software supports IND$FILE file transfer.

Tri-Data's Netway 1000, release 6 or later, provides asynchronous access to IND$FILE.

For more details, search the Tech Info Library under "Tri-Data" and "Avatar."

Published Date: Feb 18, 2012

Final Cut Pro 3: Problems playing a reference movie

This document describes problems which may occur playing a reference movie.
This article has been archived and is no longer updated by Apple.
If you encounter playback problems with a reference movie, export the media as a self-contained movie (which includes all its media files), and not as a QuickTime reference movie.

To do this, make sure there is a checkmark in the Make Movie Self-Contained checkbox in the Export dialog box. For more information, search on "Exporting a Final Cut Pro movie."
Published Date: Feb 18, 2012

System 6: Maximum Number of Fonts

I am experiencing problems when using over 250 fonts with System 6.0.3 software on a Macintosh II. This is a standard system with Adobe fonts. Is this still a problem? I thought the maximum number of fonts problem was resolved long ago.

Are there any special precautions, like Font/DA version, to take into account?

This article has been archived and is no longer updated by Apple.
A 'FONT' resource uses bits 7-14 for the font's resource ID and bits 0-6 for the font's point size. Thus, there are 256 (0-255) numbers available for font family IDs using a 'FONT' resource.

The 128K ROM introduced a new way of identifing fonts, using 'FOND' and 'NFNT' resources. This new strategy allows you to use all 15 (0-14) bits for font family IDs, giving you 32,768 possible IDs. Of these 32,768, there are 16,384 available for Roman systems.

However, in order to be compatible with the old way of identifing fonts, both 'FONT' and 'NFNT' resources can be used. There is still the limitation of 256 'FONT' resources. Therefore, the number of fonts you can install depends on which resource types the fonts use.

What seems to be the real problem, however, is that all fonts put into the System File should be installed using the Font/DA mover. The Font/DA mover will only support 200 fonts. You should use Font/DA Mover 3.8 (or later). Turning off virus detection utilities, setting RAM cache to off, and installing fonts under Finder are all prudent activities, but are rarely essential.

If you want to use more fonts you will need to use a resource-organization utility, like Suitcase II or Font/DA Juggler Plus, which allow you to organize groups of fonts in a variety of ways, including by families into files. Then you can open just those files when you need to access those fonts. Suitcase should be able to give you as many fonts as you need. Each Suitcase file has a limit in the number of fonts you can installl; however, you can have multiple Suitcase files.

For more details, search for "Fifth Generation Systems" and "3rd" or "Alsoft" and "3rd".

Published Date: Feb 18, 2012

Apple Scanner: Bulb Life Span

What is the life span of the Apple Scanner bulb?
This article has been archived and is no longer updated by Apple.
Though Apple didn't formally test the life span of the Apple Scanner bulb, only a rough estimate as to how long they are likely to last is possible.

We specify that the Apple Scanner bulbs supplied to us by vendors last a minimum of 200 hours of continuous use at an elevated temperature of 40 degrees Centigrade. Our experience using the Apple Scanner shows that all bulbs that stopped working had been in use longer than 230 hours at elevated temperatures of 48 degrees Centigrade. This translates into a possible life span of approximately 2400 scans. The actual life span of bulbs in a user environment might be a bit longer, but we are unable to establish any life span with specific test data at this time.
Published Date: Feb 18, 2012

Tape Cartridge: Life Span

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I am trying determine the life span of a tape cartridge. The article says "5,000 passes". Can you give me the suggested usage limits for a tape cartridge? How many backups is that? How many times does the tape pass through the drive during a backup?

DISCUSSION ----------

The tape cartridge life span can be greatly influenced by the environment you store and use them in, and by whether you back up the tapes by Volume or by File.

If you are backing up tapes by volume, your cartridge can last for a few thousand backups. This estimate is not based on any controlled study, but on the assumption that during a Volume backup, after the initial tensioning of the tape, the drive generally records information on the tape from the beginning to wherever it stops once it has completed transferring all of the data. This is usually in one or two continuous passes. Incidentally, the noise the drive makes when performing a Volume backup, changes in pitch, and variance of the volume is not from the drive stopping the tape, rewinding it, and proceeding forward--it is the drive switching tracks.

Backing up onto the tapes by File is much more stressful on the tape. The drive may have to reverse direction of the tape many times to put the files down sequentially on the tape, especially when the files are fractured on the drive. We are unable to predict the longevity of a tape used for file backups because of the great variance in the quantity of files backed up at any time, the differences in sizes, and the degree to which they are fractured. However, prudence should dictate practice when archiving data.

The operating environment also influences the tape life. Prior to using the cartridge, let it acclimate to your operating environment for eight hours or for the amount of time it has been exposed to dissimilar conditions--whichever is less. Recommended operating environment:

Temperature 41 to 113 degrees F (5 to 45 degrees C)
Relative Humidity 20 to 80% noncondensing
Maximum Wet Bulb Temperature 79 degrees F (26 degrees C)

Tapes should be stored out of direct sunlight and not be exposed to high temperatures.

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Macintosh: Desktop Media & the Making of Pencil Test (2 of 2)

This article has been archived and is no longer updated by Apple.
Article Change History

02/12/93 - UPDATED
* MacroMind-Paracomp now MacroMedia.

Pencil Test was modeled with Super3D from Silicon Beach Software (now Aldus Consumer Division). These 3D models were animated using MacTwixt, a Macintosh version of the public-domain animation package Twixt, developed at the University of Ohio by Dr. Julian Gomez.

Apple's Advanced Technology Graphics Group developed custom, 3D-rendering applications to render each frame of the film, adding material properties, like color, texture, smoothness, specularity, and shininess, to the geometric models (illuminated by one to four light sources and shaded by the method of Gouraud or Phong). A 24-bit Z-buffer was used to resolve the hidden surfaces. Digital bitmaps of the wood grain on the desktop, the cartoon on the mug, and the computer screen were texture-mapped onto the objects. In one scene, temporal anti-aliasing was used to create the effect of camera motion blurring.

The frames were rendered as 24-bit images at a resolution of 2160 x 1458. Each image was decimated by a factor of 3 in each dimension, using a windowed-sinc filter to reduce aliasing artifacts, to the target resolution of 720 x 486.
This was then gamma-corrected and converted to (Y, R-Y, B-Y) in the CCIR-601 digital format.

Each of the approximately 5,000 frames took an average of 30 minutes to render, for a total rendering time of 2,500 hours, or 104 days. A distributed rendering program was used to produce this in parallel in a period of four days of elapsed time on a network of 25 Macintosh II computers over the EtherTalk network.

A master program parceled rendering jobs to available machines and collected and compressed the finished frames. The finished frames, totalling 3 minutes and 10 seconds, occupied 1.4 gigabytes of a 2.5-gigabyte SCSI disk drive attached to a Macintosh II acting as an AppleShare File Server. The frames were then decompressed and transferred to an Abekas A60 digital sequence store. A Sony D-1 digital component video recorder was used to record the final video sequence off of the Abekas.

Along with the high-resolution digital video version, a Macintosh II version of Pencil Test was created by filtering every other 720 x 486 frame by a factor of 2 in each dimension with a windowed-sinc function to a target resolution of 360 x 243 (24-bit RGB). A custom-written application can replay the compressed 75MB animation in near real-time from an Apple HD80 SC SCSI hard disk on any 32-bit Macintosh II graphic interface card. The sound track for the video was created using Macintosh computers connected to music synthesizers via the Apple MIDI interface.

The score was composed and sequenced using the Performer application from Mark of the Unicorn. The sound effects were edited on the Macintosh using Sound Designer from digidesign and Opcode Patch Librarian from Opcode Systems. The effects were then cued to the video using digidesign's Cue Sheet. During final mixdown, two Macintosh computers were synchronized to the Sony D-1 digital video recorder using two Opcode Systems' SMPTE Timecode machines. One of the Macintosh systems controlled a Roland S-330 sampling instrument that played the score, while the other Macintosh controlled two E-Mu Systems' Emax sampling instruments playing the sound effects. The soundtrack was mastered directly back onto the Sony D-1.

As a comparison, the opening sequence of Steven Spielberg's television show, Amazing Stories, used a crew of 60 people. They spent 60 16-hour days working with a Cray supercomputer to produce 30 seconds of animation, or 6.5 man-years of work. We have no information on other animation programs for the Macintosh II. However, in addition to MacroMind, two companies to watch are Aegis Development Inc. and Byte by Byte.

With the general overview of Macintosh animation covered, here are some plausible, low-cost to state-of-the-art systems:

1) Super 3D and/or Swivel 3D, MacroMind's Director, one of the above-mentioned 8-bit color video card with NTSC and GenLock, and a high-quality VHS VCR.

2) Any graphics program that produces PICT2 or PICS files, TapeOp, Color-Space II, Color-Space II F/X, and a Betacam BVW-XX VTR.

3) Any graphics application that produces PICT2 or PICS file formats, TapeOp, Macintosh II Video Card with RAM expansion kit, RGB Technology's RGB/Videolink 400 (or 1400 or 1400A), and Sony Umatic BVW-XXX VTR.

4) Any graphics application, Macintosh II Video Card with RAM expansion kit, and GigaPix tape hardware system.

Starting with the first system, animation in this environment is 8-bit color running in real time. Productions created with this setup can be done relatively quick and easy. The images are created in a 3D graphics application or in Director. If Swivel 3D or Super 3D 2.0 are used, then the 3D-image series can be moved to Director via a Scrapbook file or PICS, respectively. Once in Director, the animation is recorded in real time to video tape, or, as the animation is played back in Director, it is recorded to tape. Most production time is spent creating the artwork and creating the animation.

Either system 2 or 3 lets you do production in a frame-by-frame manner. This is the more traditional method of animation and is especially helpful when animating complex images. Complex images may slow the real-time animation process to the point of customer dissatisfaction. Using a frame-by-frame technique allows the complex images to be drawn at whatever speed is necessary for the computer, and then placed one frame at a time on the video tape. Graphics are produced in any Macintosh graphics applications. The graphics needs to be saved in either PICT2 or PICS file formats.

The TapeOp application reads either file format and records the single frame graphics image to the video recorder for the specified number of frames. This is an automated process; the TapeOp application can be started in the evening and left to work through the night.

The system 4 method for creating animation is similar to the technique used for Pencil Test. Again, a frame-by-frame technique is used. The images are created in your choice of applications. Genius provides FKEYs for saving the images in the GigaPix format. Once each of the frames for the animation has been stored to the GigaPix tape, the tape is sent to a GigaPix service bureau for transfer to an Abekas digital frame storage device. A Sony D-1 digital component video recorder records the final sequence from the Abekas. From the Sony D-1 recorder, the animation is transferred to the appropriate video format: 1-inch, Betacam, Super-VHS, or regular VHS.

Vendors of video and animation hardware and software include:

- Genius, Inc.
- Macromind-Paracomp, Inc. (now MacroMedia)
- Silicon Beach Software (now Aldus Consumer Division)
- Aegis Development, Inc.
- Master Digital, Inc.
- RGB Technology

- Mass-Micro
- RasterOps
- ComputerFriends
- TrueVision

To locate a vendors address and phone numbers, use the vendor's name as a search string.

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Lisa: Memory Errors

This article has been archived and is no longer updated by Apple.

Error Meaning

10590 Memory error encountered on startup
1033/10 Error encountered in Office System
System Hang Memory error encountered - mouse hang

Most memory errors are caused by parity errors, characterized by an unresponsive system and a frozen mouse pointer. Use LisaTest or the extended memory board test to help you determine which of the two memory boards failed.

Something else to keep in mind: memory is set up so that the starting address is on memory board 2, while the data and overflow are on memory board 1. This means that if you experience memory problems on startup, it is probably a result of a bad memory board 2. If you encounter memory errors during the use of an application, it is probably memory board 1. If the system has hung only once, don't be concerned until it happens again or until you get another memory error. Nevertheless, if you get an error during startup, the memory board that is crossed out is bad.

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A/UX: Implementing Dialback To a Remote Location

This article gives the basic steps for setting up an A/UX system with dial-back capability. That is, after following these steps, you can dial into an A/UX machine from a remote location and have the machine hang up the line and dial your remote modem. Many A/UX users want this capability for security reasons.

Note: Either 4.3 UUCP or HoneyDanber UUCP needs to be implemented to have this feature.

This article has been archived and is no longer updated by Apple.

```
1) Using "cu", "kermit", or other means, "login" into the remote UNIX
  machine.

2) Execute a program or a shell script saying "dialback"; the "dialback"
  should perform the following tasks:

  * Logout your current terminal session

  * Hang up the phone line

  * Put the originating modem in the listen mode

  * Set the proper TTY bits mode to be used as a dial-out port

  * Wait a couple of seconds

  * Clear the phone line

  * Dial the phone number the user provided

  * Execute "/bin/login" to respawn a login session.

Update note: UUCP under A/UX 3.0 is HoneyDanber.  A/UX 3.0 adds F protocol to HoneyDanber, so you can
communicate over X.25 networks.

An historical note: Regarding the use of "/bin/ct" under A/UX 1.0 (or for that matter 1.1), "ct(1)" is a
holdover from System III, and possibly even Version 7 UNIX days.  Therefore, it only implements dialer code
for a DEC DN-11 dialer.  The DN-11 was an early dialer for non-smart modems.  "ct(1)" only sends the telephone
number digits, because that's all it expects. There should be support for today's smart modems (or, at least,
the Hayes command set) in all of "uucp/cu/ct".  But in A/UX 1.0 and 1.1, that is not the case.  Apple needs to
implement either the complete 4.3BSD UUCP, or HoneyDanBer UUCP/CU/CT to have that functionality.
```

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QuickTime Pro: How to Create a Movie With a Flash Track

This document discusses how to create a QuickTime movie with a Flash track using QuickTime Player with QuickTime Pro.
This article has been archived and is no longer updated by Apple.

You can create a movie with a Flash track using QuickTime Player with QuickTime Pro. Flash .swf files can be directly opened and played by QuickTime Player or the QuickTime plug-in, but this is not quite the same thing as creating a movie with a Flash track. A movie with a Flash track can be mixed and composited with other QuickTime tracks in the usual way.

To create a Flash track in QuickTime Player:

1. Choose Import from the File menu.
2. Open the Flash .swf and choose Convert.
3. Choose Save As from the File menu.
4. Change the name of the movie from movie.swf to movie.mov.
5. Select the "Make movie self-contained" option and click Save.

The resulting QuickTime movie contains a Flash track.

Related documents:

- 42594 "**QuickTime Pro: How to See Movie Tracks**"
- 42596 "**QuickTime Pro: How to Extract or Disable Tracks**"
- 42581 "**QuickTime Pro: How to Add Tracks to a Movie**"

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QuickTime Pro: About Flash Tracks

This document overviews the Flash ".swf" format and how it can be used as an element in QuickTime movies using QuickTime Pro.
This article has been archived and is no longer updated by Apple.
Flash is a popular graphics animation authoring application from Macromedia. Flash is also the common term for Macromedia's Shockwave Flash (.swf) file format, widely used on many web sites for animation. An .swf file can contain both vector and bitmap animation, as well as interactive elements.

Native Flash animation is in vector format; it is compact, scalable, and lossless. Flash files can also include bitmaps; these are not vectorized unless a bitmap tracing function is invoked from within the Flash application.

The Flash application can save images directly as a QuickTime movie, either as a movie with a video (bitmapped) track or as movie with a Flash track.

The Flash track retains its native format--Flash vectors are not converted into bitmaps or QuickTime vectors. Bitmapped graphics embedded in a Flash .swf remain bitmaps after import into QuickTime.

To convert the Flash track to bitmaps, export the movie in a QuickTime video format. The Flash vector images will be converted into cel animations. These movies are typically much larger than they would be if they retained the Flash graphics in their compact vector format.

One reason to create a Flash track in a QuickTime movie is to include graphics in formats that are not directly supported by QuickTime. For example, the Flash application can directly import vector graphics from Adobe Illustrator, Macromedia Freehand, and Autodesk AutoCAD (release 10 ASCII DXF). An easy way to incorporate these graphics into QuickTime is to import them into Flash and then import the Flash .swf as a new QuickTime track.

Another thing you can do with Flash is create animated sprite graphics.

Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.

The following document can help you search for a particular vendor's address and phone number:

Document 17159: "**Locating Vendor Information**"

Related Documents:
42635 "**QuickTime Pro: How to Create a Movie With a Flash Track**"
42634 "**QuickTime Pro: Capabilities of Sprite Tracks**"
42617 "**QuickTime Pro: About Supported File Types**"

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Remote Access: Modem Cable Requirements

This document describes the CTS/RTS handshaking cable that is recommended when using Remote Access or Internet Connect with a V.32bis or faster external modem.
This article has been archived and is no longer updated by Apple.
This document describes the CTS/RTS handshaking cable that is recommended when using Apple Remote Access with a V.32bis or faster modem and discusses implications of this wiring scheme for other communications applications.

Cable specifications To make the most efficient use of Apple Remote Access with a V.32bis or faster modem, use a cable with the following specifications:
Computer Modem
DIN-8 DB-25
1 (DTR) 4,20 (RTS, DTR)
2 (CTS) 5 (CTS) Normally pin 2 (CTS) is connected to pin 6 (DSR) on other cables.
3 (TxD-) 2 (TD)
4 (SG) 7 (SG)
5 (RxD-) 3 (RD)
6 (TxD+) Not connected
7 (GPi) 8 (DCD)
8 (RxD+) 7 (SG)

Some manufacturers ship their V.32bis and faster modems with a cable that meets these specifications.

Modem control issues
A cable constructed as specified in the previous section provides the hardware handshaking that high-speed modems require. If your cable does not meet these specifications, the modem may not operate or may not be able to sustain a connection. The cable supports the following handshaking features:

- CTS handshaking allows the modem to signal the computer to stop sending data to the modem.
- RTS handshaking allows the computer to signal the modem to stop sending data to the computer.
- DTR handshaking allows the computer to signal the modem to reset, hangup the call, or go into command mode.

RTS and DTR cannot be used concurrently. If you want to use RTS, you need to force disconnects by other means than DTR, such as +++, SBREAK, or LBREAK. If you want to use DTR, the computer must be able to accept data at all times. The computer's serial port must be set to a speed equal to or greater than the modem's highest connect speed. The actual connect speed is the modem to modem data rate, rather than the modem's serial port speed. DSR and DCD handshaking are not available with this cable. Therefore other types of communications software, such as terminal emulation software, cannot use DSR and DCD signals to detect modem readiness or carrier presence with this cable.

Recommended modem control

- The following guidelines provide for optimum performance in most instances:
- Set the computer's serial port speed equal to or greater than the modem's highest connect speed.
- Use CTS handshaking to control data flow to the modem.
- Do not use RTS handshaking.
- If possible with your modem type, use DTR control for hanging up and resetting.

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Remote Access: How to Create an "mlts" Resource

This document discusses how to create an "mlts" resource for a new modem script.
This article has been archived and is no longer updated by Apple.
Without an mlts resource, Modem WorkShop assumes a default maximum length of 30 characters for each of the dial string fragments, and it assumes that the modem cannot negotiate a reliable link. In an mlts resource, you can specify the maximum length of each of the dial string fragments. (For more information, see "Variable Strings (varStrings)" in technical document 42657 "**Remote Access: Modem Scripting Basics**."

To create an mlts resource for an existing script, follow these steps:

1. Double-click the ResEdit icon on your hard disk.
2. Press Return to remove the startup box. A dialog box appears with a directory of the current folder or disk. If necessary, use the pop-up menu to display a different folder.
3. Double-click the name of the script file you want to edit. A dialog box appears showing the resources associated with that file.
4. Choose Create New Resource from the Resource menu. A dialog box appears showing a list of resource types.
5. Enter mlts and press Return. The resource type is case-sensitive: Be sure to type mlts in lowercase. A window appears with the resource type and ID in the title bar.
6. Choose Get Resource Info from the Resource menu. A dialog box appears showing information about the resource.
7. Enter 0 (zero) for the ID and click the close box.
8. Enter the appropriate hex values for bytes 1-5. For details, see "Script Resources" in Chapter 1 of the Apple Remote Access Modem Scripting Guide. **Note**: If your modem manual provides a decimal value, you must convert that number to hex before you use it in the mlts resource.
9. Save the mlts resource and choose Quit from the File menu.

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WebObjects 5.1: How to Have Applications Launch Properly Under Windows 2000

Depending on the Regional Options that are configured, some WebObjects applications may not launch properly or at all when running under Microsoft Windows 2000.
This article has been archived and is no longer updated by Apple.

Symptom

When attempting to launch a WebObjects application under Windows 2000 an alert box appears indicating an Unexpected Error 321 occurred (321 était inattendu in French) and the application does not continue to launch.

Solution

This issue is resolved in WebObjects 5.1.1.

To have your applications launch properly, use these steps:

1. Log in as Administrator
2. Choose Settings from the Start Menu and choose Control Panel from the submenu.
3. Open the System control panel.
4. Click the Advanced tab.
5. Click Environment Variables.
6. In the System variable box, click New.
7. Type `DIRCMD` for the name of the new variable.
8. Type `/-c` for the value of the new variable.
9. Click OK to close the Environment Variables window.

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ARA Personal Server: Restart Twice Following Clean Installation

This document discusses that a second restart may be necessary if using Apple Remote Access Personal Server immediately following a clean installation.

This article has been archived and is no longer updated by Apple.

If you are using the Apple Remote Access Personal Server and you perform a clean installation of Mac OS 9.2, the server may not answer incoming calls correctly the first time you restart the computer after the installation. Restart your computer a second time before using the Apple Remote Access Personal Server.

Published Date: Feb 18, 2012

Mac OS 9: RAM Disk Disappears When Resized

This document discusses what may happen to an existing RAM disk if it is resized.
This article has been archived and is no longer updated by Apple.
If you reset the size of a RAM disk on your Mac OS 9.2 system, the icon may disappear from the desktop. When you restart your computer, the icon will reappear with its new size.

For more information see technical document 16809 "**RAM Disk: Description, Setup, and Use**"

Published Date: Feb 18, 2012

Mac OS 9: About FontSync Compatibility

This document discusses compatibility of FontSync 1.0 and FontSync 2.0 profiles.

This article has been archived and is no longer updated by Apple.

FontSync Profiles and font references created with FontSync 1.0 will not work with FontSync 2.0 in Mac OS 9.2. Create new FontSync Profiles and font references with FontSync 2.0.

Published Date: Feb 18, 2012

Mac OS 9: IP File Sharing Delay

This document discusses possible delays that may occur when using file sharing over IP with Mac OS 9.
This article has been archived and is no longer updated by Apple.
If you are experiencing one or more of the following problems while using file sharing over IP:

- long delays in waking your system when changing networks
- long delays on Startup or Shut Down
- long delays when starting or stopping file sharing

Use the Extensions Manager control panel to disable the SLPPlugin extension.

For related information see technical document 106106 "**Mac OS 9.1: Services Location Protocol (SLP) Changes**."

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Mac OS 9: Some Mac Help Features Not Available When Started from CD

This document has important information when starting from the Mac OS 9 CD-ROM disc.
This article has been archived and is no longer updated by Apple.
When you start up from the Mac OS 9.2 CD, some features (such as the ability to play QuickTime movies in Mac Help) are not available.

Use of all features is restored when you restart from your hard disk.

Published Date: Feb 18, 2012

Power Mac G4 (QuickSilver 2002): About Configuring as a NetBoot Client

This document has important information on using your Power Mac G4 computer as a NetBoot client.
This article has been archived and is no longer updated by Apple.
If you want to use your computer as a NetBoot client, you may need to update the system software on the NetBoot Server. See technical document 25090 "**Mac OS X Server: How to Upgrade a NetBoot Image to Mac OS 9**" for additional information.

Published Date: Feb 18, 2012

Lisa Workshop: Eliminating LisaBug

This article has been archived and is no longer updated by Apple.
For better or for worse, LisaBug is included in the Workshop in the form of two files: SYSTEM.DEBUG and SYSTEM.DEBUG2. In version 1.0 of the software, the mere presence of these two files enables the NMI key (non-maskable interrupt) in the Office System. In later releases of the software, the debugger may be invoked with the NMI key from the Workshop, or from the Office System if you've come directly from the Workshop without first powering down. It can be very distressing when uninitated users press the NMI key (the minus sign on the keypad) and drop into LisaBug.

To deal with this problem with post version 1 software, power the system down when you're done working in the Workshop and before you use the Office System; alternatively, disable the debugger completely, as described below.

There are two ways to deal with this problem in version 1.0 of the Workshop: change the NMI key code or disable the debugger. The first option is very simple, but lasts only for the duration of the session. The next time you boot your system, the NMI key code is reinitalized to the minus sign on the key pad. To temporarily change the NMI key code for the session, use the following procedure:

1. Enter the debugger by pressing the NMI key (minus sign on key pad).

2. Enter the command "NM 0" RETURN in response to the debugger prompt of ">". This sets the key code from hex 21 (the minus key) to hex 0 (no key)*.

3. Type a "g" RETURN to go back to your starting point.

To respecify the NMI key, specify the key location--not the ASCII code --for the character you want. The table listing the key codes is in the Pascal Language Reference Manual.

To disable the debugger, you have three options:

A. Delete SYSTEM.DEBUG and SYSTEM.DEBUG2.

B. Change the names of the two files to something besides names starting with SYSTEM.xxxx. (This allows for easy restoration at a later time.)

C. Transfer the two files to floppy, thus freeing up the disk space until you wish to restore the debugger.

Note: you must reboot the system before these changes are effective.
Published Date: Feb 18, 2012

Lisa Workshop: Program Termination

This article has been archived and is no longer updated by Apple.
There are a couple of ways to use LisaBug to terminate an infinite loop if your
program is in one:

When you find your program in an infinite loop:

1. Press the NMI key (minus key on the keypad) to enter the debugger.

2. If the domain is greater than zero--i.e., 1, 2 or 3--type a "G"o, then RETURN. This brings you back to your program then drops you back into Lisabug.

If the domain is zero or n, Type "UBR" RETURN. If that didn't change the domain to 1, 2 or 3, type "ID PC-4" RETURN, "G" RETURN, then depress the NMI key before proceding. (It's sometimes hard to get a non-zero domain if the program is caught up in I/O.)

3. Type: "PC o" RETURN.

4. Then type "G" RETURN.

There is another situation that you may get into with procedures such as:

```
Procedure QUIT;
begin
exit(PROGRAM_NAME)
end;
```

You must include a reference to QUIT in the main program, or the Dead Code Analysis removes QUIT from the object code. To terminate the program, invoke Lisabug with the numeric keypad minus key (NMI), then enter the following immediate commands:

```
br
ix movem.l d0-a6,-(a7)
quit
```

You are returned to the Workshop shell when the program terminates.

Additional information on terminating loops may be found in the debugger section of your Workshop manual,
Published Date: Feb 18, 2012

AFP: How To Implement Record-Locking

This article has been archived and is no longer updated by Apple.

TOPIC ----------

How does multi-user software (like 4th Dimension) work with regard to AFP? Doesn't AFP provide a record-locking feature, so that the record is locked automatically or is that part of some structure inherent in multi-user software (like 4th Dimension)?

DISCUSSION ----------

The AppleTalk Filing Protocol (AFP) lets a workstation on an AppleTalk network access files on an AFP-compatible file server. AFP specifies a remote filing system that provides user authentication and an access-control mechanism that supports volume- and folder-level access rights.

AFP does not provide file-locking and record-locking features to applications automatically. File-locking may be implemented by the application if the appropriate parameter is passed to the AFP call (FPOpenFork) made by the application that opens the file. These parameters include:

0 Read allows the file to be read
1 Write allows the file to be written to
4 DenyRead denies others the right to read the file while this user has it open
5 DenyWrite denies others the right to write to the file while this user has it open

Record-locking is accomplished in a much more complicated fashion. The application may lock a record by using the AFP command "FPByteRangeLock". To do this, the application must calculate where in the file the record starts and stops. This information is then passed to the "FPByteRangeLock" command and that range in the file is locked. The record may also be unlocked by using the "FPByteRangeLock" command.

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Mac OS X: Keys Used in Spoken User Interface Lose Original Functions

If you choose a single key to speak selected text in the Speech pane of System Preferences, that key loses its original function and will only read selected text.
This article has been archived and is no longer updated by Apple.

Symptom

When you press a key, you hear an alert sound or some spoken text, but the function you expected the key to perform does not occur.

Keys affected in this manner when used singly:

- Up Arrow
- Left Arrow
- Right Arrow
- Down Arrow
- Home
- End
- Del
- Page Up
- Page Down
- Tab
- Esc

Solution

Choose a key combination instead of a single key in the Spoken User Interface tab of the Speech pane in System Preferences.

Figure 1 Selecting a single key--incorrect action

Figure 2 Selecting a key combination--correct action

Note: Be careful not to use existing key combinations as these will also lose their original functions. Examples of existing key combinations are Command-S for Save and Command-P for Print.
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iMovie 3: Some Clips Have Gray Thumbnails

Updating to iMovie 3.0.2 resolves an issue where some clips have a gray thumbnail.
This article has been archived and is no longer updated by Apple.

Symptom

Imported DV clips have a blank, gray thumbnail in the shelf and timeline. The clips play back normally in the preview window despite the thumbnail's appearance.

Solution

Download and install the iMovie 3.0.2 update, or later. It is available from Apple Featured Software (http://www.apple.com/support/downloads/).
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iTunes: Songs Not Checked in Library Copied to iPod Anyway

Songs that are checked in a playlist but unchecked in the Library are copied to the iPod when the "Only update Checked songs" option is selected.
This article has been archived and is no longer updated by Apple.

Symptom

The "Only update checked songs" option in the iPod Preferences window is selected, but songs that are not checked in the Library are copied to the iPod anyway.

Solution

Make sure the songs are not checked in any normal or smart playlist.
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Incorrect date could prevent iPhoto from using HomePage or .Mac Slides feature

If the computer's date and time are set incorrectly, you may not be able to use the HomePage or .Mac (pronounced "dot Mac") Slides features of iPhoto.
This article has been archived and is no longer updated by Apple.
When you try to use the HomePage or .Mac Slides feature of iPhoto, this message appears:

> "A connection could not be established at this time. Please ensure your network connection is active and try again."

The computer's date and time may be set to a date other than the current date. To correct this:

1. From the **Apple** menu, choose **System Preferences**.
2. From the View menu, choose Date & Time.
3. Click the Date & Time tab, if necessary.
4. Select the correct date and time.

Additional information

If you unplug your computer for an extended period, or if the battery of a portable computer is completely emptied, the date may revert to 1970, or to an earlier year. Make sure to check your computer's date and time settings if the computer has been without power.
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Final Cut Express 1 & 2 and Final Cut Pro 3 & 4: How to export a movie with chapter markers for iDVD

Learn how to export a movie with chapter markers from Final Cut Express versions 1 & 2 and Final Cut Pro versions 3 and 4 to iDVD.
This article has been archived and is no longer updated by Apple.
To export chapter markers for iDVD 3 or later, you must first add chapter markers to your finished sequence in Final Cut Express or Final Cut Pro. As you add chapter markers to your sequence, keep the following rules in mind:

- Exporting chapter markers from Final Cut Pro requires version 3.0.2 or later.
- iDVD 3 has a maximum of 36 chapter markers.
- There must be more than one second between chapter markers.
- Chapter markers must be more than one second from the beginning or end of the sequence.

To insert chapter markers in your Final Cut Express or Final Cut Pro sequence:

1. In the Timeline, place the playhead exactly where you want to place the marker.
2. From the **Mark** menu, choose **Markers** and then choose **Add**. From the **Mark** menu, choose **Markers** and then choose **Edit** to open the Edit Marker window. You can also do this by pressing the M key twice. **Note**: Make sure nothing is selected in the Timeline or the marker will be added to the clip and will not be seen by iDVD.
3. Type a descriptive name for the chapter marker.
4. Click Add Chapter Marker.
5. Click OK.
6. Repeat steps 1 through 5 for each chapter marker you want to include, up to 36.
7. For Final Cut Express 1.0: from the **File** menu, choose **Export** and then choose **Final Cut Movie**.
    - For Final Cut Express 2.0: from the **File** menu, choose **Export** and then choose **QuickTime Movie**.
    - For Final Cut Pro 3: from the **File** menu, choose **Export** and then choose **Final Cut Pro Movie**.
    - For Final Cut Pro 4: from the **File** menu, choose **Export** and then choose **QuickTime Movie**.
    - A Save dialog box appears with export options for the movie.
8. Choose Chapter Markers from the Markers pop-up menu.
9. Type a name for your project and select a location for the saved movie. For more information on the other options in this dialog box, see the user's manual for Final Cut Pro or Final Cut Express. **Note**: To save time and disk space, make sure the "Make Movie Self-Contained" option is deselected unless you will be using the movie on a different computer.
10. Click Save.

A Final Cut movie, which is a type of QuickTime movie, will be saved with the name you entered and the location you selected. This file will then be ready to be imported into iDVD.

Tip: If you see a <CHAPTER> tag in the Comments field, do not delete it.
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Final Cut Express 1 and 2: Frequently Asked Questions (FAQ)

Find answers to frequently asked questions (FAQ) regarding Final Cut Express versions 1 and 2.
This article has been archived and is no longer updated by Apple.
Questions answered in this document:

1. Why isn't my serial number accepted by the program?
2. Why can't I hear audio while capturing?
3. Why can't I hear audio during playback from the Timeline?
4. Final Cut Express doesn't recognize my camera. What's wrong?
5. Where can I find the product manual?
6. How can I prevent out-of-sync audio on long clips?
7. How do I transfer my project to iDVD?
8. I hear beeping when I play audio. Why is that?
9. How do I set keyframes?
10. Why don't I see real-time effects and transitions?

Question 1: Why isn't my serial number accepted by the program?

Answer:

- Make sure you are reading from the original serial number label that came with the product.
- Enter your first and last name, and verify there are no mistakes in the serial number field.
- Make sure you enter a zero and not an O, a 1 and not a lowercase L, where appropriate.
- The dashes in the serial number are required.
- Make sure there are no spaces before or after the serial number.

Question 2: Why can't I hear audio while capturing?

Answer: To hear audio during the capture process, connect headphones or speakers to your camera or deck.

Question 3: Why can't I hear audio during playback from the Timeline?

Answer:

- If you're viewing the video on an external camera or deck, connect headphones or speakers to that device.
- If you're viewing the video on the monitor connected to your computer, choose View > Video > Real-Time.

Question 4: Final Cut Express doesn't recognize my camera. What's wrong?

Answer:

- Verify that the camera is on, connected to the computer, and in VTR mode.
- Make sure your camera is on the Final Cut Express qualified device list: http://www.apple.com/finalcutexpress/qualification.html
- Use the appropriate Easy Setup for your camera. Some cameras require FireWire Basic protocol.
- If you are using the Now button to capture, make sure you press Play on the camera.

Question 5: Where can I find the product manual?

Answer: The manual is located on the Final Cut Express CD in PDF format. More print options may be available at http://www.apple.com/finalcutexpress/

Question 6: How can I prevent out-of-sync audio on long clips?

Answer: Make sure that the "Sync Adjust Movies Over...Minutes" setting is enabled in Preferences. Then, delete the clips that are out of sync and reimport them.

Question 7: How do I transfer my project to iDVD?

Answer: Select the icon for your finished sequence in the Browser. Then choose File > Export > Final Cut Movie. This saves a file which can be

dragged into an iDVD project window.

Question 8: I hear beeping when I play audio. Why is that?

Answer: The beeping indicates that one or more audio tracks are encoded in an incompatible format. MP3 files need to be converted to AIFF using a program such as iTunes or QuickTime Pro Player and re-imported into Final Cut Express. Audio imported from iMovie 3 projects can be rendered within Final Cut Express to resolve the issue.

Question 9: How do I set keyframes?

Answer:

1. Set the Canvas to Image + Wireframe (choose View > Image+WireFrame)
2. Manipulate the position, rotation, and scale of the clip using the wireframe.
3. Click the Add Keyframe button or press Control-K.

For more information, please see the Final Cut Express User's Manual.

Question 10: Why don't I see real-time effects and transitions?

Answer: Make sure you choose View > Video > Real-Time. Available real-time effects appear in bold type in the Effects menu and Effects browser and will vary based on the performance of your computer (a G4 processor is required). Multiple video layers can also prevent real-time previews from appearing.

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MacX25: General Overview

This article gives a general overview of MacX25.
This article has been archived and is no longer updated by Apple.

MacX25: Introduction

First introduced on June 12, 1989 at the MacIS Conference in New York City, MacX25 is a network integration tool and a developer tool. On the network integration tool side, there are two components: MacX25 Server and MacPAD. The MacX25 Server runs on an Apple Serial NB card in a Macintosh II family. MacPAD is a connection tool that resides in the Communication Toolbox environment. The developer tool is the MacX25 Programming Library. It is the development interface that allows developers to create applications that access a packet switched network as the transmission facility. Macintosh Programmer's Workshop (MPW) Version 3.0 with MPW C is required.

The MacX25 Server behaves as a gateway that is physically connected to the packet switched network via a dial-up modem or leased line. The connection interface to the packet switched network is located on the Serial NB card (62-pin connector). There are two connection interfaces available: RS-232C and V.35. The RS-232C interface supports speeds up to 19.2 Kbps and the V.35 supports speeds up to 64Kbps.

MacX25 Server runs in background under Multifinder. The maximum number of active servers per Macintosh II is five. Other system requirements include System Software Version 6.0.3 (or later), 2 MB of RAM and the appropriate Appletalk LAN cable connector.

The server has a MacX25 Admin program (similar to the Appleshare Admin program) and should be maintained by a network administrator or by a Network Control Center (NCC). This program provides the following services:

* Logs the activities of the server
* Provides password protection
* Creates and modifies servers
* Creates and modifies user databases
* Selects and modifies X.25 parameter files
* Builds and maintains a Master Address Book

MacPAD

MacPAD enables an asynchronous terminal, such as a Macintosh Plus or SE, to interact with a host system. MacPAD packetizes characters transmitted to the server/network and de-packetizes characters received from the server/network.

MacPAD communicates with the server over the Appletalk LAN, whether that be Localtalk, Ethertalk, or Tokentalk. This allows users with a terminal application that uses the Communication Toolbox to place a call to any subscribed service on the packet switched network.

System requirements include a Macintosh Plus, Macintosh SE, Macintosh SE/30, or Macintosh II family with System Software Version 6.0.3 or later and the appropriate Appletalk LAN cable connector. A terminal service application that uses the Macintosh Communication Toolbox is also required.

MacX25 Programming Library

MacX25 Programming Library is a C routine toolkit that allow users to connect and disconnect from the server, and to query server status and circuit information. A packet-level interface that uses control blocks is provided for developers who require maximum control. A higher level logical packet interface performs data translation and formatting services, creates X.25 packets, and relieves the programmer of some lower-level tasks.

Some examples of applications that can be developed include electronic mail systems, sales order systems, inventory control and processing, database inquiries and retreivals, and credit card verification.

System requirements include a Macintosh Plus, Macintosh SE, Macintosh SE/30, or Macintosh II family with System Software Version 6.0.3 or later and the appropriate Appletalk LAN cable connectors.

Additional MacX25 References

1.) MacX25 Administrator's Guide, Engineering Part No. 030-2204

2.) MacX25 User's Guide, Engineering Part No.

3.) MacX25 Programming Guide, Engineering Part No.

4.) MacX25 Data Sheet, Order No. M0247LL/A

5.) Product Orientation for Salespeople, Order No. P1039LL/A

6.) The X.25 Admin Program External Reference Specification

7.) MacPAD External Reference Specification

8.) The X.25 Interface Library External Reference Specification
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.Mac HomePage: How to View HomePage Movies on a Computer With Microsoft Windows

This document explains how to view HomePage movies with a computer that uses a Microsoft Windows operating system.
This article has been archived and is no longer updated by Apple.
Movies saved on a .Mac (pronounced "dot Mac") HomePage website must be saved in QuickTime format. To play these movies, a computer with Microsoft Windows must have QuickTime for Windows installed.

QuickTime for Windows is available from the QuickTime website at: **http://www.apple.com/quicktime/download/**.

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iMovie 3.0.1: Cannot Import Audio CD Without Internet Connection

iMovie 3 may not allow you to import tracks from an audio CD if you do not have an active Internet connection.
This article has been archived and is no longer updated by Apple.

Symptom

After inserting an audio CD, you cannot select the CD in the Audio pane of iMovie 3 (the option is dimmed). The CD appears in the Finder and is listed in iTunes with the generic name "Audio CD".

Solution

Import the audio CD into iTunes. You should then be able to import the audio into your iMovie 3 project using the iTunes Library pop-up in the iMovie Audio pane.

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Application Issues and Basic Troubleshooting

This article provides troubleshooting help and issue resolution.

This article has been archived and is no longer updated by Apple.

What Causes An Application Program To No Longer Run or Unexpectedly Quit?

There are many causes for behaviors of this nature, leading among them:

Unusable application

This can occur on a floppy if the floppy disk is damaged by being stored in extreme heat or cold areas, near magnets, and so forth. On a hard drive, it may be that the sector on the drive has become unusable, or one or more files may have been accidentally deleted. Delete the application and reinstall it.

Application issues

Occasionally, you may run into two or more applications, or combination of applications and desk accessories, Extensions, or control panels that are incompatible. This is difficult to troubleshoot because there may be many factors interacting with each other and the behavior may be intermittent, occurring only if the applications were opened in a specific order, or if a certain desk accessory had been run sometime prior to application launch in the same work session. Remove any add-on programs that are contributing to the situation; do not to run them at the same time; get in touch with the software vendors for assistance.

Systematic Troubleshooting Procedures

1. If your difficulties started after installing new Extensions or Control Panels, remove them to determine if they are incompatible.

2. If your difficulties started after installing new System Software, check with application software vendor to determine if there is a compatibility issue.

3. If your difficulties started after installing new application software, try running from the floppy or CD to make sure the software is in good working order; check documentation to determine that you are using system software with which it is compatible; check with software vendor to determine if there is a compatibility issue.

4. Try quitting other applications.

5. Try launching the suspect application first.

6. Make sure that the application you are trying to run has not been deleted or damaged.

7. Check memory allocation and increase if necessary.

8. Replace system software. Use the installer on your original system software diskettes or CD.

9. Rebuild your desktop.

10. Create a folder within your system folder and call it "Suspects". Put all your inits and startup and control panel programs in that folder and restart your computer.

Replace those items, one at a time, and restart. Continue this process of replacing and restarting until the issue reoccurs. Once the issue occurs, you know that it was the last one replaced. Once you determine the faulty extension, check for version incompatibilities with other extensions or the system software. If you have determined that they are compatible, then try removing and reinstalling the extension.

Note: If you are running System 7.5 or later you can use the Extensions Manager to help determined what INITs were conflicting with other INITs. For additional information on Extensions Manager, search the TIL using "Extensions Manager".

If you have investigated all of the procedures above, then you may be looking at a hardware fault. Consult your local Apple Authorized Service Provider and have your computer checked out.

Helpful hint

If your computer stops responding, wait a few minutes to ensure that the computer is not busy performing a task. If necessary, you can force quit an application to quit by holding down the Command and Option keys, and simultaneously pressing the Esc key. This should bring up a dialog box asking if you want to quit the currently running application. Quit the application, then quit any other open applications. After quiting all open applications, restart the computer.

This procedure may not work all of the time, but will work often enough to permit you to possibly Save open documents and to reboot your

system.

Important: You can always replace system software, add on software and applications. But the only way you can replace your data is if you are conscientious about backing it up routinely.

For additional troubleshooting information see the following:

Article 4327: **System Stops Responding and Basic Troubleshooting**

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iMovie 3: Loss of Volume Settings on Export

Custom audio volume settings in iMovie 3 projects may not be saved when exported to QuickTime or iDVD.
This article has been archived and is no longer updated by Apple.

Symptom

After adjusting the volume of a clip or audio track in the iMovie timeline, the exported movie does not include these changes. Instead, all tracks play at full volume.

Solution

Update to iMovie 3.0.3 or later. It is available from the iMovie website (http://www.apple.com/imovie).
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iMovie 3: How to Create Chapter Markers

This document explains how to create chapter markers in iMovie 3 for use in iDVD.
This article has been archived and is no longer updated by Apple.
You can set chapter markers in iMovie that are exported with your movie when you export it to iDVD. Follow these steps in your iMovie project:

1. Click iDVD in the Button Bar
2. Select a clip in the timeline viewer.
3. Drag the playhead in the timeline to the point where you want the chapter to start.
4. Click the Add Chapter button in the iDVD pane. Chapter markers appear in the Timeline as yellow diamonds.
5. Type a chapter title next to the thumbnail that appears in the iDVD pane. (The titles can be changed later.)

Repeat steps 2 through 5 for each chapter you want to add. You can continue to add up to 36 markers.

Note: The Time column will display how far into the iMovie each chapter begins. The first clip will always display Time 00:00:00.

Related documents

50158 iDVD: How to Prepare Your iMovie to Work with iDVD

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Applesoft: High-Res Collision Counter

Applesoft's High-Res collision counter is a byte that is incremented whenever an object drawn crosses a non-black dot on the screen. Applesoft does not initialize or use this byte.

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The collision counter could be used in a game: such as, to detect when a lunar lander hits a mountain. Set the counter to zero, draw the lander, then check for non-zero values indicating the collision. It is up to the you to initialize and check this byte.

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Lisa Pascal: Using Serial Ports

This article has been archived and is no longer updated by Apple.
Here are some suggestions on how to output from the serial ports using Pascal.

Even though the serial ports are not devices for file storage, they must be specified with a dummy file name. The Lisa handles all I/O devices this way. (See the Pascal Operating System Manual.)

reset (f, '-rs232a-xyz') where xyz is the dummy name

If you're writing a program to talk to some other type of device, such as a card reader or test equipment, review Chapter 2 in the System Software Manual, particularly the section named Device_Control. These procedures describe how to configure the drivers for either port in order to allow communication with other devices.
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Artisen 1023 Plotter: Driver Is Available From MacPlot

This article has been archived and is no longer updated by Apple.

TOPIC ---

I would like to use a Artisen 1023 Plotter with a Macintosh IIx. Is there a driver for the Macintosh, and how can I get it?

DISCUSSION ---

MacPlot is a Macintosh driver for multiple plotters; one of the plotters it supports is the Artisen 1023 Plotter.

For more information search on "Microspot" in the Tech Info library.

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AFE: Problems Translating Into RFT and DCA Formats

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I have had numerous experiences using Apple File Exchange to translate RFT files where the translator generates an error stating that the file is not a standard RFT file format. I've seen this many times with files brought over from a 5520 or DisplayWriter.

Now, I am trying to create a DisplayWrite 4 file on a IBM PC-AT and save it to a 3.5" 720K disk. AFE translates it fine. I do the same thing on my PS/2 Model 60, and the error occurs. If I copy that file to my IBM AT, then resave it, the error remains. I am running the same versions of DisplayWrite on both machines.

I'm thinking of trying the DataViz translators. The RFT translator seems much more robust (it has never flagged any errors where Apple's supplied translator does).

Two questions:

- What is the difference between the supplied RFT-to-MacWrite translator and the one available from DataViz?

- Do you have any ideas on why a file created on the Model 60 would be different from the file created on the IBM AT?

DISCUSSION ----------

The RFT translator that currently ships with AFE is not compatible with DCA/RFT documents created by DisplayWrite 4 or other software packages that use the more recent releases of the DCA standard. Apple is evaluating whether to create a new version of the translator that is compatible with the recent releases of the DCA standard.

There should be no difference in the files created by DisplayWrite 4 on any IBM-compatible computer. We cannot begin to guess why the files appear to be different; we suspect that they aren't.

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Apple Data Modem 2400: Overview

This article has been archived and is no longer updated by Apple.

On June 12, 1989, Apple introduced the Apple Data Modem 2400. It is a 2400 bits per second (bps) external modem for the Apple II and Macintosh family of computers.

The Apple Data Modem 2400 supports the standard 2400/1200/300 bps modem protoco Classes 1 through 4 error correction protocols and is fully Hayes-compatible.

Features

- Two serial ports for connecting to the computer and to daisy-chain a serial device, such as the AppleFax Modem.
- Two RJ-11 ports to connect to the wall outlet and a telephone handset.
- A wall-mounted AC power adapter that plugs into the modem.
- An on/off switch built in to the modem.
- A built-in speaker with external volume control.
- A security slot.
- Nonvolatile RAM to store modem settings.

Support Issues

- It is possible to plug the AppleFax Modem or Apple IIc power supply into the Apple Data Modem 2400. If this is done, the modem will not power up, but it will not cause any damage to the modem or power supply.

- Only the two inner lines (tip and ring) of the RJ-11 jacks are passed through. This may cause problems with certain PBX systems that use the outer two lines for special-feature signaling. In this situation, it is best to have separate telephone lines for the modem and the telephone set.

- Unlike the Apple Personal Modem, this unit uses nonvolatile RAM to store the modem settings, which means that the modem does not automatically power up with the factory settings. The modem can be forced to the factory settings by either issuing the AT&F command or holding down the Mode button on the front panel during power-up.

- Because the serial port is rated for a maximum speed of 56.7 kilobits per second, AppleTalk devices cannot be daisy-chained to the modem.

- The ports for the telephone line and telephone set cannot be interchanged because the telephone set port is disconnected when the modem is in use. The same applies to the serial connections because the signals are directional. The ports must be used as marked.

Availability

The Apple Data Modem 2400 will be sold only by authorized Apple Desktop Communications dealers.

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VAX-to-Mac Connectivity: Starting Sequence is Critical

This article has been archived and is no longer updated by Apple.

When running the following software on the same VAX:

- VAX 8800
- VMS 5.02
- AppleTalk 2.0
- PACER 4.5
- ALISA 3.2
- PCSA 2.1

the order in which these programs are started is critical. Otherwise the Macintosh computers on the network will not see these services, or the PACER and ALISA products will not start. If AppleTalk for VMS is started before PACER when attempting to start PACER, it will fail; AppleTalk should be the last product started. These are undocumented but known problems with PACER and ALISA.

Here is a recommended starting sequence:

1. DECnet
2. PCSA
3. PACER
4. ALISA
5. ATALK for VMS

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Mac OS X Server: About QuickTime Streaming Server Preview

This article details the status of the QuickTime Streaming Server and Client availability.
This article has been archived and is no longer updated by Apple.
The Preview version of QuickTime Streaming Server software which originally shipped with Mac OS X Server requires an update to bring it to release version. There are two components which need to be downloaded and installed, Mac OS X Server Patch 1.0-1 and QuickTime Streaming Server 1.0 Update. See article 59004, **"Mac OS X Server: Patch and QTSS 1.0 Download Instructions"** for details on obtaining these files.

To view movies streamed with QuickTime Streaming Server you will need v.4.0 or later of QuickTime. You can download a preview version of QuickTime 4.0 at http://www.apple.com/quicktime/

Published Date: Feb 18, 2012

4th Dimension: How to Customize the CLUT 9/89

Some people have noticed a problem with the presentation tools with 4th Dimension when using splash screen that needed colors that weren't in the default palette. The following workaround is usefull if you need to change a few colors (for a Corporate logo, for example).

This article has been archived and is no longer updated by Apple.

1. Copy the palette for the image using ResEdit
2. paste the palette for the image into 4th Dimension
3. Change the CLUT ID (color lookup table) to 0 so that it becomes the default palette on application launch. This way

Unfortunately, this solution means that you are stuck with that palette until changed in the application (for all files). To minimize this drawback, try starting with the default system palette and change only some obscure, less used colors in that palette to the ones you want and leave the other standard colors alone.

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QuickTime 4/5: Macintosh Installation

This article describes the QuickTime 4 and 5 installation process for Macintosh computers.
This article has been archived and is no longer updated by Apple.

Macintosh Installation Overview

QuickTime 4 and 5 use a Web installer application that improves the speed and flexibility of the QuickTime software download and installation process. The new installer is a small application that manages the download of all additional files needed for QuickTime. This allows users to download only the software needed for the chosen installation and resolves issues with downloading a single large installer application. The installer can automatically detect updates to the QuickTime software components as they are made available and download just the files that have been revised.

Standard Install

After downloading the QuickTime Web Installer, simply double-click its icon to begin the Web installation process:

Figure 1, QuickTime Installer icon

The welcome message is displayed:

Figure 2, QuickTime welcome message

Next, the license agreement appears:

Figure 3, QuickTime license agreement

After reading the license agreement, you must click **Agree** (see Figure 3) in order to continue installing QuickTime software. After agreeing to the software license, the Choose Installation Type options appear:

Figure 4, Choose Installation Type options

- Click the radio button for the installation type you want to install. Information about the software components and size of files to be downloaded appears in the window below the options.
- Choosing the Custom installation type will provide options to select specific software components and to select the volume for installation.
- For further information on Custom Installation, see article 43082 "**QuickTime 4: Macintosh Custom Installation".**

After selecting the installation type, click Continue. The QuickTime Pro Registration window appears:

Figure 5, QuickTime Pro Registration window

- If you have a QuickTime Pro registration number, enter the registration name and number, then click the Continue button.
- If you have a QuickTime Pro registration number, enter the registration name and number, then click the Continue button. QuickTime Pro 3.0 registration numbers will work with QuickTime 4. QuickTime 3/4 keys do not enable QuickTime 5 Pro features. To enable QuickTime Pro under QuickTime 5 see article 31335 "**QuickTime 5: Enabling Pro Features**".
- Click Continue without entering any information if you do not have a QuickTime Pro registration number.

Important: The registration window does not appear if you have previously installed and registered QuickTime Pro on your computer.

The following window appears indicating that the QuickTime Installer is ready to begin downloading files:

Figure 6, QuickTime Installer window

If you prefer to use a Proxy Server connection to download the files, click the Use Proxy checkbox to specify the proxy server address, port number, and your username and password, if required. If you are unsure of these settings please contact your network or systems administrator.

Figure 7, Web Proxy checkbox and server information screen

Next, the Connection Speed window will appear. This window allows you to select what type of internet connection you have. Make your selection and click on the **Continue** button.

Figure 8, Connection Speed window

The QuickTime Installer window appears next, click **Continue**. The QuickTime Installer begins downloading the software files required for installation and shows the progress:

Figure 9, QuickTime Installer window

Important: Download time estimates will vary depending on the speed of your Internet connection. Depending on the type of installation you have selected and the speed of your Internet connection, it may take as long as 90 minutes to download all files.

Tip: If you cancel the file download or lose connection during the download process, all files that were able to be downloaded will be automatically saved. Once you begin the installation again, the remaining files will be downloaded.

After downloading the required files, the QuickTime Installer begins installing the software on your computer. A status window appears during the installation:

Figure 10, Installer status window

When installation has been completed successfully, the following message appears:

Figure 11, Completed installation message

Click **Restart** to restart the computer and to load QuickTime 4 or 5 software.

Published Date: Feb 18, 2012

QuickTime 4: Macintosh Custom Installation

This article presents an overview of the custom installation options available for Macintosh. For a general overview of Macintosh standard installation, please see the following Knowledge Base article:

Article 43081: "**QuickTime 4: Macintosh Installation.**"
This article has been archived and is no longer updated by Apple.

Additional Install Options

Custom Install

To install only specific QuickTime software components or to install on a volume other than the startup disk, select "Custom" from the Choose Installation Type window:

Click the Continue button. The Custom Install options appear:

Click the checkboxes for the components you wish to have installed.

Click the Select All button to choose all available software.

Once you have made your selections, click the Continue button.

Uninstall

To uninstall (remove) all QuickTime software from the computer, select "Uninstall" from the pull down menu in the Custom Install window:

Click the Uninstall button to remove all QuickTime software from the computer. After removing the QuickTime software, you will be required to restart the computer.

What's Installed?

Tip: You can find out the names and locations of files installed and deleted by the QuickTime Installer by viewing the QuickTime Installer Log File located in the QuickTime Folder.

The following files are installed on the hard disk when performing a QuickTime Authoring install:

Hard disk root: QuickTime Folder:

System Folder: Control Panels Folder:

System Folder: Extensions Folder:

System Folder: Extensions Folder: QuickTime Extensions Folder:

Updating QuickTime 4

TA40267_QuickTime_Macintosh_Custom_Installation.pdf

The QuickTime Updater program helps you maintain the latest QuickTime software components on your computer. The updater automatically checks the version of components installed and will automatically download and update if newer software is available.

You must have an active connection to the Internet in order to use the QuickTime Updater.

To begin, open the QuickTime Updater application located inside the QuickTime folder:

The QuickTime Updater window appears:

To begin the update, click the Continue button. If software updates are available a message appears:

If you want to select the specific QuickTime software components to update, click the Custom button. The Custom options appear:

Select the checkbox for the components you wish to update. Components which have updates available will be indicated as 'Yes' in the Update Available column.

When you have selected the components to update, click the Update Now button:

After installing updated components, you may need to restart your computer.

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QuickTime: How to Install on Windows

Learn how to install QuickTime 5 and QuickTime 6 on Windows 95, 98, NT, ME, 2000, and XP.
This article has been archived and is no longer updated by Apple.

Windows installation overview

QuickTime 5 and QuickTime 6 use a Web installer application to speedily and easily download and install QuickTime software. The installer only downloads the software for the installation type you've selected. This means you don't have to download the whole, larger installer for features you don't plan on using. The installer can also automatically update the software on your computer when new components are made available.

Note: If you have Windows 95, you must install QuickTime 5.

Downloading the installer

To install QuickTime:

1. Connect to the Internet and open the QuickTime website.
2. Click the button to select the Windows version of QuickTime. **Note:** The Windows 2000 and Windows XP installer for QuickTime includes iTunes.
3. Choose a language.
4. Fill in the contact information if you'd like to stay informed about updates and offers.
5. Click Download QuickTime. Your Web browser will download the installer.

Important: The QuickTime 4 and QuickTime 5 installers are saved to your computer as a Zip archive (Figure 1). You must first decompress, or "unzip", the archive before you can install QuickTime. If you try to install using the Zip archive, this message will appear: "This application may depend on other compressed files in this folder. For the application to run properly, it is recommended that you first extract all files." You can then click "Extract all", Run, or Cancel. Clicking Run will install QuickTime 6. To install QuickTime 4 or 5, click Extract all and then run the installer from the extracted folder.

Figure 1 Zip archive (top), extracted folder (bottom)

Figure 2 Compressed (zipped) Folders Warning

Figure 3 QuickTime 6 Installer welcome message

After reading the Welcome message and information about QuickTime, click Next. Next, the software license agreement appears. After reading the license agreement, click Agree in order to continue installing QuickTime software.

The Choose Destination Location window appears:

Figure 4 Choose Destination Location window

Select the directory to install the QuickTime software by clicking Browse. When you have selected the directory, click Next.

The Choose Installation Type window appears:

Figure 5 Choose Installation Type window

- Minimum - Installs the QuickTime Player, Web browser Plug-in, and essential QuickTime system software including MP3, VR and Flash. Approximate download size: 4.3 MB
- Full - Installs the Minimum package, PictureViewer, authoring support, DV support, and media exporters. Approximate download size: 7.2 MB
- Custom - Allows you to customize QuickTime by installing only the components you choose, Options include: QuickTime for Java, QuickDraw 3D, and QuickTime diagnostics.

After selecting the setup type and installation options, click Next.

The Select Program Folder window appears:

Figure 6 Select Program Folder window

The setup program automatically creates a folder called QuickTime to install program icons. You can type a new folder name or select an existing folder from the list. Once you have made your selections, click Next.

The QuickTime Plugin Options window appears:

Figure 7 QuickTime Plugin Options window

The setup program installs the QuickTime plug-in into the Microsoft Internet Explorer or Netscape Navigator or Communicator plug-in folder. To locate additional browser plug-ins folders, click Browse. Once you have made your selections, click Next.

The Enter Registration window appears:

Figure 8 Enter Registration window

- Enter your QuickTime Pro registration name and number, then click Next.
- If you do not have a QuickTime Pro registration number, click Next without entering any information.

The next steps will download the necessary software files and complete the installation:

Figure 9 QuickTime 5 Setup window

If you wish to use a Proxy connection to the Internet, click the checkbox for "Use HTTP Proxy" and enter the address of the Proxy server:

Figure 10 Use HTTP Proxy screen

When you are ready to install the QuickTime software, click Continue.

Note: You must have an active connection to the Internet in order to complete the QuickTime software installation.

The QuickTime Web Installer will connect to the Internet and begin downloading the files needed to complete the installation:

Figure 11 QuickTime 6 Setup showing download progress

Note: Depending on the type of installation you have selected and the speed of your Internet connection, it may take as long as 105 minutes to download all files.

Tip: If you cancel the file download or lose connection during the download process, all files that were able to be downloaded will be automatically saved. Once you begin the installation again, the remaining files will be downloaded.

The QuickTime Web installer begins installing the QuickTime software files:

Figure 12 QuickTime Web installer installing software files

Next, the QuickTime Setup Assistant appears:

Follow the on-screen instructions to set the connection speed, QuickTime browser plug-in settings, and file type associations.

Figure 13 QuickTime Settings: Introduction window

Figure 14 QuickTime Settings: Connection Speed window

Figure 15 QuickTime Settings: Browser Plug-in window

Figure 16 QuickTime Settings: File Type Associations window

Upon successful installation, the following message appears:

Figure 17 QuickTime installer Finished screen

- To review the QuickTime README file, select its checkbox.
- To view a sample movie using QuickTime Player, select its checkbox.

When you have completed your selections, click Close.

Note: Open the QuickTime Player and play the sample movie to verify the installation and see the (Web installation check).

Related documents

120133 "**QuickTime 5 for Windows : Information and Download**"
120081 "**QuickTime 4.1.2 for Windows: Information and Download**"
61654 "**QuickTime 6: About QuickTime Pro Keys**"

Published Date: Feb 18, 2012

Lisa Pascal: Creating Shells

This article has been archived and is no longer updated by Apple.
To create your own environment shell, merely rename your stand-alone Pascal program to SHELL."something". Once your program is named SHELL.xxx, it appears in the environments window. You may then either start your program up from the environments window, or else set the default to have your program automatically start up when you first power up.

I recommend using Quick Port, now that it's available with Pascal release 3.0, rather than creating a shell for your program. Quick Port is much more vesatile, allowing you to cut and paste to the other Lisa applications, print using the Office System print routines, and so on.
Published Date: Feb 18, 2012

X.25: A Technical Overview

This article contains the X.25 technical overview.
This article has been archived and is no longer updated by Apple.
X.25 is a CCITT recommendation for a synchronous interface between a data terminal equipment (DTE) operating in a packet mode and the data circuit terminating equipment (DCE) on the public data network. The elements of the interface is defined independently as:

Physical - the mechanical, electrical, functional, and procedural characteristics to activate, maintain, and deactivate the physical connection between the DTE and DCE.

Link - the link access procedure for data interchange across the link between the DTE and the DCE.

Packet - the packet format and control procedures for the exchange of packets containing control information and user data between the DTE and the DCE.

These three levels are associated with the first three levels in the International Standards Organization (ISO) Open System Interconnect (OSI) Reference Model.

Physical
The interface characteristics for a DTE connected to a packet switched transmission service by a dedicated circuit or by a circuit switched network is defined in Recommendation X.21 and X.21bis (V.24). Recommendation X.21 is only for connections via a circuit-switched data network while X.21bis can be used for connections via a circuit-switched data network and a telephone network.

Link
The Link Access Procedure, LAP and LAPB, is the protocol and the frame format is High-level Data Link Control (HDLC). LAPB defines procedures for link set-up, error control, flow control, and link disconnect. The frames used within the LAPB ensures error-free packets on the access link.

Packet
The packet level procedures pertain to virtual calls on the X.25 access link, and is independent of the internal protocol of the packet switched network. Procedures are defined for the setting up and clearing of switched virtual circuits, data transmission, and restart of switched and permanent circuits.

The packet format includes a user facility field which allow users to subscribe to various features such as Closed User Group, Reverse charging, and fast select.
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TA40271_MPW_Projector_Is_Macintosh_Equivalent_of_Panvalet_on_a_PC_(TIL04313).pdf

MPW: Projector Is Macintosh Equivalent of Panvalet on a PC

Is there a program for the Macintosh that is similar to Panvalet for the IBM?

This article has been archived and is no longer updated by Apple.
Panvalet is used for software development project management on PCs. To locate a similar program on a Macintosh, one doesn't have to look any further than MPW 3.0, which contains Projector. Projector is an easy-to-use collection of built-in MPW commands and windows that help programmers, individually and in teams, to control and account for changes to all the files (documentation, source, applications, and so on) associated with a software project.

Published Date: Feb 18, 2012

Macintosh: How to Use as a Telex

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Can a telex machine be connected to a Macintosh so that the Macintosh receives the wires?

DISCUSSION ----------

Many VT100 emulation packages have a TTY or Teletype emulator, including MacTerminal. Therefore, after acquiring a Western Union EasyLink account providing you with access to the telex services, a modem, and telephone line, along with MacTerminal and a Macintosh, you will then have all of the necessary items to send and receive telex messages.

Published Date: Feb 18, 2012

TA40273_AUX_X_and_Color_Support_(TIL04317).pdf

A/UX 1.1: X11 and Color Support

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

If X11 supports only 8-bit deep screens, does that mean I can't have color using the Macintosh II Video Card without upgrading it with the Expansion Kit (from 4 bits per pixel to 8 bits per pixel) ?.

This article has been archived and is no longer updated by Apple.

We have verified that the current A/UX X11R3 MacX server supports only 1-bit and 8-bit colors. The 4 bits per pixel is not supported at this time.

The "X11 -screen 0 -depth 4" command still shows only black and white even if you have the Video Expansion Kit installed.

Published Date: Feb 18, 2012

AppleFax Modem: Reception Problem May Be Due to Line Noise

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I have been having a number of problems with the AppleFax Modem while receiving from a NEC model NEFAX Bit-1 to my Macintosh SE/30.

The problem was when I was receiving from the NEC Fax; I was able to open and view the document, but it was nothing but dots down the center of the page. The document was 227K.

I had the sending end retransmit and was able to read the document the second time with no problems, but this time it was 127K. Previously, I had been unable to read an AppleFax document although it showed up as an AppleFax Document.

Is there a problem with this configuration or with this transmitting Fax? Have you had any reports of a similar nature? Is there anything I can do?

RESPONSE ----------

Since the problem is intermittent, we suspect that line noise is the cause--not an incompatibility between the AppleFax Modem and the NEC Fax machine. If there was an actual incompatibility, you would not be able to receive the document successfully. The AppleFax Modem has the capability to drop down from 9600 baud to 4800 baud in the case of line problems, but it is not uncommon to have connections that do not support 4800 baud reliably. We suspect that this had happened in this case, and the only suggestion we have is to ensure the use of clean lines from the transmitting machine to the modem.

Published Date: Feb 18, 2012

AlisaShare: Increasing Finder Requirement

This article has been archived and is no longer updated by Apple.

The mysterious "growing Finder" problem appears to be an AlisaShare file named ASROOT.CAT. This is a binary file used as an index datafile. ASROOT.CAT is a root level directory that writes entries for every file written to a specific volume. ASROOT.CAT is the file written to the Macintosh Finder for desktop information.

ASROOT.CAT is initially allocated 32K (64 blocks) for its contents, which in typical environments, would not be a problem. However, using a remote VAX volume (DOCUMENT+, Virtual Files) makes this transactional in nature--an application that more resembles a database. As DOCUMENT+ writes transaction files on Virtual Files, ASROOT.CAT is updated with the new file index entry. As the transaction files are deleted on Virtual Files, the associated index entries in ASROOT.CAT are not purged. Consequently, ASROOT.CAT continues to grow, which, in turn, forces the Finder requirements to increase respectively.

Published Date: Feb 18, 2012

AppleTalk For VMS: Concurrent User Limit

Under AppleTalk for VMS, which is AlisaShare, am I still limited to 50 concurrent users? Does this have anything to do with AppleTalk's 128-socket limit? With two sockets per node and some overhead, this leaves an absolute maximum of 62. How accurate is this, but more importantly, will this limitation ever be addressed in future versions of AppleTalk?

This article has been archived and is no longer updated by Apple.

The number of concurrent users allowed on a server is defined by the developer of the server. In the case of AppleTalk for VMS-based servers, there are ways to extend the number of users beyond the limitations set by the number of sockets per node.

There actually is nothing that limits an AFP server to having one connection per socket. AppleShare uses a one-client-per-socket method to simplify bookkeeping since the machines it is running on cannot support enough users to require multiple users per socket. The processing power and disk performanceusually provide the limitations of a server's capabilities.

The number of sockets allowed per node is not changing in AppleTalk Phase II. In both Phase I and Phase II, the socket number is represented as a byte, which gives 256 possible values: 128 of these are reserved, leaving 128 for dynamic socket allocation. Changing this field to a word size would require a major change to many of the routines and protocols of AppleTalk, beyond even the scope of the changes being implemented in AppleTalk Phase II.

Published Date: Feb 18, 2012

AppleShare File Server: Macintosh SE Versus Macintosh SE/30

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is there a performance increase when using a Macintosh SE/30 as an AppleShare file server instead of a Macintosh SE? Are there any benchmarks that illustrate a performance increase?

DISCUSSION ----------

The question as to whether or not there will be a performance increase when using a Macintosh SE/30 instead of a Macintosh SE as a file server depends on where the bottleneck is for the network. If your network is currently waiting for the server, then using a Macintosh SE/30 will increase the performance. If the network itself is sending packets slowly, the Macintosh SE/30 will not help.

There are quite a few advantages to using a Macintosh SE/30 instead of a Macintosh SE as a file server if your server is the bottleneck. First of all, the CPU in the Macintosh SE is the MC68000, which runs at 7.8336 MHz. The Macintosh SE/30 has the MC68030, which runs at 15.6672 MHz. This, obviously, will speed up anything that requires processing time.

Secondly, the SCSI hard drive access time is much faster. The Macintosh SE uses a 2:1 interleave. The Macintosh SE/30 uses a 1:1 interleave because the processor is fast enough to handle the information at that transfer rate. Therefore, the access of any given hard drive is faster on the Macintosh SE/30 than the same hard drive on the Macintosh SE, which is important for servers.

Additionally, the Macintosh SE/30 has a faster hard drive than the Macintosh SE. The Macintosh SE, which has an HD20 SC, has an average access time of 65ms. The Macintosh SE/30, which has the new 3.5-inch HD40 SC or HD80 SC, has an average access time of 20ms. This, along with the faster interleave, gives a much faster overall SCSI hard disk access time.

Finally, the Macintosh SE/30 has the same logic board as the Macintosh IIx. Because of this, as with the Macintosh IIx, if there is more than 1MB of RAM, the AppleShare File Server allows up to 50 users to be logged on to it, rather than the 25 users allowed with the Macintosh SE.

Published Date: Feb 18, 2012

ProDOS 8: How To Set, Save, and Retrieve Date/Time Data

I have a third-party clock device connected to the game port of an Apple IIe. I also have a BASIC routine that returns the time and date in a variable.

The problem is that the routine does not store the date and time in a place where other ProDOS programs (that is, AppleWorks) can access them. Is there a standard memory location and format for storing the time and date so that all other applications can retrieve it? I'm assuming that most ProDOS programs use the "GetTime" call. Is it possible to preload the memory locations that "GetTime" references?
This article has been archived and is no longer updated by Apple.
There is a standard memory location and format designated by ProDOS for the Date/Time data.

ProDOS has a built-in clock driver that queries a clock/calendar card for the date and time. After the routine stores that information in the ProDOS Global Page ($BF90-$BF93), either ProDOS or your own application programs can use it.

The locations reserved by ProDOS for the Date/Time are $BF90-$Bf93.

The format looks like this:

Date:	49041 ($BF91) 49040 ($BF90) 7 6 5 4 3 2 1 7 6 5 4 3 2 1 | Year | Month | Day |
Time:	49043 ($BF93) 49042 ($BF92) 7 6 5 4 3 2 1 7 6 5 4 3 2 1 | Hour | | Minute |

The ProDOS clock driver expects the clock card to send an ASCII string to the GETLN input buffer ($200). This string must have the following format (including the commas):

mo,da,dt,hr,mn

where:
mo is the month (01 Jan...12 Dec)
da is the day of the week (00 Sun..06 Sat)
dt is the date (00 through 31)
hr is the hour (00 through 23)
mn is the minute (00 through 59)

For example, 07,04,14,22,46 represents Thursday, July 14, 10:46 PM. The year is looked up in a table in the clock driver.

To support clock cards that do not follow the ProDOS protocol defined above, you can locate your code in a number of places. The cleanest solution is to replace the ProDOS routines with your own, if they fit. If you look at $BF07, $BF08, you will find the location to put your code. There is room for 125 bytes.

There is more information about this subject in the ProDOS 8 Technical Reference Manual, Chapter 6, "Adding Routines to ProDOS", beginning on page 104.

The disadvantage is that once the date/time is loaded by your routine, there is no way to update it without returning to your own program to reset the memory locations with the new date/time. This would get pretty cumbersome if done often.
Published Date: Feb 18, 2012

TA40280_Lisa_Pascal_Units_(TIL00433).pdf

Lisa Pascal: Units

This article has been archived and is no longer updated by Apple.
It's not possible to create an intrinsic unit. Even though the manual gives you a minimum of information, you can compile a regular unit. You don't have to put it in a library to use it, as with the Apple II and Apple III. To compile a regular unit, just include the following compiler command at the beginning of your unit:

```
{$U-}
Unit Sample;
Interface
. . .
Implementation
. . .
end.
```

Include the object code file in your program's USES statement.
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AppleTalk Internet Router: Doesn‘t Translate DDP-to-IP (11/94)

QUESTION ----------

Is there any way using the Apple Internet Router and the MacTCP drivers to encapsulate an AppleTalk protocol and place it on a TCP/IP-based backbone?

The reason I ask is that I have a customer changing their networking strategies to implement a TCP/IP-backbone only. If you can't play in this environment, they don't want you on the backbone. What the customer wants is to connect their 30 Macintosh networks onto the backbone using TCP/IP. They like the idea of the Internet Router over a Cayman- or Kinetics-type solution.

This article has been archived and is no longer updated by Apple.
With the release of the newer Apple Internet Router, TCP/IP tunneling is possible. Also the Apple IP Gateway is a DDP-to-IP gateway. For more information about these products use them as a search string.

The older AppleTalk Internet Router does not provide DDP-to-IP translation. It also does not have the ability to encapsulate AppleTalk packets within IP packets to ship the packets to another router over a backbone. It provides AppleTalk Phase II routing over multiple physical media (Token Ring, Ethernet, and LocalTalk).

MacTCP performs the opposite of what your customer is requesting. When it is on a machine on an AppleTalk network, MacTCP encapsulates TCP/IP packets within AppleTalk packets. It then sends the packets to a DDP-to-IP gateway, which strips the AppleTalk information and sends the TCP/IP packets to the appropriate TCP/IP network device, such as a UNIX system.

The Cayman GatorBox and Kinetics FastPath are examples of the DDP-to-IP gateway mentioned above. They do not encapsulate AppleTalk packets within TCP/IP packets either. Also, when they act as AppleTalk routers, they perform the same types of operations for an AppleTalk Phase I network as the Apple Internet Router provides for a Phase II network. Note that we are discussing the current versions of these products, which do not yet support AppleTalk Phase II; however, adding Phase II support to these products still would not provide the functionality your customer desires.

For more information, search on "Cayman" or "Kinetics" in the Tech Info library.

Article Change History:
30 Nov 1994 - Added references to the newer Apple Internet Router and the
Apple IP Gateway.

Support Information Services
Published Date: Feb 18, 2012

Apple Data Modem 2400: Supports "Flash" Command

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I have an application that requires approximately a 1/2-second break (sometimes referred to as a 'flash hook' or a 'switch hook') to be generated by the modem. There are a number of modems that provide this feature by sending an exclamation point ('!'). The Apple Personal Modem does not support this.

Does the new Apple Data Modem 2400 support this feature?

DISCUSSION ----------

Yes, the Apple Data Modem 2400 does support the 'Flash' command; the character used is the exclamation point ('!'). This command causes the modem to go ON-HOOK for half a second, then go OFF-HOOK. This is a useful command for transferring telephone calls on some telephone systems.

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TA40283_AppleShare_PC_OS_MSDOS_Compatibility_(TIL04332).pdf

AppleShare PC: OS/2, MS-DOS Compatibility

Does the new AppleShare PC run under the OS/2 compatibility box?

This article has been archived and is no longer updated by Apple.
AppleShare PC 1.2 and AppleShare PC 2.0 do not support OS/2 or the MS-DOS compatibility box in OS/2. The OS/2 compatibility box is not compatible for file services because the redirector does not work, and low-level calls that AppleShare PC uses for printing are not supported either.

Published Date: Feb 18, 2012

AppleShare File Server 2.0.x: File Limits and Memory

Are there any limits imposed by AppleShare File Server as far as the following parameters are concerned?

1) Total number of files per volume.
2) Total number of files in a folder.
3) Total number of files on the file server.
4) Total number of open files.
5) The memory used by open and closed files?

Is it possible that a large number of files can cause memory problems on AppleShare File Servers?
This article has been archived and is no longer updated by Apple.
AppleShare does not impose any additional limits that HFS does not. HFS and AppleShare allow the following:

1) Total number of files per volume.
A count of the total number of files and directories on the volume is maintained, as a LongInt, in the master directory block (block 2). Directory IDs are also LongInts. This limits the number of files and folders on the volume to 2^32-1 (roughly 4.3 billion). That many folders could be created as long as there's room on the volume to hold the expanding catalog B*-Tree. Because each file occupies at least one allocation block, all of the, at most, 65,536 allocation blocks (also numbered by Integers) will be allocated just before that many files are written on the volume. 65,536 is the maximum number of files on an HFS volume.

2) Total number of files in a folder.
There is another limitation imposed: a directory's valence is an Integer, and, furthermore, on GetCatInfo requests, any negative number in the ioFlIndex field is interpreted as a request for information on the directory itself. So, while HFS allows the creation of up to 65,536 files in each directory, all of which can be accessed by name, only 32,767 can be enumerated--a real limitation on folder contents. In practice, the user's patience will run out well before this many items can be enumerated.

3) Total number of files on the file server.
The maximum number of files on a file server vary depending on the version of AppleShare you use.

AppleShare 2.0.x allows 16 volumes: 16 x 65,536 = 1,048,576

AppleShare 3.0.x and later allows 50 volumes: 50 x 65,536 = 3,276,800

4) Total number of open files.
If the server is equipped with 1MB, the default maximum number of files that can be opened is 80. If you increase the server's RAM to 2MB, the default maximum number of files that can be opened also increases to 160.

The number of FCBs is pointed at by the value in $34E (hex). The number of FCBs is indicated in the first word in that table. On a 1MB machine, the default value is $1D62; on a 2MB server, the value is $3AC2. There is a one-to-one relationship between the File Control Blocks and the number of individual files you can have opened; that is, each file uses one FCB.

An easy solution to problems involving "too many files" is to increase the amount of RAM. If you increase the FCB, you, potentially, would subject your server to system errors, possibly at times when you are maximizing RAM usage.

With servers now having more RAM, there are maximum limits for open files. They are as follows:

AppleShare Pro 5000
AppleShare 4.2.x . . . . . 3000 *
AppleShare 4.x 346
AppleShare 3.x 346
AppleShare 2.0.1 160
Personal File Sharing . . 346

* 3000 instances of 346 unique files.

5) The memory used by open and closed files?
Closed files use no RAM space at all. Just opening a file uses no memory either, but it does take an FCB. Loading the resources into memory uses more memory, and how much depends on the particular files.

And finally, no, an AppleShare File Server is not encumbered by a volume or volumes with a large number of files because it does not cache any of the file directory information.
Published Date: Feb 18, 2012

LaserWriter Driver 6.0: Compatibility Issues

I have three questions about the LaserWriter 6.0 driver in a mixed AppleTalk environment.

1) Are there compatibility issues among LaserWriter, LaserWriter Plus, LaserWriter IINT, and LaserWriter IINTX printers?

2) How does the page format for #10 envelopes work with the software (that is, do the margins automatically adjust)? I assume that one should not choose this option if working with older LaserWriter products that do not have center feed.

3) Because installation of LaserWriter 6.0 requires System 6.0.3, is there a system problem when running on Macintosh Plus, and earlier computers?

This article has been archived and is no longer updated by Apple.

1) The LaserWriter 6.0 drivers are compatible with the LaserWriter, LaserWriter Plus, LaserWriter IINT, and LaserWriter IINTX printers.

2) The page format information is retrievable by the application from the printer driver. Not all applications adjust their page formats based on this information. The #10 envelope setting is intended for the LaserWriter II family of printers and their center-feed mechanism.

3) The LaserWriter 6.0 drivers require System Software 6.0 or later. This means that the Macintosh Plus and later support the LaserWriter 6.0 drivers. The Macintosh 512e and earlier computers do not. Note: The LaserWriter 6.0 drivers use the Notification Manager, which is available only in System Software 6.0 and later.

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Macintosh Plus: Dual-Voltage Switch (4/93)

Article Change History

04/07/93 - REVISED
* Separated unrelated information into another article.

The Macintosh Family Hardware Reference (Addison-Wesley) states at the end of the Macintosh Plus section that all late model Macintosh Plus systems have a dual-voltage 50/60 Hz 110-120/220-240VAC power supply that comes preset to 110-120VAC but can be changed to the higher voltage via a switch on the analog board. I can't find it the switch. Is this a publication error, or is the switch really there?

This article has been archived and is no longer updated by Apple.
Only international versions of the Macintosh Plus ship with the dual-voltage 50/60 Hz 110-120/220-240VAC power supplies. The domestic version of the Macintosh Plus system ships with the 50/60 Hz 110-120VAC power supply.

The information to which you are referring is on page 7-2 of the Macintosh Family Hardware Reference and is incorrect.

Published Date: Feb 18, 2012

Macintosh SE, SE/30: Possible Combinations of Internal Drives

What are the possible combinations for the internal drives on a Macintosh SE and SE/30?

This article has been archived and is no longer updated by Apple.

The Macintosh SE chassis is capable of holding two 3.5-inch storage devices. The Macintosh SE and Macintosh SE/30 logic boards use the same amount of space in the Macintosh SE chassis. The Macintosh SE/30 logic board has only one internal floppy-drive connector. Based on this information, it is possible to have these combinations of hardware installed in the Macintosh SE chassis:

1) Macintosh SE logic board; one 800K floppy drive.

2) Macintosh SE logic board; one Apple SuperDrive (formerly Apple FDHD).

3) Macintosh SE logic board; two 800K floppy drives.

4) Macintosh SE logic board; two Apple SuperDrives.

5) Macintosh SE logic board; one 800K floppy drive, one 3.5-inch hard drive.

6) Macintosh SE logic board; one Apple SuperDrive, one 3.5-inch hard drive.

7) Macintosh SE/30 logic board; one 800K floppy drive.

8) Macintosh SE/30 logic board; one 800K floppy drive, one 3.5-inch hard drive.

9) Macintosh SE/30 logic board; one Apple SuperDrive.

10) Macintosh SE/30 logic board; one Apple SuperDrive, one 3.5-inch hard drive.

Published Date: Feb 18, 2012

MacDraw II 1.0: Does Not Curently Support Color QuickDraw

I am using both PixelPaint and MacDraw. When I copy and paste from PixelPaint into MacDraw, I lose the color I have painstakingly put into the graphics.

Do you have any suggestions on a cause and remedy?

This article has been archived and is no longer updated by Apple.

MacDraw and MacDraw II do not support Color QuickDraw. MacDraw II displays the eight colors that the original QuickDraw supported. This is why the color information from a PixelPaint object(s) is lost when pasted into MacDraw II.

Another problem is that PixelPaint allows you to modify the palette of colors being used. If the system palette is not used, the colors may change when pasted into another application.

Published Date: Feb 18, 2012

AppleShare PC: How To Change the Printer Timeout Parameter

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I am trying to permanently change the printer timeout parameter in AppleShare PC 1.x. I can change the parameter, but whenever the machine is restarted, the parameter is reset to default.

DISCUSSION ----------

The printer timeout parameter should stay as set even if the machine is restarted. We tested this on an IBM-XT running AppleShare PC 1.2.

Make sure that you reply "Yes" to the question:

Connect automatically at startup?

in the LaserWriter Connect window.

Another way to ensure that the timeout parameter stays after restart is to use the ANET command CONNECT in the PC AUTOEXEC.BAT file. Example:

ANET CONNECT LPT1: N(Printer Name) P(LaserWriter) D(timeout)

Please refer to the AppleTalk PC Update of the AppleTalk PC Printer Driver, part no 031-1031-A, for more information.

Published Date: Feb 18, 2012

MacDFT: Supports Only Coax/Twinax & TokenTalk NB Cards

Does MacDFT work with either AppleLine or DCA's (formerly Avatar) MacMainFrame DX?
This article has been archived and is no longer updated by Apple.
MacDFT supports only the Coax/Twinax Card and the TokenTalk NB card. MacMainFrame DX requires DCA (formerly Avatar) own software. AppleLine will continue to be supported by the 3278 terminal option in MacTerminal.

MacDFT will not work with AppleLine (the interface is VT100 and needs MacTerminal). MacDFT will not work with MacMainFrame DX. DCA (formerly Avatar) has released their new DFT software for beta testing.
Published Date: Feb 18, 2012

MacDFT: Compatibility with Other Communications Products

This article has been archived and is no longer updated by Apple.

TOPIC ----------

How does a Macintosh on Token Ring appear to NetView? Will NetView see Macintoshes attached to the Token Ring via LocalTalk or Ethernet using our Internet Router?

Will Apple's first release of MacDFT, which supports DFT over Token Ring from a 3174 controller, allow mainframe sessions to be distributed to Macintoshes over LocalTalk and/or Ethernet?

Likewise, will Apple's first release of MacDFT, which supports DFT, allow sessions to be distributed from our coax card to Macintoshes on LocalTalk and/or Ethernet?

DISCUSSION ----------

Apple Computer's TokenTalk product conforms to the 802.5 Token Ring standard of the Medium Access Control (Macintosh) layer as defined by IEEE 802 Local Area Network Committee. A Macintosh with the TokenTalk NB Card appears to NetView as a Token Ring node, but it does not support NetView diagnostic functions because these NetView functions are not implemented in AppleTalk.

NetView does not see Macintoshes attached to the Token Ring via LocalTalk or Ethernet through the Internet Router because the Internet Router was not developed to support NetView and, therefore, does not pass LocalTalk and EtherTalk node information to NetView.

The first release of MacDFT, which supports DFT on coax or Token Ring cards, does not support distributions of mainframe sessions over LocalTalk or EtherTalk.

Published Date: Feb 18, 2012

Electronics Data Interchange (EDI): General Description

This article provides a general description of Electronics Data Interchange (EDI).
This article has been archived and is no longer updated by Apple.
EDI stands for Electronics Data Interchange. Officially, it is Electronics Business Data Interchange (EBDI), but the "Business" part of the title is often left out. EDI refers specifically to the exchange of business data. It defines the format and data content of business documents, like purchase orders, so that both the buyer's and seller's computers can process them, typically, at an enormous savings in data entry costs.

There are currently two EDI standards-setting groups in the United States: the TDCC and ANSI X.12 Committee. The worldwide standard-setting body for EDI is EDIFACT (part of ISO); EDIFACT standards are just beginning to be developed but are moving quickly. EDIFACT and ANSI are working toward compatibility.

TDCC, a transportation industry standards group, originally began developing EDI standards and then asked ANSI to endorse standards for all industries. TDCC and ANSI use a common data element dictionary, but they build their transaction sets differently.

Industries, other than transportation, use the ANSI standard. The standard is very large and general because it has to meet the needs of all businesses in the USA. Specific industry groups, such as EIDX for the electronics industry, use the ANSI standards but decide which optional segments and elements are used for each transaction set. Also, the industry groups select which table values to use. For example, ANSI has several hundred unit of measure values that may overlay, such as each, piece, box, set, unit, and so on. EIDX has adopted each as the only unit of measure the electronics industry needs. These industry groups simplify exchange within the industry.

The structure of an EDI message is:

1) Transaction Set is equivalent to a business document, such as a purchase order. Each transaction set is made up of data segments. Transaction sets are listed in Transactions Set Tables.

2) Data Segments are logical groups of data elements that together convey information, such as invoice terms, shipping information, or purchase order line. Data Segments are listed in the Data Segment Directory.

3) Data Elements are individual fields, such as purchase order number, quantity on order, unit price, and so on. Data Elements are listed in the Data Element Directory.
Published Date: Feb 18, 2012

A/UX: Block-to-inode Mapping

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I am having some problems with a bad block on the disk. I want to 'badblk' it, but I also want to save the file (inode) that used the block to another file before doing that.

I noticed that there is no utility in A/UX 1.1 that does a block-to inode mapping. In SysV systems you usually find icheck, which does this kind of stuff. Did I misread the manuals, or is there no facility to backtrace the blocks to the originated inode? Can I port the icheck to the next release of A/UX?

Another issue with badblk is the so-called "hardware sparing". This is mapped to a ioctl(fd,GD_SPARE),block) inside badblk, which is then translated to a SCSI call in our device driver. I'm using Rodime drives, so I really don't know the hardware-specific way of doing the hardware sparing. I am curious to know how Apple's disks do this. Does Apple support this hardware sparing with our disks? (One could speculate that the disk device copies the block information to another pure block, changes some kind of internal pointer table, and maps the bad block to a bad block table.)

This article has been archived and is no longer updated by Apple.
We, too, noticed that the 'icheck' utility (block number to i-node number mapping) is not included in A/UX 1.1. The porting of'icheck' utility has not been implemented.

We don't know how well the Rodime hard disk supports the "hardware sparing" either. However, we believe that the Apple HD80 SC (Quantum Q280) drives are intelligent disk drives and capable of "hardware sparing" support; it incorporates media defect handling and error correcting code capabilities. During regular disk operation, the drive can continue to scan and compensate for any new defective sectors that may show up later on the disks.

On the software side of the bad-blocking (the 'badblk'-set or update bad block information), we have the following test, and it seems to work.

```
# badblk /dev/rdsk/c0d0s31
===> badblk: block #33988 was not bad blocked
===> badblk: block #33999 was not bad blocked
===> no blocks bad blocked

# badblk /dev/rdsk/c0d0s31 33988 33999
===> 2 blocks spared, 0 blocks altblked

# badblk /dev/rdsk/c0d0s31
===> no blocks bad blocked
```

According to the description of'badblk', badblk first attempts to alter a bad block by hardware sparing. If the hardware sparing fails and the device supports alternate bad blocking, badblk attempts to alternate block the bad block.

Note that for the space-saving reasons, the current A/UX distribution disk partitions do not have the alternate block area reserved for bad block handling. If the bad sectors occur, it will be done by the hardware sparing.

TA40293_AUX_Blocktoinode_Mapping_(TIL04344).pdf

Published Date: Feb 18, 2012

AppleShare 2.0.1: Adding or Copying Drop Boxes (5/95)

I am running AppleShare 2.0.1 on a Macintosh II and am having trouble with the drop boxes. I have installed two new 140MB hard drives on my AppleShare File Servers; each is treated as an additional "volume". There is no trouble accessing either of the new volumes or placing folders and documents on them. The trouble is that drop boxes do not appear as drop boxes. For example, some drop boxes were copied from the original volume to the new one, and the arrow no longer appears--the drop box is essentially another folder. When new folders are added, and someone goes to Access Privileges and creates a drop box, the same thing happens. Correcting this problem is very important due to security.

This article has been archived and is no longer updated by Apple.
We do not have any difficulty creating drop boxes under this version of AppleShare. When you copy a folder from one AppleShare volume to another, one of two things happens: If you set the copy inherit bit in the LAYO resource in the Finder to on, the copied folder "inherits" the privileges of the directory it is being copied to. Or, if this bit is not set, the folder being copied has the default settings with access completely restricted to the owner of the folder (you). Either way, the privileges are being changed from the settings of the originating folder.

Also, ensure that whoever owns the drop box is not the one logged on. If it is, this person will not see the folder as a drop box; rather as an owned folder. Check the privileges on the folder after you change them to those of a drop box. If the settings are reported correctly, have a nonowner try to open the folder and copy files. The nonowner clearly should not be able to. If it can, then have that account check the folder's privileges.

Another possible cause of the problem may be the 140MB hard drives being used. Since we tested this using standard Apple hard disk drives, it is possible that the hard drives are the difference between our configuration and yours. We would suggest checking with the manufacturer of your drive to verify that it doesn't have problems working with AppleShare 2.0.1.

Article Change History:
25 May 1994 - Updated Title to reflect 2.0.1 information only.
Support Information Services
Published Date: Feb 18, 2012

AppleTalk: Wide-Area Networking Issues Using Satellite Links

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I am working toward extending our AppleTalk network from Plano, Texas, to various other offices (such as, specifically, Anchorage via 56Kb phone links for Ethernet). This 'extended' Ethernet is primarily being done to support some VAX systems, but AppleTalk packets get out over the TransLan bridges anyway, so AppleTalk goes 'piggyback' on the Ethernet with no particular trouble.

So far, Plano and downtown Dallas are connected. There is Liaison and FastPaths on the Plano end and Liaison in Dallas. AppleShare servers and printers and zones show up fine, although response time is a bit slow.

In a few weeks, I hope to have Anchorage on-line via telephone satellite. I have been trying to get some idea of how bad the delay caused by the satellite phone link will be.

Are any software packages that make use of the ADSP protocol (which sounds to me like what we really need for eliminating the wait for every packet's response)?. For instance, I've heard that CE's newest QuickMail product does this. Based on the times involved, my estimate is that the time delay due to the 24,000 mile distance to the satellite will be slightly better than that seen with a Liaison remote phone link with a 9600-baud modem.

Is this reasonable, or is there some other problem I don't know about? Will AppleShare tolerate these time delays?

DISCUSSION ----------

A satellite link will add approximately a quarter-second delay between the time a packet is transmitted at one end of the link until the time it is received at the other end of the link. This propagation delay is about 15 times greater than that seen in a 3000-mile ground link, which approaches a fiftieth of a second. This assumes perfectly clean channels; when you include error rates, ground-based analog lines have greater error rates than satellites, which require more retransmissions.

The quarter-second delay would be most noticeable in the case of extremely bursty types of communications. The best example of this type of communication is a full-duplex character mode terminal session. If the character typed at the terminal has to be echoed by the remote host before it is displayed on the screen, you see a one-half-second delay between the time a character was typed and the time it was displayed on the screen.

At the other end of the spectrum is the completely one-way transmission of large amounts of data. The quarter-second delay caused by the satellite link would then become virtually unnoticeable.

Reality will fall somewhere between these two scenarios. Typically, the amount of data transmitted in each AppleTalk packet will be in the hundreds of bytes. Also, constant send/receive-style communication is greatly reduced. For instance, communication between a Macintosh and a LaserWriter follows the pattern of 8 data packets being sent by the Macintosh, followed by a request for the next set of 8 sent back by the LaserWriter. This transaction-based communications is at the heart of most AppleTalk traffic.

AppleShare servers and LaserWriters communicate via the AppleTalk Transaction Protocol (ATP), which implements these communications along with guaranteed packet delivery. Using files servers and printers over this long distance link, as if they were locally attached, is not a

recommended solution. However, we have seen these types of operations work reliably at speeds as low as 1200 baud via asynchronous links, so communications via the satellite link should work.

Problems that slower speed links cause often are caused by errors on the network. Satellite links themselves are very reliable, but if one of the ends of the link is having network errors, continual retransmission requests across the link, due to packets lost on the misbehaving side, will cause problems. This makes it doubly important that the quality of the networks on both sides be doubly checked and well within the recommended limits of cable lengths and nodes per network.

Also, in AppleTalk Phase 1, there is no best router algorithms in use, so sometimes a Macintosh will use a router on the other side of a slow link as its router to devices on its side of the link. This is a problem only with Macintoshes directly connected (via Ethernet cards, and so on) to the backbone that includes the long distance link, and it can cause significant delays. AppleTalk Phase 2 addresses this problem, and your customer should seriously consider upgrading to Phase 2.

To address the ADSP question above, ADSP is typically used for data-stream-type communications over a network. The classic example of this is terminal services over a network. ADSP was implemented to try to reduce the impact of the problems posed by the character-by-character nature of these transactions. We do not see a need to look for other network applications that specifically use ADSP unless you are looking at the possibility of terminal services across the remote link, such as logging on to a VAX via PacerLink.

It is important to realize that the actual throughput and user-perceived throughput will vary on a case-by-case basis. As the backbone traffic increases, causing more delays due to nodes waiting to send, the actual delay from the satellite link will become a smaller and smaller portion of the overall delays on the network. If network services are configured to take the link into account, perceived throughput will be even greater. For instance, electronic mail services could be configured so that messages sent across the link were only sent twice a day at low-activity periods.

As a final note, the issues discussed above are mostly not AppleTalk- specific. Adding satellite links to any networking schemes magnifies the complexity of that network by an order of magnitude. This is definitely not a plug-and-play operation (not yet, anyway), but it has been successfully implemented within the AppleTalk world, and much more often in the TCP/IP world.

Published Date: Feb 18, 2012

Macintosh II: Problems Adjusting the Color with 4-bit Video

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Sometimes the color selection works fine, and sometimes it does not. It seems to work OK on the primary colors along the outer rim of the color wheel. However, when I move in toward the center, choose a color, say OK, I get a completely different color than what I chose. Sometimes the color does not change at all--it stays a dark gray.

Another problem is that when you change the color successfully and restart, the color returns to the color before the change! I tried this on an 8-bit video card system, and it worked fine. So, at this point, it seems to be a problem with 4-bit video systems. This is the first color problem I have encountered, but it is easy to duplicate on a 4-bit video system by going into the "color" option in the Control Panel and making various changes to the default color. I am running System 6.0.3.

Is there a workaround for this, or is this a problem being addressed by a new update for the operating system?

DISCUSSION ----------

The situation you are describing is a direct result of the number of colors that can be displayed on a screen at one time. With a 4-bit video card, this number of colors is a total of 16 at any one time.

The Color Picker will display any one of the 16.7 million colors that Color QuickDraw is capable of generating. It does this by altering its color lookup table on the fly as you request different colors. When you click the OK button, the values chosen are returned to the calling program (in this case the Color Control Panel Device). The program then uses this value; the Color CDEV uses it to set the color of text selections. However, the way this color actually is displayed depends on the current color lookup table (CLUT) in use, which has no bearing on what was being used in the Color Picker Package. In most cases, the CLUT being used is the standard system CLUT. The color chosen in the Color Picker is mapped to the closest available color in the system CLUT, and that color is the one that you actually see on the screen.

When you only have 16 colors available on the screen at one time, it is likely that you will not get the color displayed in the Color Picker, and, quite often, you see the exact same color you had on the screen before--even though the actual RGB values specified are very different. This same sequence of events occurs with an 8-bit video card. The difference is that with 256 colors on the screen at one time, you have more colors to map to in the system CLUT, and it seems as though you are getting the actual values requested.

Published Date: Feb 18, 2012

TA40297_MacintoshtoData_General_Connectivity_(TIL04349).pdf

Macintosh-to-Data General Connectivity

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Is it possible to connect a Macintosh through Ethernet to a Data General computer?

DISCUSSION ----------

The method of connection will depend on the operating system and network protocols supported on the Data General machine. If you are running UNIX on the Data General, then the standard TCP/IP connectivity solutions should work. These would include terminal emulation and file transfer programs, such as NCSA Telnet.

If you are running the proprietary Data General operating system, then being able to connect will depend on the protocols supported by that operating system. Once again, it is possible that the operating system will support TCP/IP, at which point you would be able to connect over the Ethernet. It is also possible that the Data General would support another set of protocols we can connect to, but TCP/IP is most likely.

If neither of the above options is available, you will be restricted to serial connections using a terminal emulation package, such as MacTerminal.

Published Date: Feb 18, 2012

DAL: TCP/IP In VM Environments

I have a question concerning Data Access Language (DAL) and TCP/IP. With the DAL for VM solution, I normally would have a 3278 emulation terminal with a coax connection to the cluster controller-FEP-host.

If on the 802.3 backbone we had IBM mainframes and access to them via TN3278 (either NCSA's or Intercon's product), would DAL in the Macintosh connected via LocalTalk to a FastPath 4 or GatorBox work in this case? The IBM host would have to be running all of the proper software, and again, the 802.3 cable can only have IP packets on it.

This article has been archived and is no longer updated by Apple.

Dal supports TCP/IP access via Mac TCP to a VM DAL server as of release 1.3.

Published Date: Feb 18, 2012

AppleShare: UNIX Compatible Development Encouraged

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Does Appple want people to develop AppleShare-compatible file servers for other platforms?

I am working with a local mini-super manufacturer running a variant of UNIX and they are very interested in bundling some Macintosh system services with their package.

Can you guide me to the proper resources?

DISCUSSION ----------

Apple actively encourages people to develop AFP-compatible file servers. You also should inform them of the existing products that turn UNIX systems into AppleShare servers, such as Columbia AppleTalk Package (CAP) from Columbia University and uShare from Information Presentation Technologies. Search on the above names in Tech Info library for more details on these products.

You should advise your mini-super computer manufacturer to contact Apple Developer Services Hot Lines at 408-974-4897 to get more information about developing AFP-compatible file servers. Contact Software Licensing at 408-974-4667 for information about bundling Macintosh System software with their package.

Published Date: Feb 18, 2012

MacTCP: TCP/IP Ethernet and AppleTalk Compatibilityy

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Here is a question about Macintosh-to-Cray connectivity and AppleTalk Phase 2 products. Will the GatorBox and Kinetics boxes be able to communicate using TCP/IP?

Also, will I be able to use MacTCP with Apple's EtherTalk NB Card and VersaTerm Pro?

DISCUSSION ----------

The Kinetics FastPath and the GatorBox are both Datagram Delivery Protocol-Internet Protocol (DDP-IP) gateways. Both perform the same function of taking a TCP/IP packet that is encapsulated in DDP and AppleTalk protocol, and converting it to Ethernet format from LocalTalk. DDP-IP gateways also can assign addresses to MacTCP nodes and handle routing to other networks. PacerLink software from Pacer Software, Inc. can be used in this situation to emulate VT100 terminal with softkeys. VersaTerm Pro terminal emulation software does similar functions and can be used as well.

MacTCP runs over both Ethernet- and LocalTalk-compatible cabling systems. If you run MacTCP on LocalTalk cable, you need a DDP-IP gateway, like the FastPath or the GatorBox. By default, the DDP-IP gateway should be located in the same AppleTalk zone as the Macintosh computer running MacTCP. Alternatively, a single DDP-IP gateway can support Macintosh computers in multiple AppleTalk zones; in this case, the zone where the DDP-IP gateway resides must be selected by the user using the MacTCP Control Panel.

If you run MacTCP over Ethernet using our Ethernet NB Card, you do not need a DDP-IP gateway. You do not need PacerLink or VersaTerm Pro. To provide remote terminal service, you need software, like NCSA Telnet or Internet Systems Corporation (also known as Intercon) TCP/Connect. Both of these software packages provide terminal emulation and file transfer protocol.

For more information, search on the above company names in the Tech Info library.

Published Date: Feb 18, 2012

Macintosh Finder: Trash Can and Directory Changes

Why can I open an application in MultiFinder, then drag documents into the Trash, yet still be able to open these same documents from the launched application?

Conversely, when I open a document put into the Trash directly from the Finder, the following error message appears: "Please drag the item out of the Trash."

This article has been archived and is no longer updated by Apple.
What you are experiencing is not a bug. The reason you can open a "deleted" document is that applications can still see the directory entry for a document that you have put it in the Trash, but not emptied. The Finder empties the Trash when an application launches.

In your case, you launched your application before dragging the document into the Trash, so the file still had an entry in the directory. On the other hand, the Finder knows when you are trying to open a file from the Trash and displays an error message saying that you should not do so.

Published Date: Feb 18, 2012

Macintosh-to-Amdahl Connectivity

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Do you have any information on Amdahl mainframes running the operating system TCAM? I need to connect a 10-node Macintosh network to an Amdahl mainframe, model 5890. I want the mainframe to be able to access the network. Should I connect each Macintosh via an IRMA board to the mainframe?

Also, will the MacDFT product and the Coax/Twinax Card allow a network or only a single workstation to access to the mainframe?

DISCUSSION ----------

TCAM is not an operating system. It is an access method like BTAM and VTAM. Amdahl mainframes either run an IBM operating system, such as VM, MVS, or DOS, or their UNIX operating system UTS.

Since you are doing terminal emulation, the operating system and access method are not as important to know as the environment they are in; that is, SNA or bisynchronous. Because SNA only runs VTAM and you have mentioned TCAM, we assume that the environment is bisynchronous.

The IRMA board allows single workstation connection (CUT mode). There are versions for the Macintosh SE, Macintosh SE/30, and Macintosh II. They work in both SNA and bisynchronous environments. Use this approach if you are running bisynchronous, or if you are running SNA but do not have any Macintosh IIs. Avatar's MacMainFrame products are equivalent to IRMA boards and can be used as well.

The first version of MacDFT, which will ship with the Apple Coax/Twinax Card, can operate as a CUT mode terminal with one session per Macintosh. A later version will implement a DFT mode terminal with up to five sessions per Macintosh. There are versions for Macintosh II, and stated support is for SNA and non-SNA (channel attached) only. However, if the users are running in single-session (CUT) mode, they can use MacDFT version 1.0 or 1.1, whether it is SNA, non-SNA, or bisynchronous.

MacDFT only allows single workstation access to the mainframe. For network access, you will be able to use a Macintosh II running MacAPPC with a Serial NB Card, when that product is shipped. If your need is immediate, you'll need an IRMA board or MacDFT with Coax/Twinax Card from each Macintosh to a cluster controller, or to check into the gateway product by Tri-Data Systems.

For more information, search on "Avatar Technology" and "Tri-Data Systems" in the Tech Info library.

Published Date: Feb 18, 2012

Macintosh-to-MS-DOS Connectivity: AFE and SuperDrive Problems

Some 1) Users of PS/2 systems routinely format double-sided, double-density disks as 1.44MB (high-density). Apple File Exchange won't mount these disks. Is this a hardware limitation, or could a software patch be issued?

2) When storing Microsoft Word 5.0 for the PC documents on an AppleShare File Server (using AppleShare PC 1.2), I have not been able to get Microsoft Word 3.01 or 4.0 on the Macintosh to open the files. AFE routinely does an incorrect WordPerfect translation of these documents.

3) Excel 2.x on the PC and Macintosh seems to use the same file format, so that using AFE with default translation easily converts documents from the disk. Is there a simple way to move from Microsoft Word 5.0 on the PC and Word 3.01 or 4.0 on the Macintosh, which preserves style sheets?

This article has been archived and is no longer updated by Apple.
High-density disks are physically different and tested to a different specification than double-density disks. The high-density disks have a special, thin recording surface that allows the higher data rates used in MFM (Modified Frequency Modulation). The 800K or 400K disk may not be sensitive enough to properly pick up and align the magnetic particles when the Apple SuperDrive (formerly Apple FDHD) writes in MFM. This could cause corruption of the stored data and may result in errors. The SuperDrive looks for the additional "bonus hole" in the upper left-hand corner of the disk. If the hole is not there, the drive will not recognize the MS-DOS disk as a high-density disk. It is not a hardware limitation. This practice is unreliable, unsupported, and not suggested. For more information, use keyword "SuperDive" to search the Tech Info Library.

We do not have Microsoft Word 5.0 on PC to test the conversion. We are not sure why you mentioned WordPerfect translation in your question either. Microsoft told us that Word on the Macintosh should be able to directly read the document and do the translation. Here are a couple things you might want to try:

1) In Word 4.0, see if you can read your MS-DOS document this way: Hold down the Shift key while going into "File" to open the file. "Open" will change to "Open any file".

2) Make sure you use the latest and correct AFE translator file. The DCA-RTF/Microsoft Word translator file is on the Microsoft Word Utilities 1 Disk.

Because of the differences in the program on MS-DOS and Macintosh, features such as outlining levels, styles, and tables may not be transferable.

Published Date: Feb 18, 2012

MacDFT: Terminal Session Limits & Foreign Language Support

This article has been archived and is no longer updated by Apple.

MacDFT supports up to five 3270 terminal sessions per Macintosh using either the Coax/Twinax Card or TokenTalk NB Card. There is no such distinction between host sessions and terminal sessions. The IBM PC 3270, which first used DFT, was designed to support four terminal sessions and one 3287 printer session. Since MacDFT does not support 3287 printing, all five sessions are used for terminal sessions. You do, however, need a 3X74 controller customized to have up to five LUs assigned to the physical coax in use. The LU numbers assigned have to be included in the NCP gen and have to be active or vary'd on by the host operator. The same sort of issues are involved with the Token Ring implementation.

Non-English character set support is part of the product design and is located under the Config Menu labelled Country. Currently, it lists English and Italian. If you need to support foreign language sets, a ResEdit of the ASCII-to-Device Buffer Code table is required within the application.

Published Date: Feb 18, 2012

MacDraw II, 1.1: ImageWriter LQ Printing Problem

This article has been archived and is no longer updated by Apple.

There is a known problem when using a Macintosh SE/30 with System 6.0.3, ImageWriter Driver 2.0, ImageWriter LQ, and MacDraw II 1.1.

When trying to print on computer paper with a reduction of 66%, the first half of the document is skipped (the printer starts to print from the middle of the document in the middle of the page).

However, If you place a small line (it can even be a point) on the file and print the document, everything will print as normal.

Published Date: Feb 18, 2012

Lisa Pascal: Pictures

This article has been archived and is no longer updated by Apple.
Set the ClipRect before drawing any pictures in Quickdraw. To do this, just include:

```
ClipRect(thePort^.portBits.bounds);
```

Published Date: Feb 18, 2012

Virtual Network: Apple‘s Definition

This article has been archived and is no longer updated by Apple.

TOPIC ----------

How does Apple define the term virtual network?

I have heard virtual network defined as the entire Internet; that is, encompassing all networks attached to the physical cable. However, I understood the term virtual network to mean an individual network, which is, in turn, attached to the Internet. Do you know if one definition is an industry standard and the other an Apple definition?

DISCUSSION ----------

From our research, there is no industry standard definition for the term "virtual network".

In AppleTalk Phase 2, a physical network can have a range of network numbers associated with it. Each of these network numbers is assigned to a virtual network. A node on this extended network would dynamically choose its network number from the range. What this means is that users can use the virtual network numbers to have more than 253 nodes on a large physical network without having to break up their large physical networks into cables with fewer nodes on them.

We are not sure about your first definition. It sounds like a definition for a "logical network" that encompasses all entities that make up the entire network, regardless of protocols or physical cabling.

For more information, please refer to the Technical Details of AppleTalk Phase 2 section in the LAN Minds training binders.

Published Date: Feb 18, 2012

VT100 Emulation: IND$FILE File Transfer Not Yet Available

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I need to get a terminal emulator for a VT100 terminal type with the IND$FILE transfer protocol built in. I want to connect this through a Sytek serial network to an IBM 7171 protocol converter. The only acceptable file transfer protocol is IND$FILE. I am currently using FT/Term for my IBM PCs.

DISCUSSION ----------

There are no VT100 terminal emulators with IND$FILE file transfer protocol to our knowledge. You might want to contact the FT/Term vendor to see if they are aware of any such product for the Macintosh.

If anyone is aware of such a product, please Link TECH.COMM the information.

Published Date: Feb 18, 2012

A/UX: Powering Down without Root Permission (6/93)

I want to be able to restart or power down in A/UX when I'm not the SU (super user):

chmod 7777 /etc/powerdown
chown user /etc/powerdown

This doesn't seem to work: Do you have any ideas?

I understand some of the implications like shutting down processes, but shouldn't one be able to simulate this as a user?

This article has been archived and is no longer updated by Apple.
The reason why the procedure mentioned above doesn't work is because the /etc/powerdown program performs a getuid() system call to check which user is running the program. This call returns the real user ID of the user and not the effective user ID obtained with the set uid bit.

The only way to execute the power-down without actually logging on is to make an entry in the file /etc/passwd in which the starting program is /etc/powerdown, and the user ID is "0" (zero). This entry could look like:

stop::0:1000:Entry to powerdown the system:/:/etc/powerdown

We do not recommend powering down the system this way, because there are several processes running in the background when the system is in an init level other than "s" (single-user mode).

The proper way to power is to execute the shutdown command, and, when the machine reaches "Single User Mode", execute the /etc/powerdown command.

Article Change History:
24 Jun 1993 - Revised for clarity.
31 Aug 1992 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

A/UX: LaserWriter IINTX Connection Documentation Error

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

In the A/UX Local System Administration (030-5595-B) manual (page 7-34, step 2), the user is instructed to attach the LaserWriter IINTX to the A/UX host via a SCSI cable in addition to the serial connection. Is this correct? There was no mention of the reason for this connection, nor was there mention in the LaserWriter manual. I have the most recent version of the A/UX documentation.

If this is incorrect, what is the potential damage to systems connected this way?

This article has been archived and is no longer updated by Apple.
The instructions mentioned above are wrong. There is no need to connect the SCSI cable between the LaserWriter IINTX and the A/UX host.

Also, there is no potential damage having the systems connected that way.

Published Date: Feb 18, 2012

AppleFax Modem: How It Handles Busy Signals During Transmission

This article has been archived and is no longer updated by Apple.

TOPIC ----------

When several "envelopes" are "stuffed" and prepared for later transmission, and the AppleFax Modem dials the addressed number on the envelope and encounters a busy signal:

- Will the AppleFax continue to dial until it gets through?

- Will it cycle through all of the envelopes and come back to the ones it could not send on the first pass?

- Will they not be sent until the send time tomorrow?

DISCUSSION ----------

If the AppleFax modem is unable to connect with another Fax machine, the envelope is not sent, and an error occurs requiring you to Restore the envelope before it can be sent again. The AppleFax will, however, continue to transmit all other envelopes to other accessible faxes.

Once the AppleFax has attempted to send an envelope, the envelope's icon is dimmed, and you are unable to open or change the envelope. When checking the activity report after sending an envelope, if you discover that errors occurred and that you need to resend the envelope, you must first restore the envelope to its original condition:

1. Select the dimmed envelopes that you want to restore.

2. Choose Restore Selected Envelopes from the AppleFax menu.

The envelopes are no longer dimmed and can be opened, changed, and re-sent as necessary.

Published Date: Feb 18, 2012

AppleWorks: Early Versions Don‘t Support RAM Cards

I have upgraded my Apple IIe by installing a 512K memory expansion card.

When I tried to run AppleWorks 1.0.1, the memory accessed was only 10K, and when I tried AppleWorks 1.1.1, I got a message saying "not enough memory, need 128K". All this after installing the card and ProDOS.

A diagnostics test, however, confirms that the 512K of RAM is available: yet AppleWorks still will not run.
This article has been archived and is no longer updated by Apple.
Early versions of AppleWorks do not support memory cards; you need version 1.3 or later.

Version 2.1 is available from CLARIS at an upgrade price. Contact them for an upgrade order form.

TIL article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

TA40314_Lisa_Pascal_TextSize_(TIL00437).pdf

Lisa Pascal: TextSize

This article has been archived and is no longer updated by Apple.
TextSize in Pascal release 1.0 and 2.0 doesn't seem to work. Use pictures instead.
Published Date: Feb 18, 2012

A/UX: VT220, Intermedia, and Cartridge Drives (12/95)

1. VT220 on the Console

I've ported an accounting system to A/UX (which can be used with Apple's national character set). I'm using VT220 terminals to generate masks for this application. Neither the console nor "term" give full VT220 functionality. Is there a way to run VT220 on the console? Will "term" support VT220 in the near future, or has someone already added this feature to "term"? Is there anyone else interested in getting VT220 either as console or in "term"?

2. Intermedia and Printing

A/UX is set up as an Intermedia Server and Client with a SuperMac CommCard for printing over LocalTalk. Printing over LocalTalk works fine from a shell and from a Macintosh application. I can choose a LaserWriter in the Chooser when running Intermedia but printing fails. No job goes to the queue and the printer dialog box shows the default setting for "LaserWriter" and "3.1" for the Laser Prep version!

3. Infinity and A/UX

I'm using Infinity removable cartridge drives (40 turbo) extensively. I've tried to use them as exchangeable user filesystems under A/UX without success. "mkfs" didn't work, nor did the setup utility. When I finally tried dp, I got error messages:

- dp /dev/dsk/c4d0s31
- c4d0s31: error: more data than SCSI device requested

then four times:

generic disk c4d0s31
retry limit: logical block 0, physical block 0
/dev/rdsk/c4d0s31: no such device or address
warning: size of disk indeterminable
warning: this will hinder validity checking on input
warning: unable to read disk partition map

Is there a way to use these disks with A/UX?

This article has been archived and is no longer updated by Apple.
1. The current A/UX 3.0 keyboard/console driver emulates a VT102 terminal. The A/UX Toolbox "term" terminal emulator program also emulates a VT100. None can fully provide full VT220 functionality at this time.

Your concern on the console and the Toolbox "term" with VT220 terminal emulation capability will be submitted to A/UX Engineering as an enhancement request.

2. We have tested the newly installed IRIS Intermedia package and had the same printing problem you described. According to the "IRIS System Administrator's Guide (page 39), "The printer should be set up as a 9600-baud serial printer, and it must be connected to the Intermedia server." If this is true, then there is a problem printing to an AppleTalk printer via the SuperMac CommCard.

3. No one here seems to have had any success using the removable cartridge disk drive from either Mass Microsystems or Infinity. According to Mass Microsystems, it seems that their driver works with Mac OS but not with A/UX. If anyone has successfully used a removable cartridge drive under A/UX, please Link TECH.COMM.

Article Change History:
01 Dec 1995 - Changed title.
08 Sep 1994 - Reviewed and reformatted.
31 Aug 1992 - Updated to include A/UX 3.0 information.

Support Information Services
Published Date: Feb 18, 2012

A/UX: "pagesize" Information (9/94)

I assume that a click in A/UX is the normal SysV 2K (2048 bytes). In /usr/include/sys/mmu.h, if the NEW_PMMU is defined, the PAGESIZE is defined as (1 << PAGESHIFT), and the PAGESHIFT is earlier defined as PS4K, that is, 11. So the logical shift makes it 2048. I am unsure if the A/UX kernel has NEW_PMMU set or not.

I need the click size information for shared memory tuning.

This article has been archived and is no longer updated by Apple.
From our research, the A/UX 1.1 kernel is compiled with the NEW_PMMU defined in the kernel MAKEFILE.

In the /usr/include/sys/mmu.h file:

The PAGESIZE is defined as #define PAGESIZE (1<<PAGESHIFT)
The PAGESHIFT is defined as #define PAGESHIFT PS4K
The PS4K is defined as #define PS4K 12

From the above formula, the PAGESIZE can be calculated as 1 << 12, which equals 4096. It's 4K, not 2K.

The command, called "pagesize", can also be used to display the current system page size.

Support Information Services
Published Date: Feb 18, 2012

A/UX 1.1: Wyse termcap/terminfo Entries

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

For those of you having problems trying to find all the Wyse termcap/terminfo entries in A/UX 1.1, here are most of them.

This article has been archived and is no longer updated by Apple.

```
Note: These have not been thoroughly tested, so proceed with caution.

v8|tvi925|925|televideo model 925:\\
   :am:bs:co#80:li#24:cm=\\E=%+ %+ :cl=^Z:cd=\\EY:ce=\\ET:\\
   :is=\\El\\E"\\E<\\E.2:\\
   :al=\\EE:dl=\\ER:im=:ei=:ic=\\EQ:dc=\\EW:if=/usr/lib/tabset/std:\\
   :ho=^^:nd=^L:bt=\\EI:pt:so=\\EG4:se=\\EG0:sg#1:us=\\EG8:ue=\\EG0:ug#1:\\
   :up=^K:do=^V:kb=^H:ku=^K:kd=^V:kl=^H:kr=^L:kh=^^:ma=^V^J^L :\\
   :k1=^A@\\r:k2=^AA\\r:k3=^AB\\r:k4=^AC\\r:k5=^AD\\r:k6=^AE\\r:k7=^AF\\r:\\
   :k8=^AG\\r:k9=^AH\\r:k0=^AI\\r:ko=ic,dc,al,dl,cl,ce,cd,bt:\\
   :hs:ts=\\Eg\\Ef\\EG0:fs=\\r:ds=\\Eg\\Ef\\r:
w6|wy60|wyse60|wyse 60:\\
   :al=\\EE:am:bs:bt=\\EI:cd=\\Ey:\\
   :ce=\\Et:cl=\\E*:cm=\\Ea%i%dR%dC:co#80:\\
   :dc=\\EW:dl=\\ER:do=^J:ei=\\Er:eo:\\
   :ho=\\E{:if=/usr/lib/tabset/stdcrt:im=\\Eq:\\
   :kb=^H:kd=^J:kl=^H:kr=^L:ku=^K:kh=^^:\\
   :li#25:mi:nd=^L:pt:se=\\EG0:so=\\EG4:\\
   :ue=\\EG0:us=\\EG8:ul:up=^K:\\
   :ds=\\E`a:fs=^M:hs:ts=\\EF:
w5|wy50|wyse50|wyse 50:\\
   :al=\\EE:am:bs:bt=\\EI:cd=\\Ey:\\
   :ce=\\Et:cl=\\E*:cm=\\Ea%i%dR%dC:co#80:\\
   :dc=\\EW:dl=\\ER:do=^J:ei=\\Er:eo:\\
   :ho=\\E{:if=/usr/lib/tabset/stdcrt:im=\\Eq:\\
   :kb=^H:kd=^J:kl=^H:kr=^L:ku=^K:\\
   :li#24:mi:nd=^L:pt:se=\\EG0:sg#1:so=\\EG4:\\
   :ue=\\EG0:ug#1:us=\\EG8:ul:up=^K:\\
   :vb=\\EA01[illegible]EA00:
w5|wy50-w|wyse50-w|wyse 50 132-column:\\
   :al=\\EE:am:bs:bt=\\EI:cd=\\Ey:\\
   :ce=\\Et:cl=\\E*:cm=\\Ea%i%dR%dC:co#132:\\
   :dc=\\EW:dl=\\ER:do=^J:ei=\\Er:eo:\\
   :ho=\\E{:if=/usr/lib/tabset/stdcrt-132:im=\\Eq:\\
   :kb=^H:kd=^J:kl=^H:kr=^L:ku=^K:\\
   :li#24:mi:nd=^L:pt:se=\\EG0:sg#1:so=\\EG4:\\
   :ue=\\EG0:ug#1:us=\\EG8:ul:up=^K:\\
   :vb=\\EA01[illegible]EA00:
w7|wy75|wyse75|wyse 75:\\
   :ae=\\E(B:as=\\E(0:al=\\E[L:bs:\\
   :bt=\\E[Z:cd=50\\E[J:ce=3\\E[K:cl=50\\E[H\\E[J:\\
   :cm=\\E[%i%d;%dH:co#80:\\
   :cs=\\E[%i%d;%dr:dc=\\E[P:dl=\\E[M:\\
   :do=\\E[B:ei=\\E[4l:eo:ho=10\\E[H:\\
   :if=/usr/lib/tabset/vt100:\\
   :is=\\E[35h\\E[?3l\\E[1t:\\
   :im=\\E[4h:\\
   :kb=^H:kd=\\E[B:kh=\\E[H:kl=\\E[D:kn#10:\\
   :ko=al,ce,dl,ta:kr=\\E[C:ku=\\E[A:\\
   :ks=\\E[?1l\\E>:ke=\\E[?1l\\E>:\\
```

```
   :k0=\\EOP:k1=\\EOQ:k2=\\EOR:k3=\\EOS:k4=\\E[M:\\
   :k5=\\E[17~:k6=\\E[31~:k7=\\E[18~:k8=\\E[19~:k9=\\E[20~:\\
   :l0=PF1:l1=PF2:l2=PF3:l3=PF4:l4=F5:\\
   :l5=F6:l6=F7:l7=F8:l8=F9:l9=F10:\\
   :li#24:ll=\\E[24;1H:nd=\\E[C:pt:se=2\\E[0m:so=2\\E[1m:ta=\\E[I:\\
   :md=\\E[1m:mr=\\E[7m:mb=\\E[5m:me=\\E[m:\\
   :rf=/usr/lib/tabset/vt100:rc=\\E8:sc=\\E7:\\
   :ue=\\E[p:ug#1:ul:up=\\E[A:us=\\E[8p:\\
   :AL=1*\\E[%dL:DL=1*\\E[%dM:IC=4\\E[%d@:DC=4\\E[%dP:rp=1*%.\\E%db:\\
   :hs:ts=\\E[>,^A:fs=^A:ds=:
w7|wy75-vb|wy75vb|wyse 75 with visible bell:\\
   :vb=\\E[?5h\\E,\\E[?5l:tc=wy75:
w7|wy75-w|wy75-w|wy75w|wy75-132|wyse 75 in 132-column mode:\\
   :co#132:is=\\E[35h\\E[?3h:tc=wy75:
w7|wy75-wvb|wy75wvb|wyse 75 with visible bell, 132 columns:\\
   :vb=\\E[?5h\\E,\\E[?5l:tc=wy75-w:
```

Published Date: Feb 18, 2012

A/UX: Maximum Hard Drive Volume Size Supported by Mac OS

What is the maximum amount of hard disk storage that can be provided for the Macintosh under A/UX and the Macintosh OS? Will A/UX and the Macintosh OS fully support seven daisy-chained drives on the SCSI port? Are there any large SCSI drives that A/UX supports?
This article has been archived and is no longer updated by Apple.
The theoretical maximum amount of hard disk space under Macintosh OS is:

- 2 to the 48th power bytes
- 262,144 gigabytes
- 256 terabytes

The theoretical maximum amount of hard disk space (file system) under Macintosh A/UX is:

- 2 to 31st power -1 blocks
- 2,199 gigabytes for 1K block filesystem
- 1,099 gigabytes for 512-byte block filesystem

Eight unique IDs are available for SCSI devices: 0 through 7. The Macintosh is always assigned number 7, and the internal hard disk (if you have one) is always assigned number 0. Therefore, you can assign SCSI ID number 0 through ID number 6 (total of seven devices, including internal hard disk) to form a SCSI chain on either Macintosh OS or Macintosh A/UX.

At present, the Apple HD 20SC, 40SC, 80SC, 160SC internal and external SCSI drives are the only ones formally supported by Apple. The following are third parties that support large disk drives for A/UX:

- CMS Enhancements, Inc.
- Racet Computers
- FWB Software, Inc.
- Control Data Corporation (CDC)

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

A/UX: IPC Tools (9/94)

If I remember correctly, Sys V.2 had two really good tools by which you could check the use of shared memory, segment sizes, flags on semaphores, and so on. I think this tool was called icps.

The other tool could be used for releasing shared memory segments. I did not find any equivalent tools under A/UX. I think this tool was called icpr. Please correct me if these tools exist under A/UX.

Otherwise, I would ask for an RFC because to tweak shared memory you need to know how much is in use at the moment. The problems with shared memory segments is that they hang in the system after the program has used them.

This article has been archived and is no longer updated by Apple.
The two IPC tools, which you mentioned above, are called "ipcs" and "ipcrm", and both DO exist in A/UX 3.0.

The "ipcs" allows you to print the status of the active interprocess communication facilities.

The "ipcrm" allows you to remove one or more specified interprocess communication facilities, such as message, semaphore, or shared memory identifiers.

For more details, type "man ipcs" and "man ipcrm" in the A/UX Command Shell.

Article Change History:
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

A/UX: Determining Available Memory (9/94)

After I start up A/UX, and the splash screen is gone, how can I determine how much memory is installed in the system and how much is available? I am looking for a shell command, if it exists.

This article has been archived and is no longer updated by Apple.
There is no command shipped with A/UX that will provide this information. It would be possible to write a program that returned these values, but none are included.

We don't think these values change frequently enough to require much attention. Users generally know when they change the amount of installed RAM, and the available memory only changes when the kernel is reconfigured.

A/UX 2.0: Select About the Finder in the Apple menu (while in the Finder)

A/UX 3.0: Open the Memory Control Panel for a display of both physical and virtual memory. (Control panels can be found under the Apple menu)

Article Change History:
13 Sep 1994 - Reviewed.
31 Aug 1992 - Updated to include A/UX 2.0 and 3.0

Support Information Services
Published Date: Feb 18, 2012

LocalTalk PC Card: Problem Using with Zenith Systems

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I am using two LocalTalk adapters, one in a Zenith 8088 machine, and the other in a Zenith 386 machine.

Each time I try using them, the system locks. I have version 1.0 of the software, which came with the adapter. An article in the Tech Info Library states that, most likely, there is an IRQ conflict, or that the system needs to be told that the IRQ has been changed. I double checked for IRQ conflicts (I even removed all of the adapters in the machine that may have caused the conflict), and I have the proper command in my autoexec, as described in the manual.

Do you know of anything else to try, or do you know of some incompatibility with Zenith machines?

DISCUSSION ----------

Although you have removed all of the add-in cards in the Zenith machines, there is still a possibility of an IRQ or DMA conflict.

Most Zenith PCs come with built-in serial and parallel ports. On some models, the serial ports use the same interrupt as the default interrupt for the LocalTalk PC Card. You should check the Zenith documentation for information on the interrupt lines used by the built-in ports.

Since you are using the original software that came with the card, we assume you are using LW.EXE. We recommend that you obtain the current release of AppleShare PC.

Published Date: Feb 18, 2012

TA40322_Lisa_Pascal_Printing_Graphics_(TIL00438).pdf

Lisa Pascal: Printing Graphics

This article has been archived and is no longer updated by Apple.
Quickdraw has no facility for printing graphics except to use the debugger to print contents of the screen. Refer to the Workshop Manual in the section named The Debugger for more information on printing using the debugger. See also the AppleLink article titled "Workshop 3.1 and Earlier: How to Get a Screen Dump."

To write your own routine to print graphics, use the printer ESC sequences. Remember as you are opening the printer to make sure you specify the actual port connected, instead of "-printer".
Published Date: Feb 18, 2012

AppleTalk: Cable TV/Broadband Network Connectivity

Can AppleTalk operate over cable TV wires? If so, how?

Since cable TV mainly uses coax-type cable, how do I make the connection? If it needs to be done serially (connection to the cable), would a Hayes InterBridge-type product be able to do this?

For home use, the only thing I can think of is using Liaison (if asynchronous is still the way to go) in the Macintosh.

Can any of the solutions work with Apple II computers? This is needed for home use to connect to a ANS network to a school.

This article has been archived and is no longer updated by Apple.
It is possible to have Ethernet channels running on a broadband network, which is typically used in cable TV installations. It is important that the group responsible for the cable be intimately involved in this process since this is not a plug-and-play situation. There are a number of different alternatives possible once you have the hardware and software support for Ethernet in place on the cable network.

Usually, you would connect routers, such as the AppleTalk Internet Router, to the Ethernet drops from the broadband, and all of the other Macintoshes are connected to the Internet via routers. The routers then would be the only Macintoshes required to have Ethernet boards. You also could use FastPaths, GatorBoxes, or Macintoshes running Liaison as the routers.

Network Resources also offers several products that allow Macintosh users to connect to broadband. Their MultiGate 2000 hardware router connects LocalTalk to broadband, as if connecting a LocalTalk network to Ethernet via a router. Their MultiGate Bridge connects any combination of broadband, Ethernet, and fiber optics. These solutions do not require running Ethernet on broadband. For more information on their products, search on "Network Resources and broadband" in the Technical Info Library.

A Hayes InterBridge would not be a solution because it is a LocalTalk-to-LocalTalk bridge, and you need an Ethernet connection.

For the asynchronous connection, Liaison definitely seems a good choice since it also has the other capabilities mentioned above.

On the Apple II front, we are not aware of anything that will provide remote, serial AppleTalk access similar to what is available for the Macintosh.

We strongly suggest that you get assistance from a network consultant capable of assisting you in all phases of this type of setup. You should also be aware that anyone doing this will need full approval from whomever owns and operates the cable system.

Published Date: Feb 18, 2012

Kodak DataShow: Pixels Limits Prevent Showing of Full Screen

This article has been archived and is no longer updated by Apple.

TOPIC ----------

When using the Kodak DataShow for giving presentations, the problem is that the overhead projection system places these buttons below the viewing area on the screen display as well as on the projected display. In other words, I don't have access to the buttons to start an animation or set the volume, for example. This happens whenever I have the projection system connected to the Macintosh. If the projection system is not connected to the Macintosh, the screen displays the entire screen including the buttons at the bottom.

DISCUSSION ----------

The Kodak DataShow displays only 512x342 pixels regardless of which computer you're using. Since this becomes your screen size for your presentation, anything outside of these boundaries will not be accessible. You could try one of the screen extender packages, such as Stepping Out. Otherwise, you need to work with a projection system that is capable of displaying more pixels.

Published Date: Feb 18, 2012

LaserWriter IINTX: LaserJet Emulation and Landscape Problem

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I am printing in Landscape rather than Portrait mode to a LaserWriter IINTX in LaserJet emulation mode.

I am using a PC-clone and driving the printer from dBASE III+. All the HP command codes I send to our printer work except the code for Landscape mode. When I send this, nothing happens.

The code being used is:

CHR(27)+"&1O"

I have tried using a zero instead of letter O and also put a CHR(13) at the end of the command, and it still does not work.

DISCUSSION ----------

It appears that you should be using a different escape sequence. According to our documentation, you should try the following:

in decimal:
chr(27)+chr(38)+chr(108)+chr(49)+chr(79)

in ASCII:
esc "&l1O"

Substituting the 49 with a 48 should put you back in Portrait mode.

Published Date: Feb 18, 2012

MacAPPC: Using To Create An IBM Compatible File Server

MacAPPC does not inherently provide AFP-compatible file services for the Macintosh. MacAPPC is a development tool kit that allows the user to write custom transaction programs to provide a variety of functions to the end user using the LU6.2 verb set.
This article has been archived and is no longer updated by Apple.
To Apple's knowledge, there is no AFP-compatible file service available for any IBM mainframe operating system. Someone could write one, using MacAPPC, but they would have to implement AFP on the mainframe end and create a custom application for the Macintosh. The Macintosh side would have to be written to "tunnel" or encapsulate AFP frames within SNA. One would have to examine their environment a bit closer to get a handle on what mainframe components would be required to accomplish this.

However, using APPC as a basis, a "simple" file server on the mainframe could be created which would allow the devices on the remote network to connect to it. This, however, would not be an AFP-compatible file server.

Something to investigate is a package called XCOM 6.2 from Legent Corp. (formerly Spectrum Concepts). XCOM, currently in development, sits on top of MacAPPC and permits file transfers to an IBM mainframe with a HyperCard front end. This package will support binary formats, allowing you to distribute Macintosh files from the mainframe, as well as text. Spectrum Concepts likes to position this as an RJE replacement package. This package, however, will not give you AFP/AppleShare look, feel, or functionality.

If there are 3X74 remote controllers installed, a 3270 file transfer package, like Avatar's, can provide a similar service in the 3270 world. A 3X74 replacement with similar capability is the Netway 1000. These packages allow MacBinary transfers, in addition to regular binary and text. These also do not have an AFP/AppleShare look and feel. DCA's MacIrma and Simware could also be used, but they provide binary and text transfers only, not MacBinary.

By using these packages in conjunction with a TSO-partitioned data set, one could create a "simple" file server, but without the ease of operation of AppleShare. Transport, in this instance, is file transfer. By transferring the files as text, one could share files with IBM PCs.

To locate a vendor's address and phone numbers, use the vendor name as a search string.
Published Date: Feb 18, 2012

Apple Monitors: Radius-of-Curvature Specifications

I want to put a touch screen or raster shield directly on the glass front of a monitor. What are the "curvature" measurements of Apple monitors?
This article has been archived and is no longer updated by Apple.

The monitor radius-of-curvature specifications are:

Monitor Model	Monitor Name	Horizontal Curvature	Vertical Curvature
M0400	Apple High-Resolution Monochrome Monitor	1200mm	1200mm
M0402	Apple Two-Page Monochrome Monitor	1730mm	1730mm
M0404	Apple Macintosh Portrait Display	1200mm	1200mm
M0401	AppleColor High-Resolution RGB Monitor	660mm	none
M2494	Apple Multiple Scan 17 Display	1300mm	40,000mm
M1823	Apple Multiple Scan 20 Display	1170mm	40,000mm
M4436	Apple Multiple Scan 1705 Display	1100mm	1370mm
M3323	AppleVision 1710AV Display	1300mm	40,000mm
M3322	AppleVision 1710 Display	1300mm	40,000mm

Published Date: Feb 18, 2012

AppleFax Modem: Serial NB Card Doesn‘t Support Multiple Modems

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I who would like to use six AppleFax Modems on a single Macintosh with a Serial NB Card.

1. Is this possible (that is, are there drivers available for this card)?

2. Is there any software that supports this situation?

DISCUSSION ----------

We are not aware of any drivers that support the Serial NB Card for the AppleFax modem. Also, since the modem is treated as an output or Chooser-style device, only one can be supported for output purposes. In terms of receiving input, the software also works with only one modem. We do not know of any third-party software that supports multiple modems.

Published Date: Feb 18, 2012

VT100 Emulation Package that Can Adjust Screen Display Size

Is there a product that you can recommend that will use the full 13-inch Apple screen to do a VT100 emulation? I am using Macintosh IIcx systems to trap data from a Hewlett Packard via a VT100 emulation session. The emulation packages I am using cannot take advantage of the whole of the screen in VT100 mode. Before I started using Macintosh, the dumb terminals had a screen size of about 11 to 12 inches square. Unfortunately, the Macintosh emulation packages, such as OPAL (VIA Systems, Inc. is the U.S. distributor), MicroPhone II, and VersaTerm PRO, leave a 1-inch strip at the bottom and right of the screen when doing the emulation, and the actual size of the display is smaller than before. Certainly, the screen can be resized to fill the 13-inch screen, but at 12-point, the 80 characters leave this 1-inch strip. In 14-point, the 80 characters flow off of the screen by about 3 to 4 characters. I need more control over the actual font being used--either a 13-point font, or a slightly different font might solve the problem.

This article has been archived and is no longer updated by Apple.

A possible solution would be to use Red Ryder from FreeSoft. This package has the ability to choose the font size you want as long as the font you choose is installed in the application. The application has a specific font with ID 98 that it looks for when setting the font size. You could build a 13-point font from one of the existing sizes that would then be accessible from Red Ryder. Building this font requires using a Font Editor, such as Fontastic from Altsys Corp.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

3M DC 2000 Tape Cartridge: Estimated Shelf Life

What is the shelf life of a DC 2000 tape?

This article has been archived and is no longer updated by Apple.
According to 3M Data Storage Products Division, the expected shelf life of a DC 2000 mini-data cartridge is 2 to 5 years. This shelf life is based on the active life of the lubricants used in the cartridge. The shelf life is affected by environmental conditions (temperature, humidity, and so on). The magnetic tape itself is rated for use, not shelf life, normally at 5000 passes.

For more information, search on "3M" in the Tech Info libray and contact their Data Storage Products Division.

Published Date: Feb 18, 2012

Lisa Pascal: Typestyles

This article has been archived and is no longer updated by Apple.
Here are the typestyles available to you from QuickDraw that are not described in the manual:

Font #0 system font
Font #1 small icons and symbols
Font #2 LisaDraw shading patterns
Font #3 more icons and symbols
Font #4 ps pitch, 12 point, sans serif
Font #5 ps pitch, 18 point, sans serif
Font #6 ps pitch, 24 point, sans serif
Font #7 15 pitch, 9 point, sans serif
Font #8 12 pitch, 12 point, sans serif
Font #9 10 pitch, 12 point, sans serif
Font #10 ps pitch, 12 point, serif
Font #11 ps pitch, 18 point, serif
Font #12 ps pitch, 24 point, serif
Font #13 12 pitch, 12 point, serif
Font #14 10 pitch, 12 point, serif
Font #18 calculator symbols
Font #19 20 pitch, unknown point, sans serif
Font #20 LisaGraph tic marks
Font #21 18 pitch, sans serif
Font #22 large icons and symbols
Font #49 LisaGuide icons and symbols

* Pitch is the number of characters per inch; ps pitch is proportional spacing.
* Point is the size of the characters (1 point = about 1/72 inch).
* Serifs are the short decorative lines at the ends of strokes in classical typestyles.
* Sans serif refers to typestyles without serifs.

Use the number of the font as the parameter of the TextFont procedure. Font numbers not listed comprise undefined characters.
Published Date: Feb 18, 2012

MFLOPS Ratings: How They‘re Calculated and Used

Article Change History

03/16/93 - RETITLED
* From "Motorola 68020/68030: How To Calculate MFLOPS Ratings"

Does Apple publish MFLOPS ratings for the various Macintosh computers? How accurate is this rating for comparing system performance between vendors?

This article has been archived and is no longer updated by Apple.
MFLOPS (Million Floating Point Operations Per Second) is a measurement generally used in reference to supercomputers rather than personal computers or workstations. Measuring MFLOPS is an inaccurate art, at best. The reference manuals we consulted all stated that an MFLOPS rating can be misleading. The issue that causes MFLOPS ratings to be suspect is that not all instructions take the same time. On the 68881, a single instruction can take from 29 to over 600 machine cycles.

From Motorola's 68020/68030 Performance Report:

"Benchmarking microprocessors is much like water-witching. Everyone wants to use the results but are skeptical of the 900-methods. From the user's point of view, the best benchmark to use in making a decision on a given microprocessor is to run the code which will be run in the final application. This, however, is usually difficult at best, and expensive and time consuming at least. Since running the actual code is usually not feasible, most users and all microprocessor manufacturers turn to either synthetic benchmarks - ones that simulate real-world conditions - or small standard benchmark programs which are designed to indicate real-world performance. Not everyone can agree on what simulates real conditions; thus, there are numerous benchmark programs available, each written to test some aspect of performance that the writer is interested in testing."

For many of the same reasons that Apple does not publish MIPS ratings and those stated above, Apple does not publish MFLOPS ratings. However, you can calculate this value on your own.

Using chapter 6 of the Motorola MC68881 Floating-Point Coprocessor User's Manual, figure the average time for a floating-point operation. Here's that problem mentioned above. Do you add the times for all instructions and divide by the number of instructions? Do you pick a few "popular" instructions and average their times? Do you pick the instruction that requires the least amount of time (very sneaky)?

We suggest the first method. For the sake of this discussion, let's say that value is xx cycles/instruction.

Assume that the floating-point unit and the microprocessor are clocked one for one. On the Macintosh IIx, this value would be 15.6672 m-cycles/sec.

Invert the first number and multiply by the second giving you m-instructions/sec (MFLOPS).

1 instructions 15.6672 million cycles 15.6672 million instructions
-- ------------ * ---------------------- = -------- --------------------
xx cycle sec xx sec

It is generally assumed that the 68882 is 1.5x faster than the 68881.

Published Date: Feb 18, 2012

MicroExplorer: Compatible with NuBus

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Does the Texas Instruments MicroExplorer work in the Macintosh IIx and the Macintosh IIcx?

DISCUSSION ----------

The Texas Instruments MicroExplorer is NuBus-compatible. It will work with the Macintosh II, the Macintosh IIx and the Macintosh IIcx.

The MicroExplorer card comes with 4MB of memory but is usually configured with an additional 4MB of memory. This extra memory comes on an expansion board that takes the space of a second slot although it does not use a connector. In the Macintosh II and the Macintosh IIx, two slots are used. Because there are only three slots in the Macintosh IIcx, Texas Instruments bends a pin so that the MicroExplorer only uses one slot. You can then use two additional cards in the Macintosh IIcx.

Unless you want only 4MB of memory, the Macintosh IIcx configuration must be purchased from Texas Instruments as a system because they bend the pin. The Macintosh II and the Macintosh IIx configuration can be bought as a package, or the card can be bought separately.

For more information, search on "Texas Instruments" in the Tech Info library.

Published Date: Feb 18, 2012

Omnis: Lack of Virtual Memory Limits Large Database Sorting

This article has been archived and is no longer updated by Apple.

TOPIC ----------

A have a huge (1.5-million record) Omnis database that they need to sort using a Macintosh II with 8MB of RAM.

The system is running under Finder, and the system has been stripped of all INITs, extra fonts, even the RAM cache is off. I am able to sort up to 1.2 million records, but shortly thereafter, Omnis returns an error message that the system is out of memory.

Part of the problem lies with Apple's operating system, and the fact that it only addresses 8MB of RAM. The other part of the problem is with Blyth, and the fact that they do the complete sort in RAM.

It has been suggested that I add some of the new 4MB SIMM strips that are available for the Macintosh II, but this will cost upwards of $5,000 to $10,000 just to test, and might not even work.

What should I do?

DISCUSSION ----------

We contacted Blyth Software, and they confirmed that their sort routines bring all of the information they need into RAM. Their sort routines do not write anything out to disk to allow for larger amounts of information to be sorted.

Omnis has a line at the bottom of the sort window that tells you how many records it can sort. This number is calculated according to how much memory you have available at the time. This information can, at least, can help you to determine if the sort will be complete or not before you run the sort.

We are not aware of any workaround for this problem. Adding 4MB SIMMs will not work. The Macintosh OS only addresses a maximum of 8MB of memory. It is possible that with System Software 7.0 and virtual memory, there will be enough addressable memory for this sort to work, but that obviously is not a solution now.

This is not a hardware limitation, but rather a software limitation. It is possible to write software that will write information to disk as it is sorting, so that such a large amount of RAM is not needed. FoxBase+/Mac, for example, writes information to a temporary file when it is sorting. It requires that you have twice as much disk space available as the information that you want to sort. A possible solution would be to change databases; however, we realize that with a custom database already written and all of the data in it that this is not a trivial thing to do.

Published Date: Feb 18, 2012

GS/OS 5.0: Can Create Accented and Special Characters

I want to be able to display accented French characters on a localized Apple IIGS. What are my options?
This article has been archived and is no longer updated by Apple.
The announcement of GS/OS 5.0 has some information that pertains to this very subject:

"The ability to create accented and special characters directly from the keyboard, something particularly important to customers working with legal and math symbols and other languages, is also a great addition."

GS/OS 5.0 has the capability of generating accented characters in the same manner as is done on the Macintosh.
Published Date: Feb 18, 2012

LaserWriter IINTX: Space Amounts for an Attached Hard Drive

This article has been archived and is no longer updated by Apple.

TOPIC ----------

This is a request for basic information about hard drives that are attached to the LaserWriter IINTX. Specifically, I would like additional information on the following issues.

1) How can a person determine how much space is available on the drive? Let's say I have 60 fonts downloaded to the drive and would like to check available space to determine how many additional fonts I can download. The "diskstatus" operator tells how many Kbytes are available, but what about the ratio of cache versus font storage? Is it with the "userdiskpercent" operator?

2) At what point does the system/printer alert me that the space available on the drive will limit performance? Does it depend on the ratio of font caching space versus font storage space, or an actual total MB value of space that's available?

3) What affect does the amount of free space have on the performance of the LaserWriter speed?

DISCUSSION ----------

The following information was obtained from the LaserWriter Reference Manual from Addison-Wesley (ISBN 0-201-19258-6), Chapter 2 "Working With Fonts", and the LaserWriter IINT/NTX Manual from Apple (030-3215-A), Appendix A "LaserWriter II Upgrades".

1) Initialization of a hard disk attached to a LaserWriter IINTX allocates 20% of the disk space to font storage and 80% to font caching. The LaserWriter Font Utility informs the user how much space is available for additional font storage. The "diskstatus" operator returns the number of pages currently available and the maximum number of pages available (a page being 1024 characters). The operator "userdiskpercent" returns the percentage of disk space allocated for user files. The operator "setuserdiskpercent" allows setting the percentage of space on the drive allotted for user files. This operator also removes the least recently used cached bitmaps from the disk file system until there is enough free space.

2) The Font Utility application issues the warning to the user when the storage percentage is high enough to threaten font caching performance. Since the LaserWriter IINTX automatically increases the storage percentage as needed, this warning is probably related to the number of fonts on the disk versus the amount of cache space left on the disk.

3) As long as there is enough font cache space to create the needed bitmaps for the downloaded fonts on the hard disk, there should be no decrease in throughput of the LaserWriter as available space on the hard disk gets smaller. The warning from the Font Utility should be adequate.

Published Date: Feb 18, 2012

Apple IIGS: Hard Drive Always Starts Up From 1st Partition

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I'm using a 20MB hard drive with an Apple IIGS. I used the Advanced Disk Utilities to partition the drive into four partitions. I installed AppleWorks on the first partition and the System files on the fourth partition. Every time I starts up the system, it launches AppleWorks first, which is not what I want.

Is there some way to control which partition gets opened first?

DISCUSSION ----------

There is no method available for specifying which partition the system will start up from.

As the software is currently written, the system always starts up from the first partition. If you want to start up with the System files first, it is necessary to have the Finder, and so on, in the first partition. Then have your other applications follow in partitions of ascending numerical order.

There are currently no plans to change this method of operation.

Published Date: Feb 18, 2012

Applesoft: HPLOT TO After a Draw

The Applesoft DRAW command doesn't set an internal pointer refering to the last plotted point, which a HPLOT TO command could use. Instead HPLOT TO X,Y draws a line from some random point to X,Y.
This article has been archived and is no longer updated by Apple.
The following program contains a machine language routine which decodes the position of the last plotted point, thus allowing HPLOT TO X,Y to draw from this location.

```
10 FOR J=768 TO 780
20 READ A
30 POKE J,A
40 NEXT J
50 DATA 32,203,245,166,224,164,225
60 DATA 165,226,76,17,244
100 SHLOAD
110 HGR
120 HCOLOR=3
130 SCALE=1
140 DRAW 1 AT 100,100
150 CALL 768: REM THIS IS IT!
160 HPLOT TO 10,10
170 END
```

Published Date: Feb 18, 2012

iMac: Views of Ports, Connectors, and Controls

This article provides information on the ports, connectors, and controls for the original iMac.
This article has been archived and is no longer updated by Apple.

Components and Controls

Figure 1 Component and control locations

A - Color display
B - Infrared window
C - Stereo speakers
D - Flip-out foot
E - Apple USB keyboard
F - Open button on CD-ROM Drive
G - Power button on keyboard
H - Apple USB mouse
I - Headphone jacks (2)
J - Power button on computer
K - CD-ROM drive
L - Microphone

Ports and Connectors

Figure 2 Port and connector locations

L - Sound input port
M - Sound output port
N - Universal Serial Bus (USB) ports (2)
O - Ethernet port
P - Reset hole
Q - Programmer's button
R - Internal Modem port
S - Handle
T - Power socket

Keyboard and Mouse

Figure 3 Keyboard and mouse connection locations.

U - Universal Serial Bus (USB) port
V - Attached cable with USB connector on Apple USB keyboard
W - Attached cable with USB connector on Apple USB mouse

Published Date: Feb 18, 2012

MacLink Plus: Explanation of Errors 106 and 124

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I've had a report of errors 106 and 124 appearing in MacLink Plus when going from Macintosh to Macintosh via the cable provided. What do these mean?

DISCUSSION ----------

These errors are generated by, and are specific to MacLink Plus. We called DataViz Technical Support and received the following information:

Error 106 is a "can't connect error" and occurs when MacLink Plus cannot complete a connection.

Error 124 is a "port set error". This error indicates that there is a port conflict. An example of this is having both MacLink Plus and AppleTalk set to the same port.

For more information, we suggest contacting DataViz Technical Support at 203-268-0030.

Published Date: Feb 18, 2012

Apple EtherTalk Card: Revisions "J" and "K" Explained

This article has been archived and is no longer updated by Apple.

TOPIC ----------

What is the latest revision of the Apple EtherTalk adapter? Is there a specific revision required to support the Internet Router and AppleTalk Phase 2?

DISCUSSION ----------

The latest revision of the Apple EtherTalk Card is Revision "K".

To be assured of good performance when there is a lot of network traffic, you should use Apple's EtherTalk Card with EtherTalk 2.0. You should use Revision "J" of the EtherTalk Card. Revision "J" fixed a problem in earlier revisions that caused data corruption.

When a Macintosh IIcx is used as an EtherTalk 2.0 workstation, then Revision "K" of the EtherTalk Card should be used. Revision "K" fixed a problem that caused a Macintosh IIcx with only one card installed not to start.

Both problems occur only in rare instances, but to be safe, Revision "J" or "K" should be used.

Published Date: Feb 18, 2012

InterPoll: Asynchronous and Lookup Interval Options Explained

In the Inter*Poll "Settings" command of the "Special" menu, there are two options called "Asynchronous Interval" and "Lookup Interval". The documentation says that "Lookup Interval" determines the wait time between asynchronous lookups (page 74), and it's the same thing for "Asynchronous Interval". What is the difference?

This article has been archived and is no longer updated by Apple.
On page 74 of the "Inter*Poll Network Administrator's Guide", there is a screen shot of the "Setting" dialog. The "Lookup Interval" describes, in seconds, how often NBP Lookup packets are sent to the AppleTalk network.

The "Asynchronous Interval" and "Asynchronous Count" come into play when the lookup packet or packets do not generate a response. The "Asynchronous Count" field describes how many times a resend occurs, and the "Asynchronous Interval" field describes how long (in 8-tick increments) the system waits between resends.

Published Date: Feb 18, 2012

Internet Router: Correction to Administrator‘s Guide

On page 129, of the AppleTalk Internet Router Administrator's Guide, (Appendix A: Planning an AppleTalk Internet, Figure A-8) it appears that the cable segments are LocalTalk (printer is on the same cable segment) and the workstations are all LocalTalk.

How do you get workstations and printers physically connected to the router via LocalTalk to be in separate zones as the picture describes?

How do you build a work group consisting of a few LocalTalk users, LocalTalk printers, and some EtherTalk users in one zone?

The only workstation zone selectable under the Apple-Control Panel-Network is for EtherTalk and TokenTalk? Is this correct? Is the zone for the LocalTalk printers always the single LocalTalk zone name?

This article has been archived and is no longer updated by Apple.
The diagram on page 129 of the "AppleTalk Internet Router Administrator's Guide" is misleading. A LocalTalk network can be associated with only one zone. This is the same as it was with AppleTalk Phase 1.

With AppleTalk Phase 2, any node on an AppleTalk network (other than LocalTalk) can belong to any zone selected from a list of available zone names. This would include EtherTalk 2.0 and TokenTalk 2.0. More information on this is on page 4 of the "AppleTalk Phase 2 Introduction and Upgrade Guide".

Published Date: Feb 18, 2012

LaserWriter: Workaround to The Namer Utility Naming Problem

Article Revision History

This article has been archived and is no longer updated by Apple.
04/09/93 - REVISED
* To include information on the LaserWriter Utility

I'm having problems naming a LaserWriter Plus using The Namer 2.1 utility.

I'm trying to name the printer "2040/1825 EUC LW+", but The Namer creates a name of "2040/1825 EUC LW+ ". Notice the space AFTER the + character.

What is in this name that causes this to happen? I am sure that I did not type the space when using the Namer.

STARTDISCUSSThe Namer utility, including version 7.0, appears to add a trailing space to some printer names. We have been unable to determine what causes the space to be added.

Here is an alternate method for renaming the printer:

The printer name is stored as a string in the persistent parameters of all LaserWriters. This string can be changed by the following PostScript program:

```
serverdict begin 0 exitserver
statusdict begin (NEWNAME) setprintername
```

In your case, replace "NEWNAME" with "2040/1825 EUC LW+". This program can download to the LaserWriter in batch or interactive mode. Note that the brackets are required. Make sure you have selected the correct LaserWriter using the Chooser before downloading this program (so you don't rename the wrong LaserWriter). The name can be up to 31 characters and should consist entirely of printing characters--the "@" and ":" cannot be used.

This problem has been cured in version 7.4 of the LaserWriter Utility.

Published Date: Feb 18, 2012

Macintosh: How To Configure When Using Different Monitors

I carry my Macintosh IIcx back and forth from my home to the office. At home, I have a monochrome monitor; at the office, a Portrait Display. The Macintosh IIcx contains interface cards for both monitors, and I want to be able to easily set the menu bar for each monitor.

When using the Macintosh IIcx with the Portrait Display, I can still "see" two monitors represented when I open the Monitors CDEV. I can drag the menu bar to the smaller monitor so it will start up on that screen when I'm at home.

However, at home with the monochrome monitor, I cannot set the menu bar to appear on the Portrait Display. The Monitors CDEV 3.3.1 and 4.0 won't let me select the Portrait Display unless it is plugged into the card. So when I get to the office and start up, there is no menu bar. I have to power down, remove the regular video card, and power up again.

As a fix, it has been suggested that I keep a copy of the Monitors CDEV after setting it up for the Portrait Display. At home, I can drag the current CDEV out of the System Folder, and put the "office version" in the System Folder, so it will start up properly without my having to remove the normal video card. This is inconvenient, and I would prefer that the CDEV allow me to specify the Portrait Display when the card is present.

Is there some new version of the Monitors CDEV that fixes this problem? It appears that the possibility of different monitors in multiple locations was overlooked when the CDEV was written. I imagine there are many customers in similar situations.

This article has been archived and is no longer updated by Apple.
The fix recommended above will not work. The "Monitors" CDEV does not save any settings within itself. They are stored in the System file in a resource called the "scrn" resource with an ID = 0. Replacing the "Monitors" CDEV does not affect the settings in any way. The Portrait Display Video Card is an intelligent card that senses at startup if a display is attached. If no display is attached, the video card does not make itself known to the system and does not show up in the "Monitors" CDEV.

We have, however, a solution that should work. With the Portrait Display attached, open the Monitors CDEV and move the menu bar to the icon that represents the Portrait Display and don't adjust the screen that the menu bar is on. When you take the computer home and plug in the monochrome monitor, the menu bar will show up on the monochrome monitor. This happens because the system thinks that only one video card is installed and displays all information to the monochrome monitor. When you take the computer to work and plug in the Portrait Display, the menu bar will appear up on the Portrait Display because of the values stored in the "scrn" resource in the System file.

There is nothing that can be done to the "Monitors" CDEV to resolve this issue.

Published Date: Feb 18, 2012

Macintosh: How To Get the Apple NTSC Video Utility (9/94)

Does Apple distribute a disk that tells developers how to modify an 8-bit Apple Macintosh Video Card to produce conventional NTSC color video as an unsupported feature? How do I get it?

This article has been archived and is no longer updated by Apple.
The information is actually a CDEV/INIT with a documentation file.

The CDEV/INIT file is called "Macintosh II Video Utility"; the documentation file is called "Video Utility Read Me."

These articles can help you locate software updates mentioned here:

* Where To Find Apple Software Updates
Lists online services for "free" Apple software updates

* Obtaining Apple Product Support in the USA
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History
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26 Sep 1994 - Removed binary attachments, documented how to obtain them.
02 Feb 1993 - Updated to explain how to locate the binary attachment if you are not using the on-line version of AppleLink.
29 Jul 1992 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

TA40348_Lisa_Printing_(TIL00441).pdf

Lisa: Printing

This article has been archived and is no longer updated by Apple.
If you have difficulties printing to a printer connected to a parallel card in slot 3, try slot 2 or 1. Don't forget to change Preferences before you move the card.
Published Date: Feb 18, 2012

3COM EtherLink: Running AppleTalk and EtherTalk Concurrently

Regarding the concurrent use of AppleTalk and EtherTalk:

I have 3COM's EtherLink/NB interface cards using EtherTalk and running 3COM's 3+Share for the Macintosh. Here is my procedure:

1) I log on to the Internet Server using the Chooser. (The CDEV is set to EtherTalk.)

2) I link the appropriate Servers, printers, shared folders, etc.

3) I change the CDEV back to LocalTalk, and a warning dialog box appears telling us that we will lose our current connection. Choose OK.

4) I go back to the Chooser and select a LaserWriter from the AppleTalk network.

5) I still have an EtherTalk connection! I haven't lost anything, and AppleTalk is active.

I have always thought that a workstation could use only one AppleTalk connection at a time (although it may be physically connected to several networks, sending and receiving data over the selected network connection).

Why and how does this 3COM EtherLink continue to work? Doesn't the LAP Manager send packets to the connection selected in the Control Panel?

This article has been archived and is no longer updated by Apple.
As a user, you can have access to only one physical network at a time through the link access you specify via the Control Panel.

During tests, when we change our network device in the Control Panel, we do lose our connections to our network services. We suspect that the 3COM software is not actually using AppleTalk, but instead is implementing its own protocol stack, which bypasses even the LAP specified by the Network Control Panel device.

If this is the case, then only the AppleTalk-based services would be lost whil all of the 3COM services would remain unaffected including the servers. This would mean that you actually don't have EtherTalk, but you do have the 3COM Ethernet connection still up and running.

Published Date: Feb 18, 2012

HyperCard 1.2.1: Insufficient Memory When Printing

HyperCard chokes after I print around 140-150 of the 284 cards in a certain stack. I'm using HyperCard 1.2.1 on a Macintosh II with 2MB of memory running MultiFinder.

This article has been archived and is no longer updated by Apple.

This is probably an out-of-memory error, so try printing without MultiFinder running. Here are some other options you should try (in order):

1) Compacting the stack immediately before printing.

2) Using HyperCard 1.2.2.

3) Write a script that sets the lockmessages and lockrecent properties to true, then go to each card of the stack and issue a Print Card menu command. This is the least-recommended solution, due to the time and trouble involved.

Published Date: Feb 18, 2012

Macintosh IIcx: Radio Emissions Can Trigger Radio Devices

Sometimes my wireless telephone will ring when I do something on my Macintosh IIcx. Is it possible for the IIcx to set off my phone?

This article has been archived and is no longer updated by Apple.
Under certain conditions, EMI or RFI levels from the Macintosh IIcx could be high enough to set off the ringer of a wireless telephone sitting on its cradle (the condition does not exist when off the cradle).

A Macintosh IIcx with HD40 SC and 2MB RAM with Apple 8-bit video card and AppleColor monitor running Director performed this trick. Every time an error condition existed, the telephone was triggered when we closed the error dialog box.

We did not try other software. MoC certification number of the telephone is 5382227A (Send Freq = 49.770 MHz, Recd Freq = 46.710 MHz). The telephone was approximately 4 feet from the monitor, and it is currently Bell's top-of-the-line model (Promenade 1250).

Complete testing has not been done, but garage door or alarm systems may also be affected.

Published Date: Feb 18, 2012

Macintosh II: How It Handles Color Versus CGA, VGA, and EGA

This article discusses how the Macintosh handles color in comparison to CGA (Color Graphics Array), VGA (Video Graphics Array), EGA (Enhanced Graphics Array) and other color standards.

This article has been archived and is no longer updated by Apple.

Background

CGA

The first color standard for the MS-DOS PC-style computers was CGA (Color Graphics Adapter or Color Graphics Array). The CGA standard can display two colors from a palette of 16 colors at its maximum resolution of 640 by 200. The output of this card is a TTL digital RGB signal.

PGC

The next standard for color on MS-DOS computers was the IBM PGC (Professional Graphics Card), which has a 640 by 480 resolution with 256 colors from a palette of 4096. The PGC provides an analog output. This card gained very little acceptance because EGA, the next standard, provided better price/performance.

EGA

EGA (Enhanced Graphics Array) provided some backward compatibility with the CGA standard. The first EGA had a maximum resolution of 640 by 350 with 16 colors from a palette of 64. The current EGA standard (EGA enhanced) is 640 by 480 with 16 colors. Both EGA standards use a TTL digital RGB output.

VGA

When the PS/2 computers were introduced, the VGA standard came into existence. There are three color graphics modes on the VGA (Video Graphics Array) card: 640 by 480 with two colors, 640 by 480 with 16 colors, and 320 by 200 with 256 colors. The 16- and 256-color modes have a palette of 262,144 colors. The lower resolution of the 256 colors has limited its use with commercial software. With the VGA standard, an analog RGB output is used.

MS-DOS Color

With the CGA, EGA, EGA enhanced, and VGA, it is possible that each card may require a different driver to be installed for each of the individual applications that is run on each computer. It is possible, for example, for a company with five MS-DOS computers to have five different drivers for the same program: on System One a CGA card from Manufacturer A, on System Two an EGA card from Manufacturer B, on System Three an EGA enhanced card from Manufacturer C, on System Four an EGA enhanced card from Manufacturer D, and on System Five a VGA card from Manufacturer E. Each of these systems is running Lotus 1-2-3. For each system to display the 1-2-3 graphs, each system may need a driver for each individual card. Each of these systems will most likely be displaying in different resolutions and with a different number of colors.

Even within one graphics card standard, when moving from one card manufacturer to another, different drivers may be required for the same program. Also, within one graphics card standard, some third parties may have decided to change the rules; that is, 640 by 480 by 16 colors is the standard in EGA enhanced, but there is a card that uses 800 by 560 by 16 colors.

These resolutions remain constant whether a 9-inch or a 19-inch screen is used--creating a situation where an application cannot depend on the screen display to represent any type of "what you see is what you get" environment. A graphic object that is 2 inches by 2 inches on one screen may become 4 inches by 4 inches on another screen.

With the wide variety of possible color display devices for the MS-DOS world, consistency is very difficult to maintain.

Macintosh Color

On the Macintosh, there is more consistency, even when moving from black and white graphics to full 32-bit color graphics. Card developers and software developers need not be concerned about which application or which video card they are going to work with. Both the hardware companies and the software companies focus their resources on QuickDraw. A driver for a particular application is not necessary in the Macintosh environment. Users needn't be concerned about installing drivers to use a particular application.

The typical Macintosh screen is 72 pixels per inch. There is a difference from one screen product to the next--but only a small difference. This allows for a consistent display. A 2-inch by 2-inch image remains very, very close to 2 inches by 2 inches from screen to screen.

If you have a smaller screen, you have fewer pixels; however, the pixels are very, very close to the size of any other Macintosh screen. This constant pixel size has been a tremendous benefit for the publishing market because an image on Macintosh "A" is very close to the same image on Macintosh "B"-- unlike the MS-DOS world. Since all Macintosh video cards use the same reference (QuickDraw) for image work, it doesn't matter who manufactured the video card: the image appears the same.

With 32-Bit QuickDraw now available, the Macintosh can also display photo-quality images--not available in the CGA, EGA, and VGA environments.

When the graphics environment is enhanced, applications do not need to undergo major changes to continue to work in the new and enhanced graphics model. For example, programs that ran in Macintosh 1-bit display configuration continue to run in the 32-bit display configuration. These applications may not take advantage of the new environment, but they generally continue to work without modification.

CGA and EGA cards require a digital RGB display monitor. VGA and Macintosh can, in many instances, use the same multisync monitors.

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Macintosh-to-Wang: Emulation VS Serial Communication

This article has been archived and is no longer updated by Apple.

TOPIC ----------

How can I connect and transfer files between a Wang VS 5000 and a Macintosh II over a modem?

DISCUSSION ----------

There are several ways to connect the Macintosh computer within the Wang environment. The most common implementations rely on basic Wang terminal emulation and terminal emulation with file transfer and document conversion capabilities. Below is a complete solution, including Wang terminal emulation and asynchronous file transfer.

Basic Wang Terminal Emulation

Any Macintosh application that supports VT100 emulation -- such as inTalk or MacTerminal software -- can emulate a standard VT100 terminal on a network using the Wang VS. This allows the Macintosh computer to function as a Wang workstation by direct or modem connection to the Wang-provided asynchronous device controller (ADC) or enhanced asynchronous device controller (EADC). These controllers let remote terminals execute Wang software applications, with the following limitations:

- The standard Wang keyboard includes 32 function keys, a Help key, and a Cancel key, all of which are heavily used in Wang applications. With the Macintosh computer and VT100 emulation software, the user needs to memorize several keystrokes to signify each of these keys.

- With the described MacTerminal connection, it is not possible to transfer files between the Macintosh computer and the Wang VS.

Terminal Emulation with File Transfer and Document Interchange
---

The DataViz MacLink Plus/Wang VS software provides a bridge between Wang word processing and Macintosh applications, including word processing and desktop publishing applications. It also provides two-way file transfer and document translation using the standard Macintosh user interface, while allowing the Macintosh user to access Wang Office electronic-mail services.

Macintosh documents can be converted to standard Wang word processing documents and stored on the Wang VS in a one-step process. Wang VS documents can be sent to the Macintosh computer and automatically translated to MacWrite, Microsoft Word, or WordPerfect format, allowing documents created on the Wang VS to benefit from Macintosh desktop publishing capabilities.

Data files can be transferred in both directions and then translated into a variety of formats. Wang data files can be converted and used on the Macintosh computer as Microsoft Excel spreadsheets. Macintosh files can be stored on the Wang VS in MacBinary format for use by other Macintosh users, and also can be stored in binary format for use by MS-DOS personal computer users -- in all, more than 45 translators are provided.

You can also read mail received via Wang Office electronic mail and copy received files and documents to the Macintosh computer. You can create and send Wang Office memos and packages containing memos, documents, and data files (even MacBinary and binary files) to Wang users, as well as other Macintosh computer and IBM PC users.

A special version of MacLink Plus/Wang VS is available for Macintosh connectivity via the Wang VS TC, TCP, or MLTC ports. The full range of file translators is available for file transfer and conversion. (Wang does not support terminal emulation capability through these ports.)

Document Conversion with Smart Kid

Smart Kid from Interpreter, Inc. is a hardware and software product that allows documentation conversion between Wang VS or Wang OIS and various word processors and personal computers. Many systems and software packages are supported, including Microsoft Word and WordPerfect on the Macintosh computer, WP and WP Plus on the Wang, WordPerfect and Mass11 on Digital's VAX, and a number of IBM PC word processors and dedicated word processors. Smart Kid permits almost 100-percent file conversion, including headers, footers, and footnotes and translates directly from Wang WP and WP Plus into Macintosh word processing formats.

Terminal Emulation for Document Transfer and Conversion

VSterm from MacSoft and VsCom/Macintosh from M/H Group (the leading vendor for IBM PC-Wang VS connectivity software) provide Wang 2110 terminal emulation for document transfer and conversion. With VSterm, any PC with a serial port can emulate the Wang 2100 or VT100 terminals, exchange documents and data with the Wang VS, and convert Wang VS data to popular PC formats. VsCom/Macintosh provides Wang VS 2100 terminal emulation, including quick screen response, complete support of Wang WP graphics and characters, and flexible access to Wang function keys. The program also provides file transfer and conversion between Macintosh and Wang word processing formats.

MacSoft also offers a program called Converse that provides file transfer and conversion through the Wang VS TC-IOP ports, providing a relatively simple, inexpensive solution for file transfer and conversion.

MacBLAST for Asynchronous Communication

MacBLAST communications software interfaces with BLAST for the Wang VS/OS (Revision 6.4 or later, equipped with TCP/IP boards and asynchronous ports with ADC/EADC options). MacBLAST provides high-speed, error-free file transfer and text file format-conversion for integrating the Macintosh computer with Wang computer systems. MacBLAST transfers binary data, text, or graphics.

MacBLAST and Wang VS BLAST can be used to create file transfer links or dial-up networks between Wang VS computers and any number of remote Macintosh computers or PCs. MacBLAST uses standard phone lines or X.25 networks to provide reliable, high-speed communications unaffected by line noise or propagation delay on satellite-routed calls and X.25 packet networks.

MacBLAST features include on-line help, automatic dialing, and scripting for creating unattended operations, custom menus, and seamless integration within Macintosh applications.

For more information, search under: "DataViz, Inc."; "Interpreter, Inc."; "MacSoft"; "M/H Group"; and "Communications Research Group".

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Viruses Rarely Spread Between Different Machine Types

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Can an infected Macintosh on a network spread a virus to an IBM host?

DISCUSSION ----------

A virus rarely spreads between different machine types. (A rare occurrence of this was the virus that infected thousands of UNIX systems through a hole in the mail system. This was possible since the virus actually recompiled itself on each of these machines. Even so, it would not have been possible across operating systems.)

Thus, there should be no way for a virus on a Macintosh to spread to an IBM host. The host would need to be executing 680x0-based code and using all of the basic mechanisms of the Macintosh operating system.

It IS possible, if the host is being used as a file server, for files to become infected. These files still would affect only Macintoshes connected to the host, not the host itself.

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AppleShare PC: Resetting Timeout

This article has been archived and is no longer updated by Apple.

TOPIC ----------

I have several PCs coexisting with Macintoshes on a PhoneNET network. They are printing to LaserWriters -- primarily the LaserWriter IINTX, but also a LaserWriter IINT.

The Macintoshes are running Microsoft Word on the DOS end, and are having problems printing because Microsoft Word does not release the document when it reaches the end: I have to wait for the timeout.

I can use the DA pop-up application to change the timeout from 3 minutes to a few seconds, but this is a lot of trouble. Can this be automated?

DISCUSSION ----------

You can use the command line interface to the DA; the command is called "ANET" and is documented in the AppleShare PC 2.0 manual (Apple part #030-3002-A). The specific subcommand you want is CONNECT, which has an option for setting the LaserWriter timeout value. You also can obtain the exact format of the command by entering the following command at the DOS prompt:

ANET HELP CONNECT

Once you have the specific command you desire, enter that line in the AUTOEXEC.BAT file so that it is executed at startup, automatically connecting you to the LaserWriter of your choice with your desired timeout values.

Published Date: Feb 18, 2012

HyperCard: How to Send a Macro Keystroke Sequence

Is there a way to create a button in HyperCard to send a macro keystroke sequence (such as AutoMac or QuicKeys)?

This article has been archived and is no longer updated by Apple.
HyperCard's "type" command does not generate a keydown event, which is needed for this sort of macro. It might be possible to write an XCMD. An easier way is Dewi Williams' excellent "PostEvent" stack. Not only does it call Tempo II and QuicKeys macros, it's invaluable for posting carriage returns to dialogs (that is, the Print Report dialog) without user intervention. It's available in the ordinary places: CI$, GEnie, MacNet, user groups, and so on.

Published Date: Feb 18, 2012

Macintosh: Storage at Extreme Temperatures and Altitudes

Can the Macintosh withstand non-operating temperatures of -80 deg C? Can the Macintosh and a hard drive be modified to operate at altitudes of 12,000 feet?

I am interested in using a Macintosh at the South Pole. The elevation is 10,000 feet, but atmospheric conditions add the equivalent of approximately 2000 feet, for a total altitude factor of 12,000 feet.

The equipment will be installed during the summer (temp is -30 deg C to -40 deg C), which is within Apple's storage temperature specification guidelines. If there were a generator problem during the winter, the temperature could drop to -80 deg C for a period of time.

This article has been archived and is no longer updated by Apple.
There is a great probability of damage to any Macintosh used in the environment you describe.

Apple's storage temperature guidelines are specified for storage only. Under no circumstances should the system be operated at anything under 0 deg C. In fact, if the Macintosh is stored at its minimum temperature, it would need to be returned to above 0 deg C for AT LEAST 2 hours before operation.

Also, the battery on the logic boards of all Macintosh II computers is not good for any temperature under -40 deg C. Lubricants in a hard drive would also solidify at those low temperatures.

We know of no way to modify the Macintosh to work in such conditions.

Published Date: Feb 18, 2012

NTSC Video: How To Avoid Flicker on Macintosh

This article discusses how to overcome Macintosh video "flickering" in an NTSC environment. (NTSC is the current broadcast standard for television signals.)

This article has been archived and is no longer updated by Apple.

Macintosh video in an NTSC environment is commonly beset by flickering images.

The flicker is most noticeable when 1-pixel horizontal lines are used in the display. Due to the technique used for NTSC displays, 1-pixel lines are actually on the screen only half of the time. NTSC video is displayed at 30 frames per second, with each frame having 2 fields, or 60 fields per second. A field consists of alternating lines of the frame: odd lines are displayed in the first field, even lines in the second field.

Most video images contain material that exists in each field (each half of the frame). This allows these portions of the image to remain on screen at all times, persisting through both fields. A 1-pixel line exists on the screen only in alternating fields -- half of the time.

This is the nature of NTSC and is not specific to the Macintosh -- ANY computer graphics only 1 pixel wide have a tendency to flicker. There are various methods for resolving this annoyance.

Several companies have converters that capture both fields and display them at the same time. A similar technique is beginning to appear in consumer television receivers, generally labeled "extended definition TV", or EDTV: with both fields displayed, the 1-pixel lines are always on the screen. Information on such professional-level devices can be found in ads in computer graphics magazines.

Mass Microsystems ColorSpace F/X NuBus card for the Macintosh II family uses a similar approach to provide stable 1-pixel lines on an NTSC video device.

Another approach, used by many computer graphic artists, is to simply use 2-pixel lines for any subject being sent to the NTSC environment.

In some situations, like trainings and demos, the only noticeable flicker is in a Macintosh window's title bar. The software approach for avoiding the annoying title bar flicker is to use an INIT called "NeVR". This INIT makes the title bar a solid pattern rather than the normal 1-pixel horizontal lines.

NeVR is available on many of the public access networks and bulletin boards.

For more information, search under: "Mass Micro"

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AppleShare PC 2.0: Compatible Network Cards

This article lists cards known to be supported by AppleShare PC 2.0

This article has been archived and is no longer updated by Apple.
AppleShare PC 2.0 supports the following cards:

3COM EtherLink II
3COM EtherLink MC (MicroChannel)
IBM Token Ring 802.2 (long card)
IBM Token Ring 802.2 (short card)
IBM Token Ring Adapter/A (MicroChannel)
DayStar Digital MCA LocalTalk Card (MicroChannel)
Apple LocalTalk PC Card

Only the cards listed above have drivers included with AppleShare PC 2.0.

Other third-party network cards may also be able to support AppleShare 2.0.

For more information, contact the card manufacturers directly.

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Apple HD-20 (Non-SCSI): Which Macintosh Computers Support It

With what Macintosh models can I use a serial HD-20?

This article has been archived and is no longer updated by Apple.
Support of the serial HD-20s is not tied to System Software, but to the ROM in the respective systems.

The following Macintosh models have support for the serial (non-SCSI) HD-20 built into ROM:
* Macintosh 512Ke
* Macintosh Plus
* Macintosh SE
* Macintosh Classic
* Macintosh IIci
* Macintosh Portable

The following Macintosh models do NOT have this support built in:
* Macintosh SE/30
* Macintosh II
* Macintosh IIx
* Macintosh IIcx
* Macintosh IIsi
* Macintosh IIfx
* Macintosh LC

For more information on the serial HD-20, see the article "Old HD20 and New Mac SE/30".

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HyperCard: "suspend" and "resume" Messages

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Why doesn't HyperCard generate the "suspend" and "resume" messages when running under MultiFinder? Is there a workaround?

DISCUSSION ----------

HyperCard uses the "sublaunch" mechanism of the "_Launch" trap when the "open" command is issued to run other applications. The "sublaunch" mechanism behaves one way with MultiFinder off, another with MultiFinder on.

With MultiFinder turned off, the sublaunch mechanism causes HyperCard to issue a "suspend" message and then quits. The application specified in the "open" command is then launched. When this application is exited, HyperCard is relaunched. HyperCard is able to determine that it is being relaunched and issues the "resume" message.

With MultiFinder turned on, the sublaunch mechanism acts as if the user double-clicked on an application, causing the application to launch. HyperCard never has to quit, so a "suspend" or "resume" message is never generated.

There is currently no way to work around this situation.

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HyperCard: "resume" Handler Under MultiFinder

My HyperTalk programming manual says "resume" is sent up the chain of handlers when you quit an application launched from HyperCard. I put the following handler into the "Stack Script":

```
on resume
put "Hello World"
end resume
```

When I quit the application, nothing happens. Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
HyperCard does not generate "suspend" and "resume" messages when running under MultiFinder. This is probably why the stack script resume handler is never called.

If MultiFinder is not being used, another resume handler is probably called first, and is not passing the message to the next object in the hierarchy.

Messages are passed through the object hierarchy in the following order:

Buttons and fields
Cards
Backgrounds
Stacks
Home Stack
HyperCard

Based on this hierarchy, we would check for resume handlers in the following scripts: the card script for the card from where the application was opened, and the background script for the card from where the application was opened.

(NOTE: The "suspend" and "resume" messages are not passed to buttons and fields.)

If a resume handler is found, add the line "pass resume" just before the "end resume" line in the handler. For example:

```
on resume
-- Whatever script that happens to be here
-- Whatever script that happens to be here
-- Whatever script that happens to be here
-- Whatever script that happens to be here
pass resume
end resume
```

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PostScript: Program for Obtaining LaserWriter Information

This article contains a PostScript program for gathering LaserWriter information.

This article has been archived and is no longer updated by Apple.
This PostScript program reports information about the printer, including:

- PostScript version
- available fonts
- virtual memory status
- cache status
- a graphic benchmark.

```
%!
%% Laser Doctor, Version 1.0.0
%% Written by Jim Sullivan, January, 1989.
%% This was written out of a need to display as much information
%% about various Postscript Laserprinters onto one page. More
%% can be added and anyone is free to modify it for their own
%% needs.

gsave

%% Beginning of definitions ********************************

/HB {/Helvetica-Bold} def
/CBO {/Courier-BoldOblique} def
/C {/Courier} def
/FF {findfont} def
/SS {scalefont setfont} def
/mt {moveto} def
/s {show} def
/fontname 30 string def
/getfont {pop fntnm cvs /fontname exch def} def
/fntnm 30 string def
/str 32 string def
/BOLD {CBO FF 10 SS} def
/NORMAL {C FF 10 SS} def
/cnt 0 def
/btime 0 def
/circleofbench
{ 15 15 345
{gsave
rotate 0 0 mt
(Benchmark) oshow
grestore
} for
} def
/oshow {true charpath stroke} def

%% End of definitions **********************************************

BOLD
200 756 mt
(Analysis by Doctor Laser, Version 1.0.0) s %Print title
20 720 mt
NORMAL (This printer is a ) s
BOLD statusdict/product get str cvs s %Gets the name of the
NORMAL ( running version ) s %printer from
BOLD version str cvs s %statusdict/product
```

```
NORMAL ( of Postscript.) s %and the version number
20 700 translate %of Postscript from the
%'version' command
0 0 mt
(Available Fonts : (PaintType)FontName:Example of font) s %Heading
0 -10 mt
(PaintType = 0\\(filled\\), 1\\(stroked\\), 2\\(outlined\\),) s
0 -20 mt
( 3\\(mixed\\), ?\\(unknown\\)) s
0 -30 translate

BOLD
FontDirectory {BOLD 0 0 mt %Push directory of fonts and
getfont %get the fonts one at a time.
(\\() s
{fontname cvn FF /PaintType get str cvs s} stopped {%ifelse
(?) s } {} ifelse %Get the font's PaintType and print its value,
(\\)) s %or if it is not supplied, print a '?'.

fontname s %Print the name of the font.

mark
fontname length 1 30 {(-) s} for %Print dashes out to the font sample
column.
(:) s %Print a colon.

{fontname cvn FF 10 SS ( ABCDEFGH abcdefgh) s } stopped {%ifelse
NORMAL (Error implementing font) s } {} ifelse %Show a sample of each
cleartomark %font. If an error is
cnt 10 add %trapped, print message
/cnt exch def %indicating an error
0 -10 translate} forall %occurred. Use the
NORMAL %variable 'cnt' to count
cnt 30 add /cnt exch def %the number of fonts.

350 cnt mt %Move back up the page 'cnt' points.
(Virtual Memory Status:) s %Print the Virtual Memory Status
0 0 translate %using 'vmstatus'.
370 cnt 20 sub mt
(Maximum Available Bytes = ) s BOLD vmstatus str cvs s NORMAL
370 cnt 30 sub mt
(Bytes currently in use = ) s BOLD str cvs s NORMAL
370 cnt 40 sub mt
(Level of Save Nesting = ) s BOLD str cvs s NORMAL
350 cnt 60 sub mt

(Cache status \\(Red book p126\\):) s %Print out the cache status.
cachestatus
370 cnt 80 sub mt NORMAL (blimit = ) s BOLD str cvs s
370 cnt 90 sub mt NORMAL ( cmax = ) s BOLD str cvs s
370 cnt 100 sub mt NORMAL ( csize = ) s BOLD str cvs s
370 cnt 110 sub mt NORMAL ( mmax = ) s BOLD str cvs s
370 cnt 120 sub mt NORMAL ( msize = ) s BOLD str cvs s
370 cnt 130 sub mt NORMAL ( bmax = ) s BOLD str cvs s
370 cnt 140 sub mt NORMAL ( bsize = ) s BOLD str cvs s

usertime /btime exch def %Print a graphic (circleofbench)
HB FF 12 SS %and time how long it takes for
430 cnt 230 sub translate %the printer to interpret it.
.5 setlinewidth
circleofbench
0 0 moveto
(Benchmark Testing) true charpath
gsave 1 setgray fill grestore
stroke
```

```
-40 -80 mt
NORMAL
(Time to print) s
-40 -90 mt
(the above graphic) s
-40 -100 mt
(was ) s
BOLD
usertime btime sub 0.001 mul str cvs s %Print out the time in seconds.
NORMAL
( seconds.) s
grestore
showpage
```

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Macintosh: 1-Bit Video Incompatible With Adobe Illustrator

This article has been archived and is no longer updated by Apple.

TOPIC ----------

My Adobe Illustrator 88 1.6 bombs on a Macintosh IIcx with the Macintosh 1-bit Video Card installed. Have you heard of any problems with the 1-Bit Video Card and software compatibility?

DISCUSSION ----------

Versions of Adobe Illustrator 88 prior to version 1.7 are not compatible with Macintosh 1-Bit Video Card.

Adobe Illustrator 88 version 1.8.3 is the latest version, and it does work properly with the Macintosh IIcx and the Macintosh 1-Bit Video Card.

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TA40365_Routing_Table_Maintenance_Protocol_RTMP_AppleTalk_Phase__(TIL04428).pdf

Routing Table Maintenance Protocol (RTMP): AppleTalk Phase 2

This article has been archived and is no longer updated by Apple.

TOPIC ----------

Here are some questions and answers about changes to RTMP (Routing Table Maintenance Protocol).

DISCUSSION ----------

Q) Are Routing Table Maintenance Protocol (RTMP) timers still at 10-second intervals?

A) Yes, the RTMP packets are still sent out every 10 seconds.

Q) Are RTMP validity timers still at 20-second intervals?

A) The validity timer is still based on 20 seconds.

Q) Do routing tables propagate only when changes are perceived, or are the Phase 1 algorithms still being used?

A) The algorithms used are different, but the changes do not affect when the tables are propagated. The changes specifically affect the amount of data sent in each packet. AppleTalk Phase 2 routers only pass information about routers that are located on the other side of the router. For example:

A----B----C----D

Router B passes information about routers C and D to router A, but it does not tell router A about itself.

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LaserWriter: Connecting to IBM PC and PS/2 Computers

This article discusses how to connect LaserWriter printers to IBM PC and PS/2 computers.

This article has been archived and is no longer updated by Apple.
To connect IBM PC-XT and all PS/2 systems (all have DB-25 Male Serial connectors from the CPU) to the LaserWriter families, use a Serial Null Modem cable. Here is the cabling scheme for Apple cables:

[CPU -- PC or PS/2 DB-25 (Male)] to
[(Female) DB-25 Female-to-Female Gender Changer (Female)] to
[(Male) 590-0037 (Straight through DB-25 Serial cable) (Male)] to
[(Female) 590-0166 (Modem Eliminator Cable) (Male)] to
[(Female) LaserWriter Serial Port]

To adapt the IBM PC/AT or other 80286 class MS-DOS machines to the DB-9 serial port, add a DB-9-to-DB-25 adapter between the CPU and the Female-to-Female DB-25 adapter. Radio Shack stocks both adapters. The DB-9-to-DB-25 is Radio Shack part number 26-1388 or 26-265. The DB-25 Female-to-Female is Radio Shack part number 26-1495. If the Apple 590-0166 is not readily available, use a Radio Shack Null modem (Modem Eliminator) adapter.

Testing the Connection

This test, if successful, prints the current DOS directory on the LaserWriter. Before doing the steps below, make sure that a) Everything is connected correctly; and b) the IBM-PC serial port to be used is configured as a known COM: port (like COM1: or COM2:).

Note: The test assumes that COM1: is the serial port. If you're using a different COM port, substitute it as appropriate in step 2 below.

Follow these steps:

1) Set the printer to Diablo emulation mode.

- On a LaserWriter or LaserWriter Plus, set the rotary switch to SPECIAL.

- On a LaserWriter IINT, set switche 1 to ON and 2 to OFF.

- On the LaserWriter IINTX, set switch 1, 2, and 3 to ON and 4, 5, and 6 to OFF.

2) Power on the LaserWriter and the MS-DOS machine. At the DOS prompt, type the following:

MODE COM1:96,n,8,1

MODE LPT1: = COM1:

DIR > LPT1:

ECHO ^D > LPT1:

Note: The "^D" stands for the keystroke sequence Control-D. This is the "end-of-transmission" command. Note: Use ^D instead of ^L to avoid problems with the printer expecting more information and maintaining the connection after a print.

If all went well, you should have a printout of the current DOS directory. If nothing happened, check these three things:

- Make sure that you have access to the MODE command.

- Make sure that the serial port you think is "there" really is "there".

- Make sure that all cabling is snugly connected.

If you got a good printout, then the physical and logical integrity of the connection between the MS-DOS computer and the LaserWriter is good. Once you have successful test results, you can switch modes on the LaserWriter and expect it to perform well in the MS-DOS-to-LaserWriter printing environment.

However, if you are printing a long document and pieces of the document appear to be missing from the output, the problem is probably not in the fundamental connection between the printer and the computer. This symptom will most likely appear in a PostScript production environment.

The problem probably has to do with the "Handshake" mode settings in the printer and the computer. ("Handshaking" is the process where the computer expects the printer to tell the computer to pause briefly while it finishes the current print job.) The "XON/XOFF" handshaking protocol is supported by both series of printers (LaserWriter and LaserWriter II). The "DSR/DTR" protocol is only supported by the LaserWriter IINT/NTX family.

Further questions about MS-DOS and LaserWriter connectivity are answered in Appendix C of the "LaserWriter IINTX Owner's Guide".

Published Date: Feb 18, 2012

Macintosh: Startup Problems When Using CD-ROM (5/96)

When I start my Macintosh with the CD player attached and turned on,

everything works fine. But when I have a CD-ROM disc inserted in the

player before I start it, the Macintosh will not boot, and freezes.

This article has been archived and is no longer updated by Apple.

In a majority of cases, the system doesn't crash when a CD-ROM is in the

drive as described above. However, some non-startup CD-ROM discs have been mastered with data in the boot blocks. When this happens, the computer starts to boot up from the CD-ROM disk but is unable to find a valid system folder and will, then freeze or crash. If a CD is mastered with the first two blocks left blank, the system won't attempt to use the disc as a boot device.

The problem is that the default block size for a CD-ROM drive is 2048 bytes, whereas the default block size for a hard drive is 512 bytes. This

difference can cause the system to read unanticipated areas which may lead

to the problem described above.

Article Change History

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23 May 1996 - Simplified and clarified article.

03 Mar 1996 - Revised and retitled for technical clarity.

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MacWorkStation: Protocol-Based Communications Problem

This article has been archived and is no longer updated by Apple.

A developer of a TCP/IP network reports the following problem. Uploads of window or file contents are causing serious problems resulting in line drops. This occurs during EZ read Text (T008), Read Text (T009), Select Existing File (F017), and probably during EZ Read File Fork (F007) and Read File Fork (F008).

The developer is currently using the Simple ASCII transport layer (ID = 2) with 7 data bits. Unfortunately, data in the ranges <00>-<1F> and <80>-<FF> may be contained within windows or files. In particular, if there is a carriage return <0D> within the data, then the IBM mainframe front-end processor (FEP) takes this as an end-of-line character, sends the packet to CP, which sends the packet to the application, which processes it.

Meanwhile, MacWorkStation continues to send the remainder of the packet up until the final carriage return, which it uses to signal end-of-line. Unfortunately, the characters following the first carriage return cause CP interrupts, leaving the virtual machine in CP mode. After some number of interrupts, CP determines that the line is too noisy to continue and signals the FEP to drop it.

The problem here is that they are using a protocol in an unsupported fashion. The serial protocol driver (ID=2) that uses start and stop characters is not designed to support the transfer of binary data, or any data that might contain nonstandard characters. The best choice would be to use the serial driver (ID=1) that supports binary data and should be able to handle the transfer of carriage returns. If this is unacceptable, request a copy of the source for serial driver version 2.

Published Date: Feb 18, 2012

LaserWriter IINTX: Networking PS/2 and Macintosh Computers

You can connect multiple IBM PS/2 computers, Macintosh computers, and Apple LaserWriters, so that the connected computers are networked with each other and the LaserWriters. This enables Macintosh and IBM computers to share data and printers through the network interfaces. The following solutions describe the specific interfaces and their configurations.

This article has been archived and is no longer updated by Apple.

DayStar Digital Solution (Direct LocalTalk Connection)

This solution uses a LocalTalk MicroChannel card within IBM PS/2 MicroChannel systems. The MicroChannel systems are networked using the LT200MC MicroChannel LocalTalk card for MicroChannel bus PS/2s by DayStar Digital. The card uses AppleTalk network protocols and associated software so that MicroChannel PS/2s can communicate with other AppleTalk system components, like the LaserWriter IINT and IINTX. The card comes with software for PS/2s to connect to AppleTalk printers. AppleTalk network products like TOPS are reported to work with the card, too. AppleShare PC 1.0, 1.1 and 1.2 is reported to be incompatible with the DayStar card. For more details, search the Tech Info Library under "DayStar".

3COM Solution (Ethernet to Server to Serial Connection)

Another solution is to use the EtherLink MC PS/2 card from 3COM. This is a more complex solution, because it comprises several components. The card connects MicroChannel PS/2s to Ethernet. The PS/2s can print to a 3COM 3S200 print server serially-connected to a LaserWriter II. Macintoshes may connect through an Ethernet interface card too or directly through the LocalTalk port of the 3S200 server. 3COM servers do not support AppleTalk connections to LaserWriters and can only connect serially. The 3S200 server supports file, mail services, and print services.

Routers (Ethernet to router to LocalTalk connection)

A Kinetics FastPath, Gator Box, or an Apple Internet Router can route EtherTalk data from Ethernet connected AppleTalk systems like Macintoshes, PCs, MicroChannel PS/2s, and DEC VMS systems. The computer systems must have an Ethernet, Token Ring, or LocalTalk interface installed with an AppleTalk driver and appropriate network software. Some PC software packages that run with this configuration are TOPs and AppleShare PC 2.0*. By using the routers, the EtherTalk systems can print to LocalTalk LaserWriters directly through the routers or through print servers from companies like 3COM, Pacer, Alisa, or Apple.

Note: A MicroChannel PS/2 EtherNet or Token Ring Card using AppleShare PC 2.0 must use an AppleTalk Phase 2 router. The Apple Internet Router is a phase 2 router.

PS/2 Note: There are six PS/2 models 25, 30, 50, 60, 70, and 80. Each model can also be bought in a different configuration. The low-end models 25 and 30 retain a PC and/or AT bus architecture that works with the Apple LocalTalk PC card.

Published Date: Feb 18, 2012

AppleWorks 2.0: Problems Printing to Networked ImageWriter

I have an AppleShare network, including Apple IIe, Apple IIGS, and Macintosh systems, with AppleWorks 2.0 running from the server. I cannot print to the LocalTalk ImageWriter II using AppleWorks, but can print to it from a Macintosh.
This article has been archived and is no longer updated by Apple.
The difficulty in printing concerns the version of AppleWorks being run from the server. The ability to print from Applesoft indicates that the hardware is properly configured. AppleWorks 2.0 is not licensed for, nor designed for, running from an AppleShare server.

For a version of AppleWorks licensed and designed for running from a server, use AppleWorks version 2.1N. Be sure, in AppleShare Admin under the Apple II menu, to set the user's account to the desired printer. The alternative would be to run AppleWorks 2.0 from a local disk.
Published Date: Feb 18, 2012

AppleWorks: Problems Printing to LocalTalk ImageWriter

AppleShare was recently installed at a client school. I am having problems printing from AppleWorks on the Apple IIe's to a LocalTalk Imagewriter. Here is some background:

- There are no problems accessing the file server.

- The LocalTalk ImageWriter was set as the default printer for Apple II users.

- The AppleShare Print Spooler is NOT on the file server.

- LocalTalk Cards were placed in Slot 7 of the IIe's.

- I added a printer in AppleWorks configured to print to Slot 7.

- If I run CHOOSER.II the printer shows up. If I reselect the printer I still have the same problems.

When I print from AppleWorks I get NOTHING. If I go to BASIC I can type PR#7 and talk to the printer. How can I print to the LocalTalk'd ImageWriter from AppleWorks?

This article has been archived and is no longer updated by Apple.
We cannot get the results you describe. With the Workstation card in slot 7, a networked ImageWriter, a slot 7 ImageWriter selected in AppleWorks, and AppleWorks 2.0 running, we can print across the network with no difficulties.

Our configurations have included all combinations of:

- AppleWorks version 2.0, with an ImageWriter assigned to slot 7

- ProDOS 8 versions 1.4 and 1.6

- Apple IIe, enhanced, with the Workstation card in slot 7

- ImageWriter II with AppleTalk option

- Chooser II version 1.2

- AppleShare II Workstation versions 1.0 and 1.1

In all cases the document printed without need for special actions.

Our boot disk contained

- ProDOS
- ATINIT
- Selector.System
- Sys.Apps (a sub-directory containing:)
- Basic.System
- Logoff
- Logon
- Chooser (a sub-directory containing:)
- Chooser.II
- Chooser5.OVR
- IWEM
- Chooser4.OVR
- Chooser3.OVR
- MTXABS.0

- Chooser2.OVR
- Chooser1.OVR
- Chooser.0
- Namer (a sub-directory containing:)
- Namer.II
- Namer.0
- MTXABS.0
- Access (a sub-directory containing:)
- Access
- Priv.0
- MTXABS.0
- Priv1.OVR
- Priv2.OVR
- Priv3.OVR
- Priv4.OVR
- AWORKS (a sub-directory containing:)
- Aplworks.System
- SEG.00
- WWSS
- SEG.M0
- SEG.EL
- SEG.XM
- SEG.RM
- SEG.M1
- SEG.PR

Our procedure followed these steps:

1) Boot with the above configured disk.

2) The selector window will be displayed; select and run Chooser II.

3) Press the Down cursor key to highlight "AppleTalk ImageWriter II".

4) Press Return to select. The name of the networked ImageWriter should appear in the to right scroll box. If the name does not appear:

a) Press the Tab key three times. You are now in the scroll box allowing you to chose between LocalTalk and Serial. Highlight LocalTalk and press Return.

b) Press Tab twice. You are now in the top left window. Highlight 'AppleTalk ImageWriter II'. Press Return. The name of the networked ImageWriter should now appear.

5) Press Tab twice. Use the Down cursor key to highlight the name of the networked ImageWriter. Press Return to select.

6) Press Open-Apple-Q to exit Chooser II.

7) Run AppleWorks.

8) Select Other Activities, Printer Information.

9) Verify a printer is designated as an ImageWriter in Slot 7. If no ImageWriter is set for slot 7, then do these three steps:

a) Delete a printer if all three printers are currently defined
b) Add a printer. Use ImageWriter. Set for Slot 7.
c) Give a name that indicates it is a network printer,i.e., "Network IW II".

10) Return to your document. Press Open-Apple-P to access the printer routines.

11) Answer the "Print from?" question. (In our test, we answered from

beginning)

12) Answer "Where...to print the file?" question with the network printer.

13) Answer "How many copies?" question.

14) On pressing Return after answering the last question, AppleWorks will send the document over the network to the ImageWriter. There was a slight delay between the screen refresh and the printing.

If you have any further questions about this sequence of events please Link TECH.COMM with details of what is taking place.

Published Date: Feb 18, 2012

Super Serial Card: Using with Machine Language (12/96)

This article describes assembly language addressing methods for the 6502 and 6551 microprocessors thruogh the Super Serial Card.

This article has been archived and is no longer updated by Apple.

The 6502 does a false read to the current page. This is inherent in the 6502 design. A false read occurs during a read to memory. The 6502 will hold the target address + 1 line open after it accesses the target address. This does not alter the contents of the address but can affect a memory-mapped I/O device that is toggled by the address line.

The false read does not affect the Super Serial Card as none of the card's functions are set when the address line is held open by the false read. However, for good programming to an I/O device, where false reads could toggle a function, you should use the indirect indexed-addressing mode with the address for your indirect accesses in the zero page.

The following example is available in the Tech Info Library and uses the absolute, indirect-addressing method; it has been modified here as an example of indirect, indexed-addressing. The program uses zero-page addresses $FA and $FB, because these are generally unused by both DOS and BASIC. See pages 74 and 75 of the "Apple II Reference Manual" for a map of the zero-page locations.

Super Serial Card: Accessing It Through Machine Language

Although Apple's Super Serial Card can be used from Applesoft BASIC, it is often desirable to use machine language to increase the speed with which characters are sent and received. The assembler program below illustrates a method of communicating with another computer through the Super Serial Card. You may use this routine as a starting point for your own program.

On page 291 of the "Apple IIe Reference Manual" and on pages 261 to 265 of the Apple IIc Reference Manual, there are lists of the registers and entry points used by routines resident in the Super Serial Card. The equates in the program below use these locations, as well as input/output hooks found in the Apple II family of computers.

The initialization routine (INIT) stores the address of the Super Serial Card's initialization routine in CSW (the Apple II monitor character output hook). This activates the card for output by jumping to COUT. Following this, DOS or ProDOS hooks are reinstalled.

The OUTput routine checks the 6551 status port bit 4. If this is equal to zero, the previous character has not yet been sent, so we must check the status byte again until that register is clear. When the value in bit 4 becomes one, the 6551 is ready to send another character. To do this, store the data in the transmit register (TDREG) of the chip.

Bit 3 of the status port is checked by the INput routine. If this bit is zero, the program either loops continuously or returns to the calling program, depending on the state of the return flag found in location $FF. If bit 3 is one, a character is waiting at the input port, and the character is then read from the read register (RDREG) of the 6551.

The DEMO portion of this program calls the INIT routine, and sends each letter of the alphabet to the connected device. After each character is sent, the program waits to see if a response has been received from the external device. If a character is waiting, the program ends.

Assembly Language Source Code Demo

Here is a demo of accessing the Super Serial Card with Assembly Language.

```
ORG $2000
COUT EQU $FDED ; CHARACTER OUT IN MONITOR
CSWL EQU $36 ; OUTPUT HOOK
CSWH EQU $37
WAIT EQU $FCA8 ; MONITOR ROUTINE TO WAIT
BASELO EQU $FA ; ZERO PAGE INDEX ADDRESS FOR INDIRECT ADDRESSING
BASEHI EQU $FB ; THE TARGET ADDRESS IS STORED IN FA AND FB
IO EQU $C0 ; IO PAGE HIBYTE ADDRESS THIS GOES IN BASEHI
;
; SSC EQUATES
;
```

```
DIPSW1 EQU $81 ; +N0 DIPSWITCH BLOCK 1
DIPSW2 EQU $82 ; +N0 DIPSWITCH BLOCK 2
TDREG EQU $88 ; +N0 6551 DATA REGISTER
RDREG EQU $88 ; +N0 6551 DATA REGISTER
STATUS EQU $89 ; +N0 6551 STATUS REGISTER
RESET EQU $89 ; +N0 6551 SOFTWARE RESET
COMMAND EQU $8A ; +N0 6551 COMMAND REG
CONTROL EQU $8B ; +N0 6551 CONTROL REG
;
START JMP DEMO ; SKIP AROUND ALL THE SUBROUTINES
;
; USE THE SSC FIRMWARE TO INITIALIZE THE 6551.
;
INIT LDA CSWL ; STORE THE CURRENT CSW
PHA ; SO THAT WE DO NOT DISCONNECT
LDA CSWH ; DOS OR ProDOS
PHA
LDA #$00 ; STORE $Cs00 IN CSW
STA CSWL
STX CSWH ; THIS ALREADY CONTAINS $Cs
LDA #$00
JSR COUT ; JUMP TO COUT TO INIT THE CARD
PLA
STA CSWH ; RESTORE THE DOS OR ProDOS
PLA ; HOOKS AND THEN RETURN
STA CSWL
RTS
;
; OUTPUT A CHARACTER TO 6551
;
OUT PHA ; STORE DATA ON STACK
LDA #STATUS ; GET THE STATUS ADDRESS
STA BASELO ; SET UP THE INDIRECT INDEXED ACCESS
OLP LDA (BASELO),Y ; CHECK BIT 4 OF STATUS BYTE
AND #$10 ; TO SEE IF IT'S OK TO SEND
BEQ OLP ; CHARACTER WAITING TO GO OUT
LDA #TDREG ; ADDRESS FOR TRANSMIT
STA BASELO ; SET UP THE INDIRECT INDEXED ACCESS
PLA ; GET DATA BACK FROM STACK
STA (BASELO),Y ; AND OUTPUT THE CHARACTER
RTS
;
; INPUT A CHARACTER FROM 6551
;
IN LDA #STATUS ; GET THE STATUS ADDRESS
STA BASELO ; SET UP THE INDIRECT INDEXED ACCESS
LDA (BASELO),Y ; CHECK STATUS
AND #$08 ; BIT 3 OF STATUS
BEQ INTST ; NO CHAR WAITING TO BE RECEIVED
LDA #RDREG ; GET THE READ ADDRESS
STA BASELO ; SET UP THE INDIRECT INDEXED ACCESS
LDA (BASELO),Y ; GET THE INPUT FROM 6551
RTS
INTST LDA $FF ; CHECK RETURN FLAG
BNE IN ; IF NOT 0 THEN WAIT FOR INPUT

RTS ; IF ZERO, DON'T WAIT
;
; BEGIN THE DEMO PROGRAM
;
DEMO LDY #$10 ; Y CONTAINS $s0 - DEMO USES SLOT 1
LDX #$C1 ; LOAD X WITH $Cs
JSR INIT ; INIT THE CARD
LDA #IO ; HIBYTE ADDRESS C0 FOR IO ACCESS
STA BASEHI ; STORE IT IN ZERO PAGE AS HIBYTE OF ADDRESS
```

```
LDA #$FF ; SET RETURN FLAG FOR INPUT
STA $FF ; FF MEANS WAIT FOR CHAR
JSR IN ; INPUT A CHARACTER - SEE ABOVE
OLOOP LDX #$41 ; OUTPUT THE ASCII CODES
OLP1 TXA ; FROM A-Z TO THE SSC. IT WILL STOP
JSR OUT ; WHEN THE SSC RECEIVES A CHAR.
LDA #$80 ; DELAY BETWEEN CHARACTERS
JSR WAIT ; TO ALLOW TIME FOR INPUT.
LDA #$00
STA $FF ; RETURN IF NO CHARS WAITING
JSR IN ; CHECK FOR A CHARACTER
BNE ALLDONE ; THEY SENT SOMETHING - WE END
INX
CPX #$5B ; THE LETTER 'Z'
BNE OLP1
LDA #$0D
JSR OUT ; SEND A CARRIAGE RETURN
JMP OLOOP ; BEGIN THE ALPHABET AGAIN
ALLDONE RTS ; END ROUTINE
```

Article Change History:
16 Dec 1996 - Reviewed for technical accuracy, revised formatting.
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TA40373_AUX_AppleShare_Server_Support__(TIL04436).pdf

A/UX: AppleShare Server Support (6/93)

Is it possible to run the AppleShare File Server under A/UX, so that the Macintosh II running it can act as a server and as a UNIX user workstation at the same time?

This article has been archived and is no longer updated by Apple.
The answer depends on what software versions you're running.

A/UX 1.1 did not support the AppleShare 2.0 Server software. However, you can turn an A/UX system into an "AppleShare" server through the use of AUFS from Columbia University or uShare from Information Presentation Technologies. Either of these products runs on under A/UX, turning it into a server supporting AppleShare clients. Also, they do not require a dedicated system.

If you're have the Apple Work Server (AWS) 95, running A/UX 3.0.1 you can. You can also run FileShare under System 7.x.

Article Change History:
6 June 1993 - Add information about AWS 95 and A/UX 3.0.1.
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System 6.0.3: Incompatible with Macintosh 512Ke and HD20

Macintosh 512Ke users (some also running HD-20s have reported the following scenario:

After updating the System on the startup hard disk to System 6.0.3, the system would not start. Attempts to start up from a startup disk with System 6.0.3 gave the same symptoms. That is, the Happy Macintosh face appears. Then, the dialog box appears and stays blank. At that point, the system hangs. Restarting from a System 6.0.1 floppy works.

This article has been archived and is no longer updated by Apple.
There are a couple of thing that could cause this lack of compatibility. One is the lack of support for the HD-20, which was dropped with System 6.0. Another is that System 6.0.3 requires XPRAM (256 bytes versus 20 bytes) in the Macintosh. A Macintosh Plus does not have XPRAM, and System 6.0.3 relies on it. This is probably the reason the Macintosh 512Ke hangs when starting up. It is looking for information from XPRAM and cannot find it. Starting up from an HD-20 may be compounding the problem.

According to the System Software manual that came with System 6.0, the latest version of system software recommended for a Macintosh 512Ke is System 4.1, Finder 5.5. It doesn't seem to matter whether an HD-20 is in use or not. Macintosh 512Ke users would do well to re-install Finder 5.5 and System 4.1 on their machines.

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Motorola CDX268: Terminal Emulation for Macintosh or Apple II

This article has been archived and is no longer updated by Apple.

Emulating a Motorola CDX268 terminal on a Macintosh or Apple II is easy. The CDX286 is what was once, affectionately, called a "glass TTY". It's a very basic terminal that you can configure for baud rate, data and stop bits, and parity. The port can be configured for either RS-232 or RS-422. It requires no strange or out-of-the-ordinary protocols. All of this means that almost any terminal emulation program for the Macintosh or Apple II can be set up to act like a CDX268.

To do the emulation, set it up CDX286 in TTy mode and connect the appropriate cable to the built-in serial port. The cable, like your configuration, depends on what you're connecting to.

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Macintosh II: Color Picker and Exact Color Match Issue

If you have a 4-bit color card in your Macintosh, you may have noticed that the Color Picker displays the entire range of over 16 million colors in the top-half of the color box to the left of the color wheel (inside the color window). However, when you choose color, the actual color is some ugly approximation. This anomaly rests with the Color Picker and the device's Color Look-Up Table (CLUT).

This article has been archived and is no longer updated by Apple.
The Color Picker Package is a tool that presents a standard interface for color selection. With this dialog, any application can ask the user to choose a color. The Color Picker displays all 16.8 million colors available through Color QuickDraw. They are the colors that are available to any color device, regardless of the number of bits that device can display. A 4-bit color card can display only 16 of the 16.8 million different colors at one time. An 8-bit color card can display 256 of the 16.8 million colors at one time. The number of bits that the card has does not limit the number of colors that are available to be shown, but rather it limits the number of colors that the device can show at one time.

The Color Picker returns the RGB color value of the chosen color to the application to do with it what it wants. The application has the choice of going to the device's Color Look-Up Table (CLUT) and approximating the color by picking the color closest to the chosen color, or replacing an entry in the device's CLUT to show the exact color picked. The Color Picker, itself, displays the exact color by borrowing a color table entry from the CLUT and changing it according to the color selected. When it's done, it puts everything back to the way it was. Thus, when you quit the Color Picker, the CLUT is the same as when Color Picker was called.

The choice of showing the exact color or an approximation is entirely up to the application. The Color Picker is not aware of the colors available in the CLUT, nor does it care. There may be more than one device that the application wants to display color on. In such a case, the CLUT for each of these devices will probably be different. This gives the application the ability to save the RGB color values returned from Color Picker and display a more or less accurate approximation of that color, depending upon the device used.

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AppleShare Workstation: How to Install It on the Mac SE/30

Users have had problems installing AppleShare workstation software (release 2.0 is the most common version) on a Macintosh SE/30. For example, after initializing the hard disk on the Macintosh SE/30 and installing System software 6.0.3, they experienced problems installing AppleShare Workstation software. To wit, after installing AppleShare Workstation software and selecting Shut Down, the system hangs with a frozen screen.

This article has been archived and is no longer updated by Apple.
When they reinstalled the System software using Minimum Macintosh SE/30, the AppleShare Workstation software worked. Shut Down worked too, although it seemed to take slightly longer. This type of thing can occur if the AppleShare Workstation software was installed from a disk using System software 6.0.2.

To have everything properly installed, do the following:

1) Use Macintosh System Tools disk, version 6.0.3, to install the System software.

2) Use the Macintosh Utilities Disk 1 disk, version 6.0.3, to install the AppleShare Workstation software.

Both disks are a part of the System software 6.0.3 four-disk set sent with the Macintosh SE/30. Each disk has an Installer and Installer scripts (full system scripts on the Tools disk and minimum system and workstation on the Utilities disk).

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TA40378_Email_Services_for_Novells_Netware_(TIL04442).pdf

E-mail Services for Novell‘s Netware

This article has been archived and is no longer updated by Apple.
E-mail programs that support Novell's Netware Message Handling System (MHS) (designed by Action Technology) should be compatible and able to send mail to other E-mail programs on other systems supporting MHS. Some of those E-mail programs are:

- Coordinator (for MS-DOS clones) or MacAccess (for Macintosh) from Action Technology

- Di Vinci (for PC clones)

- Dyna Mail (for Macintosh)

- EasyGate (offers Fax services to E-mail systems supporting MHS) from Alcom Inc.

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LocalTalk PC Card: Keyboard Problem in PS/2

While attached to the AppleTalk network, the cursor arrows, instead of moving the cursor, displays the corresponding numeric keypad number (8, 4, 6, or 2). This is intermittent. That is, when they hold down the right arrow key, the cursor moves along the screen and then, suddenly, a "6" appears. Also, some typed characters appear in caps, as if the Shift key was pressed.

Yet, when the LocalTalk PC Card is removed, WordPerfect works fine.

Setup: PS/2 30, running InBox 2.2 and AppleShare 2.0., with a LocalTalk PC Card in it running WordPerfect 4.2 (non-network version).

This article has been archived and is no longer updated by Apple.
Although the Token Ring card is currently not connected, having it in the machine can cause hardware conflicts between it and the LocalTalk PC Card. Check to make sure that the two cards are not using the same IRQ (interrupt) line. Also make sure that the two cards are not using the same DMA channel. A quick way to check if the two cards are in conflict is to remove the Token Ring card. Does the problem goes away?

Another possibility is that the LocalTalk PC Card has gone bad. If you have access to another LocalTalk PC Card, try that card to see if you get the same results.

While you are checking for DMA and IRQ conflicts between the two network cards, also should check the rest of the hardware in the machine for the possibility of such conflicts. For instance, multiple serial ports could cause conflicts with the IRQ line, which is the default on the LocalTalk PC Card.

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TA40380_CCITT_Group_Macintosh_Compatibility_(TIL04444).pdf

CCITT Group 4: Macintosh Compatibility

A am in the process of creating a company-wide database on a 3070 mainframe to store images. I have decided on CCITT Group 4 as the format for these images. To use Macintoshes with this system, I need Group 4 compatibility. Does Apple have such a thing, or is this support available from a third party?

This article has been archived and is no longer updated by Apple.
CCITT Group 4 classification is not a format, but rather a classification of facsimile machines for document transmission over the public networks. Groups 1, 2, and 3 are for use over the public telephone network. Group 4 is for use over the public data networks, which also may include the public telephone network. In other words, Group 4 does everything the other groups do, plus more. It specifically incorporates means for reducing the redundant information in the document prior to transmission and assuring essentially error-free reception of the document.

It is important to understand that CCITT Group 4 is not a format. It is many pages of specifications that explain exactly how an apparatus of this grouping works. It specifies the binary description of the document.

As of August, 1989, Tech Comm did not know of any application or utility for the Macintosh that is CCITT Group 4-compatible.

Published Date: Feb 18, 2012

TA40381_AppleShare_PC_MSDOS_Incompatibility_(TIL04445).pdf

AppleShare PC 1.2: MS-DOS 4.0 Incompatibility

My AppleShare PC 1.2 does not run with MS-DOS version 4.0. Is there something I can do?

This article has been archived and is no longer updated by Apple.
The best thing to do is upgrade; AppleShare PC 2.0 is fully compatible with MS-DOS 4.0. AppleShare PC through 1.2 is not compatible with MS-DOS 4.0.

Published Date: Feb 18, 2012

Canvas 2.0: LaserWriter Printing Problem

I have a problem when overlaying two objects in Canvas 2.0. According to Deneba Software, this is a known problem with the LaserWriter ROMs that has to do with an exclusive-or command. Has this known problem been fixed with the LaserWriter Rev 47 ROMs?

This article has been archived and is no longer updated by Apple.
No, the problem remains. Tech Comm recreated the problem with the 2.0 ROMs (Rev 38 of PostScript) and with the 3.0 ROMs (Rev 47 of PostScript) on a LaserWriter Plus and on a LaserWriter IINT.

Published Date: Feb 18, 2012

LaserWriter: How To Send Asynchronous PostScript File

How can I send a PostScript file, produced with the Command-K combination (under System 6.x) or by clicking the "Postscript File" destination in the Print dialog (under System 7), to a LaserWriter using asynchronous file transfer? I've been unsuccessful using "Send File..." from MacTerminal and others. I can send the file successfully using SendPS over AppleTalk, but I get a PostScript error when I send the same file using a 9600-baud asynchronous connection. It appears that XON/XOFF doesn't properly control the flow. What am I missing?

This article has been archived and is no longer updated by Apple.
The use of Command-K (under System 6.x), or using the "Postscript File" destination option in the Print dialog (under System 7) to create a PostScript file actually adds the information from Laser Prep to the beginning of the file being generated. This eliminates the need to send the Laser Prep header separately. In fact, there is a chance that the problem is being caused because the header is being included.

There is a segment of PostScript included in Laser Prep header that checks to see if certain routines are already loaded in the LaserWriter RAM. If they are, everything from that point in the header to the next Control-D character is deleted from the print job. Unfortunately, when the header is added to the PostScript file, no Control-D is appended at the end of the header information. Therefore, the next Control-D reached is the end of the file, which effectively flushes the job by deleting everything but the header.

Solution
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1) Using a blank document, generate a PostScript file, which contains the header, by (under System 6.x) holding down Command-K when you select the OK button in the Print dialog box, or by (under System 7) clicking the "Postscript File" radio button in the Print dialog. This generates the header only. Send this file to the LaserWriter. You must do this once per power-on cycle of the LaserWriter, unless you need to switch headers.

2) When you are creating files from documents that you want printed, hold down Command-F (under System 6.x) when you select the OK button in the print dialog box. This generates a PostScript file without the Laser Prep header. Because you already have sent the header, the necessary dictionary is already loaded, and your files should print properly. Unfortunately, to generate a PostScript file without the Laser Prep header in System 7, you need a shareware program like Trimmer, which gives the option of stripping the header from an existing PostScript file.

Published Date: Feb 18, 2012

MPW 3.0: Conflicts Caused by INITs Misusing PBHSetVol

Apple Tech Comm has found a problem in a number of third-party INITs that cause the MPW Installer to fail. This problem is the result of these products doing a HSetVol by calling PBHSetVol. Macintosh Technical Note 140, "Why PBHSetVol is Dangerous," warns against using PBHSetVol. This problem has been reported most frequently with TOPS from TOPS, a Sun Microsystems Company.
This article has been archived and is no longer updated by Apple.
When you try to run the MPW Installer while running a third-party INIT, you get an error saying the "DoIt" script cannot be found. The message appears when an INIT uses PBHGetVol to get and save the working directory and then tries to restore the working directory using PBHSetVol. The result is that such an INIT sets the working directory to the root of the volume containing the installation volume. Note: Any mention of installation in this article refers to the procedure outlined in the "Macintosh Programmer's Workshop Development Environment Reference, Volume 1." Here are three workarounds for this problem.

First, you can install MPW by hand and forego the MPW Installer. However, this does not stop problems caused by INITs that use PBHSetVol. Any INIT that uses PBHSetVol interferes with the setting of the working directory any time you insert a disk while running MPW. After inserting a disk, the problem manifests itself when:

- MPW tries to access a script in the current directory.
- A tool tries to open a file in the current directory.

In both of these cases, a "directory :" command (as given in step 2 below) restores your environment.

Second, you can install MPW without the INIT running. In the case of TOPS, restart while holding down the Command key. During the restart process, TOPS will bring up a dialog asking if you want to install TOPS. Answer no, and proceed to install MPW 3.0.

Third, you can modify the installation script by following the procedure described below:

1. Open up the file "Startup" in the Installation Folder using any editor that can read text files.
2. Search for the line: "DoIt copyStuff >= errorFile" and insert the line "directory :" immediately before it. This forces the MPW Shell to reset the working directory to Installation Folder before running the "DoIt" script.
3. Save the "Startup" file and then do the installation procedure outlined in the "Macintosh Programmer's Workshop Development Environment Reference, Volume 1."

References: See "Macintosh Programmer's Workshop 3.0 Errata: MPW Installation Problems;" revision date: March 13, 1989

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

HyperCard: Information on ADSP XCMDs in MacTutor

I need to do HyperCard AppleTalk-type developing. My project requires data streaming and zones, but the current HyperAppleTalk Toolkit does not support ADSP (Apple Data Stream Protocol). Will the toolkit be updated to provide this support? If not, where can I get more information on writing my own XCMDs and XFCNs?

This article has been archived and is no longer updated by Apple.
Apple is not planning any updates to the package. However, "Inside Macintosh" contains all the information you need to create the kind of XCMDs you require. Further, the author of the toolkit XCMDs wrote a series of articles in "MacTutor" (publication now known as MachTech) magazine describing AppleTalk XCMDs including ADSP. The articles are an excellent source of information on how it all works. The series ran from January through May of 1989.

Article Change History:
22 July 1993 - Company title changed from MacTutor to MacTech.
Published Date: Feb 18, 2012

Macintosh Compatible Hand-Held Scanners and Bar Code Readers

I need a light pen for the Macintosh (NuBus or ADB).

This article has been archived and is no longer updated by Apple.
We have listed examples of four different types of "light pen input devices" or related devices.

Fixed-Position Bar-Code Readers

- UNi Bar Code Reader from TPS Electronics, connects via the keyboard or ADB port

- Datapen from Datalogic, Inc., connects via the keyboard

Portable Bar-Code Readers

- TimeWand from Videx, Inc. (a serial device requiring serial download through a communications program which is available from Videx.)

- XP-300 Portable Bar Code Reader from TPS Electronics, a portable, serial device.

Hand-Held Scanners

- LightningScan from Thunderware, Inc.A hand-held scanner capable of handling images up to 4 inches wide; interfaces to any Macintosh SCSI port.

- ScanMan for Macintosh from Logitech, Inc.A hand-held scanner capable of handling images up to 4.1 inches wide; interfaces to any Macintosh SCSI port.

Touch Screen

Mac 'N Touch from MicroTouch Systems, Inc.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
26 July 1993 - Company title updated from Datalogic Electronics, Inc. to Datalogic, Inc.
19 January 1993 - Updated, vendor Information.
13 September 1991 - Reviewed, for accuracy.
Published Date: Feb 18, 2012

TA40387_Macintosh_II_IIx_IIfx_AutoPowerOn_Device_(TIL04452).pdf

Macintosh II, IIx & IIfx: Auto-Power-On Device

I need a device that can automatically start a Macintosh II (or Macintosh IIx and IIfx) following a power outage and that can start the computer at a specified time.

This article has been archived and is no longer updated by Apple.
The only solution we know of is a NuBus card called MacClock II from MacSema. MacClock II contains a real-time clock with battery. It also restarts the computer when power is applied to the electrical circuit (as would be the case when power comes back on after an outage). MacClock II also starts a Macintosh system at a specified time and can execute macros via programs like Tempo II and QuicKeys.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

TA40388_VMEtoNuBus_Interface_Cards_(TIL04455).pdf

VME-to-NuBus Interface Cards

This article lists NuBus interface cards for VMEBus.

This article has been archived and is no longer updated by Apple.

Product	Vendor	Description
Buslink	Flavors Technology	VMEbus, Qbus, Unibus interface
Lexilink	Lexis	VMEbus board chassis interface
MacVee Micron Sparrow	VMEbus board chassis interface	
NuBus VME Adapter Bit 3 Computer	VMEbus computer interface	

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

TA40389_Apple_IIGS_SuperHighRes_Graphics_Access_from_BASIC_(TIL04456).pdf

Apple IIGS Super-High-Res Graphics: Access from BASIC

Are there any Applesoft BASIC commands to invoke super-high-resolution graphics on an Apple IIGS?

This article has been archived and is no longer updated by Apple.
The super-high-resolution graphics of the Apple IIGS are not directly available from Applesoft. Applesoft BASIC supports only the original Apple II low-resolution graphics (40x48 or 40x40 with 4 lines of text) and high-resolution graphics (280x192 or 280x160 with 4 lines of text).

One solution is "Iconix IIGS" from So What Software. This is a set of machine language subroutines accessible from Applesoft. They provide an interface to the super-high-resolution graphics mode of the Apple IIGS.

Other BASIC solutions for super-high-resolution graphics mode include Complete BASIC Compiler from Complete Technologies, AC/BASIC from Absoft Corporation, and Micol Advanced BASIC from Micol Systems.

The Complete BASIC Compiler is similar to Apple's GSBASIC (available from APDA) with the addition of graphics support. AC/BASIC is compatible with Microsoft's QuickBASIC language and provides graphics support similar to what is found in QuickBASIC for the Macintosh. Micol Advanced BASIC is modeled after Applesoft. Anyone familiar with Applesoft should be comfortable with Advanced BASIC.

GSBASIC from APDA provides calls to QuickDraw II. However, GSBASIC does not directly support graphics commands within the BASIC language syntax.

For more details, search the Tech Info Library under "So What Software", "Complete Technologies", "Absoft Corp", and "Micol Systems".

Published Date: Feb 18, 2012

System 6.0.X: Not Compatible with Macintosh 512Ke

Has Apple determined if a Macintosh 512Ke can be used with System Software 6.0.3? I have a Macintosh 512Ke with a third-party 2MB memory upgrade. I cannot start the system with either System 6.0.2 or System 6.0.3.

This article has been archived and is no longer updated by Apple.
Officially, System 6.0 and later were not designed, tested, or recommended for Macintosh systems prior to the Macintosh Plus. The total memory installed in the system is irrelevant. The fact that the Macintosh Plus and later Macintosh computers have 256 bytes of PRAM is a major part of the compatibility problem. This is Apple's official position.

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TA40391_Apple_Portrait_Display_Macintosh_SE_Card_(TIL04458).pdf

Apple Portrait Display: Macintosh SE Card

Does anyone make a card to connect the Apple Portrait Display to a Macintosh SE?

This article has been archived and is no longer updated by Apple.
RasterOps makes a card called the Clearview APD for the Macintosh SE that drives an Apple Portrait Display. The board is also an accelerator running a 68000 at 16 MHz. Includes a socket for a 68881 math coprocessor. ("APD" stands for "Apple Portrait Display.")

For more information, search on "RasterOps" in the Tech Info library.

Published Date: Feb 18, 2012

Sony GDM-1601 and 1602 Monitors: Incompatible With Macintosh

How can I connect large a Sony GDM-1601 monitor to my Macintosh? What about the Sony GDM-1602?

This article has been archived and is no longer updated by Apple.
The Sony GDM-1601 and Sony GDM-1602 monitors are not compatible with the Macintosh 1-bit, 4-bit, or 8-bit video cards. These monitors may be compatible with video cards from companies like RasterOps, Radius, or SuperMac Technologies. Check with them for more information. (For more details, search the Tech Info Library under "RasterOps", "Radius", and "SuperMac".

The primary difference between the two displays is that the Sony GDM-1601 has a display resolution of 1280 x 1024, while the Sony GDM-1602 has a display resolution of 1024 x 768.

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Lisa Disks: "Disk Is Deteriorating" Message

This article has been archived and is no longer updated by Apple.
The dialog box stating that the "Disk Is Deteriorating" indicates that bad blocks have been found on the diskette and that spare good blocks are starting to be used.

A directory on the diskette contains the addresses of good blocks that are used as spares. When you get about as many bad blocks on your diskette as you have spare good blocks, the error message is displayed and the diskette may soon become unreadable.

If you receive a message that the Disk is Deteriorating, it's time to put the documents onto another diskette. However, if the disk works fine in other drives, there may be something wrong with the drive.
Published Date: Feb 18, 2012

Apple FDHD: Formatting PS/2 720K Disks in 1.44 Drives

1) PS/2 machines with 1.44MB drives will, by default, initialize double-sided dual-density disks to the 1.44MB format when the unsuspecting user simply types FORMAT A:.

2) IBM recommends against this and refers the user to the MS-DOS documentation for the proper arcane FORMAT options needed to properly format double-sided dual-density disks.

3) Most users don't know about any of this and use FORMAT A: just like they used to.

4) Entire departments are, therefore, evolving collections of double-sided dual-density disks that are readable on PS/2 machines and unreadable on Macintoshes (so much for data exchange).

5) Apple's choices are clear:

a) Embark on a massive PS/2 user education program.
b) Make a "best effort" try to read the disks (possibly with an informative alert).

This article has been archived and is no longer updated by Apple.
This is not a problem with AFE. Apple designed the drive to work properly, and it looks for the "bonus hole" to determine whether a disk is high-density. The drive design will not be changed.

Installations with PS/2 machines should make an effort to educate users in proper way to format disks instead of trying to find a patch and jeopardize their data integrity.

The command to format a DOS disk as 720K in a 1.44MB drive is:

FORMAT A:/N:9/T:80

Published Date: Feb 18, 2012

Macintosh-to-VAX: Connectivity And "Tunneling"

I am evaluating AlisaShare/Macintosh-to-VAX connectivity. This system will consist of a HyperCard front end that, based on selections made by the user (for example, clicking on a series of buttons), downloads a number of Microsoft Word files from the AlisaShare volume and then merges them together into a single document. The front end is running smoothly.

The goal of this project is to have all of the components of the proposal system (for example, the individual premerge Microsoft Word documents) sitting on a hub VAX at the corporate site. Smaller VAX systems at each remote field location are connected to the VAX using DECnet. The Macintoshes, on which the HyperCard front end will run, are then attached to these local VAX systems through a router (either a FastPath 4 or an Apple Internet Router). I know that the ability to "tunnel" AppleTalk protocols through DECnet is on the way, but I need a solution now.

1) Do I need to be concerned about tunneling AppleTalk through DECnet, or can the Macintoshes access the VAX at the corporate site directly through the Ethernet?

2) Will AppleTalk Phase 2 be necessary? If so, when can I anticipate Phase 2 for VMS?
This article has been archived and is no longer updated by Apple.
If the remote sites are connected to the hub site via Ethernet bridges, you do not need to use DECnet "tunneling" as long as the bridges pass the AppleTalk packets. On the other hand, if the VAX systems function as half bridges with bridge processes on one communicating with other bridge processes using DECnet as the link between them, "tunneling" is required.

"Tunneling" is available for AppleTalk for VMS 2.0. You do not have to wait for AppleTalk Phase 2. However, you should be aware of some possible "tunneling" problems with AppleTalk for VMS 2.0. These problems are documented in the Tech Info Library. Search on "tunneling".
Published Date: Feb 18, 2012

Token Ring Network: Model 5 Capabilities for Macintosh

I have an IBM 3090 and a 3x74 controller with a Token Ring Interface Coupler (TIC). Attached to the TIC is a Compaq AT serving as a dedicated gateway. The gateway machine contains a Token Ring card and is running IBM's Token Ring support driver, Novell NetBIOS, and Attachmate Extra! 3270 Gateway software.

The gateway also contains a 3COM Ethernet card for attaching Ethernet workstations. I want to attach Macintosh computers to this network, but I need to have the Model 5 extended attributes and DFT capabilities. Attachmate currently does not have a solution for this.

Is there a way to attach Macintosh computers to this network and get these capabilities through their gateway (as with the Internet Router), or should I use something like a Netway 1000?

This article has been archived and is no longer updated by Apple.

We are not sure which network you want to attach the Macintosh computers to. If you connect the Macintosh computers to the Token Ring network, MacDFT over the TokenTalk NB Card is a solution for you. It supports Model 5 capabilities with all the extended attributes you mentioned.

As of July 1989, we don't know of a terminal emulation solution for attaching your Macintosh computers directly to the Ethernet network. The Netway 1000 supports only LocalTalk cabling.

Published Date: Feb 18, 2012

MacTCP: Questions and Answers

Here are a few questions on Apple's TCP/IP functionality. In all cases, I am assuming the use of Apple's MacTCP software.

1) Do the PD programs, like NCSA, support Macintosh-to-Macintosh FTP over LocalTalk and/or EtherTalk?

2) Are there any problems using MacTCP-based products with EtherTalk Phase 2 (due to the change from Ethernet to 802.3 framing)?

3) Can I run MacTCP sessions concurrently with AppleTalk sessions over the same physical media?

4) Can I run MacTCP sessions concurrently with AppleTalk sessions over different physical media (for example, AppleTalk on LocalTalk concurrent with TCP/IP over Ethernet on the same Macintosh)?

This article has been archived and is no longer updated by Apple.

1) Question: Do the PD programs, like NCSA, support Macintosh-to-Macintosh FTP over LocalTalk and/or EtherTalk?

Answer: NCSA does NOT support Macintosh-to-Macintosh FTP over LocalTalk or Ethernet cabling.

2) Question: Are there any problems using MacTCP-based products with EtherTalk Phase 2 (due to the change from Ethernet to 802.3 framing)?

Answer: There should not be any problems regarding framing when using MacTCP- based products with EtherTalk Phase 2. MacTCP is co-resident with AppleTalk protocols so there can be concurrent TCP/IP and AppleTalk operations. EtherTalk manages data flow so it can co-exist on Ethernet cable with TCP/IP protocols.

3) Question: Can I run MacTCP sessions concurrently with AppleTalk sessions over the same physical media?

Answer: Yes, for the same reason as (2). For example, MacTCP can be run while a print job goes to an Apple LaserWriter printer over LocalTalk cabling.

4) Question: Can I run MacTCP sessions concurrently with AppleTalk sessions over different physical media (for example, AppleTalk on LocalTalk concurrent with TCP/IP over Ethernet on the same Macintosh)?

Answer: AppleTalk and MacTCP can run over the same media, or one protocol can run over one medium while the other protocol runs over a different medium.

Article Change History:
29 Nov 1995 - Updated format, reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

SMB File Utility: Difficulties Over Ethernet

I am running PC LAN over Ethernet cabling and would like to access a PC LAN file server from an Ethernet connected Macintosh. Can I use the SMB File Utility over Ethernet? Or, is it strictly a Token Ring situation?

This article has been archived and is no longer updated by Apple.
While the SMB protocols are not limited to running on Token Ring, they are usually thought of in conjunction with Token Ring. Because Apple SMB File Transfer Utility works so closely with the Texas Instrument Token Ring interface controller chip set on the TokenTalk NB Card, it would be difficult to port to an Ethernet environment without a major rewrite of the software.

For file transfer and sharing in a PC/Macintosh environment over Ethernet, try an AppleTalk Filing Protocol Server solution, like Novell's NetWare or even AppleShare.

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TokenTalk 2.0: Token Ring and Source Routing Bridges

A client resides on a 4MB Token Ring called A. The server is on a 4MB Token Ring called B. Connecting the two rings is a 16MB fiber backbone, and at either end of each sub ring A and B is an IBM bridge. Can we pass our AppleTalk packets through these bridges?

This article has been archived and is no longer updated by Apple.
The TokenTalk 2.0 software works in Token Ring environments where two or more Token Ring networks are bridged together with source routing bridges.

For more information on TokenTalk 2.0 software and source routing bridges, please refer to the "LAN Minds" and "MacDecathLAN" training materials.

Published Date: Feb 18, 2012

A/UX: NFS "Not a directory" Message (9/94)

I have some problems with an nfs configuration. Here is what happens:

#mount
/dev/dsk/c5d0s0 on / type 5.2 (rw,noquota)

#ls -la /udd/halles
total 2
drwxrwxrwx 2 root root 32 Jan 12 06:40 ./
drwxrwxrwx 6 root root 96 Jan 12 06:40 ../

#mount ilog:/udd/halles /udd/halles
#mount
/dev/dsk/c5d0s0 on / type 5.2 (rw,noquota)
ilog:/udd/halles on /udd/halles type nfs (rw)

To prove the exchange of information, the command df:

#df
/ /dev/dsk/c5d0s0 7064 blocks 9443 i-nodes
/udd/halles ilog:/udd/halles 1514 blocks 0 i-nodes

It runs, and ls runs, too (the permissions are the remote permissions).

#ls -l /udd
drwxrwxrwx 6 root root 96 Jan 12 06:40 ./
drwxr-xr-x 17 root root 720 Jan 12 07:17 ../
drwxrwxrwx 2 root root 32 Jan 12 06:40 chatelet/
drwxrwxrwx 2 root root 32 Jan 12 06:40 cite/
drwxr-xr-x 61 root ilog 1536 Jul 3 1989 halles/

Now the problem:

#cd /udd/halles
/udd/halles : Not a directory

I run a command like ls /udd/halles, and I get a list of the subdirectory with the error message: <dir> : Not a directory.

This article has been archived and is no longer updated by Apple.
As you described, there doesn't seem to be anything wrong on your local NFS client side. However, from the error message "Not a directory", it sounds like the REMOTE NFS server exported filesystem or directory, /udd/halles in this case, is not a directory type.

Check the spelling of the exported directories on the remote NFS server; both the exported entries in the "/etc/exports" file and the actual filesystem object MUST be a directories. After checking the spelling from the remote NFS server, at the local NFS client do "/etc/umount /udd/halles", and try the NFS mount command again.

Also the "showmount [a] [d] [e] [host]" is a nice tool for NFS to display things like directories that have been mounted by clients, the list of exported filesystems from the server, and so on. See showmount (1M) for details.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy

Support Information Services

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Lisa Disks: ProFile Memory Loss

This article has been archived and is no longer updated by Apple.

If you suspect that you don't have as many blocks available to store your documents as you should, perform a "repair" of the hard disk. The Lisa 1 Owner's Guide describes the repair procecdure on p. D53, while in the Lisa 2 Owner's Guide, it's on p. C24. When given the option to Install or Don't Install, click Don't Install.

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PowerPoint: How To Speed Up Printing

Here is a tip to speed up printing for PowerPoint users

This article has been archived and is no longer updated by Apple.
From "One-on-One with Microsoft" newsletter, Summer 1989, p.6:

The LaserWriter printer is optimized for printing bitmaps in Tall (Portrait) orientation. Normally, however, PowerPoint presentations are printed in Wide (Landscape) orientation. To avoid slow printing, deselect the Faster Bitmap Printing option in the Page Setup dialog box.

Published Date: Feb 18, 2012

Apple II Network: Drop Box Creation From Finder Only

I work on an AppleShare/Aristotle network setup. I created a Drop Box on the server, so that users can save their AppleWorks files directly into the Drop Box on the server by using the appropriate ProDOS pathname. It doesn't work! (Owner has all privileges, everyone else has Make Changes only.)

I first tested this on a Macintosh workstation, trying to save a document to a Drop Box using the "Save As" command. Drop Boxes are dimmed in the dialog box, so I wasn't able to open the Drop Box folder and save the document. The only alternative I could think of was to save the document somewhere else, return to the Finder, and then drag the document into the Drop Box.

Are there any alternatives for Apple II users who want to use Drop Boxes?

This article has been archived and is no longer updated by Apple.
The Finder is the only mechanism we are aware of that lets you put files into a Drop Box folder.

Published Date: Feb 18, 2012

AppleTalk Phase 2: Network Numbers, Nodes, and Zones

I have some questions about AppleTalk Phase 2. The material I have read states that AppleTalk Phase 2 will provide for:

1) 65,534 possible network numbers
2) 16 million nodes
3) 256 zones per network
4) 1,024 networks per Internet

How were these numbers arrived at?

This article has been archived and is no longer updated by Apple.
1) Network numbers are defined by a 16-bit number: 2^16 = 65,536. The network number 0 is reserved to mean unknown, and network number 65,535 is reserved for future use. This means a total of 65,534 networks are possible.

2) AppleTalk Phase 1 supported 2^8 nodes minus the reserved nodes, ID 0 and ID 255, which resulted in a total 254 nodes possible. AppleTalk Phase 2 nodes on the physical network are identified by their virtual network number and their 8-bit node ID. The node IDs of 0, 254, and 255 are reserved in AppleTalk Phase 2.

Because it is possible to have 65,534 networks with 253 nodes in each network, it is possible to have a maximum of 16,580,102 nodes (65,534 * 253 = 16,580,102). Note: Network numbers 65,280 through 65,534 are used only when a router is not present.

3) Actually, the maximum number of physical zones per network is 255. This is an architectural limitation of AppleTalk Phase 2. The AppleTalk Internet Router supports a maximum of 255 names on a single zone list. The reason for 255 is because the zone list may apply to a single physical network.

Also, an AppleTalk Phase 2 internet (1 or more physical networks connected together via routers) is capable of supporting more than 256 zones. But the AppleTalk Internet Routers supports a maximum of 256 zones on an internet.

4) There can be a maximum of 1,024 entries in the routing table for the AppleTalk Internet Router. Each entry can refer to an individual network number or a range of network numbers. This limitation is not AppleTalk Phase 2-specific.

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Macintosh Portable: Modem Connector Pinouts (6/94)

Macintosh Portable Data Interface: 18-pin dual-in-line connector
This article has been archived and is no longer updated by Apple.

Pin	Pin Name	Definition
1	/Modem_Power	System power status
2	Ground	Ground
3	/RTS	Request to send
4	/DCD	Data Carrier Detect
5	RxD	Receive data
6	/CTS	Clear to send
7	Modem_sound	Analog sound output
8	TxD	Transmit data
9	/RI_EXT	Ring indicator
10	-5 VDC	Power (switchable)
11	+5 VDC	Power (unswitched)
12	/DTR	Data terminal ready
13	V1	Sound volume control bit (Least significant)
14	V3	Sound volume control bit (Most significant)
15	V2	Sound volume control bit (Middle significant)
16	/Modem_Ins	Modem installed
17	/Modem_Busy	Modem busy
18	MS_Enable	Modem sound enable

Data Access Arrangement (DAA) Interface: Mini-DIN8 connector

Pin	Definiton
1	Ring Indicator to modem board
2	Clock for reading data from modem board
3	Command 2 (Relay) from modem board
4	Ground
5	Data Read (Country code) to modem board
6	Command 1 (Relay or Data Enable) from modem board
7	+ 5 VDC
8	Receive/Transmit Analog signal line
Shell	Chassis ground

Article Change History:
23 Jun 1994 - Reviewed for technical accuracy, title changed to more accurately reflect content of article.

Support Information Services
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Macintosh Portable: Internal Modem Installation Guide

This article has been archived and is no longer updated by Apple.

All power must be disconnected before the modem can be installed. The AC adapter must be disconnected, the main battery removed and the battery cover must be in place to shut off the backup battery to insure the unswitched +5 volt connection is disconnected. If the power is not completely shut off, the modem may be damaged.

Note: This action will cause all RAM to lose power. This will erase RAM disks, reset all Control Panel settings including the system clock and lose any unsaved documents which are open.

This procedure is also the recommended method to hardware reset the modem.

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Macintosh Portable Data Modem 2400: Pinouts

This article has been archived and is no longer updated by Apple.

Macintosh Portable Data Interface

Pin	Pin Name	Definition
1	/Modem_Power	System power status
2	Ground	Ground
3	/RTS	Request to send
4	/DCD	Data Carrier Detect
5	RxD	Receive data
6	/CTS	Clear to send
7	Modem_sound	Analog sound output
8	TxD	Transmit data
9	/RI_EXT	Ring indicator
10	-5 VDC	Power (switchable)
11	+5 VDC	Power (unswitched)
12	/DTR	Data terminal ready
13	V1	Sound volume control bit (Least significant)
14	V3	Sound volume control bit (Most significant)
15	V2	Sound volume control bit (Middle significant)
16	/Modem_Ins	Modem installed
17	/Modem_Busy	Modem busy
18	MS_Enable	Modem sound enable

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Macintosh Portable: Battery

This article describes the Macintosh Portable sealed, lead-acid battery.

This article has been archived and is no longer updated by Apple.
The Macintosh Portable uses a sealed, lead-acid (SLA) battery. SLA cells have a constant voltage drop as they lose their charge. This enables the Macintosh Portable to alert the user when power is running low.

The cycle life of an SLA battery varies depending on the depth of discharge. If the battery is discharged to 100% of the energy in the battery, the battery can get 200 charge/discharge cycles before it has to be replaced. If discharged to 25% depth, the battery can get 2,000 charge/discharge cycles. The recharging system used in the Macintosh Portable keeps the battery at full charge to extend the number of charge/discharge cycles.

The external battery recharger charges a spare battery when the user is still using the Macintosh Portable. It uses the same power adapter as the Macintosh Portable, and has the same power input requirements as the Macintosh Portable power adapter (120/240 VAC 50/60Hz). It includes a recharge cradle to hold the battery. The battery charger LED, located on the top of the unit, will display:

LED Color	Status
Amber (Yellow)	Charging
Green	Fully Charged
No Light	Replace Battery

Published Date: Feb 18, 2012

Macintosh Portable: Internal 40SC Hard Disk

This article gives the a technical description of the Macintosh Portable Internal 40SC Hard Disk.

This article has been archived and is no longer updated by Apple.
The Macintosh Portable Internal 40SC Hard Disk provides fast, reliable access to high-performance storage and large-capacity applications. One-inch high, weighing 1.1 pounds, the Macintosh Internal Hard Disk 40SC has been designed especially for use with the Macintosh Portable. It draws little power from system batteries and virtually eliminates disk swapping, because it can accomodate multiple applications, complex documents, and large databases in one convenient location.

SPECIFICATIONS

Mechanism Size : 3.5 Inches

CAPACITY 40MB
- Data Capacity: 40MB Formatted
- Data surfaces: 2
- Heads/Surfaces: 1
- Block Size: 512 bytes
- Total disk blocks: 82,080
- Blocks/Tracks: 40

CHARACTERISTICS
- Average Seek Time : 25 milliseconds
- Rotational Speed: 3,557 rpm
- Startup Time: 20 seconds
- Spin-down Time: 10 seconds
- Automatically retracks to the inner stop (non-data area) upon power down to protect data area during travel and startup.

ENVIRONMENTAL
- Operating Temperature: 50 degrees F to 104 degrees F (10 degrees C to 40 degreesC)
- Non-Operating Temperature: 32 degrees F to 122 degrees F (0 degrees C to 50 degrees C)
- Humidity: 20% to 80% relative humidity non condensing

Interface : internal 34-pin connector

Published Date: Feb 18, 2012

Macintosh Portable: Power-Saving Features

This article desribes Macintosh Portable computer's power saving features.

This article has been archived and is no longer updated by Apple.
The Macintosh Portable has a number of power-saving features that give it 6 to 12 hours of battery life. The Macintosh Portable contains two batteries: a main battery that provides power while the computer is in use, and a backup 9-volt transistor battery that sustains the computer's memory while the main battery is disconnected (as when a fresh main battery is being installed).

Note: The main battery is required for operation of the Macintosh Portable. The hard drive will not spin up without the internal battery.

The power-saving features are controlled by the power-manager processor. The power-manager processor is a separate "computer" inside the unit that controls the power functions of the unit.

The Macintosh Portable is the only member of the Macintosh family that is designed to be powered by a battery. In normal operation, the Macintosh Portable never switches off. Rather, it goes into a low-power consumption\\ state, the sleep state, when it is not in use. Ideally, the Macintosh portable is switched on only when the battery is first installed or after the battery has been removed to install an expansion card in the machine.

Sleep

System sleep helps the Macintosh Portable operate longer between charges. When in sleep state, the Macintosh Portable maintains full power to system RAM, video RAM, and the power-manager processor. The power-manager processor stops the clocks to the SCC, the SWIM, and the ASC. Stopping the clocks to these devices, reduces their power consumption to almost zero without requiring that they be reset. The power-manager processor switches off power to the serial drivers, ROM, flat panel display, the ASC, the Sony sound chips, the SCSI, and to a variety of pull-up resistors and other components. The power-manager processor also sends a signal to the internal modem that causes the modem to shut itself down, if not in use.

The system can enter sleep in the following ways:

- The user selects sleep from the Special menu in the Finder.

- The user selects sleep from the Battery DA.

- The system enters sleep after a period of inactivity (the interval is user selectable).

- The system enters sleep, because battery power is at the software-shutdown level.

- This is the first time power is being applied.

- The power-manager processor is reset.

The system will not enter sleep, if the internal modem is executing an AT command or if the modem is off-hook, except at hardware shutdown.

Macintosh Portable will come out of sleep for any of the following reasons:

- A key is pressed on the keyboard (except Caps Lock).

- The wake-up timer matches the real-time clock.

- The internal modem is installed, and a ring detect comes in, while the modem is set to watch for ring detect.

Note: If the unit is in software shutdown, the Macintosh Portable does not come out of shutdown until the power adapter is plugged in or until the battery is replaced.

When power is first applied to the Macintosh Portable, the power-manager processor immediately puts the system into the sleep state. When a key is pressed, the power-manager processor initiates a system reset and the Macintosh Portable goes through the same sequence of start-up events as the Macintosh SE.

Macintosh Portable presents four dialogs to the user when the battery is running low. The first three warn the user about the power condition, and the last lets the user know the system is going to sleep mode.

Sleep vs Shut Down

The Shut Down menu item doesn't care about memory contents and quits applications before shut down. Sleep saves memory contents. Shut Down should be used for the following:

- To have the unit wake up and reboot

- To add an external peripheral

- To make sure all applications have been quit

- Hard Drive Sleep. If the Macintosh Portable has a hard drive, the control panel displays an option to put the hard drive to sleep. This causes the hard drive to stop spinning. Hard drive sleep automatically occurs when the Macintosh Portable goes into system sleep.

Any hard disk activity causes the Macintosh Portable to come back out of hard drive sleep. It takes one or two seconds for the hard drive to get up to speed, sllowing access to the drive.

Rest

The power-manager processor monitors the amount of time the Macintosh Portable has been inactive. After a period of 15 seconds without any activity, the unit goes into Rest mode. It causes the CPU to insert 64 wait states into RAM and ROM accesses which lowers the effective clock rate to approximately 1 MHz. Interrupts continue to be processed at the same rate. As soon as the trackball or mouse moves, or any peripheral device is activated, the computer comes up to full speed instantly.

The following items are checked and stop the unit from entering rest mode:

- Mouse movement

- I/O activity, (keyboard, trackball, modem, etc..)

- Cursor change

- Serial port access

This feature can be turned off, when running Video Works or some other program that avoids detection by the rest routine. The user can disable

rest mode by doing the following:

1) Enter the Control Panel DA and select the Portable icon.

2) Hold Down the Option key and click the words "Minutes Until Automatic Sleep."

3) Click on Don't Rest in the dialog box that comes up, and select OK

Low Power Warnings

When the battery starts to run low, a series of messages appears, warning the user that it is time to recharge. A flashing battery replaces the Apple Icon in the menu bar. When these messages start to appear, save any open documents and plug the Macintosh Portable into the power adapter as soon as possible. (Saving work is a good thing to do every once and a while, anyway.) The computer can be active, while it is recharging the battery.

After the fourth warning, the computer automatically goes into system sleep, while there is still enough power to hold the contents of memory for five days.

Note: As long the battery is recharged within five days, the contents of memory remain intact, and the computer will pick up where it left off before the battery ran low. The only consequence of not recharging within five days is that the contents of memory are lost.

When not using the computer for more than one month, save any files and select Shut Down from the Special menu. After shut down, remove the battery to make sure the battery does not become completely discharged.

Published Date: Feb 18, 2012

Macintosh Portable: External Video Port Pinouts

This article describes the external video port pinouts of the Macintosh Portable.

This article has been archived and is no longer updated by Apple.
The External Video Port drives video devices with a digital signal. It does not provide an analog signal used by a monitor.

Display Electronics

The display uses a digital signal to generate information, not an analog signal like a CRT. There are three signals generated in the video logic IC:

- the pixel synchronization signal; it marks the end of a byte.

- the horizontal synchronization signal; it marks the end of a 640 pixel line.

- the vertical synchronization signal; it marks the beginning of a new video frame.

The Macintosh Portable produces signals for an external video display through an 8-bit interface that is similar to the interface for the built-in display. A video adapter is required to convert the 8-bit data stream into a signal that can drive an external video device.

Connector: Density and 1/2 15-pin (same size as DB-9 with 15 pins)

PINOUTS

1 - FPDATA(0) Data bit 0
2 - FPDATA(1) Data bit 1
3 - +5 volts **
4 - FPDATA(2) Data bit 2
5 - FPDATA(3) Data bit 3
6 - FPDATA(4) Data bit 4
7 - GND Signal Ground
8 - +5 volts **
9 - GND Signal Ground
10 - FPDATA(5) Data bit 5
11 - FPDATA(6) Data bit 6
12 - FPDATA(7) Data bit 7
13 - BATT_VOLTAGE
14 - FLM from Video chip, Begin frame scan over
15 - CL2/ from Video chip, Byte clock

** Maximum current on 5 volt line is 50ma

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TA40412_Lisa_Page_Numbering_(TIL00449).pdf

Lisa: Page Numbering

This article has been archived and is no longer updated by Apple.
The Lisa Office System numbers the pages of a documents differently, as follows:

LisaCalc, LisaGraph, LisaList: 1 3
2 4

LisaProject 1 2
3 4

LisaDraw (in portrait format) 1 3
2 4

LisaDraw (in landscape format) 1 2
3 4

Keep these facts in mind for those occasions when you wish to print specific pages of your document.
Published Date: Feb 18, 2012

TA40413_TSSnet_DECnet_for_the_Macintosh_(TIL00045).pdf

TSSnet: DECnet for the Macintosh

This article has been archived and is no longer updated by Apple.

```
Overview
--------
TSSnet is DECnet for the Macintosh. The documentation is fairly
straightforward, but installation is somewhat complex. The package includes
three applications (NCP, NET Copy, and NET Mail) and a DECnet driver. The
driver is copied into the System Folder, and the the Macintosh is reset
to load the driver. DECnet is alive in background even when the Macintosh
is in another application, permitting access from other systems at any time.

The documentation includes the source calls to implement DECnet in programs
to allow true peer-to-peer program use.

NCP
---
The first time you run NCP, you must know the DECnet node number being
assigned to the Macintosh. You must then contact Thursby Software to get a
key for the system. The key sets the node number and is the copy protection
for the software. On DECnet, the node number is assigned by the Network
Manager when the system is first put onto DECnet. DECnet does not
automatically assign nodes or broadcast node information. NCP is where you
set up the line and circuit information and establish the node table for
other DECnet nodes. The user can also restrict access to your node through
a user name and password and toggle the network on and off.

NET Copy
--------
NET Copy provide the basic functionality of DECnet End Nodes. The user can
view remote directories, type remote files, or print files to a local printer.
File transfer is supported for text files or image files. Image files are
stored in MacBinary format and will transport to another Mac with full
resouce and data forks.

NET Mail
--------
NET mail, compatible with VMS Mail, lets the user create, read, and send
mail. A new mail folder may also be created from within the program. Up
to 32K can be written into a single memo, with larger documents converted
automatically to text files on the disk.

Conclusion
----------
TSSnet makes DECnet available to the Macintosh. Its shortcomings are really
the shortcomings of DECnet (such as having to define all the nodes to use
them), and it will solve any objections large VAX sites might have to
supporting additional protocols.

 Thursby Software Systems
 5840 Interstate 20 West, Suite # 145
 Arlington, Texas 76017
 Phone: (817) 478-5070

Thursby recently announced support of the Kinetics EtherSC and EtherPort SE
as well as terminal emulation through the DECnet connection.
```

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Lisa: Screen Dumps

This article has been archived and is no longer updated by Apple.
To print the current contents of the screen, hold down the SHIFT and OPTION keys while pressing the 4 on the keypad. Screen dumps of the Office System 1.0 software only print to the DMP, which must be connected to the upper port of the parallel card in slot 2. Versions newer than Release 1.0 support either the DMP or Imagewriter connected to any port, as long as they're selected in Preferences.

Virtually anything displayable on the screen may be printed--including, for instance, disk directories.
Published Date: Feb 18, 2012

Apple Internet Server Solutions 3.0: FireSite Keys aren‘t Valid

The FireSite Authorization Keys and the FireSite software included in the Apple Internet Server Solutions 3.0 (AISS 3.0) bundles do not match. This article has been archived and is no longer updated by Apple.
Visit the ClearWay support site and download the latest version of the FireSite software v2.1. This allows you to use the authorization keys that shipped with the Apple Internet Server Solutions.

The ClearWay support site is at: **<http://www.clearway.com/pages/support.html>**

Published Date: Feb 18, 2012

MessagePad and eMate: Noise Emission Levels

I have several Apple MessagePad devices, which emits a high pitched buzzing sound. What is causing this?
This article has been archived and is no longer updated by Apple.
Sophisticated technology used in the design of the Newton MessagePad and eMate, allows these devices to operate with very low power requirements.

The design in essence requires a rapid power-on power-off cycle - which in turn emits an audible signal. This signal can be heard in quiet environments, or in the case of the eMate 300, seem more pronounced when using headphones. This noise can be described as a buzz, static or high-pitched whine.

This level of noise emission is at very low decibels and is well below industry standards.

There are a few additional notes concerning noise emission depending on the model you own.

On the Apple MessagePad 110, 120, and 130, the sound is strongest from the foot of the device where the charging contacts are located. This sound is related to the power manager and will pulse off and on with use. This sound is normal.

The Apple MessagePad 130 and 2000 normally emit additional noise when the backlight is on. You may notice the sound when the MessagePad devices are in a quiet environment, or if you are more sensitive to the frequency being produced by the MessagePad devices. Again, this noise emission is normal.

The larger screen on the eMate 300 requires more power, which will in turn result in a louder audible tone associated with the power-on power-off cycle. As with the MessagePad 2x00 series, backlighting will create additional noise, and may be more pronounced than the smaller MessagePad screens.
Published Date: Feb 18, 2012

Early Language Connections: Enabling Inactive Speech Options Using At Ease 3.0.x

I have just installed the Early Language Connections bundle v6.0 and I'm using Kid Works 2 Bilingual 1.3s. When I launch Kid Works 2 under At Ease 3.0.3, I notice that the "Speak Each Word" or "Speak Each Sentence" option no longer works. When launching Kid Works 2 from the Finder, the speech options works. How can I get this feature to work under At Ease 3.0.3?
This article has been archived and is no longer updated by Apple.
Kid Works 2 depends on it's own text-to-speech engine called "ProVoice". Part of this engine is an application called "fbvgn". Kid Works 2installs the folder called "ProVoice Folder" in the Preferences folder located in the System Folder. The "fbvgn" application needs to have launch priviledges within At Ease for text-to-speech to work properly. At Ease administrators should add the "fbvgn" application to any user set that has Kid Works 2 so that text-to-speech works properly when Kid Works 2 is launched from At Ease. This can be done using the At Ease Setup application included with the Early Language Connections software bundle.

If you are still having problems using Kid Works 2, the Kid Works 2 Bilingual Read Me included with the application states the following for troubleshooting:

"If you are running At Ease and experience problems with Kid Works 2 Bilingual: Exit Kid Works 2 Bilingual. Turn At Ease off. Re-launch Kid Works 2 Bilingual."

For the latest information regarding Kid Works 2 Bilingual, contact Davidson at:

Davidson & Associates, Inc.

Published Date: Feb 18, 2012

Apple Network Servers: Where to Find AIX Updates

This article contains sources for getting AIX updates for Apple Network Servers.
This article has been archived and is no longer updated by Apple.
Apple Computer, Inc. no longer supplies any type of AIX updates for Apple Network Servers. If you wish to upgrade to AIX 4.1.5, you need to either contact IBM, or Palmer Digital.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

Apple RAID 1.5: Using Third-Party Software to Initialize Volume (7/97)

I have an Apple RAID 1.5 volume I want to initialize using another companies' software. However the computer crashes when I try to do so. It does not matter if the drives are mounted or not, it still crashes. How can I initialize the volume?
This article has been archived and is no longer updated by Apple.
This is a limitation of RAID. The crash itself is the third-party software not handling the "cannot format part of a volume group" situation appropriately.

The Apple Raid 1.5 manual states that you need to delete the RAID volumes before you try to take them over with other drivers.

Recovery Method

1) Restart the computer

2) Launch Apple RAID.

3) From the volume list, delete the RAID volumes associated with the drive you wish to initialize.

4) Restart the computer

Now you can initialize the volume using the other drive software.

Published Date: Feb 18, 2012

Apple Internet Server Solution: How to Serve Multiple Home Pages

How can I serve multiple "index home pages" such as www.company1.com, www.company2.com, www.companyN.com from my Apple Internet Server Solution (AISS)?
This article has been archived and is no longer updated by Apple.
There are several ways to serve multiple index home pages using WebSTAR Web Server software, including a naming scheme such as:

```
http://www.company1.com/abc.html
http://www.company2.com/def.html
http://www.company3.com/xyz.html
```

Or you can run multiple copies of WebSTAR on the same machine using different port numbers:

```
http://www.company1.com:80/
http://www.company2.com:8001/
http://www.company3.com:8005/
```

Another software solution is called HomeDoor by **Open Door Networks Inc**. The HomeDoor solution works for any browser. A five-domain version of the HomeDoor index home page server is included in the Apple Internet Server Solution.

For questions concerning WebSTAR, please contact **StarNine Technologies, Inc**.
For questions concerning HomeDoor refer customers to **Open Door Networks Inc**.
Published Date: Feb 18, 2012

AppleShare 3.7: Updated UAM for NetWare Needed

The Novell NetWare User Authentication Module (UAM) does not let me log into the NetWare server since I upgraded my AppleShare client to version 3.7.
This article has been archived and is no longer updated by Apple.
The Read Me for the AppleShare Client 3.7 states that the NetWare User Authentication Module is incompatible with AppleShare Client 3.7, and to contact Novell for an update.

You can obtain a newer, not fully tested version of the NetWare UAM from Novell at the following ftp site:
ftp://ftp.novell.com/pub/netwire/nsd/mclupd2.bin.

It appears to work properly with the AppleShare Client 3.7, but has not been fully tested by Apple Computer, Inc.
Published Date: Feb 18, 2012

At Ease 4.0.x: Uses AppleTalk Instead of TCP/IP Connecting to AppleShare IP 5.0

I am using At Ease 4.0.1 to connect to an AppleShare IP 5.0 server. The At Ease workstations always connect using AppleTalk.

This article has been archived and is no longer updated by Apple.

All versions of At Ease up to and including 4.0.x will always use AppleTalk instead of TCP/IP when connecting to an AppleShare IP 5.0 server, even if the AppleShare Client 3.7 software is installed on the At Ease workstation.

Published Date: Feb 18, 2012

Apple Telecom 3.x: Send Button Inactive when Using Quick Send or QuickFax

When I attempt to use the Quick Send function from the Apple Address Book or QuickFax from the Apple Fax application under Apple Telecom 3.0 or 3.1, the Send button is not active, no matter what I do. In addition, I cannot enter comments. Why?
This article has been archived and is no longer updated by Apple.

- Make sure that you have properly entered a valid recipient phone number.

A common mistake is to create a user in the Apple Address Book and enter the fax number in the voice telephone number box. Without a valid fax number, you cannot drag a recipient from the Apple Address Book.

- Make sure that your cover pages are available. Click on the Cover Pages pop-up menu in the Send dialog. If None is present, this is probably the problem.

This happens when a "clean" installation of the Mac OS has taken place. To correct this, follow the instructions in the Tech Info Library article titled "**Macintosh Performa 6400: Restoring Cover Pages in Apple Fax**".

- If this fails to resolve the issue, try removing the Fax Extension Preferences.

This file is present in the System Folder: Preferences folder. Removing this file will require you to reconfigure some localization information in the Apple Address Book.
Published Date: Feb 18, 2012

Power Macintosh 4400/200 PC Compatible: Setting Up TCP/IP Services (7/97)

Can I use TCP/IP in both the Mac OS and Windows environment on the Power Macintosh 4400/200 PC Compatible?

This article has been archived and is no longer updated by Apple.

Yes, it is possible to use IP services in both environments. A separate IP number is needed as well as an IP client. If you are using Windows 95, all of the necessary TCP/IP components are included on the Windows 95 installation CD. You should essentially configure the PC Card the same way they configure other Window 95 computers on your network. The only Apple related items necessary for Ethernet networking are the drivers included on the "PC Compatible disk for Windows", which ships with the product. If you have CD version of Apple's PC Compatibility Card software, the appropriate drivers in the APPLE folder on the CD labeled "PC Utilities".

Published Date: Feb 18, 2012

Apple Network Server: RAID Adapter Issue with AIX 4.1.4.0

This article contains troubleshooting information when installing and configuring a RAID adapter for two or more system drives on an Apple Network Server using AIX 4.1.4.0, and the LCD never proceeds past C20. The server stays at C20 until powered off.
This article has been archived and is no longer updated by Apple.

Workarounds

The simplest solution is to install AIX with 4.1.4.1 installation CD.

If the AIX 4.1.4.1 Installation CD is not available, follow these steps:

1. Delete the last RAID system drive or drives from the RAID configuration so there will be 1 system drive only during the BOS install.
2. Update AIX with the AIX 4.1.4.1 update CD.
3. Shut down the server after the update is complete.
4. Create the other RAID system drive or drives exactly as previously defined. Using this technique, you do not need to reinitialize the system drives defined in the RAID configuration.
5. Restart the server.

The system drives they configured should be available.
Published Date: Feb 18, 2012

Apple Newton Devices: Backlight Life

How long does backlighting on the Apple MessagePad 2000 last? Is this the same for the Apple MessagePad 130 and eMate 300 devices?
This article has been archived and is no longer updated by Apple.
The electro luminescent panel used for backlighting on Apple Newton devices loses brightness over time. Initially, a new panel loses a percentage of brightness in the first few hours of its use. Then it loses brightness at a slower rate with half brightness still available after thousands of hours of use. This slow loss of brightness is measurable with calibrated instruments, but the rate of change is not noticeable to most MessagePad 2x00 users.

This same information applies to the Apple MessagePad 130 and eMate 300 devices.
Published Date: Feb 18, 2012

Newton OS 2.x: Calls application & Phone Number Extensions

How can I use the Calls application in the Newton OS 2.x Extras drawer with phone numbers containing an extension? When I try using the Calls application, it does not record the phone number extension in the phone field.
This article has been archived and is no longer updated by Apple.
When a call is placed using the Calls application, a time stamp is placed at the bottom of the note section, which includes the full number and extension dialed. If you want to call again, you can tap Place Call, which creates a call slip for the person listed in the names field. The phone number does not contain the extension, but the extension information can be retrieved using the following steps:

1) Tap on Name

2) Tap on Other Name

The currently selected name appears in the Phones display.

3) Tap on the currently checked name.

The phone number is listed twice, with and without the extension.

4) Select the phone number with the extension.

5) Tap x to close the display and return to the phone slip

6) Tap Call to dial the number with the extension.

Published Date: Feb 18, 2012

eMate 300: Types of Compatible Storage Cards

I want to purchase additional storage memory cards (flash memory cards). The eMate 300 manual states that the eMate 300 only uses 5-volt PC cards. Are the memory cards from Apple compatible with the eMate 300?

This article has been archived and is no longer updated by Apple.

Although the eMate 300 can read and write to 5-volt PC Cards, 12-volt flash memory cards are treated as read-only. This is because the eMate 300 does not use the 12-volt write and erase required by older cards such as Apple part number H0008LL/A. Apple as well as other retail vendors sell 5-volt flash memory PC Cards that are compatible with the eMate 300, such as Apple part number H0230Z/A.

Note: Although the eMate 300 supports larger sized flash memory PC Cards, Apple has tested and supports flash memory PC Card sizes up to 4 megabytes.

Published Date: Feb 18, 2012

AIX 4.1.5: Read Me Document

This article contains the AIX 4.1.5 Read Me document.
This article has been archived and is no longer updated by Apple.
IMPORTANT INFORMATION ABOUT AIX FOR THE APPLE NETWORK SERVER

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- AIX 4.1.5
- Known Issues
- Critical fixes
- New Hardware Support
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- Disk Management Utility Enhancements
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- Transitioning From Other AIX Systems
- Moving From AIX 3.2 to the AIX Common Desktop Environment (CDE)
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- In Case of Issues Running the AIX Common Desktop Environment
- OSF/Motif Toolkit Widgets
- National Language Support (NLS) Error Logging
- System Dump
- Note to InfoExplorer Users

This document gives advice and information that supplements the information that appears in the manuals that came with your server. You may want to print a copy of this file and keep it with your manuals for future reference.

Information From Apple Computer, Inc.

About the AIX (*) Information from IBM

The AIX Installation CD that includes this file also includes a number of separately-installable programs, known as licensed program packages, which also have Read Me files associated with them. To obtain a list of the Read Me files, enter this command:

find /usr/lpp -name "*README*" -print

The other Read Me files and the InfoExplorer database that's provided with the AIX operating system were written by IBM and include some hardware information as well as some installation and networking information that doesn't apply to the Network Server.

For more information, see the manual "Using AIX, AppleTalk Services, and Mac OS Utilities on the Network Server."

AIX 4.1.5

The AIX for Apple Network Server accessory kit now includes AIX version 4.1.5. There are no human interface differences between this version and earlier Version 4 software. The new release is, however, faster and more reliable. In addition, the following software packages, which were not previously included with AIX for the Network Server, are now available with the current version:

- bos.loc.utf Base System Locale UTF Code Set for Simplified Chinese

- bos.pci PCI bus support
- bos.powermgt Power Management Software
- bos.som Distributed SOM Framework (DSOM)
- xlC.cpp C for AIX Preprocessor
- X11.x_st_mgr Xstation Manager
- dce.client DCE Client Services
- dce.compat DCE Compatibility with AIX 3.2
- dce.cds DCE Cell Directory Services
- dce.dfs_server DCE DFS Base Server
- ipfx Information Presentation Facility
- ipx IPX and SPX Protocol Stacks

KNOWN ISSUES
The following is a list of the most visible user issues that were not fixed in this release. They are still candidates to be fixed and released as PTF's in the future.

- The keyboard driver cannot be unloaded and then reloaded while the system is running; a reboot is required to make the keyboard available.
- The 'chhwkbd' command is not fully supported.
- The help information in 'rc.powerfail' doesn't apply to the Network Server. The correct information does appear in the error log and can be viewed by executing the following command... "**errpt -a**".
- The 'smit' help file is incomplete for the Mammoth tape drive, it is missing information for the various tape densities supported by the drive. See the manufacturer's specifications for the correct values.
- The Mylex RAID controller doesn't support non-zero SCSI LUN's.
- The Mylex 'dacmgr' doesn't log events (e.g. drive failures, system drives offline, etc...) if the log window is closed.
- If a Mylex RAID system drive is brought on-line through the intervention of 'dacmgr' (it was not on-line at system boot), AIX will NOT see it as available until after the next system reboot.
- If the Xstation Manager package is installed, the Internet services BOOTP and TFTP are automatically configured. For systems which are NOT providing network services for X terminals, these services pose a security risk and Apple recommends disabling these services; see the file /etc/inetd.conf.

CRITICAL FIXES
The following is a list of the most critical fixes included in this release of AIX. Many more issues of a less critical nature were also fixed and are part of this release also.

- The system will no longer crash if the Real Heap is set larger than the default.
- I/O requests that hang due to a SCSI device that is no longer responding are now properly timed out and reported as an error. The code to bring the 'hung' device back on-line has been significantly re-written to improve the chances of a successful recovery.
- Very 'dirty' ethernet segments could cause the on-board ethernet device to hang... this is no longer the case.
- A new and improved version of PPP (from IBM) has been included.
- This version of AIX fixes a memory leak triggered by heavy use of TCP/IP connections.
- Under heavy FTP usage (lots of simultaneous connections), the system will no longer temporarily stop accepting new connections.
- Heavy use of the Apache webserver may cause system crashes with AIX 4.1.4.1. This issue has been eliminated in AIX 4.1.5.
- Multiple tape backups using the HP-DAT now work properly.
- The fixes for the 'talkd', 'gethostbyname', "the ping of death" and the "SYN flood denial of service" issues (as reported by CERT) are included.
- You can now increase the receive queue size for multiple ethernet adapaters without risking a system crash during the next system boot.

The following post 4.1.5 fixes from IBM have also been included and will install as part of the Apple Server Bundle:

- APAR IX62435...Paging I/O performance improvement
- APAR IX62476...SYN flood denial of service
- APAR IX62509...libc_r.a exports list is incorrect

NEW HARDWARE SUPPORT
All models of the Network Server now include the following hardware enhancements:

- Support has been added for the Seagate 2, 4 and 9 gigabyte hard drives and for 8x CD ROM drives.
- Support has been added for external connection of Ultra-SCSI and differential devices to Symbios Logic PCI cards.
- Ethernet performance and reliability have been improved.
- Diaganostics have been added for both the on-board and PCI card ethernet devices.
- PCI device driver binary compatibility has been substantially improved.
- Common I/O support for FDDI, ATM, and Token Ring drivers has been added.

- Support for both Spanish and Japanese keyboards has been added.

NEW SOFTWARE FEATURES
The following software features have been added to the 4.1.5 software:

SMP support. AIX 4.1 is designed to support SMP hardware platforms. The kernel is thread-based and core kernel extensions such as the file system and the network stacks already use fine-grained locks, and are therefore, MP-efficient. The AIX device driver model supports full parallelism in interrupt handling, supporting thread interrupt and interrupt-interrupt synchronization. Applications can take advantage of the parallelism provided by the base operating system by using the following kernel services: POSIX threads, the AIX processor affinity API, fast locks, semaphores and mutexes. Existing, traditional, multi-process applications also benefit from the SMP scalability.

European localization. The installation CD-ROM includes AIX 4.1 localized message catalogs for French, German, Italian, Spanish, and other European languages. In addition, the French and Italian language versions include localalized versions of the messages Apple has added to support AppleTalk services, Apple devices and other Apple specific functionality.

NEW APPLETALK SUPPORT

Multi-homing. Multi-homing now supports multiple AppleTalk networks without routing. Multi-homing is enabled from the Advanced Features section of the AppleTalk SMIT menu. Functionally, multi-homing means that when you register a service in the default zone ,"*", the service is registered once in the default zone for each configured network interface and shows up once in each of those zones. If no default zone is chosen, multi-homing does not come up.

The user is prompted to specify a default zone for each configured network interface. Multi-zone registration allows the user to specify any local zone on any running interface. You can register as many services in as many local zones as there are, and they can all run at the same time. The default zone on any one interface cannot be the default zone on another interface. In addition, each port must have a router connected to it, otherwise AppleTalk won't start up.

AFP over TCP/IP. The capability of running AFP over TCP/IP will significantly improve the performance of file sharing with clients that support this protocol, since network communication over TCP/IP is inherently faster than over AppleTalk due to the larger transmission packet size. The appropriate version of the AppleShare Client needs to be installed on the client computer in order to take advantage of this feature.

Appletalk encapsulation in TCP/IP. IP tunneling provides the capability to route AppleTalk packets over the Internet using TCP/IP protocols, i.e., by encapsulating AppleTalk packets inside UDP packets before sending them over a TCP/IP network. This implementation follows the AppleTalk Update- based Routing Protocol (AURP) specification (AppleTalk routing over wide-area netorks), making it interoperable with Apple's Internet Router 3.0 product.

Some users reported system hangs while printing over AppleTalk, particularly with the Apple LaserWriter Pro 810. These issues have been corrected, as have system crashes associated with the ADSP stack. In addition, support for AppleTalk over FDDI has been added.

DISK MANAGEMENT UTILITY ENHANCEMENTS

The following enhancements have been made to the Disk Management Utility:

- The striped popup item in the logical volume allocation view has been disabled
- File systems can no longer be created that exceed the total size of the logical volume group
- The maximum number of logical partitions increases automatically when necessary
- The Mirror Write Consistency Check now works properly
- Log volumes for newly created files systems are displayed

DRIVER AND OPERATING SYSTEM ENHANCEMENTS
The following enhancements have been made:

- Write-behind I/O scheduling now works properly for all cases of sequential access
- The Network System will not boot if a fan has failed
- The serial driver now supports character sizes smaller than 8 bits
- The output of the lscfg command no longer includes an entry for the "cpucard" as it did in the previous release.
- The tagged command queue depth has been increased to 8 for those SCSI devices that support it.

SHARED LIBRARY HOOKABLE SYMBOLS
Apple's AIX Installation CD-ROM includes support for an extra feature known as Shared Library Hookable Symbols (SLHS). The SLHS support is required by some third-party applications.

The contents of the slhs.rte.obj fileset have been made part of the fileset which contains the standard libraries. The slhs.dev.obj fileset should be obtained from IBM.

To use the slhs.dev.obj fileset to develop applications which use this Shared Library Hookable Symbols support, it is necessary to run the SLHS compiler setup script, /usr/lpp/slhs/etc/svCompSetup. Please read the manual page on svCompSetup for a detailed explanation by running the command 'man svCompSetup'.

SAFETY MEASURES

The following safety measures will help you safeguard your data and the Network Server itself.

Power off before adding drives

Unless you have installed and are using the Network Server PCI RAID Disk Array card, always shut down the server and turn power off before replacing or adding drives. For more information about adding drives with RAID, check the Network Server PCI RAID Disk Array Card Administrator's Guide.

Replace only one drive at a time

Do not insert multiple drive trays into the front drive bays at the same time.

Ensure proper ventilation

To ensure maximum airflow and cooling, don't leave any drive trays out or panels open while running the server.

Exit properly from Installation Assistant

After completing installation, be sure to click Exit to exit Easy Install, then click Tasks Completed/Exit to AIX Login. If you fail to exit in this manner, certain system parameters, such as paging space, may not be configured correctly.

Check applications after reinstallation

If you reinstall AIX for the Network Server from the CD, you may need to reinstall some or all of your server applications. When reinstalling, be sure to check the information that came with your server application software.

Always unmount CD-ROM discs before removing them

For instructions on mounting and unmounting CD-ROM discs, see Using AIX, AppleTalk Services, and Mac OS Utilities on the Network Server.

Never use alcohol-style cleaning cartridges for tape drives.

Always use Apple-approved cleaning cassettes or cartridges.

Avoid running out of paging space.

If paging space is inadequate, you may see the following error messages:

- No more processes

- killed

You may also unexpectedly log out. Use the following command to check paging space:

lsps -a

You can increase paging space with the Install Assistant. For more information, see "Using System Administration Tools", Chapter 6 of Using AIX, AppleTalk Services, and Mac OS Utilities on the Apple Network Server. If you have inadvertently logged out and cannot restart from your hard disk, you can restart in maintenance mode. See the section "Booting from Maintenance Mode", in Chapter10 of Using AIX, AppleTalk Services, and Mac OS Utilities on the Apple Network Server.

MONITOR ISSUES

If your Network Server does not display data correctly, make sure that the monitor is compatible. The Network Server requires a monitor with multiple scan support, and many older monitors will not work. If the monitor is compatible (i.e. capable of multiple scan mode), and you are experiencing "rolling" video, do the following:

1. Boot in maintenance mode.

Follow the instructions in "Booting from Maintenance Mode", in Chapter 10 of Using AIX, AppleTalk Services, and Mac OS Utilities on the Apple Network Server.

2. Select an appropriate video resolution and refresh rate.

HARDWARE IDENTIFICATION

There are a number of hardware identification details that you should be aware of.

The serial I/O ports are labeled s1 and s2 on the system back panel; the AIX software numbers these ports as sa1 and sa0, respectively. This is the reverse of the relationship on IBM systems with native serial I/O support. As with all adapters, the numbering of the associated ttys depends on the order in which the ttys are configured. During installation, you can define the console with a terminal connected to the serial I/O port labeled s1.

Quantum 1 GB and 1.2 GB hard drives are identified by SMIT and other device commands as type 'other' instead of 1.0 (or 1.2) GB disk drives.

THE NETWORK SERVER DIAGNOSTIC UTILITY

You can use the Diagnostic Utility to verify the hardware configuration and run a variety of system tests. For more information, see the Read Me file on the Network Server Diagnostic Utility floppy disk.

INTERPRETING THE LCD

The liquid crystal display (LCD) screen on the Network Server displays a series of values while the Network Server starts up. These values are explained in the following table.

Value	Meaning
510	The system has started the configuration manager.
511	The configuration manager has completed.
517	The system is attempting to mount the / (root) and /usr file systems.
538	The configuration manager is calling a configuration method.
539	The configuration method has completed.
551	The system is attempting to varyon the root volume group.
553	The system has completed phase one of the boot process.
591	The system is configuring the Logical Volume Manager (LVM).
593	The system is configuring the low-function graphics terminal.
594	The system is configuring the rendering context manager.
704	The system is configuring a SCSI disk drive.
723	The system is configuring a CD-ROM or other SCSI device.
727	The system is configuring an asynchronous device.
731	The system is configuring a pseudo TTY.
811	The system is configuring the system planar (main logic board).
812	The system is configuring the standard I/O adapter.
814	The system is configuring the NVRAM.
821	The system is configuring the standard keyboard adapter.
823	The system is configuring the standard mouse adapter.
826	The system is configuring serial port 1.
828	The system is configuring the standard floppy disk adapter.
831	The system is configuring serial port 2.
868	The system is configuring the integrated SCSI adapter.
874	The system is configuring the graphics subsystem adapter.
890	The system is configuring a SCSI-2 adapter.
921	The system is configuring a keyboard.
925	The system is configuring a mouse.
935	The system is configuring a 3.5-inch diskette drive.

PRINTER DRIVER INSTALLATION

The Easy Install procedure detailed in Using AIX, AppleTalk Services, and Mac OS Utilities on the Apple Network Server does not install all the printer drivers that some users may need. If the drivers you require are not installed, the steps that follow will install them.

Important: Before proceeding with the installation, be sure that you are logged in as root and that the AIX Installation CD-ROM disc is inserted in the Network Server.

1. Type smit install and then press Return at the prompt in a terminal window. The installation utility opens.

2. Click the Install and Update Software checkbox. A software installation screen appears.

3. Click the Install and Update Selectable Software (Custom Install) checkbox. The custom install screen appears.

4. Click the Install Additional Printer/Plotter Software checkbox. A dialog box opens, asking you to specify the software source.

5. Type /dev/cd0 and press Return.

You can also click the List button (or press F4) and choose /dev/cd0 from the list that appears.

The Install Additional Printer/Plotter Software screen appears.

6. Click the List checkbox next to Software to Install. A popup list appears.

7. Select the printer drivers you want to install by clicking their names in the popup list that opens. If you want to select all printer drivers, click All @@ printers

8. Click OK. The Install Additional Printer/Plotter Software screen reopens.

9. Click OK. A confirmation dialog box appears.

10. Click OK. The installation process begins.

11. When installation is complete, click Done.

12. Choose Exit SMIT from the Exit menu to return to the Common Desktop Environment.

ETHERNET ISSUES

The following guidelines will help eliminate or avoid Ethernet issues:

Connect an Apple PCI Ethernet card to only one network at a time. Although the card has three connectors, it should not be connected to more than one network.

Do not install an Apple PCI Ethernet card without connecting a network cable

If you configure an Apple PCI Ethernet Card by assigning it an IP address or by enabling the AppleTalk stack on it, the card attempts to determine which of the three possible media types is connected to it. If you have not connected a network cable, you will hear clicking sounds every few seconds. These clicking sounds will continue until the cable is connected. Although this should cause no serious issues, the lack of a cable may cause long pauses during system booting, as the system attempts to contact other servers on the network.

Installing Ethernet cards for best performance

For maximum performance, always install Ethernet cards from the bottom slot up; slot 6 before slot 5, and so on.

Accessing Printers or Zones with Apostrophes in Their Names

The AIX System Management Interface Tool (SMIT) prevents you from selecting an AppleTalk printer if the printer name or the zone name contains an apostrophe. To solve this issue, do this:

1. Log in as root

This gives you the necessary write permission to the /etc/atalk directory.

2. Determine the printer name and zone name for the printer.

You can view the zone name and printer name by using the SMIT menu path Communications -> AppleTalk -> AppleTalk Services -> AppleTalk Printing -> Change or Select AppleTalk Printer Settings, then click the List button. Do NOT click OK to run the command.

3. At the command line, enter this command:

/usr/sbin/at_printer_cfg "zone" "printer"

Replace "zone" and "printer" with the correct zone and printer from step 2. Be sure to include the double quotes.

The system displays a message stating that this printer is now the default printer.

KEYBOARD ISSUES

A number of issues with keyboards utilizing a variety of language mappings have occurred. Try the following suggestions. If none of them solves the issue, contact Apple support for more information. See the Apple support brochure in your accessory kit.

Issues using standard keyboards

It is sometimes possible to use a standard Apple keyboard with the Network Server, using the upper row of keys on the numerical keyboard to stand for the first four function keys, as described in Using AIX, AppleTalk Services, and Mac OS Utilities on the Apple Network Server. This method does not work for all languages.

Important: It is strongly recommended that you use an Apple Extended Keyboard or an equivalent third-party keyboard with all models of the Network Server. For more information on keyboard mapping, see the AIX Technical Reference, available through InfoExplorer.

Issues with number keys

The number keys in most keyboards require you to press only the number key itself to type the number, with the shift key also pressed to type the second symbol, such as * or ^. Other keyboard maps, however, use the opposite scheme, requiring you to press the shift key when typing a number. If this is the case, you may encounter occasional conflicts. To solve the issue:

1. Press the number lock key on the numerical keypad on the right of the keyboard.

2. Enter all numbers from the numerical keyboard.

For more information on keyboard mapping, see the AIX Technical Reference, available through InfoExplorer.

Issues generating third symbols on keys

Apple keyboards include no more than two symbols on keys, while some IBM keys have three. To generate the third symbol, hold down the Alternate Graphic (AltGr) key while pressing the key you need. The AltGr key is always in position 60 and 62 on the keyboard, on either side of the space bar. On Apple keyboards, it is the Apple or Command key. For more information on keyboard mapping, see the AIX Technical Reference, available through InfoExplorer.

OPEN FIRMWARE

Open Firmware can be used to set basic Network Server parameters and for some diagnostic procedures. To boot the system into Open Firmware, restart the server while holding down these keys:

COMMAND-OPTION-O-F

You can use the following commands while in Open Firmware:

- printenv

Lists the current (left column) and default (right column) values for all the Open Firmware variables.

- set-defaults

Sets all the Open Firmware variables to their default values.

- setenv variable value

Sets the Open Firmware variable to the value listed. Note that some variable changes take effect immediately, others only after rebooting.

- setenv input-device ttya:9600

This sets the input device to serial port 'a' at 9600 baud:

- setenv output-device ttya:9600

This sets the output device to serial port 'a' at 9600 baud:

- setenv input-device kbd

This sets the input device to the attached ADB keyboard:

- setenv output-device screen

This sets the output device to an attached monitor:

- probe-scsi0

Lists all the devices connected to the external SCSI bus.

- probe-scsi1

Lists all the devices connected to the first (top) internal SCSI bus.

- probe-scsi2

Lists all the devices connected to the second (bottom) internal SCSI bus.

- password

Sets the Open Firmware password. By default the Open Firmware password is the same as the AIX root password. If you change the Open Firmware password, then changing the AIX password no longer changes the Open Firmware password.

- boot

When the front key on the server is turned to the upright (normal) or right (locked) position, the server boots from the device listed as boot-device. When the front key is turned to the left (service), the server boots from the device listed as diag-device.

- shut-down

Turns off server power.

- reset-all

Reboots the server and forces changed variables into effect.

- .keyswitch

(Note the leading period.) Reports the position of the front keyswitch (service, normal, or locked).

Open Firmware Password

If you forget the Open Firmware password, do this:

1. Turn the front key to the left (service) position.

2. Reboot the system, and then immediately hold down the following key combination: **COMMAND-OPTION-P-R**

This resets the parameter RAM (PRAM).

3. Reboot the system in maintenance mode. See Chapter 10 of Using AIX, AppleTalk Services and Mac OS Utilities on the Network Server.

4. Reset the system date.

5. Reset the AIX root password to null.

When you reassign an AIX password, the Open Firmware password will be the same.

CORRECTIONS

The following are corrections to the information in Using AIX, AppleTalk Services, and Mac OS Utilities on the Apple Network Server.

- In Chapter 4, page 48, the manual provides the following incorrect command for starting the Common Desktop Environment:**xinit /usr/dt/bin/dtsession**

The correct command is:

xinit /usr/dt/bin/Xsession

- On page 86, the keystroke esc-esc should be just esc.

- On page 87, in the second table, in the description for "Return or Enter", the phrase "...advances to the next field," should read "...goes back to the first field."

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INFORMATION FROM IBM

TRANSITIONING FROM OTHER AIX SYSTEMS

The remainder of the information in this Read Me file is from IBM. Much of it applies only if you already have other, older AIX systems and want to copy configuration information from those other AIX systems to the Network Server.

Moving from AIX 3.2 or AIX 4.1 to the AIX Common Desktop Environment (CDE):

AIX Common Desktop Environment (AIX CDE) is the default desktop shipped with AIX 4.1.4. AIXwindows Desktop is the default desktop shipped with AIX 3.2, 4.1.0,4.1.1 and 4.1.2.

If you have previously logged onto the AIXwindows desktop on AIX 4.1.0, 4.1.1 or 4.1.2, online help assists you in migrating to AIX CDE 1.0 from the AIXwindows Desktop. This help appears automatically the first time you log onto AIX CDE 1.0 You can also view this online help by selecting "Welcome to AIX CDE 1.0" from the Help Manager subpanel.

NOTE: A minimum of 64 MB of paging space is required to run AIX CDE.

Moving from AIX 3.2 to the AIX Common Desktop Environment (CDE):

Here's what you need to do in order to move from any version of AIX 3.2 to AIX CDE 1.0 :

If you have not customized the AIXwindows desktop, you do not need to take any action.

If you had customized the AIXwindows desktop, you can use the xdt2cde migration tool to move X.desktop objects from the AIXwindows version 3.2 desktop to the new graphical Common Desktop Environment desktop syntax. This migration tool also converts XPM2 pixmaps to XPM3 pixmaps.

To start the xdt2cde migration tool:

1. Click the Application Manager control from the Front Panel.

2. Click the Desktop_Tools icon.

3. Click the Migration Tool icon.

Online help is provided for the xdt2cde migration tool. In addition, you can order AIXwindows to CDE Migration Guide (SC23- 2531).

Moving from Any Version of AIX 4.1 to AIX CDE 1.0:

AIX 4.1.4 changes some action, data type and front panel definitions provided with previous releases of AIX 4.1.

Here's what you need to do in order to move from any version of AIX 4.1 to AIX CDE 1.0 :

If you have not made any customizations to your desktop, if you do not have your home directory out in a networked environment, and if you do not mount a file system containing action, data type and front panel definition files, you do not need to make any changes.

The X11.Dt.compat fileset should be installed to aid in the transition from AIXwindows Desktop on AIX 4.1 to the AIX CDE 1.0 desktop. This fileset contains executables, icons, action and data type definitions and symbolic links to maintain compatibility with previous versions of the CDE desktop. This fileset also contains the Migrate Actions icon and its associated action definition. The "Welcome to AIX CDE 1.0" help volume contains additional information about the contents of this fileset. This fileset can be deinstalled later when you no longer have a need for the files contained within it.

If you have made customizations to your desktop action and data type definition files (*.dt) or to your front panel definition files (*.fp) or installed icons on the front panel, you need to migrate these changes to the new desktop using Migrate Actions (dtmigrate).

To start dtmigrate:

1. Click the Application Manager control from the Front Panel.

2. Click the Desktop_Tools icon.

3. Click the Migrate Actions icon.

If you have customized your desktop actions, data types or front panel, or are planning on running the desktop with file systems that contain action, data type or front panel definitions and the Calendar resource file (.desksetdefaults) shared between an AIXwindows Desktop on AIX 4.1.1 or 4.1.2 and an AIX Common Desktop Environment on AIX 4.1.4, you must take special action. See the "Welcome to AIX CDE 1.0" help for details.

Moving from a Snapshot Version of CDE to AIX CDE 1.0:

If you have installed a "snapshot version" of the Common Desktop Environment and are migrating to AIX Version 4.1.4 installing AIX CDE 1.0, remove the /etc/dt and /var/dt directories before installing AIX Version 4.1.4. While some customizations made in $HOME/.dt will still work unmodified, it is also recommended that the .dt directory be renamed to .dt.old prior to logging in to CDE 1.0.

NOTE: A "snapshot version" of CDE was distributed to select customers in April, 1994 and runs with AIX 3.2.5 only.

IN CASE OF ISSUES RUNNING THE AIX COMMON DESKTOP ENVIRONMENT

If, after migrating to AIX CDE 1.0 from AIXwindows desktop on AIX 4.1.1 or 4.1.2, you have issues with the desktop (for example, icons on the front panel do not execute properly, icons are missing, or actions can not be found), check that the following has been done:

1. The X11.Dt.compat fileset has been installed

2. Action, data type and front panel definitions in personal directories have been migrated to a valid format for AIX CDE 1.0.

The "Welcome to AIX CDE 1.0" help volume contains information about these steps and other useful information to aid in the transition to AIX CDE 1.0.

OSF/MOTIF TOOLKIT WIDGETS

When upgrading to AIX Version 4.1.4 from AIX Version 3.2.5, the OSF/Motif(*) toolkit widgets will have some slight changes in appearance, size, and shape. Any automated test tool that records and replays X mouse movements to simulate user input may fail as a result of these changes, and may have to be recalibrated to function correctly on AIX Version 4.1.4.

To avoid having scripts affected by changes in widget size or position, record scripts using keyboard input wherever possible. Further changes of widget size or appearance will occur as a result of software upgrades, since the current Motif standard does not contain detailed descriptions of widget size or appearance.

(*) Open Software Foundation, OSF, OSF/Motif and Motif are trademarks of Open Software Foundation, Inc.

NATIONAL LANGUAGE SUPPORT (NLS) ERROR LOGGING

If you run the errpt command and get a 4 digit hex value where you should get message text, this means that the message number for that message was not found in your language's codepoint catalog. If you set LANG=C before running the errpt, English text is displayed for the bad message(s).

SYSTEM DUMP

There is a new item on the System Dump SMIT menu called Always Allow System Dump. The value defaults to false. If set to true, the cntl-alt-numpad1 and cntl-alt-numpad2 key sequences work with the key in normal or service position. These key sequences are used to start a system dump to the primary and secondary dump devices, and formerly always required the key to be in the service position.

A flashing 888 on the LCD panel indicates a system dump. To set the system so that it automatically restarts after a crash:

1. Log in as root.

2. In SMIT, choose System Environments.

3. Choose Change / Show Characteristics of Operating System.

4. Set the "Automatically REBOOT system after a crash" attribute to true.

You can also set this attribute by logging in as root and entering this command:

chdev -a 'autorestart=true'-l sys0

NOTE TO INFOEXPLORER USERS

If you try to read a CD with more than 64 InfoExplorer databases (for example IBM's May 95 Technical Library CD), InfoExplorer may core dump. To prevent a core dump, enter this command before running InfoExplorer:

export MALLOCTYPE=3.1

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Published Date: Feb 18, 2012

MessagePad 2000: Proper Warranty Card for International Units

The Apple MessagePad 2000 international bundles contain both the information for support in the US, and outside of the US.
This article has been archived and is no longer updated by Apple.
Use the following warranty registration card:

Non-US customer support registration

- Use the card labeled "Register Your Apple MessagePad Today To Receive 12 Months Free Support" (Z030-8774-A).

US customer support registration

- Use the card labeled "Your New Apple Support Card" (030-9190-B) for 90 days free phone support and one year hardware warranty.

Published Date: Feb 18, 2012

PC Compatible Card: ATI Player Readme Document (7/97)

This article contains the ATI Player Read me document, which is bundled with the Apple Pentium 166MHz PC Compatible Card.
This article has been archived and is no longer updated by Apple.

IMPORTANT INFORMATION

for

ATI Video Player Users

****

ATI Video Player Release Notes Dec. 5, 1996

****

READ THIS FILE COMPLETELY BEFORE ATTEMPTING TO USE THIS PRODUCT !

****

Contents

1.0 Introduction

2.0 System Requirements

3.0 Installation Notes

3.1 Uninstall

4.0 Notes and Known Bugs

4.1 General

4.2 Windows 95

4.3 Windows 3.1

****

1.0 Introduction

This file contains last-minute notes and known bugs. Please read this file before proceeding with the installation.

****

2.0 System Requirements

This product requires a mach64 PCI or VLB graphics accelerator. ISA cards and VLB cards with the aperture disabled will not be supported. The minimum recommended system is a Pentium (P5-60) with a double speed CD-ROM. This product is Windows 3.1 and Windows 95 compatible.

****

3.0 Installation Notes

To install the ATI VIDEO PLAYER in Windows 95:

1) Insert the ATI CD-ROM into your CD-ROM drive.

Note: If your CD ROM is configured for Auto insert notification (Auto Load), the ATI Installation program will be automatically launched. Proceed to step 5 of the Windows 95 installation notes.

2) Click Start.

3) Select Run.

4) Type the following:

D:\\ATISETUP (If D is not your CD-ROM drive, substitute D with the correct drive letter.)

5) Click on ATI VIDEO PLAYER.

6) Follow the online screen instructions to complete the installation.

To install the ATI VIDEO PLAYER in Windows 3.1x:

1) Start Windows.

2) Insert the ATI CD-ROM into your CD-ROM drive.

3) Pull-down the File menu in the Program Manager.

4) Select Run.

5) Type the following:

D:\\ATISETUP (If D is not your CD-ROM drive, substitute D with the correct drive letter.)

6) Click on ATI VIDEO PLAYER.

7) Follow the online screen instructions to complete the installation

Note: Make sure you restart Windows for changes to take effect.

For information about using the controls of the ATI VIDEO PLAYER, see the online help.

3.1 Uninstall

To uninstall the ATI VIDEO PLAYER in Windows 95:

1) Insert the ATI CD-ROM into your CD-ROM drive.

Note: If your CD ROM is configured for Auto insert notification (Auto Load), the ATI Installation program will be automatically launched. Proceed to step 5 of the Windows 95 installation notes.

2) Click Start.

3) Select Run.

4) Type the following:

D:\\ATISETUP (If D is not your CD-ROM drive, substitute D with the correct drive letter.)

5) Select OPTIONS from the ATI Installation toolbar and Click on UnInstall Mode

6) Click on ATI VIDEO PLAYER to uninstall.

7) Follow the online screen instructions to complete the uninstall.

To uninstall the ATI VIDEO PLAYER in Windows 3.1x:

1) Start Windows.

2) Insert the ATI CD-ROM into your CD-ROM drive.

3) Pull-down the File menu in the Program Manager.

4) Select Run.

5) Type the following:

D:\\ATISETUP (If D is not your CD-ROM drive, substitute D with the correct drive letter.)

6) Select OPTIONS from the ATI Installation toolbar and Click on UnInstall Mode

7) Click on ATI VIDEO PLAYER to uninstall.

8) Follow the online screen instructions to complete the uninstall.

****

4.0 Notes and Known Bugs

4.1 General

- The "Play CD" button in the "File" menu will be active only if there is a VideoCD disc in an XA compatible CD ROM.
- If a PAL or NTSC MPEG file is too large to fit in the Windows screen at 2x playback, the ATI Player will switch automatically to full screen.
- The "mpg" and "dat" file extensions denote a standard MPEG file. However, some files with a "dat" extension are not MPEG files and therefore will not play. On a Video CD, MPEG files are in the MPEGAV directory. Files with the "dat" extension in other directories may cause problems.
- CD-i discs which are not labeled "Video CD" will not play on some CD ROM configurations. CD-i discs which are labeled "Video CD" are known as CD-i Bridge discs, and are Video CD compatible. Non-bridge CD-i discs are not supported.
- If the ATI Player is opened while another application is accessing the CD ROM, there will be an interruption in that application. For example, if you are playing an audio CD as you open the ATI Player, the sound of the audio CD will stop.
- If playing a long movie, it is recommended that you disable any screen savers. If a screen saver begins operation during play, moving the mouse or touching the keyboard will stop it.
- The time/frame counter is not completely accurate. When seeking around a single file, the frame count or time becomes an estimate.
- In certain situations of high monitor refresh rates and high resolutions, the accelerated display path may fail due to lack of bandwidth. The point at which this failure occurs is system dependent.
- When there is no audio card present or a disabled audio driver, there may be a problem with some VideoCD 2.0 CDs. If there is a menu item which comprises a single still image and a lengthy audio track, the lack of audio card will cause this menu to terminate before the user can select anything, and will thus force the default setting.
- The video playback performance (frame rate) is directly dependent on your CPU and CD-ROM.

The minimum recommended system is:

Pentium class

Double speed CD-ROM

- To overcome any CD-ROM deficiencies you may have, you can copy the MPEG clips to your hard drive to increase the playback speed.
- Panning the desktop while loading or playing the ATI Video Player may result in lock-ups.

4.2 Windows 95

If you have installed Microsoft Plus! for Windows 95 some problems may occur in 8bpp. After playing full screen MPEG, the Windows colors may be incorrect. Opening any other application will correct the colors. Also, if you change the system colors while the MPEG application is open, the MPEG playback will be incorrect. Closing and restarting the ATI Player will correct the colors.

For MPEG playback and DirectDraw support under Windows 95, you must install the mach64 Enhanced Utilities version 2.2 or higher. Previous versions of the mach64 driver do not concurrently support DirectDraw and the ATI Player. DirectDraw must be installed on the system.

The MPEG playback application should be closed before changing resolutions. Problems may occur if an MPEG playback session is open when a resolution switch occurs.

For Video CD playback under Windows 95, enhanced CD ROM drives must not share the IDE connector with another hard drive or device. Otherwise, playback will be very slow.

Some Video CDs are recorded in such a way that they are not fully compatible with the Windows 95 file system. These Video CDs may experience playback problems on some CD-ROM drives. If you experience problems try adding the following 2 lines to the end of the MCIATIM1.INI file in your windows directory.

[fileaccess]

ReadCDsAsFiles=0

There may be problems accessing video CDs from Windows 3.x when using versions of smartdrive earlier than 4.02. If problems are experienced try modifying AUTOEXEC.BAT to reference the smartdrive included with DOS 6 or later.

4.3 Windows 3.1:

Under Windows 3.1, there is a conflict with WinSwitch, DeskScape and the Screen Adjustment program in the ATI DeskTop. It is recommended that you disable WinSwitch and DeskScape when playing MPEG files, and avoid using the Screen Adjustment program subsequently in that Windows session.

Compton's Interactive Encyclopedia, for MPEG, 1996 Edition will not play MPEG clips under Windows 3.1x.

TA40434_PC_Compatible_Card_ATI_Player_Readme_Document_.pdf

On a mach64 CT-based product, under Windows 3.x, there are known problems when playing back MPEG clips at 200%. Please use the full screen mode instead.

On a mach64 CT-based product, under windows 3.x, when in 640x480 mode with an 800x600 desktop and 24 bits per pixel, fullscreen MPEG playback may not be stretched to fit the entire screen.

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Newton OS: Backing Up 1.x Information to a 2.x Device

I need to backup information from an Apple MessagePad 110 and restore the information on an Apple MessagePad 2000 device. However, I have found that the Newton Connection Utilities 1.0 bundled with the Apple MessagePad 2000 does not recognize my old backup. How can I make this work?

This article has been archived and is no longer updated by Apple.

Although the format used with the original Newton Backup Utility 1.0 is compatible with the Newton Connection Utilities 1.0 bundled with the Apple MessagePad 2x00, users of Newton Connection Kit 2.0 bundled with the Apple MessagePad 110 may find that the backup cannot be read by Newton Connection Utilities 1.0.

However, Newton Connection Utilities 1.0 does allow a backup from an older Newton device. On connection, Newton Connection Utilities will automatically backup information to the Newton Connection Utilities folder. This backup file can be used to restore information to the Apple MessagePad 2x00 device.

Below is a chart with the Newton OS connection software provided by Apple computer and versions of the Newton OS they are compatible with.

Connection Software	Newton OS Compatibility	Notes
Newton Connection Kit 1.0	1.x only	-
Newton Connection Kit 2.0	1.x only	-
Newton Backup Utility 1.0	2.x only	This software contains a subset of the features in Newton Connection Utilities 1.0. Provides a way to backup Newton OS 1.x devices.
Newton Connection Utilities 2.0	2.x	Provides a way to backup Newton OS 1.x devices.

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Apple eMate 300: Disabling Classroom Exchange Server Autostart Feature

I have installed Classroom Exchange used with the Apple eMate 300, and after installation, I found that Classroom Exchange is starting every time I startup my computer. How can I change this?
This article has been archived and is no longer updated by Apple.
The autostart feature is based on its performance as a Newton Server in the classroom environment, and it is designed to startup at startup. However, the Admin will only ask for the location of the server file if it can't find it. Once the Admin application has been launched once, then you move the file, the Mac OS keeps track of the move and you never get the dialog.

Below are two ways of deactivating the autostart feature.

1) Turn off the server before quitting Classroom Exchange.

2) Click the Stop Server button in the eMate Classroom Exchange Status window.

This turns off the server and disables the autostart feature. If you quit Classroom Exchange before turning the server off, the server continues to operate even though the program is not running.

Here is another workaround to prevent Classroom Exchange from activating at system startup.

1) Move the file "Classroom Exchange Server" located in the System Folder: Extensions Folder to the "eMate Classroom Exchange" folder located in your hard disk.

2) Start the Classroom Exchange Server by opening the Classroom Exchange Admin application. The Admin application presents a dialog, asking you to locate the Classroom Exchange Server file.

3) Locate the Classroom Exchange Server file in the Classroom Exchange folder.

4) Click OK.

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Apple MessagePad 2000: System Update 2.1 (717145) Read Me

This article contains the Readme document for the MessagePad 2000 System Update 2.1.
This article has been archived and is no longer updated by Apple.
MessagePad 2000 System Update 2.1 (717145)US

This document describes the product enhancements included in the system update file named 'MessagePad 2000 2.1 (717145)US'.

System Update 2.1 (717145)US is for Apple MessagePad 2000 customers in the United States. This version will install over the following system software versions for MessagePad 2000:

- version 2.1 (717006)
- version 2.1 (717041)
- version 2.1 (717132)

Before you install any system update, you should backup your MessagePad 2000 with the Newton Connection Utilities application or to a PC storage card (PCMCIA card). Apple is not responsible for any lost data.

New changes in System Update 2.1 (717145):

- Data may have been lost when sending large blocks of data via the serial port. This has been fixed.
- When writing large amounts of cursive text, an out of memory condition was sometimes encountered. This has been fixed.
- Fixed a problem causing the error message "Newton still needs the card..." when certain communication cards are ejected.
- Text on the cover page of a fax is now clear.
- Battery level indicator in Extras will now accurately display battery charge.
- The power switch detection sensitivity has been improved to minimize false detection of system or backlight on/off events.

Published Date: Feb 18, 2012

Newton OS: Printing Uses Font Substitution

I am printing a formatted document from an Apple MessagePad, but the final document does not look like what I have on my MessagePad device. It looks like the printer is using font substitution. Is there a way to create a WYSIWYG document?

This article has been archived and is no longer updated by Apple.

The imaging architecture of the Newton is not **WYSIWYG** (What You See Is What You Get). There are some printing modes that are closer to the electronic document than others, but there is no guarantee of any fonts or layout. The font substitution map is not always what you expect or want, especially when you are talking about the "look" that certain fonts give to blocks of text. The words in a line are generally the same, but the spacing to the margin are always different from the print preview. This also affects IrDA and serial based printing, but in different ways.

For example, you will find that printing a checklist from IrDA to an Hewlett-Packard HP5mp is different than printing using the same printer through LocalTalk.

Regardless of the printer being used, do not count on the formatting of your Newton document to be the same as what you see on the Newton device's screen.

Note: When printing to Apple LaserWriter printers, the following substitutions are made:

Casual -> Times Roman
Century Schoolbook -> New Century Schoolbook
Courier -> Courier
Geneva -> Helvetica
New York -> Times Roman

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AppleShare IP 5.0: Frequently Asked Questions - General

This Frequently Asked Questions (FAQ) document contains general AppleShare IP 5.0 question and answers.
The topics in this article are:

1. What is the upgrade policy for existing AppleShare 4.x customers?
2. I just purchased the AppleShare 4.x-4.2.1 upgrade for $199 in February. Am I entitled to the ASIP 5.0 free upgrade?
3. What does the AppleShare IP 5.0 license agreement mean?
4. What are the license agreements for the AppleShare IP 5.0 Companion CD bundled software?
5. Can I install AppleShare IP 5.0 on any Mac OS computer?
6. Other AppleShare IP 5.0 FAQ Documents

This article has been archived and is no longer updated by Apple.

1. Question: What is the upgrade policy for existing AppleShare 4.x customers?

Answer: Upgrade information may be found on at the following location: **AppleShare IP 5.0: Frequently Asked Questions - FTP Services**

- **AppleShare IP 5.0: Frequently Asked Questions - Administration**
- **AppleShare IP 5.0: Frequently Asked Questions - AppleShare Client**
- **AppleShare IP 5.0: Frequently Asked Questions - File Service**
- **AppleShare IP 5.0: Frequently Asked Questions - MacDNS**
- **AppleShare IP 5.0: Frequently Asked Questions - Mail Service**
- **AppleShare IP 5.0: Frequently Asked Questions - Print Service**
- **AppleShare IP 5.0: Frequently Asked Questions - Web Service**

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AppleShare IP 5.0: Print Service (FAQ)

This article contains frequently asked questions (FAQ) regarding Print Service for AppleShare IP 5.0, with answers to those questions. Additional AppleShare IP FAQ's are listed at the bottom of this article.
This article has been archived and is no longer updated by Apple.
Questions answered in this article:

1. Does the AppleShare IP 5.0 print server provide logging that can be used for accounting purposes?
2. Can I store fonts on the print server for use by everyone sending print jobs to its queues?
3. Is it possible to run the Print Server component of AppleShare IP 5.0 on a 680x0 computer?
4. Does the new print server handle print jobs sent over TCP/IP?

Question 1: Does the AppleShare IP 5.0 print server provide logging that can be used for accounting purposes?

Answer: This is not currently available with AppleShare IP 5.0.

Question 2: Can I store fonts on the print server for use by everyone sending print jobs to its queues?

Answer: No. The client will have to locally store fonts that are needed.

Question 3: Is it possible to run the Print Server component of AppleShare IP 5.0 on a 680x0 computer?

Answer: No, the new Print Server is a PowerPC native application, and cannot run on 680x0 computers. With the introduction of AppleShare 4.2, the server software is now only PowerPC-compatible.

Question 4: Does the new print server handle print jobs sent over TCP/IP?

Answer: This is not available with AppleShare IP 5.0.

Other AppleShare IP 5.0 FAQ's can be found in the following articles:

- Article 45035: **AppleShare IP 5.0: FTP Service (FAQ)**
- Article 45036: **AppleShare IP 5.0: Administration (FAQ)**
- Article 45037: **AppleShare IP 5.0: AppleShare Client (FAQ)**
- Article 45038: **AppleShare IP 5.0: File Service (FAQ)**
- Article 45039: **AppleShare IP 5.0: MacDNS (FAQ)**
- Article 45040: **AppleShare IP 5.0: Mail Service (FAQ)**
- Article 45042: **AppleShare IP 5.0: Web Service (FAQ)**

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Power Macintosh 8600 & 9600: Use Mac OS 7.6.1 w/ Telephony Apps

I am having multiple problems trying to use the Apple Telecom 3.1 software on a Power Macintosh 8600 computer. When I use the Dialer application, it often crashes the first time it is launched. Also when I use the voice phone, the voice is usually very distorted.

This article has been archived and is no longer updated by Apple.

On both the Power Macintosh 9600 and Power Macintosh 8600, you need to use Mac OS 7.6.1 or greater to use the telephony applications. There was a problem with the Mac OS shipped on two models that didn't appear until you used the Apple Telecom software. Although it may seem to be related to the Apple Telecom software, it is not. Upgrading to a newer version of Mac OS (7.6.1 or greater) corrects the problems.

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Newton OS 2.x: Solution for NewtWorks (-48204) Error

When I try to open NewtWorks, I get a (-48204) error. What is causing this error and how can I prevent it?
This article has been archived and is no longer updated by Apple.
This error is caused by restoring system configuration data (the "System Information" soup) from Newton 1.x OS devices. In Newton 1.x OS, the paper size was specified as 'letter', in Newton 2.x OS paper size is specified as 'eightByEleven'. With this new paper size, NewtWorks cannot get the correct margin information when opening, causing the error.

Workaround

1) Tap Extras

2) Tap Prefs in the Setup drawer

3) Tap Locale

4) Change the Paper Size to A4

5) Close Locale

6) Tap Locale

7) Change the Paper Size back to U.S. Letter

This resets the paper size information.

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Newton OS: To Do Items Aren‘t Always Moved To Current Date

I noticed that some of the To Do items that I have not completed yet are not being moved forward each day. Since the Newton OS is suppose to carry To Do items forward each day until they are completed, why aren't they being carried forward? How do I get them to move forward each day without manually moving each To Do item?
This article has been archived and is no longer updated by Apple.
Unfinished To Do items can get stuck in the past under a couple of situations:

- You restore unfinished To Do items from a backup done several days previously.

For example, assume it is the 1st of the month and you have some unfinished To Do items. Back up your Newton device, and several days later you restore your Newton device. Those unfinished To Do items get restored to the 1st and do not automatically get moved up to the current date.

- You store To Do items on a card and remove the card for several days.

For example, assume it is the 1st of the month and you have unfinished To Do items on a storage card. You then remove the card and insert it a few days later. Those unfinished To Do items are still on the 1st and do not automatically get moved up to the current date.

How To Get To Do Items to Current Date

1) Set the date on the Newton device to the date of the earliest To Do item not being carried forward. (You can also set the date to something earlier).

2) Set the date to the current date.

When you move the date forward, all unfinished To Do items are also moved forward.

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AppleShare 4.2.x: Use AppleShare Client 3.6.1 with Mac OS 6.x

What version of the AppleShare workstation client is recommended for Mac OS 6.x workstations accessing an AppleShare 4.2 server?
This article has been archived and is no longer updated by Apple.
AppleShare Client 3.6.2 will not successfully mount AppleShare 4.2 volumes on Mac OS 6.x workstations. When attempting to mount a message is presented indicating that the desktop needs minor repairs, if you choose to fix there will then be a message indicating insufficient privileges for the operation and the original message is presented again. The only way out of this loop is to restart the workstation.

To prevent this error, use AppleShare Client 3.6.1 on Mac OS 6.x workstations using an AppleShare 4.2.x server.

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AppleShare IP 5.0: Same Volume Mounted Twice Upon Startup

I have an AppleShare Client that mounts our AppleShare server at startup. After upgrading to AppleShare IP 5.0, it now mounts the same AppleShare volume twice. Once through AppleTalk and once through TCP/IP. Why?

This article has been archived and is no longer updated by Apple.

This happens when the old AppleShare Prep file has an entry for the server using AppleTalk, then an entry is made with AppleShare IP 5.0 for the server through TCP/IP. To prevent the two volumes, you should throw away the AppleShare Prep file and create the TCP/IP entry for the server over again.

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Power Macintosh 6500/300: Ships with Partial Iomega Software

We have determined that the Power Macintosh 6500/300 configuration, which ships with an Iomega drive, only contains the Iomega driver in the System Folder. It does not contain any of the extras which have been included with previous ZIP configurations, such as the Iomega Guest or Iomega Tools application.

- Where can users get the complete software?

- Also, the Iomega driver version we have is version 5.0.3 while Iomega only has version 5.0.1 posted to their web site. Can I use the Iomega 5.0.1 tools with the Iomega 5.0.3 driver?

- What is different between versions 5.0.1 and 5.0.3?

This article has been archived and is no longer updated by Apple.
The latest version of Iomega's software can be found at Iomega's web site.

http://www.iomega.com/support/software/index.html

According to Iomega, Iomega tools version 5.0.1 can be used and is fully compatible with Iomega driver 5.0.3 that ships with Apple's Power Macintosh computers and system software.

Version 5.0.3 of the Iomega driver is functionally the same as version 5.0.1. Version 5.0.3 was updated for Apple by Iomega to allow for international localization.

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PowerBook 1400: Pressure to I/O Door Presses Reset Pin

On some PowerBook 1400 computers the reset pin is too long. When pressure is applied to the I/O door, the reset pin is pressed.
This article has been archived and is no longer updated by Apple.
Apple Computer, Inc. is aware of the issue and has shortened the reset pin. Contact Apple Computer, Inc. or your local Apple Reseller for information on a permanent solution. As a temporary workaround, avoid putting pressure on the rear door when carrying the PowerBook 1400.
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MacX 2.0: Read Me document

This article contains the MacX 2.0 Readme Document.
This article has been archived and is no longer updated by Apple.
MacX 2.0 Read Me

Introduction
MacX is Apple's enhanced X Window System software for Power Macintosh and 68K Macintosh platforms. MacX's server implementation combined with X11R6.1 server technology, provides Mac OS users with the ability to concurrently access and display Macintosh applications and network-based X applications.

MacX version 2.0 offers significant enhancements from the previous versions. Primary among these is X11 release 6.1 compatibility.

This file contains an introduction to the product as well as useful additions and corrections to the product documentation. We suggest that you print and carefully read this file before you start working with the applications. Then keep it for reference as a supplement to your product documentation.

Documentation
The full manual ("MacX User Guide"), in Adobe Acrobat format, will be installed with an "Easy Install." The manual will be placed in the "Documentation" folder within the "MacX Application" folder wherever you target your installation. If you'd like to read the document before installing the software, you'll also find it in the "Documentation" folder on this CD. Note that you must have the Adobe Acrobat Reader software installed to open the MacX User Guide. You'll find an installer for the Acrobat Reader software in the "Apple Extras" folder on this CD. Additional information about Adobe Acrobat is found later in this document.

Installation

680x0 vs. PowerPC
MacX can be installed on Mac OS computers equipped with 680x0 and PowerPC processors. Easy install will provide the correct binary version for your computer (running optimally on either 680x0 or PowerPC equipped computers). To install the FAT version, you will need to perform a custom installation.

Note: If you are using a Power Macintosh Upgrade Card, you must install the 680x0 version of the software to use it when your machine is in 680x0 mode.

System Requirements

To run the MacX package you will need the following:

- At least 8 MB of RAM for 680x0-based computers and 16 MB of RAM for PowerPC processor-based computers.
- 8 megabytes of available disk space.
- System 7.1 or later; System 7.5.3 or later recommended.
- A Macintosh or Mac OS-compatible computer with a 68030 or faster processor.
- If you are running Open Transport, version 1.1.1 or later is highly recommended.
- CD-ROM drive

MacX version 2.0 Features

X11 Release 6.1 Support
Major client features in X11R6.1 are multi-threading support, additional internationalization support, and new toolkit and desktop management specifications, including support for drag and drop. Additional information about X11 release 6.1 can be found at:

http://www.opengroup.org/tech/desktop/x/gettingx.htm

MacX version 2.0 can display windows and graphics created by clients that take advantage of the preceding X11R6.1 features. Additionally, the server supports the following new X11R6.1 extensions:

RECORD
DOUBLE-BUFFER
ICE X Rendezvous
SYNC

Open Transport Ready

MacX version 2.0 now provides native support for the Open Transport networking architecture. Previously, MacX communicated with Open

Transport through MacTCP. Using Open Transport APIs MacX now interacts directly with Open Transport. This direct interface further enhances server performance, particularly on PowerPC systems. MacX no longer uses the "MacTCP Tool," though it does continue to run on MacTCP systems.

Additional MacX version 2.0 Features

- The option of treating the Macintosh Option key as an X windows Alt key was added to the Misc. Preferences... command from the Edit menu.
- The Host... button in the New and Edit Remote commands has been replaced with the Host data entry field and a Validate button on those same dialog boxes. Click Validate to determine if the host you entered is recognized by your Domain Name Server (DNS). (Note that the Validate button does not verify connectivity between your Macintosh and the specified host. You should use a Ping application to do this.) If you do not enter a host as part of a remote command, you will be prompted for the host when you attempt to execute the command. With this feature, you can use the same remote command for multiple hosts.
- Cutting and pasting between X and Macintosh applications has been enhanced to support Compound Text.

MacX General Features

- X11R6.1 compliance.
- Bundles MacTCP 2.0.6 and support for Open Transport.
- Accelerated for Power Macintosh (fat binary for PowerPC and 68K support).
- Standard X11 R6 fonts (.PCF, .BDF files), and X11 font server access.
- CDE fonts.
- Standard X11 XDM support (to start Unix X sessions).
- Remote login option for TCP (REXEC, RSH).
- Support for XIE (X Image Extension).
- Support for core Apple events.
- Balloon Help.
- Multiple monitor support.
- Simultaneous use of Rooted or Rootless windows with built-in window management for Rootless windows.
- Cut and Paste of text or graphics.

Other Tidbits

The following shortcuts or hints may prove useful:

- To move or resize any X client window quickly, press the option-command key and use the mouse.
- To scroll within a rooted X window, press the option-command keys and mouse button.
- To edit a remote command quickly, press the option key when selecting a command from the Remote menu.

Known Problem Areas

The following areas are known to have minor problems:

- Shaped parent windows don't work perfectly in Rootless mode.
- Color Palette management with two Macintosh monitors is less than optimal.
- GrayScale monitors default to PseudoColor visual.
- Compound Text (utilized by Motif libraries) is not currently supported for Rootless window titles.

Known Conflicts

The following areas are suspected conflicts with other products for Macintosh computers:

- Older versions of Symantec's AutoDoubler may hang MacX during program startup on some PowerPC machines. Versions of AutoDoubler newer than 2.0.5 may cure the problem.
- Open Transport users should upgrade to a current release (Open Transport 1.1 or later, which is automatically installed with System 7.5.3 on both Power Macintosh and 68K platforms).
- MacTCP users with older System installs may suffer hang conditions under heavy network loads. In this situation, Apple's NSI 1.5.1 network update may help by updating the low level Ethernet drivers. Do not use the earlier NSI 1.5 update. Even with NSI 1.5.1, it is still possible to hang under heavy loads of small packets (for example, maze client).
- When starting MacX with insufficient free memory, the Code Fragment Manager may erroneously report "The Application MacX could not be started because the shared library XIE could not be found."

Installing the Acrobat Reader

In order to view the MacX User Guide, the Acrobat Reader program must be installed on your computer's hard disk. If you need to install the Acrobat Reader on your computer's hard disk, follow these steps:

1. Start up your computer from the hard disk on which you want to install the Acrobat Reader.

2. Insert the MacX Software CD-ROM disc.

3. Open the Adobe Acrobat Reader folder in the Apple Extras folder and follow the installation instructions in the file titled Installing Acrobat Reader.

The Acrobat Reader requires more than 3.5 megabytes of memory to work properly. When you attempt to open a PDF document, if Acrobat Reader is unable to find a section of memory large enough, Acrobat Reader displays two messages. The first message says that the Adobe Type Manager (ATM) couldn't be installed because it requires more memory or additional system software resources. When you click OK, a second message appears, saying that ATM version 3.6 or newer must be installed and that Acrobat Reader is quitting. Usually, the reinstallation process recommended by these messages is not necessary. Instead, try freeing up memory by quitting some of the other applications that are currently running on your computer, and then attempt to reopen the PDF document.

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PowerBook 1400 and 2400: Microphone for Audio Input

I want to purchase a microphone for my PowerBook 1400 computer and want to know what type I need.
This article has been archived and is no longer updated by Apple.
Both the PowerBook 1400 and PowerBook 2400 computers use a 1v Peak-to-Peak, line level, microphone. You can find these types of microphones at almost any electronic stores. One such microphone found at Radio Shack is the Sound Level Meter (Radio Part Number: 33-2050). The cable we used with this microphone was also from Radio Shack (Radio Shack PN: 42-2481).

Note: The Radio Shack Sound Level Meter only records in mono. This means that with this particular microphone you will either record the left or right channel depending on which RCA cable is connected to the meter.

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AppleShare 5.0.2: Addendum Notes

This article contains the AppleShare 5.0.2 Addendum information.

This article has been archived and is no longer updated by Apple.

Important Information About AppleShare 5.0.2

AppleShare 5.0.2 has two improvements not mentioned elsewhere in the documentation.

- It is fully compatible with Mac OS 8
- It contains support for WebStar compatible plug-ins

Note: Several sections in this document instruct you to restart the Web server so that settings changes can take effect. To save time, read this entire document and make all setting changes before you restart the server.

Using WebStar plug-ins

Plug-ins add speed and functionality to your Web server. They act like CGI (Common Gateway Interface) scripts but are faster and more efficient. Here are some typical uses:

- page counters
- form processing
- database accessing
- chats
- access control
- searching

You get plug-ins by buying them from software vendors or by downloading them from the Internet.

Installing plug-ins

To install a plug-in, follow the directions that came with the plug-in software. If no directions came with the software, drag the plug-in to the Plug-Ins folder inside the current Web folder.

Important: Your plug-in documentation may tell you to adjust the memory setting in the server's Information dialog box. Ignore that instruction and follow the instructions in the next section instead.

Setting aside plug-in memory

The documentation that comes with your plug-in tells you how much memory your plug-in needs to load and to run correctly. (All the plug-ins in the Plug-Ins folder load when your Web server starts.)

You set aside memory for your plug-in using the Plug-Ins section of the Web & File Server Settings window. Follow these instructions:

1) Open the Web & File Admin Program.

2) Choose Web & File Server Settings from the Server menu.

3) Choose Plug-Ins from the pop-up menu.

4) In the text field next to Maximum Plug-in Memory Usage, increase the setting by the memory that your plug-in requires.

To increase the setting, click the up-arrow.

5) Click Save.

Before doing so, you may want to read the next section and make changes to other settings.

6) Restart the server to make your changes take effect.

Choose Stop Web & File Server from the Server menu, respond as appropriate to the dialog box that appears, and then choose Start Web & File Server from the Server menu.

The total in the text field should be at least as large as the sum of required memory for all plug-ins in the Plug-Ins folder, plus any special plug-ins that reside elsewhere. (See "Special Plug-in Settings," later in this document.)

Important Your plug-in documentation may tell you to adjust the memory setting in the server's Information dialog box. Ignore that instruction and

follow the instructions above instead.

Controlling other plug-in settings

You make all plug-in settings in the Plug-Ins section of the Web & File Server Settings window, accessible from the Server menu of the Web & File Admin program. Follow these instructions:

1) Open the Web & File Admin Program.

2) Choose Web & File Server Settings from the Server menu.

3) Choose Plug-Ins from the pop-up menu.

4) To allow plug-ins to work, click to put an X in the box next to Enable Plug-ins.

5) To allow plug-ins to maintain a log of their actions, click to put an X in the box next to Enable Plug-in Logging.

6) To deal with special preprocessor, postprocessor, or error-handling tasks, click the appropriate button and locate the plug-in you want to use.

See the next section for details.

7) Click Save.

8) Choose Restart Server from the Server menu to make your changes take effect.

Special plug-in settings

AppleShare IP lets you activate specific preprocessor, postprocessor, and error plug-ins.

Preprocessor plug-ins examine requests for information before your Web server acts on them. For example the plug-in might display a password dialog box to make sure whoever is trying to reach your site has the authority to do so.

Postprocessor plug-ins manipulate information after your Web server has been used, for example to file in formation about what internal links the most recent visitor activated.

Error plug-ins process information about out-of-bounds conditions such as "file not found" errors. This kind of plug-in might record the error in a log and send a message to the user suggesting what to do.

To activate specific preprocessor, postprocessor, and error plug-ins, follow these instructions:
1) Open the Web & File Admin program, if it's not already open.

2) Choose Web & File Server settings from the Server menu.

The Web & File Server Settings window appears.

3) Choose Plug-Ins from the pop-up menu.

4) Click the button next to the kind of plug-in you want to activate.

Choose from preprocessing, postprocessing, and error.

5) Locate the plug-in you want to activate, then click OK.

6) If you wish, repeat steps 4 and 5 to activate other specific plug-ins.

You can activate one of each special type.

7) Choose Restart Server from the Server menu to make your changes take effect.

Seeing the plug-in log file

Plug-ins can maintain information about what happens when they execute. This information varies from plug-in to plug-in, but it's all stored in the same text file.

- To see the log information, double-click the file named Plug-In Messages in the HTTP Logs folder.

The HTTP Logs folder is in the AppleShare IP Preferences folder within the System Folder's Preferences folder.

Published Date: Feb 18, 2012

AppleShare Mail Server: Functions as POP3 & SMTP Server

What is the purpose of the AppleShare Mail Server?
This article has been archived and is no longer updated by Apple.
The AppleShare Mail Server performs two main functions, it acts as a POP3 server and a SMTP server.

POP3 Server Description

The POP3 (Post Office Protocol version 3) server component allows e-mail messages to be stored on the server and retrieved by e-mail client software. A POP3 server performs user authentication (checking user name and password) to prevent unauthorized access to users' mail. Each user has a unique name and password. Basically, POP3 handles only incoming mail.

For more information on the POP3 specification, see RFC 1725 available on the Internet.

SMTP Server Description

The SMTP (Simple Mail Transfer Protocol) server component handles outgoing mail requests. SMTP servers do not perform any type of user authentication, so there is no way to prevent unwanted use of an SMTP server except through the implementation of firewalls. Although this means that any user can send mail through any SMTP server, it does not mean that they can retrieve e-mail or access other users' messages. This is a limitation of the SMTP specification, not of the AppleShare IP Mail Server.

For more information on the SMTP specification, see RFC 821 available on the Internet.

Published Date: Feb 18, 2012

Color StyleWriter 4100 & 4500: No Desktop Printing Option

I want to create a desktop printer for my Color StyleWriter 4100 printer, but can't seem to do so. If I try selecting another printer in the Chooser, a desktop printer is created, but not when I select the Color StyleWriter 4100.

This article has been archived and is no longer updated by Apple.

Desktop Printing is not available using the Color StyleWriter 4000 series driver. When you select the Color StyleWriter 4100 or Color StyleWriter 4500 printer in the Chooser, no icon is created on your desktop. However, all standard printing features are available through the File menu within applications.

Published Date: Feb 18, 2012

Lisa: Spontaneous Reset and Power Ups

This article has been archived and is no longer updated by Apple.

A Lisa that resets itself spontaneously may have a bad I/O board. A Lisa that starts itself up has a bad power supply.

Published Date: Feb 18, 2012

Lisa: Dialog Boxes

This article has been archived and is no longer updated by Apple.

Dialog boxes have a default button distiguishable by its heavy outline. When you click outside the dialog box, the default button is automatically selected.

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Newer Technology

Newer Technology

Note: Newer Technology's RAM production has been purchased by Peripheral Enhancements Corporation.
This article has been archived and is no longer updated by Apple.

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Company Profile:
Makers of Macintosh hardware, USB and FireWire peripheral devices.
Published Date: Feb 18, 2012

AppleShare PC 2.0: How To Configure for DOS 4.0

I have installed a 3COM EtherLink/MC card into a PS/2 Model 50z running DOS 4.0.

I also installed AppleShare PC 2.0 with EtherLink/MC options (with standard setting on the interrupt level, DMA, and and so on). I have no other interface cards except a 1MB RAM upgrade in the machine.

However, when I restart the machine, it hangs at:

"Initializing AppleTalk. One moment please..."

Is AppleShare PC 2.0 incompatible with DOS 4.0, or did I do something wrong?

This article has been archived and is no longer updated by Apple.
AppleShare PC 2.0 is compatible with DOS 4.0, but it appears that you missed one item.

You need to select "3" as the primary interrupt line for the MLID used by this card (ETHER$). If you leave the default interrupt line intact, it will certainly fail.

Both the default primary memory address 0C0000H and the default primary port address 0300H are correct and do not need to be changed.

Published Date: Feb 18, 2012

TA40466_HyperCard_AppleTalk_XCMDs_to_Query_Networks_(TIL04527).pdf

HyperCard: AppleTalk XCMDs to Query Networks

I have over 200 zones on my AppleTalk network; it has become far too much trouble to look for devices through the Chooser. Can I use AppleTalk HyperCard XCMDs to build an intelligent stack to query the network for devices and inform the user?

This article has been archived and is no longer updated by Apple.
The AppleTalk XCMDs can do this. There is, however, one feature missing that would require some extra work. Because the XCMDs do not provide zone information, you need to know the zone names prior to looking up the devices.

The only constraints on creating a stack to do AppleTalk device queries are machine configurations. For this stack to be a workable solution, you should be running MultiFinder or System 7, and you should use a hard disk.

Published Date: Feb 18, 2012

A/UX: How To Convert PICT File to PostScript (9/94)

Under A/UX, can I take a PICT format file and convert it to a PostScript file without going through a printer? It seems that all the toolbox calls to do such a thing are only in the Print Manager.

This article has been archived and is no longer updated by Apple.
The simplest way to convert a PICT file may be to use Command-F from the print dialog of an application that can print PICT documents. (MacDraw is a good example.) You don't have to connect a LaserWriter for this to work.

Make sure the LaserWriter driver has been chosen from among the different options in the Chooser. Don't worry about not being able to actually select a LaserWriter.

When you get to the MacDraw print dialog, click the OK button, then immediately press and hold Command-F. You should see the message "Creating PostScript File" at the top of your screen above the normal MacDraw "print progress" indicator. You can release the keys when you see this message.

This puts a PostScript file in /usr/lib/Macintosh named PostScriptN, where N starts at 0 and increases by 1 each time you generate a PostScript file this way (up to a maximum of 9).

If this is not an acceptable solution, there are also Macintosh OS applications that can read PICT files and save them as PostScript. One of these which also runs under A/UX is Adobe Illustrator 88. Illustrator 88 can read a MacDraw II-generated PICT file and save it as PostScript.

For more information, search under: "Adobe Systems"

Article Change History:
08 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

Lisa: Empty Folders

This article has been archived and is no longer updated by Apple.
The Empty Folder pad is easily replaced if you happen to have lost it. Every initialized or repaired diskette contains one. Just make a duplicate of one those pads and place it onto the disk that lost it.
Published Date: Feb 18, 2012

Abaton Scanner Upgrade: Incompatible With AppleScan

This article concerns the incompatibility of the Abaton 8-bit upgrade with Apple's scanning software.
This article has been archived and is no longer updated by Apple.
Abaton's (now Everex Systems) 8-bit upgrade for the Apple Scanner -- a logic board swap -- may create more problems than it solves. An upgraded scanner does not work with the AppleScan or HyperScan software.

If you only use gray scale images, Digital Darkroom or Image Studio are probably more appropriate pieces of software. The upgrade does not affect them.

However, for more general scanning (line art, halftone, and HyperCard images), the Apple software (AppleScan and HyperScan) is the usual choice. This software does NOT work with the upgrade.
Published Date: Feb 18, 2012

Apple Equipment: Special Enclosures for Dirty Environments

Are there ways to ensure cleanliness for the Macintosh operating environment?

I need to install about 500 Macintosh IIcx systems in truck garages and loading docks. Are there any special covers or enclosures that filter fumes and soot, but still permit access to a Macintosh IIcx? Also, is there anything that prevents the typical mechanic from setting a wrench or dripping oil can on top of the equipment? Proper air circulation is my main concern.

Aso, is it necessary (or possible) to "ruggedize" an AppleCD SC for this environment? Mechanics aren't very gentle with the ROM caddies.

This article has been archived and is no longer updated by Apple.
What you really need is a NEMA (National Electrical Manufacturers Association) enclosure. Check your local area for a NEMA office that can make recommendations.

The two big issues are heat and dirt. To keep the dirt (air-based carbons and oil from diesel trucks) out of the system requires filters that restrict the airflow. Reduced airflow equals increased heat, which reduces the system's life span. Without filters, the soot gets into the fan bearings, slowing it down and increasing heat.

Adapting the AppleCD SC to these conditions results in the same sorts of problems.

Published Date: Feb 18, 2012

Macintosh: Multiple SCSI Device Startup Problems

I have a Macintosh IIx with internal HD80 SC drive, AppleCD SC, and Apple Scanner. When all devices are connected, the last device on the SCSI chain does not show up.

I have already tried switching the order of devices, changing SCSI ID numbers, and starting up the three machines in every possible order. The last device is terminated but I still can't see it. The first device always works (whether it's the AppleCD SC or the Apple Scanner).

Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
You are encountering a problem known as impedance matching. This is a known problem with the Apple Scanner. The situation occurs when the impedance created by a combination of devices and terminators on the SCSI chain causes one device to be "lost" on the chain.

Change the impedance of the SCSI chain by adding one or more terminators, SCSI devices, and/or additional SCSI extender cable, and the device will reappear.

Published Date: Feb 18, 2012

Macintosh IIcx: PDR (FLoating Point Decimal) Rating

I want to send a Macintosh IIcx overseas, and need to know the PDR (floating point decimal rate) specification.

This article has been archived and is no longer updated by Apple.
The Macintosh IIcx has a PDR of 89.9 megabits per second.

Published Date: Feb 18, 2012

TA40473_MacintoshtoVME_Connectivity_Solution_(TIL04537).pdf

Macintosh-to-VME Connectivity Solution

Here is one solution for Macintosh-to-VME connectivity.

This article has been archived and is no longer updated by Apple.
A company in Holland advertises a direct connection from the Macintosh II family to a VME bus.

The company, Bergoz, makes an interface called MacVEE, which consists of a NuBus card with DMA and a connection through a flat cable to a VME and CAMAC subrack. The cable can be up to 100 meters. (The MacVEE product was developed at the European CERN, a large research institute based in Geneva.)

For more information, contact Bergoz or CERN.

Published Date: Feb 18, 2012

Access II: Use Version 1.2 With Apple IIGS

I use Apple IIe and Apple IIc systems to communicate with my server HP by typing:

in#2
Control-A
T

at the Applesoft BASIC prompt.

When I tried this on an Apple IIGS, it didn't work. I set all communication parameters from the Control Panel exactly the same as the hardware settings on the Super Serial Card.

I tried starting up from a System disk, running BASIC.SYSTEM, and typing the program:

```
10 PRINT CHR$(4),"in#2"

RUN
```

This doesn't seem like a good permanent solution. Apparently, my version of Access II doesn't work on the Apple IIGS. Should I look for other terminal emulation software?

This article has been archived and is no longer updated by Apple.
There should be no problem with this procedure on an Apple IIGS. You are invoking the Terminal mode from the Super Serial Card firmware, which should work.

The firmware may not be in modem mode. If this is the case, the method should be Control-I T instead of Control-A T. (Control-I T is the command for the Printer/Terminal mode of the firmware, Control-A T is for the Modem mode.)

Access II does work on the Apple IIGS if version 1.2 is used.

Another terminal package is "ASCII Express MouseTalk" from United Software Industries.

Shareware terminal packages are available from various bulletin boards, but without a terminal package, accessing a bulletin board would be difficult at best.

For more information, search under: "United Software"

Published Date: Feb 18, 2012

AppleShare: Server Problems Using Removeable Media (9/94)

I'm having problems using optical disk drives as server volumes on AppleShare 2.0.1.

I'm using 350MB, double-sided media. The problems seem to occur when using this device as a slave drive for AppleShare (that is, not the startup volume). I wanted to get high-volume replaceable media on line.

But when attempting to change the media, I have found that AppleShare is a bit unreliable in recognizing and mounting the slave volume (even when it's been mounted previously).

The situations that arise are:

- Server acquires the volume but has to re-prepare it for use.
- Server does not find the volume at all.
- Server acquires the volume with no problems.
- On restarting the server, the system often responds with Bomb ID=01 or ID= 02, but the Resume button is active; clicking it causes successful continuation of the startup process.

In addition to the above, I once was not able to get the server to recognize the volume at all.

This article has been archived and is no longer updated by Apple.
AppleShare File Server 2.0.1 is not designed to handle the changing of removable media while the server is active. This includes removable media of any type: CD-ROM, Optical Read/Write disks, Syquest hard disk cartridges, and so on. However AppleShare 3.0 allows you to change removable media.

During the startup of the server, each volume's AppleShare Parallel Directory Structure (PDS) file is read. This allows the server to know which volumes are available for presentation to the user. The creation of the volume's PDS file requires the use of the AppleShare Admin application.

Launching the AppleShare Admin program from the Server Admin floppy disk causes Admin to examine each volume attached to the Macintosh server. If a volume is located that has not been prepared for AppleShare, the Admin program asks whether to skip the volume or to prepare the volume for AppleShare. Preparing the volume adds a Server Folder containing an AppleShare PDS file to the volume. (On read-only volumes, like CD-ROM, the PDS file is written to the startup volume; otherwise, the PDS file is written to its own volume.)

AppleShare builds a separate PDS file for each on-line server volume that is not skipped. Since the PDS files are built only during the Admin program's preparation, and checked only during the server startup sequence, changing removable storage media while the server is active does not allow AppleShare to review the required PDS file for the newly inserted media. Therefore, the new storage media is an unknown volume to AppleShare and unpredictable results can occur.

The only procedure to assure that removable media is properly recognized involves shutting down the server, changing the media, then restarting the server. This allows AppleShare to read the PDS file for the newly inserted removable media.

NOTE: Check your INITs, too. The purpose of an INIT does not necessarily determine whether it causes problems. The specific actions taken within the INIT, and the relationship of those actions to other system functions, are the factors that may cause difficulty in the operation of the Macintosh.

In the situation describe above, AppleShare's procedure for working with on-line volumes, not the INIT, plays a larger part in the success or failure of the procedure. However, make sure the INIT gets installed before AppleShare begins verification of server volumes. This is easy to detect if the INIT displays an icon at startup time. If the icon appears during the "Welcome to Macintosh" screen, then the INIT has installed at an appropriate time. (INITs are installed by name, using the ASCII notation as a sorting guide.)

Article Change History:
13 Sep 1994 - Combined multiple articles on this subject.
24 Nov 1992 - Updated to include AppleShare 3.0 information.

Support Information Services
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Lisa: Accessing the Environments Window

This article has been archived and is no longer updated by Apple.
This is a summary of ways to access the Enviroments window:

--From the Office System, press the on/off switch while holding down the Apple key. (Lisa 1 Owner's Guide, p. G26; Lisa 2 Owner's Guide, p. G55.)

--From the Workshop, (Q)uit the main command line. When prompted to leave the editor, etc., press "Y". Choose Another_Shell to display the Environments window.

--To boot the system up to the Environments window: press any key on the keyboard (except the Caps Lock key) after you hear the double click. (This double click occurs at the end of the self-tests.) If you asked to start up from a specific device by using the "Start Up From..." menu, press any key when you see the large hour glass displayed.
Published Date: Feb 18, 2012

Apple IIGS: Color Printers

Are there any third-party vendors that make a color printer for the Apple IIGS?

I know the ImageWriter II prints color, and most Apple IIGS software talks PostScript.

I am interested in the HP PaintJet and other HP color printers, but I wonder if they can do the job: since they are not QuickDraw-compatible, most Apple IIGS software probably won't work.
This article has been archived and is no longer updated by Apple.
With the advent of GS/OS for the Apple IIGS, printer communications follow a Macintosh-style architecture; both Macintosh OS and GS/OS printing are driver-based.

The print driver technique allows a wide variety of printers to be attached to the Apple IIGS -- once the driver is written. This allows Apple IIGS-specific applications to talk with the Print Manager. In turn, the Print Manager communicates with the Graphic Control Panel-selected print driver, which is installed in the Apple IIGS. Thus, the communication to printers relies on the availability of print drivers for the Apple IIGS, not on the specific application.

As shipped from Apple, GS/OS 5.0 provides direct connection drivers for the ImageWriter, ImageWriter LQ, and the Epson printers. For LocalTalk printers, LaserWriter, AppleTalk ImageWriter, and AppleTalk ImageWriter LPG drivers are included. Only the ImageWriter drivers provide color support; the Epson driver does not provide color capabilities.

Hewlett-Packard does not support the Apple IIGS-to-PaintJet (or other HP printers) connection. Apple Tech Comm does not know of any third-party Apple IIGS print drivers that allow the selection of the PaintJet from the GS/OS Graphic Control Panel.

Orange Micro markets a product called Grappler C/Mac/GS. This is a serial-to-parallel converter. The Grappler device also provides ImageWriter II emulation for Epson, Okidata, Panasonic, and other Epson-compatible parallel printers. The Grappler C/Mac/GS can print in color on parallel color printers. We have been unable to define which of the following printers are color; however, Orange Micro has provided this list of Grappler C/Mac/GS-compatible printers:

- Epson : EX, FX, JX, RX, LX series; and the MX series with Graftrax
- Star : SD, SR, SG series; and Gemini 10X, NX-10 (in Epson FX mode)
- Okidata : 190, 290 series
- C.Itoh : C310XPR (Epson FX mode), ProWriter Jr.
- Panasonic: 1080, 1090 series
- Citizen : MSP-10 (Epson FX mode)
- Printers fully compatible with any listed above.

For more information, search under: "Orange Micro"
Published Date: Feb 18, 2012

MacDFT: Does Not Support Explicit Partitioning

Does MacDFT support "explicit partitioning"? Apparently, it's a feature that is available on the new IBM 3290 Information Display Panel (gas-plasma screen). From what I understand, this hardware divides the screen and uses one data stream over coax to drive several sessions.
This article has been archived and is no longer updated by Apple.
Explicit partitions on the IBM 3290 screen allow up to four session windows to be displayed at one time. To define the session windows' size and location, a 3270 system extension, known as explicit partition, is used. Explicit partition sends a partition-structured field command from the host to the 3290 to tell the display the size and location of each session window.

MacDFT does not support explicit partitions. We are not aware of any third-party products that support this 3270 extension. However, MacDFT, when attached to a host's DFT port, can define a document with four windows positioned on the Macintosh screen. With this ability, MacDFT accomplishes the desired results of four sessions at once. This method places the session window management in the Macintosh, not on the host -- thus, allowing the host to concentrate on more important computing concerns.
Published Date: Feb 18, 2012

GS/OS: Making a Startup Disk With Printer Drivers

I want to create a startup disk for GS/OS 5.0 that contains drivers for both a direct connect ImageWriter and a LaserWriter -- but even after reducing the number of resources on a startup System Disk by using the Installer, there is still insufficient disk space to install the LaserWriter drivers.

We didn't find any ideas on how to accomplish this task. The only solutions we found are:

- To remove drivers from the System Disk, which renders it nearly unusable (no P8, CDEVs, and so on).
- To recommend that the customer purchase a hard disk.

Is there another solution or minimum configuration that can be used.
This article has been archived and is no longer updated by Apple.
"Chapter 5: Using The Installer" of the the Apple IIGS System Software User's Guide, version 5.0. (Apple part #030-1622-A) has a section on p. 99 called "Deciding What To Install", which discusses how to fit the desired parts of GS/OS onto a 3.5-inch disk for stand-alone Apple IIGS computers.

At the top of page 100, there is a paragraph referring the user to the "AppleTalk Network User's Guide for the Apple IIGS" -- which is included with GS/OS 5.0 -- for advice on how to install the required items for a networked Apple IIGS.

At the back of the AppleTalk Network User's Guide (Apple part #030-1633-A) is a four-page "Update to AppleTalk Network User's Guide for the Apple IIGS", which replaces "Creating a 3.5-Inch Networking Startup Disk" on pp. 24-26 of the network guide.

This update lists the procedures for:

- Using AppleShare File Servers, but not network printers.

- Using AppleShare File Servers and LaserWriter printers.

- Using one or two Types of network printers, but not AppleShare File Servers.

- Using AppleShare File Servers and ImageWriter or ImageWriter LQ printers.

Using the third procedure, substitute a direct connect ImageWriter for the AppleTalk ImageWriter used in the procedure. The resulting disk provides access to both the direct connect ImageWriter and the networked LaserWriter.

The disk will include:

Graphic Control Panel
DC Printer CDEV
LaserWriter CDEV
RAM CDEV
P8

Drivers for:
AppleDisk3.5
Console
Atalk
SCC
Printer port
ImageWriter
LaserWriter

with 11K still available.

This does not allow support of AppleShare file services. One of the printers needs to be discarded before file services can be provided. This is noted by the Installer during the installation procedure for AppleShare on a 3.5-inch disk. When AppleShare for 3.5 is selected, a dialog appears with the following message:

"WARNING: This update makes a 3.5-inch disk into an AppleShare disk. Files will be removed. Install any printer driver you want (only one will fit)."

NOTE: Do NOT install this on your only copy of the System Disk.
Published Date: Feb 18, 2012

Apple Monitors: Why Screen Flickers When Image Is Dragged

There seems to be a flicker in the Apple High-Resolution Monochrome Monitor and AppleColor High-Resolution RGB Monitor.

To produce the flicker, use MacPaint to create a black box approximately 1 inch by .5 inch. Then select the black box and move it from left to right. In one area of the screen (approximately the bottom one third), you will notice the black box flickering or breaking up as you move it.

This flicker also happens on some Macintosh SE screens (approximately the top one third).

What causes this?

This article has been archived and is no longer updated by Apple.
The flicker is a result of non-synchronous timing between drawing the bitmap to the screen and refreshing the screen. It is a difficult programming task to synchronize the drawing of the image to the screen refresh rate. When this anomaly affects only the moving of selected images, the synchronization is often not implemented. When smooth animation is vital to the application's function, the problem generally does not occur.

The flicker can be seen with most bitmapped-based graphic applications (HyperCard, SuperPaint, MacPaint, FullPaint) that select an image and then directly drag the image. In applications like MacDraw, where only an outline of the image is moved, the flicker is not as evident.

The flicker has been reproduced with several combinations of applications and Macintosh models, and with a variety of monitors. Different combinations demonstrate the effect more prominently than others. We have unable to determine the exact reason certain areas of certain screens display this effect more than others. Timing issues play a large part in this anomaly.

Published Date: Feb 18, 2012

TA40481_Apple_SuperDrive_User_Guide_Part_of__(TIL04545).pdf

Apple SuperDrive: User Guide (Part 1 of 3)

This article, the first of three parts, contains suggestions for best use of the Apple SuperDrive (formerly Apple FDHD)

This article has been archived and is no longer updated by Apple.
The Apple SuperDrive is a disk drive that can read and write in the standard Macintosh 400K and 800K formats, as well as the newer 1.4MB format. It also allows reading and writing 800K Apple II ProDOS, 720K MS-DOS, and 1.44MB MS-DOS formats.

(NOTE: The format used for MS-DOS is the same one used by OS/2.)

The SuperDrive uses 3.5-inch disks. These disks are available from several sources and come in three "flavors": single-sided (400K), double-sided (800K), and high-density (1.4MB). As a rule, the various disk types are guaranteed by the manufacturer to provide a certain level of storage per disk with little or no errors at the rated storage capacity.

The single-sided disk can be formatted to 400K, and the double-sided disk can be formatted as 800K with confidence (it can also be formatted to 400K). If you do format the 800K disk as a 400K disk, you lose about one-half of the disk's actual rated storage capacity. This may be useful if you want to pass data to a friend who has a Macintosh 512K or a Macintosh XL, which can read only 400K disks. You do not need to buy 400K disks -- just use your 800K disks formatted as 400K.

(Many single-sided disks are really double-sided disks that did not pass the factory's stringent testing standards for double-sided media, but passed as single-sided disks. So, other than the guarantee from the manufacturer, double-sided and single-sided disks are manufactured with the same process.

High-density disks, however, are manufactured with a completely different process [different oxides, different rating of magnetic flux capacity per square inch, and so on].)

If you have a Macintosh that does NOT have the FDHD capability (like a Macintosh Plus), it is possible to take the high-density media and format it as a 400K or an 800K disk, but is NOT supported.

Unlike the double-density disk (800K), which can be formatted as 400K and be guaranteed to work as a 400K disk, there is no guarantee (especially from the manufacturers of the disk media) that the high-density (1.4MB) disk, when formatted as a 800K or 400K, will work as flawlessly as the user might expect.

The high-density media is a completely different media than is used in the single-sided and double-sided disks. Even the process to read and write information to the 1.4MB disk differs from the 400/800K modes of disk operation. A Macintosh configured for a SuperDrive as one of its floppy drives can tell the difference.

IMPORTANT NOTE: The Macintoshes that support SuperDrives include:

- Macintosh IIx
- Macintosh IIcx
- Macintosh SE/30
- Macintosh SEs sold after August 2, 1989.

This article is continued in "Apple SuperDrive: User Guide (Part 2 of 3)".

TA40481_Apple_SuperDrive_User_Guide_Part_of__(TIL04545).pdf

Published Date: Feb 18, 2012

Apple SuperDrive: User Guide (Part 2 of 3)

This article, a continuation of "Apple SuperDrive: User Guide (Part 1 of 3)", contains suggestions for best use of the Apple SuperDrive (formerly Apple FDHD).

This article has been archived and is no longer updated by Apple.
(The Apple SuperDrive is a disk drive that can read and write in the standard Macintosh 400K and 800K formats, as well as the newer 1.4MB format. It also allows reading and writing 800K Apple II ProDOS, 720K MS-DOS, and 1.44MB MS-DOS formats.)

If you compare a 3.5-inch single- or double-sided disk to the 3.5-inch high-density disk, you will notice only small differences. There may be a difference in the disk labeling (whether it is silk-screened or ink-stamped), or the plastic jacket coloring, but the only two ways to spot the difference with certainty is that the high-density media have a "bonus hole" at the top of the disk and the letters "HD" on the front of the disk. The bonus hole is on the same end of the disk as the Write Enable/Write Protect tab, but on the opposite side. The letters "HD" are found around the shutter at the front face of the disk.

When you insert a 3.5-inch high-density disk into Macintosh computers without an Apple SuperDrive, which do not have the necessary mechanisms to detect the bonus hole, the computers presume that it is a "normal" single- or double-sided disk and try to operate with it as expected.

When the high-density disk is put into the SuperDrive-equipped Macintoshes, the SuperDrive senses the bonus hole and locks itself into the mode that allows the Macintosh to treat it as a 1.4MB disk. This is a hardware function of the drive that cannot be overridden.

- If you insert and format a brand new double-sided disk into a SuperDrive-equipped Macintosh, the disk is formatted at a minimum of 400K or a maximum of 800K. The 400K format is interchangeable with all Macintoshes, and the 800K is interchangeable with all Macintoshes above the Macintosh 512K. So, going from the SuperDrive to the other Macintoshes, everything works just fine as long as you do not use the high-density disks.

- If you take a Macintosh Plus, insert a double-sided disk and format it, the best that you can hope for is 800K of storage on it. The Macintosh Plus then operates with the disk as expected (you insert the disk, the icon appears on the desktop. You can then open it, access applications and documents, and so on). If you take that same double-sided disk to the SuperDrive-equipped Macintosh and insert it into the SuperDrive, the SuperDrive does not sense the bonus hole, and therefore presumes that it is a 400K- or 800K-formatted disk. It reads the 400K/800K-formatted data off of the disk and all operates as expected -- just as on the Macintosh Plus.

Now, if you take that same Macintosh Plus, insert and format a high-density disk, you get a maximum of an 800K-formatted disk. Take this high-density disk to the SuperDrive-equipped Macintosh and insert it into the SuperDrive. The SuperDrive now senses the bonus hole, and therefore presumes that it is a 1.4MB-formatted disk. It tries to read the information on the disk in the 1.4MB mode and sees nothing that it recognizes as 1.4MB type of information. It cannot read the 400K/800K format that the Macintosh Plus put on it in the 1.4MB mode, and therefore gives the user the dialog box stating that it is not a readable disk.

The user sees a disk that works fine in another Macintosh, but does not

work in the SuperDrive-equipped Macintosh, and assumes that it is a SuperDrive failure problem. Rather, it is because the SuperDrive has some intelligence, and processes the disk types differently.

A fix for this problem, as well as other information, can be found in the conclusion of this article, "Apple SuperDrive: User Guide (Part 3 of 3)"

Published Date: Feb 18, 2012

Apple SuperDrive: User Guide (Part 3 of 3)

This article, a continuation of "Apple SuperDrive: User Guide (Part 2 of 3)", contains suggestions for best use of the Apple SuperDrive (formerly Apple FDHD).

This article has been archived and is no longer updated by Apple.
(The Apple SuperDrive is a disk drive that can read and write in the standard Macintosh 400K and 800K formats, as well as the newer 1.4MB format. It also allows reading and writing 800K Apple II ProDOS, 720K MS-DOS, and 1.44MB MS-DOS formats.)

The "Fix"

If you put the original high-density disk back into the Macintosh Plus and copy the 800K data from the high-density disk onto an 800K- formatted double-sided disk, you can then put the double-sided disk into the SuperDrive, and the Macintosh with the SuperDrive will read the data properly.

The SuperDrive also has the ability to exchange data on disks between Macintoshes and 3.5-inch drive-equipped MS-DOS or OS/2 computers.

Here are some scenarios to help you understand the combinations of disk types, drive use, and supported (and unsupported) combinations between the two:

- A user on an MS-DOS machine that uses 3.5-inch disks takes a brand new double-sided disk and formats it to 720K. The user can copy his Lotus 1-2-3 spreadsheets from his hard disk to the newly formatted disk and remove the disk from the MS-DOS machine. The user can go to the Macintosh, launch Apple File Exchange (AFE), and insert the MS-DOS disk into the FDHD. A listing of the contents of the disk, including the spreadsheet that the user wants to transfer to the Macintosh, appears in the AFE window. All behaves just as expected (well, at least, like the manual says it will).

- A user on an MS-DOS machine who uses 3.5-inch disks takes a brand new high-density disk and formats it to 1.44MB. The user can copy his Lotus 1-2-3 spreadsheets from his hard disk to the newly formatted disk and remove the disk from the MS-DOS machine. The user can go to the Macintosh, launch Apple File Exchange (AFE), and insert the MS-DOS disk into the SuperDrive. A listing of the contents of the disk, including the spreadsheet that the user wants to transfer to the Macintosh, appears in the AFE window. Everything behaves as expected.

- A user on an MS-DOS machine who uses 3.5-inch disks takes a brand new high-density disk and formats it to 720K. The user can copy his Lotus 1-2-3 spreadsheets from his hard disk to the newly formatted disk and remove the disk from the MS-DOS machine. (In this instance, the MS-DOS machine does not care whether the disk is high-density or not. It only "cares" that it moved the data successfully to the target disk.) The user can go to the Macintosh, launch Apple File Exchange (AFE), and insert the high-density 720K-formatted MS-DOS disk into the SuperDrive. The SuperDrive cannot read the 720K-formatted MS-DOS disk in the 1.4MB mode, and the Macintosh gives the familiar dialog box that it is not a readable disk, Eject or initialize".

- A user on an MS-DOS machine that uses 3.5-inch disks takes a brand new double-density disk and formats it to 1.44MB. (Note: although this may be possible, it is NOT a supported configuration.) The user should be able to copy his Lotus 1-2-3 spreadsheets from his hard disk to the

newly formatted disk. The user removes the disk from the MS-DOS machine. The user can go to the Macintosh, launch Apple File Exchange (AFE), and insert the double-density 1.44MB-formatted MS-DOS disk into the SuperDrive. The SuperDrive senses that the disk is not a high-density disk (no bonus hole) and attempts to read the disk in 400K/800K mode. The SuperDrive cannot read the 1.44MB-formatted MS-DOS disk in the 720K mode, and the Macintosh gives the familiar dialog box that it is not a readable disk, Eject or initialize.

(By the way, the correct MS-DOS command to format a double-density disk to 720K in a 1.44MB disk drive is:

FORMAT A:/N:9 /T:80

This tells MS-DOS to format the disk in drive A: to 9 sectors per track and 80 tracks, which fits the specifications of the double-density media. If you typed only FORMAT A:, MS-DOS assumes that the disk is high-density and tries to format it to 1.44MB. This is not a supported configuration even though it may be physically possible.)

Summary

When you use the SuperDrive, make sure that you are using the correct disk for the job that you are doing. There are only two rules to remember:

1) If you are exchanging disks with older Macintoshes, Apple IIs, or 720K formatted MS-DOS machines, use only single- or double-sided disks.

2) If you are exchanging data with SuperDrive-equipped Macintoshes or with 1.44MB-formatted MS-DOS machines (most PS/2 machines fit this description), make sure that you are using high-density disks (the ones with the bonus hole).

Published Date: Feb 18, 2012

Macintosh: Menu Manager and Printer Font Handling

Technically, is there any difference between the ImageWriter, ImageWriter LQ, and LaserWriter IISC fonts and the normal fonts (FONT, FOND, and NFNT resources)? Or, is the Font Manager just looking for the 2x, 3x, or 4x fonts and using them?

If it is the latter, how does the Menu Manager know the right font sizes? Is it considering what printer driver is used? If an ImageWriter LQ is connected and the same fonts are installed, it had to show different font sizes installed than if an ImageWriter II is installed! Is the Menu Manager just showing the right fonts for the screen and doesn't care about the output?

This article has been archived and is no longer updated by Apple.
The fonts that come with the ImageWriter LQ and LaserWriter IISC are bitmap fonts, just like the fonts that come with the System Software. The only difference is that they come in larger sizes. The Menu Manager and the Font Manager do not behave any differently than normal.

The printer drivers, however, do have an affect on how the fonts are used during the printing process.

For example, if you have a document comprised entirely of Geneva 12, and you are printing to an ImageWriter LQ, the ImageWriter LQ driver attempts to locate Geneva 36 and scale it down to the same size as Geneva 12.

This is done to make the printouts look better. Doing the same thing with the LaserWriter IISC would result in the LaserWriter IISC driver looking for Geneva 48. The ImageWriter II driver would look for Geneva 24.

This is the only difference in the way fonts are handled in these systems.

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LaserWriter IINT: How To Set PostScript Interactive Mode

It is possible to set the LaserWriter IINTX to interactive PostScript mode via DIP switch settings, but the LaserWriter IINT cannot be set to interactive PostScript mode through hardware DIP switches.

Is it possible through PostScript (batch mode) to set the LaserWriter IINT to an interactive mode?

This article has been archived and is no longer updated by Apple.
Yes. Both the LaserWriter IINT and the the LaserWriter IINTX can be set to PostScript interactive mode via PostScript.

Use the PostScript procedure that selects PostScript interactive mode. Type "executive", followed by a return or line-feed, and the LaserWriter will be in interactive mode.

Control-D or the PostScript "quit" operator causes the LaserWriter to go back to batch mode.

For more information, see pp. 289-290 of the "PostScript Language Reference Manual", also known as the "Red Book" (Addison-Wesley, ISBN #0-201-10174-2).

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When ADB Keyboards Do Not Function Properly

I have a Power Macintosh 9500/132, and any keyboard connected to it eventually begins to act strangely. It throws characters and mistypes them. Is there anything wrong with the system software?

This article has been archived and is no longer updated by Apple.

First, make sure that the keyboard is correctly connected to the computer, and that no more than three ADB devices are connected at one time. If the behavior remains, reset the parameter RAM (PRAM) by restarting and holding down the command, option, P, and R keys. Parameter RAM stores settings that can affect the performance of the keyboard. You should also open the Keyboard control panel and set the Key Repeaat Rate settings to their slowest levels and then back to the desired settings.

If none of these work, the logic board of this computer may be damaged. An Authorized Apple Service Provider can run diagnostics to determine if replacement is necessary.

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AppleFax Modem: Two Modems Needed To Send Text Files

AppleFax Modems are fine for sending Faxes, but I would also like to receive text files.

Is there a way to save the file as text, short of importing the received paint file into OmniPage and converting it?

This article has been archived and is no longer updated by Apple.
Fax technology was designed to send and receive a facsimile (photocopy) of a document quickly across long distances. The ability to manipulate the received document defeats the purpose of the facsimile concept, since a manipulated document is no longer a facsimile of the original.

The facsimile communication protocol does not transmit and receive text. This protocol is based on the transmission of a graphic image. A Fax document is composed of scan line information at a resolution of approximately 200 dots per inch. Thus, the data sent via a Fax machine/modem contains no computer-readable text -- it's only a graphic image of the original document. A character recognition application is necessary to translate the graphic image into text, which a computer can edit.

However, when communicating with a second AppleFax Modem, the AppleFax Modem has the ability to transmit and receive Macintosh disk files at Fax speeds.

Published Date: Feb 18, 2012

Macintosh: System 6 Heap Size not an Issue With DAs

Note: The following information pertains only to system software version 6.0.X.

I am concerned about the possibility of running out of system heap space under System 6 when using certain DAs (Desk Accessories). Is there a suggested method for increasing system heap size?

This article has been archived and is no longer updated by Apple.
System heap size is not an issue as far as DAs are concerned under System 6.

When MultiFinder is not active, DAs are loaded into the application heap. With MultiFinder active, DAs are open and closed via the DA Handler. The DA Handler loads the DAs into the system heap, whose size is automatically increased by MultiFinder, as necessary. When a DA is closed, MultiFinder reduces the size of the system heap.

Published Date: Feb 18, 2012

AppleShare PC: Printing To Shared LaserWriter

I am using AppleShare PC software with my IBM PCs -- I want to share LaserWriters between Macintoshes and PCs.

The problem is that I want to print dBASE IV and Harvard Graphics documents, and am limited by the list of document types Apple supports in the software. Do you have any solutions?

This article has been archived and is no longer updated by Apple.
It sounds to us like you are not using AppleShare PC print services at all, but instead you are using the old PC LaserWriter Program that USED to come bundled with the card. Only in that documentation are application and file types mentioned -- they are only relevant with the PC Laserwriter Program. This program is no longer bundled with the card for a variety of reasons, including: lack of flexibility, supporting only select PC programs, and the need to quit from the application before you could print.

The PC LaserWriter Program lets you print files created with WordStar, MultiMate, Lotus 1-2-3, Microsoft Word, or other applications that create files in ASCII format or files prepared for printing on a Diablo 630 printer.

The AppleShare PC program lets those programs that produce PostScript output to print in pass-through mode, or emulates and translates output intended for any number of Epson printers (listed below). It also translates printer commands and information intended for Epson printers into commands for output to an ImageWriter.

If the program you want to print from cannot produce (PostScript or) LQ2500 output, configure the program to produce output compatible with one of the printers in the list that follows. Use the first compatible printer in the list. The Epson LQ2500 command set is a superset of these printer command sets, and can use them as well:

Lq2500
LQ1000
LQ800
LQ1500
EX series
FX series
LX series
RX series
MX series
Epson printer
Standard printer
Draft printer

Though we don't have any experience printing documents from either dBASE IV or Harvard Graphics, since they both support Epson printers and Harvard Graphics outputs in PostScript, we know of no reason why they couldn't be printed using the AppleShare PC printing facilities.

For more information, search under: "AppleShare PC 2.0"

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EtherTalk Card: Optimized for 32-Bit Data Transfer

Is Apple's EtherTalk Card conversing over the NuBus in 32-, 16-, or 8-bit mode?

This article has been archived and is no longer updated by Apple.
The EtherTalk Card transfers data using the full 32-bit NuBus path. Although NuBus supports 8-bit and 16-bit data transfers, it is optimized for 32-bit data transfer, and the EtherTalk Card has been designed to take advantage of the full data bus size.

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Multidisk Audio CD Player Controlled from Macintosh

Can a multidisk audio CD player be controlled from Macintosh?

These CD players are controlled by standard cordless remote controls. Are there any infrared controllers that can be connected to a Macintosh serial port?

This article has been archived and is no longer updated by Apple.
We are not aware of any commercially available infrared controllers that connect to the Macintosh.

If someone is interested in building a controller, they should check a back issue listing in Byte magazine. Several years ago Steve Ciarcia published an article describing the construction of a programmable infrared controller in his Byte column, "Ciarcia's Circuit Cellar".

Another approach for controlling multiple audio CDs from the Macintosh is using up to seven AppleCD SC drives daisy-chained on the SCSI bus. These are individually controllable from HyperCard via the HyperCard CD Audio Toolkit available from APDA.

For more information, search under: "APDA"

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AFE: Reading 720K MS-DOS Disk Requires SuperDrive

I have a Macintosh Plus and want to use Apple File Exchange and DataViz translators to read 720K MS-DOS disks.

Whenever I insert a disk, the Macintosh responds with the message that the disk is unreadable and asks if I want to initialize it.

The Macintosh Utilities User's Guide says: "The File Exchange Utility runs on any Macintosh computer that has a built-in 800K disk drive."

Why doesn't it work on a Macintosh Plus, but does work when tested on a Macintosh SE?

This article has been archived and is no longer updated by Apple.
Apple File Exchange should run on any Macintosh computer with a built-in 800K disk drive.

The problem here is not AFE, but the disk, so the manual's statements about the File Exchange Utility are beside the point. It is not possible to read an IBM-formatted (MFM) 720K disk in a Macintosh 800K drive. Only the Apple SuperDrive (formerly Apple FDHD) has this ability.

The Macintosh SE you used for testing is able to read a 720K MS-DOS disk, it must have an Apple SuperDrive installed.

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Internet Router: Needs One EtherTalk Card To Run 1.2 AND 2.0

In the EtherTalk documentation, it mentions that I can run both EtherTalk 1.2 and EtherTalk 2.0 on the same machine until my migration is complete to AppleTalk Phase 2.

Do I need two EtherTalk Cards in the router machine to accomplish this?

This article has been archived and is no longer updated by Apple.
No, only one EtherTalk Card is required to communicate in EtherTalk 1.2 and EtherTalk 2.0 packets on the same network.

Complete details on this, including installation, are in Chapter 3 of the "AppleTalk Phase 2 Introduction and Upgrade Guide". This document was included in the "LAN Minds, Volume 1" binder under tab 9.

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Apple Color Plotter and Apple Writer Interface

This article has been archived and is no longer updated by Apple.
The following instructions are aimed at helping you use the Apple Writer IIe word processor to generate text with the Apple Color Plotter.

NOTE: (No.) represents a variable.

Step Input Result

1 Boot Apple Writer
2 Type .LM0 (CR) Sets left margin to 0
3 Type SP0 (CR) Plotter command to set paper to 8 1/2 x 11
4 Type LR90 (CR) Sets printing on Apple Color Plotter horizontal
5 Type MA(No.),0(CR) Moves plotter to the point on the paper where you want to start plotting.
(No.) = any value in millimeters from 0 - 340
6 Type CTRL-P?(CR) Print Menu
7 Type PD(No.)(CR),(CR) Sets the slot location
(No.) = Super Serial slot location
8 Type LS(No.)(CR) Sets letter height to any height you desire - please be sure it fits on the page.
(No.) = any measurement in graphic unit within the parameters of the page (See Help Chart below)
9 Type PS(No.)(CR) Commands the Apple Color Plotter to change pens
(No.) = Any number from 1-4 with 1 as the default
10 Type PL(CR) Tells plotter to accept text
11 Enter your text here
12 Type CTRL-V(CR)
13 Type CTRL-C(CR)
14 Type CTRL-V(CR) This terminates the PL command
15 Type CTRL-P
16 Type NP(CR) Sends commands and text to the plotter

USEFUL HINTS:

o If it doesn't run, first set the CR command (Print Menu) to CR1.
o There are 1759 graphic units (g.u.) per 8 1/2" edge of paper OR 175.9 mm of usable space. So, each graphic unit = 0.1 mm.
o To determine the number of characters per line use the formula 1759 g.u. divided by (No.) g.u. per horizontal line on the page.

APPLE COLOR PLOTTER - HELP CHART

# of Characters	# of G.U.	Hght of Chrs across page
2	612	61.2
6	254	25.4
11	148	14.8
17	102	10.2
29	60	6.0
36	48	4.8

Note: Use the 0.3mm pens to generate 6.0mm letters or less
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TokenTalk NB Card, OS/2 LAN Server, and SMB

I am able to connect my Macintosh to an IBM running MS-DOS and PC LAN 1.3, but I'm having problems with the system running the OS/2 LAN software.

I am trying to connect the TokenTalk NB Card to an OS/2 LAN Server and use the SMB File transfer, but I'm having difficulties. As near as I can tell, I am getting a connection to the OS/2 server but cannot perform file transfers.

I am using the SMB server desk accessory to add and to connect to the server, and it seems to be working OK. The OS/2 system's disk flashes while the connection is established, and then it just stops. When I go to AFE, the SMB server is no longer visible. Apparently, there is another level of security with the OS/2 system that is preventing a firm connection. Is there a workaround? Does Apple support OS/2 LAN?

This article has been archived and is no longer updated by Apple.
The SMB File Transfer Utility can communicate with the SMB file servers implemented in the IBM PC LAN Program versions 1.2 and 1.3 and in the OS/2 LAN server. When adding SMB File Transfer Utility users to the OS/2 server, be sure to identify them as DOS users. The Macintosh SMB File Transfer workstation name must match the OS/2 user name exactly.

If no files or folders appear in the AFE window for any directory on an SMB server, there are three possible explanations:

1) You have no access privileges for that directory.

2) There are no files or folders within that directory.

3) SMB File Transfer cannot determine your access privileges for the directory volume. If this is the case, the SMB File Transfer assumes that you have no access privileges for this directory.

To determine access privileges when communicating with the OS/2 LAN Server, SMB File Transfer requires that you have either all privileges (A) for the directory to which you connect, or that at least one file exists in that directory.

If you do not have the required privileges, the network administrator needs to create at least one file in the directory to which users connect. This file gives the SMB File Transfer the information it needs to determine your access privileges.

For more information about communicating with an OS/2 LAN server, please read the Update to Apple SMB File Transfer Utility User's Guide shipped with the TokenTalk NB Card.

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AppleShare PC 2.0: PCLAN Compatibility

I am trying to use a PS/2 Mod 70/25 as a bridge between a broadband-based PCLAN server and AppleShare. I need to be able to update files on an AppleShare server from an SMB server every 30 seconds, and AFE's SMB Transfer Utility can't handle this repetitive task.

I installed a DayStar Digital MCA LocalTalk card in the PS/2 along with AppleShare PC 2.0. Both printing and file services worked as advertised. When I issued a "net use" to start up the PCLAN program, I was disappointed. I got some obscure DOS message about "out of buffer memory".

Next, I reconfigured the system to load PCLAN first. When AppleTalk tried to load, I got an error message stating that the session was already bound. After reading the AppleShare PC Read Me file, I came to the conclusion that I was having an interrupt conflict over 5C. Can I change the interrupt in AppleShare PC 2.0?

My next adventure actually worked. I installed the DayStar software, and after changing the load order, I was able to mount both an SMB server and an AppleShare volume on the same machine. I was able to copy files back and forth, and this appears to give me what I need. However, I would feel better using Apple's software, if possible.

Can I get AppleShare PC and PCLAN to co-exist?

This article has been archived and is no longer updated by Apple.
It is possible to configure AppleShare PC 2.0 to use different interrupts and DMA channels.

The card being used must first be configured via its hardware (DIP switches, and so on) to also use those different settings. Once you have the settings for the card, you have a couple of options available to configure AppleShare PC 2.0 properly.

The first is described on pages 20 through 22 of the AppleShare PC 2.0 manual (Apple Part #030-3002-A), and involves using the configuration menus supplied for the hardware you are using.

The second method is to edit the NET.CFG file, which is created during the configuration process mentioned above. Appendix C of the AppleShare PC 2.0 manual describes the various entries in this file and the different possible settings. It is important to remember that the card being used must have already been configured for the settings you choose in AppleShare PC, or the software will not run.

This should -- no guarantees, unfortunately -- let the two networking packages coexist peacefully. As a final note, Appendix C also contains information on setting buffer sizes as well as the interrupts and DMA channels.

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Macintosh: Continuous Digital Sound Playback Limited by RAM

Is the maximum length of continuous sound that a Macintosh II, IIx, or IIcx can play determined by RAM size or hard disk size? Maybe I should put it this way: Is there any software that is capable of moving sound from hard disk to RAM and Audio Output fast enough to play hundreds of megabytes of continuous music on the Macintosh? Do we need special hardware (like a NuBus card) to do this?

This article has been archived and is no longer updated by Apple.

Most of the Macintosh applications that record and play back 8-bit internal Macintosh digitized sound have their limits set by the amount of RAM in the machine. There are some high-end, higher cost, 16-bit, CD-quality sound solutions available. One of these is Sound Tools from Digidesign. This solution includes a NuBus card, external hardware, and software for the Macintosh II.

For more information, search under: "Digidesign"

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LaserWriter Driver: Font File Distinctive Icons Lost

The original LaserWriter drivers had a creator of LWRT and a bundle resource that gave a desktop icon to PostScript font files that had the LWRT creator and a type of LWFN or LWFn, as well as to Laser Prep files with a type of LROM and creator LWRT. The new LaserWriter driver has a creator of LWRR, as does the new Laser Prep.

So far, all the downloadable font files that I have seen still have a creator of LWRT. Therefore, when one rebuilds the desktop, the icons for the downloadable font files are lost unless one of the old LaserWriter drivers is available. I tried changing the creator of a font file to LWRR, but even rebuilding the desktop with a copy of the new LaserWriter driver on the same disk does not result in anything other than a blank, generic icon. Is there a trick I need to use?

This article has been archived and is no longer updated by Apple.
Changing the font file's creator to LWRR should have worked. It turns out that there is an anomaly in the BNDL resource in the LaserWriter 5.2 drivers that keeps the necessary information from being copied to the Desktop file of a disk.

Specifically, the LaserWriter 5.2 BNDL resource specifies FREF resources of IDs -8185 and -8186 for the two types of downloadable font files. However, these FREF resources actually have resource IDs of -8189 and -8190. Since the BNDL entries do not agree with the actual resource IDs for each FREF, the information is not copied by the Finder to the Desktop file, and the file icons remain blank.

If you want the icons to appear as they should, you can use ResEdit to change the resource IDs of FREF -8189 to -8185 and FREF -8190 to -8186.

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TA40500_AUXtoMSDOS_C_CrossCompiler_(TIL04565).pdf

A/UX-to-MS-DOS C Cross-Compiler

Article Change History

08/31/92 - REVIEWED
* For technical accuracy

I am looking for a C cross-compiler that works under A/UX 1.1 and produces code for MS-DOS (Intel 8086 and 80286). What do you suggest?

This article has been archived and is no longer updated by Apple.
We do not know of any third-party system developer who has a specific C cross-compiler for A/UX 1.1 that can produce code for MS-DOS Intel 8086 and 80286. However, we know of a couple of third-party system developers (listed below) who have C cross-compilers running under a variety of UNIX System V for 8086, 80286, and 80386 codes. Contact them directly. For more details, search the Tech Info Library under any of the company names given below.

InterMetrics Inc (bought out Whitesmiths, Ltd.)
Product: Version 3 C Cross-Compiler

Lattice, Inc.
Product: Lattice C Cross-Compiler

MetaWare Incorporated
Product: High C Compiler

Oasys
Product: Microsoft Cross C Development System

Omron Tateisi Electronics Co.
Product: Cross C Compiler

Green Hills Software Inc.
Product: Optimizing compiler C-386

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MacX25: Compatibility with Bridges And Routers

What are the support and compatibility concerns of MacX25 and bridges and/or routers?

This article has been archived and is no longer updated by Apple.

MacX25 and the Internet Router can run on the same Macintosh II. However, MacX25 1.0 does not let you connect two AppleTalk networks together over X.25. In other words, one cannot run MacX25 with the Internet Router and expect to link two AppleTalk networks together over X.25.

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MacX25: Dial-out Capabilities

What about MacX25 dial-out capabilities?

This article has been archived and is no longer updated by Apple.

MacX25 works with "private dial X.25 services," like those offered by Telenet. MacX25 does not support X.32, which is the defined way of doing PUBLIC X.25 dial-in. X.32 is not widely-used today.

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MacX25: Modem Capability

What modems are compatible with MacX25? Will MacX25 work with internal 2400 baud modem?

This article has been archived and is no longer updated by Apple.

MacX25 supports RS232C (V.24/V.28) and V.35 connections. Modems which use these correctly work with MacX25. MacX25 does not support an internal 2400 baud modem.

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X.25 to LocalTalk: Performance Degradation

Are there any performance degradations when transmitting from a X.25 network to Localtalk?

This article has been archived and is no longer updated by Apple.

LocalTalk speed is a factor of 4 to 100 times FASTER than X.25 speeds. LocalTalk is 230.4Kbps, whereas most X.25 access lines are 2400 to 19,200bps, with a maximum of 64Kbps. Therefore, going from a LocalTalk to X.25 link will show lower "performance" than LocalTalk to LocalTalk.

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MacX25: Number of Server Connections Supported

What is the practical, maximum number of MacX25 connections one server can open? Does the MacX25 server software require a dedicated machine?

This article has been archived and is no longer updated by Apple.

The maximum number of virtual circuits (VCs) supported is dependent upon the number of Serial NuBus cards used by the MacX25 server. Each card supports a maximum of 64 VCs. There is a maximum number of VCs supported by the MacX25 server itself of around 250 VCs. So if you configured a MacX25 server using 4 Serial NuBus cards, you could theoretically support 4 * 64 = 256, or 250 VCs.

The actual number of users that can be simultaneously supported depends on:

* The speed of the line (2400bps or a rate from 9600bps to 64000bps)
* The usage pattern (terminal traffic vs file transfer)
* The LAN media (EtherTalk or LocalTalk)

The X.25 server can run in the background; therefore, you do not need to dedicate a Macintosh to run MacX25.

Published Date: Feb 18, 2012

TA40506_LaserWriter_II_Paper_Jam_ProblemCure_(TIL04572).pdf

LaserWriter II: Paper Jam Problem/Cure

BEFORE YOU START: Familiarize yourself with the LaserWriter II Technical Procedures. Be sure to follow proper ESD procedures.

Problem: Even after the printed paper is delivered to the output tray, sometime the Delivery Sensing Lever (P/N 949-0186) may not return in place completely, causing the engine to sense it as a paper jam.

This article has been archived and is no longer updated by Apple.
Solution: To ensure the lever returns to its proper postion, the shape of the lever was changed. This occured in the fall of 1988. Changing the delivery sensor lever will correct the problem. Use part number 949-0186.

The old lever has a single chambered counter weight near the sensor interupt portion of the Delivery Sensor Level. The new version has a double chambered counterweight, at the same location.

Published Date: Feb 18, 2012

LaserWriter IINTX: Changing Typeface in LaserJet+ Emulation

I am using the IBM PS/2-30-to-LaserWriter IINTX in HP LaserJet+ emulation mode connection.

Everything works perfectly until I try to select a typeface according to:

ESC(s3T Courier
ESC(s4T Helvetica
ESC(s5T Times Roman

It doesn't work but according to your paper and the manual, it should. I created a text file called font2.txt, which contains:

ESC(s4T

Then I create a file called helv.bat containing:

type font2.txt > lpt1 %Sends ESC-code.
dir > lpt1 %Print text; in this case, the directory.
end %Sends Control-D to empty buffer.

I execute that file by typing:

helv

Everything is sent to the printer, but the same typeface is still printed. The printer accepts the escape code but doesn't do anything. What is wrong?

This article has been archived and is no longer updated by Apple.
The reason you could not select the typeface you wanted has to do with the way the HP LaserJet+ works with characteristics. You changed the typeface to Helvetica without specifying the "Proportional character spacing" characteristic. Because this is a high-priority characteristic, and you did not specifically ask for it, the printer pointed back to the typeface with "Fixed character spacing," which is Courier.

The escape sequence to make this work is:

ESC(s1P
ESC(s4T

Note that the escape sequence to select Fixed character spacing is ESC(s0P. Characteristics priority is described in the "HP LaserJet Technical Manual."

Published Date: Feb 18, 2012

SMB Server: Printing and Spooler Questions

Does Apple's implementation of Token Ring allow access to IBM PC LAN server-based spoolers? In other words, can a Macintosh print to a LaserJet serviced by a spooler on an SMB Server? Can an IBM PC print to a LaserWriter II through the same configuration?

This article has been archived and is no longer updated by Apple.
As of September, 1989, we don't know of any LaserWriter IINT/NTX spooler for an IBM PC LAN server, or any method of printing directly from a Macintosh to a LaserJet on an SMB server. The SMB File Transfer Utility, which is bundled with the TokenTalk NB Card, provides only file transfer and translation between MS-DOS files on the SMB file server and the Macintoshes on the Token Ring network.

To print a file from the Macintosh to the LaserJet, first transfer the file to the SMB server using SMB File Transfer. Then, the start the print job.

An IBM PC running TokenTalk can print directly to LaserWriter, if the LaserWriter is connected to a Macintosh running the Apple Internet Router and the AppleShare Print Server.

Published Date: Feb 18, 2012

TA40509_MacintoshtoTenNET_Connectivity_(TIL04576).pdf

Macintosh-to-TenNET Connectivity

Does anyone know of a Macintosh product that lets a Macintosh communicate with a PC that is running 10Net. 10Net, from what I have been told, is a network package that runs on IBM PCs, but I can't find any information about it.

This article has been archived and is no longer updated by Apple.
We were unable to locate 10Net. However, there is a PC-based product called TenNET from TenNET Communications. Their PC LAN is based on the 802.3 standard, supporting 1MBps on twisted pair and 10MBps on either thick or thin coax.

TenNet Communications suggests that their users use QuickShare by Compatible Systems for accessing any PC hard disk from a Macintosh. This software/hardware product connects a SCSI port from a PC to the SCSI port on the Macintosh. It also supports text and bitmap graphics translations.

For more information, search the Tech Info Library under "TenNET Communications" and "Compatible Systems."

Published Date: Feb 18, 2012

Macintosh: Twinax/Coax Card Supports One Operation at a Time

If I plugged a twinax connection and a coax connection into an Apple Twinax/Coax Card, can I work on both host environments simultaneously. (That is, run simultaneous 3270 sessions and 5250 sessions under MultiFinder)?

This article has been archived and is no longer updated by Apple.
You cannot use the twinax and coax connections simultaneously on the Apple Coax/Twinax Card. This is due to the limitation of the chip set, which can support only one operation at a time.

Published Date: Feb 18, 2012

AppleShare 2.0: Desktop Manager and UnMounting Cartridge Disks

I have some Videoworks/Director demos that rely on the AppleShare 2.0 Desktop Manager System file for some special file management functions. This file causes problems with removable cartridge disk systems, when ejecting one volume and mounting another.

An easy solution is to simply drag the Desktop Manager out of the System Folder. However, this means that you can't use these cartridge systems for different animation demos, unless you are willing to restart with the new cartridge in place. Do you have any other solutions?

This article has been archived and is no longer updated by Apple.
Our guess is that you have a copy of the Desktop Manager in the System Folder of your startup volume. This INIT shipped with AppleShare and is intended to be used on the server but can be copied to and used with any Macintosh volume. With this INIT in place, you can't unmount any volume you mount at startup, unless you use special utilities as you mentioned above.

Removing the Desktop Manager from the System Folder of the startup volume should let you unmount volumes by dragging the volume to the Trash, as would be expected.

Published Date: Feb 18, 2012

Macintosh: Mini-8-to-RJ-45 Connection

I have an AT&T 6544 controller with RJ-45 connections, but no coax or RJ-11 installed. (Access to corporate VAX and IBM systems is through the AT&T.) How can I connect a Macintosh asynchronously to this device?

This article has been archived and is no longer updated by Apple.
Our goal was to connect one of the 8-pin serial ports on the back on the Macintosh to an RJ-45 connector. To do this, you need some kind of adapter. We used an RJ-45-to-DB-25 adapter from Black Box Corporation; it doesn't require solder. The DB-25 adapter can be connected to a DB-8-to-DB-25 serial cable. Here are the Black Box part numbers:

* EVMAI: Apple II-to-ImageWriter cable (or use one of our cables)

* FA027: RS-232/RJ-45 modular kit, female

Note: Not all AT&T controllers are wired the same for RJ-45 connection, so there is no guarantee that this exact wiring scheme will work for you. However, it may give you a starting point. Follow these steps:

1) Test the wiring. (It's a good idea to use colors on the RJ-45 side to avoid confusion). In this case, the following scheme worked:

RJ-45 pin DB-25 pin
--------- ---------
brown --------> 8
green --------> 2
black --------> 20
red --------> 3

2) Connect the pins on the RJ-45 connector directly to the pins of the cable and attach a breakout box. You can monitor signals first at the user site and make any necessary changes before you construct the adapter. (Once the connections are plugged into the adapter, they're hard to extract.)

3) When you've got the correct pinouts, construct the adapter accordingly and screw it together.

4) Plug the cable into the back of the Macintosh, the adapter into the cable, and the RJ-45 connection into the adapter for asynchronous access to the AT&T. This works with MacTerminal and Red Ryder (two emulations packages we use).

Published Date: Feb 18, 2012

A/UX 1.1: Korn Shell and "rootksh" Problem Report

I have a problem with the Korn shell option that lets you edit and reuse commands: "set -o vi". Normally, if you type this in a Korn-shell, you can edit and reuse previous commands (see "A/UX User Interface" page 3-8) by pressing Escape and then "+" or "-" to scroll through your commands and edit them using vi-commands.

This works perfectly well except in one case. If you go to multi-user ("init 2") and log on as "rootksh", you can't go back to previous commands (after a "set -o vi"). You still have to type "i" (after an Escape) before you can enter commands. This means that the keyboard input is intercepted by that pseudo-vi editor and not all functions are allowed, although you should be in a normal Korn-shell. If you try to do "exec ksh" from there, you will have the same problem in that shell, but everything works fine if you start another Korn shell ("ksh"). If you do a "su rootksh", you don't have the problem.

You only have the problem (as far as I tested it) when you go to multi-user and log on as "rootksh". This seems to generate a shell that doesn't behave like other Korn shells. Is this normal? Is this a known Korn shell problem (I didn't test this on other UNIX machines)? Is this typical for A/UX?

This article has been archived and is no longer updated by Apple.

We have verified the problem that the particular "rootksh" login account cannot perform the Korn shell previous command function by issuing Escape and "-".

Published Date: Feb 18, 2012

NCSA Telnet 2.3 Release Notice (8/94)

NCSA Telnet version 2.3 Release Notice Macintosh version only (July 14, 1989).

This article has been archived and is no longer updated by Apple.
NCSA (National Center for Supercomputing Applications) Telnet is a combined Telnet client and FTP server program for the Macintosh. It emphasizes a convenient, powerful, user interface and can be configured to match the characteristics of your TCP/IP hosts. We have included support for a wide variety of Ethernet options. Complete user documentation is available: printed or in Macintosh Microsoft Word format files. NCSA Telnet is in the public domain and is available via anonymous FTP or by placing an order.

Features included in version 2.3 of NCSA Telnet

DARPA standard Telnet
Built-in standard FTP server for file transfer
VT102 emulation in multiple, simultaneous sessions
Tektronix 4014 graphics emulation
Scrollback for each session
Domain name lookup with default domain suffix
RARP for dynamic IP address assignment
Full color support (PC and Macintosh II)
Font and size support (Macintosh)
MacBinary FTP transfer (Macintosh)
Apple MacTCP support
Screens larger than 24 lines supported
Color Raster display protocol (ICR)

Hardware required for NCSA Telnet

Macintosh: Macintosh Plus, Macintosh SE, Macintosh II, Macintosh IIx, or Macintosh IIcx with 1MB memory and System 5.0 or later.

An AppleTalk-to-Ethernet gateway, one of:

* FastPath from Kinetics Inc. and Kinetics gateway software or
Stanford KIP (Croft) gateway software
* GatorBox from Cayman Systems and associated gateway software
* Alternate FastPath-compatible LocalTalk-to-Ethernet gateway

or

* EtherTalk software, combined with any of the following hardware:
* EtherSC or EtherPort SE or EtherPort II from Kinetics
* EtherTalk Card from Apple Computer, Inc.
* EtherLink/NB (3C543) or EtherLink/SE (3C563) from 3COM Corporation
* Nodem products from Adaptec.
* MacConnect NIA310 from Interlan, Inc.
* Alternate EtherTalk-compatible systems for the Macintosh

EtherTalk software drivers are generally bundled with the hardware.

Where to Get a Copy

You can get a copy from any of the following:

* From a friend. The documentation, program and source code are in the
public domain. Copy, modify, and distribute, as you wish.

* Anonymous FTP from: ftp.NCSA.uiuc.edu (128.174.20.50)

You may want to ftp the READ ME file(s) to determine which files to transfer to your home machine. In particular, only transfer the source (1MB) if you really want it, and only get the MacTCP version if you need it.

The Macintosh version consists of several files encoded with StuffIt and BinHex 4.0. For those of you with BinHex only, UnStuffit is provided in BinHex form. Download the selections you need with an ASCII transfer method (Kermit, NCSA Telnet) and extract the individual files. The

documentation is in Microsoft Word 3.X format (not fast-saved).

* Disk or Tape

Disk copies and printed manuals are available for a small fee, which covers materials, handling, and postage. The anonymous FTP tape covers the contents of all disks. Orders are accepted only if accompanied by a check in U.S. dollars made out to the University of Illinois. You can get an order form by contacting:

NCSA Telnet Orders
152 Computing Applications Building
605 E. Springfield Ave.
Champaign, IL 61820

* Archive Server

Electronic mail a request to archive-server@ncsa.uiuc.edu. Include in the subject or message a line with "help" and a line with "index". This is a controlled-access server that E-mails the distribution to you one segment at a time. It is slow, but gateways to BITNET and overseas. To save time for access to NCSA Telnet, also include a line with "index Telnet_Mac".

* LISTSERV at Brown University (LISTSERV@BROWNVM)

To request a file from LISTSERV@BROWNVM, send a GET command:

GET filename filetype

The files currently available are:

NCSA file	LISTSERV filename	filetype
README	README	MEMO
Telnet.src.sithqx	TELSRC	PACKAGE
Telnet.2.3.docs.sithqx	TEL23DOC	SITHQX
Telnet.2.3.sithqx	TEL23	SITHQX
Telnet.mactcp.sithqx	TELMTCP	SITHQX

In addition, the current list is available in the file NCSA FILELIST. To stay within BITNET file size guidelines, TELSRC PACKAGE consists of the file Telnet.src.sithqx split into three pieces. They must be combined using an editor or file utility before running BinHex.

LISTSERV accepts commands either interactively or via mail. Interactive commands are sent as messages to LISTSERV@BROWNVM. For example, on an IBM VM system, the TELL command is used: tell listserv at brownvm get NCSA filelist. To send a command via mail, send mail to LISTSERV@BROWNVM (BITNET address) or listserv@brownvm.brown.edu (Internet address), and specify the command as the first line of text in the body of the mail.

Electronic Mailing List

Mail to telnet-request@ncsa.uiuc.edu to be added to the list of recipients. To post messages to the list, mail to telnet@ncsa.uiuc.edu.

Article Change History:
08 Aug 1994 - Removed Dove Computer from article.
26 Jul 1993 - Company title updated from Adaptec, Inc. to Adaptec.

Support Information Services

Published Date: Feb 18, 2012

ImageWriter LQ: ROM Upgrade Service Program

I have a small network of approximately 10 Macintosh II systems, all using EtherTalk Cards with thinnet wiring. The Ethernet network runs connects through a Kinetics FastPath to a PhoneNET network containing two ImageWriter LQs with LocalTalk PC Cards.

With the original ImageWriter LQ logic board with the ROM version 00 everything worked fine. The printer was available on the network from both the Ethernet side and the PhoneNET side. When the dealer installed a new "Reworked" logic board with a ROM version 02 was installed in the ImageWriter LQ, the Macintoshes could access the printer on the PhoneNET side of the network. However, the printers became invisible on the Ethernet side.

Do you have any suggestions for solving this problem?

This article has been archived and is no longer updated by Apple.
There are problems like the one you described that occur as a result of the ImageWriter LQ ROM Upgrade. To solve the problem, a second service program will replace the main logic board with a newer version. The part number of the board is 661-0563. Use the 02 ROMs and driver version 2.0 for the best results.

Published Date: Feb 18, 2012

MacIrma 1.20: Use With MultiFinder

I have a Macintosh II with 5MB of memory under MultiFinder, running System 6.0.2. I use a DCA MacIrma board for IBM host connectivity. When I print five to ten mainframe screens in a row, the system freezes and must be restarted. Background printing is on, and there is no AppleShare Print Server on the network. Do you have any ideas?

This article has been archived and is no longer updated by Apple.

According to our local MacIrma expert, this is a known problem in earlier versions of the software. Make sure that you are using version 1.20 of MacIrma, and the problem should disappear. If the problem does not clear up, contact DCA, Inc. For more details, search the Tech Info Library under "DCA."

Published Date: Feb 18, 2012

Read/Write Optical Disk Drives (5/97)

What can you tell me about various optical-disk drives for the MacintoshII? Do you have any tips on evaluating various models? And what about anEthernet connection for the drive?

This article has been archived and is no longer updated by Apple.

There are two types of read/write optical disks available: non-erasable anderasable. Most workstation users are interested in the erasable type of optical disk, and so will the rest of this article.

Another issue to be aware of is average seek time or access time. Different manufacturers rate this according to two different methods: the average seek time and the average access time.

Seek time is the amount of time required to move the laser beam to a particular location on the optical disk. Access time is a combination of seek time, latency time, and SCSI overhead time. When comparing the different systems, be sure that seek times are compared to seek times and access times are compared to access times. Do not compare seek times, toaccess times or vice versa.

Both access and seek times are averages due to the variable distances traveled by the read/write head. A seek time from track 1 to track 12 will be much less than a seek time from track 1 and track 121. Seek times may be vary from 21 to 75ms. The times show an average of these two numbers.

The one measure of performance that may provide a more appropriate feel for the actual performance of a storage device (like a floppy disk, hard disk, or optical disk) is the transfer rate. When loading data from an optical drive, the optical drive feels more like a floppy drive than like a hard drive, although speed continues to improve very quickly. We have been unable to locate transfer rates for the listed optical drives.

Apple's Macintosh II EtherTalk Interface Card provides the Ethernet connection you need. In addition, there are a variety of third-party Ethernet cards available.

Here is a list of vendors and (where appropriate) their optical drive follows. For more details, search the Tech Info Library under the names of vendors that interest you.

Peripheral Land Incorporated
Infinity Optical Disk
73 ms average access
Sony engine
(cartridges are readable by Pinnacle)

Pinnacle Micro, Inc.
REO-650
REO-1300
70 ms average seek
Sony engine
(cartridges are readable by Peripheral Land)

Relax Technology, Inc.
Optical 600 Plus
Ricoh engine
50 ms average seek

MACsetra Technologies International, Inc.
Genesis 6000
Ricoh engine
45 ms average seek

Racet Computers, Ltd.
Cosmos 600
Ricoh engine
71 ms average access

Sumo Systems

RSSM660
Ricoh engine
50 ms average seek

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Published Date: Feb 18, 2012

AppleShare Print Server: Error Code -127 Problem Solved

I am having trouble in my lab. It contains the following:

Server hardware: Macintosh SE
File server: AppleShare File Server
Print server: AppleShare Print Server
Workstations: Macintosh SE

All the workstations are running System Software 6.0. A fatal error occurred so the print server tried to clean up before releasing the printer. I got Error Code -127

The workstation (the fourth one that was about to print) got the message:

Printing cancelled. A problem occurred while printing. Error -4100

What can I do?

This article has been archived and is no longer updated by Apple.
We tested a similar configuration in two labs. The first runs System 6.0 and the second lab System 6.0.2. We have no problems in the second lab. When we exchanged some equipment between the labs, the first lab still had problems. Running System 6.0.2 in the first lab resolved the printer errors.

Published Date: Feb 18, 2012

TokenTalk NB Card Connector Issues

I have an IBM PS/2 attached to a Token Ring. Can the DB-9 connector be detached from the back of the PS/2 and connected to the TokenTalk NB Card in the Macintosh?

Also, what do you do about the different types of connectors, like the yellow and green color-coded connections? Is it true that using the wrong type (color-coded) connector may bring down the Token Ring?
This article has been archived and is no longer updated by Apple.
If the DB-9 attached to the PS/2 is a Type 2 connector, everything will work correctly when connected to the TokenTalk NB Card. However, if the DB-9 connected to the PS/2 is a Type 3 connector, one issue exists. This concerns the size of the DB-9 being attached the PS/2. Some Type 3 DB-9 connectors may be too wide to fit the opening of the Macintosh card slot. Using either the Nevada Western or the Belkin Type 3 connectors designed specifically for the Macintosh resolves the issue.

Using the incorrect cable may induce problems within the Token Ring. The following list describes what various color coding symbolizes:

- Green cables indicate a normal (straight-through, pin-to-pin) cable. This is the standard Type 2 cable.
- A yellow (or possibly red) stripe on the cable indicates that the cable has a built-in Type 3 filter. Type 3 filters are used when phone wire is the physical layer of the Token Ring.
- A yellow cable indicates that the transmit and receive pairs are swapped in the cable. This cable is used ONLY when connecting two Token Ring repeaters.
- An IBM adapter card, which has a green DOT on it, indicates that this connection is for an adapter cable (a DB-9-to-Data Connector adapter cable).

For more complete information on Token Ring connectors, refer to the IBM document #GA27-3677-0x, Token Ring Planning Guide.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

AppleTalk: Zone and Performance Issues

I have an Internet containing five networks with a total of 75 Macintosh systems using Hayes InterBridges as routers. All five networks are in a single zone to minimize user confusion.

Is there a performance loss doing this? Should I separate the networks into different zones?

This article has been archived and is no longer updated by Apple.
Zones provide almost no performance benefit. Zones were implemented to provide a more convenient interface to the Internet for the user and network administrator. NBP lookups are faster with more than one zone. Other than that, there is no performance difference.

It would not be a good idea to have all the file servers or LaserWriters for one Internet within a single network. The following is an example of improperly designed Internet:

Network "A" contains 15 Macintosh systems. Network "B" contains four LaserWriter printers and 15 Macintosh systems. Both networks are connected to a backbone via routers.

Here is what happens during a sample printing operation:

Printing from a node on network A to a LaserWriter in network B:

1) The packets from the node on network A are sent to the network A router.

2) The packets are then sent by the network A router, over the backbone, to the network B router.

3) The network B router sends the packets to the destination LaserWriter on network B.

4) All packets sent by the LaserWriter giving the job status return to the node on network A, along the same path in reverse.

Printing from a node on network B to a LaserWriter in network B:

1) The packets from the node on network B are sent to the destination LaserWriter on network B.

2) All packets sent by the LaserWriter giving the job status return to the node on network B directly.

As you can see by the two examples, it is significantly more efficient to print to a LaserWriter within the same network, whether or not the LaserWriter is in the same zone.

When deciding what components to put into a network, keep the above information in mind. It also applies to other networked devices, like file servers, not just LaserWriters.

Published Date: Feb 18, 2012

EtherTalk 2.0: Allows Serial & AppleTalk Communication

I am having some difficulty printing with the ImageWriter LQ.

I have an EtherTalk Card for accessing AppleShare servers and other network entities, and an ImageWriter LQ on the printer port. When using Chooser to select the ImageWriter LQ (instead of LaserWriter) and selecting the printer port, all AppleShare connections are destroyed.

I notice that the A-L Historical Listing of software (6/89) in the Tech Info Library shows ImageWriter LQ disks rev 2.0.1. Could it be that this problem has been addressed with Revision 2.0.1?

This article has been archived and is no longer updated by Apple.
Actually, it has nothing to do with the ImageWriter LQ driver. The EtherTalk 1.0 (1.1 and 1.2, inclusive) drivers make it impossible to use the printer port when EtherTalk is selected and AppleTalk is turned on.

The EtherTalk 2.0 drivers have solved this problem by freeing the printer port for serial or non-AppleTalk communications.

We do have a resolution to the problem, however. Here are the steps:

1) Remove the EtherTalk 1.0 software using the EtherTalk 1.0 installer.

2) Install the EtherTalk 2.0 software using the EtherTalk 2.0 installer.

3) Copy the EtherTalk 1.0 ADEV into the System Folder of the target machine; the name of the file is "EtherTalk".

4) Remove the file called "EtherTalk2.0". This file is used only when connecting to an AppleTalk, Phase 2-based, EtherTalk network.

The ImageWriter LQ disks rev 2.0.1, mentioned above, refer to the revision of the disk and not the software on the disk. ImageWriter LQ 2.0 is the latest revision of the driver.

Published Date: Feb 18, 2012

TextEdit: Limits and Alternatives

I have developed an alpha version of an electronic mail system for a Sun 4 server running UNIX with Macintosh front ends. Documents are limited to approximately 32,000 characters, because of the 16-bit count in the text editor (buffer). I want the system to handle longer documents, and this brings up a couple of questions:

1) "Inside Macintosh Volume I," page 392, shows "teLength" as an integer (16-bit). Is this the variable in question?

2) Does System Software 7.0 implement longint (32-bit) count?

3) Is there a tool kit available for developers that would help in this effort?

This article has been archived and is no longer updated by Apple.

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1) TextEdit is able to handle text up to 32,767 characters long.  This is
a
  design or implementation limit. The "teLength" field just happens to
  reflect this limit.  Remember, TextEdit was designed for limited text
  handling tasks; it was not intended to be the foundation for an editor
  or word processor.

2) TextEdit will still be limited to 32,767 characters in System Software
  7.0.

3) There is a text-editor tool kit available from Symantec call "CAPPS'"
  that is compatible with their Think C and Think Pascal products. DataPak
  Software has a product called "WP-Engine" that may also meet your needs.
  For more details, search for "Symantic AND 3rd" and "DataPak AND 3rd".
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Published Date: Feb 18, 2012

AppleTalk: Zone Design Issues

This article discusses technical advantages exist for communications within a zone:

1) Is there a simplified routing algorithm used within a zone?

2) How much performance difference is there between intra-zone and inter-zone transmission (for a given physical Internet)?

3) Are there any downside tradeoffs to grouping several networks as a zone?

We have been told that it is generally best to assign each network to its own zone. However, the Kinetics FastPath 4 manual (page 1-13) says that "...it is fastest to communicate with devices that are within one's own zone", and "...zones should be based on network traffic patterns". Which is correct?

This article has been archived and is no longer updated by Apple.
1) There is no simplified routing algorithm used within a zone as compared to routing to another zone. This is because all routing depends on node IDs, socket numbers, and network numbers.

2) In most situations, there is very little difference. NBP lookups are faster when communicating within a single zone. Other than this, there are no performance difference.

3) It depends: the Kinetics FastPath 4 manual is correct saying that "zones should be based on network traffic patterns". It is not a good idea to put several saturated networks within the same zone. Nor is it a good idea to have all the file servers for one Internet within a single zone. It is best to balance the Internet by leveling the traffic across zones so that a single zone does not contain the majority of the network traffic.

The Kinetics FastPath 4 manual is not completely correct saying "...it is fastest to communicate with devices that are within one's own zone". This statement is correct if each network is its own zone and incorrect if several networks are within a single zone. This is the true because it is necessary to go through a router if Network A is communicating with Network B, whether or not they are in the same zone.

For more information, we recommend reading chapters 7 and 8 of "Inside AppleTalk".

Published Date: Feb 18, 2012

Applesoft: Dotted Vertical Lines in High-Res

The Apple HIRES screen, unable to display all colors at all locations, displays colored vertical or near vertical lines as dashed lines, or not at all.
This article has been archived and is no longer updated by Apple.
Refer to your Apple II Reference Manual for a more thorough explanation.
Published Date: Feb 18, 2012

TA40525_Cellular_Modems_Availability_(TIL04600).pdf

Cellular Modems: Availability

Article Change History

02/12/93 - UPDATED
* Vendor information.

Do you know anyone who makes car phone modems?

This article has been archived and is no longer updated by Apple.
You have two options:

1) An internal cellular modem. This is more expensive. However, Fujitsu makes a mobile phone with a datalink option.

2) Use a data jack with any existing Hayes-compatible modems. The data jack serves as an gateway and does not interfere with the phone or the modem. It is independent to the modem baud rate. Data jacks costs about $150 and are available from Cellab in Canoga Park, CA.

You might want to try the phone book in your area for distributors of these products. If you cannot find any information in your area, try the following distributors in Northern California: CelluTel of Palo Alto and Mobile Land in Fremont.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

Power Macintosh 8600 Series: Description

This article contains a description of the Power Macintosh 8600 Series computer.
This article has been archived and is no longer updated by Apple.

Overview

If your profession demands a high-performance, expandable computer, look to the Power Macintosh 8600 series. These powerful computers are optimized for work in a variety of media (audio, video, or graphics) tasks.

Featuring 250- or 300-megahertz PowerPC processors, the Power Macintosh 8600 series offers outstanding performance. The new 1MB of Apple Inline Cache on the processor card provides direct access to the cache at 100 megahertz--a first for the Power Macintosh line. And the tower design provides incredibly easy access to the computers' components, as well as accommodating a built-in Iomega Zip drive.

Built-in near-broadcast-quality video input/output capabilities, a fast hard disk drive, and a 24x-speed CD-ROM drive add vitality to professional projects and--with Apple's QuickTime software--make media authoring on a Power Macintosh 8600 series computer simple. Networking is also a simple matter on these computers, because they include both Ethernet (AAUI-15 and 10BASE-T) and LocalTalk ports. They even come with all the software you need to access the Internet.

The three industry-standard Peripheral Component Interconnect (PCI) high-performance expansion slots on the Power Macintosh 8600 series systems let you customize them easily to meet your needs more precisely. For example, if you want to run MS-DOS and Windows applications as well as software written for the Macintosh, you can install a PC Compatibility Card from Apple--and switch instantly between computing environments.

In fact, the Power Macintosh 8600/250 and 8600/300 give you yet another system software option. Although these computers come with Mac OS 7.6.1 installed, Apple will also provide Mac OS 8 on CD-ROM for you to upgrade when you're ready. Mac OS 8 is the latest, greatest version of the popular Macintosh system software providing significant performance enhancements, integrated Internet capabilities and state-of-the-art multimedia designed to increase not only your productivity but also your enjoyment through desktop management.

The Power Macintosh 8600/250 and 8600/300: Exceptional performance for media authoring--or any work with video, audio, or graphics--to enhance your creativity.

Features

Performance

- 250-MHz or 300-MHz PowerPC processor
- Integrated Iomega Zip drive
- Built-in floating-point processor and 32K on-chip data and 32K instruction caches
- 1MB of Apple Inline Cache (level 2)
- Built-in accelerated graphics card

Compatibility

- Includes 10BASE-T and AAUI-15 Ethernet connectors
- Supports Open Transport networking software (TCP/IP and AppleTalk)
- Runs 680x0 Macintosh applications as well as applications accelerated for Power Macintosh computers
- Reads Mac OS, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats
- Runs MS-DOS and Windows applications via optional PC Compatibility Card from Apple
- Comes with all of the software required for Internet access

Communications /Network

- Two high-speed serial ports compatible with GeoPort and LocalTalk cables

Multimedia

- 64-bit VRAM graphics subsystem
- 24x-speed CD-ROM drive
- 16-bit stereo audio input and output
- 24-bit composite and S-video input and output

Expandability

- Three industry-standard PCI expansion slots

- SCSI connector for hard disks, CD-ROM drives, and other SCSI devices
- Expansion bays for additional storage devices (3.5- or 5.25-inch)

Mac OS 7.6.1 system software

- Makes working with different applications consistent, so they're easier to learn and use
- Allows easy customization of your Macintosh to reflect the way you work
- Provides active assistance in learning new features with Apple Guide
- Includes MacLinkPlus file translation software from DataViz

Ordering Information

Power Macintosh 8600/250
Order No. M5905LL/A

Power Macintosh 8600/250 computer with 32MB of RAM, a built-in 1.4MB Apple SuperDrive floppy disk drive, an internal 4GB hard disk drive, an internal 24x-speed CD-ROM drive, an internal Iomega Zip drive, and a PlainTalk microphone. Includes keyboard and mouse; system software version 7.6.1 or later; Internet access software; complete setup, learning, and reference documentation; and limited warranty.

Power Macintosh 8600/300
Order No. M6092LL/A

Power Macintosh 8600/300 computer with 32MB of RAM, a built-in 1.4MB Apple SuperDrive floppy disk drive, an internal 4GB hard disk drive, an internal 24x-speed CD-ROM drive, an internal Iomega Zip drive, and a PlainTalk microphone. Includes keyboard and mouse; system software version 7.6.1 or later; Internet access software; complete setup, learning, and reference documentation; and limited warranty.

PC Compatibility Card
(with Pentium 166-MHz processor)

Order No. M5782LL/A

Product specifications are subject to change. Check with your Apple reseller for the most current information about product specifications and configurations.

Published Date: Feb 18, 2012

MessagePad 2x00: How to Configure the Button Bar

I am trying to customize the button bar on my Newton MessagePad 2x00. When I add buttons to the bar, I get the message: "Button Bar: The button bar couldn't hold all the icons. The overflow will show in 'Unfiled Icons'."

This article has been archived and is no longer updated by Apple.

The button bar can only hold seven icons. If you would like to add an icon to the button bar, first remove an icon that you do not wish to appear there. To do this, open your Extras drawer and drag the button icon into the open drawer. The button will then move from the button bar area, making room for the desired button icon.

Published Date: Feb 18, 2012

TA40528_MacintoshtoUnisys_Connectivity_MacBLAST_(TIL04601).pdf

Macintosh-to-Unisys Connectivity: MacBLAST

Beyond Novell, is there any other way to connect the Macintosh to a Unisys B26, B27, B27LCW, B28, or B38?

This article has been archived and is no longer updated by Apple.
As of August 1989, the only other option we know of is MacBLAST software from Communications Research Group. Their "BLAST" software runs on over 100 different hardware platforms. MacBLAST communications software interfaces with BLAST running on the B series computers you mentioned above. It supports asynchronous communications with speed up to 38.4K.

For more details, search the Tech Info Library under "Communications Research Group".

Published Date: Feb 18, 2012

Mac OS 8: Internet Service Provider Guide for the US, Canada & Latin America

Mac OS 8 includes a variety of Internet software and services to help Mac OS customers connect to the Internet quickly and easily, and to have the most enjoyable Internet computing experience once they are connected.

Note: This document is designed for the US English version of Mac OS 8 distributed in the U.S, Canada, Australia, New Zealand and parts of Latin America. The screen shots and the software included may be different for other versions of Mac OS 8.

This article has been archived and is no longer updated by Apple.

Software included

Internet connection software:

- Internet Setup Assistant 1.0
- Internet Editor Assistant 1.0
- ISP Registration Assistant 1.0
- Internet Dialer 1.0
- Internet Setup Utility 1.0

Networking software

- Open Transport 1.2
- Open Transport PPP 1.0.1

Internet applications:

- Netscape Navigator 3.01
- Claris Emailer Lite 1.1v4

Browser plug-ins:

- Apple QuickTime plug-in 1.1
- EmeraldNet LiveAudio plug-in
- Macromedia Shockwave plug-ins
- Internet Utilities
- Aladdin Stuffit Expander 4.0.2
- Aladdin DropStuff w/EE 4.0 Installer
- Internet Config 1.3

Internet extras (on the CD-ROM only)

- Microsoft Internet Explorer 3.01 Installer
- PointCast Client 1.0.1 Installer

Unlike previous Internet connection solutions provided with Mac OS 7.6 and with System 7.5, the Internet software is tightly integrated into the Mac OS, and part of the default install to the Internet folder on the root level of the hard drive.

The Apple-developed Internet communication software (Internet Setup Assistant and Internet Dialer) is completely Open Transport based (both TCP and PPP). Customers who have previously installed the Apple Internet Connection Kit (AICK) will have their configuration settings migrated to this new software. This software, as well as the 3rd party software components included, have been optimized and fully tested with Mac OS 8. Please help Mac OS customers configure their systems with the software that Apple provides. Do not send additional Internet software; everything Mac OS customers need is included with Mac OS 8. Additional Internet software may cause technical problems.

Internet Setup Assistant

The Internet Setup Assistant helps customers set up their computer for Internet access via dial-up through an ISP.

The Assistant requires the following information:

- ISP local phone number
- account name
- account password

- DNS address
- Domain name
- e-mail address
- e-mail password
- e-mail account
- e-mail host computer
- newsgroup host computer

This information is summarized in Appendix A (ISP Information Form) which is also included on the Mac OS 8 CD. Customers have been instructed to identify themselves as Mac OS 8 customers when they contact an ISP and to ask for this information. The Internet Setup Assistant asks for this information in the same order listed.

How to set up a new ISP configuration

1. Open the Internet folder or the Assistants folder on the hard drive.

2 . Double-click the Internet Setup Assistant icon.

3. Click Update.

4. Click the right arrow at the bottom right corner to continue.

5. Click Add Internet configuration. Click the right arrow.

6. Enter the ISP name for the configuration and click Modem. Click the right arrow.

7. Select the modem, port and dial type. Click the right arrow.

8. Enter the local ISP phone number, user ID and password. Click the right arrow.

9. If there is an IP address for this configuration click Yes and then click the right arrow.

10. Enter one or more DNS address and Domain Name if required. Click the right arrow.

11. Enter the e-mail address and password. Click the right arrow.

12. Enter the e-mail account and e-mail host computer. Click the right arrow.

13. Enter the news group host if required. Click the right arrow.

14. Click Go Ahead.

15. The Internet configuration will be set up and a test connection will be made.

Configuring proxy settings
If your service uses a firewall and requires proxies, follow these steps to configure the settings.

1. Open the Internet folder.

2. Open the Internet Utilities folder.

3. Open the Internet Config folder.

4. Double-click the Internet Config icon.

5. Click Firewalls or select Firewalls from the Window menu.

6. Enter the appropriate proxy information.

7. Select Save from the File menu to save the proxy settings.

Configuring connection scripts
If your service requires a connection script for authentication, follow these steps to configure the settings:

1. Open the PPP control panel.

2. Click Options and select the Protocol tab.

3. Click Connect to a command-line host:.

4. Click OK.

5. Click Connect.

A terminal window will appear during the connection and the session will be recorded. The customer should enter the connection script required for authentication. After the script is entered the session should be saved.

6. Click Options and select the Protocol tab.

7. Click Use connect script.

8. Click Import Script and select the saved script.

9. Select Save from the File menu to save the connection script settings.

At any point click on the ? for help with the PPP control panel.

Connecting and disconnecting
After the Internet configuration has been set up, there are two main ways to connect and disconnect:

Internet Dialer

The Internet Dialer helps customers manage their connection to the Internet. If customers have more than one Internet Service Provider, the Internet Dialer allows them to choose which configuration to make active. The Internet Dialer is located in the Internet folder.

Auto-connect and auto-disconnect

The PPP software included with Mac OS 8 is set to connect on-demand if an application initiates a network request. The software is also set to disconnect automatically after 10 minutes of inactivity. Non US English versions of Mac OS 8 may have this set differently. These settings can be changed through the PPP control panel by clicking Options and selecting the Connections tab.

Desktop icons for the mail and the web

Mac OS 8 includes two desktop icons titled Browse the Internet and Mail. These icons launch the default web browser or e-mail application. If auto-connect is set ON (see above), then connections will be initiated if the browser attempts to load a home page, or if the mail client checks for mail on start up. These default applications are set up and maintained through Internet Config, located in the Internet Config folder, in the Internet Utilities folder, in the Internet folder. This folder also contains instructions for how to use Internet Config.

Appendix A - Sample ISP information form
The following form is included on the Mac OS 8 CD in the Internet Extras folder. The Internet Setup Assistant asks for this information in the same order listed.

ISP information form
The following information is needed to configure the Mac OS 8 for dial-up Internet access via an Internet Service Provider (ISP). If you need to set up a new account, or have an existing account, contact the ISP for this information. You may want to fax this form directly to them.

The Internet Setup Assistant will help you enter this information.

After you have the ISP information:

1. Double-click the Internet Setup Assistant icon located in your Internet folder.

2. Click Update and select Add Internet Configuration.

3. Enter the information from the ISP in the order that it appears below.

ISP local phone number (also known as the local point of presence or POP) _____

- account name (also known as login name or user id) _____
- account password _____
- DNS address (ie. 12.222.6.78) _____
- Domain name (ie. isp.com) [optional] _____
- e-mail address (ie. name@isp.com) _____
- e-mail password _____
- e-mail account (ie. name@pop.isp.com) _____
- e-mail host computer (ie. smtp.isp.com) _____
- newsgroup host computer (ie. news.isp.com) [optional] _____

Appendix B - export configurations
An ISP can create an Internet configuration for a customer and then, using the Internet Setup Utility, export that configuration into a file that can be sent to a customer either electronically or on removable media. The customer can then use the Internet Setup Utility to import this configuration.

How to export internet configurations
1. Open the Internet folder on the hard drive.

2. Open the Internet Utilities folder.

3. Double-click the Internet Setup Utility icon.

4. Select the Internet configuration you want to export.

5. Click Export.

6. Select the folder and the file name.

7. Click Save.

8. Send the export file to the customer, either electronically or on removable media.

9. The customer can use the Internet Setup Utility to import the file, and then click Assist Me to use the Internet Setup Assistant to enter in the password information. This information will need to be supplied separately.

Appendix C - additional resources
The Internet folder contains a document titled About Internet Access which describes late breaking news and information related to the Internet features in Mac OS 8. Mac OS 8 also includes the Mac OS Info Center, a web-based help and information system, located at the root level of the hard drive.

The following web sites are recommended for additional information:

- Apple Customer Support: **http://www.info.apple.com**
- Apple Software Updates: **http://support.info.apple.com/ftp/swhome.html**
- Mac OS: **http://macos.apple.com**
- Aladdin Systems: **http://www.aladdinsys.com**
- Claris: **http://www.claris.com**
- Macromedia: **http://www.macromedia.com**
- Microsoft: **http://www.microsoft.com**
- Netscape: **http://www.netscape.com**
- PointCast: **http://www.pointcast.com**

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Workgroup Server 9650: Addendum to Setting Up Your Workgroup Server 9650 Manual

This article is the addendum to the Setting Up Your Workgroup Server 9650 manual.
This article has been archived and is no longer updated by Apple.

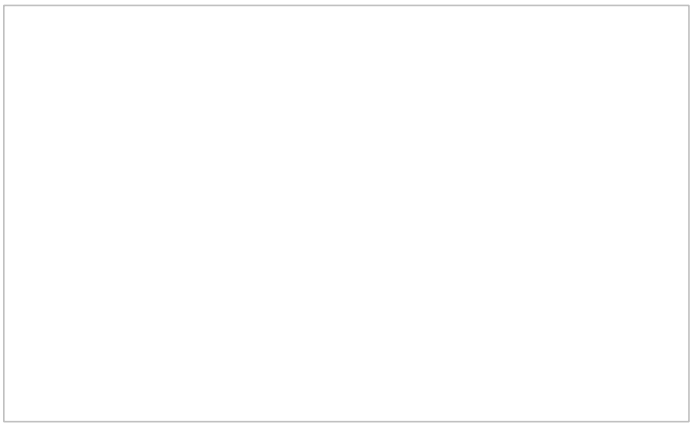
Introduction

This addendum to the Setting Up Your Workgroup Server 9650 manual contains setup information and technical specifications for the following parts of your Workgroup Server 9650:

- the main unit, whose processing speed and memory capacity were increased after Setting Up Your Workgroup Server 9650 was published
- the 24x-speed CD-ROM drive, which replaces the 12x-speed drive originally in the Workgroup Server 9650
- the 10/100BaseT Ethernet card which is factory-installed in your server in addition to the built-in 10BaseT Ethernet capabilities described in Setting Up Your Workgroup Server 9650
- the Xclaim 3D monitor card, which replaces the IMS Twin Turbo-128 monitor card originally in the Workgroup Server 9650
- the VGA monitor port included on the Xclaim 3D monitor card, which allows you to connect a VGA monitor to the Workgroup Server 9650

Your server at a glance

The following figure shows the basic components of your Workgroup Server 9650 assembled and connected to a network.



The ports on the back of the Workgroup Server 9650 and the icons that identify them are shown in the following figure. During setup, you'll connect hardware to some of these ports.

Your server's ports and connectors	
SCSI-1 port (DB-25)	Connects your server to SCSI equipment such as external hard disk drives.
Ethernet port (AAUI)	Connects your server to an Ethernet network using an AAUI adapter.
Ethernet port (10BaseT)	Connects your server to an Ethernet network using an RJ-45 connector
Ethernet port (10/100BaseT)	Connects your server to an Ethernet network using an RJ-45 connector
Printer port (GeoPort)	Connects your server to a printer, LocalTalk network, GeoPort adapter, or serial device.
Modem port (GeoPort)	Connects your server to an external modem, LocalTalk network, GeoPort adapter, or serial device.

Your server's ports and connectors	
Apple Desktop Bus (ADB) port	Connects your server to an input device, such as a keyboard or a trackball.
Sound input port	Connects your server to an Apple PlainTalk microphone or other audio input equipment.
Apple monitor port	Connects your server to an Apple monitor. This port is on a video card installed in one of the PCI slots.
VGA monitor port	Connects your server to a VGA monitor. This port is on a video card installed in one of the PCI slots.
68-pin SCSI port	Connects your server to Ultra Wide SCSI-3 equipment such as external hard disk drives. This port is on a SCSI card installed in one of the PCI slots. Normally you should not use this port; for more information, see Chapter 4 of your setup manual.
Sound output port	Connects your server to headphones, externally powered (amplified) speakers, or other audio output equipment.
Access covers for PCI expansion slots (6)	Your server supports up to six Peripheral Component Interconnect (PCI) expansion cards. (The monitor, SCSI, and Ethernet cards are installed in three of the slots.)
Security lock port and lockable cover latch	You can attach a security lock to your server and to its cover to secure internal components. See your computer products retailer for security lock devices that work with your server.

Connecting a VGA monitor

This information supplements Chapter 1 in the Setting Up Your Workgroup Server 9650 manual.

1. Connect the monitor power cord. Follow the instructions on page 21 in the Setting Up Your Workgroup Server 9650 manual.

2. Attach the monitor cable to the monitor. On some monitors, the cable is already attached.

3. Attach the monitor cable to the VGA monitor port on the back panel of the server. The VGA monitor port is located next to the Apple monitor port. See the illustration in the previous section, Your Server at a Glance.

Warning: You cannot connect monitors to the VGA port and the Apple monitor port at the same time. Connecting two monitors degrades performance and may cause electromagnetic emissions that interfere with the performance of nearby electronic devices, such as a television or radio. If you want to connect two monitors to your server, you must purchase an additional monitor card. See Connecting Multiple Monitors on page 113 in the Setting Up Your Workgroup Server 9650 manual.

Connecting to a 100BaseT Ethernet network

This information supplements Chapter 2 in the Setting Up Your Workgroup Server 9650 manual.

Note: Although you can simultaneously connect cables to the built-in AAUI and 10BaseT ports as well as the 10/100BaseT Ethernet port, you can use only one of these Ethernet connections at a time.

1. Make sure that the server is turned off.

2. Plug one end of the twisted-pair cable into an RJ-45 wall outlet that supports 100BaseT Ethernet. You must use Category 5 unshielded twisted-pair cable.

3. Plug the other end of the twisted-pair cable into the 100BaseT Ethernet port on the server.

4. Configure your network connection. You need to change the default port in the AppleTalk control panel from Ethernet built-in to Ethernet slot D2. Instructions for changing the default port are in Chapter 4 of your Workgroup Server Administrator's Manual.

Technical information

The following specifications replace the specifications in Appendix B of Setting Up Your Workgroup Server 9650.

Main unit

Processor card

A PowerPC TM 604e processor with the following features:

- 350 megahertz (MHz) processor clock
- built-in floating point unit (FPU) and 64 kilobytes (K) level 1 cache
- 1 MB Apple Inline Cache (level 2)
- 50 MHz system bus
- 100 MHz cache bus

Memory

- 64 MB of dynamic random-access memory (DRAM), supplied in removable Dual Inline Memory Modules (DIMMs), expandable to a maximum of 768 MB
- 4 MB of synchronous graphics RAM (SGRAM) on the monitor (video)card
- 4 MB of read-only memory (ROM)
- 32 K of nonvolatile parameter memory
- 1 MB of static random-access memory (SRAM) used as an Apple Inline Cache. (The cache size is not expandable because the RAM is soldered to the processor card.)

Monitor card

The monitor card is the Xclaim TM 3D PCI card from ATI. It has a high performance 64-bit graphics accelerator with support for 2D, motion video, and 3D.

Note: You must install the ATI drivers provided on your Mac OS CD-ROM if you want to use the full capabilities of your monitor card.

The card includes 4 MB of synchronous graphics RAM (SGRAM); it can be upgraded to 6 or 8 MB SGRAM. The card has two connectors that let you connect it either to an Apple monitor or to a VGA monitor. You cannot connect two monitors to this card at the same time.

Note: Your server must be connected to a monitor; it cannot be operated without one.

You can use most multiple-scan (multisynchronous) monitors with the monitor card. On some monitors from manufacturers other than Apple, the connector pinout designates one pin for both green video and timing synchronization. Multiple-scan sync on green monitors are not compatible with your monitor card, but VGA sync on green monitors are compatible. If you're not sure what type of monitor you have, check with your dealer.

You use the Monitors & Sound control panel or the Control Strip to set a video mode that is supported by both your monitor and the monitor card. The monitor card supports the resolutions and color depths listed in the 2D and 3D Mode tables that follow.

2D Mode table

Resolution	Color depth*	Vertical refresh rate
512 x 384	millions	70
640 x 480	millions	60, 67, 72, 75, 85, 90, 100, 120
640 x 870	millions	75
800 x 600	millions	56, 60, 72, 75, 85, 90, 100, 120
832 x 624	millions	75
1024 x 768	millions	60, 70, 75, 85, 90
1024 x 768	thousands	100, 120
1152 x 870	millions	75
1280 x 960	thousands	75

1280 x 1024	thousands	60
1280 x 1024	thousands	75, 85
1600 x 1200	thousands	60, 65, 70, 75

3D Mode table

Resolution	Color depth	Memory used for display (K)
512 x 384	thousands	384
512 x 384	millions	768
640 x 480	thousands	600
640 x 480	millions	1200
800 x 600	thousands	937.5
800 x 600	millions	1875
832 x 624	thousands	1014
832 x 624	millions	2028
1024 x 768	thousands	1536
1024 x 768	millions	3072
1152 x 870	thousands	1957.5
1152 x 870	millions	3915

To find out how much memory is available for 3D acceleration, subtract the Memory Used for Display from the number of kilobytes of SGRAM on your video card.

Internal disk drives

The following drives come factory-installed in your server:

- Apple SuperDrive 1.4 MB high-density floppy disk drive
- 24x-speed CD-ROM drive
- Two 4 gigabyte (GB) Ultra Wide SCSI-3 hard disk drives

Note: Your server does not come with an internal tape backup drive. See your computer products reseller for backup solutions for your server; making backup copies of server files is important.

Interfaces

In addition to the interfaces listed in the Setting Up Your Workgroup Server 9650 manual, your server comes equipped with these:

- One built-in RJ-45 connector for connecting to 10/100BaseT Ethernet networks.
- A VGA monitor port in addition to the Apple monitor port referred to in the Setting Up Your Workgroup Server 9650 manual. (See "Monitor Card" earlier in this addendum.)

CD-ROM drive

Disc speed

- 24x (twenty-four-times) maximum speed (constant 5135 RPM)

Disc diameters supported

- 120 mm (4.7 inches)
- 80 mm (3.2 inches)

Data capacity

- 656 MB, Mode 1
- 748 MB, Mode 2

Modes supported

- Audio CD
- CD-ROM: Modes 1 and 2
- CD-ROM XA: Mode 2, Forms 1 and 2
- CD-I: Mode 2, Forms 1 and 2
- Photo CD: Single-session and multisession
- Video CD

Laser

- Type: Semiconductor GaAlAs laser
- Wavelength: 795 ± 25 nanometers
- Output power: 0.2 to 0.6 milliwatts
- Beam divergence: 55°
-

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Workgroup Server 9650: About This CD Read Me

This article is the About This CD Read Me for the Workgroup Server 9650.
This article has been archived and is no longer updated by Apple.

Contents

About the Workgroup Server Software CD-ROM disc

Third-party product support

Server Additions

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WS Electronic Library

About the Workgroup Server Software CD-ROM Disc

The software on this CD-ROM disc supports the Workgroup Server 7350 and the Workgroup Server 9650. Read the following sections for brief descriptions of the contents of the main files and folders on this CD.

Third-party product support

Apple does not provide technical support for third-party software products. If you need support for a third-party product that is provided on this CD, you must contact the manufacturer directly.

Server Additions

The software in the Server Additions folder contains complete software installers and components for the following Apple and third-party products:

- ATI XClaim 3D Graphics card
- Apple 10/100 Fast Ethernet Card
- StreamLogic PCI SCSI JackHammer 1.2.2

Should it become necessary to reinstall your system software, you should install Mac OS from the System Software Installer, and then install each of the aforementioned components separately.

Should you decide to upgrade your operating system at a later time, we have separated these components out of our System Software Installer so that you may easily replace those drivers which are not part of Apple's base system software.

About Mac OS 7.6.1 Update

Read this for late-breaking news about Mac OS 7.6.1.

America Online

This folder contains an America Online installer for Power Macintosh computers and one for other Macintosh models.

Apple RAID 1.5

Apple RAID 1.5 is an installer for Apple RAID software version 1.5. The Apple RAID software is installed on your startup disk at the factory, but no RAID volumes have been created. Read the Apple RAID Guide before you use Apple RAID to create Apple RAID volumes.

Due to a late breaking problem with AppleRAID and the SCSI Manager, an update for this application is posted on Apple's Service and Support Website at **http://www.info.apple.com**. Please obtain this update before setting up your RAID volumes.

CD Extras
The CD Extras folder includes folders for several programs, such as At Ease Updaters, QuickTime MPEG, and Spanish Text-to-Speech 1.5.

Exploring Mac OS 7.6
This folder contains an introduction to Mac OS 7.6 and samples of how to use new features such as desktop printing, Live Objects, and QuickDraw 3D.

Install Workgroup Server OS
Double-click this icon to install the Mac OS on your server.

Installing Mac OS 7.6
Read this file before you install Mac OS 7.6 for important compatibility and installation information.

Mac OS 7.6 Information
This folder contains important information about Mac OS 7.6 software and the software that comes with your Mac OS 7.6, such as MacLink and Cyberdog. Read this for late breaking news.

Utilities
This folder contains the Apple HD SC Setup, Disk First Aid, Drive Setup, SimpleText, AppleShare 3.6.4, Acrobat Reader 2.1, and 5xxx/6xxx Tester 1.1 programs. Also included are two Apple Guides - Drive Setup Guide and SimpleText Guide.

Software Installers
This folder contains installers for the following:

- Apple RAID 1.5
- Apple Remote Access Client 2.1
- Cyberdog 1.2.1
- English Text-to-Speech 1.5
- Extras
- Mac OS 7.6
- Mac OS 7.6.1 Update
- MacLinkPlus 8.1
- Open Transport PPP 1.0
- OpenDoc 1.1.2
- OpenDoc Essentials 1.0.1
- QuickDraw 3D 1.5.1
- QuickDraw GX 1.1.5
- TV/FM SW Installer 1.5.4
- Workgroup Server Update

Workgroup Server Read Me
This file contains important information about your Workgroup Server, including troubleshooting and compatibility information.

WS Electronic Library
This folder contains electronic versions of documentation for products included with your Workgroup Server. You'll also find information about using these documents in this folder.

Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Apple assumes no responsibility with regard to the performance or use of these products.

The Tech Info Library article titled **Locating Vendor Information** can help you search for a particular vendor's address and phone number.

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TCP/IP-to-VM Connect and Ethernet Cards for Mac II (8/94)

I want to send TCP/IP protocols to VM in the IBM environment. I also want information on all Ethernet interface cards that can be used in the NuBus slots for the Macintosh II family. Also, can you explain the configuration for connecting a Macintosh II with an Ethernet interface to the VM system?

This article has been archived and is no longer updated by Apple.
1) Here are names and phone numbers of some vendors who support Ethernet interface cards for the Macintosh II:

* Apple Computer, Inc.

* 3COM Corp.

* EMAC, A division of Everex

* Asante Technologies

For a more complete list of hardware and peripherals communications vendors, please consult a commercial publication, like "The Macintosh Buyer's Guide.

2) IBM has a TCP/IP family of products called The Laureate Series. The TCP/IP for VM product (part number 5798-FAL) uses an S/370 channel to attach to a variety of controllers for connection to the selected network. The network controllers supported are:

* IBM 8232 LAN Channel Station
* Series/1 with Realtime Programming System

The 8232 LAN Channel Station is a controller-type device that provides attachment of Local Area Networks to a host via the S/370 channel. The LAN Channel Station unit supports one or two LAN Channel Controllers. Each LAN Channel Controller supports two LAN connections to a host channel. To be on a VM TCP/IP network over Ethernet, the Macintosh needs an Ethernet adapter, TCP/IP software, like NCSA Telnet or TCP/Connect from InteCon Systems Corp and appropriate Ethernet cables.

3) To get an asynchronous connection to a Macintosh, you have three possibilities:

* Mac3270, by Simware

* MacBLAST, by Communications Research Group

* RELAY Baton, by RELAY Communications

For more details, search the Tech Info Library using the above company names.

Article Change History:
08 Aug 1994 - Removed Dove Computer.

Support Information Services

Published Date: Feb 18, 2012

ApplePhone: Invisible Characters

When I create a new greeting message in ApplePhone and type in the name of the greeting to save it, the characters I type are invisible. How will I know if my greeting is saved?

Notes: ApplePhone 1.0 and 1.0.1 is an example program that Apple does not support and it has been removed from Apple Software Updates. The Macintosh AV team created the program to show the capabilities of the AV technology. Apple does not intend to do any further work to this example program.

This ApplePhone software is NOT related in any way to the ApplePhone software that is a part of the Apple Telecom 3.x package. Apple Telecom 3.x also includes Apple Address Book and Apple Fax software.

This article has been archived and is no longer updated by Apple.
When you save a greeting, you will be asked to enter a name for it. The characters you type are invisible as you type them.

The typed characters, however, do appear in the greeting choice list afterward.
Published Date: Feb 18, 2012

Workgroup Server 9650: Additional Software Information

This article provides information on software availability for the Workgroup Server 9650 that is not covered in the Read Me documents.
This article has been archived and is no longer updated by Apple.

Acrobat Reader not pre-installed

Acrobat Reader does not come pre-installed on the Workgroup Server 9650. To open the Read Me documents, you must install Acrobat Reader. To obtain the latest version of Acrobat Reader, call Adobe Systems at 800-64-ADOBE (642-3623) or download from their website at **http://www.adobe.com**.

AppleShare IP 5.0.2

AppleShare IP 5.0.2 will be included in the Workgroup Server 9650's accessory kit when it becomes available.

Published Date: Feb 18, 2012

PowerBook 1400 Series: No Rear Feet

Why does the PowerBook 1400 series not have rear feet? I thought this was needed to dissipate heat.
This article has been archived and is no longer updated by Apple.
The feet were present on prior PowerBooks models to allow tilt for customer comfort, and to allow heat to dissipate more easily. Due to the palm rests being present, keyboard tilt is no longer needed for the ergonomic benefits, and the presence of heat sinks in this model resolves any heat dissipation issues.

We do not recommend adding tilt to these machines, as CD/floppy ejection could be obstructed.

Published Date: Feb 18, 2012

Avid Cinema: Not Compatible With 8600/250, 8600/300, 233MHz Processor Card

Avid Cinema versions 1.1.5 and earlier are not currently compatible with the Power Macintosh 8600/250, 8600/300 or the 233MHz Processor Upgrade Card. Power Macintosh 8600/200 and earlier machines are not affected.

This article has been archived and is no longer updated by Apple.
Attempting to use Avid Cinema versions 1.1.5 and earlier on the Power Macintosh 8600/250 ,8600/300, or systems with a 233MHz Processor Upgrade Card may result in various errors while capturing video.

Apple and Avid plan to release a version of Avid Cinema that corrects this problem soon.

Published Date: Feb 18, 2012

Mac OS 8: MacLink Plus Demo Version Expired

I just installed Mac OS 8 on my computer yesterday. Today when MacLink Plus began working I got an error message stating " Your Demo version of MackLink Plus has expired." What should I do?

This article has been archived and is no longer updated by Apple.
The DataViz technical support web page explains the solution:

If you are using version 9.0.2 or lower (9.0 is what comes with the Mac OS 8 CD), you must delete these files:

- MacLink Plus Setup (in the Control Panels folder)
- MacLinkPlus for Easy Open (in the Extensions folder)
- DataViz folder (in the System Folder)

Then reinstall MackLink Plus from your Mac OS 8 CD.

1. Insert your Mac OS 8 CD
2. Open the folder Software Installers
3. Open the folder MacLinkPlus
4. Double click on the Installer and follow the prompts.

After the installation your system will restart, and your desktop will rebuild. Then you will have a full working copy of MacLink Plus.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

ADB: Development References

I am developing ADB (Apple Desktop Bus) hardware/firmware. Does Apple already have some sort of an ADB developer's starter kit?
This article has been archived and is no longer updated by Apple.
Apple doesn't have an ADB starter kit. However, ADB information is available from a variety of sources, including:

- "Inside Macintosh Volume 5," Chapter 20, "The Apple Desktop Bus"

- "Macintosh Hardware Reference"
Chapter 11, "Macintosh SE ADB Interface"
Chapter 19, "Macintosh II ADB Interface"

- "MacUser"
Baum, Peter, "Boarding the Bus," July 1987, page 142

- Call A.P.P.L.E., Baum, Peter, "An Overview of Apple Desktop Bus," June 1987,
page 24.

- Technical Note #160, "Key Mapping"
- Technical Note #206, "Space Aliens Ate My Mouse!!! (ADB--The Untold Story)"

- Macintosh Sample Code Note #17, "ADB Tablet Driver Sample Source"

Note: Apple's Desktop Bus and ADB Device Specifications are a licensable product available through Apple's Software Licensing group.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

Lisa and Macintosh XL: Memory and Hard Disk Requirements

Lisa Office System:
This article has been archived and is no longer updated by Apple.
Hard Disk: Office Systems 1.0, 1.2, 1.4, 2.0, 3.0, and 3.1 all require you to use at least a 5-megabyte hard disk.

Memory: Only Lisa 7/7 Version 3.1 will run with 1/2 megabyte of memory. All previous versions of the Office System require 1 megabyte of memory. If you're using Version 3.1, we highly recommend that you use a full megabyte of memory in order to improve system performance.

Workshop:

Hard Disk: Within certain limitations, you can operate Lisa Pascal Workshop 1.2 without a hard disk; we recommend that you use one, though, unless you aren't concerned about system performance. All subsequent versions of the Workshop require at least a 1/2-megabyte hard disk.

Memory: All versions of the Workshop require 1 megabyte of memory. Versions 1.2 and 2.0 appear to offer you, in the Preferences window, an option to run them with only 1/2 megabyte. If you choose this option, though, the system will hang if you then try to access either the Editor or Preferences.

MacWorks:

Hard Disk: MacWorks Versions B and later do not require a hard disk, though those versions will support one. If you opt not to use a hard disk, the system will simply behave like a Macintosh without an external drive.

Memory: All versions of MacWorks can run with either 1/2 or 1 megabyte of memory.
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DAL: Applications

This article contains a list of applications that have been developed for Data Access Language (DAL), formerly known as "CL/1." Many of the other DAL applications are available from the particular application's vendor. Search the Tech Info Library under the vendor's name for details on any of these packages.

This article has been archived and is no longer updated by Apple.

Generic Database Browsers

- Clear Access from Clear Access Corp. (formerly Fairfield Software, Inc.)
- GQL from Andyne Computing Limited
- Data Prism & Data Pivot from Brio Technology
- Executive Query Tool from ADI (Application Design Inc.) and Apple IS&T

Spreadsheets

- Full Impact from Ashton-Tate
- Lotus 1-2-3 for Macintosh from Lotus
- WingZ from Informix Software
- Excel from Microsoft

Desktop Mapping

- GeoQuery from Odesta Corporation
- Tactisian from Tactics International
- Atlas Pro from Strategic Mapping

Expert Systems

- DAL for HyperCard from Apple
- Nexpert Object from Neuron Data
- Hyper X from Millenium

Client/Server Application Development

- 4th Dimension from ACI US, Inc.
- Omnis from Blyth
- HyperCard from Claris
- Super Card from Aldus

Published Date: Feb 18, 2012

Lisa 2: Copying Office System Diskettes

This article has been archived and is no longer updated by Apple.
The easiest way to backup your Office System diskettes is to use Office System 3.1. Release 3.1 allows you to duplicate a diskette to another diskette; it even prompts you when to insert your destination diskette. Office System 3.0 is unable to copy an Office System 1 diskette.

If you don't have access to a Lisa with Office System 3.1, but do have a version of the Workshop which is the same version of the Office System diskettes you're copying:

1. Enter the Workshop.

2. Type "S" to get into the System manager.

3. Set FilesPrivate to Yes; Quit the System Manager.

4. With the File Manager, Copy all of the files on the diskette to the ProFile with a unique prefix--e.g. Copy -LOWER-=,ZX=

5. Swap microdisks so the destination diskette is in the drive. Copy all the files back to the diskette, this time stripping the unique prefix--e.g., Copy ZX=,-LOWER-=

6. Create as many duplicates as you wish from the prefixed files on the hard disk.

Published Date: Feb 18, 2012

Lisa: How and Why To Back Up Data

This article has been archived and is no longer updated by Apple.
Because no computer system is infallible, it is important to periodically back up all important documents. This minimizes the risk of loss of data due to power failure, hard disk failure, system hangs, and so on.

There are 3 kind of backups:

A. A full backup.
B. An incremental backup.
C. Individual duplication of the document onto a backup disk. (This is the method Apple recommends.)

To do a full or incremental backup (method A or B):

1. Insert your diskette.
2. Duplicate the hard disk, then move the duplicate to the diskette.
3. Follow the directions displayed on your screen.

Full and incremental backups are described on pp. D14-D16 in the Lisa 1 Owner's Guide, and on pp. B32-B37 of the Lisa 2 Owner's Guide.

To duplicate a document (method C):

1. Select the document.
2. Scroll open the File/Print menu; choose Duplicate.
3. A flashing duplicate of the document will appear on your screen next to the orignal. Move that duplicate to another folder, diskette, or drive.

Duplicating a document or folder is described on p. D11 in the Lisa 1 Owner's Guide and p. B68 in the Lisa 2 Owner's Guide.
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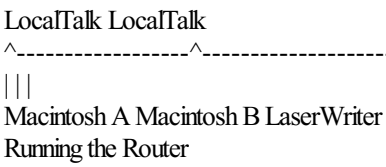
LaserWriter 6.0 Driver: Internet Router Conflict

I think I have a conflict between the AppleTalk Internet Router and LaserWriter 6.0 drivers. When I send a job to the printer with the gray-scale option, the system crashes completely without any system ID error. It seems to work fine when the black and white option is selected.

This article has been archived and is no longer updated by Apple.
The following diagram will help illustrate our answer:



There should be no problem with Macintosh A printing gray scale to the LaserWriter: we have successfully tested this with no problems.

Printing from Macintosh B to the LaserWriter with the LaserWriter 6.0 driver is not recommended, because it uses much more memory than the LaserWriter 5.2 driver.

Printing

(Note that the following considerations refer to printing from the router machine. These considerations do not refer to a workstation printing, even if it reaches a printer through a router.)

* Avoid background printing on a router machine. When PrintMonitor opens a printer driver, it uses up memory; the router desk accessory may then run out of memory.

* Do not try 32-bit color printing from a router machine.

* Be aware that the 6.0 LaserWriter driver uses much more memory than the 5.2 driver. Avoid using the 6.0 LaserWriter driver on a 1MB router machine. Also, avoid using the 6.0 LaserWriter driver, when running the router and the AppleShare File Server concurrently.

Published Date: Feb 18, 2012

SuperDrives: "Bad Formatting" May Mean Disk Is High-Density

On a few occasions, when I have formatted an 800K floppy disk on a Macintosh II or Macintosh SE, then tried to use it in a Macintosh IIx, Macintosh IIcx, or Macintosh SE/30, I received a dialog box stating, "This is not a Macintosh disk, do you want to format it?". Why?

This article has been archived and is no longer updated by Apple.
This message, asking if you want to format a disk, occurs if the floppy disk formatted in the 800K drive was a high-density disk. Check the disks displaying this problem to see if they have a bonus hole -- an extra hole at the top right corner of the disk. They are also marked as high-density disks. There have been cases where high-density disks were put in packages with 800K disks, so you might not even be aware that there are two different disks.

When high-density disks are put into an Apple SuperDrive (formerly Apple FDHD), the drive sees the bonus hole and knows that it is a high-density disk. It also sees that it was not formatted for 1.44MB and wants to do that.

The medium for the 800K disks is different than for the high-density disks, and data is written differently to each. Because of this, we suggest that if you have any high-density disks that have been formatted as 800K disks, copy the information from the high-density disks onto 800K disks. The high-density disks should then be re-formatted as 1.44MB disks.

For more information, read the three-part Tech Info Library article, "A Guide to Using the AppleSuperDrive". Search under: "SuperDrive"

Published Date: Feb 18, 2012

Apple IIc Plus: How To Print to a LaserWriter IINT

I want to print to a LaserWriter IINT in Diablo emulation from an Apple IIc Plus running AppleWriter v2.0.

I am having some difficulty making this configuration work. Can you provide the cabling, serial port, LaserWriter, and software information necessary?

This article has been archived and is no longer updated by Apple.

We were able to successfully print from an Apple IIc Plus to a LaserWriter IINT using the following method.

1. Copied the software (AppleWriter 2.1, in our case) to a 3.5-inch disk.

2. Set up the LaserWriter IINT and set the switches to Diablo mode (SW1 DOWN, SW2 UP)

3. Connected to the Apple IIc Plus with an Apple IIe Printer-8 cable (Mini circ-8-to-DB-25 cable) and a Modem eliminator (DB-25 Male-to-DB-25 Female).

Note: If you have an Apple IIe Modem-8 cable, it will also work correctly.

4. Started up the software and set the parameters on the Apple IIc Plus serial port #1 to 9600 baud, 7 data bits, No parity and 2 stop bits. (Setting the port is done by using the Control-O menu, Option-J "Setting the Printer/Modem Interface", and entering 9600,7,n,2, Return.)

5. Loaded a file into AppleWriter and press Control-P, then np, to print.

The main reason you may have had difficulty printing with this particular hardware/software configuration -- given correct cabling -- is that you may have assumed the Apple IIc Plus serial ports default to a usable baud rate, as have previous Apple IIc systems.

When setting the Printer/Modem interface through AppleWriter, we noticed that the ports default settings are 0 baud, 8 data bits, no parity, and 2 stop bits. This needs to be changed to the configuration listed above before you can print.

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ImageWriter II: Maximum Interface Cable Length

I want to have an ImageWriter II printer directly connected to my Macintosh modem port (as a non-AppleTalk device), but have the printer physically located several yards away from the Macintosh. What is the maximum cable length for connecting an ImageWriter II directly to a Macintosh?

This article has been archived and is no longer updated by Apple.
Tech Comm has driven an ImageWriter/ImageWriter II at distances up to 12 feet without difficulty. The RS-232 standard specifies a maximum of 50 feet using the maximum voltage (+/-25V).

If one side of the output device is grounded, to convert the signal from RS-422 to RS-423 signalling, the printer should workable at (approximately) a maximum of 50 feet away.

(NOTE: Since most Macintoshes use the same output device, the 26LS30, this information is relevant for most systems.)

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TA40552_Lisa_Full_Backup_(TIL00464).pdf

Lisa: Full Backup

This article has been archived and is no longer updated by Apple.
A full backup of the Office System 2.0 or 3.0 copies all of your files on the hard disk, including any Workshop files you may have stored there. Backing up a 5-megabyte ProFile may require as many as 20-25 microdisks, while an internal 10-Megabyte disk could require more. Release 1.0 copies only your Office System documents.
Published Date: Feb 18, 2012

GS/OS: SCSI Device Driver Error Message

After I updated from GS/OS version 4.0 to 5.0, I received a strange error message -- "SCSI DEVICE NEEDS TO HAVE DRIVER INSTALLED" -- when starting up or reloading the desktop from a ProDOS 8 application. If I press RETURN, I can continue as if nothing is wrong.

I have tried various software fixes, including completely reformatting my 20MB hard disk and reloading it, but I continue to get this error.
This article has been archived and is no longer updated by Apple.
It's hard to be specific without knowledge of the exact procedures used during installation, or what type of hard disk is in use. However, the following are generally the reasons the error message is posted.

There's an option called "Install Everything Possible" in the GS/OS 4.0 Installer. If you choose this option, it's likely that the SCSI Hard Disk option gets installed as a part of the "everything possible" option.

GS/OS 5.0 uses the "Latest System Files" option to install the major portion of GS/OS -- GS/OS 5.0 doesn't have the "everything" option. This means that the "SCSI Hard Disk" driver installation must be selected independently of the System Files installation.

The "Apple IIGS System Software User's Guide Version 5.0" (Apple Part #030-1622-A) discusses troubleshooting in Chapter 9. Page 155 of that chapter states:

"SCSI device requires a driver. Please install the SCSI driver on boot disk and restart system."

This message indicates that you've connected a SCSI hard disk, but the current startup disk (or "boot disk" in computer jargon) doesn't include the "SCSI Hard Disk update." Press Return to continue starting up. When the Finder desktop appears, use the Installer to add the "SCSI Hard Disk" update to the current startup disk.

With GS/OS versions 6.0 and 6.0.1, you can still get the error message, and it still means that something is missing from the installation. SCSI drivers are still installed as separate items in most instances. If you have a SCSI device attached and you don't have a SCSI driver installed, you'll get this message.
Published Date: Feb 18, 2012

LaserWriter Driver: Will Not Print To LW With Password

Can the LaserWriter IINTX set an "exitserver" password? Is an exitserver password insufficient to prevent settings from being changed?

This article has been archived and is no longer updated by Apple.
The LaserWriter IINTX CAN have a password, and that password is sufficient to prevent settings in the LaserWriter from being changed.

More importantly, the only password in the LaserWriter family (PostScript) of printers is the system administrator password. If this password is set to anything other than "0", the LaserWriter will not work with the LaserWriter drivers from Apple. If the password is set to zero, the LaserWriter effectively has no password. The LaserWriter drivers expect the LaserWriter to have no password and will not print to a LaserWriter with a password.

Published Date: Feb 18, 2012

Macintosh Video Card: Modifying 8-Bit to NTSC Color Video

I hear that there are pinouts available for a cable that will modify an 8-bit Apple Macintosh Video Card to produce conventional NTSC color video as an unsupported feature. What are they?

This article has been archived and is no longer updated by Apple.
The information you are looking for is actually a CDEV/INIT and a documentation file. These are on AppleLink in a file called "32-Bit QuickDraw Demos" under the "Developer Services" icon. Here is the path:

Developer Services
Developer Technical Support
Macintosh
32-Bit QuickDraw
32-Bit QuickDraw Demos

The CDEV/INIT file is called "Macintosh II Video Utility", the documentation file is "Video Utility Read Me".

Here is the information included about the cable:

"You will need a special cable to connect an RS-170-compatible monitor (or VCR) to your Macintosh. One side must plug into the Apple Macintosh II Video Card. It must have a 15-pin male DB-15 connector. The other side must plug into your video equipment. Pin 5 of the DB-15 connector contains the RS-170-compatible monochrome video signal. Pin 6 is the shielding ground for this signal. Typically, you connect pin 5 to the central wire of your video cable, and connect pin 6 to the shielding braid."

"WARNING: It is possible to damage your video equipment and/or your Macintosh II by using an improperly constructed cable. If you are not familiar with video equipment, you should not try to make a special cable!"

Published Date: Feb 18, 2012

nFLU Virus: Information

Do you have any information concerning what to do about "nFLU", a new virus I have heard about?
This article has been archived and is no longer updated by Apple.
The nFLU virus is another clone of the nVIR B virus. (The "Hpat" virus is another example of an nVIR clone.)

There is a shareware program called "Disinfectant 3.7.1" available on most networks that removes this and all other known viruses from an infected system. Disinfectant 3.7.1 also contains a good description of all known viruses.

For information on downloading the latest version of Disinfectant refer to:
TIL aritcle 30487: "**Disinfectant: Macintosh Anti-Viral Utility**".
Published Date: Feb 18, 2012

Internet Router: AppleShare Print Server Memory Requirement

What are the memory recommendations for an AppleShare Print Server?

I know that you need at least 2MB in the machine to support up to five printers. Does more memory give you better performance? I want to run Internet Router software in the machine as well. (The server will be connected to the network with an Ethernet adapter.) What will this do to the memory requirements?

This article has been archived and is no longer updated by Apple.
Additional memory allows the AppleShare Print Server to capture more printers. It does not provide any speed improvement that we know of.

Here are some considerations for running the Internet Router in the same machine:

- It is recommended that you use 2MB RAM to run the router and the AppleShare Print Server, or to run the router and a mail server package concurrently. As long as you have 2MB RAM, you can also run the router, the AppleShare File Server, and any single foreground application, such as the Print Server.

- Best use of memory can be obtained by minimizing the INITs and desk accessories that run concurrently with the router.

- Run the router in Finder. MultiFinder runs desk accessories in the system heap, so you are likely to run out of memory, since the router driver and any other concurrently running process also takes memory from the system heap.

The following considerations refer to printing FROM the router machine. These considerations do not refer to a workstation printing, even if it reaches a printer through a router:

- Avoid background printing on a router machine.

- Do not attempt 32-bit color printing from a router machine.

- The LaserWriter driver 6.0 uses much more memory than the 5.2 driver.

Published Date: Feb 18, 2012

AppleTalk Phase 2: AlisaShare and PacerShare

Is it possible to run PacerShare without using AppleTalk for VMS 2.0?

I know that AlisaShare will run by itself (modifying the NETWORK parameter in the ATK$ROOT:[APPLETALK.ALISASHARE]ASPARAMS.DAT file) but will that change allow the server to run on an AppleTalk Phase 2 or Phase 1 network? If running the server directly on Ethernet (without the AppleTalk for VMS bridge process), it will not allow the server to run under AppleTalk Phase 2.

This article has been archived and is no longer updated by Apple.
From what we understand, the NETWORK parameter in the ASPARAMS.DAT file determines the network to which AlisaShare connects. A value of 1 specifies a virtual network configuration, and 2 specifies direct connection to Ethernet.

You will need multiple Ethernet controllers within a single VAX: one for the AlisaShare process, and the other for the AppleTalk for VMS process. This configuration allows a higher performance AlisaShare process connected directly to the Ethernet, while still allowing access to the AppleTalk for VMS virtual network. We see no relation of this parameter to the AppleTalk Phase 2 support.

PacerShare does not use AppleTalk for VMS, only AlisaShare does. Current versions of PacerShare and AlisaShare support AppleTalk Phase 1.

Published Date: Feb 18, 2012

TokenTalk NB Card: Type 1 Cable Interface

I need information on a type 1 cabling interface for Apple's TokenTalk NB Card.

This article has been archived and is no longer updated by Apple.
Here's some information about type 1 cable:

- Two-stranded, AWG #22, shielded twisted pair, solid wire, heavy jacket.
- Supports up to 260 stations, 33 Multi-Station Access Units (MAU) per ring.
- Tested up to 16M bps.
- Maximum lobe length: 330 feet.

To connect to our TokenTalk NB Card, you also need a Token Ring Adapter cable, which is shielded twisted pair about 8 feet long. One end of this cable is the IBM data connector to connect to an MAU; the other end is a DB-9 connector to our TokenTalk NB Card.

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Macintosh II Family: Fan Regulator Voids Warranty

I have heard of a small device that can be installed inside the Macintosh II power supply, with a remote temperature sensor mounted near the hard drive. The function of this device is to regulate fan speed based on internal temperature so that fan noise would be greatly decreased.

Does installation of such a device void Apple's warranty?

This article has been archived and is no longer updated by Apple.
Installing such a device definitely voids the warranty.

We strongly discourage installing such a device because of, among other reasons, the differences in temperature within the housing versus where the device's temperature pickup is located. This would be compounded by the quantity and locations of NuBus cards, RAM, and whether there is a hard disk drive or multiple floppy drives installed.

Published Date: Feb 18, 2012

Lisa: Incremental Backups

This article has been archived and is no longer updated by Apple.
An incremental backup theoretically copies only those files that have changed since the last backup. In Office Systems 1.0 and 2.0, the incremental backup does NOT work that way: it copies everything, just as if you had selected a full backup. Because of this problem, Apple recommends in the Lisa 2 Owner's Guide Release Notes: "Do not back up a hard disk icon to the diskette icon. Instead, make duplicates of the tools or documents you wish to back up, and then move the duplicates to the micro diskette icon."

At the end of an incremental backup with release 3.0 software, the error number 941/3 may be displayed. All documents that were changed since the last full backup are copied to the disk. These documents are accessible only from the desktop; they may not be used to restore the ProFile using the Office System 1 diskette's Restore routine. Lisa Office System version 3.1 corrects this problem, allowing you to restore your hard disk from backup diskettes if you wish.
Published Date: Feb 18, 2012

LaserWriter: Using 3rd Party Products To Restrict Access

I need a product that restricts access to a LaserWriter.

I know there is a hardware device that acts as a spooler and provides LaserWriter accounts for tracking printing, but I can't find any information on it. Do you know of this product? The main objective is to limit access to a LaserWriter. I know of the solution to change the type of LaserWriter via a PostScript code and then alter the LaserWriter file as well. If you know of any other software or hardware products, please let me know.

This article has been archived and is no longer updated by Apple.
We were unable to find one product that would fulfill all of your needs. However, what you want to do can be accomplished by using three products together.

Shiva offers zone security: putting the LaserWriter in its own zone with restricted access solves part of the problem.

Farallon's Traffic Watch allows the user to calculate traffic volume and source for a particular node.

Apple's print server software gives the user a page count for each job.

This is a less than perfect solution, but it does give you the results needed.

For more information, search under: "Farallon" and "Shiva"

Published Date: Feb 18, 2012

System 6 Chooser: Device, Name, Zone, Memory Limits

This article discusses device, zone, and name limits as displayed and controlled through the System 6 Chooser DA window (which would correspond to version 3.x of the Chooser itself).

This article has been archived and is no longer updated by Apple.
The following information pertains to Chooser versions 3.x:

The Chooser DA window consists of five separate sections:

1) The device type list.
2) The AppleTalk zone list (visible only if there are multiple zones).
3) The user name box.
4) The AppleTalk active/inactive controls.
5) The available devices name list.

1) The Chooser is able to display a maximum of 16 items in the Chooser device type list. This is the limit that is imposed by the Chooser itself, not by something interfering with the operation of the Chooser.

2) The Chooser allocates memory for the zone list dynamically, up to 32K. Each entry in the zone list uses 1 byte of memory for each character in the zone name, plus 1 byte. The Chooser uses this extra byte as a length byte. For example, the 7-character zone name "My Zone" uses 8 bytes of memory: 7 bytes for the characters and 1 byte for the length byte. The maximum length of a zone name is 32 characters. A 32-character zone name uses 33 bytes of memory.

Based on this information, if every zone had a 32-character name, it would be possible to have a maximum of 992 zones listed in the Chooser (32K / 33 = 992.97, remove the remainder). The maximum number of zones that can be displayed in the Chooser is wholly dependent on the length of the zone names being used.

3) The user name can be a maximum of 31 characters.

4) This one is self-explanatory; it controls whether or not AppleTalk is active.

5) Determining the maximum number of visible Chooser device names:

System 5.x and 6.x Choosers allocate a 512-byte buffer for the Chooser's list of available AppleTalk network device names. Each name in the buffer is embedded in an AppleTalk Name Binding Protocol (NBP) packet received by the Chooser from the selected device type. The NBP packet is called a "lookup reply", and is sent in answer to the Chooser's lookup broadcast for the selected device. An example is the selection of the device type LaserWriter driver, and the displayed LaserWriter object names.

When the 512-byte buffer is filled, this sometimes causes various names in the Chooser selection window to appear and disappear. When selecting the LaserWriter driver in this situation, a LaserWriter disappears and another appears approximately once each 1.5 seconds. This happens whenever there are more names than the buffer can hold. Because the lookups are usually sent in a series, whenever a device does not fit on the display list, the first reply received from a previous lookup is removed and replaced with the name of the device that did not fit. This process continues for each following lookup broadcasted by the Chooser. While the display list is also limited to 32 names, this is never reached when displaying devices like LaserWriters, because even with 1

character per name, the buffer is filled when 22 LaserWriters are displayed.

If you encounter the constantly appearing and disappearing LaserWriter situation, you can either break the network up into zones containing smaller numbers of the particular device, or reduce the length of some or all of the device names.

The buffer space used by each returned AppleTalk device is the length of the NBP reply packet returned by the device to the Chooser's lookup.

NBP LaserWriter Lookup Reply Packet Definition

Function and Tuple Count: 1 byte
NBP ID: 1 byte
Network Number: 2 bytes
Node ID: 1 byte
Socket Number: 1 byte
Enumerator: 1 byte
Object Field Length: 1 byte
Object: length of name
Type Field Length: 1 byte
Type: 11 bytes for type "LaserWriter"
Zone Field Length: 1 byte
Zone: 1 byte for zone "*" the NBP reply default

TOTAL 22 bytes + length of the LaserWriter name

A calculation for determining the maximum number of visible LaserWriters in a zone:

Number of visible LaserWriters = trunc(512/(22+(sum of name lengths / Number of LaserWriters))

If the LaserWriter names are all the same length, the calculation is simplified to trunc(512/(22+length)). The mean calculation (sum of name lengths / Number of LaserWriters) is not necessary in this case.

(NOTE: Trunc indicates that decimal values should be ignored. That is, a result of 12.8 indicates 12 LaserWriters.)

The calculation can be used for any other type of AppleTalk device, if the type length and the mean of the device names are known.

In Chooser 3.3.1 selecting the Apple LaserWriter driver displays:

Mean Name Length	Max Number of Visible LaserWriters
30	9
25	10
20	12
15	13
10	16
5	18

For information on the System 7 Chooser limits, search on System 7 Chooser.

Published Date: Feb 18, 2012

Chooser: NBP LaserWriter Lookup Information

This article discusses the performance of NBP lookups by the Chooser.

This article has been archived and is no longer updated by Apple.
Chooser broadcasts are performed when an AppleTalk device is selected from the Chooser.

In the case of the LaserWriter, the Chooser does an NBP lookup or a broadcast request every 1.47 seconds five times. At the end of each set of five NBP lookups, the LaserWriter begins another set of five NBP lookups. Each set corresponds to a unique NBP ID number.

The function of the ID and associated set of five NBP lookups is to allow for incomplete transmission of replies. The time period and retry values for AppleTalk devices are found in the -4096 GNRL resource of AppleTalk drivers. The LaserWriter uses $0B05. This means 11*8 ticks (Tick = 1/60th of second) for time intervals between lookups and five retries per NBP lookup or broadcast request.

Published Date: Feb 18, 2012

TokenTalk NB Card: Isn‘t Supported by Mac286, PC LAN Services

I have a Mac286 and a TokenTalk NB Card installed in a Macintosh IIx. Can I access typical PC LAN services, such as NETPRINT and NETUSE, or any other services that might typically be supported from PC LAN?

This article has been archived and is no longer updated by Apple.
The Mac286 card has no means of communicating with the TokenTalk NB Card or other NuBus cards, in general. Also, the PC LAN software has not been written to support the TokenTalk NB Card -- especially since it is not a PC bus architecture card, much less an IBM product.

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MacWorkStation 3.1: Interprets Semicolon As End Of Command

Regarding MacWorkStation 3.1 (specifically version b6):

I am sending a D010 with a dialog ID and item ID (for example, D010 209;3;), where item ID 3 is an editable text field, to get the text. However, my text contains some semicolons, which MacWorkStation uses as an end-of-line marker!

How can I return all of the text, including all of the semicolons?
This article has been archived and is no longer updated by Apple.
The only way you can send a semicolon and not have it interpreted as the end of a command is to have it enclosed within double quotes (";").

The MacWorkStation manual has the following example:

"This string contains a semicolon;"

The string you are sending must be the entire string parameter for that specific MacWorkStation command, although the command itself and any other parameters would be outside the quoted string.
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TokenTalk NB Card: Connecting To A 16MB Token Ring Network

Is there any way to connect Apple's 4MB cards to a 16MB Token Ring using a PS/2 as a source router?
This article has been archived and is no longer updated by Apple.
Currently, there is only one way to connect a Macintosh II with the Apple TokenTalk NB Card to a 16MB Token Ring network.

You must use an IBM-compatible computer with 16MB and 4MB Token Ring cards installed as a bridge between the 4MB Token Ring network that the Macintosh II is on and the 16MB Token Ring network. The PC needs to run IBM's Token Ring Bridge Program and be dedicated to this bridging function. (This works because we support source routing.)
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LocalTalk PC Card: Using It For IBM PC-to-VAX Connectivity

Is there any software for an IBM PC with LocalTalk PC Card that allows communication (terminal emulation/file transfer) with VAX machines not running AppleTalk for VMS and Alisa/Pacer -- that is, for example, a TCP/IP or VT100 emulation through LocalTalk ->Kinetics FastPath ->Ethernet?

This article has been archived and is no longer updated by Apple.

We are not currently aware of such a product.

Since the LocalTalk PC Card sends AFP calls to access the AppleTalk network, you cannot use it without an AFP-compatible server running on the VAX.

You will probably achieve better performance by connecting to the VAX directly over Ethernet or -- if that is cost-prohibitive -- over an RS-232 serial connection using an IBM PC terminal emulation package.

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Macintosh: How To Convert Database Files

I need to transfer database information to Microsoft Works from a Tandy system running an ENABLE-based program called Legis and a program called Q&A.

How can I do this?
This article has been archived and is no longer updated by Apple.
We are not familiar with either Legis or Q&A. However, transferring information from one database to another can be accomplished via several different methods and is fairly straightforward regardless of the method used.

The object is to find a common link between the two systems and their associated databases. This may be matching file formats, a common file format, the ability to import data from a text file, or being able to read an incoming data stream.

For your account, you may be able to use a common file format, such as DIF or SYLK, or save the database information to a text file and use the import feature within Microsoft Works to retrieve the information. In either case, you should be able to move the file from the Tandy to the Macintosh via the Apple PC 5.25 drive and Apple File Exchange.

If the account does not have access to an Apple PC 5.25 drive, the database-generated text file also can be transferred between the systems using either PC MacLink or a direct serial connection with a terminal package running on both systems.

Another method of moving the information would be to use a network solution, like TOPS or AppleShare PC, making the database files available to everyone. Again, to make this a working solution, a common file format is necessary.
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Apple Scanner: Controlling The Lamp During Scans

Is it possible to perform a scan with the Apple Scanner lamp off?

I am trying to scan some X-ray photographs. However, because they are photo-negatives, they are very dark, and the Apple Scanner lamp:

1) Is not bright enough to pick out the white detail.

2) Causes reflections off the shiny surface of the "acetate" film.

I can solve problem "1" by balancing a photographic lightbox on top of the Apple Scanner, but then I have to switch off the Apple Scanner lamp when scanning to prevent the reflections in problem "2".

Is it possible to control the lamp via software, or is it controlled by the Apple Scanner hardware? Can I simply remove the lamp from the Apple Scanner, or does it automatically stop operating when the bulb is broken or removed?

As a worst case, is it possible to modify the Apple Scanner board to switch the lamp on and off manually, and also fool the Apple Scanner into thinking that it is on?

This article has been archived and is no longer updated by Apple.

It is possible to control the Apple Scanner lamp through the control flags in the scanner driver. However, in normal operation, this function is controlled exclusively by the AppleScan software, and any changes would require either a modification to the AppleScan software (not a solution supported by Apple) or writing a custom scanner application.

As an alternative, it is also possible to remove the lamp from the Apple Scanner and still be functional with the AppleScan software.

Published Date: Feb 18, 2012

AppleShare Print Server: Installing "Server System"

The AppleShare Print Server Administrator's Guide refers to a "Server System" that should be used when installing a server.

What happens when a user wants to set up a server on a 68030-based machine that needs System 6.0.3? This is not provided for in the Server Software package. Since the standard System Software is the only way to obtain System 6.0.3, could this cause problems?

This article has been archived and is no longer updated by Apple.
When installing the AppleShare Print Server on a Macintosh 512Ke, it is important to install the System Software using the AppleShare Print Server installer disk. This guarantees that the AppleShare Print Server software is running in conjunction with System Software that supports both the Macintosh 512Ke and the Print Server software.

On the Macintosh Plus and later Macintosh systems, we recommend installing the System Software from a disk containing the most recent version of System Software available for that particular machine. For example, you should install System Software 6.0.3 for the Macintosh IIcx. Then install the AppleShare Print Server software.

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Apple Internet Router: Memory Issues Using with AppleShare

I have this configuration:

Macintosh SE/30
Dove internal Ethernet card (note--internal card, not the SCSI box)
AppleShare File Server
AppleShare Print Server
Apple Internet Router

All three applications are running on this machine.

1) With the AppleShare File Server and Printer Server and the Internet Router running, is 2MB the proper amount of memory for this configuration? Is there any benefit to having more?

2) Is this, in general, a recommended configuration? Can I expect the Internet Router to perform reliably on the Macintosh SE/30 with the Dove card? Are there any problems with the Internet Router on the Macintosh SE/30 with any Ethernet card?

This article has been archived and is no longer updated by Apple.
1) Memory considerations

- In general 1MB of RAM is sufficient for running the router. However, you should consider the following exceptions:

- You must use 2MB of RAM when running the router concurrently with the AppleShare File Server. You can add memory beyond 2MB, but that only increases performance of the file server and not of the router. The reason is that the file server uses all additional memory for its RAM cache.

- It is recommended that you use 2MB of RAM to run the router and the AppleShare Print Server or the router and a mail server package concurrently. As long as you have 2MB of RAM, you can also run the router, the AppleShare File Server, and any single foreground application, like a print server.

- To avoid memory problems, do not use MacroMaker on a 1MB router machine.

- Be aware that having MacsBug (or any other debugger) active reduces the amount of memory available to the router. Do not run MacsBug on a 1MB router machine or on a router that is also running the AppleShare File Server.

- To avoid memory problems, do not use 32-Bit QuickDraw on a 1MB router machine.

- Best use of memory can be obtained by minimizing the INITs and desk accessories that run concurrently with the router.

- Because of the way MultiFinder runs desk accessories, we recommend that you run the router in Finder. MultiFinder runs desk accessories in the system heap. This means that when you use the router desk accessory under MultiFinder, you are more likely to run out of memory because the router driver and any other concurrently running process take memory from the system heap.

2) As long as you have 2MB of RAM, you can also run the router, the

AppleShare File Server, and any single foreground application, like a print server.

The AppleTalk Internet Router was tested with a variety of third-party Ethernet cards, including Dove's. At this time, we cannot recommend their use in a Macintosh acting as a router because of driver anomalies.

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Macintosh IIci: RAM Requirements

Article Change History

09/30/92 - UPDATED

* To include additional information on the use of burst mode with Fast Page Mode RAM.

This article explains the RAM requirements of the Macintosh IIci. Part numbers for Apple labeled SIMM upgrades and service parts that meet these requirements are also included.

This article has been archived and is no longer updated by Apple.
?he increased speed of the Macintosh IIci is primarily due to two factors. The first factor is the increased speed of the 68030 CPU and 68882 FPU. Those chips are clocked at 25 MHz in the IIci.

The second is that the Macintosh IIci support 68030 burst reads to the on-chip data and instruction caches.

The 256 byte 68030 data and instruction caches are each organized in sixteen lines of four long word entries. The 68030 can save cacheable instructions or data into these long word entries. When burst mode is disabled, it takes five processor cycles to fetch each long word entry into the cache. Each entry is read into the cache, one at a time, as needed. To fill an entire cache line would take twenty cycles (5 + 5 + 5 + 5 = 20 cycles).

When burst mode is enabled, the on-chip cache entries are filled one line at a time. It takes five cycles to fetch the first entry, but it takes only two cycles to fetch each of the remaining three entries, resulting in a total of eleven cycles to fill the entire cache line (5 + 2 + 2 + 2 = 11 cycles). This mode is sometimes referred to as the "5 2 2 2" burst mode.

To satisfy the timing requirements of the 25 MHz 68030, the IIci requires a RAM speed of 80 ns or faster. To satisfy the requirements for burst reads, the IIci requires RAM that has a Fast Page Mode access type. Fast Page Mode (FPM) is a RAM access type that is necessary to support the "2 2 2" portion of the "5 2 2 2" burst mode access.

The use of burst mode with Fast Page Mode RAM gives the processor a maximum RAM access rate of 36.36 MB/sec. That access rate is always true for bank B. For bank A, it is achieved only when not using the built-in video circuits on the logic board; using a NuBus video card.

The built-in video circuits use a video buffer in RAM bank A. The effect of the video RAM cycles can decrease the processor's access to bank A by as little as 6% or as much as 65%, depending on the type of video display in use. Larger displays and display modes with more bits per pixel have a greater effect.

You will obtain better performance when using the built-in video circuitry by installing the larger SIMMS in bank B. For example, in a 5 MB configuration, put the 256KB SIMMS in bank A and the 1 MB SIMMS in bank B.

Ultimately, maximum performance can be achieved by adding a NuBus video card (high end / co-processor type).

If RAM is used in the IIci that is slower than 80ns, or does not support fast page mode, the system will eventually crash. Most of the RAM SIMM modules that are 80 ns have a Fast Page Mode access type. As a result, it

should be uncommon for users to unknowingly install RAM in the IIci that do not have this access type. However, it is likely that unknowing or curious users will install RAM SIMMs that are rated slower than 80 ns. In most cases, those users will find that the slower RAM may work for a short time, but the IIci unit WILL eventually crash with a serious system error.

There are several reasons why a Macitosh IIci will not always crash immediately on power up when slower RAM is installed. They include:

- Frequently, RAM speed is rated conservatively. As a result, a chip may actually be faster than it is rated under certain circumstances.

- Many of the RAM SIMMs that are available on the market for use in the Macintosh SE/30, II, IIcx and IIx, including some sold by Apple, are rated for 100 ns, which puts them close to the 80 ns requirements.

- RAM speed is higher in a cooler chip than in a warmer chip with the same rating. When the Macintosh is first turned on, the chips are cool. After the unit is turned on, the chips will heat up, which causes them to slow down.

The part numbers for Apple labeled SIMM upgrades and service parts that meet these requirements are listed below.

Finished Goods RAM Upgrade Packages:

Finished Goods Upgrade Size	Part Number
1MB, 80 ns FPM	M0291LL/A
4MB, 80 ns FPM	M5952LL/A
4MB (Parity), 80 ns FPM	M0294LL/A

Service Goods RAM SIMM Parts:

Service RAM Density	Part Number
256KB, 80 ns FPM	661-0519
1MB, 80 ns FPM	661-0520
1MB (Parity), 80 ns FPM	661-0546

To identify 80 ns chips, some RAM manufacturers indicate RAM speed on the chip with a number that is usually expressed in tens. For example, 80 ns chips are marked with an 8, 100 ns with a 10, 120 ns with a 12 and 150 ns with a 15. When the speed is marked on the chip, it is usually set apart from the chip part number with a dash or is positioned in a separate location on the surface of the chip. Also, some SIMM manufacturers indicate the RAM speed on the back of the SIMM board.

For most of the SIMM modules that Apple sells, RAM speed can be identified with one of the above methods. However, RAM speed of some third-party SIMM modules are not so explicitly marked on the chips or the SIMM board.

Identifying RAM that supports fast page mode is more difficult, because this characteristic is usually not explicitly printed on the chip or the SIMM board. In most cases this will not be a problem, because the vast majority of the 80 ns DRAM SIMM can be installed into a IIci support Fast Page Mode.

Although both of these pieces of information can be confirmed in the chip manufacturers' data book, most people will prefer to contact the SIMM vendor to verify that the modules are compatible with the IIci. Customers should avoid purchasing SIMMs that cannot be confirmed to be IIci-compatible.

TA40573_Macintosh_IIci_RAM_Requirements_(TIL04666).pdf

Many of the 256KB SIMM modules for the IIci will look different from the SIMM modules that we are accustomed to. Until now, Apple labeled RAM SIMM modules have contained eight RAM chips (8 chips x 256K x 1-bit each). Most of the Apple labeled 256KB, 80 ns, fast page mode RAM SIMMs will have only two RAM chips (2 chips x 256K x 4-bits each). Each SIMM module contains 256KB, but each chip contains four bits of each byte, instead of just one bit.

The 256K x 4-bit chips were chosen because 256K x 1-bit, 80 ns, fast page mode chips are not readily available.

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Macintosh IIci: RAM SIMM Configurations

This article discusses the different RAM SIMM requirements presented by the Macintosh IIci, and provides the RAM configurations that the IIci supports.

This article has been archived and is no longer updated by Apple.
In all previous Macintosh models that have RAM SIMM slots, there were configuration requirements that dictated the following:

- All SIMM boards within a bank must be the same density.

- Within a bank that contains RAM, all four slots in that bank must be filled.

- All SIMM boards must be installed in Bank A for configurations that fill only one bank.

- Higher density SIMM boards must be installed in Bank A for configurations that have different densities in each bank.

In the IIci, the first two restrictions still apply. However, the second two are not requirements for IIci RAM configurations. These restrictions have been eliminated, due to functionality provided by the Memory Decode Unit (MDU).

Following are the valid RAM configurations supported by the Macintosh IIci:

(SPECIAL NOTE: Some of the RAM configuration recommendations that are made below will be in direct opposition to configuration requirements on all previous modular Macintosh models.)

- 1MB: Four 256KB SIMMs can be installed in either bank. However, the built-in video feature requires that the RAM be installed in Bank A. If the memory is installed in Bank B, built-in video will be disabled, but the IIci will work fine.

- 2MB: Four 256KB SIMMs are installed in each bank.

- 4MB: Four 1MB SIMMs can be installed in either bank. However, the built-in video feature requires that the RAM be installed in Bank A. If the memory is installed in Bank B, built-in video will be disabled, but the IIci will work fine.

- 5MB: There are two possible 5MB configurations. The preferred is to install four 256KB SIMMs in Bank A, and four 1MB SIMMs in Bank B. This configuration is preferred because it minimizes the effects of video cycle stealing. The second is to install the 1MB SIMMs in Bank A and the 256KB SIMMs in Bank B.

- 8MB: Four 1MB SIMMs are installed in each bank.

4MB SIMM modules when available, can be used in the IIci. All of the above recommendations and requirements will still apply.

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EtherTalk Card: Problems with Macintosh IIcx/IIci

This article discusses the EtherTalk card (Revisions J and earlier) and its timing problem with Macintosh IIcx and IIci units.

This article has been archived and is no longer updated by Apple.
Revisions J and earlier of the EtherTalk card have a timing problem with Macintosh IIcx and Macintosh IIci units.

Symptoms of the problem are intermittent, and include: system hangs on boot, serious system errors, and exceedingly poor network performance.

Revisions K and later of the EtherTalk card have been modified so that they will not exhibit this problem.

The capacitance of a six-slot NuBus was factored into the timing mechanism of the EtherTalk card. Consequently, the capacitance level in a three-slot NuBus is lower, thereby effecting the EtherTalk card's timing.

As additional NuBus cards are installed into a system, the capacitance level is raised on the NuBus. As a result, the problem is less likely to present itself.

The most likely Macintosh IIcx and Macintosh IIci candidates for having the symptoms mentioned above are units with a single EtherTalk card installed and no other NuBus cards in the remaining two slots. This is a configuration that would be commonly used for routers, file servers, mail servers, and so on.

The only current solution is to use EtherTalk card revision K or later.

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TA40576_LaserWriter_II_Using_with_Windows__(TIL04669).pdf

LaserWriter II: Using with Windows 2.11

This article discusses the correct version of Windows to use with a LaserWriter II

This article has been archived and is no longer updated by Apple.
Microsoft Windows, used in conjunction with a LaserWriter II, sometimes has a problem of seeing ROM version I instead of PostScript 47, and thus refusing to print to it.

As of November, 1989, Microsoft UK has informed us that the latest versions of Windows (v2.11) and its PostScript driver (v3.1) do not suffer from this problem and will print to a LaserWriter II successfully.

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Lisa: Backup Problems

This article has been archived and is no longer updated by Apple.
This article outlines known problems both with backing up Office Systems 1.0 and 2.0 and with restoring from backups of those Office Systems.

Preferences is destroyed by restoring the hard disk from backups. The only way to replace Preferences is to do a full Install (i.e., erase the hard disk and reinstall everything). Instead of restoring the hard disk, then, we advise that you simply duplicate the documents on the desktop individually from the backup disks to the hard disk.

The Lisa 2.0 Owner's Guide, p. B36, item number 7, reads: "Everything on Internal Hard Disk, the Internal Hard Disk, is about to be erased." This error message in the manual is not correct. It does not erase the hard disk; it erases the microdisks. The correct message is displayed on your screen.

Sometimes the backup has difficulties on the 3rd or 4th disk: typically, an error message is displayed stating that there isn't room on the diskette, even though the diskette has just been erased. This seems to happen most often when (a) it's been a long while since installation of the software, (b) the system has hung at one time and a Repair wasn't properly performed, or (c) Office System 2.0 is being used, and some of the files being backed up are very large. (Office System 2.0 has been known to have problems backing up very large files.) Usually, the only recourse is to completely reinstall your software.

Backing up a file larger than 728 blocks onto microdisks is not possible with releases 1.0 or 2.0: as the system tries to copy these large files, it repeatedly asks you to "Insert the next backup diskette" and yet does no copying to these diskettes, because it's looking for a large enough microdisk to back up your entire file. If you have Office Systems 1.0 or 2.0, then, simply make duplicates of any files larger than 728 blocks and place them on your hard disk or onto an additional ProFile instead of trying to back them up onto microdisks. Alternatively, upgrade to Office System release 3.0, which has no problem backing up very large files: it knows how to split a large file into portions and back up the portions onto a series of microdisks.
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AppleShare File Server: Setting Up Using an Apple IIGS

I am having problems upgrading AppleShare File Servers with the new Apple IIGS System 5.0 software.

Here is what happens when I try to use the server:

1) When using the AppleShare on a 3.5-inch disk, everything works fine. I can log on, launch applications, save to the file server, print to the network printers, and log off the server by pressing ESCAPE.

2) When using either AppleShare with No Finder disk or self-booting over the network, I encountered the following situations:

a) The administrator can use the server as usual.

b) When trying to log onto the server as a user, after I type a name and password, GS/OS begins to load, then crashes with the following message:

"Sorry, system error $004E occurred while loading the start FST file. Restart."

After further tests, I found that I can log onto the network as a user only after the administrator has previously logged on and used the Quick Logoff feature.

I tried reinstalling the updates, but the problem persists. What's going on?

This article has been archived and is no longer updated by Apple.
The problems you report are most likely caused by not setting folder access privileges correctly on the AppleShare Server. For users to start up a workstation over the network, they must have See Files and See Folders privileges for both the GS/OS System and Icons folders and all folders within the GS/OS System Folder. Note that we mean the GS/OS system folder named "System", and not the Macintosh "System Folder" or "Server Folder".

If you installed the GS/OS files on the server as the user Administrator, then starting up as Administrator should work properly, because Administrator is the owner of all the files and has complete access. When you start up as any other user with different privileges, it fails, because that user cannot access any or all of the necessary GS/OS files.

The usual problem is not setting privileges on the folders within the System Folder or missing the Icons folder completely. From the error you describe, it sounds like you need to select the "Change all enclosed folders" option when setting the privileges for the System Folder. With this option selected, all folders within the System Folder will be updated to use the same privileges as the System Folder.

The reason other users could log on after the Administrator had previously started up and used Quick Logoff is that all of the necessary files have already been loaded into the Apple IIGS. Using Quick Logoff doesn't clear them from memory; therefore, when the next user logs on, there is no need to access those files.

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Macintosh: SIMM Thickness

I need to know the "thickness" of the SIMM boards for the Macintosh.

This article has been archived and is no longer updated by Apple.
The SIMM connectors are designed to accept 1.27 mm (.05 inch) thick memory SIMM expansion boards.

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HyperCard: Error 1277

I keep getting HyperCard error 1277 when I try to add a new card, even though there is enough hard disk space to add a new card. What could the problem be? Is there a list of HyperCard error codes where I could look this up?

This article has been archived and is no longer updated by Apple.
Error 1277 generally occurs when HyperCard tries to allocate space for an additional object and can't. It's usually the result of a corrupted stack. Our only suggestion is to use the recovery utility available on AppleLink.

Error codes in HyperCard are not available in list form because the codes are considered confidential.

For more information, search under: "HyperCard" and "Recovery"

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AppleShare PC 2.0: Compatible with PCLAN

This article discusses a method that allows AppleShare PC 2.0 and PCLAN to coexist.

(Some people have had problems running both PCLAN and AppleShare PC at the same time on the same machine. Both PCLAN and AppleShare PC try to install a network redirector to intercept file system calls to network drives.)

This article has been archived and is no longer updated by Apple.
To get AppleShare PC 2.0 and PCLAN to coexist:

You must load PCLAN first, then AppleShare PC 2.0.

However, you will get an error loading the REDIR.EXE and MINSES.EXE programs. The functions provided by these two modules are duplicated in the PCLAN program.

To solve this, edit the batch files created by the install program so that neither REDIR nor MINSES is loaded. You must run PCLAN first because its redirector is a superset of Microsoft's redirector included with AppleShare PC. AppleShare PC can use IBM's redirector, but IBM can't use Microsoft's.

(NOTE: A related question is whether or not PCLAN and AppleShare PC will run at the same time using the same Token Ring card. Unfortunately, version 2.0 of AppleShare PC will not -- IBM's PCLAN software doesn't "share" the Token Ring card.)

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AppleScan: Problem Enlarging Documents

I need some information about how to enlarge a scan area using AppleScan 1.0.2. on a Macintosh II using System 6.0.2.

The manual instructions state that you only need to click on the percentage selector to change the output size. The manual states that you can increase the size up to 400%. This would be great, but I can't seem to get past 100%. Help!

This article has been archived and is no longer updated by Apple.
The ability of AppleScan to enlarge and reduce images is based on the resolution of the scan. Page 196 of the "Apple Scanner Owner's Guide" outlines this relationship and states:

"The Reduce/Enlarge process works in tandem with the resolution you are using. Reduce/Enlarge changes the effective scan resolution, and the values you can choose vary depending on the resolution setting. If you reduce an image, the scanner detects fewer dots per inch; if you enlarge an image, the scanner detects more dots per inch."

If the scanned image resolution is set to 300 dpi, it is not possible to increase the size of the image. This requires the Apple Scanner to have a resolution beyond 300 dpi. However, if the scan resolution is set to 150 dpi, it is then possible to enlarge the scanned imaged to 200%, or, in effect, 300 dpi for the Apple Scanner.

The complete description of how Reduce/Enlarge works in conjunction with resolution is on pages 194 to 198 of the "Apple Scanner Owner's Guide".

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AppleShare 2.0 : CD-ROM Issues (3/94)

This article contains questions and answers about a number of CD-ROM issues and AppleShare 2.0. Most does not apply to AppleShare 3.0, or AppleShare 4.0.

This article has been archived and is no longer updated by Apple.

Q) I've got an AppleCD SC running on my AppleShare server. When I run the Administrator to prepare certain large CDs (such as the Boston Computer Society CD-ROM, 300MB and tons of files) for use with the server, I always get a -127 error.

I have no problem preparing and publishing simpler CDs, such as EDUCORP's, but I cannot get the BCS CD-ROM prepared for publication. It seems as though I'm reaching some type of AppleShare limit when the desktop files are being prepared. What's going on?

A) We tested the Boston Computer Society Macintosh PD-CD v2 and v4 discs with AppleShare 2.0.1; both worked flawlessly. We, too, have "prepared" numerous CDs for use as server volumes without difficulty. AppleShare file handling limits are significantly greater than the number of files that can be stored on a compact disc (search in the Tech Info Library under "Macintosh" and "maximum number of files" to get a explanation of the number of files the Macintosh OS allows).

Error -127 is a DS error, which is the equivalent of a system error for the file system and is of little help in identifying this problem.

Possible sources of the problem:

* You might have some INITs causing a conflict.

* You might have a damaged copy of the AppleShare Administrator or Server software, or an early version that doesn't support locked media. You should be using 2.0.1 or later.

* Your compact disc or discs may be damaged.

* The AppleCD SC or other hardware (logic board, RAM, server hard disk) may be malfunctioning.

* Your are using old or damaged copies of System Software, AppleCD SC software, and so on.

Q) How can I control the order in which volumes (CDs and hard disks) appear in the scroll box when logging into AppleShare?

A) At the server, devices are displayed in Finder order: startup volume first, followed by SCSI drives in descending order of SCSI address, followed by devices connected via the drive port in the order returned by the getVolInfo call.

At the workstation, the devices are displayed in exactly the opposite order, placing the startup volume at the bottom of the list.

Q) It takes me a very long time to prepare a CD for use with AppleShare. Sometimes the Administrator runs for 3 to 4 hours, and only after that tells you that it already knew about the CD. Your only choice is "OK", and then it still doesn't want to mount anyway!

Isn't there a way to prepare the CD index/desktop/privilege files -- or whatever it does when preparing a CD volume -- offline, so the server doesn't have to be shut down for hours?

A) We agree that it can be frustrating preparing and mounting large CDs. Unfortunately, there aren't really any shortcuts or workarounds, aside from preparing a series of CDs at one sitting to minimize startup time at a later time.

Your difficulties mounting might be related to the above, or possibly the AppleCD SC might not be "online" when the AppleShare program starts up.

Article Change History:
10 March 1994 - Made the article specific to AppleShare 2.0. Most issues do not apply to later versions.
Support Information Services
Published Date: Feb 18, 2012

A/UX: Available Removable Cartridge Drives

Is there a removable cartridge drive for use with A/UX?

This article has been archived and is no longer updated by Apple.
We know definitely of two companies that sells a removable cartridge drive that works with A/UX.

Advanced Information Concepts sells a drive called the AIC SlimLine, a 45MB removable hard-disk cartridge system that has A/UX drivers, and SlimLine II, a dual cartridge system.

The AIC Slimline uses the popular Syquest mechanism and cartridges with their own proprietary software. Their optional A/UX compatibility software allows Macintosh OS and A/UX partitions to coexist on a single cartridge.

MicroNet also makes a vast array of drives and tape backups that can be partitioned to run under A/UX or Mac OS.

For more information, search under: "Advanced Information Concepts" and "MicroNet"

Published Date: Feb 18, 2012

Apple Writer IIe: How to underline words

This article has been archived and is no longer updated by Apple.
To implement underlining in Apple Writer IIe:

1. Press the CTRL-P to get to the Print/Program Command Menu.

2. Type UT for "Underline Token", then type some unique character such as a backslash or tilde, and then press Return.

3. Press Return again to get back to the text. Insert the character you chose just before and just after the portion you want underlined: the first character turns underlining on, and the second turns it off. NOTE: You must check to see that your underline token doesn't appear anywhere else in the text so that you don't end up with underlined text where you don't want it.

4. Print the file; the portions between pairs of underline tokens will be underlined.

Some printers may not accept the character that Apple Writer's printing program sends to the printer to start and stop underlining. If your printer expects a special control character to turn underlining on and off, look in your printer's manual to determine which character that is; then, embed the control character before and after the portion of text you wish underlined:

1. Move the cursor to the place where you want the underlining to start.

2. Press CTRL-V; "A V" will appear on the Data Line at the top of the screen. Any control characters that you type at this time will be inserted into the text.

3. Press the control key along with the character that signals your printer to begin underlining.

4. Press CTRL-V to get back to normal mode.

5. Move the cursor to the place where you want the underlining to stop.

6. Press CTRL-V; then, type the control character that signals your printer to stop underlining.

7. Press CTRL-V to get back to normal mode.

8. Print the file; the portions between pairs of control characters will be underlined.

Published Date: Feb 18, 2012

Aristotle: When New Users Aren‘t Recognized

I set up an AppleShare network at a school. This network consists of one Macintosh SE/30 with 4MB RAM and an 80MB hard disk. There are 15 Apple IIGS computers set up as workstations over PhoneNET cabling.

On day 1, we input approximately 210 users (all in the student group except for one teacher). These all appeared in Aristotle, and we were able to set up classes (approximately 10 classes). Everything worked fine up to this point.

On day 2, we input approximately 12 more users. We put them into the Macintosh SE/30, assigned them to the student group, set their startup application, restored their startup access, and saved the users and groups. Aristotle, however, did not rebuild the user list to include these new people. We reinstalled Aristotle and AppleShare, and they still do not appear in Aristotle.

I have an identical setup at another site, so I do have experience with this system. I need a solution -- short of starting from scratch and putting all 227 users in again.
This article has been archived and is no longer updated by Apple.
There are several different reasons why Aristotle may not recognize new users that are added to the AppleShare server. Here are a number of important factors to check:

For all users starting up GS/OS from the server:

- AppleShare privileges must allow the user to See Files and Folders in the GS/OS System Folder and all folders within it. If the startup application is set to "Finder", AppleShare privileges must allow them to See Files in the Icons folder.

For all users on Aristotle:

- All users who will be Aristotle teachers must have their primary group set to "Teacher".

- All users who will be Aristotle students must have their primary group set to "Student".

- A Teacher's AppleShare startup application can be set to "Management" or "Finder", depending on your preferences. The startup application for students can be set to "Display" or "Finder", but setting it to anything other than Display tends to defeat much of Aristotle's purpose. The startup prefix for all of these users should be set to the folder that contains their individual startup applications.

Also:

- AppleShare privileges for the Users folder on the server must allow the Owner, Group, and Everyone to See Folders, and the folder's group should be "Teacher".

- The individual folders for Aristotle students and teachers within the Users folder must have their AppleShare privileges set to allow the Owner, Group, and Everyone to See Folders and See Files, and the Owner and Group to Make Changes. Also, the Group of these folders must be set to "Teacher". This is most easily accomplished by setting each user's group at the same time you create the user.

The AppleShare File Server software creates user folders as users are created. If you assign a user to a group when the user is created, then the user's folder is assigned to that group also.

- The Aristotle folder, and all folders within it, must have their AppleShare privileges set to allow the Owner, Group, and Everyone to See Files and See Folders, and the Owner and Group to Make Changes.

Chances are, one of these setups is incorrectly set in your system.
Published Date: Feb 18, 2012

Macintosh IIci: Calculating RAM Speed

Why is the RAM on the Macintosh IIci 80ns? My own mathematical calculations suggest a required speed of 40ns for a 25MHz chip and no wait states.

This article has been archived and is no longer updated by Apple.
Your math is correct: the 25MHz 68030 CPU clock has a period of 40ns per clock.

However, the minimum memory access cycle for Macintosh IIci is two clocks, which means that there is at least 80ns between memory accesses (one wait state). The maximum number of cycles between memory accesses is five clocks (three wait states).

For example, the Macintosh IIci performs a random read from DRAM in five clocks and a four long word burst read in 11 clocks -- five clocks for the first long word and two clocks each for the remaining three long words.

1st Long Word - 5 clocks or 3 wait states
2nd Long Word - 2 clocks or 1 wait state
3rd Long Word - 2 clocks or 1 wait state
4th Long Word - 2 clocks or 1 wait state

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TA40588_Pascal_Solutions_for_Resizing_Windows_(TIL04683).pdf

Pascal 1.3: Solutions for Resizing Windows

This article contains sources for information on resizing Pascal 1.3 windows.

This article has been archived and is no longer updated by Apple.
The default console driver for Pascal 1.3 does not support resizing the text window; however, there are other ways to accomplish that functionality, including implementing an attached console driver.

The Pascal Device Support Tools from APDA shows how this is done. Another example is in the Super PILOT Special Edition source code, which is licenseable.

For more information, search under: "APDA"

Published Date: Feb 18, 2012

LaserWriter IINT: How To Print from Sun 360 Under UNIX

This article discusses how to print to a LaserWriter IINT from a Sun 360, under UNIX.

This article has been archived and is no longer updated by Apple.
Here is a tip on how to get a LaserWriter IINT working with a Sun 360 system under UNIX.

The problem most often described is that the Sun provides PostScript to the LaserWriter, which begins imaging the job (green light flashing) but nothing further happens.

The cause of the problem is probably that the UNIX spooler was adding a header to the print job. After toggling the option off, the LaserWriter IINT should work as expected.

Published Date: Feb 18, 2012

AppleShare File Server: Increasing Speed Bottlenecks

I am having performance difficulties using a Macintosh Plus as a network server.

The network is correctly set up, and the load is fairly low (that is, there are only about five users on it).

One possibility is that the problem is caused by using a CPU that is not fast enough for the high performance of the 140MB Rodime external drive. Macintosh IIx systems are often recommended as servers, even for small networks.

I would have thought that the bottlenecks would be the disk performance (all that jumping around to meet different requests) and network performance (particularly on LocalTalk), not CPU performance, and that small networks users would get better value for their money if they used the Macintosh IIx as workstation.

I understand that the drive has to be formatted on its target machine, and I understand that the transfer rate for drives is faster on Macintosh II machines than Macintosh SE systems (but still the network is a bottleneck).

Could you give me some advice on this?

This article has been archived and is no longer updated by Apple.
Access time, CPU speed, and network throughput all affect the "speed" of a network. It's difficult to determine just which one of the three elements mentioned will result in the largest performance increase.

However, if you are restricted to LocalTalk, and already have the Rodime drive, the only way to improve the network performance is to use a faster CPU.

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RS-170 Versus NTSC Video Standards

This article contains information about the RS-170 monitor extension software for the Monitors CDEV.

This article has been archived and is no longer updated by Apple.

RS-170 is sometimes described as "the interlaced 60Hz video signal standard used for broadcast video in America."

This statement is a little misleading. RS-170 has not been the broadcast video standard in the United States for more than twenty years. RS-170, drafted in 1957, is a video signal developed by the Engineering Industries Association as a standard for monochrome (black and white) television studio facilities.

RS-170 can be recorded using the "Video In" jacks of most video tape recorders. The Macintosh II Video Card can generate a signal that is very close to the exact specifications of the RS-170 standard--close enough so that it can be displayed on most RS-170 monitors, recorded on most RS-170 video tape recorders, and so on. Unfortunately, the minor deviations from the exact standard causes problems with some video equipment.

Twenty years after the drafting of RS-170, the EIA video signal standard proposal RS-170A evolved into what is known today as NTSC. NTSC is the color television standard of the National Television Standards Committee, and is the standard now used for broadcast video in America. This standard is the result of combining three RS-170 signals into a single encoded color video signal.

While RS-170 signals are compatible with most of today's NTSC video products, it is NOT broadcast video, NTSC video, or color video. Not knowing this fact can lead to confusion.

For more information, search for "Macintosh and Video Overview".

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Macintosh Portable and PowerBook: ADB Mouse Q & A 3/93

This article contains questions and answers about ADB mouse devices and the Macintosh Portable and the Macintosh PowerBook.

This article has been archived and is no longer updated by Apple.

Q) Can I use the low-power ADB mouse that is available for the Macintosh PowerBook (and originally shipped with the Macintosh Portable) with other computers in the Macintosh family?

A) Yes, you can use the low-power mouse with ANY Apple computer that has an ADB port. It is equipped with a ferrite EMI filter in the ADB connector to meet EMC standards specifically for the Macintosh Portable and PowerBook.

Q) Can I use a standard ADB mouse with the Macintosh Portable or PowerBook?

A) There are two standard ADB mouse devices available. One of these is low-powered. You should not connect either of the standard mouse devices to the Macintosh Portable or the PowerBook. This violates the FCC specifications and would draw too much power if it was not the low-power model.

Q) Is there any visual way I can distinguish between the mouse devices?

A) Yes:

* The standard mouse has an ADB connector that is approximately 0.5 inch long.

* The standard low-power mouse also has an ADB connector that is approximately 0.5 inches long and there is a low-power symbol (a half circle with a dash across the top) on the product label.

* The low-power mouse has an ADB connector that is approximately 1 inch long and also includes the low-power symbol(a half cirlce with a dash across the top) on the product label.

Article Change History

10/08/92 -Revised to include the PowerBook and clarify differences between the two low-power ADB mouse devices.

Support Information Services

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Lisa 2: Possible Problems With The Upgrade Kit

This article has been archived and is no longer updated by Apple.

1. Symptom: Operating system error 10726, or error 82.
Problem: Bad motherboard-ProFile interaction.
Solutions:

A. Replace the motherboard with an upgraded one. (Upgraded motherboards are distinguished by resistor packs around the parallel port.) Also make sure that the system has an I/O board with the resistors clipped and the proper boot ROMs installed.

B. Use a different ProFile.

2. Symptom: CPU boot error 43.
Problem: Bad CPU-boot ROM interaction.
Solutions:

A. Replace CPU board with upgraded CPU board.

B. Use the original Lisa boot ROMs. The only noticeable differences between using the old (version D) boot ROMs and using later revisions are (a) slightly different icons displayed in the Startup Menu, and (b) an apparent option to boot from two drives, though only one drive exists. Careful, though! If you select the top drive, the system hangs and must be reset.

3. Symptom: Blank screen when attempting to boot system after retrofitting.
Problem: Incorrectly labelled or placed CPU ROMs.
Solution:

Verify that the CPU ROMs are installed according to the directions. If they are correctly installed, one or both may be mislabelled. In that case, simply use the old version D boot ROMs instead.

4. Symptom: System goes through self-test, then hangs.
Problem: System is trying to start from nonexistent drive
Solutions:

A. If you're using your old CPU ROM:
Reset the system and tell it specifically what drive to boot from. Preference settings, such as the correct time and the default startup device, may have been lost when you unplugged the sytem to swap the chips. Since Preference's startup default is drive 1 with the old CPU ROMs, the system probably hung while booting, since (of couse) there is no drive 1.

B. If you have the new CPU ROMs installed:
a. Reinstall the software.
b. Test the memory boards with LisaTest or the extended memory board test.
c. Test the memory board #2 by swapping it with with memory board #1 or with one from your spares kit.

Published Date: Feb 18, 2012

Guided Tour System Disk Bombs

Whenever I try to run a Guided Tour for an Apple peripheral I bought several years ago, my Macintosh freezes up. The System Folder on the Guided Tour disk, which I am trying to boot from, is 4.1.

This article has been archived and is no longer updated by Apple.
You probably have a Macintosh which requires a more recent version of system software than was included on your Guided Tour disk. A workaround is, instead of booting from the Guided Tour floppy, to drag the Tour Folder from the Guided Tour disk to the hard disk. While still running under the System Folder on the hard disk, launch the tour by double-clicking on its icon (looks like a movie projector).

This workaround should work with several older Guided Tour disks, such as those for the Apple Scanner and the LaserWriter IISC.

Published Date: Feb 18, 2012

TokenTalk NB Card: Range of "Burned In" Addresses

I have two questions about the TokenTalk NB Card:

1) What is Apple's range of "burned in" addresses for the TokenTalk NB Card? I have a customer who has the IBM LAN Manager software and wants to identify the newly installed Macintosh systems by their addresses.

2) In the LAN Minds binders, there was mention of a CDEV that comes with MacAPPC and MacDFT that allows the identification and changing of the addresses associated with the TokenTalk NB Card. Can I have some more information?

This article has been archived and is no longer updated by Apple.

1) The IEEE 802 committee has assigned Apple the address range of "5000E0000000" to "5000EFFFFFFF". This gives Apple over 268 million possible Token Ring network node addresses.

2) The CDEV in question is called "Token Ring" and will be included with MacAPPC but not with MacDFT. The MacDFT CDEV has all the functions of the Token Ring CDEV plus the MacDFT specific features.

Published Date: Feb 18, 2012

Apple II: Using a Switchbox With ImageWriter II

I am having problems with my Apple II, switch boxes, and ImageWriter II.

What actually is the difference between the ImageWriter and the ImageWriter II?
Is there solution guaranteed to work?

Do you know of anybody who is having success with ImageWriter IIs and switch boxes?

This article has been archived and is no longer updated by Apple.
The workaround is to use XON/XOFF handshaking.

Following is an explanation of what happens when switching between an Apple IIGS and an Apple IIe. Also included is an explanation of why this may not be a problem with ImageWriters, and why a MicroBuffer may cure this as well.

Set-Up:

Our configuration to test this problem was an Apple IIe equipped with a Super Serial Card, an Apple IIGS, and an ImageWriter II, along with two commercial switch boxes. Line status was monitored with a Data Specification RS-232 Break-Out box. A Fluke 8050A Digital Multi-Meter was used to measure the voltage levels. Software used was AppleWriter II with the same file open on both systems.

The Test:
_____

When switching between the systems, transitions were noted on the Transmit line, which caused DTR from the printer to go into the high state, effectively shutting off communication with the connected computer. If the printer does a reset in between the systems, the now-connected system prints correctly. If there is no reset when switching, it is necessary to reset the printer by either deselecting/selecting, as you stated, or by powering off the printer, and powering it on again. Either of these actions resets the DTR line and re-establishes communications with the computer.

Our first thought was to use a switch box with a make-before-break switch. The reason this would not work with Apple IIe and Apple IIGS systems connected is the difference in voltage levels between the systems. The Apple IIGS system output device, AMD 26LS30, is supplied with +/-5VDC, while the Super Serial Card output device, TI 75189, is provided with +/-12VDC. This means that the Apple IIGS outputs -4.7 volts for a "Low" signal while the Apple IIe outputs -9.7 volts. When the switch is thrown from one position to the other, here's what happens:

Ground Level _____ _____
-4.7 __/\\ /_____
\\ /
-9.7 __ __

GS-> IIe IIe-> IIGS

With the switch type a break-before-make, when the switch opens between contacts, the voltage level rises to Ground, then drops to a Low level again. This positive transition to Ground causes the printer to see either a start bit or a DSR level shift from the computer, which then sets DTR false. If the switch box is a make-before-break switch, there would be current flow from the Apple IIe into the Apple IIGS output because of the different voltage level in the output "Low" signal, which could cause damage to the interface chips in the

Apple IIGS.

XON/XOFF works because the printer sends/receives the XON/XOFF handshaking over the normal data communications lines, pins 2 and 3, and even though these lines are affected by the level transitions caused by the switch action, these transitions are not recognized as XON/XOFF by the printer or the computer. Because the equipment doesn't see these transitions as requests to halt data flow, there is no attendant response to incorrect data by the printer, and the information flow continues.

The ImageWriter has 75189 receiver chips installed, functionally equivalent to the 1489 Line Receiver, which are much less sensitive to level transitions because they are designed to operate at lower frequency limits. This causes them to be much more tolerant of the level transitions that occur during the actual time of the switch. ImageWriter IIs have 26LS32s for receivers. They are designed for higher speed use, and thus are much more sensitive to the level transitions occurring. This is our interpretation of why this problem does not exist with the ImageWriter.

A MicroBuffer might cure this problem because the ImageWriter II responds to the level transitions occurring during the switch time, but when this transition is sent to a buffer, it knows it is not data, so it ignores the change in potential between connections.

To use XON/XOFF with older software, it is necessary to use a pre-boot program to set up the Super Serial Card before using the software. On the Apple IIGS, if you cannot gain access to the Control Panel from within the application, the pre-boot needs to be used there, too.

The pre-boot program should look like this in DOS 3.3 or ProDOS:

```
10 D$=CHR$(4)
20 PRINT D$;"PR#1"
30 PRINT CHR$(9);"X E";CHR$(13)
40 PRINT D$;"PR#0"
```

Enter this short program into the system in immediate mode prior to starting up the systems, or save it on disk as either a HELLO (DOS 3.3) or STARTUP (ProDOS) program to run before the software boots.

Bottom Line

Change the ImageWriter II to XON/XOFF handshaking by setting SW 2-3 Open, and the problem of not being able to print from multiple systems should vanish. It is less convenient, but we have not been able to make the setup fail using this method.

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TA40597_HyperCard_InBox_Incompatibilty_(TIL04693).pdf

HyperCard: InBox 2.2 Incompatibilty

This article discusses an incompatibility problem between HyperCard and InBox 2.2 under System Software 6.0.4.
This article has been archived and is no longer updated by Apple.
A Macintosh running HyperCard 1.2.5 and System Software version 6.0.4 hangs when HyperCard is the active application in MultiFinder and the user receives an incoming InBox 2.2 memo, triggering Inbox's "audible warning".

The problem persists when the same configuration is used with HyperCard 1.2.2 under the same system software (v6.0.4), so it may be caused by the interaction of InBox and the system software.

Turning off the audible warning in InBox eliminates the problem, and is the only solution to the problem as of November of 1989.
Published Date: Feb 18, 2012

TokenTalk NB Card: How the Confidence Test Works

After installing the SMB File Transfer software, I tried to run the TokenTalk NB Card Confidence Test. The card failed the test. (It passed the test before installing SMB.)

Following the failure, I was unable to access the AFE/SMB software. The message given was specific, and indicated that access to the Token Ring software was not available.

Restarting the Macintosh and accessing the AFE/SMB software resulted in immediate access to the SMB server (Normal operation).

I tried the confidence test again and it failed. Another attempt to access the AFE/SMB software was also unsuccessful.

It appears that there is an incompatibility between the SMB software and the confidence test -- or am I doing something wrong?

This article has been archived and is no longer updated by Apple.
In our quick test, a TokenTalk NB Card also failed the Confidence Test when the test was launched from a hard disk. N&C QA provided us with the following information:

Such results may occur if the Confidence Test launching instructions are not strictly followed because of two inherent characteristics of the diagnostic:

1) The Confidence Test is destructive by nature; therefore, the Macintosh must be restarted after running the test.

2) The Confidence Test expects the TokenTalk NB Card to be in an idle state; therefore, the test must be run before the TokenTalk NB Card is used. Any software using the TokenTalk NB Card will interfere with the Confidence Test and cause the test to indicate that the card is bad. (Once installed, Token Ring software may start using the TokenTalk NB Card at startup. So, if one runs the Confidence Test after starting up from a Token Ring software installed disk, the Confidence Test may indicate that the card is bad.)

The trick is to restart from a disk that has no Token Ring software installed, like the User Confidence Test disk, and to restart the Macintosh after running the test.

For more information, refer to the TokenTalk NB Confidence Test's initial dialog and the Apple TokenTalk NB User's Guide (page 18).

Published Date: Feb 18, 2012

Apple SCSI Drives: Why Hard Drive Access Time May Vary

What is the "average access time" of internal HD40 SC drives, especially the HD40 SC found in a Macintosh SE/30?

This article has been archived and is no longer updated by Apple.
The hard disk drive specifications that Apple supports are those published in our literature. The Macintosh Internal Hard Disk HD40 SC is rated with an average seek time of 30 milliseconds in literature dated February 1989. This doesn't necessarily mean that all drives will be that exact speed -- just that we claim they'll be at least that fast.

Our computers may ship with different hard drives during their product lifetimes. In the case of the Macintosh SE/30, customers may have received a Quantum, a Seagate, or a Sony. Each of these drives performs similarly, but mild differences are detectable using certain benchmark tests. The most noticeable difference in actual day-to-day operation would probably be the unique sounds made by each drive: the overall performance should not differ all that much.

Many factors influence which drive a customer receives with their Macintosh. When a drive manufacturer is unable to produce adequate quantities for us, we'll use another manufacturer. Sometimes drives are dropped from our approved hardware lists for one reason or another, and others are added. It is almost impossible to predict which drive a Macintosh will have.

The service situation is also difficult to predict. Our pool of service hard drives changes over time, much the same as our pool of new product drives does. All that is guaranteed is that our customers will receive replacement drives that are compatible, and that will match or exceed our published specifications.

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TA40600_MacTCP_Ethernet_And_IEEE_Packets_(TIL04696).pdf

MacTCP: Ethernet And IEEE 802.3 Packets

To be useful in our environment, every IP implementation must use an "Ethernet-style data link layer (EtherType field)" type packet instead of the "IEEE 802.3/2 data link layer (Length field and SAPs)" type packet.

Which data link layer does MacTCP's IP use?

This article has been archived and is no longer updated by Apple.
MacTCP, when using the Ethernet link level protocol as selected via the MacTCP CDEV, always uses Ethernet-style packets. We are not aware of any implementations of TCP/IP that use the IEEE 802.3 style packets.

When using the EtherTalk 2.0 link level protocol with MacTCP, IEEE 802.3-style packets are used. These packets have AppleTalk encapsulated in them, and they must be decapsulated by a DDP/IP gateway, such as a FastPath. These packets then are sent to the destination IP address in Ethernet-style packets.

(NOTE: The DDP/IP gateway needs to be AppleTalk Phase 2-compatible to work as described above.)

The only time IEEE 802.3-style packets are used is when using EtherTalk 2.0. These packets are seen only by other EtherTalk 2.0 nodes. EtherTalk 1.x uses the Ethernet-style packets.

Published Date: Feb 18, 2012

CE QuickMail: Apple Tape Backup Incompatibility

This article contains information about a QuickMail/Apple Tape Backup problem.

This article has been archived and is no longer updated by Apple.
CE Software's QuickMail 2.0 server INIT causes the Apple Tape Backup software to freeze or crash the system when it is launched.

As of November of 1989, the only known workaround is to remove the QuickMail server INIT from the System Folder and restart the machine before attempting to back up the server.

Published Date: Feb 18, 2012

Macintosh Portable: Lead Acid Battery Alternative

If the lead acid battery of a Macintosh Portable is removed, and the 9-volt battery is replaced with an AC-to-9-volt adapter (plugged into the wall), can the machine still run? This would allow the user to make the Macintosh Portable a lighter, but transportable only, computer.

This article has been archived and is no longer updated by Apple.
Apple recommends that the Macintosh Portable NOT be used without the internal lead acid battery. The battery is always in use even when the Apple Power Adapter is connected.

The Apple Power Adapter provides 7.5 volts DC at a nominal current of 1.5 amps, peak of 2 amps. This adapter will not adequately power the Portable without the lead acid battery installed.

It might be possible to use an AC/DC 9-volt adapter to power the system, thus eliminating the need for the lead acid battery, but the only gain from this would be the 3-pound reduction in the weight of the system.

Any weight savings obtained by removing the battery would be negated by the size and weight of a 9-volt adapter of the appropriate capacity, and not being able to use the machine without AC power available. These size, weight, and convenience factors seem to be the primary reasons for having a portable machine.

Published Date: Feb 18, 2012

TokenTalk NB Card: Using With MacTCP

Can I use a TokenTalk NB Card with MacTCP? I would like to encapsulate IP packets in TokenTalk packets and route them through an AppleTalk Internet Router to a DDP-IP gateway, such as the GatorBox.

I know MacTCP is unable to use the TokenTalk NB Card directly, but I want to encapsulate IP in DDP and strip the AppleTalk off at the gateway.

If that is not possible, can I go from LocalTalk to the router to a Token Ring backbone to a router to LocalTalk to a DDP-IP gateway?

This article has been archived and is no longer updated by Apple.
Yes, you can use the Apple TokenTalk NB Card with MacTCP if TokenTalk has been selected via the Network CDEV. (We have tested this configuration with a GatorBox but not with a FastPath 4.)

NOTE: It is important to remember that MacTCP 1.0 will not work across a router, including the AppleTalk Internet Router, if class C addressing is used. Class A and class B addressing, however, work properly.

Published Date: Feb 18, 2012

AppleWorks: Settings and codes for Star Daisy Wheel Printer

This article gives the settings and codes for the Star Daisy Wheel Printer.
This article has been archived and is no longer updated by Apple.
Do not change the default settings of the Custom printer except for Platen Width, which should be changed to 11 inches.

Menu Item	Value	Entry
1. Characters per inch	10	[ESC]B[CTRL-A]^
1. Characters per inch	12	[ESC]B[CTRL-B]^
1. Characters per inch	17	[ESC]B[CTRL-C]^
2. Lines per inch	6	[ESC]1^
2. Lines per inch	8	[ESC]0^
3. Boldface	begin	[ESC]G^
3. Boldface	end	[ESC]H^
3. Subscript	begin	[ESC]S[CTRL-A]^
3. Subscript	end	[ESC]T^
3. Superscript	begin	[ESC]S[CTRL-@]^
3. Superscript	end	[ESC]T^
3. Underlining	begin	[ESC]-[CTRL-A]^
3. Underlining	end	[ESC]-[CTRL-@]^

Published Date: Feb 18, 2012

LisaGuide: Startup

This article has been archived and is no longer updated by Apple.
IMPORTANT FACT: The LisaGuide diskette doesn't contain any system startup instructions, so if you try to start LisaGuide solely from the diskette, a crossed out Lisa icon and an error 10735 is displayed.

To boot LisaGuide: Startup From... the ProFile with your LisaGuide diskette in the drive.

If you're still unable to boot LisaGuide, your Office System or your LisaGuide diskette may be damaged. First, repair and reinstall the Office System startup software as described on p. D50 in the Lisa 1 Owner's Guide or p. C24 in the 2's guide; then, repair the LisaGuide diskette. If LisaGuide still doesn't boot, replace the diskette.
Published Date: Feb 18, 2012

Macintosh Keyboards: Enter Key Problems Are Key Code Difference

I am experiencing a problem with the Macintosh Portable. It seems that the Enter key on my Macintosh Portable does not act like an Enter key on any of our other keyboards.

I am using terminal software that requires the Enter key. Under MacWrite II, the Enter key causes a page advance. Can you explain?

This article has been archived and is no longer updated by Apple.
The ASCII code generated by the Enter key is $03, which is consistent with all of Apple's keyboards that have Enter keys. The virtual key code, however, is not the same on all Apple keyboards. Here is a list of Macintosh keyboards and the virtual key codes their Enter keys return:

Macintosh Keyboard	Virtual Key Code
Macintosh 128K, 512K Keyboard	$34
Macintosh 128K, 512K Numeric Keypad	$4C
Macintosh Plus Keyboard	$4C
Macintosh Standard Keyboard (ADB)	$4C
Macintosh Extended Keyboard (ADB)	$4C
Apple Keyboard II	$4C
Apple Extended Keyboard II	$4C
Macintosh Portable Keyboard	$34
Macintosh Portable Numeric Keypad	$4C
Macintosh PowerBook 100 Keyboard	$34
Macintosh PowerBook 140 and 170 Keyboard	$34

The fact that the Enter key next to the Space bar on the Macintosh Portable returns a virtual key code of $34 is most likely the reason the terminal software is having a problem.

These keys have different virtual key codes because it is possible to have two different Enter keys with these keyboards. The authors of the terminal software are not taking into account the possibility of a different virtual key code for the Enter key -- they are looking at the ASCII code of the key being pressed.

Published Date: Feb 18, 2012

GS/OS 5.0: King‘s Quest Compatibility

I have an Apple IIGS, and I would like to use King's Quest (from Sierra ON-LINE). Running under System 5.0 with only the icons of 5.0 and AppleWorks GS installed, I tried to install King's Quest and its icons, but the computer always hangs and I have to restart.

Without the Icons, the system performs OK. The same setup with all Icons worked fine on version 4.0 of the operating system. Can you explain?
This article has been archived and is no longer updated by Apple.
There are a couple of things to watch when using some of the King's Quest programs:

1) If your version of King's Quest includes the program and icons, eliminate all of the King's Quest icons from your hard disk -- except for the program icon. Deleting these icons will not effect the functionality or performance of the program; these icons were used by the programmer when writing the program, and were not removed before the program disk was duplicated for distribution.

2) When using GS/OS 5.0, you must have 768K or more of memory (minimum used to be 512K). Alternatively, run the program from its program disk (which contains an older, less memory consuming version of the OS).

Good Luck King Graham, Gwydion, and Rosella!
Published Date: Feb 18, 2012

Macintosh II Family: Why Color Icons Are Black and White

I would like to know why my color monitor with a 256-color video card displays a black Apple icon instead of a color icon for the DA menu. Also, why is the startup "Welcome to Macintosh" Macintosh icon not in color, although it is a color system?

This article has been archived and is no longer updated by Apple.
The most likely cause is that your Monitors control panel is set to Black & White. If the Monitors control panel is set to Black & White, the Welcome to Macintosh icon and the Apple icon will be black. To get color icons, all you need to do is set the Monitors control panel to either 16 colors or 256 colors.

Published Date: Feb 18, 2012

Network Addressing Without Using A Router

Is it possible for EtherTalk 2.0 or TokenTalk 2.0 to address more than 253 nodes without the benefit of a router? I understand that network numbers 65,280 to 65,534 are used only when a router is not present. If it is possible, how is network addressing accomplished?

This article has been archived and is no longer updated by Apple.

Operation Without a Router

If a node has a hint stored in parameter RAM, the node uses the AppleTalk Address Resolution Protocol (AARP) to determine if the address is still unique. If the address is unique, the node can begin communicating on the network. If the address is not unique, the node continues as if it had no hint.

When a node doesn't have a hint node address stored in parameter RAM, the node determines its address by first determining its network number, the first 16 bits of its node address. In the absence of a router, the node picks a network number from the startup range. This range is specified to be 65,280 to 65,534 ($FF00 to $FFFE).

A node then picks a node ID in the 0 to 253 ($00 to $FD) range. As in the past, a node ID of 0 is reserved to mean "send to myself", and 255 is reserved for broadcasts. With AppleTalk Phase 2, 254 is also reserved for internal use.

The node now has a node address in the form $FFxxyy, where xx is the last part of the network number, and yy is the node ID. The node uses AARP to determine if any other nodes on the network are already using that node address. If no other nodes are using it, then the node adopts that as its node address. Otherwise, it tries a different node address.

For more information, look in the "LAN Minds, Volume 1" binder. (The above and related information can be found under tab 2 on page 14).

Published Date: Feb 18, 2012

HDBackup: Problem and Solutions

HDBackup does not always ask for each disk when backing up or restoring a 1.9MB FileMaker II file. Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
We were unable to duplicate this problem.

We tested HDBackup 1.1 with System Software 6.0.2 on a Macintosh II, running MultiFinder and Finder. We were able to back up a variety of sizes of FileMaker files and 'other applications' files that ranged in size from a few K to a few that were so large they required more than one disk to hold them. We backed up using all of the options: all files, changed files, and a single file. We restored using both options: all and a single file.

There are some known problems, however, that can confuse users or jeopardize their data. You may be encountering one or more of these problems.

If you insert a disk containing your backed up information when just running the Finder or MultiFinder, you may never be able to restore from that disk again. Therefore, after backing up information onto disks using HDBackup, immediately write-protect them using the write-protect tab, and store them for use with only the HDBackup program.

If your disk is not recognized by HDBackup when you try to restore, you should be able to recover all of the information that isn't split over multiple disks (for example, you will be able to recover a 200K file but not one that is 1.5MB that is contained on multiple disks). Insert the disk while running the Finder or MultiFinder and merely copy the file.

(NOTE: This does not work with files that are split between two or more disks. Unfortunately, there are no tools or tricks to easily recover large files that were backed up onto multiple disks.)

When running MultiFinder, if you attempt to restore all, you may immediately encounter the dialog, "That file already exists on the volume. Click continue to replace." Since the file in question is most likely the Desktop file, select OK. Another error message may display, "Tried to open a file to write to it twice -49." Typically, you can ignore this error message because it also refers to the Desktop file and click continue with no ill effects.

After restoring by file while running MultiFinder, close and open the folder or volume to which you restored the file. This alerts MultiFinder to update the new icons on the desktop. (These newly restored files' icons change from the generic document icon to the icon of that application, and Get Info displays the proper attributes of that file.) After which, you will be able to access the files normally.

If the problem you are encountering differs from the known problems described above, the directory structure may be damaged on the disk you are trying to back up, or the file itself may be damaged. Consider rebuilding the Desktop file on that volume and repairing it using a utility, such as Disk First Aid.

Because many of the problems described above are encountered only when using HDBackup under MultiFinder, it is best to run HDBackup under Finder.

Published Date: Feb 18, 2012

Macintosh Portable: Sound Volume Problem Solved

I am having a problem controlling the volume on the internal speaker of our Macintosh Portable. Most of the time, the speaker is barely audible -- even though the volume control in both the General and Sound CDEVs is at 7.

I cleared PRAM by using the keyboard method (Control, Shift, Option, and Command). This procedure worked, but it raises a couple of questions:

1) What is causing the speaker volume to become so low?

2) Why does resetting the PRAM fix the problem, whereas removing the power supply via the battery removal/power-down sequence does not fix the problem?

This article has been archived and is no longer updated by Apple.
1) The volume on your Macintosh Portable was low because the PRAM was getting scrambled.

2) To clear PRAM on the Macintosh Portable, both batteries must be removed for an undefined period of time -- probably more than 10 minutes. Otherwise, the 9-volt battery holds the values stored in PRAM. The easiest way to clear this memory is, as you discovered, by keyboard command.

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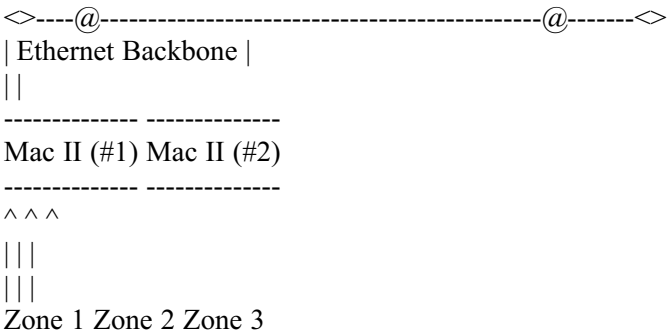
AppleTalk Internet Router 1.0 & 2.0: ADEV Files Question

After installing the AppleTalk Internet Router, the following problem occurred and was solved.

Situation

There are three separate LocalTalk-type networks, each going into a Star Controller (that is, three Star Controllers) -- Zone 1, Zone 2, and Zone 3. There is also an Ethernet backbone. Two Macintosh IIs are acting as routers between Zone 1 and Zone 2 and the Ethernet backbone and Zone 3 and the Ethernet backbone.



Macintosh II 5MB (#1)
- System Software Version 6.0.3
- EtherTalk 2.0
- AppleTalk Internet Router
- AppleShare 2.0.1
- AppleShare Print Server

Macintosh II 1MB (#2)
- System Software Version 6.0.3
- EtherTalk 2.0
- AppleTalk Internet Router
- AppleShare Print Server

Problem

When configuring the router in the router setup for Macintosh II (#1), four ports appear: 1 Ethernet port, 1 LocalTalk modem port, and 2 LocalTalk built-in ports.

The appearance of this extra "LocalTalk built-in" port is impossible and doesn't make sense but, for some odd reason, continues to happen no matter how many times I restarted or tried to deactivate the port. The router actually runs in this configuration, but doesn't work properly.

Zone 1 is attached to the built-in port. However, whenever Zone 1 is chosen in the "Chooser" (after the router came on-line), none of the network services available in Zone 1 appear. Also, people in Zone 1 can't see any part of the network--including their zone (Zone 1). If I shut off the routers, everyone can see their respective zones including the Zone 1 people. Therefore, I know there is integrity in the physical media.

Solution

Since the router setup on the Macintosh II (#2) was normal (that is, two total LocalTalk ports (modem/built-in) and one EtherTalk port), I assumed that there had to be something wrong with Macintosh II (#1). The only thing I was doing different on Macintosh II (#1) was running the AppleShare File Server.

After examining the System Folders for both Macintosh IIs (#1 and #2), I found two CDEVs that were installed by the AppleTalk Internet Router. "LocalTalk (Built-In)" and "LocalTalk (Modem)". Since I had two "LocalTalk (Built-In)" ports for my router setup on Macintosh II (#1), I decided to throw out the "LocalTalk (Built-In)" CDEV system document in the System Folder for Macintosh II (#1) and left it in Macintosh II (#2).

To my surprise, when I got into my router setup for Macintosh II (#1), everything was normal with one "LocalTalk (Built-In)", one "LocalTalk (Modem)", and one EtherTalk port. When I restarted both routers, the whole network started up, and everyone could see everything in the network -- including Zone 1.

Questions
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1) Why did this happen, and why did the solution work?

2) Why do you need a CDEV for "LocalTalk (Built-In)"? I thought that code was an integral part of the system (ROM or on some other chip).

3) If "LocalTalk (Built-In)" is not an integral part of the system, why haven't I ever seen a "LocalTalk (Built-In)" CDEV in the System Folder?

4) Does AppleShare File Server install some of its own resources that may cause conflicts with the AppleTalk Internet Router "LocalTalk (Built-In)" CDEV? This would explain why the Macintosh II (#2) didn't have any problems with the "LocalTalk (Built-In)" CDEV installed while Macintosh II (#1) did have problems.

This article has been archived and is no longer updated by Apple.
1) The AppleTalk Internet Router 1.0 beta software (AppleTalk Phase 1 only) installs the files:

- Modem LocalTalk
- Printer LocalTalk

in the System Folder.

The AppleTalk Internet Router 2.0 installs the files:

- LocalTalk (Modem)
- LocalTalk (Printer)

in the System Folder. These four files are ADEVs, not CDEVs.

If the AppleTalk Internet Router 2.0 software was installed on a machine that had the AppleTalk Internet Router 1.0 beta software installed, you would have the "Printer LocalTalk" file from the AppleTalk Internet Router 1.0 beta software and the "LocalTalk (Modem)" and "LocalTalk (Printer)" files from the AppleTalk Internet Router 2.0 software in the System Folder.

The AppleTalk Internet Router 2.0 installer script removes the "Modem LocalTalk" file from the System Folder, but does not remove the "Printer LocalTalk" file. This is why the router setup window shows the two LocalTalk printer ports and the LocalTalk modem port.

The router did not work properly because both LocalTalk Printer port drivers were telling the printer port different things, which, in turn, caused the network problems. When you removed the "LocalTalk (Printer)" file, the AppleTalk Internet Router 2.0 software had only one driver talking to the printer port, and the problems stopped.

It is important to note that the "LocalTalk (Modem)" and "LocalTalk (Printer)" files from the AppleTalk Internet Router 2.0 software should be in the System Folder, and the "Printer LocalTalk" file from the AppleTalk Internet Router 1.0 beta software should be removed.

2 and 3) The AppleTalk Internet Router requires special LocalTalk drivers and uses RAM-based drivers instead of the ROM-based drivers. This is why you have not seen these files before.

4) The AppleShare File Server and AppleShare Print Server software does not conflict with the AppleTalk Internet Router software.

(NOTE: Apple Tech Comm recommends that the Macintosh II (#2) router have 2MB RAM installed, since it is running the AppleShare Print Server software in conjunction with the AppleTalk Internet Router.)

Published Date: Feb 18, 2012

AppleTalk: Node IDs, Node Hints

I have a large AppleTalk Internet. Using NodeHint by Farallon, I am able to assign node numbers to each workstation, allowing some control over the network. Is there a way to assign node IDs to AppleTalk printers, either by using the same method or another method?

This article has been archived and is no longer updated by Apple.
The node hint is stored in the PRAM of the Macintosh computer. There is no method that we are aware of (as of November 1989) for assigning node hints for AppleTalk-based printers.

Also, using NodeHint to assign node numbers does not guarantee that the workstation will actually have node number assigned in PRAM. See the following for a detailed description of the node number assignment process:

Operation without a router

If a node has a hint stored in parameter RAM, the node uses the AppleTalk Address Resolution Protocol (AARP) to determine if the address is still unique. If the address is unique, the node can begin communicating on the network. If the address is not unique, the node continues as if it had no hint.

When a node doesn't have a hint node address stored in parameter RAM, the node determines its address by first determining its network number, the first 16 bits of its node address. In the absence of a router, the node picks a network number from the startup range. This range is specified as 65,280 to 65,534 ($FF00 to $FFFE).

A node then picks a node ID in the 0 to 253 ($00 to $FD) range. As in the past, a node ID of 0 is reserved to mean "send to myself", and 255 is reserved for broadcasts. With AppleTalk Phase 2, 254 is also reserved for internal use.

The node now has an node address in the form $FFxxyy, where xx is the last part of the network number, and yy is the node ID. The node uses AARP to determine if any other nodes on the network are already using that node address. If no other nodes are using it, then the node adopts that as its node address. Otherwise, it tries a different node address.

Operation with a router

When a network administrator sets up a router, a network number range is specified for an extended AppleTalk network. The numbers in this range must be unique on the Internet. The network administrator also specifies a list of zone names that are valid for the extended network. As in the past, a router can depend on a seed router for the authoritative definition of network numbers and zone names.

When a router is present, an AppleTalk Phase 2 workstation node determines its node address in two steps. In the first step, the workstation establishes a potential temporary node address for communicating with a router. If the workstation has no hint to use, then it uses a number in the startup range and uses AARP until it finds a unique address.

If the workstation has been on an AppleTalk network previously, then it uses its hint node address and uses AARP to determine if that node address is still unique. If it isn't unique, then the workstation tries other node IDs with the same network number. If the workstation still can't find a unique address, it tries a network number in the startup range.

In the second step, a workstation uses its potentially temporary node address

and proceeds to talk to the router to discover information about its environment. It learns from the router the range of valid network numbers for the cable and confirms that its saved zone name is valid for that cable.

If a node determines that its zone name is not valid, or it does not have a saved zone name, it can ask the router for the list of valid zone names and the name of the default zone. The software can allow the user to choose a zone name from the list of valid zone names. EtherTalk and TokenTalk software support this feature. Until the user goes into the Control Panel and chooses a zone, the node is in the default zone.

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Lisa Office System: Version 3.1 Still Calls Itself "3.0"

I set up a Lisa with Lisa Office System version 3.1.

The Lisa Office System, however, although marked as version 3.1, appears as version 3.0 when it is installed. What's going on?

This article has been archived and is no longer updated by Apple.
When Apple revised the Lisa Office System software to 3.1, we didn't change the dialog screens that appear when you install the software. Therefore, each disk shows version 3.0.

However, after installing the OS and starting up from the volume onto which you installed the software, check the startup "Wait" message box. This should properly reflect that the Lisa Office System you installed is in fact version 3.1 -- or, as it is commonly called, Lisa 7/7.

Published Date: Feb 18, 2012

TA40615_MacWorks_Localization_(TIL04711).pdf

MacWorks: Localization

Is there a localized version of MacWorks (that is, the bottom two rows on the keyboard are transposed one place to the right, so "b" appears as an "n", and so on)?

This article has been archived and is no longer updated by Apple.
No localized versions of MacWorks were created. Therefore, if you used localized Macintosh System Software, this version of the software assumes that the associated localized Macintosh 128/512K keyboard is being used.

Workarounds might include locating a QuicKeys or Tempo II-like program which is compatible with this older System Software, and which will let you remap the keyboard. Apple Tech Comm is not aware (as of November 1989) of such a program.

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HyperCard: General Problems with XCMDs and XFCNs

Using your own or someone else's XCMD or XFCN involves some risks. Some XCMDs may cause system crashes or unusual problems to appear. These problems usually result from not programming enough error protection into an XCMD and from lack of testing of the XCMD.

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When running a new XCMD, first execute it within a test HyperCard stack. If a problem does occur within and corrupting the test stack, your real stack will not be damaged. Also, be sure to check the result of the XCMD or XFCN for any error messages. It's a good idea to put this statement into the script after executing the command:

"Put the result into the message"

Here are some possible XMCD or XFCN causes of system locks up:

- The memory management system is purging needed data of the XCMD or XFCN, because the XCMD or XFCN has not taken precautions to protect it.

- The XCMD or XFCN has broken the master-pointer block, and the problem is not uncovered until some random, future action.

- The memory manager's application stack has become fragmented causing an out-of-memory error, because the XCMD or XFCN has allocated memory, locked it down, and has not removed the data after it was finished.

- There just is not enough memory available.

There are several ways for XCMDs or XFCNs to crash. Almost all are due to lack of error checking and or defensive programming. Some are simply due to trying to use HyperCard in ways for which it was not designed. Anyone using an XCMD or XFCN needs to test the XCMD or XFCN in a stack by itself and slowly add and execute other XCMDs. Any one of the additions may fragment the memory manager's stack, corrupting the master pointer block, or using up memory by leaving data floating around.

An XCMD or XFCN may not immediately cause problems. For example, a corrupted, master-pointer block may continue to work until a call is made to a once-valid pointer to your data. Once but is now corrupted the pointer points to garbage. The effect could be returning garbage to the stack, but usually, HyperCard chokes on the unexpected garbage data and crashes. Such a crash can take the system with it.

Apple does not support extensions that are not part of the HyperTalk language. The ability to add extensions was created, so that customers can enhance their stacks. However, each programmer must take the responsibility to check for errors and to report any problems to the user when writing the XCMD or XFCN. Be wary when faced with extensions from unknown sources.

Finally, a user's needs may not be appropriate for the capabilities of HyperCard. There are some supported XCMDs, like those available within legitimate HyperCard software products. We suggest HyperTalk programmers use only those XCMDs that they are confident with or that carry a guarantee for future support.

There are many other programming environments that support and handle advanced programming requirements. HyperTalk is not meant to be a replacement for programming languages like Pascal or C.

Published Date: Feb 18, 2012

TA40616_HyperCard_General_Problems_with_XCMDs_and_XFCNs_(TIL04713).pdf

MPW 3.0: Problem Using C Compiler

I think that there is a problem in "AppleTalk.h". It seems that the C compiler doesn't feel that the definition of the toolbox routine "BuildDDPwds()" is compatible with the definition of "AddrBlock". It seems like the actual toolbox routine is expecting the parameter to be passed by (a scalar) value, but the compiler is expecting a pointer.

I could not make one of our programs compile and work correctly until I changed the "AddrBlock" parameter to a type "long" in "AppleTalk.h" and passed the AddrBlock parameter in as a type "long" scalar parameter. Here is my change to "AppleTalk.h":

```
#if 0
pascal void BuildDDPwds(Ptr wdsPtr,Ptr headerPtr,Ptr dataPtr,const AddrBlock
*netAddr,short ddpType,short dataLen);
#else
pascal void BuildDDPwds(Ptr wdsPtr,Ptr headerPtr,Ptr dataPtr,long myAddrBlock,
short ddpType,short dataLen);
#endif
```

Any comments?

This article has been archived and is no longer updated by Apple.
Although it seems at first that there is an error in the way this particular parameter is declared, the declaration actually makes sense when you look at the underlying mechanisms used by Macintosh Toolbox calls.

Because Macintosh Toolbox calls use Pascal parameter-passing conventions, an AddrBlock parameter is always passed as the address to that parameter. This happens because any parameter longer than 4 bytes automatically has its address passed to preserve stack space.

To mimic this calling convention, the C declaration for the BuildDDPwds declares the AddrBlock parameter as a pointer to an AddrBlock structure. When you call the BuildDDPwds routine, you are expected to pass a pointer to an AddrBlock structure you have declared.

For more information, see the Parameter types section of the "MPW C Reference."

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Apple Portrait Monitor: Macintosh SE/30 Card Availability

I have a Macintosh SE/30 and want to use a full-page (not a two-page) monochrome monitor. Do you know of any monitors that work with the Macintosh SE/30?

This article has been archived and is no longer updated by Apple.
Generation X Technologies has a line of 8-bit graphics cards for the Macintosh SE/30. The line includes the Vision '030X, a 1,024-by-768 resolution card with a 74 Hz vertical refresh rate. It will be available next month. The Vision '030A features 640-by-480 resolution and a refresh rate of 66 Hz. Both products include hardware pan and zoom, virtual desktop capability, and support for 1-, 2-, 4-, or 8-bit graphics.

Nutmeg Systems, Inc. offers also offers an SE/30 card for Apple's large monitors. Both the Apple Two-Page Monochrome Monitor and the Apple Macintosh Portrait Display can be driven by the new Nutmeg card, called the Nutmeg 30/2. The single card can drive either monitor due to the card's use of an auto-sensing circuit which detects which monitor is in use and then sends the appropriate signal to that monitor. If no external monitor is connected, the card lets the SE/30 monitor run by itself.

For more details, search the Tech Info Library under "Generation X" and "Nutmeg."

Published Date: Feb 18, 2012

EtherTalk 2.0: How It Reduces Broadcast Traffic

This article discusses how broadcast traffic is reduced when you use EtherTalk 2.0 instead of EtherTalk 1.0.
This article has been archived and is no longer updated by Apple.

Background

In the past, versions 1.0 through 1.2 of Apple's EtherTalk software have caused excessive broadcast traffic when used on a large number of Macintoshes on an Ethernet network. Apple has fixed this problem with the EtherTalk 2.0 version of the software by using multicast addressing.

Ethernet Broadcast Traffic

All nodes on an Ethernet local area network listen to broadcast packets that are addressed to the general-purpose broadcast address FF-FF-FF-FF-FF-FF. EtherTalk 1.0 used this address for all AppleTalk name lookups, Routing Table Maintenance Protocol traffic between routers, and other types of AppleTalk broadcast packets. Large sites like universities and research labs found this to be a problem, because all of their non-Apple hardware had to accept Apple's packets, read them, then discard them. This translated into lost machine cycles on VAXs, Suns, and so on. In some extreme cases, Sun diskless workstations can crash if they're booting and take a broadcast packet at the wrong time.

Ethernet Multicast Addressing

Ethernet addresses actually have two parts. The first 24 bits (written as xx-xx-xx) are a vendor code. Apple's codes are 08-00-07, 00:05:02, and 00:A0:40. The second 24 bits designate a unique machine with that vendor code. If a certain bit in the first byte of the vendor code is turned on, the address is said to be a "multicast address" and ALL Ethernet interface boards with that vendor code will receive the packet. (Apple's multicast vendor code is 09-00-07).

An Ethernet interface board can be programmed to accept only packets with certain multicast addresses. These are the only packets which are passed to the higher level protocols; the hardware rejects all others. This results in a significant efficiency, because it means that the Ethernet interface board will only interrupt the main CPU when "useful" packets are received.

EtherTalk 2.0

EtherTalk 2.0 no longer sends all AppleTalk broadcasts to the general-purpose Ethernet broadcast address. When EtherTalk 2.0 needs to send a packet to all EtherTalk 2.0 nodes, it sends to the multicast address 09-00-07-FF-FF-FF. All EtherTalk 2.0 nodes are registered to receive these packets.

In addition, EtherTalk 2.0 uses a range of other multicast addresses for its Name Binding Protocol (NBP) lookups. This range includes 09-00-07-00-00-00 through 09-00-07-00-00-FC. If there is a service (like a print spooler, or even Responder) registered on a Macintosh, the Macintosh will listen to NBP packets addressed to an address in the NBP multicast range. The Macintosh's zone name determines which address the Macintosh listens to. For example, if a file server is in zone "foo", it might expect file server client software to send lookup requests to the multicast address 09-00-07-00-00-27.

The Ethernet hardware does not pass lookups for a different zone (different multicast address) onto the EtherTalk software. A file server in a different zone would receive lookup requests to a different multicast address.

(Actually, there isn't an exact one-to-one mapping between zone names and multicast addresses. The Zone Information Protocol on routers assigns multicast addresses to zones, but because of the hash function used, there may sometimes be more than one zone assigned to one multicast address, but this is not likely.)

The important thing to understand is that in almost all cases, nodes are no longer disturbed by broadcast traffic that has no relevance to them. This leaves the CPU available for more important tasks.

Improvements for Multi-Vendor Environments

As discussed above, multicast addressing reduces the amount of processing that Macintoshes need to do because NBP lookups are sent to multicast addresses instead of to the general-purpose Ethernet address. However, the biggest improvement that EtherTalk 2.0 offers is that non-AppleTalk nodes are no longer disturbed by general-purpose Ethernet broadcasts generated by AppleTalk devices. When Macintoshes only run EtherTalk 2.0, they no longer send general-purpose Ethernet broadcasts.

Non-AppleTalk nodes, (i.e. Suns, VAXs, and so on) do not register to receive packets sent to Apple's multicast address 09-00-07-FF-FF-FF or Apple's NBP range of multicast addresses, 09-00-07-00-00-00 through 09-00-07-00-00-FC. Non-AppleTalk nodes no longer need to spend machine cycles reading Apple-specific Ethernet broadcasts only to learn that they didn't need to. Many large customers, especially university, government, and Fortune 500 business accounts have become more amenable to placing Macintoshes on their Ethernet networks.

Note: TokenTalk 2.0 also uses multicast addressing. The concept is the same: non-AppleTalk nodes on the Token Ring will not be disturbed by Apple-specific broadcasts. The exact implementation of Token-Ring, multicast addressing is different than the Ethernet implemenation.
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Installing LisaGuide as a Shell

This article has been archived and is no longer updated by Apple.

If you wish, you may install LisaGuide as a shell so that you can access it from the hard disk instead of having to boot it from a diskette. To install LisaGuide as a shell, you'll need go into the workshop and copy all the files on the LisaGuide diskette to the ProFile EXCEPT:

```
{!CATALOG}
{!CATALOG}$R
{!SAVEDESKTOP} BOOT
{!TFCATALOG}
```

CAUTION: If you mistakenly copy these files, the Lisa will see your ProFile as a diskette!

Remember to set FilesPrivate to Yes with the System Manager before attempting to copy any files; then, copy to the ProFile all the files that start with "{" EXCEPT the ones listed above. Finally, change the name of LISAGUIDE.SHELL on your ProFile to SHELL.LISAGUIDE.

Your environments window on the hard disk will now give you the option of starting up LisaGuide the next time you power up.

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RGB-to-NTSC Video Converter

I am looking for a RGB-to-NTSC video converter that works well with ChunkTV. Any suggestions?

This article has been archived and is no longer updated by Apple.

```
MARKERTEK Video Supply makes a RGB-to-NTSC video converter, model number
RN-1.  The 1989 catalog description reads:

RGB Plus sync input to NTSC video out.  This card will only be
effective if the horizontal scan rate of the input is close to
the standard NTSC video horizontal sync frequency of approximately
15.75 KHz.  (This is what ChunkTV does.)

You still have to make a special cable for the Macintosh II extended video
card--nothing terribly difficult, though.
```

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Inside AppleTalk: Network Questions & Answers

This article contains a series of questions based on material in "Inside AppleTalk" with answers. References to "Inside AppleTalk" are from the March 1989 edition (ISBN 0-201-19257-8), published by Addison-Wesley.
This article has been archived and is no longer updated by Apple.

What's a Protocol Stack

Question: "Inside AppleTalk" suggests that a protocol stack is an implementation of a protocol suite, like AppleTalk for VMS or AppleShare PC. Most other literature refers to a protocol stack as a subset of the OSI model. An example is TCP, which does not include layers 6 and 7 or selected protocols with AppleTalk. Which is more accurate? The implementation idea or the subset idea?

Answer: Protocol stacks often implement only a portion of the OSI 7-layer model. A protocol stack is a suite of protocols that implements the feature set for a particular networking scheme. The term "protocol stack" typically refers to the actual implementation of a networking scheme. TCP/IP's protocol stack only implements the layers that it needs, whereas AppleTalk implements all of the layers.

The OSI Model and Protocols

Question: Often, I have heard (and saw documented in "Inside AppleTalk") that the OSI model is a general description of protocol usage and not the protocols themselves. Yet page I-22 of "Inside AppleTalk" cautions that AppleTalk is not necessarily compatible with the forthcoming OSI protocols.

What are these forthcoming protocols? What is OSI, if not a reference to follow for integration into heterogeneous networks? What protocols for OSI have already been established? Are these based on CCITT protocols like X.25 and X.400? (It seems to me that although we have protocols that match every layer of OSI, we are only loosely tied to those layers. Is this so?)

Answer: The OSI 7-layer model has become a standard in the industry for describing network architectures. This model was originally designed as a blueprint for the OSI network protocols that were and still are in the process of being implemented. Many of the lower layers have already been implemented, and there are even products available for the Macintosh that provide connectivity solutions to these protocols. The press has often described the OSI architecture as the replacement for TCP/IP.

Although we have a network architecture that fits nicely within the OSI model, AppleTalk cannot be considered an implementation of OSI any more than it can be considered an implementation of TCP/IP. We use the model, because it provides a concise and elegant way to describe our network. We do not use the OSI architecture, because many of its layers remain undefined.

AFP an Application?

Question: "Inside AppleTalk" shows AFP to be mostly Presentation and part Application. What aspects of AFP are Application? Wouldn't AppleShare File Server and AppleShare Workstation be applications?

Answer: We are not sure why AFP is listed as falling partially into the application layer. We assume that it has to do with the fact that the description of AFP in later chapters includes actual network services. AFP does define many of the features that need to be implemented in AFP servers. If this is the reason AFP falls partially in this layer, then AppleShare implements the highest part of the application layer, putting the interface on the services that have, at least, been partially defined by AFP.

CMSA/CA

Question: I understand that CSMA has at least two flavors: 1-persistent and non-persistent. 1-persistent is when a deferring sender grabs the channel as soon as it's released, contending with another sender who grabs the channel at the same time. Non-persistent throws in a random period of time to back off before attempting to grab the channel. Is this what we call CSMA/CA? Or, is CA something different? Or, is it non-persistent including handshaking? (See page 1-3, "Inside AppleTalk.")

Answer: The CA in CSMA/CA stands for "Collision Avoidance". It does implement the random period of time you mentioned as opposed to collision detection (CD).

Ethernet throughoutput

Question: They say that the 10MBps of Ethernet is only used under heavy loads and that its throughput does not come through at that rate. What does this mean? Are nodes communicating at 10MBps or not? Is Ethernet a broadband network? How are the channels within the broadband used? (You can refer me to some other documentation on that last one.)

Answer: "Throughput" is a term used to describe the actual rate of transfer achievable over a network. This is a relative term, similar in reliability to "MIPS" or "megaflops." Network throughput is often measured by copying large files across a network and calculating the amount of data transferred in a specified period. As you can see, this throughput depends on the overhead of the protocols being used and the capability of the servers to transmit data to the client. The 10MBps specified for Ethernet refers to the ideal maximum possible over coaxial cable and is never achieved in real-world situations.

Standard Ethernet coax is baseband cable, not broadband. However, these days, you can run Ethernet over many different media, including broadband cable, unshielded twisted-pair telephone wiring, T1 telephone circuits, satellite links, and leased lines. These have different speeds and characteristics.

Bridge
Question: A bridge is a datalink layer device only. It separates networks but does not use network numbers. Right?

Answer: A bridge is used to connect two physical networks of the same type into one logical network. As far as any node on the network is concerned, this is a single network.

Router
Question: A router is a higher-level device (either transport or network layer) that routes like-protocols from one network to another. The networks on either side are identified by their network numbers. Like-protocol routing includes AppleTalk-to-AppleTalk, TCP/IP-to-TCP/IP, SNA-to-SNA, and so on. Right?

Answer: A router is used to divide two physical networks into separate logical networks using the same protocols. Each logical network has its own unique network identifier(s) distinguishing that network from other networks on the same Internet.

Networks and Bridges
Question: AppleTalk is a network protocol suite. A network is a specified physical cable and datalink, like Ethernet and Token Ring. A physical network is a cable. Are these accurate? Does a bridge create an Internet? Are the segments on either side of the bridge networks or just physical networks? Are physical networks and segments synonymous?

Answer: The physical network, or layer, typically refers to the physical medium in use. This can be cable, twisted-pair wiring, and so on. If you go with the definition above, a bridge does not create an Internet. A router provides the necessary functionality and acts at a high-enough level to create an Internet. A "segment," as you are using it, is a piece of cable or set of wiring that is part of a physical network. This usually means as the physical medium on one side of a bridge or router, but it could be a smaller part.
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A/UX: How To Use Prototyper as Development Tool

Article Change History

08/31/92 - REVIEWED
*For technical accuracy.

These notes explain how to use Prototyper 2.0 as a development platform for A/UX.

This article has been archived and is no longer updated by Apple.

Introduction

Prototyper 2.0 is a screen layout and code generator that produces most of the code and resources necessary for the Macintosh user interface part of the program. Prototyper release 2 includes things like MPW C 3.0 code generation, pop-up and hierarchical menus, and linking icons and menu entries to various other windows and dialog boxes. We hope these notes help people get up to speed when using Prototyper as a development tool for A/UX programs that make use of the Toolbox.

As stated above, Prototyper is a very versatile tool. A programmer saves a lot of time and energy when using Prototyper for the base program. The use of prototyping tools and object-oriented methodologies speeds up the boring parts of the programming job.
In general, one can define a simple interface and produce code within 10 minutes. Depending on the level of complexity, the design phase takes much longer.

How To Use Prototyper

Prototyper runs well under A/UX. There are some things that make the program bomb, but, in general, the program is quite stable. When you design anything with Prototyper, you start with the user interface. This phase usually takes much longer than anticipated.

Prototyper saves this frozen user interface in a special file. You are able to cold-run this interface during the prototyping phase as much as you want. This is especially helpful because it saves time compared with endless testing-recompilation phases and sleepless nights.

You can produce either resource code (in .RSRC and .R format, .R stands for the old RMaker program), or both resource and code. In our case, we will choose MPW 3.0 code because this best reflects the A/UX environment.

The only worry when Prototyper produces source and resource code is that the tab settings are a bit unusual for the A/UX environment. This is easy to change with some clever sed programming. Another thing to think about is the 14-character limit of filenames. Prototyper tries happily to produce filenames that reflect the names of windows and dialogs used inside the code, and many times the names are longer than 14 characters. You can define your own names when Prototyper produces the C source code files.

Remember to strip out the AppleSingle/Double stuff from the top of the file before you continue in the A/UX file system with UNIX tools.

Resources

The .RSRC format can be translated back to the rez/derez format that rez/derez uses within A/UX. The following shell script does the job handily:

```
if [ -f${$1}.res] then
```

```
echo Output file \\(${1}.res\\) exists!
echo No action taken
exit
fi
echo Doing derez of file $1.RSRC - new resource file will be $1.res derez
-i/usr/lib/mac/rincludes ${1}.RSRC types.r > ${1}.res
```

What you then need to do with the produced .res file is to include a statement type:

```
#include "types.r"
```

at the top of the file for the ultimate rez of the resource file. This is for the make, so it will find the resource type templates in the A/UX system.

Prototyper makes a special OpenResFile call inside the produced C code that opens a special resource file. Comment this because we will use the AppleDouble style resource files.

C Code

The C code produced by Prototyper is very ANSI-C-oriented. Thus, some parts of the code have to be changed so it will compile under A/UX. The most annoying things to change are the so-called function prototypes, usually found in the .h files.

For instance, if Prototyper produces function declarations like:

```
void Foo(WIndowPtr MyWindow, ControlHandle CItem);
```

we have to change this to:

```
void Foo()
```

in the .h files, and sometimes in the .c files. Note that these are function declarations, and not the actual function headers. For me, it is annoying because the function prototypes help a lot when you have written code that wants to call a function with the totally incorrect data type. ANSI C function prototypes complain about it during the compilation; normal K&C compilers like pcc happily accept the variables.

Another issue is the string used in MPW and A/UX. In MPW, you can declare Pascal strings with the handy \\p in front of the string, as in:

```
DrawString("\\pThis is a Pascal String");
```

This won't work with A/UX, so you have to use the small letter Toolbox calls that know about C strings, like:

```
drawstring("This is my String");
```

The best thing is to define:

```
#define DrawString drawstring
```

in a special header file. This is also true with string functions, such as GetIText and SetItext.

Another thing to change are the filenames for the Toolbox modules. They usually have capital letters in their names, so you need to change names such as QuickDraw.h to quickdraw.h.

Note that all this could be done with #ifdef statements in the code; that is, you could use the same base for both Macintosh OS and A/UX code.

In general, the code produced is stable, but not much is optimized. It also leaves dangling handles that you need to keep track of and remove if you want to have really bug-free code.

Prototyper produces code with comments, so it is very easy to dive into the code and change or modify things. Still, you need to know the fundamentals of Macintosh programming if you want to change or enhance the C code.

Don't forget to use select(2) to poll for interrupts on the Macintosh Toolbox device; otherwise, you spend too many resources for the Macintosh program itself. For more details, read the term sources.

Makefile

The easiest way is to copy the example one found under /usr/lib/mac/examples and tweak this to reflect the source files.

End Result

Well, after about 10 minutes and with a clever idea, you have a working base program and can continue with the rest of the UNIX programming. After a while, you realize that with Prototyper the user interface is 80% of the job, and the function coding is a small portion of the creative work. I would highly recommend this product if you want to write A/UX tools and applications that make use of the Macintosh side of A/UX.

If you are unsure (as I am) about scroll bars in windows, check the latest code examples from Phil and Dave's Excellent CD. There is a really good example that works under A/UX, as well.

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Macintosh: Determining Video Card Status via Software (1 of 2)

How can an application detect information about the status of the video display system connected to a Macintosh? For example, how many bits per pixel are selected via the Monitors cdev, and how many bits per pixel is supported by the card in the system? Inside Macintosh Volume V mentions using some high-level Color QuickDraw call. How is this implemented?
This article has been archived and is no longer updated by Apple.
Refer to the QuickDraw chapters of "Inside Macintosh, Volume V." Page 124 documents a function called "GetMainDevice". This function returns a GDHandle (Graphics Device Handle). This handle has the information you want. Here is its description (page 119):

```
TYPE
GDHandle = ^GDPtr;
GDPtr = ^GDevice;
GDevice = RECORD
gdRefNum: INTEGER;
gdID: INTEGER;
gdType: INTEGER;
gdITable: ITabHandle;
gdResPref: INTEGER;
gdSearchProc: SProcHndl;
gdCompProc: CProcHndl;
gdFlags: INTEGER;
gdPMap: PixMapHandle;
gdRefCon: LONGINT;
gdNextGD: GDHandle;
gdRect: Rect;
gdMode: LONGINT;
gdCCBytes: INTEGER;
gdCCDepth: INTEGER;
gdCCXData: Handle;
gdCCXMask: Handle;
gdReserved: LONGINT;
END;
```

The field in the above Pascal record with is the "gdPMap" field. The "gdPMap" field contains a PixMapHandle. Here is a description of the handle (pages 52 and 53):

```
TYPE
PixMapHandle = ^PixMapPtr;
PixMapPtr = ^PixMap;
PixMap = RECORD
baseAddr: Ptr;
rowBytes: INTEGER;
bounds: Rect;
pmVersion: INTEGER;
packType: INTEGER;
packSize: LONGINT;
hRes: Fixed;
vRes: Fixed;
pixelType: INTEGER;
pixelSize: INTEGER;
cmpCount: INTEGER;
cmpSize: INTEGER;
planeBytes: LONGINT;
pmTable: CTabHandle;
pmReserved: LONGINT;
END;
```

This "PixMap" record has a field called "pixelSize" that contains the current depth, in bits, of the pixels for the graphic device.

The Pascal code to retrieve this information looks something like this:

```
PROCEDURE GetBitsPerPixel;

VAR
mainDevice: GDHandle;
theDepth: INTEGER;

BEGIN
mainDevice := GetMainDevice;
theDepth := mainDevice^^.gdPMap^^.pixelSize;
END;
```

If more than one video card is installed in the system, and you need to know what the bits per pixel setting is on all devices, not just on the main device, try the following functions (page 124):

GetDeviceList
GetNextDevice

Here is a sample procedure that shows how to use them:

```
PROCEDURE GetGraphicDevs;

VAR
DeviceList: ARRAY[1..6] OF GDHandle;
theDepthList: ARRAY[1..6] OF INTEGER;
x: INTEGER;

BEGIN
DeviceList[1] := GetDeviceList;
theDepthList[1] := DeviceList[1]^^.gdPMap^^.pixelSize;
FOR x := 2 TO 6 DO
BEGIN
DeviceList[x] := GetNextDevice(DeviceList[x - 1]);
IF DeviceList[x] <> NIL THEN
theDepthList[x] := DeviceList[x]^^.gdPMap^^.pixelSize
ELSE
x := 6;
END;
END;
```

If you need to find which device in the device list array created above is the main device, use the "TestDeviceAttribute" function described on page 124. Here is a code fragment showing how to use the function:

```
IF TestDeviceAttribute(DeviceList[1], mainScreen) THEN...
```

If the "TestDeviceAttribute" function returned "TRUE" or "1" in the example above, then "DeviceList[1]" is the main screen. If the function returned "FALSE" or "0", then the device is not the main screen. You can also use this function to determine if the device is in color model. For example:

```
IF TestDeviceAttribute(DeviceList[1], gdDevType) THEN...
```

If the "TestDeviceAttribute" function in this example returned "TRUE" or "1", then "DeviceList[1]" is in color mode; if it returned "FALSE" or "0", then it is in monochrome mode.

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Macintosh: Determining Video Card Status via Software (2 of 2)

What follows is an MPW Assembly listing that demonstrates, for a given GDevice, how to determine the minimum and maximum depths that the device supports: PRINT OFF INCLUDE "Traps.a" INCLUDE "ToolEqu.a" INCLUDE "QuickEqu.a" INCLUDE "SysEqu.a" INCLUDE "PackMacs.a" INCLUDE "SlotEqu.a" INCLUDE "ROMEqu.a" INCLUDE "VideoEqu.a" PRINT ON
This article has been archived and is no longer updated by Apple.

```
GetScreenMinMax PROC EXPORT
;------------------------------------------------------------
; PROCEDURE GetScreenMinMax(whichScreen : gdHandle;
; VAR minDepth, minMode,
; maxDepth, maxMode : Integer);
;------------------------------------------------------------
; This nasty little procedure figures out, for a given GDevice, what the
; minimum and maximum depths that the device supports. It does this by
; using the Slot Manager to traverse the sResources that are in ROM on
; the video interface card.

StackFrame RECORD {A6Link},DECR
ParamSize EQU *-8
whichScreen DS.L 1
pMinDepth DS.L 1
pMinMode DS.L 1
pMaxDepth DS.L 1
pMaxMode DS.L 1
Return DS.L 1
A6Link DS.L 1
spBlk DS SpBlock.spBlockSize
slotModesPtr DS.L 1
nextMode DS.W 1
LocalSize EQU *
ENDR

WITH StackFrame,SpBlock,vpBlock

LINK A6,#LocalSize

MOVE.L pMinDepth(A6), A0 ;Get ptr to minDepth VAR
MOVE.W #$7FFF, (A0) ;Init to MAXINT
MOVE.L pMaxDepth(A6), A0 ;Get ptr to maxDepth VAR
CLR.W (A0) ;Init to zero

; We need to convert the GDevice's refNum to its unit number. Then, we
; can look in the unit table for a handle to a NewDCE block. This
; will tell us in which slot the card for this display is.

MOVE.L whichScreen(A6), A0 ;Get the gDevice handle
MOVE.L (A0), A0 ;Get a ptr to the gDevice
MOVE.W gdRefNum(A0), D0 ;Get the device's refNum
NOT.W D0 ;Get the unit number
ASL.W #2, D0 ;Times 4 (SizeOf UTableEntry)
MOVE.L UTableBase, A0 ;Get a pointer to the Unit Table
MOVE.L 0(A0, D0.W), A0 ;Get the handle to the NewDCE
MOVE.L (A0), A0 ;Get ptr to the NewDCE

; We only want to deal with sResources on the card that are for Apple-
; style video devices. (We only care about the data format; it really
; doesn't matter who made the hardware.) Set up information about the
; type of sResource that we want.

MOVE.B dCtlSlot(A0), spBlk+spSlot(A6) ;Put slot of device into parmBlock
CLR.B spBlk+spID(A6) ;Start with first sResource
MOVE.W #catDisplay, spBlk+spCategory(A6) ;Only want Display sResources
```

```
MOVE.W #typVideo, spBlk+spCType(A6) ;Only want Video sResources
MOVE.W #drSwApple, spBlk+spDrvrSW(A6) ;Only want Apple-format sResources
MOVE.B #1, spBlk+spTBMask(A6) ;Don't care whose hardware

; Now go and get the first resource that matches our specs.

LEA spBlk(A6), A0 ;Pointer to block in A0
_sNextTypesRsrc ;Get sResource that matches
TST.W D0 ;Was one found?
BNE BadExit ;Nope. Oh well.

; We now have a pointer to the sResource List (in spBlk.spsPointer). This
; sResource List has all of the modes that the card will currently support.

MOVE.L spBlk+spsPointer(A6), slotModesPtr(A6) ;Save the result
MOVE.B #128, nextMode(A6) ;Start with first video mode

REPEAT
; For Apple-style video data, the first video mode is 128, and they proceed
; sequentially from there, with no gaps.

MOVE.B nextMode(A6), spBlk+spID(A6) ;Want entry for nextMode
MOVE.L slotModesPtr(A6), spBlk+spsPointer(A6) ;Restore ptr to modes sRsrc
LEA spBlk(A6), A0 ;Ptr to our parameters
_sFindStruct
TST.W D0 ;Was it there?
BNE NoMoreModes ;Nope. We're done.

; spBlk.spsPointer now contains a pointer to the mode information
; structure we just got.

MOVE.B #mVidParams, spBlk+spID(A6) ;We want the video parms data
LEA spBlk(A6), A0 ;Pointer to param block
_sGetBlock ;Get the video parms data
TST.W D0 ;It should always be noErr!
BNE.S BadExit ;It's not. Bail out!

; spBlk.spResult contains a pointer to the video parms data block. Now
; we check to see if we have a video mode that QuickDraw can deal with.

MOVE.L spBlk+spResult(A6), A0 ;Get pointer to video parms
MOVE.W vpCmpCount(A0), D0 ;How many components/pixel?
CMP.W #1, D0 ;Can only handle 1
BNE.S @1 ;Don't count this mode
MOVE.W vpPixelSize(A0), D0 ;How many bits/pixel?
CMP.W vpCmpSize(A0), D0 ;Does it match component size?
BNE.S @1 ;Nope. QD can't handle it.

; D0 now contains a valid pixel depth, and nextMode(A6) contains the
; mode that has this pixel depth. Update the minDepth, maxDepth, and so
; on variables if needed.

MOVE.L pMinDepth(A6), A0 ;Ptr to user's minDepth
CMP.W (A0), D0 ;Is this mode less than minDepth?
BGE.S @2 ;Nope. Don't update.

; The pixel size in D0 is less than the pixel size that we have stored in
; minDepth so update minDepth and store this mode into minMode.

MOVE.W D0, (A0) ;Update minDepth
MOVE.L pMinMode(A6), A0 ;Get pointer to user's minMode
CLR.W D1 ;Start with an empty word
MOVE.B nextMode(A6), D1 ;Get this mode
MOVE.W D1, (A0) ;And save it to user's minMode
```

```
@2
MOVE.L pMaxDepth(A6), A0 ;Ptr to user's maxDepth
CMP.W (A0), D0 ;Is this mode > maxDepth?
BLE.S @1 ;Nope. Don't update.

; The pixel size in D0 is greater than the pixel size that we have
; stored in maxDepth, so update maxDepth and store this mode into
; maxMode.

MOVE.W D0, (A0) ;Update maxDepth
MOVE.L pMaxMode(A6), A0 ;Get pointer to user's maxMode
CLR.W D1 ;Start with an empty word
MOVE.B nextMode(A6), D1 ;Get this mode
MOVE.W D1, (A0) ;And save it to user's maxMode

@1
; Either QuickDraw couldn't handle this video mode, or we're done
; updating the minDepth and maxDepth variables. Now we have to dispose
; of the video parms block we just got.

MOVE.L spBlk+spResult(A6), spBlk+spsPointer(A6) ;The pointer to vidParms
LEA spBlk(A6), A0 ;Pointer to our param block
_sDisposePtr ;Release this block

ADDI.B #1, nextMode(A6) ;Try the next mode
BRA.S REPEAT

BadExit
; Something went wrong. Set all of the user's variables to zero and
; return.

MOVE.L pMinDepth(A6), A0 ;Ptr to user's minDepth
CLR.W (A0) ;Set to zero
MOVE.L pMinMode(A6), A0 ;Ptr to user's minMode
CLR.W (A0) ;Set to zero
MOVE.L pMaxDepth(A6), A0 ;Ptr to user's maxDepth
CLR.W (A0) ;Set to zero
MOVE.L pMaxMode(A6), A0 ;Ptr to user's maxMode
CLR.W (A0) ;Set to zero

BRA.S NoMoreModes ;Standard clean-up

NoMoreModes
; When we get here, _sFindStruct couldn't find the mode that we were
; for, so there must not be any more. We've looked through all of the
; modes so we're done.

UNLK A6 ;Release locals
MOVE.L (SP)+, A0 ;Get return address
ADDA.L #ParamSize, SP ;Pop input params off stack
JMP (A0) ;And return to caller
DC.B "GETSCREE" ;Name of routine for debuggers

END
```

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Apple Internet Router: "Memory Bank Manager" Compatibility

Can I run the Apple Internet Router along with a tape backup program from Northern Telecom called "Memory Bank Manager"?.

This article has been archived and is no longer updated by Apple.
As of July, 1989, we have not tested Northern Telecom's "Memory Bank Manager" software (an AppleShare foreground application) and cannot make any statements on whether or not it works properly with AppleShare and the AppleTalk Internet Router. We do recommend that 2MB RAM be used in this situation.

On an AppleShare File Server, the AppleTalk Internet Router runs in the background; it does not run as a foreground application. Because the Internet Router runs in the background, you can run an AppleShare foreground application on the same machine.

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AppleShare File Server: Process Limits

What is the official answer as to how many processes can be run on an AppleShare File Server?

This article has been archived and is no longer updated by Apple.
There is no "official" answer that describes how many processes can be run on an AppleShare File Server at one time. The AppleTalk Internet Router is the only product that we have tested on an AppleShare File Server that is running a foreground application (AppleShare Print Server). Based on this information, three processes is the maximum that we have tested and support.

On an AppleShare File Server, the AppleTalk Internet Router runs in the background; it does not run as a foreground application. Because the Internet Router runs in the background, you can run an AppleShare foreground application on the same machine.

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Macintosh: No Restriction on System Folder Location

Is there anything wrong with having the System Folder located within another folder on the Macintosh desktop?

This article has been archived and is no longer updated by Apple.

The System Folder can be located on the Desktop, the root level, or anywhere in the volume hierarchy. There is no restriction on where the System Folder can be located. We suggest locating the System Folder at the root level of the volume, because the folder is accessed so often.

Published Date: Feb 18, 2012

TA40629_LaserWriter_IISC_Quotation_Marks_Printed_versus_OnScreen_(TIL04731).pdf

LaserWriter IISC: Quotation Marks, Printed versus On-Screen

What is the difference between the way characters appear on my Macintosh screen and on the LaserWriter? In particular, how are the different types of quotation marks produced?

This article has been archived and is no longer updated by Apple.
When the Macintosh displays characters on the screen, it uses the information from the font resource to show the character the best way it can, given that the Macintosh screen is 72 dpi. Likewise, when the driver prints the document to the LaserWriter IISC, it also uses the information from the font resource (rather than the bitmapped display) to create the printed output in its 300 dpi format. The printer always prinst a more accurate representation of the actual font than the screen.

Also, be sure you are pressing Option-[and Option-Shift-[for open and close double quote marks instead of the quote key. Likewise, Option-] and Option-Shift-] produce open and close single quote marks. In the case of Times, the quote key and Option-Shift-[produce the same results, but this is not true of all fonts (Helvetica, for example).

Published Date: Feb 18, 2012

IEEE 802.X LAN Protocols: Brief Descriptions

This article gives a brief description of the IEEE 802.X LAN Protocols.
This article has been archived and is no longer updated by Apple.
The Institute of Electrical and Electronic Engineers (IEEE) was created to establish standards. These standards include Project 802 for specifying interface and protocol specifications for various LAN topologies. The resulting 802 standards correspond with the Physical and Data Link layers of the ISO-OSI Model Layers 1 and 2, the Physical and Data Link layers.

802.1 Overview, Interworking and Systems Management
802.2 Logical Link Control
802.3 CSMA/CD Access Method and Physical Layer Specifications
802.4 Token-Passing Bus Access Method and Physical Layer Specifications
802.5 Token-Passing Ring Access Method and Physical Layer Specifications
802.6 Metropolitan and Network Access Method and Physical Layer Specifications

IEEE 802.1 and 802.2 are still being defined. Furthermore, any associated "packets" aren't going to be seen on the LAN,, because they define the common interface for higher software levels over networks with different topologies, protocols, and media.

IEEE 802.3, 802.4, and 802.5 define different network topologies and media access methods, or the ability of a node to physically send and receive data on a LAN.

Ethernet Data Link Frame Format
Destination (48 bits), Source (48 bits), Type (16 bits), Data (8n: 46 bytes<= n <=1500 bytes), CRC (32)

802.3 CSMA/CD Access Method
Destination (16 or 48 bits), Source (16 or 48 bits), Length (16 bits), Data (8n: 46 bytes<= n <=1500 bytes), CRC (32)

802.4 Token-Passing Bus
Destination (16 or 48 bits), Source (16 or 48 bits), Data (8n: our materials didn't list the max), CRC (32)

802.5 Token-Passing Ring
Destination (48 bits), Source (48 bits), Data (8n: max of 4K), CRC (32)
Published Date: Feb 18, 2012

Customizing Fonts: Putting a Tilde where You Want It

Is there a way to use or create special text characters, like the letters e, i, u, y, with a tilde above the character? These characters are used in the native language of the country, Guarani.
This article has been archived and is no longer updated by Apple.
As of August, 1989, we couldn't locate any Guarani fonts. Neither the screen fonts supplied by Apple nor the built-in LaserWriter PostScript fonts generally have the diacritical tilde over any of the characters except for the N, n, O, o, and A, a. However, Microsoft Word versions 3.0 and 4.0 have an overstrike ability that lets you put the tilde (or any symbol or character) over any character.

Other possible options are to try to locate a specific Paraguayan Guarani font or to design a screen font and/or a downloadable PostScript font yourself.

There are many programs that let you design your own fonts, including ATF FontMaker by Kingsley and KeyMaster by Altsys. For more details, search the Tech Info Library under "Microsoft," "ATF," or "KeyMaster."

There is also a company called "Linguist's Software", which sells international word processors, fonts, and other assorted software products. Search under their name to find other possible solutions.
Published Date: Feb 18, 2012

EtherShare: Implements AFP/PAP on UNIX Machines

Do you know of software that can make my UNIX machines act as servers in AppleTalk Internets?

This article has been archived and is no longer updated by Apple.
Yes, the German system house Helios Software GmbH has a file server product named EtherShare.

EtherShare implements an AFP fileserver and PAP printserver on UNIX machines in Ethernet. It supports the well-known AppleTalk and the enhanced AppleTalk Phase 2. You decide during the boot process what AppleTalk version to use. It is also capable of routing AppleTalk packets between several Ethernets, when the UNIX machine has more than one Ethernet interface. EtherShare is installed with very few UNIX commands. This means you can do server administration totally from a Macintosh in the typical Macintosh style.

Currently Supported UNIX Machines

- Sun 3/xx, Sun 4/xx, and Sun 386i under Sun OS 4.0 or higher

- Sony NEWS 1500, 1700, 1800, and 1900 (as of September, 1989, AppleTalk Phase 2, because NEWS's Ethernet driver does not support the IEEE standard for MultiCast).

AFP Functionality

EtherShare fileserver can be used by all AppleTalk clients without any changes in the client AppleShare software. These clients include Macintosh, Apple IIGS, and MS-DOS PCs. It also supports all security and locking mechanisms, like scrambling of passwords, volume password, MS-DOS short names, drop folders, and so on. EtherShare can be used by up two 200 users simultaneously, depending on the server machine. AppleShare clients can access UNIX files if allowed by the administrator. Likewise, UNIX applications can access files stored by AppleShare clients.

PAP Functionality

EtherShare implements a PAP printserver in AppleTalk with as many print queues as you want. You can print to PostScript printers (which are directly, asynchronously attached to the UNIX machine) or to other networked PAP print services in the AppleTalk Internet. EtherShare also lets UNIX applications print to PAP printers, like networked LaserWriters.

Installation and Administration

It takes very few UNIX commands to install EtherShare. The administration of AFP and PAP servers is done from any Macintosh in the AppleTalk Internet, in a manner similar to Apple's AppleShare admin program. However, you can administer several EtherShare fileservers simultaneously and easily exchange users, user groups, and their privileges between different EtherShare servers.

EtherShare APIs

Helios provides a full set of programming interfaces. For example, you can write UNIX applications which respect the AFP-locking.

For more details, search the Tech Info Library under "Helios Software."

Published Date: Feb 18, 2012

A/UX: Apple Tape Backup 40SC Driver Kernal Name Is "tc"

What is the name of the driver that supports the Apple Tape Backup 40SC in A/UX 1.1?

This article has been archived and is no longer updated by Apple.
The Apple Tape Backup 40SC driver name is called "tc", short for "tape cartridge." You can display other A/UX kernel module names with the "module_dump /unix" command.
Published Date: Feb 18, 2012

Using double high-res graphics or a Color 100 on older IIe‘s

This article has been archived and is no longer updated by Apple.

The IIe needs a Revision B Motherboard or an Enhanced IIe Logic Board in order to support double high-resolution graphics or an RGB (Red Green Blue) Color Monitor 100. (The Revision B board differs from the Revision A board in that the RGB signals are sent to slot 7 and the auxilliary slot.) To determine which revision your Motherboard is, look at the back of the board behind the I/O slots: there you'll see the Motherboard's part number. The number will be 820-0064-A or 820-0064-B; the last character tells you whether the board is Revision A or Revision B. If the part number is 607-0187-A, it is an Enhanced IIe and does not need upgrading.

If you have a IIe with a Revision A (820-0064-A) Motherboard and an Extended Text card or an RGB interface card, you can have your Motherboard upgraded to Revision B by exchanging the motherboard.

Published Date: Feb 18, 2012

A/UX: System Benchmark Results using "lloops"

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.
01/20/93 - UPDATED
* Vendor information.

This article describes the floating-point, computational performance of an A/UX system. The benchmark test run was "lloops," a suite of benchmarks, developed at Lawrence Livermore Labs, and written in FORTRAN. In this case, the suites were written both in NKR Research's (now PenWare, Inc.) Optimizing FORTRAN and f77 (shipped with A/UX) compilers.

This article has been archived and is no longer updated by Apple.
The test system was a Macintosh IIcx with 4MB RAM and a HD80 SC hard drive. All tests were done in single-user mode with all networking and the toolbox turned off. All calculations were made on data defined as REAL*8. Because "lloops" contains a variety of common scientific and math program segments, floating point performance varies by "sub-test". Overall results (using the NKR compiler) were as follows:

Mflops range: 0.0364 to 0.3148 Mflops/sec
Harmonic mean: 0.1189 Mflops/sec
Median rate: 0.1319 Mflops/sec +/- 0.0577 Mflops/sec
Average rate: 0.1496 Mflops/sec +/- 0.0668 Mflops/sec

Results using the f77 were lower by 30% to 60%--presumably because of the lack of an object optimizer with f77.

Published Date: Feb 18, 2012

A/UX: Shift-Click Problem Solved

Article Change History

08/31/92 - REVIEWED
*For technical accuracy

When I'm running A/UX, selecting files under "hfx" by pressing shift-click does not work. What's going on?

This article has been archived and is no longer updated by Apple.
The Shift-click in the A/UX "hfx" behaves a bit differently than in the Macintosh OS. As described in the "Getting Started with A/UX", it works as expected. In general:

- To select a "contiguous" group of files and folders, or files and folders on the same level, press Shift while you select files or folders. You can also select the first file in the group, press Shift and select the last file in the group--all files in between are selected.

- To select files or folders that are "not contiguous", press Command and select the files or folders.

Published Date: Feb 18, 2012

A/UX: Accessory Kit: READ ME File Correction

The READ ME file that comes with the A/UX Accessory Kit tells the user to phone 408-446-9836 for software patches.

I've tried this number several times without success. Is it the wrong number, or has the service not been turned on yet?
This article has been archived and is no longer updated by Apple.
At present, the facility for providing A/UX software patches service has not been set up yet; the number 408-446-9836 is no longer in service.

Please ignore the above information in the READ ME file of the "A/UX System Setup and READ ME" floppy disk at this time. We will announce the number as soon as this facility is completed.
Published Date: Feb 18, 2012

A/UX: Fix for "POSSIBLE FILE SIZE ERROR I=xxx Error"

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

QUESTION ----------

When I run fsck on my A/UX system, it shows several possible file size errors and the corresponding inode numbers. Is there any way to fix these files?

This article has been archived and is no longer updated by Apple.
The "POSSIBLE FILE SIZE ERROR I=xxx" error occurs in the Phase 1 of "fsck" when the file information in the inode table conflicts with the actual file size.
With this inconsistency, basically, you can find the file of the inode number, make a copy, and remove it.

For example, with the file system /dev/dsk/c5d0s4 (which encountered the "POSSIBLE FILE SIZE ERROR I=xxx") mounted on /u2, and the inode number 1234 associated with the error, do the following:

1) # cd /u2
2) # find . -inum 1234 -print
(It displays the filename path of the inode number 1234.)
3) Go to that path and try to make a copy of that file (if it is important).
4) Remove that file.
5) # cd /
6) # umount /u2
7) fsck /dev/rdsk/c5d0s4
(The "POSSIBLE FILE SIZE ERROR" for that inode should go away after "fsck".)

Published Date: Feb 18, 2012

A/UX: Problem Retrieving Files From Apple 40SC Tape

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Using an Apple Tape Drive, I tried loading the third-party UNIX applications you shipped to our office on two cartridges. I didn't have directions for extracting the files from the tape, so I used tar. The system replies with a Tape Read Error.

The following commands were unsuccessful:

tar -tvf /dev/dsk/t0
tar -tvf /dev/dsk/t1
tar tvf /dev/dsk/t0
tar tvf /dev/dsk/t1
tar -xvf /dev/dsk/t0
tar -xvf /dev/dsk/t1
tar xvf /dev/dsk/t0
tar xvf /dev/dsk/t1

The following commands were successful:

mt -f /dev/dsk/t1 rewind
mt -f /dev/dsk/t1 fsf 1

What did I do wrong?

This article has been archived and is no longer updated by Apple.
You should have received the instructions to install from the two tapes. The two A/UX demo tapes distributed by A/UX Technical Resources contain many third-party Macintosh/UNIX applications (approximately 80MB). Most of these files are compressed tar format.

The instructions describe in great detail the contents of the tapes, how much space is required, and how to extract files. We would suggest that you get the instructions before trying to extract any files.

In general, instead of "/dev/dsk/", you should use something like "/dev/rmt/tc ". All logical tape units are stored in the /dev/rmt directory. Also, since the Apple 40SC Tape Driver has an 8K buffer boundary in the kernel, you need to state a block factor option in the "tar" command.

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TA40640_X_Windows_Compared_to_SunView_and_SunTools_(TIL04749).pdf

X Windows: Compared to SunView and SunTools

Article Change History

08/10/92 - REVIEWED
* For technical accuracy.

What is the difference between Sun Microsystems' Suntools, SunView, and X Windows?

This article has been archived and is no longer updated by Apple.
SunTools and SunView together provide similar functionality to that of X Windows and X Windows-based applications. SunView provides a programming interface and basic windowing capabilities similar to X Windows. However, SunView is Sun's proprietary windowing environment and, hence, is a competitor of X Windows.

To locate a vendor's address and phone number, use the vendor name as a search string.

Published Date: Feb 18, 2012

TA40641_LaserWriter_Utility_Provides_List_of_Fonts_(TIL04751).pdf

LaserWriter: Utility Provides List of Fonts

Is there a program that prints a list of all fonts and their font ID numbers in the LaserWriter?

This article has been archived and is no longer updated by Apple.
The LaserWriter Font Utility provides the ability to list all fonts currently installed in a LaserWriter. The LaserWriter (PostScript) does not use font ID numbers; all fonts are referred to by their proper names (Courier, Helvetica, Times-Bold, and so on.

Published Date: Feb 18, 2012

Macintosh SE-to-Macintosh SE/30 Upgrade: Drive Issues

I have a Macintosh SE with two floppy drives. Can I upgrade to a Macintosh SE/30 with one Apple SuperDrive (formerly Apple FDHD) and one 800K floppy drive?

This article has been archived and is no longer updated by Apple.
It is not possible to upgrade a Macintosh SE with two floppy drives to a Macintosh SE/30 with one SuperDrive and one 800K floppy drive. This is because the Macintosh SE/30 logic board has only one internal floppy-drive connector. When upgrading a dual floppy drive Macintosh SE, you must remove one of the internal floppy drives.

It is possible to upgrade to the SuperDrive without also upgrading to the Macintosh SE/30 logic board. In this case it would be possible to retain both floppy drives.

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Apple Portrait Display: Macintosh SE Card Is Available

Are there any cards that connect Apple Portrait Display to the Macintosh SE?

This article has been archived and is no longer updated by Apple.
Mobius Technologies has a video card that drives the Apple Portrait Display. For more details, search the Tech Info Library under "Mobius."

Published Date: Feb 18, 2012

TOPS: No Access to AppleShare Driver

I want to use AppleShare PC 2.0 with a LocalTalk PC Card to provide print services to a LaserWriter, while continuing to use TOPS to provide file services. Can I?

On a related note, can AppleShare PC use memory above the 640K barrier? Are there any official plans to make it available in the future?

This article has been archived and is no longer updated by Apple.
TOPS doesn't plan to provide access to the AppleShare driver from TOPS, now or in the foreseeable future. Therefore, you must continue to have both the TOPS card and LocalTalk PC Card installed in your system to gain access to both services. This information was provided by TOPS Technical Support.

If you need print services only, you might consider TOPS NetPrint. It is a software package that enables DOS users to print directly to the LaserWriters or other PostScript-compatible printers from within their DOS applications. NetPrint lets DOS users print the full IBM character set, all LaserWriter fonts, and any downloadable fonts.

AppleShare will not load into expanded memory. AppleShare PC 2.0 uses differing amounts of memory based on the options installed, as outlined below:

File and Print Services: 117 - 126K
File Services only: 91 - 100K
Print Services only: 62 - 71K
AppleTalk and MLI driver(s) only: 49 - 58K
MLI driver(s) only: 13 - 22K

Add 57K to make the DA memory resident
Add 6 - 15K per additional MLI driver

For more details, search the Tech Info Library under "TOPS."

Published Date: Feb 18, 2012

TA40645_MacintoshtoCompugraphic_Connectivity_(TIL04755).pdf

Macintosh-to-Compugraphic 9600 Connectivity

I want to buy a Compugraphic 9600. Can I send output from the Macintosh to the Compugraphic?
This article has been archived and is no longer updated by Apple.
Agfa Compugraphic sells an Adobe PostScript RIP for the Compugraphic 9600. The RIP (Raster Image Processor) comes with the necessary driver software for the Macintosh and requires no modification of files. For more details, search the Tech Info Library under "Agfa Compugraphic

Published Date: Feb 18, 2012

Macintosh SE: Internal HD in Dual Floppy Voids Warranty

If I install a third-party hard disk in a dual-floppy Macintosh SE, will I void the warranty on the Macintosh?

This article has been archived and is no longer updated by Apple.
To answer this question, we looked in the Apple Service Programs binder. The following information is under the "Product Notices" tab on page 8.4.12 (6/15/89 is the revision date):

Macintosh SE and Macintosh II Third-Party Add-Ons (Announced September 87)

The addition of third-party peripherals does not void the Apple Limited Warranty, provide that:

- The addition of the third-party peripheral does not require modification to the design of either the Macintosh II or Macintosh SE.

- If a third-party peripheral requires dealer installation, the installation is performed by an Apple Service Certified Technician. ESD precautions should be followed during installation.

- The total number of internal drives does not exceed two for the Macintosh SE.

- Third-party peripheral cards satisfy Apple specifications for the NuBus architecture in the Macintosh II and the SE-Bus architecture in the Macintosh SE.

- Third-party RAM SIMMs must meet Apple specifications for the CPU they are installed in.

- Third-party hard drives satisfy the thermal, physical, and electronic specifications stated by Apple for internal SCSI devices.

Based on the statement, "The total number of internal drives does not exceed two for the Macintosh SE", any Macintosh SE configuration that has three internal drives voids the Apple Limited Warranty. Also, any configuration that disrupts the internal thermal dynamics (air flow) of the Macintosh SE voids the Apple Limited Warranty.

Published Date: Feb 18, 2012

Macintosh Plus: Control Panel Startup Device Not Available

The Startup Device does not appear in the Control Panel on Macintosh Plus systems. This happens with System 4.3 and with System 6 and later. And using System 7, there is no Startup Disk control panel available either. I have two hard disks and want to choose which one should start up first.

This article has been archived and is no longer updated by Apple.
That behavior is correct. On Macintosh Plus or earlier Macintoshes, the Startup Device module of the Control Panel does not appear while running System 6.0.X or earlier, nor does the Startup Disk control panel appear while running System 7 or later. The SCSI firmware is different on the Macintosh Plus and does not allow for the same flexibility that later Macintoshes provide. The SCSI device with the highest SCSI number will be the first device to boot (note that an internal hard drive will take SCSI ID 0, while the Macintosh itself will take SCSI ID 7).

For more information, see chapter 18 of "Inside Macintosh Volume V," specifically page 325.

Published Date: Feb 18, 2012

TA40648_Unix_Software_for_Lisa_(TIL00476).pdf

Unix Software for Lisa

This article has been archived and is no longer updated by Apple.
If you have questions about Unix and what software is available for that operating system, contact:

Santa Cruz Operations
500 Chestnut St.
Santa Cruz, CA 95060
(408) 425-7222

--OR--

Unipress Software
1164 Raritan Ave.
Highland Park, NJ 08904
(201) 985-8000
Published Date: Feb 18, 2012

A/UX: "cpio" and Floppy Disk Error (2/95)

I encountered a problem with "cpio". When I try to restore a big file, which was "cpio"-ed on to two floppy disks, in a directory where the file already exists, I get the message:

"can't read input - errno=25: Not a typewriter"

After some retries, the restore succeeds. When I restore the file in a directory where the file doesn't exist, I don't have the problem. It seems that this error occurs when you try a restore from more than one floppy disk and to a directory where the file already exists.

Also, I am now seeing error number 5 on a regular basis.

This article has been archived and is no longer updated by Apple.
We experienced the same problem you encountered with the "cpio", which involved a big file across two floppy disks.

The error saying "not a typewriter" is an historical error. The text for this error message was created when the terminals attached to the system were teletypes. The error is saying that there is no terminal attached to the process where the process can send messages generated by either STDIO (standard output) or STDERR (standard error). This message is common on processes that are started from a script, from cron or from inittab. It can also be encountered if a process is started as a background process. If the process generates any kind of output, the message "not a typewriter" is displayed.

As we have debugged further, the problem seems to be with either the "cpio" program itself or the floppy driver. We encountered a state where the errno changed to 25 after the "fgets()" function was called while trying to open the current directory.

The "Can't read input - error=25: Not a typewriter" error message appears when specify a block device rather than a character device.

Normally, the "Can't read input - error=5: I/O error" or the "Can't write output - error=5: I/O error" message appears, when the floppy disk was not inserted in the drive before the "cpio" command tries to open the drive. The driver can also give this messge when it detects a bad floppy disk.

Article Change History:
27 Feb 1995 - Added historic information on "not a typewriter".
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

NEC Laser Printer: Patch for Dual-Bin Support

I have a NEC LC890 laser printer (a PostScript printer) with a 2-bin sheet feeder, but I can't use it, because with the standard LaserWriter driver you see only one bin. Do you know of a driver that controls two or more bins?

This article has been archived and is no longer updated by Apple.
We contacted NEC Technical Support, and they told us that the NEC LC890 will plug into an AppleTalk network and work with the Apple LaserWriter driver. As you mentioned, only one bin can be seen by this driver. NEC has a patch for the LaserWriter driver that gives you dual-bin support.

NEC told us that this patch is available on their free bulletin board. The number for that bulletin board is 508-264-8816. The patch is in the Apple section. It is called "dual-bin support" (LaserWriter driver 5.2/6.0), and the filename is "dualbin.sit." There is a patch that works with LaserWriter driver 5.2 and a patch that works with LaserWriter driver 6.0, plus documentation included in this StuffIt package.

The patch gives a different print dialog for you to select different bins. Other printers on the network, like an Apple LaserWriter, appear the same as they do now. The print dialog does not change for them.

Published Date: Feb 18, 2012

LaserWriter: Print layout can differ from screen layout

This article has been archived and is no longer updated by Apple.
Drivers 3.0 or earlier try to create a resemblance to the screen's image of text. The driver then sends this resemblance to a LaserWriter or LaserWriter Plus.

To create this resemblance, a line layout routine in the driver formats each line extensively, padding the spaces between characters. The routine that does the formatting takes into account that the Macintosh's screen, 512x342 pixels, displays 72 pixels/inch and that the LaserWriter prints 300 dots/inch.

In the complex conversion from Macintosh screen pixels to LaserWriter printer dots, converting a 72 pixel inch to a 300 dot inch and accounting for angles, boldfacing, italicizing, and so on, the result is not always an exact resemblance. While the routine creates a printed line that resembles the screen line in length, the printed line can look different because of the routine's padding between characters.

This padding appears in lines printed with drivers 3.0 or later EXCEPT when fractional pixel widths, disabled by default, are turned on by an application. With fractional pixel widths enabled, the printer driver doesn't use its line layout routine and doesn't measure line length; printing can go as fast as possible.

In case an application enables fractional pixels and thus disables the line layout routine, the designers have made it possible to create a resemblance going the other way: the screen's image of text can be made to resemble the LaserWriter's image of text. This can happen even if text never goes to the LaserWriter.

To match LaserWriter text on the screen, the Macintosh uses FOND resources. FOND resources represent "families" of FONT resources and contain information about the width of each character in the font as if it were printed. To map the printer's ROM-based fonts to the Macintosh's screen fonts, the Font Manager and QuickDraw use these FOND's to calculate the width for the text to be displayed on the screen. To determine line breaks, the application can use these widths as well.

Fonts should be added or deleted from the System File with Font/DA Mover version 3.0 or later to insure that FOND's and Fonts are correctly updated.

For further information refer to "Inside Macintosh: The Font Manager" and/or "LaserWriter Reference Manual".
Published Date: Feb 18, 2012

QuickDraw: How It Does Pattern Alignment

I need to know how QuickDraw aligns its patterns when it's drawing them. I'm using off-screen bitmaps to get patterns that always start in the same place, but a less memory-intensive solution would be nice. Is there a way to do this?

This article has been archived and is no longer updated by Apple.
QuickDraw aligns patterns relative to the origin of the current GrafPort, which is usually a window. The origin of a window is the upper lefthand corner of the window. This causes a pattern to "shift" within a pattern-filled rectangle if that rectangle is placed in different locations within a window. The method of drawing a filled shape in an off-screen bitmap and then placing it in the current window is an acceptable method for forcing a pattern's placement within that filled shape.

Published Date: Feb 18, 2012

Macintosh: Remote Power Up (12/93)

I want to remotely power up and remotely reset a Macintosh computer? Are there Apple or third party solutions available?

This article has been archived and is no longer updated by Apple.
Depending on the Macintosh model you have, there are different software and hardware solutions available. Many Desktop (examples: Macintosh IIcx, IIci) and PowerBook models are capable of being remotely powered up or restarted.

Below are a few examples of some solutions.

* Farallon Timbuktu/Remote Pack includes a cable and software that allows a Macintosh to be started remotely. For further details, contact the vendor, Farallon. To obtain contact information, use "Farallon" as a search string.

* PowerKey is a hardware and software solution for compact and modular desktop Macintoshes. For further details, contact the vendor, Sophisticated Circuits. To obtain contact information, use "Sophisticated Circuits" as a search string.

* If a Macintosh is powered on and is connected to an AppleTalk network, you can use third party network management software to restart Macintoshes over the network. GraceLAN Update Manager by TechWorks and Status*Mac by ON Technology are two examples. Use the vendor as a search string for contact information for these companies.

* For PowerBook computers, you can use the Auto Wake Up feature in the PowerBook control panel to set a time for your PowerBook to automatically "wake up."

Macintosh II, IIx computers: Special Information

The information below describes how to modify the Macintosh II and IIx models, which don't have the auto power capability. One of the scenarios suggested is how the PowerKey product works.

If you want to modify the Macintosh, consider the following. The way to power up the Macintosh II without pressing a button requires a modified power supply or a completely different one. There is circuitry in the Macintosh II power supply that senses a level transition from the logic board, initiated by pressing either the button on the back of the machine or the reset key on the ADB keyboard. If this transition does not occur, the power-up sequence does not start. If a steady voltage is applied to the Power Fail signal line into the power supply, the sequence will not start. The power supply must see the transition to begin the power-up cycle. A modified power supply that powers up with a voltage applied steadily, instead of level-shifted, would work in this case.

To replace the switch on the back with a power-sensing switch, you must ensure the proper connections are made, because the switch is a double-pole, double-throw switch. Also, the new switch needs to perform the same function as the existing mechanical one. That is, it must switch ground into the shutdown circuit to shut off the system. Likewise, to turn the system on, it must switch power in. This is not to say it cannot be done. Just make sure the functions of the power-sensing switch are the same as the current mechanical one.

Another possibility may be to create a circuit that plugs into the ADB port and generates pulses of a sufficient amplitude (between 3.0 and 6.8VDC) and duration (>1.5 seconds) on the proper pins (2 and 4) to operate the Power Fail circuit in the present power supply long enough to bring it up. Perhaps a remote ADB switch would work, too. It would need to momentarily connect pins 2

and 4 on the ADB port.

Article Change History:
22 December 1993 - Added new third party information, removed old info.

Published Date: Feb 18, 2012

MacWorkStation: A Pseudo-TLPM Workaround

Is there a plan to provide a TLPM to run MacWorkStation over the TokenTalk NB Card?
This article has been archived and is no longer updated by Apple.
Providing a TLPM (Transport Layer Protocol Module) to let MacWorkStation run over Token Ring is under investigation. There is no timeframe for implementing it.

As of September, 1989, you can use MacWorkStation over the Apple TokenTalk NB Card via ADSP (Apple Data Stream Protocol), as if you created a pseudo host application on another Macintosh.
Published Date: Feb 18, 2012

A/UX 1.1: "pstat -m" Option Problem

This article discusses a "pstat -m" option problem.

This article has been archived and is no longer updated by Apple.

The "pstat -m" option should report about core memory allocations and give a dump of the memory free map with headings about

- core addresses(LOC)

- click addresses (ADDR)

- sizes of clicks (SIZE).

However, when you type "pstat -m", you get a general report about buffers, inodes, procs, file table (type the -a option), and an empty report with no entries about LOC, ADDR, and SIZE.

At the end of the report, you get a statement similar to:

"Total memory = 1023K, currently free = 0K."

This message appears whether it is a non-loaded or even heavily-loaded system (running 5 nntp sessions, nfs, crunching C code, and so on).

This is a problem in A/UX 1.1, not your particular kernel. This problem has been fixed in A/UX 2.0.

Published Date: Feb 18, 2012

Apple IIGS: Users Should Upgrade to PrintShop GS 1.1

This article describes why and how to get an upgrade for Printshop GS.

This article has been archived and is no longer updated by Apple.
Versions prior to 1.1 of Broderbund's PrintShop GS are incompatible with the new Apple IIGS ROMs. The fix is for the customer to send the PrintShop disk back to Broderbund (address is on the disk label, Attn: Software), along with a receipt of purchase and a letter stating that you would like to upgrade to version 1.1.

Published Date: Feb 18, 2012

A/UX: No Pascal Compilers (5/97)

Do you know where I can find an ANSI standard Pascal compiler for A/UX?

This article has been archived and is no longer updated by Apple.

We are not aware of any Pascal compilers currently available for A/UX. The two listings below are rather old, but you may want to check with them just in case.

Virginia Tech

Virginia Tech was offering their Pascal compiler for A/UX. As of September, 1989, the compiler had 400 to 500 users on the Tech campus. Distribution is by way of a site-license basis to other universities.

However, Matt Davis, one of the developers, indicated a willingness to work with commercial users. For more information, E-mail Matt Davis directly at the following Bitnet address:

davism@vt.opus.cs.vt.edu

Axis Digital

Axis Digital of France had a product available for A/UX 1.1 called HCR/Pascal. It's a translator from Pascal (ISO DP7185, ANSI, with UCSD-extensions string) to C.

Published Date: Feb 18, 2012

Ethernet: NFS-to-ATP Translation Over Backbone

I want to connect to an Ethernet backbone to which personal IRIS workstations are connected. I want to do NFS-to-AFP translations. Basically, I want to do the same thing that the Cayman GatorBox does, but I want to eliminate the GatorBox and connect directly. The personal IRIS workstations are UNIX machines; their UNIX adheres to TCP/IP standards. We are looking for a supported solution. I would rather not get Telnet using Excelan's EtherPort SE/30 and host access for the Macintosh. I would rather mount directories onto my Macintosh. Can I do this without a GatorBox?

This article has been archived and is no longer updated by Apple.
Yes, You can do this without a GatorBox by getting the CAP (Columbia AppleTalk Package for UNIX), a public domain software from Columbia University. Here are CAP's prerequisites:

- Kinetics FastPath box

- KIP, a revision of the UDP software, developed by Bill Croft at Stanford University

- Based TCP/IP host running UNIX

For the above CAP/KIP/AUFS solution, basically, the customer needs to install the CAP software on the UNIX host and download the KIP code to the Kinetics FastPath box. The client Macintosh side can run on either LocalTalk or EtherTalk.

For more information on CAP and KIP, search under these words in the Tech Info Library. Also, pay particular attention to the Tech Info Library articles "UNIX: Kip and Cap Information," "Macintosh: Columbia AppleTalk Package And AUFS," and "Macintosh-To-Sin Connectivity."

Published Date: Feb 18, 2012

AppleShare PC 2.0: Not Recommended on Single-Drive PC

When installing AppleShare PC on a machine with one 5.25-inch disk remember that it really has two logical drives, A: and B:. To test this at DOS, issue this command:

DISKCOPY A: B:

The DOS DISKCOPY program prompts you to switch disks with a message like

"Please insert the diskette for drive A:."

Because I haven't had a chance to use AppleShare PC 2.0, I don't know how the installer batch file is written. If it asks for drives by drive letter, I'd try specifying A: and B: and let DOS ask you to do a disk swap.

This article has been archived and is no longer updated by Apple.
You are correct that the AppleShare PC 2.0 installer can install from A: to B:--even when B: is just a logical drive. DOS prompts for each disk as it is needed. Unfortunately, because of the installer program's design, this might require swapping disks as many as 100 times--even for print services alone.

This means that we do not recommend installing AppleShare PC 2.0 using a system that has only one floppy drive and no a hard disk. Booting such a system with already installed disks works fine. However, unless you enjoy swapping disks, don't try to install on it.

As a side note, the installer is actually an executable file, not a batch file. You can write a batch file to do the install by using the xcopy command on groups of files. This shortens the install process a great deal and allows installing with a single drive PC. Of course, it also requires manual preparation of AUTOEXEC.BAT and NET.CFG and selection of the proper REDIR file, depending on what version of DOS is being used.

Published Date: Feb 18, 2012

Use MacLink Plus 3.X With Wang VS Release 7

I am using MacLink Plus/Wang VS 2.02 to connect the Macintosh to a Wang VS model 15 running the VS release 7 operating system for terminal emulation using direct cable to an ADC port. When connection is established, I get the logon VS screen--but that's all. The characters entered for userid and password don't seem to be accepted by the VS; the Macintosh beeps with each keystroke.

This article has been archived and is no longer updated by Apple.
We talked with DataViz Technical Support, and they confirmed that versions of MacLink Plus prior to version 3 do not work properly with VS release 7. They suggested that you should upgrade to the latest version which is 3.06. According to DataViz, they currently have a free upgrade program in place.

For more in-depth support on their product, we suggest you contact them directly. For more their addresses and numbers, search the Tech Info Library under "DataViz."

Published Date: Feb 18, 2012

Macintosh: Database File Conversion

I need to transfer database information from a Tandy system running an ENABLE-based program called Legis and a program called Q&A to Microsoft Works. Do you know how to do this?

This article has been archived and is no longer updated by Apple.
We are not familiar with either Legis or Q&A. However, you can transfer data from one database to another by way of several different methods. Any of these methods is fairly straightforward. The object is to find a common link between the two systems and their associated databases. This may be matching file formats, a common file format, the ability to import data from a text file, or being able to read an incoming data stream.

You may be able to use a common file format, like DIF or SYLK, or save the database information to a text file and use the import feature within Microsoft Works to retrieve the information. In either case, you should be able to move the file from the Tandy to the Macintosh via the Apple PC 5.25 drive and Apple File Exchange.

If you do not have access to an Apple PC 5.25 drive, the database-generated text file also can be transferred between the systems using either PC MacLink or a direct serial connection with a terminal package running on both systems.

Another method of moving the information would be to use a network solution, like TOPS or AppleShare PC, making the database files available to everyone. Again, to make this a working solution, use a common file format.

Published Date: Feb 18, 2012

TA40662_Mutoh_Plotter_Macintosh_Compatibility_(TIL04785).pdf

Mutoh Plotter: Macintosh Compatibility

I need compatibility information about the Mutoh plotter series, especially IP-500 and IP-530. Which Macintosh software can drive it? Will MacPlot Professional drive it? Which standard plotters (if any) are these Mutoh plotters compatible with? The data sheets only say that they are HPGL-compatible.

This article has been archived and is no longer updated by Apple.
We contacted the Mutoh Sales Office in Southern California and found that the IP-500 emulates an HP-7580. All they had to say about the IP-530 was that it is HPGL-compatible. It doesn't emulate any specific plotter. The folks at Microspot (MacPlot driver) would not guarantee that the Mutoh plotters would work with their product, because they haven't been tested. They stated that there should be no problem driving any HPGL-compatible plotter.

Published Date: Feb 18, 2012

Some Apple Manuals are Available on Disk or in Braille (4/93)

Article Change History

04/14/93 - REVIEWED
* To verify company information.

Does Apple provide any manuals or other documentation in Braille? How about disk files for the manual that I could output on my Braille printer.

This article has been archived and is no longer updated by Apple.
Two companies are licensed to distribute disk copies of some Apple manuals:

* American Printing House for the Blind distributes manuals for various Apple products.

* RFB (Recording For the Blind) distributes disk-based manuals for various Apple products as well as third-party products.

To locate a vendor's address and phone numbers, use the vendor name as a search string.
Published Date: Feb 18, 2012

Works-to-Works/AppleWorks 3.0: Saves Files in ASCII

The name Productivity Software, Inc. appears in the "Get Info" dialog box for the AppleWorks-to-Microsoft Works translator for Apple File Exchange. This translator does not support the new AppleWorks 3.0.

I am receiving a rash of complaints about backward and forward compatibility surrounding AppleWorks 3.0. Is anyone else getting these complaints? It seems that version 3.0 will not read older 1.x files and will not allow the user to save files in older 1.x or 2.x formats.

I am trying to find out if there will be an upgrade? Does anyone have the phone number for Productivity Software, Inc. or know where they are located?
This article has been archived and is no longer updated by Apple.
CLARIS Tech Support is telling their customers to save the files as ASCII for Works-to-Works to function as expected. Using the new features causes AppleWorks 3.0 to use a different creator type, which is not recognized by Works-to-Works. The phone numbers we have for Productivity Software are no longer valid. However, we are emailing them a copy of this.

CLARIS was unaware of problems reading files saved by older versions of the software. As long as no new features are used, AppleWorks 3.0 saves files in a format that can be read by older versions of the software. Once a new feature is used, the creator type is changed and is no longer readable by older software.

This is intentional because the old software would get confused when trying to deal with the results of a new feature. Again, they suggest saving the file in ASCII form for reading into previous versions. For further clarification, call CLARIS Technical Support. For more details, search the Tech Info Library under "CLARIS".

TIL article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

Micro Touch Screen: Not Compatible with CloseView (11/95)

I have a Macintosh SE with 1MB RAM and Micro Touch Screen installed. System software is System 6.0.2 and Finder 6.1. My problem is that Macintosh SE freezes on "Welcome to Macintosh" window.

This article has been archived and is no longer updated by Apple.
Unfortunately, Micro Touch software is not compatible with the Control Panel document "CloseView". Your fix is to remove CloseView from the System Folder.

Article Change History:
29 Nov 1995 - Corrected minor typo.

Support Information Services

Published Date: Feb 18, 2012

TA40666_AntiTheft_Device_for_the_Lisa_(TIL00479).pdf

Anti-Theft Device for the Lisa

This article has been archived and is no longer updated by Apple.
An anti-theft device for the Lisa is available from:

Anchor Pad of Northern California
1255 Post St., Suite 723
San Francisco, CA 94109
(415) 441-2593

Published Date: Feb 18, 2012

AppleShare Print Server: Installing Software

The AppleShare Print Server Administrator's Guide refers to a "Server System" that should be used when installing a server see (page 16, instruction 5).

What happens when a user wants to set up a server on a 68030-based machine that needs System 6.0.3? This is not provided for in the Server Software package. Because the standard System Software is the only way to obtain System 6.0.3, could this cause problems?

This article has been archived and is no longer updated by Apple.
When installing the AppleShare Print Server on a Macintosh 512Ke, it is important to install the System Software using the AppleShare Print Server installer disk. This guarantees that the AppleShare Print Server software is running in conjunction with System Software that supports both the Macintosh 512Ke and the Print Server software.

On the Macintosh Plus and later Macintosh systems, we recommend installing the System Software from a disk containing the most recent version of System Software available for that particular machine. For example, you should install System Software 6.0.3 for the Macintosh IIcx. Then install the AppleShare Print Server software.

Published Date: Feb 18, 2012

Macintosh System Software 6.0.4: General Information

This article is a general disucssion

This article has been archived and is no longer updated by Apple.

The Macintosh IIci and Portable REQUIRES Macintosh System Software 6.0.4 or later. Trying to boot either of these computers from versions earlier than 6.0.4 results in a dialog box that reads "This startup disk was created with a 'Minimum' installer script and will not work on this model Macintosh. Use a standard installer script to update the disk for different models.".

The only people who need to upgrade to 6.0.4, are those who will be using the Macintosh IIci or the Portable. In both cases, 6.0.4 is included. Most of the changes that occurred in 6.0.4 were required by the IIci and Portable hardware. Some of the more significant changes to 6.0.4 include:

- The Multi-Disk Installer is introduced with 6.0.4.

- The Sound Manager was modified to use the Time Manager to provide fixed frequency timing.

- The SysEnvirons call has been modified to support the new computers.

- Responder has been modified to recognize the new computers.

- Code to support IIci parity is included in 6.0.4.

- A new version of the Monitors cdev is included with 6.0.4 which supports direct video modes, improved grayscale video modes, and third-party extensibility. On the Macintosh IIci, Monitors also includes special extensions so the sophisticated user can control the amount of RAM dedicated to built-in video.

- The Battery DA was added so users could monitor the power level of the Macintosh Portable battery.

- The Portable cdev is included in 6.0.4. This lets users change various settings for the Macintosh Portable.

- CloseView 1.1 is included in 6.0.4. This version has a better interface than 1.0.

Macintosh System Software 6.0.4 will also be included with all Macintosh models as of the IIci introduction. This version will also be rolled into the stand-alone Macintosh System Software package.

Those who have subscriptions to the Macintosh System Software update service will also receive 6.0.4.

Published Date: Feb 18, 2012

MacroMaker: How To Simulate a Pause

Is there any way to put in wait states or time delays into a MacroMaker recording?

This article has been archived and is no longer updated by Apple.
MacroMaker has no built-in pause function, but it is possible to simulate a pause by recording an extended mouse-button press. To create a simulated pause while recording your macro, press and hold the mouse button for the desired length of the pause. When you play back the macro, the extended mouse button press is played back using the same amount of time as when it was recorded.

Be careful to press the mouse button with the mouse pointer in an unimportant part of the screen. For instance, do not pull down a menu to create the pause or important activities may be suspended for its duration. Your best bet may be to hold the mouse button down while the pointer is in a lower corner of the screen, to avoid affecting the operation of other software.

Published Date: Feb 18, 2012

Applesoft: High-Res Screen Swapping

The POKEs listed in the Applesoft Reference manual allow you to plot data on one High-Res screen while displaying the other.
This article has been archived and is no longer updated by Apple.
The POKEs control which screen is displayed, while location 230 (decimal) controls which screen is plotted by the HIR =>ommands. For example, POKE 230,32 causes Applesoft to draw on screen 1 (HGR), while POKE 230,64 will draw to screen 2 (HGR2).
Published Date: Feb 18, 2012

Lisa: When to "Repair" Your Hard Disk

This article has been archived and is no longer updated by Apple.
Anytime your system resets or falls victim to a power outage or any other kind of abnormal power down, you must "repair" your hard disk. Also consider reparing your hard disk when your system is acting strangely or if you're having difficulties locating or displaying your documents, even if they are located on a diskette. The repair is basically a disk clean-up: it closes any files left open, gets rid of unused scratch files, and then reconstructs the catalog files if necessary.

If you receive the message "the disk needs minor repairs", start up with the Office System 1 diskette to repair your hard disk. If you've just repaired the hard disk using the Office System 1 diskette, perform the "minor repair" as well when given the choice.

The Office System 1 repair is very thorough, while the minor repair merely reconstructs the catalog files.

Note: Repairing the hard disk will delete folders (but not documents) in Office Systems older than version 3.0.
Published Date: Feb 18, 2012

Legislative-Information Databases: A List

Can you give me a list of services that provide electronic access to legislative-information databases?

This article has been archived and is no longer updated by Apple.
So many services provide electronic access to legislative-information databases that we cannot describe them all. Here is a brief list of those that seem most appropriate with contacts for each:

LEGI-SLATE

Legi-Slate, Inc.
777 North Capitol, Suite 900
Washington, DC 20002
202-898-2300

Updated daily. Available on-line via LEGI-SLATE.

LEGI-SLATE reports federal legislative and regulatory information. It comprises the following six services: Congressional Service, Federal Register Service, Bill Text Service, Member Profile and Rating Service, News Service, Press Briefing Service.

CQ Weekly Report

Congressional Quarterly Inc.
1414 22nd St., N.W.
Washington, DC 20037
202-887-6353

Updated weekly. Available on-line via DataTimes as the CQWEEK file.

CQ Weekly Report covers U.S. Congressional and political activity, including legislation and election news. It reports on legislative proposals, decisions, and historical backgrounds; interest group lobbying; and Supreme Court decisions. CQ provides pre-election forecasts, post-election analysis, candidate and new member profiles, and vote studies.

Congressional Activities

Oliphant Washington Services (OWS)
1819 H St., N.W., Suite 330
Washington, DC 20006-3677
202-296-0924

Updated weekly. Available on-line via NewsNet, Inc.

Congressional Activities provides information on upcoming congressional events related to the environment and the energy industry. It includes a schedule of hearings, historical background information on scheduled actions, a list of bills and resolutions introduced, reports files, measures passed, laws enacted, and Congressional Record references.

Congressional Record Abstracts

National Standards Association, Inc. (NSA)
1200 Quince Orchard Blvd.
Gaithersburg, MD 20878
301-590-2300

Updated weekly. Available on-line via DIALOG Information Services, Inc.

Congressional Record Abstracts summarizes the legislative and policy proceedings reported in the Congressional Record, the official journal of proceedings of the United States Congress.

Electronic Legislative Search System (ELSS)

Commerce Clearing House, Inc. (CCH)
4025 W. Peterson Ave.
Chicago, IL 60646
312-583-8500

Updated daily. Available on-line via GE Information Services.

CCH provides a complete, up-to-date history of all legislative activity in current sessions of all state legislatures and the U.S. Congress.

For information on connect services, search the Tech Info Library under "DataTimes," "DIALOG," "LEGI-SLATE," and "GE."

Published Date: Feb 18, 2012

TA40674_GSC_Associates_Inc_(TIL04804).pdf

GSC Associates, Inc.

GSC Associates, Inc.

This article has been archived and is no longer updated by Apple.
13254 Jefferson Ave.\\Hawthorne, CA 90250

310-379-2113

310-379-1649 Fax

Company Profile:
Software, specializing in graphics transfers.

Article Change History: 07/12/93 Address changed
Published Date: Feb 18, 2012

Macintosh: How To Call ExitToShell Trap from ROM Debugger (9/94)

What is the A ("ExitToShell") trap or address to call for "Resume OS" from the ROM debugger on a Macintosh?

This article has been archived and is no longer updated by Apple.
The most efficient way to call the "ExitToShell" trap with any Macintosh with the ROM debugger is documented below. To use this method, the interrupt switch must first be depressed to generate the debugger window.

At the ">" ROM debugger prompt, type the following lines, pressing Return after each:

```
SM 0 A9F4
G 0
```

In the first line, the "SM" stands for "Set Memory", the "0" signifies memory location "0", and the "A9F4" is the trap number for the "ExitToShell" trap. This line puts "A9F4" at memory location "0". In the second line, the "G" stands for "Go" and the "0" stands for memory location "0". This line tells the computer to execute the instructions starting at memory location "0". Since "A9F4" is at memory location "0", the "ExitToShell" trap is executed.

Barring other memory corruption, your Macintosh should exit back to the Finder. It is recommended that all other work in progress be saved and that the machine be restarted to completely clear and reset memory.

Article Change History:
06 Sep 1994 - Reviewed for technical accuracy, removed reference to specific Macintosh models.

Support Information Services
Published Date: Feb 18, 2012

TA40676_Macintosh_II_Old_and_New_Video_Card_Part_Numbers_Etc_(TIL04809).pdf

Macintosh II: Old and New Video Card Part Numbers, Etc.

The Macintosh II Video Card specifications seem to have changed since August 15th. After looking in the Finished Goods Price List, the part numbers have actually been replaced. The cards use to be M0213 and M0322. We need to know the changes that have occurred because the video output on their projection monitors now is blurred.

This article has been archived and is no longer updated by Apple.
Actually, Apple part number M0213 is the Macintosh II Video Card 4-Bit Expansion Kit and Apple part number M0322 is the new Macintosh II 4-Bit Video Card. The Macintosh II 8-Bit Video Card is part number M0324. The old 4-Bit Video Card's part number is M0211, and the old 8-Bit Video Card's part number is M5640.

The new video cards (M0322 and M0324) use pin 4 to detect the type of monitor attached to the card, and this feature is probably the cause of the problem. For more information on the new video cards, check the Tech Info Library article, "Macintosh II High-Resolution Video Card: New Features."

Published Date: Feb 18, 2012

System 4.1: Keyboard Mapping Changes

This article has been archived and is no longer updated by Apple.

The Macintosh character set is illustrated on page I-247 of Inside Macintosh, Vol. 1, copyright 1985. All characters that are not shaded in this illustration can be generated on any Macintosh.

With System 4.1, the keyboard mapping changed. It now uses resources in the System file for mapping dead keys. "Dead keys" are those that don't produce a character until a second key is pressed. If the second character is one that is recognized as a proper dead-key combination, then a character is produced. For example, Option-n is a dead key that produces the n-tilde character only if n is the next key pressed.

There are two omissions in the new keyboard maps for System 4.1. The capital A with tilde and capital O with tilde are valid combinations that were omitted from the key map.

Published Date: Feb 18, 2012

AppleShare PC 2.0: Token Ring Card Memory Location Solution

Problem:

I tried installing AppleShare PC 2.0 on a PS 2 Model 60. The model 60 has 5MB RAM with a 40MB hard drive. Slots 1 and 2 are empty, slot 3 has an extended memory card, slot 4 has a MicroChannel Adapter A Token Ring card (16/4), slot 5 is empty, and slot 6 has an IRMA board.

The problem is that we are getting the "Mem 2 not matching board" error. We have tried many different memory configurations, and the results are always the same. I cannot get a match. What's the problem?

This article has been archived and is no longer updated by Apple.
This error message, along with the description of the system, suggests that you may not have configured the Token Ring card. Configure the card using the IBM Reference Disk, prior to installing AppleShare PC.

Check to see if the files on other disks that may have shipped with the Token Ring card are already contained on the Reference Disk. If not, copy them to the Reference Disk. Make a note of the parameter settings for the card, particularly the memory locations you assigned. You'll need these later, when you install the AppleShare PC software. Start up your PC with the Reference Disk and install and configure the Token Ring card.

Published Date: Feb 18, 2012

GS/OS 5.0: Slow Startup Time on Network

I am unhappy with the performance of GS/OS 5.0 (not 5.0.2) when starting up 16 Apple IIGS systems over a network. It seems that the startup time has increased by about 10 minutes.

Additionally, there are problems with the workstations losing their Chooser settings. It seems to happen at least hourly.
This article has been archived and is no longer updated by Apple.
The additional time required to start up is caused by the increased size of GS/OS 5.0. Roughly speaking, the increased time works out to about 30 second per Apple IIGS (not that long, considering the amount of data being moved).

The problem of lost Chooser settings has been fixed in version 5.0.2.
Published Date: Feb 18, 2012

Macintosh: Scan Rates for Monitors

This article contains a list of scan rates of select Macintosh monitors. Scan rates for monitors not listed here can be located in the the Apple Spec database online at http://www.info.apple.com/applespec/applespec.taf/ .
This article has been archived and is no longer updated by Apple.
Here are two terms you need to understand when reading the tables:

Scan Rates
The scan rate is the time it takes a monitor's electron gun to move across one line of the screen or repeat one entire screen. These values are known as the horizontal and vertical scan rates, respectively. The monitor scan rate is the number of times a screen is redrawn each second. Computer display scan rates differ from standard video scan rates.

Interlaced versus Non-Interlaced Scans
Apple monitors use a non-interlaced, or progressive, scan. Interlacing is a technique used on character-based displays to create solid character text. It is also used on home television sets (the dominant standard in the United States being NTSC). Using alternate scan lines, the monitor performs high-speed retraces to create the illusion that the monitor has twice as many lines as it does. A major drawback of interlaced displays is their tendency to noticeably flicker thin horizontal lines, lines that are frequently used on the Macintosh interface.

The non-interlaced format used on Apple Macintosh monitors means that the horizontal and vertical scan rates are timed to cause the display electron guns to produce even progressively horizontal scans. The non-interlaced scan format helps prevent the flickering that you can see on some types of monitors.

Built-in monitors	**Vertical (Hz)**	**Horizontal (KHz)**
Macintosh 128K	60.15	22.25
Macintosh 512K	60.15	22.25
Macintosh 512Ke	60.15	22.25
Macintosh Plus	60.15	22.25
Macintosh SE	60.15	22.25
Macintosh SE/30	60.15	22.25
Macintosh Classic	60.15	22.25
Macintosh Classic II	60.15	22.25
Macintosh Color Classic	60.15	24.48
Macintosh LC 520	66.7	35
Macintosh LC 550, 575, 580	66.7	35
Power Macintosh 5200/75	60-75	35-50
Power Macintosh 5260/75	60-75	35-50
Power Macintosh 5400/180 Power Macintosh 5400/200 Power Macintosh 5400/225	60-75	35-50
Power Macintosh 5500/225	60-75	35-50
Power Macintosh G3 All-in-one	59.9-85	31.469-56.476
Apple and Macintosh Monitors	**Vertical (Hz)**	**Horizontal (KHz)**
Apple 21-in. Color Display	75	68.7
Apple Two-Page Monitor	75	68.7
Apple 16-in. Color Display	75	50
Apple Portrait Display	75	68.9
Apple AudioVision 14 Display	66.7	35
Macintosh (14-in.) Color Display	66.7	35
Basic (14-in.) Color Monitor	59.94	31.5
Performa Plus Display	66.7	35
Performa Display	66.7	35
AppleColor High-Res RGB Monitor	66.7	35
AppleColor High-Res Mono Monitor	66.7	35

Multiple Scan Monitors:

Apple Macintosh multiple scan monitors let you customize and adjust the size and position of the displayed image.

Apple Multiple Scan 15 display

Mode	Resolution	Vertical (Hz)	Horizontal (KHz)
VGA	640x480	60	31.77
Macintosh	640x480	66.7	35
SVGA	800x600	72	48.1
SVGA	800x600	60	37.9
Macintosh	832x624	75	49.7
1024x768	1024x768	70	56.5

Apple Multiple Scan 17 display

Mode	Resolution	Vertical (Hz)	Horizontal (KHz)
VGA	640x480	59.95	31.47
Macintosh	640x480	66.7	35
VESA	640x480	75	37.5
VESA	800x600	75	46.9
SVGA	800x600	55.98	35.16
800x600	800x600	60	37.8
Macintosh	832x624	75	49.73
Macintosh	1024x768	75	60.2
1024x768	1024x768	60	48.3

Apple Multiple Scan 20 display

Mode	Resolution	Vertical (Hz)	Horizontal (KHz)
VGA	640x480	59.95	31.47
Macintosh	640x480	66.7	35
VESA	640x480	75	37.5
VESA	800x600	75	46.9
Macintosh	832x624	75	49.73
Macintosh	1024x768	74.93	60.24
VESA	1024x768	75	60.02
Macintosh	1152x870	75	68.7
VESA	1280x1024	75	79.98

In some cases, it may be necessary to reset the display settings of a multiple scan monitor to their factory defaults. To reset these monitors, hold down Control button (which has the circle symbol above it), while pressing the Reset button (which has the triangle symbol).

Most of the time, just pressing the Reset button resets the display settings. However, pressing Control-Reset resets the CPU inside the Multiple Scan 17 Display and Multiple Scan 20 Display.
Published Date: Feb 18, 2012

Apple Products Meet the CISPR 22 Standard

Does the Macintosh family of computers meet the "CISPR 22" standard? Are there any stickers for "CISPR 22" approval on the back of Macintosh computers that are sold in France or any other European countries?

This article has been archived and is no longer updated by Apple.
Apple products DO meet the CISPR Publication No. 22 requirements.

The international committee on RFI (Radio Frequency Interference) -- known as CISPR -- proposed an RFI standard applicable to all Information Technology Equipment (ITE). This proposal was agreed upon by many nations, including -- but not limited to -- Australia, Austria, Belgium, Bulgaria, Canada, Denmark, Egypt, France, Ireland, Italy, Japan, Netherlands, Poland, Romania, South Africa, Spain, Sweden, Turkey, United Kingdom, U.S.A., and U.S.S.R.

As mentioned before, our products meet the CISPR Publication No. 22 requirements.-- which (as of November, 1989) aren't legally required or policed by any of the countries to which we sell products. Neither is any sort of mark or symbol that indicates a product passes the CISPR standards presently required. Labels WILL be required, but probably not until 1992. The CISPR mark will include the letters "EC" for European Conformity.

The European Computer Manufacturers' Association (ECMA) published a CISPR look-alike specification so that its members could prepare themselves in advance of when the CISPR document was published in August 1985. Therefore, you may hear that standard referred to as:

ECMA 95 (March 1985) Information Technology Equipment Limits of interference and measurement methods.

Apple Manufacturing in Cork will add FTZ numbers to product labels for those countries requiring VDE testing; otherwise, there are no special "RFI" marks or symbols on Apple products sold in Europe. Canada, though supporting CISPR, had already aligned its RFI standard to that of the FCC in the U.S.A., and uses a mark that looks like the characters "SA" encircled by a letter "C":

Products destined for sale in the U.S.A. have an FCC approval number.

Published Date: Feb 18, 2012

Broderbund Software: Problems with Apple IIGS 1MB Systems

I'm having various software compatibility problems with the new Apple IIGS 1MB system. Specifically, there are problems with Broderbund's Print Shop GS. Can you tell me anything about this?

This article has been archived and is no longer updated by Apple.
Broderbund Software is aware of the Print Shop GS compatibility issue and they have an update available. Contact Broderbund for more information on the updating procedure.

Broderbund also said that the Apple IIGS-specific versions of the "Carmen Sandiego" series might encounter difficulties with System 5.0x and the 1MB Apple IIGS computer. Tool 032 is required by these applications, and may be missing after an installation of System 5.0x.

To resolve this issue, locate a disk with Tool 032 and copy that tool into the Tools folder of the system disk to be used with the Carmen Sandiego.

For more information, search under: "Broderbund"

Published Date: Feb 18, 2012

Limits On Call Of Programming Resources

I am trying to write an application. Is there a limit on the number of resources a program can call? (A resource here would be a memory block that is periodically filled with incoming data and then called from an application.)
This article has been archived and is no longer updated by Apple.
The theoretical limit on the number of resources an application can open at one time greatly exceeds the practical limits of a program.

If you are not using "owned" resources, such as resources for desk accessories, you can have up to 32767 of a single resource type. If each of those resources held 1Kb of data, you would be accessing on the order of 30MB. In other words, the limit on the number of resources you can have open at one time is not a real limit in the way that the limit on the number of open files is.

If you are considering having thousands of resources open at one time, we suspect that you need to take a hard look at the way you are doing things and develop an alternative method for accessing data.

Note: Tech Note #141 states that the maximum number of resources you can have in a single file is 2727. Also, be aware that the size of a resource fork of a single file is limited to 16MB. This probably isn't an issue, but it has been brought to our attention at least once.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

AppleShare: Documentataion On Desktop Calls

Where are the new desktop calls (OpenDB, AddIcon, AddComment, and so on) documented? I've noticed that our AppleShare servers support the "new" Desktop Manager, but I haven't been able to find any documentation on it. Can you help?

This article has been archived and is no longer updated by Apple.
The desktop calls such as FPAddIcon are documented in two places: Inside AppleTalk and the AppleTalk Filing Protocol (AFP) Engineering Technical Notes. Both of these are available from APDA. For programming purposes, we recommend the Technical Notes; we suggest Inside AppleTalk for a theoretical understanding of the internals of AppleTalk.

(NOTE: These calls are currently available only for AppleShare. They are not supported for local volumes.)

Published Date: Feb 18, 2012

Macintosh II High-Resolution Video Card: Monitor Sensing

This article lists the pin configurations to use with the Macintosh II High-Resolution Video Card, so that its monitor-sensing function will work properly.

This article has been archived and is no longer updated by Apple.
The Macintosh II High-Resolution Video card is the replacement card for Macintosh II Video card. One new feature with this card which may present a problem is the automatic monitor sensing.

This feature, which has been incorporated into the video card for the Portrait and Two-Page display, allows the video card to determine if a monitor is attached to the card at boot time. This is accomplished by sensing either a low (ground) or high (no connect) signal on the connector.

For DB-15 connectors, these sense lines are on pin 4, 7 and 10. The Macintosh II High-Resolution Video card is a special case and only senses pin 4 of the DB-15 connector.

In order for the card to work correctly with the monitors listed below, the following is the minimum configuration of pins that must be connected:

Mac Mac
Hi-Res Hi-Res A II
Mono Pins RGB Pins RGB Pins
Pin Video Card Signal

1 Red video ground -> 1 1
2 Analog red video -> 2 2
3 TTL composite sync -> 3 3 3
4 Sense 0 -> 4 4
5 Analog grn video w/composite sync -> 5 5 5
6 Green video ground -> 6 6 6
7 Sense 1 (not used)
8 NC
9 Analog blue video -> 9 9
10 Sense 2 (not used)
11 Ground
12 Analog grn video w/composite sync
13 Blue video ground -> 13 13
14 Ground
15 NC
Shell Earth ground -> Shell Shell Shell

When Sense 0 (pin 4) is grounded, the card will generate a RS-343 video signal compatible with the Macintosh High-Resolution Monochrome and High-Resolution RGB monitor:

Horizontal Scanning = 35.000 KHz
Dot Clock = 30.24 MHz
Vertical Scanning = 66.67 Hz

When Sense 0 (pin 4) is not connected, the card will generate a RS-170 video signal compatible with the Apple II AppleColor RGB monitor:

Horizontal Scanning = 15.734 Khz
Dot Clock = 12.27 Mhz
Vertical Scanning = 60.0 Hz

In addition, the frame buffer size is reduced to fit the display area of the AppleColor RGB monitor.

(NOTE: This automatic sensing mechanism of the Apple High-Resolution Video card is similar to the Apple Portrait and Two-Page display cards, but does not have a shutdown mode -- that is, it does not show up in Control Panel -- when a monitor is not attached.

This feature is useful when you have two video cards installed, but only use one at a time. With the shutdown capability, the system software will recognize only the card with a monitor attached. Thus if a card is assigned the bootup monitor and the monitor is removed, the system will not send the startup video to a non-existent monitor.)

Published Date: Feb 18, 2012

MacTCP: Where To Get Single-User And Site Licenses

Does Apple offer any type of MacTCP site licensing agreements, or is it sold on a cost-per-individual user basis?
This article has been archived and is no longer updated by Apple.
MacTCP is available as a single-user and a site-licensed product. The single-use product is available with System 7.5, or if you do not have System 7.5, call 512-919-2645.

Customers interested in the site-licensed product need to contact Apple Computer Software Licensing. For more information, contact:

Apple Computer Software Licensing
1 Infinity Loop, M/S 38-I
Cupertino, CA 95014
408-974-4536
Published Date: Feb 18, 2012

EtherPort II 2.5: Compatible with AppleTalk Phase 2

Will the Kinetics EtherPort II card work in a Macintosh II running the AppleTalk Internet Router? If yes, what release of the drivers is required?

This article has been archived and is no longer updated by Apple.
Yes, the Kinetics EtherPort II card does work in a Macintosh II running the AppleTalk Internet Router.

Version 2.5 of the EtherPort II software, which is AppleTalk Phase 2-compatible, is required.

The EtherPort II cards are now supported by Dayna Communications; for more information, search under "Dayna".

Published Date: Feb 18, 2012

A/UX and X Windows: Frequently Asked Questions (12/95)

This article contains frequently asked questions (FAQ) about A/UX and the X Window System.

This article has been archived and is no longer updated by Apple.
Question: Does Apple provide a Motif Window Manager (mwm) to run under X Window System? Is there such manager available from a third-party? Are there any other window managers available under X Window System besides "twm", "uwm", and "wm"?

Answer: The Motif Window Manager (mwm) developed by OSF is available from Integrated Computer Solutions Inc.

There are also ports of OpenLook Window Manager "olwm" and Tom's Virtual twm "tvtwm" along with several others that run under A/UX.

Question: Is C++ available under A/UX yet? I thought I saw this recently, but I have not been able to find anything.

Answer: C++ is not available in A/UX; however, it is available through A/UX developer's tools from APDA. Also, the third-party product called "Designer C++" from Oasys, Inc. might have a solution for A/UX.

Question: Since Apple has announced MacX, will client applications written on the Macintosh OS be available as clients through MacX to other servers on an Ethernet? Can client applications be displayed on other X servers using MacX?

Answer: Currently, MacX acts as an X server that supports only X clients running on other machines, such as A/UX. No Macintosh client application can be run through MacX to other servers.

Question: How do you set the default for a color monitor when displaying the X Window System server? This can be done each time you run X by entering -screen and -depth, but is there a way to set the default to do this without entering these parameters?

Answer: Here are a couple of ways to do what you're looking to do:
* Create .X11 file in users $Home Directory, the file should contain a line reading:

/usr/bin/X11/X -screen 0 -depth 8

* You can create an alias in the .login or .cshrc file for this. For example:

alias Xcolor X /usr/bin/X11/X -screen 0 -depth 8

For more information, search under: "Integrated Computer Solutions" and "Oasys, Inc."

Article Change History:
01 Dec 1995 - Changed title and added keyword.
22 Sep 1994 - Reviewed.
15 Jan 1993 - Corrected to show latest information.

Support Information Services
Published Date: Feb 18, 2012

SMB File Transfer: Using With OS/2 LAN Server

I have a large installation running PC LAN servers, and I want to connect via Apple's TokenTalk NB Card and use SMB File Transfer.

When I tried this , I got locked out because the installation had recently been upgraded to OS/2, which has additional privileges required by the OS/2 LAN server (LAN Manager).

I could see the directory on the server, but it wouldn't show any files. Can you give me any information on how to set privileges under an OS/2 LAN server that will allow the use of the TokenTalk NB Card and SMB File Transfer?

This article has been archived and is no longer updated by Apple.
First off, when adding SMB File Transfer Utility users to the OS/2 server, remember to identify them as DOS users.

If no files or folders appear in the AFE window for any directory on an SMB server, there are three possible explanations:

- You have no access privileges for that directory.

- There are no files or folders for that directory.

- SMB File Transfer cannot determine your access privileges for the directory volume. If this is the case, SMB File Transfer assumes that you have no access privileges for this directory.

To determine access privileges when communicating with the OS/2 LAN server, SMB File Transfer requires that you have all privileges (A) for the directory to which you connect or, at least, one file exists in that directory.

If you do not have the required privileges, the network administrator must create at least one file in the directory to which users connect. This file will give SMB File Transfer the information it needs to determine your access privileges.

Published Date: Feb 18, 2012

InterPoll: Why Hop Count Fluctuates

I am using Inter*Poll on my network. The network is all Macintosh systems connected with Farallon's PhoneNET.

I did an echo test and sent out 200 packets at an interval of 0. The hop count fluctuated between 2 and 3. Why?

This article has been archived and is no longer updated by Apple.
The hop count tells you how many routers the packet had to go through to get to the destination node.

All routers maintain complete routing tables that allow them to determine how to forward a datagram (packet) on the basis of its destination network number. RTMP (Routing Table Maintenance Protocol) allows routers to exchange their routing tables periodically. In this process, a router receiving the routing table of another router compares and updates its own table to record the shortest path for each destination network. This exchange process allows the routers to respond to changes in the connectivity of the Internet (for example, when a router goes down or a router is installed).

During this process of exchange, routers sometimes lose track of the shortest path to a particular network, and the packet may go through one or more additional routers to reach its destination. This is not uncommon and is not normally anything to be concerned about.

Published Date: Feb 18, 2012

Laser Discs: Production Questions and Answers

This article contains some questions and answers about laser disc production.
This article has been archived and is no longer updated by Apple.

Question: I have seen the "ABC News Presidential Election" laser disc. This particular disc has the single image (freeze frame) and runtime movie (video clips). I know about two methods of recording: CAV (still image) and CLV. Which method was used for this disc? Can you combine both methods of recording on one disc (one side with CAV and the other side with CLV)?

Answer: Constant Angular Velocity (CAV) is capable of providing both freeze-frame and full-motion video. Constant Linear Velocity can provide only the full motion video. Therefore, if both freeze frame and full motion are desired, then CAV is the technique to use when creating the laser disc.

The disadvantage of the CAV method concerns the amount of video that can be placed on the laser disc. This is 30 minutes per side. CAV plays only one frame in one revolution of the laser disc. This is where CLV has the advantage; it is capable of placing more video on the same disk, namely, 60 minutes per side. However, there are varying number of frames played during a revolution. This is why the freeze-frame feature is not available in the CLV format.

Technically, it would be feasible to use CAV on one side of a disc and CLV on the other side. Typically, this is not a method used in the laser disc industry since the CAV method provides both freeze frame and full motion.

Question: I would like to print my laser disc. I have all the materials on video tape. Can it be done?

Answer: Laser disc production houses have specifications that vary. Generally, these production companies want the master video tape in the 1-inch broadcast tape format; some may accept 3/4-inch broadcast tape. There are precise specifications for the layout of information on these master video tapes. Different production companies may require slightly different layouts.

If material has been transferred from motion picture film to video tape, there are special considerations for freeze-frame images. The method of transfer from the film to the tape is very important. When transferring 24 frames a second (the film standard) to 30 frames a second (the NTSC video standard), the method used to compensate for the differing frame rates must be precisely controlled.

If the original material was shot on video tape, the frame-rate issue is not a concern. However, freeze-frame images still need special attention so there will not be image flicker during the laser disc freeze-frame display. Two methods are available: frame-accurate edits or multiple-frame recording.

- Frame-accurate edits allow just one frame of video to be recorded on the laser disc for the freeze-frame image. This is the preferred technique.

- Multiple-frame recording allows freeze frames without the need to have frame-accurate edits. Three frames are recorded on the laser disc, and the middle frame is used for the freeze frame. This uses space on the disc quickly; three times the space that is used for frame-accurate edits. Someone using a disc recorded with this method cannot step through the freeze frames, frame by frame, without seeing the same image three times.

Question: If I want my laser disc in NTSC format, what should I do?

- Will PAL-formatted video tapes work?
- Do I need high-band (broadcasting) or low-band (normal/home use) video tape?

Answer: It is possible to move from one format to the other, but there are issues that need to be addressed when using the CAV method. These are related to how the conversion takes place. A laser disc production company can explain the details of these issues.

Most disc production companies require the master video tape to be on 1-inch video tape or 3/4-inch video cassettes.

Question: How long does it take to do the pressing?

Answer: The usual turnaround -- from the time a production company receives the master video tape until the duplicated discs are ready -- is 10 days. If faster turnaround is required, turnaround time as short as same day is often available. However, any turnaround less than the typical 10 days will cost extra. The faster the turnaround, the more the cost.

In summary, using the CAV method requires a specifically formatted master video tape in 1-inch or 3/4-inch format. Freeze-frame images require very close attention to avoid image flicker. Film-to-video tape transfer is a very precise process that must be monitored very closely. Many laser disc production companies provide books, at no cost, that detail the many specific issues that must be addressed to produce a quality video disc.
Published Date: Feb 18, 2012

TA40692_InterPoll_Compatible_with_Macintosh_IIci_(TIL04831).pdf

InterPoll 1.0.1: Compatible with Macintosh IIci

Does the Macintosh IIci require an updated version of Inter*Poll?

This article has been archived and is no longer updated by Apple.
There is no updated version of Inter*Poll. Inter*Poll 1.0.1 is the latest version, and it does work properly with the Macintosh IIci.

Published Date: Feb 18, 2012

TA40693_Macintosh_IIci_Using_Cache_Memory_Card__(TIL04832).pdf

Macintosh IIci: Using Cache Memory Card (5/94)

What is the maximum cache memory I can install in the Macintosh IIci?

This article has been archived and is no longer updated by Apple.
The size of the Apple cache card for the Macintosh IIci is 32K. There is no real limit on the amount of memory a cache card designer can put on a cache card. The designer could cache the entire RAM address space of the computer, but beyond 32K, the improvement in performance per each 1K of cache memory diminishes greatly.

Performance tests indicate that the extremely marginal increase in speed gained by using 64K of cache memory is not worth the doubled static RAM cost. Beyond 64K, the speed improvement becomes almost nil.

The Macintosh IIci Cache Card part numbers are:

M0326LL/A - Discontinued
M0326LL/B

Article Change History:
23 May 1994 - Added part numbers.

Support Information Services

Published Date: Feb 18, 2012

TA40694_Macintosh_Portable_Number_of_Wait_States_(TIL04833).pdf

Macintosh Portable: Number of Wait States

How many wait states does the Macintosh Portable use?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable uses one wait state when accessing RAM and two wait states when accessing ROM.

Published Date: Feb 18, 2012

SMB File Transfer: Extended Services & the NET SHARE Command

I have a small problem with the SMB File Transfer Utility using PC LAN 1.3 Extended Services.

Extended Services does not issue explicit NET SHARE commands when starting the LAN program. Instead, it does this within one of the .exe modules. When I try to connect to the SMB server, I get an "access denied" dialog (even though my user ID doesn't require a password). If I then issue a NET SHARE command on the PC to look at shared devices, I can see the devices that I defined as shared in Ext. Services Config. At this stage, I issue a NET SHARE command to reshare one of the devices, and I can access this without any problem. Why do I have to reshare a volume that my PC can already see?

This article has been archived and is no longer updated by Apple.
We think you're making a fairly common mistake. The IBM manual describes a procedure for sharing filesets in such a way that the user may think it does the same function as NET SHARE. But this is not true! If you start Extended Services and then make the following menu choices: Administrator Services/PCLP/Adminsrv/Manage/filesets, you will be prompted to give information about the filesets that are to be shared. Doing a NET SHARE then shows a list of directories available to network users.

The procedure described above is unnecessary and can be eliminated. To work properly, the SMB file transfer software requires the NET SHARE command in the format: NET SHARE netName = DOSPathName

Published Date: Feb 18, 2012

Canon Color Laser 500: Driver Needed

I heard that someone is developing a driver for Canon's Color Laser 500, which functions as a 400-dpi, 256-color scanner, hardcopy output device, and copier. Do you know of anyone who has a driver for it. (The interface is GPIB.)

This article has been archived and is no longer updated by Apple.
As of September, 1989, neither we or Canon knew of any Macintosh printer or scanner drivers for the Canon Color Laser 500.

The General Purpose Interface Bus (GPIB) interface is defined by ANSI/IEEE Standard 488-1978. It is often referred to as the IEEE-488 bus, which is also synonymous with HP-IB. The GPIB is an 8-bit, parallel, digital bus with full handshake and interface management capabilities. It has been widely used for interfacing programmable instruments with computers.

You have many GPIB interfaces available to choose from for the Macintosh, whether it be for a Macintosh Plus, Macintosh IIcx, and so on. Refer to any of the Macintosh buyer's guides for a listing of your options.

Published Date: Feb 18, 2012

Macintosh: Integrated Services Digital Networks (ISDN)

Do you have information on Macintosh connectivity via Integrated Services Digital Networks (ISDN)?

This article has been archived and is no longer updated by Apple.
Here is an introduction to ISDN and some interface possibilities.

ISDN

Integrated Services Digital Networks (ISDN) is a network architecture that uses digital technology to support integrated voice, data, and image services. It works through standard interfaces over standard twisted-pair telephone wire. The ISDN concept also includes some services not yet available, non-communications services, and services yet to be invented. Current work on ISDN standards is the responsibility of a number of study groups within the CCITT.

There are two types of ISDN channels: transparent and nontransparent. Transparent channels may carry whatever the user chooses--voice or high-speed data, for example--all independent of protocol. Non-transparent channels have been assigned specific protocols for specific functions on the network. The specified channels are:

B- (Bearer) A transparent digital channel of 64Kb, carrying circuit-mode or packet-mode user information (like voice, data, facsimile, and user-multiplexed information streams).

D- A non-transparent digital channel of 16 or 64Kb, used for signaling in association with one or more B-channels. This is also used for telemetry and for low-speed packet-switched data.

H- (high-speed) Transparent digital channels, roughly equivalent to current T-carrier channels, for carrying circuit-mode or packet-mode user information--like multiplexed data, data and voice, or facsimile--at rates of millions of bits per second. Although H-channels have not been fully defined, an H0 channel operates at 384Kb; an H1 channel operates at 1536Kb (H11), or 1920Kb (H12). A H4 broadband version has been proposed that would operate at 135Mb.

Two other channels were once proposed, the A- and C-channels. These channels were intended to accommodate analog connections and related signaling. CCITT committees view such channels as obsolete. Nevertheless, analog-link interfaces are defined by CCITT, so during the duration that analog lines exist and continue to be used, they can interface to ISDN networks.

Although ISDNs are generally not yet a "tariff" service in most states (they are not priced by the California or equivalent Public Utilities Commissions), ISDN lines are readily available and acquired via contracts from the (in the US) Regional Bell Operating Company or AT&T. Most ISDN links are a combination of B-channels in association with a single D-channel for signaling. Signaling includes call establishment, call progress monitoring, call termination, and enhanced telephone features. The heaviest users may require one or more H-channels. Two standard service plans are expected to be offered:

* BRI: A Basic Rate Interface provides two transparent 64Kb B-channels and one nontransparent 16Kb D-channel per interface (2B+D). BRI provides two voice or data connections, or one voice and one data connection over the B-channels along with one or more low-speed, low-priority, packet-switched data or telemetry exchanges over the D-channel. The total data rate is 192Kb, with 144Kb available to users.

* PRI: A Primary Rate Interface provides 23 64Kb B-channels and one 64Kb D-channel (23B+D). This service is based on the U.S. T1 specification of 1.544Mb. The European PRI equivalent is based upon the CEPT specification of 2.048Mb, providing 30 B-channels and 1 D-channel (30B+D).

ISDN circuits are usable with Macintosh products. Generally speaking, there is FUNCTIONALLY no advantage to using ISDN over other links in today's analog or digital worlds (other than two circuit-switched devices per line, as opposed to one with analog). Therefore, when trying to decide whether ISN or ISDN solutions are best, consider what services you require.

AT&T and other manufacturers supply terminal adapters and CSU/DSUs that (with the proper hardware and software) let the Macintosh connect to ISDN circuits. Because terminal adapters and CSU/DSUs support certain switches, protocols, and interfaces, you need to ensure that the interfaces you plan to use are compatible with the ISDN circuit.

Among the various ways to interface a Macintosh to an ISDN network are:

* Using a Hayes-compatible terminal adapter (like Universal Data Systems TA100, Infotron Passport ISDN Terminal Adapters) with the software (like MacTerminal).

* Using the recently announced Solana H-server or other bridge (TeleBridge, R-Server, Ethernet bridges, and so on) with the appropriateCSU/DSU. These would provide a range of data rates, asynchronous or synchronous, 19.2 to 64Kb, or higher.

You can have terminal emulation with the first solution, whereas the second lets you create an AppleTalk or Ethernet Internet. Other solutions exist or will in the future.

DSU and CSU Units

DSU stands for Data Service Unit, which is an interface to digital links. It is somewhat analogous to a "digital" modem. The DSUs translate the computer's unipolar serial data to baseband bipolar signals. The DSU uses a DCE interface to communicate with the terminal and then transmits the data in a special format over the link.

CSU (Channel Service Unit) is sometimes required at the end of some links. The trend today is to incorporate the CSU into the DSU.

For more information on manufacturers, check the Tech Info Library, under "Telebridge," "Universal Data," and "Infotron."

Editor's Note 22 June 1992: Solana has discontinued business to our knowledge, so we are unable to refer you to them directly for further information.

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TA40698_AUX_Compatible_Ethernet_Card_for_Macintosh_SE_(TIL04840).pdf

A/UX: Compatible Ethernet Card for Macintosh SE/30

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

Is there an A/UX-compatible Ethernet card for the Macintosh SE/30?

This article has been archived and is no longer updated by Apple.
Asante Technologies claims that the "MacCon SE 30/E" Ethernet card is compatible with the Apple EtherTalk NB Card at the register level. For information on how to contact them, search the Tech Info Library under "Asante"

Published Date: Feb 18, 2012

GS/OS: How To See OS Info at Startup

I have a lab of 16 Apple IIGS systems, running AppleShare 2.0.1 and the GS/OS 5.0 software with the Apple II setup from the GS/OS 5.0 disks. They are exhibiting some strange behavior when starting up over the network. When about half of the systems are started up, they get a list-type screen that says:

"Welcome to the World of the Apple IIGS"

and then a list of the network program segments that are loading. They get this instead of the Welcome to the Apple IIGS GRAPHIC SCREEN and the "thermometer".
This article has been archived and is no longer updated by Apple.
The purpose of this screen is to provide operating system information to the operator. A list of installed GS/OS drivers is displayed as they are loaded.

This alternate screen is normal and is generated by pressing the space bar as GS/OS begins to load--whether starting up from a local disk or over the network. The screen will not appear unless someone presses the space bar sometime during the initial stages of booting the Apple IIGS.

If an Apple IIGS displays the alternate screen even when the space bar hasn't been pressed, there may be a hardware malfunction, and the unit should be serviced.
Published Date: Feb 18, 2012

TA40700_AUX_Updated_GKSPHIGS_Info_(TIL04843).pdf

A/UX: Updated GKS/PHIGS Info

Article Change History

08/31/92 - REVIEWED
* For technical accuracy

This article gives sources for GKS (Graphic Kernel Systems) and PHIGS for A/UX.

This article has been archived and is no longer updated by Apple.
In the U.S., two companies have GKS and PHIGS: Prior Data Sciences and Advanced Technology Center.

Prior's GKS/C is a full implementation of the ANSI and ISO Graphical Kernel System (GKS) standard. It is a level 2c implementation, providing all graphic subroutine library output calls and request, sample, and event input. It is based on X11 as the screen/input handler with support for PostScript and other output devices. Prior has a GKS/PHIGS solution for A/UX.

Advanced Technology Center has GRAFPAK-GKS. GRAFPAK-GKS is a graphics subroutine library that conforms to the ANSI/ISO Graphical Kernel System (GKS). It provides comprehensive functions for developing graphics applications and includes the entire GKS functionality and extensions to the standard. Key features include levels 2b/2c implementation, distributed architecture, machine and device independence, Fortran and C language bindings (future support for ADA and Pascal), and extension to the Standard, Custom extension and porting is available.

In France, G5G has both GKS and PHIGS. SLX offers S GKS, an implementation of the GKS standard for A/UX under X Window System.

For more details, search the Tech Info Library under "Prior Data," "Advanced Technology," "G5G," or "SLX."

Published Date: Feb 18, 2012

TSSnet 1.3.2: Incompatible with Macintosh IIci

I am running TokenTalk, EtherTalk, TSSnet, QuickMail 2.01 Server, and Apple Internet Router 2.0 all on the same machine (a Macintosh IIci). Despite my best efforts, TSSnet doesn't seem able to establish a communication channel with the VAX. Instead, it can see only the nearest DECnet router. However, it cannot speak to it (by terminal emulation, mail, file transfer, or otherwise).

This article has been archived and is no longer updated by Apple.

We have isolated the problem. Do not run Alisa System's TSSnet 1.3.2 (or earlier) on the Macintosh IIci. Apparently, there seems to be some unknown problems in communication that can be duplicated in our office on our own VAX. We have successfully run TSSnet on a Macintosh II, Macintosh IIx, Macintosh IIcx, and Macintosh II with a DayStar 33MHz accelerator card.

However, TSSnet on the Macintosh IIci does not operate, and will, in time, completely freeze the machine. As of October, 1989, Alisa Systems (and, consequently, Thursby Software, the authors of TSSnet) have been alerted, although a timetable for a fix is uncertain.

Published Date: Feb 18, 2012

32-Bit QuickDraw: Where To Get Documentation (11/94)

How do I get programmer's documentation for 32-Bit QuickDraw?

This article has been archived and is no longer updated by Apple.
The 32-Bit QuickDraw information you are looking for is available through APDA. The part number is M0572LL/A. For APDA contact information, search the Tech Info Library under "APDA."

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy, revised formatting.

Support Information Services
Published Date: Feb 18, 2012

Apple IIGS: Problem with Sort Directory When Using One Drive

This article has been archived and is no longer updated by Apple.

On single-drive Apple IIGS systems, using Sort Directory on a disk other than the System disk causes a system crash. Before the disk on which the sort is to be done can be inserted, the System disk must first be ejected. When the user chooses Sort Directory from the Apple menu, he or she is prompted to insert the System disk, and the data disk is ejected. When the System disk is again inserted and the OK button clicked, the system crashes.

Here are three workarounds:

- Use the new IIGS Finder.

- Attach another drive to the system so that the System disk doesn't have to be ejected.

- Upgrade the Apple IIGS' memory so that the RAM disk can be used.

Published Date: Feb 18, 2012

Macintosh: Calling Resources, MultiFinder, and Desktop Calls

I am programming in the Trader Workstation application. For my current project, I need to know if there is there a limit on the number of resources a program can call?

This article has been archived and is no longer updated by Apple.
The theoretical limit on the number of resources an application can open at one time greatly exceeds the practical limits of a program. If you are not using "owned" resources, such as resources for desk accessories, you can have up to 32,767 of a single resource type. If each of those resources held 1Kb of data, you would be accessing on the order of 30MB. In other words, the limit on the number of resources you can have open at one time is not a real limit in the way that the limit on the number of open files is. If you are truly looking at having thousands of resources open at one time, you need to take a hard look at the way you are doing things and develop an alternative method for accessing data.

Published Date: Feb 18, 2012

System 6.0.2: Sound Manager Versus Sound Driver

I need to find out about the Wave Table Synthesizer under the new Sound Manager. The Apple technical document states that the "synth" resource for the Wave Table Synthesizer in System 6.0.2 doesn't work with the Macintosh SE or Macintosh Plus. This is a big problem; I need to know when it will be fixed or a workaround that will be upwardly compatible--the beep generator just doesn't cut it, and I need four voices.

This article has been archived and is no longer updated by Apple.
The fact that the Wave Table Synthesizer does not function on a Macintosh Plus or a Macintosh SE is a known limitation of the Sound Manager. This means that if you want a four-tone sound, you have to use the Sound Driver as opposed to the Sound Manager. Be aware that you cannot use both the Sound Driver and the Sound Manager at the same time, and, because SysBeep is owned by the Sound Manager, you cannot receive SysBeeps while using the Sound Driver.

A further note of caution: if you are going to use the Sound Driver this way, be sure to use System 6.0.4 or later. It solves a problem directly related to SysBeeps to prevent crashes caused by SysBeeps when you are using the Sound Driver.

Published Date: Feb 18, 2012

Empower: How to Decrypt Files

I have been having problems with various HyperCard stacks giving me an "Old format" dialog while using Empower security software from Magna. I'd been having unusual system problems, so I trashed my System Folder, reinstalled new system software and reinstalled drivers and INITs. I did NOT reinstall the Empower INIT. Everything worked as though I'd never had Empower until I tried getting into those HyperCard stacks.

This article has been archived and is no longer updated by Apple.
Using file encryption programs requires users to be careful: getting locked out is a common mistake. Denying access privileges to a folder causes Empower to encrypt files within it, and without Empower, they cannot be decrypted. This is what happened to the HyperCard files. If you compare a new stack with a problem stack under FEdit, you'll see the difference. If you check a few other files you had protected (including some non-HyperCard files), you'll find that they, too, still encrypted.

The fix is to restart with the Empower INIT installed, remove any volume protection (and all privileges) to decrypt any encrypted files, then remove Empower, and restart. After all security has been removed and files are no longer encrypted, all is normal.

Empower provides good security using a familiar interface, but can cause problems with careless use.

Published Date: Feb 18, 2012

Apple IIGS: Chatsworth Optical Mark Reader Compatibility

This article has been archived and is no longer updated by Apple.

The Chatsworth OMR1000 is a popular optical mark card reader that is normally connected to an Apple IIe. It is also compatible with the Apple IIGS, but with one precaution.

The OMR software defaults the slot for the controller card to slot 4. On the Apple IIGS, slot 4 defaults to MOUSE. Before using the OMR1000 with the IIGS, use the Apple IIGS control panel to change Slot 4 for "Your Card".

Published Date: Feb 18, 2012

SCSI Drives: Size Differences After Formatting

This article has been archived and is no longer updated by Apple.

SCSI drives formatted under different versions of HD SC Setup may show differing numbers of blocks available, even though the storage capacity of the drives is theoretically the same. This is due to different methods used by various versions of HD SC Setup.

HD SC Setup Version 1.1 checks each drive and formats the disk with that drive's maximum number of blocks. Versions 1.4 and later determine the approximate size of the drive (20MB, 40MB, or 80MB), then format all manufacturers' drives with a set number of blocks. On an HD-20SC, the result is 19,171 blocks. This is the number of blocks available on an Apple HD-20.

Apple made this change in order to provide an easier method of using tape backup systems, and to provide a consistent amount of storage on a hard disk without regard to the computer or drive's manufacturer. Since all 20MB drives formatted with version 1.4 and later will contain the same number of blocks, it is possible to restore a backup from one drive onto another type of drive without encountering problems due to insufficient storage. This will avoid problems that could develop when users compare two "identical" units and find that they have different amounts of disk storage available.

Published Date: Feb 18, 2012

Apple II And II Plus Hardware: Stopping The Blinking Cursor

This article has been archived and is no longer updated by Apple.

Hardware generates the blinking cursor on the Apple's screen. You can stop the blinking using this Applesoft program:

```
10 FOR A = 935 TO 941
20 READ B
30 POKE A,B
40 NEXT A
50 POKE 56,167
60 POKE 57,3
70 CALL 1002
80 END
100 DATA 72,41,63,145,40,104,76,27,253
```

This program assumes that you have DOS booted. If you don't have DOS, delete line 70.

After you run the program, the cursor will be a solid block until the RESET key is pressed, until there is an IN#0 command, or until the Apple is turned off.

The cursor can be completely eliminated by changing the 63 in line 100 to a 191.

Published Date: Feb 18, 2012

Applesoft: Using Applesoft Shape Tables from Disk

The following programs were written to make Applesoft shape tables easier to use.
This article has been archived and is no longer updated by Apple.
SHAPE LOADER

The Applesoft SHLOAD statement loads shape tables from a cassette tape and sets up the proper pointer for Applesoft to use. The following program loads the shape table from diskettes as a binary file and sets up the proper pointer for Applesoft. This program assumes the shape table has been entered into the systems memory using the same format, but not necessarily the same addresses, as the example in the Applesoft reference manual. Name the program anything you choose, but be sure to place this routine in the first part of your program, since it destroys string variables while loading the shape table.

```
100 INPUT "WHICH SHAPE TABLE TO LOAD ? ";F$
110 PRINT CHR$(4);"BLOAD ";F$;",A$D000"
120 DS = PEEK (977) + PEEK (978) * 256 + 3233
130 HM = PEEK (115) + PEEK (116) * 256 - PEEK (DS) - PEEK (DS + 1) * 256
140 PRINT CHR$(4);"BLOAD ";F$;",A";HM
150 HIMEM: HM
160 POKE 232,HM - INT (HM / 256) * 256: POKE 233,HM / 256
```

SHAPE SAVER

This program saves your shape table to the disk as a binary file for the SHAPE LOADER routine to use. Load this program before entering the monitor and typing in your shape table. The best place to start your shape table is at $2000: this leaves alot of room for the shape saver and the table. (Refer to chapter 9 of the Applesoft Reference manual.) After typing in your shape table and checking it, type 3D0G to re-enter Applesoft and to RUN the program.

```
1000 REM SHAPE SAVER
1005 H$ = "0123456789ABCDEF"
1010 TEXT : HOME : VTAB 5
1020 INPUT "WHAT IS THE STARTING ADDRESS (HEX)?";A$
1030 IF LEN (A$) = 0 THEN END
1040 GOSUB 5000
1050 IF F < 0 THEN 1000
1060 S = X
1070 PRINT
1080 INPUT "WHAT IS THE ENDING ADDRESS (HEX)?";A$
1090 IF LEN (A$) = 0 THEN 1000
1100 GOSUB 5000
1110 IF F < 0 THEN 1000
1120 LET E = X
1130 IF E < = S THEN PRINT CHR$(7);"THE END IS LESS THAN THE START!": GOSUB 5100: GOTO 1000
1140 PRINT
1150 PRINT "WHAT NAME DO YOU WANT TO USE ?"
1160 INPUT " ";A$
1170 PRINT CHR$(4);"BSAVE ";A$;",A";S;",L";E - S + 1
1180 END
5000 PRINT : PRINT "CONVERTING TO DECIMAL"
5010 LET F = 0:X = F
5020 FOR J = 1 TO LEN (A$)
5030 FOR I = 1 TO 16
5040 IF MID$ (A$,J,1) = MID$ (H$,I,1) THEN X = X * 16 + I - 1: F = F + 1
5050 NEXT I,J
5060 IF F < > LEN (A$) THEN F = - 1:"THAT'S NOT HEX!!!"; CHR$(7): GOSUB 5100
5070 IF X > 2 ^ 16 THEN F = - 1: PRINT "THAT'S TOO BIG!!!"; CHR$(7): GOSUB 5100
5080 RETURN
5100 FOR J = 1 TO 1000: NEXT J: RETURN
```

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Apple II Hardware: Apple II vs Apple II+

This article has been archived and is no longer updated by Apple.
The only difference between the Apple II and the Apple II+ is that the Apple II has Integer BASIC and the "old" monitor ROM, while the Apple II+ has Applesoft BASIC and the Autostart monitor ROM. Most of the game programs available today are written in Integer BASIC and most of the business, scientific, and industrial programs require Applesoft, so the selection depends upon what your application requires. Apple offers firmware cards that will supply Applesoft to Apple II owners and Integer Basic to Apple II+ owners.
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Kensington Technology Group: Support and Upgrades

This document contains contact information for Kensington Technology Group, plus support links and software upgrade links for Kensington Technology Group products sold through the Apple Store.

Note: Apple support for third party products sold through the Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Contact Information

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World Wide Web address: http://www.kensington.com

Company Profile:
Hardware, specializing in accessories such as security systems, screen filters, fans, mouse pads.

Apple Store Support Links and Upgrade Links

Company:	Kensington Technology Group
Company Web Site:	http://www.kensington.com

Important: Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.
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Apple II Hardware: The Apple II Keyboard

This article has been archived and is no longer updated by Apple.
The keyboard on the Apple II has an upper-case-only encoder. It can produce ASCII characters 0 through 95, excluding _ , \\ , [, CTRL-_ , CTRL-[, and CTRL-\\. The Apple III uses the very same encoder. However, the Apple III also has a second keyboard port; with this port, the Apple III can independently to sense the shift, control, and alpha lock keys, as well as a number of other functions.

You can modify an existing Apple II to allow it to sense whether or not the shift keys are depressed. This modification is supported by system software such as Pascal 1.1 and Pilot, as well as some word processing software. The core of the modification is a wire running from the shift keys to button input 2 of the game I/O port which button input the paddles don't use. This modification is not recommended for in-warranty Apples and should be only performed by an authorized service technician.

Since the modified Apple can sense whether or not the shift key is being pressed, it can distinguish 51 new characters: CTRL-SHIFT-A thru Z excluding M, N, and P, SHIFT-A thru Z excluding M, N, and P, SHIFT-0, SHIFT-RETURN, SHIFT-ESC, SHIFT-LEFT ARROW, and SHIFT-RIGHT ARROW. This raises the total number of distinguishable characters to 141, which easily encompasses the 128 member ASCII character set.

To facilitate the most natural use of the keyboard, software sometimes rearranges the interpretation of these characters so that the keyboard resembles that of a typewriter. Apple has employed several types of keyboards on the Apple II since its introduction, so the modification has two appearances.

1. On the older style keyboard, a wire should be run between pin 2 of the 74LS00 and pin 4 of the keyboard connector on the keyboard.

2. On the newer style keyboard with the "piggy-back" electronic assembly, the wire should be run between pin 9 of the 74LS00 closest to the keyboard connector and pin 4 of the keyboard connector.

In either case, a second wire should connect the bottom of pin 4 at location A7 to pin 7 at location J14 on the motherboard. Check carefully that the wire isn't connected to pin 7 of H14. The keyboard cable acts as a connection between these two wires.
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TA40715_Adaptec.pdf

Adaptec

Adaptec (Formerly Adaptec, Inc.)
This article has been archived and is no longer updated by Apple.
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Company Profile:
Networking, specializing in interfaces.
Published Date: Feb 18, 2012

Apple II Hardware: Character Generator ROM

This article has been archived and is no longer updated by Apple.
To allow you to write programs involving special characters or lower case characters, you can get a 2716 PROM to replace the the character generator ROM in revision 7 and later Apples. This note describes how the characters are mapped in the ROM.

Characters storage uses a scheme of eight bytes per character, arranged in the ROM in the order shown in Table 7 on page 15 of the Apple II Reference Manual. The starting address for each character is the address from Table 7 multiplied by eight. Lower case characters, if desired, should be mapped in place of the numbers and punctuation in columns $E0 and $F0.

Each character is made up of eight bytes. Each byte represents one row of dots. The most significant bit of each byte is ignored by the hardware. The lowest-addressed byte of each character is the topmost row of dots of the displayed character. The first and last bits of each row of dots are usually set to zero to supply a two dot space between characters. The bottom row of dots is usually left set to zero to allow a one row space between lines. Some lower case character sets use the bottom row for descenders (the letter "g", for example). This causes overlap when the descender is directly above an upper case letter like "B". The following diagram shows how the characters are built. The three digit hexadecimal number is the hexadecimal ROM address for each byte and the two digit hexadecimal number is the pattern of on and off bits.

$208 $08 ...*... $708 $00 ..... $730 $08 ...*...
$209 $14 ..*.*.. $709 $00 ..... $731 $14 ..*.*..
$20A $22 .*...*. $70A $1C ..***.. $732 $10 ..*....
$20B $22 .* *. $70B $02 .....*. $733 $10 ..*....
$20C $3E .*****. $70C $1E ..****. $734 $3E .*****.
$20D $22 .*...*. $70D $22 .*...*. $735 $10 ..*....
$20E $22 .*...*. $70E $1E ..****. $736 $10 ..*....
$20F $00 ..... $70F $00 ..... $737 $00 .....
$210 $3C .****.. $710 $20 .*..... $738 $00 .....
$211 $22 .*...*. $711 $20 .*..... $739 $00 .....
$212 $22 .*...*. $712 $3C .****.. $73A $1C ..***..
$213 $3C .****.. $713 $22 .*...*. $73B $22 .*...*.
$214 $22 .*...*. $714 $22 .*...*. $73C $22 .*...*.
$215 $22 .*...*. $715 $22 .*...*. $73D $1E ..****.
$216 $3C .****.. $716 $3C .****.. $73E $02 .....*.
$217 $00 ..... $717 $00 ..... $73F $1C ..***..

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3Com Corp.

3Com Corp.
This article has been archived and is no longer updated by Apple.
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Company Profile:
Hardware, specializing in a wide range of data networking systems and multivendor connectivity that spans organizations worldwide.
Published Date: Feb 18, 2012

EtherTalk and PacerLink: How They Can Delay Screen Echo

When using the following elements, I notice delays in screen echo:

- Apple EtherTalk card in a Macintosh II (2MB RAM)
- PacerLink (on Macintosh)
- Pacer (running on a DEC/VMS system)

For example, when typing data, I am forced to wait for the screen to show what was typed. The problem seems to be consistent, regardless of the number of users on the network or VAX. Likewise, the problem is consistent across all 23 Macintosh IIs.

However, the problem does NOT exist when using the Kinetics FastPath. The screen echo is consistent with the interactive mode the user expects. What's the problem?

This article has been archived and is no longer updated by Apple.
We suspect that you are running into packet routing problems being caused by a remote AppleTalk bridge somewhere on the Ethernet. If there is a slower-speed link somewhere in the Ethernet (perhaps a 9600-baud link between remote sites), and, if that remote site has an AppleTalk bridge anywhere on it, you can get the situation you describe.

The problem arises because AppleTalk is treating the Ethernet as a single AppleTalk network, even though the Ethernet may consist of many networks in a complex setup. Because of this, the Macintoshes directly connected to the Ethernet use whichever bridge on this network was the last one to send an RTMP (Routing Table Maintenance Protocol) packet. Even though the VAX running Pacer software and the Macintoshes are on the same physical cable, a Macintosh cannot send its keystroke packets via that remote bridge, because it has no way of deciding which bridge is "closest" in terms of actual transmission time.

This does not happen when you put a Kinetics FastPath between the Macintoshes and the Ethernet, because the only bridge the Macintoshes get RTMP packets from is the FastPath, and it knows enough about the Ethernet to properly route the keystroke packets directly to the VAX.

One possible solution is to have the Ethernet bridges on the local side of the network refuse to transmit AppleTalk packets. If this is done, then the VAX running the Pacer Software once again begins acting as its own bridge for the Macintoshes directly connected to the Ethernet. The two packet types that you want the bridges to exclude are RTMP (Ethernet type 809b) and AARP (Ethernet type 80f3). You need to consult the documentation for your bridges for instructions on how the bridge excludes packet types from retransmission.

Be aware that stopping these packets from being transmitted over a bridge keeps you from using AppleTalk over the remote link.

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Apple II Hardware: 6522 Versatile Interface Adapter (2/97)

This article describes the 6522 Versatile Interface Adapter (6522 VIA).

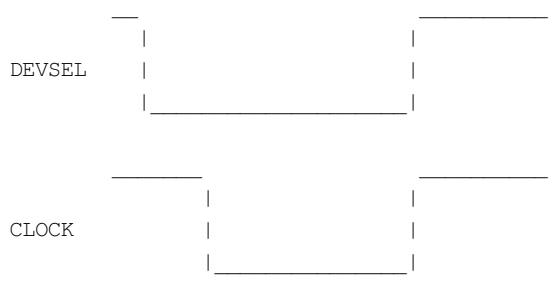
This article has been archived and is no longer updated by Apple.

The 6522 Versatile Interface Adapter (6522 VIA) is a popular integrated circuit for use with microcomputers because it operates in a variety of modes. The precursor to the 6522, the 6520, has been used in several interfaces with no difficulty. Unfortunately, although these two parts have identical timing specifications, their operation is different. The 6520 is very tolerant of operation outside of the parameter limits on its data sheet while the 6522 must have its timing specifications met exactly.

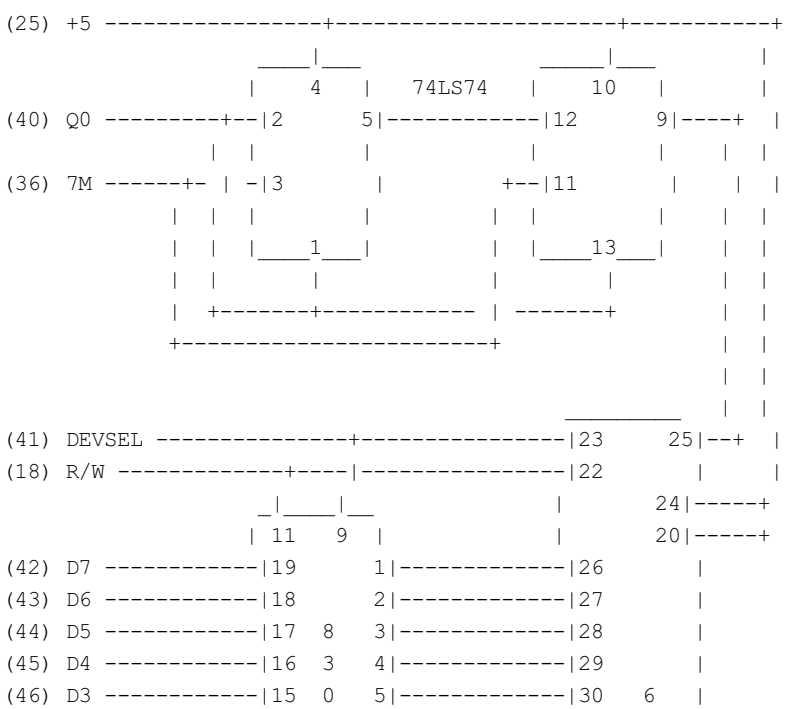
The most critical timing parameter for the 6522 is the address set-up time, the delay between the chip select and the rising edge of the 1MHz clock. The 6522 will not operate under the nearly identical Device Select and 1 MHz clock of the Apple II. The solution is to shorten the positive half-cycle of the 1 MHz waveform. This can be achieved by various methods, but, since the length of the positive half-cycle is critical, it is essential to have a well-controlled circuit to do this.

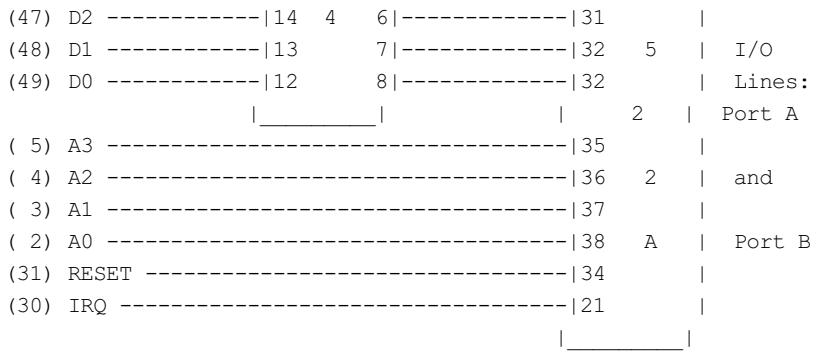
The circuit below is proposed for use with the Apple II. The 74LS74 circuit delays the positive edge of the clock by one cycle of the 7 MHz clock, generating the clock waveform that the 6522 needs. The negative edge of the clock is set by the falling edge of the 1 MHz clock; this also holds off the flip-flop until the next cycle. The shortened positive half-cycle of the clock waveform results in a leading edge delayed by 140 nanoseconds from the falling edge of Device Select.

The 6522A is required to meet the data sheet timing parameters. The 6522 will usually work but its operation cannot be guaranteed.



SUGGESTED SCHEMATIC





Article Change History:
28 Feb 1997 - Reviewed for technical accuracy, revised formatting.
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TA40720_th_Dimension_Needed_for_Macintosh_IIci_Compat__(TIL04940).pdf

4th Dimension 2.0.8: Needed for Macintosh IIci Compat. 12/89

This article discusses the incompatibility of early versions of 4th Dimension with the Macintosh IIci.

This article has been archived and is no longer updated by Apple.
The international releases of 4th Dimension version 1.0.8 and earlier DO NOT run on a Macintosh IIci. The incompatibility stems from the copy protection method used in 4th Dimension's international releases.

4th Dimension v2.0.8 is the Macintosh IIci-compatible international release.

(NOTE: The United States releases of 4th Dimension all work properly on a Macintosh IIci.)

For information on how to upgrade to a new international Macintosh IIci-compatible version, contact the distributor of 4th Dimension in your country.

Published Date: Feb 18, 2012

FastPath 4: Problem and Fix

This article discusses a potential problem with Kinetics FastPath 4.

This article has been archived and is no longer updated by Apple.
Here is a problem that may occur with Kinetics FastPath 4:

Symptoms:

- Affected FastPaths may reset at irregular intervals, resulting in a loss of network configuration and zones (i.e. the indicator lights on the front panel cycle continuously).

- On power up, the unit may not pass self-verification (i.e. all front panel indicator lights are on continuously).

Problem Description/Fix:

The DC power cable harness that connects the power supply to the main PRINTED CIRCUIT BOARD assembly may become loose, causing interference with the voltage regulation circuitry. To insure a consistent supply of voltage to the PRINTED CIRCUIT BOARD, the cable should be soldered to the power supply and PRINTED CIRCUIT BOARD.

All units manufactured since 1 October 1989 have this fix incorporated. The ECN (Engineering Change Notice) level has changed to #2446, Rev. N, which is stamped on the outside of the shipping box.

(NOTE: "Rev. J" still appears on the UNDERSIDE of the corrected FastPath unit.)

Solutions for units in the field:

Warranty rework is provided for FastPath 4s displaying the above symptoms. Please contact Novell Customer Service for help.

For more information, search under: "Novell"

Published Date: Feb 18, 2012

Macintosh Portable: Can Use Square Wave Power Source

I want to use a Macintosh Portable on a boat. The boat generates a power source with a square wave as opposed to a sine wave.

Is it okay to use the Macintosh Portable on a square wave power supply?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable power adapter can be used in most voltage ranges and can accept a square wave from a generator. The power adapter has the following characteristics:

Input voltage: 85 to 270 VAC; 120/240 nominal
Frequency: 48 to 62 Hz; 50/60 nominal
Output current: 0.005 to 1.5 Amp maximum
Output voltage: 7.5 +/- 0.1 VDC
Operating temperature: 0 to 40 degrees centigrade (external temperature
Weight: Less than one pound (varies depending on the unit)

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TA40723_X_Window_Colors_Bit_Planes_Allowed_(TIL04943).pdf

X Window: Colors (Bit Planes) Allowed

Article Change History

01/15/93 - REVIEWED
* For technical accuracy.

How many colors (bit planes) does the X Window specification allow? How many bit planes are supported by the MacX product?

This article has been archived and is no longer updated by Apple.
The X Window version X11 specification does not specify a maximum number of bit planes supported. The specification does say: "The number of bits in a pixel, and how a value translates into color, depends on the hardware."

The maximum number of bit planes that we have seen supported is 24. The MacX product supports 1- or 8-bit planes. The same applies to Apple's current X11 product under A/UX.

Published Date: Feb 18, 2012

TOPS: Using with IBM‘s MicroChannel

I would like to connect my Macintosh systems and IBM PS/2 series machines to LocalTalk (with TOPS). The trouble is that the PS/2 Model 70 uses the MicroChannel bus and I can't find any cards for it. What should I do?
This article has been archived and is no longer updated by Apple.
Daystar Digital sells a MicroChannel LocalTalk card that works with TOPS.

For more information, search under: "Daystar" and "TOPS"

Published Date: Feb 18, 2012

GS/OS 5.0: "No Finder" Printing Fix

This article discusses a workaround for the problem of a GS/OS 5.0 startup disk without Finder, and its inability to retain default printer information.
This article has been archived and is no longer updated by Apple.
The GS/OS 5.0 AppleShare startup disk without Finder is not capable of retaining default printer information. The startup printer selection made in the Apple II menu of AppleShare Administration is not used. Thus, if the disk is created as described in the manuals, the user must run the Chooser each time they restart the system to set a default printer.

Here is a workaround for this problem:

1) Copy the entire Chooser folder from the Apple IIGS workstation disk (or from the server) onto the startup disk. The file IWEM is not required if you are not printing to a LaserWriter.

2) Copy the file called ATINIT from the server onto the startup disk.

3) Set the Control Panel to either Scan or Startup Slot 5, then restart using this new disk.

4) Go into BASIC on the server, launch Chooser.II, and set the default printer settings. That printer will remain "selected" until someone runs Chooser.II to change it.

5) If you want the Chooser to be accessed from Aristotle, create an application that accesses the floppy disk copy of the Chooser, rather than the server-based version. The floppy disks must have a common volume name as well as pathname if this method is to be used.
Published Date: Feb 18, 2012

System 6: Sound Manager Issues

The Macintosh II can handle "snd" and "snth" resources. System 6 notes suggest that the Macintosh Plus and Macintosh SE can do this too. Apart from the Macintosh II being stereo, what are the differences in sound play capabilities between the Macintosh SE and Macintosh II?

This article has been archived and is no longer updated by Apple.
The question might be better stated: "What machines can use the Sound Manager?", since "snd" and "snth" resources are used by the Sound Manager.

Starting with the Macintosh Plus and continuing through the latest Macintosh, all can use the Sound Manager. However, the Macintosh Plus and the Macintosh SE have known difficulties with the Wave Table Synthesizer of the Sound Manager because of anomalies in the System Software. Basic Note Commands and Sampled Sound Synthesizer can be used from the Plus and the Macintosh SE.

The Macintosh II and later machines can use the Wave Table Synthesizer, the Basic Note Commands, and the Sampled Sound Synthesizer.

For more in-depth discussion of these issues, see the Inside Macintosh replacement chapter on the Sound Manager. This replacement chapter is posted on AppleLink. Follow this path to locate the document:

Developer Services:Macintosh Developer Technical Support:
Interim Technical Documents:Sound Manager (Microsoft Word)

It's a Word 3.02 document which discusses the use of the Sound Manager in Macintosh Plus systems and later.

Published Date: Feb 18, 2012

KanjiTalk 6.0.2.4: Macintosh SE/30 and IIcx Compatibility

Does KanjiTalk work on a Macintosh IIcx?

This article has been archived and is no longer updated by Apple.
Yes, KanjiTalk does work on the Macintosh IIcx. However, the correct version of KanjiTalk is required.

The version required for use with the Macintosh IIcx and Macintosh SE/30 is 6.0.2.4. This version is now available from APDA.

For more information, search under: "APDA"

Published Date: Feb 18, 2012

TokenTalk NB Card: Incompatible with IBM ECF

Does Apple's Token Ring card and MacDFT participate in what customers call IBM ECF (Enhanced Connectivity Facility)?

This article has been archived and is no longer updated by Apple.
None of the software that Apple provides for the TokenTalk NB card supports ECF. ECF was one of the intermediate steps that IBM took towards SAA (Systems Application Architecture), and is no longer in the mainstream of architectures promoted by IBM except as a building block of SAA.

MacDFT uses our own proprietary API for communication with a host, and MacAPPC is fully compliant with IBM's LU 6.2 protocol specification (including the APPC verb set). Thus, Apple does not support the limited verb set specified by ECF (which is rarely used anyway).

Published Date: Feb 18, 2012

MPW 3.0: How To Build Header Files and Libraries

When converting from MPW C 2.0 to MPW C 3.0, I ran into the following problem.
It seems the linker can't find some routines.

Have these been renamed or replaced? If so, the compiler accepted my calls
since they appear in the #include files. I tried relinking with every library
that shipped with MPW 3.0 and always got the same error.

Following is my link command and its output:

```
Link -w -t APPL -c Kran -sym on -mf C Option-D
... /* a bunch of my filenames */ Option-D
"{CLibraries}"CRuntime.o Option-D
"{Libraries}"Interface.o Option-D
"{Libraries}"DRVRRuntime.o Option-D
"{CLibraries}"StdCLib.o Option-D
"{CLibraries}"CSANELib.o Option-D
"{CLibraries}"Math.o Option-D
"{CLibraries}"CInterface.o Option-D
-o klink
setfile -a B klink

### Link: Error: Undefined entry, name: (Error 28) "KillIO"
Referenced from: setupSerComm in file: INIT.c.o
### Link: Error: Undefined entry, name: (Error 28) "OpenDriver"
Referenced from: setupSerComm in file: INIT.c.o
### Link: Error: Undefined entry, name: (Error 28) "RAMSDOpen"
Referenced from: setupSerComm in file: INIT.c.o
### Link: Error: Undefined entry, name: (Error 28) "FlushEvents"
Referenced from: main in file: main.c.o
### Link: Errors prevented normal completion.
### MPW Shell - Execution of input terminated.
```

This article has been archived and is no longer updated by Apple.
We were able to successfully link a short C program that made all of these
calls. We suspect that not all of the necessary files had been "included",
which would definitely affect the way the linker operates. The following
are the steps you can use to determine what header files and libraries are
necessary for a complete build of your program:

1) With your directory set to the {MPW}Interfaces:CIncludes: folder, use
the search command to search all of the header files for the routine you
want to call. For example, we used the command:

```
search killio Option-X
```

where Option-X is the keystroke that generates the MPW wildcard
character for filenames. This returned:

```
File "Devices.h"; Line 112 # Pascal OSErr KillIO(short refNum);
File "Devices.h"; Line 115 # Pascal OSErr PBKillIO(ParmBlkPtr
paramBlock,Boolean asynchronous);
File "Errors.h"; Line 32 # #define abortErr -27
/*IO call aborted by KillIO*/
File "Traps.h"; Line 597 # #define _KillIO
0xA006
```

Therefore, the header file that must be included is Devices.h.

2) Create a simple program that artificially calls the routines you want to use. In this case, we used:

```
#include <Types.h>
#include <OSEvents.h>
#include <Devices.h>
#include <Serial.h>
main()
{
OSErr theResult;
short *bogusRefNum;

FlushEvents(0,0);
theResult = KillIO(0);
theResult = OpenDriver("\\pbogus driver name",bogusRefNum);
theResult = RamSDOpen(sPortA);
}
```

3) Use the Create Build Commands menu item from the Build menu to create a make file for your artificial program, and build the program to verify that it links properly.

(NOTE: Be sure you do not actually run the program since it is unlikely to run properly and, as in the case of our code, will crash.)

4) Open the make file generated, and you will have the necessary link command for the routines you wish to use. The make file generated for us follows:

```
# File: testflush.make
# Target: testflush
# Sources: testflush.c
# Created: Monday, November 13, 1989 3:20:14 PM

testflush.c.o Option-F testflush.make testflush.c
C testflush.c

SOURCES = testflush.c
OBJECTS = testflush.c.o

testflush Option-F testflush.make {OBJECTS}
Link -w -t APPL -c '????' Option-D
{OBJECTS} Option-D
"{CLibraries}"CRuntime.o Option-D
"{Libraries}"Interface.o Option-D
"{CLibraries}"StdCLib.o Option-D
"{CLibraries}"CSANELib.o Option-D
"{CLibraries}"Math.o Option-D
"{CLibraries}"CInterface.o Option-D
-o testflush
```

Our C file was "testflush.c", and the generated make file was "testflush.make".

Published Date: Feb 18, 2012

The Apple II Cassette Interface (1 of 2)

This article has been archived and is no longer updated by Apple.
This note is about the cassette interface built into the Apple II and Apple II+, subroutines. An assumption made here is that the cassette recorder is in the proper mode, play or record, when the read and write routines are executed. Note also that the timing is approximate and may vary from one Apple to another.

A record is a block of binary data. This data may be a BASIC or APPLESOFT program, a machine language program, or just binary data. Records representing BASIC or APPLESOFT programs are really two records, the length of the program and the actual program. A record consists of a header, synchronous bit, the actual data, and a checksum byte for error detection.

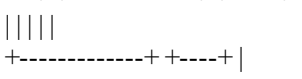
Monitor record format

BASIC program record format

Key: S = SYNC bit
C = CHECKSUM byte
LB = BASIC program length

The header consists of 10 seconds of 770 Hz tone, (1 cycle equals 1300 microseconds). This gives enough time for the cassette motor to attain speed and the plastic tape leader to go by. A subroutine called HEADR generates a shortened header between the BASIC length bytes and the BASIC program itself. The length of the header tone is controlled by the value of the accumulator on entry to the subroutine. This can vary from 0.2 seconds to 40 seconds. On entry the X register should be 0 and the carry flag should be set. HEADR also generates a synchronous bit at the end of the tone. HEADR resides at hexadecimal address $FCC9, or decimal address -882.

The last cycle of header tone and SYNC bit

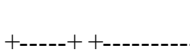


| 1300 microseconds | 200| 250 |
header tone | synchronous bit |

The synchronous bit, generated by HEADR, is one half cycle of 2500 Hz, (200 microseconds) and one half cycle of 2000 Hz, (250 microseconds). It is used to signal the end of the header tone and the start of the data.

The data is recorded on the tape with a low starting address and a high ending address. Each byte of data is shifted out most significant bit first, least significant bit last. A zero bit is made up of one cycle of 2 kHz, (250 microseconds per half cycle) and a one bit is one cycle of 1 kHz, (500 microseconds per half cycle). This works out to 2000 baud for zeros only and 1000 baud for ones, or an average of 1500 baud.

A zero bit and a one bit



| | | | |
+ +-----+ +----------+

| 500 usec | 1000 usec |

The checksum byte is written on the tape at the end of the data block. All during reading or writing each data byte is EXCLUSIVE OR-ed with the checksum byte. If the checksum computed during a read agrees with the checksum that was written out, then the data is probably good. This method will detect an odd number of errors for any of the eight bits of the byte.

In writing data, the cassette output uses quite simple circuitry, a flip-flop connected through a voltage divider to the jack on the back panel of the Apple. Any time the address $C020 is accessed this flip-flop changes state. Accessing the flip-flop once every 500 microseconds generates a 1000 Hz tone.

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TA40731_Apple_IIGS_Duplicate_BASICSYSTEM_Files_(TIL04950).pdf

Apple IIGS: Duplicate BASIC.SYSTEM Files

When using Apple IIGS System Installer 5.0 it appears to put the following files into the "Root" directory: BASIC.LAUNCHER, BASIC.SYSTEM, and ICONS.

The same file BASIC.SYSTEM is also in the folder called system. Do we need both? Are they there for Apple IIGS's diskless "boot up"?

This article has been archived and is no longer updated by Apple.
Because you mentioned diskless booting, we assume you are talking about installing Apple IIGS/OS 5.0 on the Macintosh AppleShare File Server.

The only copies of BASIC.SYSTEM and BASIC.LAUNCHER that are installed by the Server Network Startup script are those installed at the root directory. The copy of BASIC.SYSTEM in the Macintosh System Folder is installed by the Apple II Setup installer when the server is set up for use by Apple IIs. A copy is put in the System Folder so that the server will have a default startup application for all Apple II users.

It is perfectly acceptable to remove the copy of BASIC.SYSTEM in the System Folder, so long as you remember to set a startup application for each Apple II user. You should not remove those copies of BASIC.SYSTEM and BASIC.LAUNCHER located at the root directory unless there is no need for Applesoft BASIC.

Published Date: Feb 18, 2012

AppleShare: How To Keep Apple II & Macintosh Software Separate

I want to use a utility (that is: Disk Tools, DiskTop or ResEdit) to make Apple II folders (that is: Aristotle, system, and users) invisible to Macintosh users. I want to prevent the users from going into a folder and trashing its contents. I could "lock" them, but if they don't know they are out there it works better in the long run.

Is this process safe?

This article has been archived and is no longer updated by Apple.
The problem with making those files invisible to Macintosh users is that they will also be invisible to Apple IIGS users -- the Apple IIGS users will have no convenient way to launch Applesoft BASIC.

We recommend locking them. This prevents those without adequate AppleShare privileges from removing, renaming, or replacing them.

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HyperCard: Can‘t Simulate Mouse-Down In Other Applications

I use the following command in HyperCard with MultiFinder running:

```
open "filename1" with "Microsoft Word"
```

Microsoft Word launches and opens the document "filename1". I click on the HyperCard window to go back to HyperCard, then execute the following command:

```
open "filename2" with "Microsoft Word"
```

This time I go back to Microsoft Word, but it doesn't open the new file "filename2".

Can you explain this, and do you know if there is a workaround?
This article has been archived and is no longer updated by Apple.
When running under MultiFinder, the HyperCard command:

```
open "filename" with "application"
```

behaves in one of two ways:

1. If the application is not open, HyperCard launches the application and passes the Finder the information needed to open the document "filename" to the application. This mechanism is documented on pages 55 and 56 of Inside Macintosh Volume II (included in master edition of Volumes I, II, and III, ISBN #0-201-17737-4).
2. If the application is already open, HyperCard brings the application window to the front. Since the application is already open, HyperCard has no way to tell the application to open the document.

In System 6.0 and later, MultiFinder adds the ability to open documents from the Finder even though the application is already open. For example, if Microsoft Word is open with a document titled "filename1", and you switch to the Finder and double-click on a Microsoft Word document called "filename2", Microsoft Word opens this document. This happens because MultiFinder tricks Microsoft Word into opening the document by simulating a mouse-down event in the Microsoft Word menu item for opening files.

Note: For a more complete description of this process, see the fourth paragraph on page 2 of Macintosh Technical Note #205.)

There is no workaround for the situation you describe. HyperCard, unlike MultiFinder, is unable simulate the mouse-down events in other applications.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
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LaserWriter IINTX: Downloading PC Fonts To Hard Disk

I have several PCs and one LaserWriter IINTX. I will be using PostScript software on the PC.

How do I download PC fonts to a SCSI hard disk connected to the LaserWriter IINTX? Is there a special driver required? Does AppleShare PC include this option?

This article has been archived and is no longer updated by Apple.
Adobe Systems provides software with their font library for the IBM PC and compatible computers that will download Type 1 PostScript fonts to the LaserWriter IINTX hard disk.

This is the only software we know of that will download Type 1 PostScript fonts to the LaserWriter IINTX hard disk. There is no way to download non-Type 1 PostScript fonts to the LaserWriter IINTX. An example of a non-Type 1 font would be any font created using third-party (not Adobe) font creation programs. We suggest you contact Adobe Systems, Inc. for more specific information.

For more information, search under: "Adobe"

Published Date: Feb 18, 2012

Macintosh Portable: How Battery Charge Affects Activity Status

If my portable is running from battery, and the system sleep time is set at 20 minutes (just for example), and I walk away with 15 minutes to go until the "reserve power" dialog appears, what will happen?

In 15 minutes, the dialog sleep warning appears. But, when a modal dialog such as the reserve power dialog is on the screen, when 5 more minutes have elapsed does a system sleep even occur, or will the machine actually drain all battery supplies if not attended?

What if my portable is running from battery and attached to an AppleTalk network? When the machine goes into a sleep voluntarily (set by me in the CDEV), the "I'm trying to sleep but I'm connected to a network" dialog appears and the machine never actually sleeps.

Aren't these potential battery-drain situations?

This article has been archived and is no longer updated by Apple.
Here is a chart that shows what the Macintosh Portable is doing at various battery charge levels:

Battery Voltage	Macintosh Portable Status
7.2	Charging with adapter
6.4 - 6.0	Battery without adapter (normal operation)
5.9	1st software warning
5.86	2nd software warning
5.8	3rd software warning
5.76	10 second warning
5.72	Software shutdown
5.65	Hardware shutdown
5.4	Battery sulfation

Once the Macintosh Portable's battery reaches a voltage level 5.72 volts, the machine goes into software shutdown mode. This will occur regardless of the activity of the machine, even when connected to AppleTalk networks. This mode is equivalent to sleep mode except that the Macintosh Portable will not come out of software shutdown mode until the battery charger is plugged in or a battery with more than 5.8 volts is installed. Once in software shutdown mode, the Macintosh Portable will keep the contents of memory intact for about five days.

When the Macintosh Portable's battery reaches a voltage level 5.65 volts, the machine goes into hardware shutdown mode. This mode removes power from the entire system except for the Power Manager chip. All memory contents are lost. The Macintosh Portable will not come out of hardware shutdown mode until the battery charger is plugged in or a battery with more than 5.8 volts is installed.

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The Apple II Cassette Interface (2 of 2)

This article has been archived and is no longer updated by Apple.
For reading data, the cassette recorder uses a more complicated input circuit consisting of a 741 operational amplifier configured as a zero crossing detector. Zero crossing detection means that whenever the voltage at the input jack goes from positive to negative (or negative to positive) the output of the amplifier switches from a 1 to a 0 (or 0 to 1). The detector is accessed by any read to address $C060. The sign bit (most significant bit) of the byte read reflects the detector status. The read routines continually EXCLUSIVE ORs this bit with the value most recently read to detect a change in state. The amount of time required to change state indicates the incoming frequency which then is used to determine if a one or a zero has been received. After detecting the first zero crossing at the start of the header, the read routine uses HEADR to generate a 3.5 delay, and then the read routine waits for the sync bit. After HEADR generates the synchronous bit, the read routine reads the data and puts it in the specified memory range.

In using the cassette interface to either read or write, all you need do is specify an address range and execute the read or write subroutine. The address range is stored in four bytes, two for the first address to be saved and two for the last to be saved. In both cases the least significant byte is first.

Commanding the cassette interface:

1. from the monitor:
If the start is $800 and the end is $9FF, then
800.9FFW will write the data to the cassette and
800.9FFR will retrieve it.

2. from machine language:
Again, if the start is $800 and the end is $9FF then store the address range,

```
LDA #$00
STA $3C starting address low
LDA #$08
STA $3D starting address high
LDA #$FF
STA $3E ending address low
LDA #$09
STA $3F ending address high
JSR $FEDC write to block to tape
```

The JSR $FEDC will write to the cassette; JSR $FEFD will read from the cassette.

3. from BASIC:
First set up the address range. If S = the start and E = the end then from integer BASIC,

```
POKE 60,S MOD 256
POKE 61,S / 256
POKE 62,E MOD 256
POKE 63,E / 256
```

4. from APPLESOFT,

```
POKE 60,S - INT(S / 256) * 256
POKE 61,S / 256
POKE 62,E - INT(E / 256) * 256
POKE 63,E / 256
```

Then, to write out to cassette, use CALL -307; to read in from the cassette, use CALL -259.

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LaserWriter IINTX: Lots of Fonts on Hard Disk Slows Printing

I tried to set up my LaserWriter IINTX and a spare HD80 SC as a font cache. I've downloaded more than 400 PostScript fonts onto the HD80 SC.

Instead of getting an increase in the system throughput, I'm now experiencing delays approximately 5 to 6 times longer than before the hard disk was commissioned.

The utilities are current, and I'm using LaserWriter Driver 5.2, running under System 6.0.3. Do you have any suggestions as to why this problem has occurred?

This article has been archived and is no longer updated by Apple.
According to the Addison-Wesley LaserWriter Reference Manual (ISBN #0-201-19258-6), Chapter 2, page 46:

"When the PostScript interpreter encounters the input /Palatino findfont, it first searches the FontDirectory (in memory), then searches the disk file system for the file named fonts/Palatino. If that search succeeds, PostScript executes the file, thereby loading it into virtual memory and registering the name Palatino in the FontDirectory."

Therefore, whenever the LaserWriter must find a font to use, it must search ALL available fonts -- starting from its own memory, then going to any attached hard disks -- to locate the proper font. It then must download it, as if from the system, for it to be available for use. With a directory of over 400 fonts, the search and download take a great deal of extra time.

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EtherTalk: How To Install Drivers

As I understand it, Apple delivers EtherTalk 2.0 together with the EtherTalk NB Card.

Since EtherTalk 2.0 uses AppleTalk Phase 2, and not every networking and communication product can use AppleTalk Phase 2 -- GatorBox can't, for example -- what should I do if I still need to use EtherTalk 1.2 with the EtherTalk NB Card?

This article has been archived and is no longer updated by Apple.
Apple now ships EtherTalk 2.0 software with all EtherTalk NB Cards. It is possible to install BOTH the EtherTalk 1.2 and EtherTalk 2.0 drivers on a Macintosh II, using the EtherTalk 2.0 Installer and a file on the EtherTalk 2.0 Installer Disk.

To install the EtherTalk 1.2 and EtherTalk 2.0 drivers, follow the installation sequence below:

1) Use the Installer on the EtherTalk 2.0 Installer Disk to install EtherTalk 2.0 on the destination Macintosh.

2) Open the folder called "Previous Version" on the EtherTalk 2.0 Installer Disk.

3) Copy the file "EtherTalk" to the System Folder of the destination Macintosh. This file is the EtherTalk 1.2 driver.

The System Folder of the destination Macintosh now contains both EtherTalk 1.2 and EtherTalk 2.0 drivers. Either one of these drivers may be selected via the "Network" CDEV. The EtherTalk 1.2 driver icon has a single arrow pointing to the left and right; the EtherTalk 2.0 driver has double arrows pointing to the left and right.

Published Date: Feb 18, 2012

Macintosh IIx: Lockup Caused By MIDI And SCC Chip Registers

System Configuration

Macintosh IIx
Opcode Studio 3+ (MIDI interface)
Opcode Vision (MIDI sequencer software)
Digidesign SoundTools,
System Software 6.0.3.

My Macintosh IIx sends a constant stream of data from the serial port. This affects the MIDI setup and creates a jam causing the MIDI devices and software to crash.

My first Macintosh IIx worked for a couple of days, then everything locked up. I returned it to the dealer and have the dealer's Macintosh IIx as a loaner, but that computer has the same problem.

This article has been archived and is no longer updated by Apple.
This issue centers on the SCC chip power-on configuration and the fact that MIDI developers have had to bypass the Toolbox to write directly to the SCC chip. With MIDI Management Tools, Apple has provided the developers a MIDI toolbox to communicate to the serial ports without directly addressing the SCC chip. Since the MIDI Management Tools are a recent development, most existing MIDI programs still talk to the hardware directly.

Prior to Macintosh computers using the 68030, the contents of a particular register of the SCC chip had a power-on default of zero.

(NOTE: This one register will be the only one discussed, but there are other registers in the SCC.)

Starting with the Macintosh IIx, the register's power-on state may be set to something other than zero. This appears to be a random event. The Opcode utility (provided as a startup document, also known as an INIT) assures that the setting of the Macintosh SCC register is set to zero.

Some known sequences of events that reset the register of the SCC are:

- The Opcode INIT correctly sets the register's value at startup; printing takes place via a serial port; printing resets SCC register to something other than zero; SCC chip sends random data stream out the serial port; MIDI attempts to interpret the data stream as MIDI packets; everything connected to MIDI becomes confused (for example, locks up or crashes). Alternatively, nothing is sent out the serial port.

- AppleTalk, when it is turned on, changes the setting of the SCC register and sends AppleTalk packets; MIDI attempts to use those packets; this confuses all devices listening to the packets (for example, locks up or crashes). It is reported that Font/DA Juggler and Master Juggler are known to occasionally turn on AppleTalk.

To be sure that all works correctly, the following items need to be watched. These items assume that the Opcode INIT is in the System Folder of the startup disk.

- If any printing takes places after powering on and before a MIDI application is used, the SCC register may be in an incorrect setting for

MIDI. Not printing prior to launching a MIDI program assures that the SCC's register configuration is proper.

- If AppleTalk is turned on before MIDI is used, the SCC registers are likely to change and, thus, may cause lockups to occur in MIDI devices. This includes: AppleTalk off at startup, turned on, turned off; or AppleTalk on at startup, then turned off. Restarting with AppleTalk inactive, and not activating AppleTalk prior to MIDI usage, should allow the MIDI session to run smoothly.

- (This is not verified but has some logical merit, so it may provide a workaround.) Launching MacTerminal and quitting has been reported to clear the lockups experienced on MIDI devices. This apparently sets the SCC's register to zero, which is the setting MIDI wants. One user with Southworth Music System's Jambox, a MIDI interface, uses the Jambox DA to clear the lockups. Both of these solutions seem to work due to their interaction with the SCC's register.

- It is also possible that a faulty SCC chip is on the logic board of the computer; however, with the situation appearing on two separate Macintosh IIx computers, it is unlikely that you are experiencing faulty hardware.

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System 6: Maximum Addressable RAM (9/93)

What is the maximum addressable RAM for a Macintosh under System 6.0.7? We have a IIsi with 17MB of RAM installed (1MB on the main logic board plus four 4MB SIMMs), and the "About the Finder" shows 7MB available with the System using 10MB of RAM.

This article has been archived and is no longer updated by Apple.
Macintosh system software version 6.0.x is currently unable to address any RAM above 8MB that is installed in the logic board SIMM sockets. The IIsi can detect and report the presence of a greater amount of RAM, but the operating system won't use it. The computer will behave as if it has 8MB of RAM. All the memory is available under A/UX or System 7.0.

System 6, when starting up, switches to 24-bit addressing mode and maps the installed RAM into an 8MB address space. Any RAM above 8MB is useless without a different operating system, A/UX being an example. The Macintosh knows that more RAM is installed but is unable to use it. You can verify that the RAM is recognized by selecting "About the Finder" from the Apple menu. It shows any RAM above 8MB as being added to the system memory.

Connectix Corporation has several products that take advantage of extra RAM under System 6:

* Optima makes System 6 32-bit clean and puts a Macintosh IIsi into 32-bit mode. This makes all of the physical RAM addressable by System 6. You can have one application open at a time.

* Maxima makes it possible to use up to 14MB of the RAM installed in a System 6-based system as RAM, with the excess RAM to be used as a RAM Disk. You can have more than one application open at a time.

* Virtual 2.0 uses NuBus address ranges to add virtual memory above the 8MB boundary (up to 14MB). It uses the NuBus slot address ranges to extend the 8MB limit by mapping this larger space onto an equal-sized disk image. It then uses the Paged Memory Management Unit (PMMU) function of the 68030 (or 68020 with 68851 PMMU) to manage the swapping of required sections of this new, larger memory map to and from disk.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
2 September 1993 - Added application usage information about Optima and Maxima.

Published Date: Feb 18, 2012

Macintosh: 286-Compatible Emulation Software Needed

I really need to be able to run an MS-DOS-based administration package inexpensively on my Macintosh.

The package is Dataflex v2.3 and although SoftPC will "sort of" run the installation section of the package, the package itself won't run at all. I assume that this is because SoftPC is an XT-compatible emulation. (It runs perfectly on the AST286 system.)

Are there any AT-compatible PC emulation packages that may get around the problem? I am trying to find a software solution to run on a Macintosh SE and to keep the cost to a minimum.

This article has been archived and is no longer updated by Apple.

Apple Tech Comm is not aware of any PC emulation software other than SoftPC. The only 286-compatible solutions we know of are hardware-based solutions and the Mac286 product from Orange Micro (formerly from AST), which requires two NuBus slots.

It is possible to add a third-party NuBus expansion chassis to a Macintosh SE, but the cost is quite high. The combined price of an expansion chassis for the Macintosh SE and the Mac286 product makes this an unrealistic solution for a cost-conscious customer.

We recommend that you contact the vendor of the administration package to determine if they have an 8088-, 8086- or Macintosh-compatible version of their software.

For more information, search under: "Orange Micro" and "Insignia Solutions"

Published Date: Feb 18, 2012

MacroMind Director 1.0.1: Use with Macintosh Portable & IIci

Can MacroMind Director be used on the Macintosh Portable to run animation that was created on a Macintosh IIcx?

This article has been archived and is no longer updated by Apple.
Yes, MacroMind Director 1.0.1 is capable of running animation that was created on a Macintosh IIcx.

MacroMind Director 1.0 is not fully compatible with the Macintosh Portable or Macintosh IIci. A free upgrade is available from MacroMind.

For more information, search under: "MacroMind"

Published Date: Feb 18, 2012

AppleFax Modem: Distribution List Capacity (9/93)

I want to send a single Fax through the AppleFax Modem to 300 different locations. What is the maximum number of addresses that the AppleFax software can send to in one batch?

This article has been archived and is no longer updated by Apple.
The mechanism within the AppleFax application to send an envelope containing a document or documents to multiple addresses is called a Distribution List. The Distribution List has a theoretical limit of an integer, or approximately 32K names; however, you will run out of memory (and patience) long before that.

We have successfully sent over 100 addresses in a single Distribution List. We don't have any experience with larger quantities or the testing resources to check this, but we don't know of any reason why it wouldn't work with the proper amount of memory.

You might create many smaller Distribution Lists, or try one list and monitor memory consumption and add memory as appropriate.

Article Change History:
2 September 1993 - Removed BackFax information because Solutions, Inc. is out of business.

Published Date: Feb 18, 2012

AppleShare: Types of Programs That Can Run in the Foreground

This article has been archived and is no longer updated by Apple.

These are the three major conditions that a program must meet for it to be an AppleShare foreground application:

- it must be of type FGND.

- it must be in the server folder (so AppleShare can find it) and it can save files only in the server folder (so as not to disrupt the desktop in a manner AppleShare cannot handle).

- it must call SYSTEMTASK often in order to give AppleShare run time.

Published Date: Feb 18, 2012

MacDraw II: Scaling Discrepancy with LaserWriter Printing

I have a problem using MacDraw II and a LaserWriter IISC (Printer Driver 1.1). When I try to print a line with a width of 0.5mm or smaller, lines with widths 0.5mm, 0.3mm, and 0.1mm print the same size.

The MacDraw II Reference Manual says that if your printer is a LaserWriter, for example, lines can be as small as 1/300 inch. Can you tell me what's causing my problem?

This article has been archived and is no longer updated by Apple.

We tested MacDraw 1.0 and the latest release, MacDraw 1.1v2, on a LaserWriter IISC, LaserWriter IINTX, and LaserWriter Plus. Driver versions used included LaserWriter 5.2 and LaserWriter IISC 1.1. We used a Macintosh II and a Macintosh Plus running KanjiTalk 6.0.2.

We were able to scale a line to at least 0.1mm. Choosing anything smaller had no effect on the output. Though we could print all sizes to 0.1mm (for example, 0.5, 0.4, 0.3, 0.2, and 0.1) successfully, we were not able to print to 1/300 inch (0.083mm) as the MacDraw manual states.

CLARIS is aware of this scaling discrepancy in the LaserWriters output, and though they have a utility (available from CLARIS upon request) for improving the resolution of ImageWriter output, they have no solution for your problem as of December, 1989.

If you need the additional 0.017mm resolution, you should consider using another graphics program.

For more information, search under: "CLARIS"

Published Date: Feb 18, 2012

TA40747_AUX_Porting_Applications_from_UNIX__(TIL04972).pdf

A/UX: Porting Applications from UNIX (8/94)

I am a UNIX developer. I want to port one of my applications over to A/UX. Here are some questions:

1) Does A/UX use "TERMCAP" or "TERMINFO"?

2) The package compiles successfully on Convergent Technology's 68020 machine. Does this mean that there should be few problems on the A/UX?

This article has been archived and is no longer updated by Apple.
1) Both TERMCAP and TERMINFO (different formats of) terminal databases and libraries are supported by A/UX. The database file for the TERMCAP is the /etc/termcap file, and the database files for the TERMINFO are under the /usr/lib/terminfo directory.

2) A/UX is based on AT&T System V.2.2 UNIX with Berkeley software signals support. This allows most portable C code written on other UNIX machine, Convergent Technology's UNIX machine in this case, to be easily ported to A/UX without major modifications.

For A/UX third-party product information, search under the following AppleLink path:

Third Parties
Redgate Macintosh Registry
A/UX

Article Change History:
23 Aug 1994 - Reviewed and updated.
27 Aug 1992 - REVIEWED for technical accuracy. Removed obsolete info.

Support Information Services

Published Date: Feb 18, 2012

AppleShare PC 2.0: How To Access AppleTalk

How do I access from an MS-DOS machine the AppleTalk stack provided by AppleShare PC 2.0?

This article has been archived and is no longer updated by Apple.
Use the same interface method as specified for AppleShare PC 1.2. This is documented in the APDA documentation for both AppleShare PC and the LocalTalk PC Card.

The reason the LocalTalk PC Card developer notes are relevant is that even though AppleShare PC 2.0 runs over multiple physical media, the API remains the same.

There is one important additional step that must be taken. Included with AppleShare PC 2.0 is a program called COMPAT.COM that installs a TSR (Terminate and Stay Resident) process. This process ensures compatibility between programs using the AppleShare PC 1.2 interface and AppleShare PC 2.0, and the program should be run at system startup.

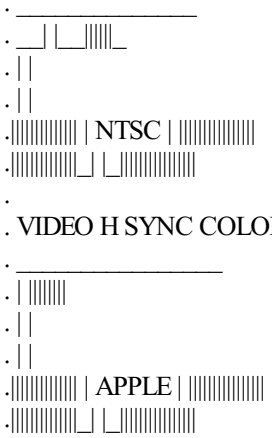
Published Date: Feb 18, 2012

TA40749_Apple_III_Hardware_Apple_III_Video__(TIL00498).pdf

Apple III Hardware: Apple III Video (2/95)

This article describes the horizontal sync signals for the Apple ///.

This article has been archived and is no longer updated by Apple.
The Apple III's horizontal sync consists of 8usec of sync and 4usec of color burst. There are no porches or breezeways. There is a certain amount of 3.58 MHz during a video line due to the switching of the pixels.



Article Change History:
14 Feb 1995 - Reviewed for technical accuracy, corrected spelling of sync.

Support Information Services
Published Date: Feb 18, 2012

AppleShare: Problem With Early Version Of TOPS

This article has been archived and is no longer updated by Apple.

When older versions (before September 1986) of TOPS for the Macintosh are used together with AppleShare, an endless loop of error messages ("The Disk need minor repairs" and "Desktop file could not be created") appear when you try to mount an AppleShare volume. Newer versions of TOPS fix the problem.

There is an external file system hook that both AppleShare and TOPS use. Since there is only one hook, and more than one application needs to access it, the solution implemented is to daisy-chain the routines that latch into it. This means that any routine that puts its address in the hook should preserve the address that was previously there, and then call it after it's done performing its tasks. That way, all applications have a chance to examine a filing call if all other applications are well-behaved. While early versions of TOPS daisy-chained properly, and passed on the filing command to other routines, they didn't preserve register values.

Published Date: Feb 18, 2012

A/UX: How To Use With Apple Modem 2400

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

While testing the new prerelease Apple Modem 2400 with A/UX, I was unable to get it to function properly by using "getty" in the /etc/inittab. The modem answered the phone but never produced a tone. The phone hung up.

When I changed /etc/inittab to use "apm_getty", the modem answered the phone and presented a tone, but it would connect at 1200 only -- not at 2400. Changing the apm_getty parm to "at_2400" did not solve the problem. This is the /etc/inittab entry that I am using:

00:2:respawn:/etc/apm_getty tty0 at_2400

Can you suggest something that would work with our new Apple Modem 2400 and allow it to operate at 300, 1200, or 2400 as determined by the speed of the incoming modem?

This article has been archived and is no longer updated by Apple.
We configured the Apple Modem 2400 for dial-in use with the standard getty. The apm_getty operates only at 1200 baud. It is intended for use only with the 1200-baud Apple Personal Modem, which can't remember settings between resets.

Here are the steps we followed:

1) Connect the Apple Modem 2400 to the Macintosh modem port with cable (M0197, 590-0552). Turn on the modem.

2) Edit the file /usr/lib/uucp/L-devices to add this line:

DIR tty0 tty0 2400

3) Open a connection to the modem using cu:

#cu -ltty0 -s2400 <- typed by you
Connected <- returned by cu

4) Recall factory settings, change for dial-in use, and save the new settings:

AT&F <- typed by you
OK <- returned by modem
AT E0 Q1 &C0 &D2 S0=1 &W <- typed by you (0 is a zero)
<- nothing is returned because of our settings

5) Edit the file /etc/inittab to respawn a getty on tty0:

00:2:respawn:/etc/getty tty0 mo_2400

6) Edit /etc/gettydefs to limit rollover between 2400 and 300. Edit the mo_2400 line to end with mo_2400 instead of mo_9600.

7) Start the getty process with INIT:

#INIT q

8) Dial in from another modem.

(NOTE: This configuration does not allow A/UX to sense a loss of the Carrier Detect signal -- that is, an accidental disconnection can result in the next caller getting the disconnected caller's login. Enabling this requires a different cable that connects the GPi line (pin 7) from the modem to the HSKi line (pin 2) of the Macintosh modem port. It also would require modifying the modem setup string (in step 4) to set &C1 instead of &C0.)

Published Date: Feb 18, 2012

Macintosh II Family: Internal Speaker Plays Left Channel Only

It seems that when a device is recorded in stereo (for example, from Farallon's MacRecorder), and you replay the sound through the built-in speaker on the Macintosh II, the computer combines both channels. On a Macintosh IIcx, you hear only the left channel through the built-in speaker, even though the stereo port on both computers works correctly.

This article has been archived and is no longer updated by Apple.
According to schematics, all Macintosh II products (Macintosh II, Macintosh IIx, Macintosh IIcx, and Macintosh IIci) have only the left sound channel connected to the internal speaker.

(The Macintosh SE/30 has both sound channels connected to the internal speaker.)

If any users ARE actually getting stereo from any Macintosh II system, it has to do with software and not hardware. In all cases though, both channels are connected to the external speaker jack, so external speakers will produce correct stereo sound.

Published Date: Feb 18, 2012

Apple Software: Where to Get Permission to Distribute

What Apple approval or copyright releases are required for the following requests?

- Including Apple software on a CD-ROM or DVD-ROM disc.
- I want to include some Apple software updates or QuickTime with a Macintosh application I'm developing.
- Providing a mirror site on the Internet for the Apple Software Updates library available at http://www.apple.com/swupdates/ or including sections of the Apple Software Updates library on a CD-ROM or DVD-ROM disc.

This article has been archived and is no longer updated by Apple.
Apple approval and licensing is required to distribute any and all software originally distributed on an Apple floppy disk, CD-ROM disc, DVD-ROM disc, or from http://www.apple.com/ .

Send a letter to Apple Software Licensing explaining what you want to do and why. Software Licensing will evaluate the request. Apple's Software Licensing department also licenses Apple software to independent software vendors for inclusion with their products.

For example, a vendor who publishes a word processing program with QuickTime capabilities may wish to include the QuickTime extension with the word processor. They would license QuickTime from Apple through this department.

Contact Information

Software Licensing
Apple Computer Inc.
2323 Ridgepoint Drive
MS 198-SWL
Austin, TX 78754
USA

+ 1 512 674 2645
+ 1 512 674 2120 (fax)
Published Date: Feb 18, 2012

TA40754_Apple_II_MiniAssembler_of_.pdf

Apple II+: Mini-Assembler (1 of 2)

The attached listing is a relocated version of the mini-assembler for the Apple II+ with instructions for the Apple II version. This version can be BRUN from the disk or BLOADed and start with CALL 2048 from Applesoft.
This article has been archived and is no longer updated by Apple.
To restart use CAll 2051. From machine language the start is 800G and the restart is 803G. Users who have Integer Basic available need only enter that language and use the instructions in part one of this note.

Please note that the mini-assembler performs a NEW command, so it will wipe out any resident Applesoft program. Also note that the mini-assembler loads from $800 to $947. Don't try to assemble anything into those locations.

This note covers the operation of the mini-assembler only. It is not a course in assembly language programming. For a reference on programming the 6502 microprocessor, refer to the Synertek Programming manual or any of the tutorials available. This note assumes the user has a working knowledge of 6502 programming and mnemonics.

The mini-assembler is a programming aid aimed at reducing the amount of time required to convert a handwritten program to object code. The mini-assembler is basically a look-up table for opcodes. With it, you can type mnemonics with their absolute addresses, and the assembler will convert it to the correct object code and store it in memory.

Typing "F666G" puts the user in mini-assembler mode. While in this mode, any line typed in will be interpreted as an assembly language instruction, assembled, and stored in binary form unless the first character on the command line is a "$".

If the first character of a command line is a "$", the remainder of the line will be interpreted as a normal monitor command, executed, and control returned to the mini-assembler. To get out of the mini-assembler, press RESET.

If the first character on the line is blank, the assembled instruction will be stored starting at the address immediately following the previously assembled instruction. If the first character is not a blank nor a "$", the line is assumed to contain an assembly language instruction preceded by the instruction address (a hex number followed by a ":"). In either case, the instruction will be retyped over the line just entered in dis-assembler format to provide a visual check of what has been assembled.

The counter that keeps track of where the next instruction will be stored is the pseudo PC (Program Counter) and it can be changed by many monitor commands (eg. 'L', 'T', . . .). Therefore, it is advisable to use the explicit instruction address mode after every monitor command and, of course, when the mini-assembler is first entered.

Errors (unrecognized mnemonic, illegal format, etc.) are signalled by a "beep" and a caret ("^") will be printed beneath the last character read from the input line by the mini-assembler.

The mnemonics and formats accepted by the mini assembler are the same as those listed by the 6502 Programmers Manual, with the following exceptions and differences:

1. All imbedded blanks are ignored, except inside addresses.

2. All addresses typed in are assumed to be in hex (rather than decimal or symbolic). A preceding "$" (indicating hex rather than decimal or symbolic) is therefore optional, except that it should not precede the instruction address).

3. Instructions that operate on the accumulator have a blank operand field instead of "A".

4. When entering a branch instruction, the argument of the branch mnemonic should be the address of the target of the branch. If the destination address is not known at the time the instruction is entered, simply enter an address that is in the neighborhood, and later re-enter the branch instruction with the correct target address.

NOTE: If a branch target is specified that is out of range, the mini-assembler will flag the address as being in error.

5. The operand field of an instruction can only be followed by a comment field, which starts with a semicolon (";"). Obviously, the mini-assembler ignores the field and in fact will type over it when the line is typed over in disassembler format.

6. Any page zero references will generate page zero instruction formats if such a mode exists. There is no way to force a page zero address to be two bytes, even if the address has leading zeroes.

In general, to specify an addressing type, simply enter it as it would be listed in the disassembly. For information on the disassembler, see page 49 of the Apple II Reference Manual.

```
0000:                         **************************
0000:                         *                        *
```

```
0000:                          *       APPLE II         *
0000:                          *   MINI-ASSEMBLER       *
0000:                          *                        *
0000:                          **************************
002E:           FORMAT  EQU    $2E
002F:           LENGTH  EQU    $2F
0031:           MODE    EQU    $31
0033:           PROMPT  EQU    $33
0034:           YSAV    EQU    $34
0035:           L       EQU    $35
003A:           PCL     EQU    $3A
003B:           PLH     EQU    $3B
003D:           A1H     EQU    $3D
003E:           A2L     EQU    $3E
003F:           A2H     EQU    $3F
0042:           A4L     EQU    $42
0043:           A4H     EQU    $43
0044:           FMT     EQU    $44
0200:           IN      EQU    $200
D64B:           NEW     EQU    $D64B
F88E:           INSDS2  EQU    $F88E
F8D0:           INSTDSP EQU    $F8D0
F94A:           PRBL2   EQU    $F94A
F953:           PCADJ   EQU    $F953
F9B4:           CHAR1   EQU    $F9B4
F9BA:           CHAR2   EQU    $F9BA
F9C0:           MNEML   EQU    $F9C0
FA00:           MNEMR   EQU    $FA00
FC1A:           CURSUP  EQU    $FC1A
FD67:           GETLNZ  EQU    $FD67
FDED:           COUT    EQU    $FDED
FE00:           BL1     EQU    $FE00
FE78:           A1PCLP  EQU    $FE78
FF3A:           BELL    EQU    $FF3A
FFA7:           GETNUM  EQU    $FFA7
FFBE:           TOSUB   EQU    $FFBE
FFC7:           ZMODE   EQU    $FFC7
FFCC:           CHRTBL  EQU    $FFCC
```

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Applesoft: Mixing DOS and High-Res

DOS uses two memory locations, $26 and $27, which are also used by Applesoft's High-Res routines during the HPLOT TO X,Y statement. DOS commands mixed in with HPLOT TO X,Y statements prevent the X,Y from plotting properly.
This article has been archived and is no longer updated by Apple.
To enable mixing DOS with High-Res, you must save and restore the pointer. Statments 25 and 35, in the second program, demonstrate how to maintain the pointer values.

This will not work:

```
10 D$ = CHR$(4)
20 HPLOT 1,2
30 PRINT D$;"CATALOG"
40 HPLOT TO 33,44
```

This does work:

```
10 D$ = CHR$(4)
20 HPLOT 1,2
25 A = PEEK(38): B = PEEK(39)
30 PRINT D$;"CATALOG"
35 POKE 38,A: POKE 39,B
40 HPLOT TO 33,44
```

Published Date: Feb 18, 2012

AppleTalk: Using Within a Token Ring Source Routing Environment

Does the AppleTalk protocol running on the Token Ring board modify the optional source routing field within a Token Ring frame? If not, how does it resolve paths and routing to non-local networks?

Where can I get detailed information about the functions of AppleTalk within a Token Ring Source Routing environment?
This article has been archived and is no longer updated by Apple.

```
Token Ring
----------

The AppleTalk protocol layer does not directly modify the optional source
routing fields in the 802.5 frame.  Source routing in an 802.5 environment is
handled by the LLC (Logical Link Control) layer within the TokenTalk NB Card
(Macintoshes) in cooperation with source routing bridges.  In the 802.5 world,
the end nodes (Macintoshes) are responsible for determining how to route a
packet to its destination and for caching and expiring that information for
later use in route resolution.  Each time a station needs to connect to an
unknown host, it has to go through a route discovery process.

The discovery process involves sending a special packet (Discovery Packet) with
an empty source routing field to all interconnected rings.  This packet is sent
across all source routing bridges to all nodes in the current ring environment.
The first bridge encountered adds two network ID numbers, one for each of its
connected networks, to the source routing field and forwards it on to the next
ring.  Each of following bridges adds one network ID to the source routing
field up to a maximum of 7 networks. This is the maximum number of hops any one
data packet can travel across. The node with the matching node ID responds to
the discovery packet using the path contained within the discovery packet.
This packet now provides the source station with the path to the remote node,
and also provides the remote node with the path to the source node.  The
discovery process is handled within the LLC and Macintosh layers of the TI
TMS380 chip set. Support for source routing bridges is provided within the LLC
and Macintosh layers of the TI TMS380 chip set.  Support for source routing is
provided for, but it's not automatic at the LLC layer.  It's important to
understand that the TI Token Ring chip set (the TMS380 family) fully implements
the Macintosh and LLC layer services for the TokenTalk NB Card.

The TokenTalk NB Card also implements the SNAP (SubNetwork Access Protocol) for
use with various protocol multiplexing and de-multiplexing functions. The
AppleTalk protocol suite takes advantage of the SNAP protocol's implementation
of automatic source routing support.  The SNAP protocol allows support for
building other layered protocols, which operate transparently in a source
routing bridge environment.

Since we're using Token Ring, which provides its own 48-bit hardware address,
we need to provide a mapping between the 802.5 address and the 8-bit AppleTalk
node ID.  The Macintosh uses the AppleTalk AARP protocol to accomplish this
mapping.  More information about AARP can be found in "Inside AppleTalk"
(Addison Wesley, ISBN #0-201-19257-8).

Example
-------
A user on a Macintosh named "Pluto" (node ID 10) wants to mount a volume
from an AppleShare File Server named "Bozo" (node ID 20) located on the
other side of an IBM source routing bridge.

     Ring 1        Ring 2
           Pluto%-------source routing bridge-------%Bozo

User pulls down the Chooser to locate the "Bozo" file server.

An NBP lookup is generated from Pluto, asking for all of the
```

network-visible entities of type "AFPserver".

NBP(=:AFPserver:*)

This request is passed to the AppleTalk DDP layer as a broadcast to all AppleTalk nodes (address FF). The DDP layer uses AARP to determine that the AppleTalk address FF translates to the Token Ring address FFFFFFFF, the Token Ring broadcast address. Now that we have an 802.5 address, we can pass the address and data to the SNAP interface, which then passes it on to the LLC layer and finally out to the ring.

Each AppleShare File Server on all of the interconnected rings within the current zone would respond to the NBP lookup. The route to the file server would then be cached by the LLC layer; this allows us to resolve the node ID without the discovery process the next time we need to access this host. Now that we know the AppleTalk network number and node ID of the server, we can use them for any requests for services to the server.

As you can see, the AppleTalk protocols have no direct intervention with the source routing fields of the 802.5 frame. Source routing support is completely handled from the LLC and Macintosh layers, and operates transparently to AppleTalk or any other protocol that uses the SNAP protocol interface.

More information about AARP can be found in "Inside AppleTalk" (Addison Wesley, ISBN #0-201-19257-8).

More information can be obtained about Token Ring (802.5) and source routing bridges in these materials:

TokenTalk NB Programmers Guide
Kian-Bon, K. Sy, Daniel Avery Pitt, and Robert A. Donnon. "Source Routing for Local Area Networks." IBM Corp., 1985
Texas Instruments TMS380 Adapter Chip Set User's Guide
Texas Instruments TMS380 Adapter Chip Set User's Guide Supplement
Texas Instruments Manual Update, Revision F
IBM Token Ring Network Architecture Reference, P.N. SCC30-3374
IEEE 802.2 Standard
IEEE 802.5 Standard

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Apple Discussion About Performa: Frequently Asked Questions (FAQ)

This article contains a number of questions that have come up frequently on the Apple Discussion About Performa in the Apple Discussions area at the Apple Support site.

If the questions below do not contain an answer to something you are looking for, you can continue to search for an answer by using the Search function here within the Apple Knowledge Base or you can go to the **Apple Discussion About Performa** itself.

Take some time to look through the board, or use its search function. It is quite likely your question has come up before, even if it does not have the frequency of the ones listed below. If you still did not find an answer, please feel free to either post a new topic describing your issue, or add a reply to an existing topic that closely matches your issue.
This article has been archived and is no longer updated by Apple.
Questions addressed in this FAQ article:

1. Can I use EDO memory with my computer?
2. I just installed Mac OS 8 and now there appears to be a significant delay on startup.
3. The date reverts to 1956 and my printer/Chooser/time settings are incorrect.
4. "This disk is unreadable by this Macintosh" when a CD-ROM disc is placed in the computer.
5. What types of processor upgrades does Apple offer for my computer?
6. Type 11 errors.
7. Which modem comes with a Macintosh Performa 6400?
8. Can I use an external modem?
9. Does Apple offer a 56K modem upgrade?
10. My Apple Geoport modem no longer works after installing Mac OS 8, 8.1, 8.5, or 8.6.
11. I just added a new EIDE, IDE, or SCSI hard drive and am having problems with it."
12. My web browser crashes or freezes a lot.

---

1. Can I use EDO memory with my computer?

- Article 19456: "Power Macintosh: Using FPM, EDO, SDRAM, & SGRAM"

2. I just installed Mac OS 8 and now there appears to be a significant delay on startup. I press the power button and the computer gives a startup chime, however, the power light and monitor do not come on for another 30 seconds or so. It was not doing this before Mac OS 8. How can I fix this?
This issue is addressed in Mac OS 8.1. The Mac OS 8.1 Update is available from the Apple Software Updates site.

3. Every time I start-up my Macintosh computer after it has been powered off, it switches to black and white mode, changes the desktop pattern, the date reverts to 1956, forgets my printer settings, Chooser settings, or time. What could be causing this issue?

- Article 15609: "Macintosh: Low Batter Causes Lost Date & User Settings, No Video"
- Article 11751: "Macintosh Family: Batteries & Part Numbers"

4. When I put a CD into my CD-ROM drive the disk will not show up or I get the message "This disk is unreadable by this Macintosh". How do I go about troubleshooting this issue?

- Article 17927: "CD-ROM: This disk is unreadable" Message"

5. What types of processor upgrades does Apple offer for my computer?

- Article 17055: "Macintosh Family: Upgrade History"

6. I keep getting a type 11 error. What does it mean and how do I troubleshoot it?

- Article 16004: "Power Macintosh: Meaning of Error Type 11"
- Article 18912: "Power Macintosh: Type 11 & No FPU Errors Technote"

7. Which modem comes with my Performa 6400?
The Performa 6400 series computers come with either a Global Village Teleport Platinum V modem or a Geoport modem. The following article should help you identify which modem came with your computer.

- Article 20642: "Macintosh Performa 6400: Which Modem Is Included?"

8. I have a Performa computer with an internal modem. Can I use a modem on the external modem port? If so, how do I do this?
Yes, you can add an external modem to the modem port, however, the internal modem must first be removed. See the following article for more information:

- Article 18250: "Power Macintosh: Modem Port Disabled w/Internal Modem Present"

You will also need to remove your modem software and use the software that comes with your new modem. The following articles describe how you can remove the modem software depending on which modem you have:

- Article 17749: "How To Remove Global Village Software"
- Article 20974: "Performa 6400/GVC: How to Remove Modem Software"
- TIL Article 20973: "Performa 6400/6360/GeoPort: How to Remove Modem Software"

9. I would like to upgrade my internal modem to a 56K internal modem. Does Apple offer such an upgrade?

- Article 24326: "56Kbps Modems: No Apple Upgrade Available"

10. My internal or external Apple Geoport/Telecom modem no longer works after installing Mac OS 8.x.
Check your Extensions Manager control panel and verify the Express Modem control panel and any Geoport extensions are active.

You may need to install Apple Telecom software from the Apple Extras folder of a Mac OS 8 or 8.1 CD-ROM disc. If such a CD-ROM disc is not available, Apple Telecom 3.1.3 may be downloaded from the Apple Software Updates http://www.info.apple.com/kbnum/n58172

- Article 24663: "Where Is Apple Telecom?"

11. I installed a new, larger hard drive (IDE, EIDE, or SCSI) and it does not seem to work. I reformatted it with Apple Drive Setup software but that did not help.

Drive Setup is intended for use only on Apple factory-installed hard drives. It may work with other drives, but is not tested or supported. Unexpected errors or data loss may occur with such an unsupported configuration.

See Article 24585: "Hard Disk Driver: Identifying It And Ensuring Compatibility"

You may need to use compatible third party hard disk formatting software. Check with the hard drive manufacturer for a recommendation.

Also, depending on the model of Macintosh Performa you have, you may need to partition the hard drive into 4GB or 2GB sized volumes.

- Article 8647: "Macintosh: File System Specifications & Terms" (see the section "Volume")

12. My Web browser crashes or freezes a lot.
Although a number of factors may be contributing to such behavior, in general the following suggestions should help:

- Allocate more RAM to the web browser. See the following article for assistance.

- Article 18278: "System 7.x: Allocating More Memory to a Program"

- Remove or clear the Web browser's cache folder and preference file.

- Run a hard drive utility such as Disk First Aid.
- Remove and reinstall the web browser software (be sure it is a compatible version).

If the Web browser did not come with your system software or Mac OS, contact the manufacturer of your Web browser for further assistance.

Note: This article mentions an Apple software update. You may search for software updates in the Software Updates Library at following URL: "http://www.info.apple.com/support/oldersoftwarelist.html"
Published Date: Feb 18, 2012

AppleShare: Limiting Users From Launching Applications

I want to limit the number of users that can simultaneously launch applications on an AppleShare File Server. I am currently doing this on an IBM network.

1) Does the AppleTalk network system support the ability to limit the number of users who can simultaneously launch an application on a file server?

2) If this is possible, does it depend on the application software or the file server software?

3) If it depends on the application software, do you know of any applications that take advantage of this capability (particularly, productivity software, such as word processors and spreadsheets)?

This article has been archived and is no longer updated by Apple.
AppleTalk Filing Protocol (AFP) does not directly support the ability to limit the number of users launching an application. This is something the developer of the application must provide within their code. AFP does provide methods to allow a developer to accomplish this type of limiting. For a more detailed STARTDISCUSSShared Environment", available from APDA, part number A7Z0014.

Microsoft Technical Support indicates that Microsoft Word, versions 3.0.x and 4.0; Microsoft Excel, versions 1.5 and 2.2; Microsoft File 2.0 and PowerPoint, versions 1.0 and 2.0 are all multilaunch applications. Each has some limited multi-user capabilities as well.

Published Date: Feb 18, 2012

TA40759_Macintosh_IIcx_Slot_Addresses_(TIL05004).pdf

Macintosh IIcx: Slot Addresses

What are the slot addresses for the Macintosh IIcx?

This article has been archived and is no longer updated by Apple.
The Macintosh IIcx slots and their 24-bit addresses are the same as slots $9, $A, and $B and their addresses in the Macintosh II:

Slot	24-Bit Addresses
$9	$90 0000-$9F FFFF
$A	$A0 0000-$AF FFFF
$B	$B0 0000-$BF FFFF

Published Date: Feb 18, 2012

Apple Internet Router: Timbuktu & Macintosh II Incompatibility

This article discusses a compatibility problem between the Apple Internet Router, Timbuktu 3.x, and members of the Macintosh II family running with more than 1-bit color

This article has been archived and is no longer updated by Apple.
There is a compatibility problem between the Apple Internet Router, Timbuktu 3.x, and members of the Macintosh II family running with more than 1-bit color.

To reproduce the problem, put an Apple Internet Router on a Macintosh II and set the Monitors CDEV to anything other than two-color black and white. When Timbuktu makes a connection with the router system, the screen on both the router system and the observing system become mangled. The text in the Port Statistics window changes size and moves to a different place on the screen. In the Network Information window, a dark black line appears on the top third of the screen.

The workaround is to set the router system to 1-bit color. It is possible to adjust the router system without restarting or breaking the Timbuktu connection.

Farallon, manufacturer of Timbuktu, says that Timbuktu should be used only in two-color, black and white mode.

Published Date: Feb 18, 2012

AppleShare IP Third Party Server Extensions Products

This article provides information about software and hardware products that work with AppleShare IP to provide enhanced or additional capabilities.
This article has been archived and is no longer updated by Apple.

Server Extensions

ShareWay IP Gateway brings the benefits of AppleShare IP's file service over TCP/IP to other servers on your network, such as personal file sharing servers. With ShareWay IP, all your servers can now provide Internet and intranet-based file service. Open Door Networks, Inc.

Vicomsoft DHCP Server is a MacOS-based application that automatically allocates TCP/IP addresses and configuration information to computers on your network. Over 1000 addresses can be distributed to any modern OS computer, including MacOS, Windows95 and NT and Unix. Check the Vicomsoft web site for an evaluation copy.Vicomsoft

Published Date: Feb 18, 2012

FORTRAN: Using WCHAR from FORTRAN

This article has been archived and is no longer updated by Apple.
This applies to the Apple II, Apple II+, Apple IIe, and Apple IIc.
The Turtlegraphics WCHAR procedure, which writes a single character on the high-res screen, will often give a "Value Range Error" (S#20, P#17, I#11) when called from FORTRAN. WCHAR does not check the high byte of the character word passed before calling the DRAWHBLOCK routine, so if the high byte contains a value, WCHAR will choke by trying to access an index beyond the end of SYSTEM.CHARSET.

This error will occur when passing a single character from a character array, but not from a single character "string". For example,

```
CHARACTER CH(10)
READ (*,100) CH(1)
CALL WCHAR (CH(1))
```

will result in a "Value Range Error". However,

```
CHARACTER*1 CH
READ (*,100) CH
CALL WCHAR (CH)
```

will work correctly. To prevent the error in the first example, replace the call statement with

```
CALL WCHAR (CHAR (ICHAR ( CH(1))))
```

which will convert the character to a integer, and then back to a character before calling WCHAR.
Published Date: Feb 18, 2012

Apple IIGS: Don‘t Use DuoDisk on SmartPort

I am experiencing a problem using DuoDisk with the Apple IIGS.

Equipment

"Blockbuster" Apple IIGS with Rev. 3.0 ROM, DuoDisk, Profile or SCSI HDA in slot 7 (optional)

Reproducing the Problem

Plug the DuoDisk into the disk port on the Apple IIGS main logic board. Install the ProFile in slot 7, and set the Control Panel to "your card." Leave both DuoDisk drives empty and power on the system. Set startup to "Scan."

The DuoDisk LED for drive #1 should turn on, but the system will not start. Why did the Apple IIGS skip the ProFile in slot 7? Now, power down the Apple IIGS and put a non-write-protected disk in the DuoDisk drive. It still doesn't start.

Power down the Apple IIGS and place a write-protected disk in the drive. Power on the system. The system starts up as expected, following the "Control Panel".

If the system appears to be "hung" following any of the above steps, momentarily triggering the write-protect switch by inserting anything into the drive allows the system to start up.

There appears to be a compatibility problem with the new Apple IIGS main logic board and the DuoDisk. Performing the "DuoDisk/Apple IIGS fix" that is posted on AppleLink has no effect since the problem appears to be hardware (firmware) based.

I'm stumped. What's going on?

This article has been archived and is no longer updated by Apple.
Tech Comm was able to reproduce this problem exactly as you describe.

There IS a compatibility problem with the DuoDisk and the Rev 3 Apple IIGS main logic board.

A check with Engineering provided us with the only workaround. Do NOT use the DuoDisk on the SmartPort. There is some code in the ROM that does not handle the interface to a DuoDisk properly. As of February, 1990, the only workaround is to use the DuoDisk on an interface card.

Published Date: Feb 18, 2012

TA40770_Nohands_Input_Devices_for_the_Handicapped_(TIL05013).pdf

No-hands Input Devices for the Handicapped

This article discusses "no-hands" input devices for profoundly handicapped computer users.

This article has been archived and is no longer updated by Apple.

A popular device for profoundly handicapped users is the Headmaster by Personics Corp., which mounts on the head with a headband. Depending on head position, the position of the cursor can be controlled on the screen, and the equivalent of a mouse click is generated using one of several other devices.

The package also includes a special DA that puts a soft keyboard on the screen that runs concurrently with other applications, such as Microsoft Word. By selecting letters on the keyboard and generating a mouse click, characters are entered into the application. (Selecting commands from the pull-down menus is straightforward when using the Headmaster to control the cursor and the mouse-click device.)

The Headmaster unit has also been tested with the Macintosh Portable, and it works fine.

Published Date: Feb 18, 2012

InitCdev 2.0: Using with Virus Detectors May Cause Problems

I've been using InitCdev 2.0, a freeware INIT management utility. Today, I installed the AppleComm Toolbox on my system.

When I invoke InitCdev, it crashes with ID=17 (package 0 not present--list manager). Can you explain?
This article has been archived and is no longer updated by Apple.
Your problem may be the order in which your INITS are loaded.

We tested the InitCdev with the Toolbox. After moving a couple of virus detectors around, so that SAM Intercept loads BEFORE the InitCdev, and Vaccine loads AFTER InitCdev, the Apple Communication Toolbox worked great.

Some virus detectors don't respond well to the way this INIT manipulates them.
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HyperCard: Card Name Limitation

While working on a HyperCard stack, I entered a card name that contained 29 characters. From any card, I could type "go to [card name]" in the message box or from a script, and go to that card. If I changed the name of that card to a 34-character name and made the appropriate changes in my script or the message box, I get a message "String too long."

I can type much more than 29 characters in the name of that card, but is there a HyperCard limit on the card name length?
This article has been archived and is no longer updated by Apple.
Official HyperCard documentation states that HyperCard (up through version 2.1) will read up to 31 characters as a valid parameter when you use the GO HyperTalk command or a script to address a card by name. This is the theoretical limit, though tests show that HyperCard accepts 33-character names as a valid practical limit. Bigger and more complex stacks could pull the practical limit more in line with the theoretical. In tests, entering a card name of 34 or longer gives the message "String too long."

The 31 character limit concerns accessing the card, not simply naming it. You can type as many characters as you want into the Card Name area of the Card Info dialog box, but for obvious reasons this is not advised. You would not be able to access the card directly with a name over the maximum valid number above.
Published Date: Feb 18, 2012

TA40773_HyperCard_Disks_Are_Mislabelled_As_.pdf

HyperCard 1.2.5: Disks Are Mislabelled As "1.2.3"

This article contains information about HyperCard version 1.2.5, which has been mis-labeled in some situations as v1.2.3.
This article has been archived and is no longer updated by Apple.
Some users are buying Macintoshes and getting disks labeled HyperCard version 1.2.3 -- although the "About" box shows version 1.2.5.

HyperCard version 1.2.3 was an internal testing version and never distributed to the general public as a product.

Despite what may be listed in some publications, the CORRECT HyperCard version for use with the Macintosh Portable and Macintosh IIci, under System Software 6.0.4, is HyperCard version 1.2.5.
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AppleShare: How To Correctly Shut Down Remotely

What happens when a foreground application (or possibly a DA) issues a Shutdown command to the Macintosh while it is running the AppleShare File Server software? Will any damage be done to open files, or does the Shutdown process force AppleShare to clean all of its active and idle open file services before shutting down?

I want to perform a remote restart of the system to activate some system updates that take place only at startup. I am concerned about what that might do to the file server operation, since I'm not using the Shutdown option under on the AppleShare menu.

This article has been archived and is no longer updated by Apple.
The only correct way to shut down the AppleShare File Server software is by using the Shutdown option under the AppleShare menu. Choosing Shutdown from the Special menu or executing a shutdown trap does not guarantee that anything currently in the AppleShare's buffers will be written to disk before the shutdown occurs.

The only way we know of to control AppleShare remotely is by using Timbuktu/ Remote from Farallon Computing, Inc.

For more information, search under: "Farallon"

Published Date: Feb 18, 2012

LaserWriter Driver 6.0: Palatino Bold Print Size Problem

I am using PageMaker 3.02 and LaserWriter Driver 6.0.

When printing Palatino Bold, the printed character appears to print one point smaller: a line of 9-point Plain text looks a little bigger than 9-point Bold text in Palatino. It's really noticeable when printing numbers.

This happens whether you use the Apple driver or the Aldus driver. I tried this in Microsoft Word 4.0, and it happens there as well. Can you explain?

This article has been archived and is no longer updated by Apple.
We were able to duplicate the problem you describe and found that Palatino Bold prints about one dot (not point size), or about 1/300 inch, smaller than the Plain text Palatino. This is the result of the PostScript definition of the font and is independent of application or driver.

This can be fixed only with a change to the ROM.

The only solution with this combination of PageMaker and the LaserWriter Driver, is to use a different font family.

Published Date: Feb 18, 2012

FORTRAN Language Reference Manual: Errata

This article has been archived and is no longer updated by Apple.
This applies to the Apple II, Apple II+, Apple IIe, and Apple IIc.

Page inside cover
The number A2D0032 is for the diskette, not the manual. The correct number for the manual is A2L0032 030-0118-00.

Page ix
The page number for the Appendices should be 135 instead of 134.

Page xi
The top paragraph should be deleted because the information is presented on page x.

Page 156
In a multi-drive system, it isn't necessary to duplicate the system files on FORT2:. Here is a configuration for Apple FORTRAN diskettes that leaves you with over 130 blocks of storage on FORT1:, which remains the boot diskette, and allows you to write-protect FORT2: to prevent you from accidentally crashing the diskette that has the uncopyable FORTRAN SYSTEM.COMPILER .

FORT1:	FORT2:
SYSTEM.APPLE	SYSTEM.COMPILER
SYSTEM.PASCAL	SYSTEM.FILER
SYSTEM.MISCINFO	SYSTEM.EDITOR
SYSTEM.LIBRARY	SYSTEM.LINKER
SYSTEM.STARTUP	SYSTEM.CHARSET
FORTMOD.CODE	
FORTLIB.CODE	
SYSTEM.LIBRARY	

The copy of SYSTEM.LIBRARY on FORT2: is a copy of the original that came on FORT1:. There is a little room left on FORT2: which makes a good place to archive it. The SYSTEM.STARTUP program is generated from Pascal and contains the following commands:

```
PROGRAM LIBLINK;
USES APPLESTUFF;
BEGIN
END.
```

After compiling the program in Pascal, use the Filer to Transfer the codefile to FORT1: with the file name SYSTEM.STARTUP

Published Date: Feb 18, 2012

Internet Router: Compatible with LatticeNet Products

Can LatticeNet be used with the AppleTalk Internet Router? Are there any support issue to be considered?

This article has been archived and is no longer updated by Apple.
Apple has been using the Synoptics LatticeNet products with the Apple EtherTalk Interface Card and the AppleTalk Internet Router with no problems.

We can think of no unique support issues that the AppleTalk Internet Router would add to a LatticeNet network.

Published Date: Feb 18, 2012

Apple IIe: Network Printing Problem

I am working with a school which has a lab of 14 Apple IIe systems sharing two network ImageWriters with no file server.

They have been unable to get the Apple IIe systems to print from any application, so I was brought into the situation. I moved the Workstation Card to slot 1, used Chooser.II, and was able to get all their software to print over the network.

The interesting thing is that the printer would work only by placing the LocalTalk connector in the serial printer port rather than LocalTalk port on the Workstation Card. The Chooser finds the printer as a network printer.

Can you explain?

This article has been archived and is no longer updated by Apple.
It sounds as though the cables from the adapter box have been reversed during installation.

The top cable (LocalTalk) from the adapter box needs to be attached to the top connector pins on the Workstation Card. The bottom cable (printer port) from the adapter box needs to be attached to the bottom connector pins. If the cables from the adapter box to the Workstation Card have been reversed, the situation you describe would occur.

Once you were able to see the network from slot 1, did you try using slot 7 again? Were you able to see the network (even with the LocalTalk connector in the printer port)? Were you able to print from the applications?

Since you were able to see the network (that is, with Chooser.II), yet could not print, our first suggestion would be to check the printer slot assignment in the application. The application needs to be set to print to slot 7 if the Workstation Card is in slot 7.

Published Date: Feb 18, 2012

TokenTalk 2.0 Installer: Problem and Fix

This article discusses how to spot and fix incorrect TokenTalk 2.0 Installer disks.

This article has been archived and is no longer updated by Apple.
I was installing some Macintosh IIs on a Token Ring network and discovered a problem with the TokenTalk 2.0 Installer disks that are shipping with the TokenTalk NB Card.

The TokenTalk 2.0 disk (Apple Part #690-5435-A) included with the cards is not configured properly for the System 6.0.4 Network Products Installer disk.

The released disk is named "Token Talk Installer" (there is a space between 'Token' and 'Talk') instead of "TokenTalk Installer", and this prevents the MultiDisk Installer from recognizing this disk. In addition, all of the files on the released disk are inside a folder called "TokenTalk Installer" (which should be the name of the disk). The proper files/folders are within this folder -- that is, Installer, Installer Scripts, and System Folder.

To recap: the hierarchy of the released disk:

Disk Name: "Token Talk Installer"
1st Window contains: "TokenTalk Installer" folder
This folder contains: "Installer"
"Installer Scripts"
"System Folder"

Valid disks have this hierarchy:

Disk Name: "TokenTalk Installer"
1st Window contains: "Installer"
"Installer Scripts"
"System Folder"

Renaming the released disk to the proper name (that is, removing the space) and then moving the Installer, Scripts, and System Folder to the main/root window makes this disk usable with the MultiDisk Installer.

(NOTE: As of February, 1990, Apple Manufacturing is aware of the mistake and has corrected it, so there shouldn't be many more of these disks sent out.)

Published Date: Feb 18, 2012

Line Printers for LocalTalk-Based Network

I need a high-speed line printer that can connect to a Macintosh network (LocalTalk-based) for times when PostScript isn't necessary. I currently have an IBM 3262 and IBM 5262 printer that I would like to use, but I'm willing to buy another model or brand, if necessary.

Can IrmaPrint handle these models?

This article has been archived and is no longer updated by Apple.
The IBM 3262 printer can be directly attached to the 5360 System Unit as the system printer. This means that it is a System 36 printer -- and, because it can be directly attached, it is most likely a Twinax connection. There is no method for connecting this printer to a LocalTalk-based network.

The IBM 5262 printer is a freestanding line printer also associated with the System 36. It may have RS-232 interconnection available. If so, the following scenario would be applicable.

(NOTE: A Check with DCA revealed that neither of the mentioned printers is supported by IrmaPrint.)

At Tech Comm we have used a Printronix Model 300XG line printer with a Centronics parallel interface. We connected it to a Macintosh II via a Tigertronics Model 770 serial-to-parallel converter. The Typewriter driver from the Microsoft Word 1.05 disk was moved into the System Folder, selected from the Chooser, and set up for 9600-baud and 10-pitch. A 23-page document was created and successfully printed via the Typewriter driver to the Printronix.

One current method of connecting this type of printer to the network is from Orange Micro, called Orange Port. It looks like a Solana R-Server and allows connection of serial devices to an AppleTalk network.

Solana Electronics also markets devices that are designed to connect non-networkable printers to AppleTalk networks. If the printers are serial, either the R-Server, the X810.1, or X810.2 could be used. If the printer is parallel, then the X810.2 is necessary. The X8120 devices can be set up with up to 2MB of memory to be used as data buffer, store and forward messages, and so on.

While we know this scenario functions properly, any serial-to-parallel converter should work, and if the printer in question already has a serial connection, only network-to-serial conversion would be necessary.

For more information, search under: "Orange Micro"

Editor's Note 22 June 199: Solana has discontinued business to our knowledge, so we are unable to refer you to them directly for further information.

Published Date: Feb 18, 2012

AppleWorks 6: How to Add and Format a Chart Legend

This article explains how to add and format a chart legend.
This article has been archived and is no longer updated by Apple.
A chart legend lists each data series in the chart along with a sample of the color and pattern used for that series.

Note: You must use the chart legend to change the color, pattern, or other attributes of the data plotted in the chart. If you don't want a legend in your final chart, hide it.

To add or change a chart legend:
Select the chart, then choose Chart Options from the Edit menu and click Labels.

Tip: You can also double-click the chart legend, if it has one.

Make sure the Legend checkbox is selected.

Select the options you want.
Click a circle to position the legend in relation to the chart.

For area, stacked area, line, X-Y line, scatter, and X-Y scatter charts, you can display data points with a symbol. To use the symbol in the legend, select Use Symbol.

To hide the legend:

Double-click the chart legend and deselect the Legend checkbox.

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

LaserWriter: Setting Manual Feed Through PostScript

I have a DayStar Digital board and need the PostScript code necessary to set up the LaserWriter for Manual Feed.
This article has been archived and is no longer updated by Apple.
According to the PostScript Language Reference Manual(ISBN #0-201-10174-2), Appendix D, Page 303:

"statusdict contains two operators (setjobtimeout and jobtimeout) with immediate effects that do not persist from one job to the next. The remaining statusdict entries are not operators but ordinary data values such as Boolean, integers, and strings. They may be read and written in the usual way by PostScript dictionary operators, such as get and put. There are no restrictions on changing these parameters; the effects of changes persist only until the end of the current job.

There are several additional statusdict entries that are not documented. They have to do with the operation of the server and are not intended for execution by users programs."

The statusdict entry is "manualfeed", which is a Boolean that controls whether the paper is to be fed manually (true) or from the paper tray (false)."

The syntax is basically the same as the AppleTalk-type changes you have seen previously.

Caution:
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

```
%=============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin
currentdict manualfeed true put
end
%
% Begin PostScript Code
%=============================================================
```

Remember, these "volatile parameters" persist only until the end of the current job. Any volatile parameter(s) changed must be set to their desired values prior to printing and will revert to their default values after the print job is completed. Setting these parameters is accomplished by prepending the above short program to any text file sent to the LaserWriter, or by sending the program before sending any other PostScript file.

Published Date: Feb 18, 2012

Macintosh II: Baud Rate Settings

My Macintosh II systems interface to Opto-22 digital and analog I/O modules via the modem port. The Opto-22 is capable of serial communications at speeds up to 38.4 kilobaud. At this time, I'm using 19.2 kilobaud, but I would very much like to communicate over the modem port at 38.4 kilobaud. According to "Inside Macintosh Vol II," this baud rate is unsupported. Can you explain?

I heard that a baud rate code of 1, 2, or 3 might allow talking at 38.4 kilobaud. Is this true?

This article has been archived and is no longer updated by Apple.
"Inside Macintosh, Volume II" (Addison Wesley, ISBN #0-201-17737-4) does NOT state that 38.4K is not supported in hardware. It DOES show that a predefined constant has not been created for the speed.

In other words, the constant "baud38400 = 1" is not part of the serial driver's implementation. This is not indicative of the serial driver's capabilities. By setting a serConfig to the correct value and using the SerReset function, the serial driver is able to use the 38.4K speed. Developer Support indicates that the correct value for 38.4K speed is 1.

The values of the various speeds are derived from the way bits are set in the serConfig variable of the SerReset function (discussed on page II-250 of Inside Macintosh). A table representing these variables looks like this:

Bits: Actual Baud Constant
64 32 16 8 4 2 1 Value Rate Name
-- -- -- -- -- -- -- ------ ------ ---------
0 0 0 0 0 0 0 = 0 = 57600 baud57600
0 0 0 0 0 0 1 = 1 = 38400
0 0 0 0 1 0 0 = 4 = 19200 baud19200
0 0 0 1 0 1 0 = 10 = 9600 baud9600
0 0 0 1 1 1 0 = 14 = 7200 baud7200
0 0 1 0 1 1 0 = 22 = 4800 baud4800
0 0 1 1 1 1 0 = 30 = 3600 baud3600
0 1 0 1 1 1 0 = 46 = 2400 baud2400
0 1 1 1 1 1 0 = 62 = 1800 baud1800
1 0 1 1 1 1 0 = 94 = 1200 baud1200

Published Date: Feb 18, 2012

Macintosh: International System Software Differences

What are the differences between the U.S. and International versions of System Software 6.0.3?

I'm doing a 12-country rollout of an application I wrote, and may be running international versions of the System Software at those sites (for instance, using B 6.0.3 in London).

Are there any differences that may affect the application I have written in Think C?

This article has been archived and is no longer updated by Apple.
Keyboard layouts, sort orders, paper size, and unit defaults are among the things that might be different between System Software versions.

Inside Macintosh, Volume I, Chapter 19, and Volume 5, Chapter 16 (available in omnibus edition from Addison Wesley, ISBN #0-201-17737-4) discusses the International Utilities Package that allows software developers to make their software country-independent.

Everything you need to know about localization should be contained in these documents.

Published Date: Feb 18, 2012

AppleShare: Restoring AppleShare Volumes

This article has been archived and is no longer updated by Apple.

When you restore a backed-up AppleShare volume, all access privileges are lost and the files and folder are property of the Custodian. The Admin program creates a new Server folder (Server2) when it reinitializes the drive for AppleShare.

AppleShare, when determining access privileges, uses the directory IDs to keep track of separate folders. However, when you backup a hard disk and then restore it, all of the ID numbers are reassigned. Consequently, AppleShare can't match up its stored lists of access privileges with what is on the disk. The only solution is to use an 'image backup' device, usually a tape backup. This backup device would in essence make a clone of the hard disk onto a tape, keeping all directory IDs intact, and correctly restoring them later.

The reason for the creation of the folder named Server2 is that AppleShare has also lost track of its older Server folder. When you run the Admin program, it looks for the server volume based on its directory ID. Because the IDs have changed, the Admin program can't find the server folder and notices that there is a folder on the desktop with the name Server. Thinking that the folder belongs to someone other than itself, the Admin program creates a new name (Server2) and uses that. When this happens, you can use the old 'Users & Groups' file to create a new one, and throw out the old Server folder.

Published Date: Feb 18, 2012

WDEF Virus: May Cause AppleShare Performance Problems

Over the past 2 weeks, some of my AppleShare workstations are sporadically slowing down.

When a server volume is mounted and the mouse is moved, the pointer changes to a watch, and the AppleTalk arrows activate. Trashing the server volume makes the problem go away.

These workstations are Macintosh II and Macintosh Plus Systems running System Software 6.0.2 and using AppleShare 2.0.1.

I also have a I have a six-system network on PhoneNET cabling, with one Macintosh SE/30 as an AppleShare server. After using the one Macintosh IIcx for about a minute, it freezes, and the server activity bar just bounces back and forth for several minutes. I connected only the Macintosh IIcx to the Macintosh SE/30 to lessen the problem, but it is still there. I've replaced the connectors on both machines.

The hardware passes all diagnostics. The Macintosh SE/30 has an HD80 SC, and the Macintosh IIcx has an HD40 SC.

Can you explain why these things are happening?
This article has been archived and is no longer updated by Apple.
There are two likely causes for these problems.

The first would be poor network connections or wiring that causes excessive packet loss and retries, resulting in poor performance. The second possibility is that the AppleShare File Server client stations are infected with the WDEF virus.

Since you are reporting multiple occurrences of what seems to be the same problem, a cable or connector malfunction seems unlikely. We would suspect that the WDEF virus has spread at your sites.

While the WDEF virus does not appear to cause malicious damage (other than propagating), it does have bugs and side effects that are very annoying at best. It is spread via the Desktop file of Macintosh disks, and is activated when the Finder opens this file as part of its normal disk-mounting process. Once activated, WDEF copies itself to the Desktop files of other mounted volumes.

This virus effects server performance because it tries to infect the Desktop file of mounted server volumes as well as locally mounted disks. It first tests the target Desktop file to see if it's already infected, and if not, copies itself there. With network volumes, this activity requires many AFP (AppleTalk Filing Protocol) requests and is noticeably time-consuming on a LocalTalk- or PhoneNET-based network. This would be the effect you are noticing.

Fortunately, this virus is easy to detect and eliminate. One way is to scan your disks with a recent version of an anti-virus utility that has been updated to recognize the WDEF virus. Disinfectant, which is known to detect current strains of the WDEF virus as well as many other viruses, is one such utility. We recommend using it to scan all floppies and hard disks that may have been used recently.

Disinfectant is capable of detecting and removing WDEF, but WDEF is also simple to remove by simply rebuilding the Desktop file of an infected disk. Hold down the Command and Option keys while the Macintosh is loading the Finder. Confirm the dialogs asking if you really want to rebuild the Desktop file on each mounted volume. The new Desktop file will be free of WDEF. Remember to restart the Macintosh after disinfecting volumes. This is necessary to remove any copies of WDEF that may be currently executing.

Another means of WDEF detection and removal is to use ResEdit. It allows you to view all the resources in a file, and can, therefore, be used as a primitive means of detection. If there are any WDEF resources present in a Desktop file, delete them. A normal Desktop file will not contain any WDEF resources.

To remove WDEF from server volumes, mount the volumes on a client Macintosh and use ResEdit to delete the server volume Desktop files. A Desktop file is not necessary on an AppleShare File Server volume, and by removing it you reduce the risk of a future WDEF outbreak affecting server performance. Do not try to remove the files Desktop DB and Desktop DF. These are the files used by AppleShare instead of a Desktop file. They are not infected by WDEF, but are needed by AppleShare.

Other anti-virus software is available, both commercially and non-commercially, to detect viruses and to prevent future infections. SAM is a commercial package from Symantec Corp. that contains a detection and repair program from Symantec Corp. with similar functionality to Disinfectant. It also contains an NIT that alerts the user to, and prevents, infection attempts by known viruses.

There is also a public domain INIT, Eradicator!, that prevents infections of the WDEF virus, and removes any occurrences it detects.

We strongly recommend the installation of this or some similar type of program to help prevent infection.

For more information, search under: "Symantec" or "WDEF" or "Viruses".

For information on downloading the latest version of Disinfectant refer to:

TIL aritcle 30487: "**Disinfectant: Macintosh Anti-Viral Utility**".

The Tech Info Library article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

AppleWorks 6: How to Tint a Painted Image

This article explains how to tint a painted image.
This article has been archived and is no longer updated by Apple.
Tinting an image shades it with a pale wash of the current fill color.

To tint an image:
In the Tools or Accents window, choose a color from the fill color palette.
Select the area you want to tint.
Choose Tint from the Transform menu.

Tip: To tint the selected area quickly, click the tint button in the Button Bar.

To increase the tint effect, choose Tint several times.

If you don't see the Transform menu:
If the item you want to tint is in a painting frame, make sure you enter the frame to edit it. If you see the Arrange menu and not the Transform menu, you are in a drawing document and therefore cannot tint images. In a drawing, you use different methods for changing the appearance of objects. (Because there are significant differences between painting and drawing features, it is important to choose whether you need to paint or draw before you begin creating something.)

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

AppleWorks 6: How to Align Data in Spreadsheet Cells

This article explains how to align data in spreadsheet cells.
This article has been archived and is no longer updated by Apple.
Alignment determines where data appears in a cell relative to the left and right borders of the cell.

To align data:
Select the cells you want to align.
Choose Alignment from the Format menu, then choose General, Left, Center, or Right from the submenu.
General (the default alignment) aligns text to the left and numbers to the right.

Tip: You can also turn on cell word wrap by choosing Wrap from the submenu.
This document contains information from Help Center, the help system included with your computer.
Published Date: Feb 18, 2012

AppleWorks 6: How to Automatically Fill Spreadsheet Cells With Data

This article explains how to automatically fill spreadsheet cells with data.
This article has been archived and is no longer updated by Apple.
You can speed up data entry and reduce typing mistakes by automatically filling cells with data.

Filling cells with data from other cells

You can fill cells with the contents of the row above or the column to the left of the cells.

To fill cells below or to the right:
Select the cells containing the data you want to duplicate. (The cells to be duplicated must all be in the same row or column.)
Continue dragging downward or to the right until the selection includes all cells you want to fill with the duplicated data.
Choose Fill Down or Fill Right from the Calculate menu.

Note: When you fill using cells that contain formulas, AppleWorks updates relative cell references to fit the new location.

Filling cells with numbers, times, or dates

You can fill a range of cells with a series of numbers, times, or dates with an increment you specify.

To fill cells below or to the right:
Select the cells you want to fill with a series. (The cells to be filled must all be in the same row or column.)
Choose Fill Special from the Calculate menu.
Select the type of data for your series and the appropriate starting value and increment.

Filling cells with a repeating pattern of data

If a series of cells in the same row or column represents a pattern you want to repeat, you can fill cells below or to the right with the same pattern of data (for example, Spring, Summer, Fall, Winter).

To fill cells below or to the right:
Select the cells containing the pattern of data you want to duplicate. (The cells to be duplicated must all be in the same row or column.)
Continue dragging downward or to the right until the selection includes all cells you want to fill with the duplicated pattern.
Choose Fill Special from the Calculate menu.
Select the Pattern option.
Type the number of cells that contain the pattern you want to repeat.

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

AppleWorks 6: How to Add Borders to Spreadsheet Cells

This article explains how to add borders to spreadsheet cells.
This article has been archived and is no longer updated by Apple.
To add cell borders:
Select the cells to which you want to add borders.
Choose Borders from the Format menu.
Select the edges where you want to add a border.
Outline adds borders to the four edges of the selection as a group. If you want individual cell edges to have borders, select the individual edges as well.

Tip: To quickly apply borders to selected cells, click the appropriate button in the Button Bar.

To change the color of cell borders:
Select the cells whose borders you want to change.
If the Tools window is not open, choose Show Tools from the Window menu, or click the toolbox icon at the bottom of the active document:
Click the Pen formatting button:
Click the Color palette button and choose a color:

You can also add borders to spreadsheet cells using the Accents window.

Note: You can't apply the other pen attributes to cell borders.

You can also add a background color or pattern to cells.

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

AppleWorks 6: How to Add Colors and Patterns to Spreadsheet Cells

This article explains how to add colors and patterns to spreadsheet cells.
This article has been archived and is no longer updated by Apple.
You can emphasize specific spreadsheet cells by adding a background color, a pattern, or both.

To add a background color or pattern to cells:
Select the cells you want to emphasize.
If the Tools window is not open, choose Show Tools from the Window menu, or click the toolbox icon at the bottom of the active document:
Click the Fill formatting button:
Select a color or pattern by clicking the Color or Pattern palette button:

Color
PatternAfter you apply one attribute (color or pattern), you can apply the other by repeating step 4.

You can also add colors and patterns to spreadsheet cells using the Accents window.

Note: You can't apply the other fill attributes to cells.

You can also add borders to cells.

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

Apple Scanner: Unable To Be Recognized

I have had difficulties with a Macintosh SE/30 and my Apple Scanner.

When the Macintosh SE/30 is connected to the Apple Scanner, it doesn't recognize the scanner. The scanner does, however, work with a Macintosh IIx using the same cables and terminator.

I was finally able to make the connection between the Macintosh SE/30 and the scanner by putting a new hard drive in the SE/30, but I still don't know what is happening. Can you help?
This article has been archived and is no longer updated by Apple.
You have an issue with impedance matching.

This is a known situation with the Apple Scanner. It occurs when the impedance created by a combination of devices and terminators on the SCSI chain causes one device to be "lost" on the chain.

There is no official service procedure. A workaround is to change the impedance of the SCSI chain by adding one or more terminators, SCSI devices, or an additional SCSI extender cable. The device in question should reappear.
Published Date: Feb 18, 2012

AppleWorks 6: How to Clear Spreadsheet Cell Formats

This article explains how to clear spreadsheet cell formats.
This article has been archived and is no longer updated by Apple.
When you clear cell formatting and data, the empty cells remain.

To remove all formatting from a cell (along with any data):
Select the cells you want to clear.
Choose Clear from the Edit menu.

To remove all formatting from a cell without deleting the data:
· Duplicate the cell formats of an unformatted cell.

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

AppleWorks 6: How to Duplicate Spreadsheet Cell Formats

This article explains how to duplicate spreadsheet cell formats.
This article has been archived and is no longer updated by Apple.
You can easily copy complex cell formatting, including fonts, formats for numbers, dates, and times, and cell backgrounds and borders, and apply the format to other cells.

To duplicate a cell's format:
Select the cell whose format you want to copy.
Choose Copy Format from the Edit menu.
Select the cells you want to reformat.
Choose Apply Format from the Edit menu.

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

AppleWorks 6: How to Delete Spreadsheet Data

This article explains how to delete spreadsheet data.
This article has been archived and is no longer updated by Apple.
When you delete data from cells, the empty cells remain.

To delete cell data but preserve cell formatting:
· Select the cells you want to delete, then press the Delete key.

To delete cell data and formatting:
· Select the cells you want to delete, then choose Cut or Clear from the Edit menu.

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

AppleWorks 6: How to Edit Spreadsheet Data

This article explains how to edit spreadsheet data.
This article has been archived and is no longer updated by Apple.
To edit data in a cell:
Select the cell containing the data you want to change.
Edit the text in the entry bar as you would any text.

IMPORTANT: To avoid confusion when entering dates, always use 4-digit years. In order for AppleWorks to interpret 4-digit years properly, click "Show century" in the Date Formats dialog box of the Date & Time control panel (in the Apple menu).

Confirm your changes.

If you are editing a cell that contains a formula, you must confirm your edits before you click in another cell. If you don't, AppleWorks adds the cell's reference to the formula.

If you can't edit a cell:
The cell might be locked. Unlock the cell to edit it.

If you can't see all the data in the entry bar:
Click in the entry bar and use the arrow keys to move the insertion point. Depending on your spreadsheet preferences, you can also use the arrow keys to move to other cells.

This document contains information from Help Center, the help system included with your computer.

Published Date: Feb 18, 2012

EtherTalk 2.0 and 802.3 Framing

Using a Macintosh II with the Apple EtherTalk Card, I hooked up and ran concurrently:

1. VersaTerm-Pro and Exodus X windows using a TSSnet transport providing login and X server capability to a DEC VAX running VMS and DECwindows.
2. NCSA Telnet and Exodus X windows using a Macintosh TCP/IP transport providing login and X server capability to a DEC VAX running Ultrix with X11 clients.
3. AppleShare Workstation using an AppleTalk transport to a DEC VAX running AlisaShare file server.

These three protocol stacks ran with Apple EtherTalk Phase 1 drivers, which use Ethernet framing, and ran concurrently without interference.

Would the above scenario work with Apple's EtherTalk Phase 2 drivers, which use 802.3 framing?
This article has been archived and is no longer updated by Apple.
The IEEE divides the OSI Data Link Layer into the Logical Link Control (LLC) layer and the Medium Access Control (MAC) layer. It also developed the SubNetwork Address Protocol (SNAP) standard to accommodate the large number of protocols.

With EtherTalk Phase 1, AppleTalk data was transmitted in the data field of an Ethernet packet. With EtherTalk Phase 2, AppleTalk data is encapsulated in a SNAP packet, which is encapsulated in an LLC packet and transmitted in a CSMA/CD 802.3 packet.

Though EtherTalk Phase 2 uses the SNAP interface, higher-level protocols can go directly to the LLC layer without using SNAP. SNAP allows for connectionless communication services only.

1 and 2)
These higher protocols go directly to the LLC layer and use the Ethernet driver for the EtherTalk Card instead of using our higher-level EtherTalk 2.0 software. They should work fine.

3)
This should work fine when Phase 2 support for AppleTalk for VMS is released.
Published Date: Feb 18, 2012

AppleShare IP Third Party Web Server Products

This article provides information about software and hardware products that work with AppleShare IP to provide enhanced or additional capabilities.
This article has been archived and is no longer updated by Apple.

Web Server

Document Management

Virginia Systems, Inc.'s WebSonar was Apple's choice for Best Business Solution at MacWorld San Francisco in January. WebSonar provides an easy way to deploy and access documents on the web. It is based on Virginia Systems' mainstream Sonar Professional text retrieval and document imaging systems for the Macintosh. WebSonar is a complete drag, drop, search and deliver, document management system optimized for AppleShare IP. WebSonar allows users to dynamically publish information quickly and easily on either the Internet or an intranet by simply dropping their existing files into a folder. WebSonar can archive then search very large databases, standard legacy documents, PDF and html documents all at the same time.

Virginia Systems offers a software bundle with a special price for AppleShare IP version 6 owners. The bundle includes WebSonar and Welcome.

Published Date: Feb 18, 2012

AppleShare IP Third Party Site Managemant Products

This article provides information about software and hardware products that work with AppleShare IP to provide enhanced or additional capabilities.
This article has been archived and is no longer updated by Apple.
Site Mangement

ClickLog makes it easy to log people who click on Ad banners. When someone clicks on the ad, their IP address, date/time, and what they click on is logged to a file. They are then redirected to the location in the search arguments. It allows the tracking of people who click on links that are not on your website. Clear Ink

InfoAgency CGI provides a means of monitoring machines on your network. You may, for example, wish to see what applications are being run on each machine, idle time, Kerboros user, installed RAM, printer selected etc etc. The Info Agency software will allow you to do this. Hi Resolution.

LogDoor Multi-domain Web Site Monitor provides real-time statistics on each site on your server, plus site-by-site summaries and logfiles. LogDoor also displays information about AppleShare IP plug-ins. Open Door Networks, Inc.

LOG FM is a full-featured web-server log-analysis and real-time statistics application for WebSTAR API 1.2 compatible web servers that is powered by the runtime database engine of FileMaker Pro. Web Broadcasting

TombStone is a collection of 3 plug-ins, which prevent proxies and client caches from caching your data. There is one plugin each for HTML files, GIF files and JPEG files. This plug-in is really useful for images used in the LOWSRC attribute. Clear Ink

Published Date: Feb 18, 2012

AppleShare IP Third Party Virtual Hosting Products

This article provides information about software and hardware products that work with AppleShare IP to provide enhanced or additional capabilities.
This article has been archived and is no longer updated by Apple.

Virtual Hosting

ClearlyHome is a WebServe plugin that allows Macintosh WebMasters to point multiple domain names at a single Macintosh WebStar server. Clear Ink

HomeDoor Multi-domain Web Service Manager was the first multi-domain Web service manager on the Macintosh. With HomeDoor your AppleShare IP Web server can serve pages for multiple independent domains.Open Door Networks, Inc.

Pardeikes Welcome Plugin combines three basic functions: Virtual Hosting of an unlimited number of domains or sites, Dynamic URL Manipulation and Realtime Graphical Statistics. For more information visit Pardeikes.

Published Date: Feb 18, 2012

AppleShare IP Third Party Searching and Indexing Products

This article provides information about software and hardware products that work with AppleShare IP to provide enhanced or additional capabilities.

This article has been archived and is no longer updated by Apple.

Searching and Indexing

FindFile is a WebSTAR plugin that allows you to search your entire Macintosh web server for all files that contain a given keyword in their name. FindFile will search all volumes on the web server's desktop, including remotely mounted file servers. For each file that is found, FindFile will list its full name, location, creation and modification dates, and a link that you can click on to download (via FTP) the file to your desktop.FindFile is freeware from Xperts, Inc.

Phantom is the Web crawler and search engine that makes your Web site accessible. Phantom is the easiest way to add searching capability to your site, but Phantom does much more. Since it can crawl sites via the Web as well as local files, it can index a group of sites on a related topic. Phantom is also ideal for creating a central index for all of your organization's intranet servers. Visit the Maxum Development Web site for more information and a free demo copy. Maxum Development Corporation

Published Date: Feb 18, 2012

AppleShare IP Third Party Image Maps Products

This article provides information about software and hardware products that work with AppleShare IP to provide enhanced or additional capabilities.
This article has been archived and is no longer updated by Apple.

Image Maps

FastMap is a plug-in for handling server side NCSA style image maps quickly and efficiently. Clear Ink
Published Date: Feb 18, 2012

AppleShare IP Third Party Java Products

This article provides information about software and hardware products that work with AppleShare IP to provide enhanced or additional capabilities.
This article has been archived and is no longer updated by Apple.

Java

JRun Servlet Engine is an extension to AppleShare IP that allows you to run Java Servlets (server-side Java). JRun works in conjuction with the web server to allow you to run sophisticated server-side Java applications. Java servlets are an attractive alternative to CGI (Common Gateway Interface) or Perl scripts because servlets are platform independent, easier to develop, faster to deploy, and more cost-effective to maintain. JRun is available for free to end users. Visit the Live Software web site to download the JRun Servlet Engine.

ServletExec for Mac OS is a W*API-compatible plug-in that runs Java servlets. Servlets are alternatives to traditional CGIs and web server plug-ins for extending web server functionality. Written in Java to a standard API, servlets can run with any leading web server (Microsoft IIS, Netscape FastTrack and Enterprise, Apache, JavaSoft JavaWebServer) on any computing platform (Mac OS, Windows 95/NT, Unix). ServletExec for Mac OS takes advantage of the Mac OS Runtime for Java (MRJ). New Atlanta Communications, LLC

Published Date: Feb 18, 2012

AppleShare IP Third Party Mail Server Products

This article provides information about software and hardware products that work with AppleShare IP to provide enhanced or additional capabilities.
This article has been archived and is no longer updated by Apple.

Mail Server

ClickMail Central Directory provides a master list of users' email addresses integrated with AppleShare Users and Groups. Users can find addresses and build personal address books in their mail client (Netscape, Eudora, QuickMail Pro, Microsoft Outlook, etc.) via LDAP (Lightweight Directory Access Protocol). Also works with Sherlock 2 and Mac OS 9 Network Browser. ClickMail can serve private/public contact information of any kind (phone, address, public key, etc.) via LDAP. Allows remote changes, imports, exports of AppleShare users. Gracion Software (formerly One Click Systems)

Published Date: Feb 18, 2012

DAL Developer‘s Toolkit: Callable Libraries

Is it possible to use LightSpeed C 3.02 to call the XCMDs (external commands) for Data Access Language (DAL, formerly known as "CL/1")? I currently have the externals for HyperCard.
This article has been archived and is no longer updated by Apple.
The DAL Developer's Toolkit for Macintosh includes callable libraries for:

- LightSpeed C
- MPW C
- MPW Pascal

in addition to HyperCard XCMDs.

Most of the commercial developers who have already developed products on top of DAL (ClearAccess, Omnis 5, 4th Dimension, MacDBC) have used Lightspeed C or MPW Pascal libraries.
Published Date: Feb 18, 2012

Macintosh IIci: No Way To Disable 32-Bit QuickDraw

Is there any way to disable 32-Bit QuickDraw on the Macintosh IIci?

This article has been archived and is no longer updated by Apple.
There is no current method to disable 32-Bit QuickDraw on the Macintosh IIci.

Published Date: Feb 18, 2012

Macintosh OS C Compiler and Draft ANSI Standard

Do the Macintosh OS and A/UX C compilers meet the ANSI standard X3J11 draft X3.259? I need to include that information in a proposal.

This article has been archived and is no longer updated by Apple.
The C compiler that comes with A/UX is NOT compatible with the draft ANSI standard for C. (The A/UX C compiler is the standard System 5.2.2 release compiler.)

Under the Macintosh OS, the MPW 3.0 C compiler was written to move towards the ANSI draft standard, but since the standard is at a draft stage, engineering has a moving target.

However, if you read Appendix D of the MPW 3.0 C reference manual (APDA #M0022LL/A) you will see that the majority of the changes to the C compiler were implemented for ANSI compatibility.

Both Appendix D and the Release Notes have sections pertinent to ANSI compatibility. Read them for further information.

Published Date: Feb 18, 2012

Monitors Control Panel: "Special Gamma" Function Explained

Can you provide any information on the Special Gamma function in the Monitors control panel?

This article has been archived and is no longer updated by Apple.

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How to Change the Gamma Setting
-------------------------------
Special Gamma allows different gamma tables to be selected.  You access it
through the Monitors control panel:

* By holding down the Option key while clicking the "Options..." button
 or
* By holding down the Option key while double clicking the happy Mac face
 that appears in the monitor window.

Now you get a dialog box where you can change the setting:

1) Check the "Use Special Gamma" checkbox.

2) Highlight the "Mac HiRes Std Gamma" or "Uncorrected Gamma" in the scroll
  box.

3) Restart the computer.

An Example of Special Gamma Table Use
-------------------------------------
A company has a video card that supports the two different displays that
they sell.  Unfortunately, these two displays show colors differently on
the screen.  Being able to select the gamma table allows the company to
make both displays generate comparable colors to the viewer's eye.

The following information is on page 9-16 of "Designing Cards and Drivers
for the Macintosh II and Macintosh SE" (Addison Wesley, ISBN
#0-201-19256-X):

 "The gamma table compensates for nonlinearities in a display's color
  response by providing either a function or a look-up value that
  associates each displayed color with an absolute RGB value.  It is used
  to modify a video card's color look-up table.  The gamma table is
  described in the chapter 'Graphic Devices' of Inside Macintosh Volume V
  (Addison Wesley, ISBN #0-2-1-17719-6)."

Displays that don't use gamma-table correction tend to look over-saturated
and dark.  Although determining the correct values for a gamma table can be
difficult without special tools, the table's contribution to image quality
can be striking.
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Published Date: Feb 18, 2012

Macintosh IIci: Two-Page Monitors Need NuBus Video Card

Does the Macintosh IIci support the Apple Portrait Display and Apple 2-page Monochrome Monitor? I've heard that it doesn't.

This article has been archived and is no longer updated by Apple.
The Macintosh IIci has the equivalent of a video card built into the main logic board. Other video cards can be added to any one of the three NuBus slots.

The built-in video circuitry supports:

- Apple Macintosh 12" RGB Display (@ 2, 4, 16, and 256 colors or levels of gray)

- Apple High-Resolution Monochrome Monitor (@ 2, 4, 16, and 266 levels of gray)

- AppleColor High-Resolution RGB Monitor (@ 2, 4, 16 and 256 colors or levels of gray)

- Apple Macintosh Portrait Display (@ 2, 4, and 16 levels of gray)

Therefore, the Two-Page Monochrome Monitor does not work if simply connected to the built-in video circuitry, but WILL if used with its respective NuBus video card.

All the other monitors mentioned will also work if connected to the Macintosh IIci through compatible NuBus cards.

Published Date: Feb 18, 2012

Graphics Tablet: Manual Errata (11/96)

The following manual corrections are for Graphics Tablet manual 030-0076-00.

This article has been archived and is no longer updated by Apple.

Page 26

The first word on line 5 should read "initialized" instead of "uninitialized".

Page 55

The following lines are incorrect:

- 2475 GOTO 2340 should be 2475 GOTO 2350

- 2490 GOTO 2340 should be 2490 GOTO 2348

Article Change History:
18 November 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Icons: Bibliography on Design

Does Apple have international icons? I want to create a database and use it in different countries by displaying icons in a universal way.

This article has been archived and is no longer updated by Apple.
We strongly recommend that you obtain one or more of the numerous symbols dictionaries or dictionaries of icons, often available from graphic-arts, graphic-design, and technically oriented bookstores. Some of these reference dictionaries are listed at the end of this document. These dictionaries are helpful when creating and implementing icons.

We request and obtain design patterns for many of the icons created at Apple, after which Apple Legal is generally open to them being used by developers -- but for their designed purpose only, such as being used in Macintosh software that runs on the Macintosh, not for porting to other platforms.

Though Apple has no list of icons that are distributed, the icons Apple developed can be found in many locations, including user and technical manuals, the Icon Stack in HyperCard, advertisements, and so on. They are also visible in the system software.

Among the many programs that allow you to create and edit icons are ResEdit from APDA and Icon-It! from Tactic Software.

Also, Icon Factory from HyperPress Publishing Corporation contains more than 2,000 icons that can be used to customize HyperCard stacks.

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To locate a vendor's address and phone numbers, use vendor name as a search string.

(NOTE: "Tactics International", also listed in the TIL, is a different company)

Article Change History:
26 July 1993 - Company title changed from Dover to DOVatron International.
9 January 1990 - Updated for technical accuracy.
Published Date: Feb 18, 2012

Macintosh Portable: Connecting External SCSI Devices

I've had numerous problems connecting external SCSI devices to Macintosh Portables. I've tried three Portables with several external SCSI drives and printers.

When I tried to start up the Macintosh Portable with an external SCSI drive attached, I received the question mark icon. After I disconnected the SCSI system cable from the Portable, the internal hard immediately kicked in and started up the machine.

Once the machine started up, I connected the drive and tried to mount it with a SCSI CDEV utility. I was able to do so once, but in every other instance, the utility was unable to identify the SCSI address of the external drive or mount it. In fact, SCSI address 0 disappeared when the external drive was connected, and nothing requiring internal hard disk access could be done until the external drive was disconnected. This corresponded with the symptoms while starting up; apparently the entire SCSI bus was disrupted. However, SCSI address 7 remained intact.

Can you explain what's going on? Any ideas?

This article has been archived and is no longer updated by Apple.
We have, on different occasions, connected numerous types of external hard drives to the Macintosh Portable. In all cases, the drives and the Macintosh Portable functioned properly.

Make sure you're using:

- Proper termination and good terminators

- Good cables

- The SCSI number on the peripheral is something other than 7 (reserved for the CPU) and 0 (if you have an internal hard disk).

- The external drive is not damaged. (If it is damaged, it may not be providing proper termination power.)

- The external drive is connected and powered on before you start up the Macintosh Portable.

We suspect that your problem may be caused by the last variable.

The Macintosh Portable does not provide termination power, so any external SCSI devices connected to the Macintosh Portable must be turned on and ready. Termination power is required for the terminator to terminate the SCSI bus. Until external SCSI devices are powered on and ready, the Macintosh Portable will not start up. The external SCSI devices must remain on while using the Macintosh Portable, or the system will hang. If you erroneously turn off an external device and the Macintosh Portable hangs, you can sometimes resume by turning the SCSI device back on.

The proper and safest way to add SCSI devices to the Macintosh Portable is to first turn off the Macintosh Portable using the Shut Down function. Also make sure the external SCSI devices are turned off. Your external SCSI devices can then be plugged in without damaging the Macintosh Portable.

Published Date: Feb 18, 2012

Using Macintoshes on Token Ring Network

I want to implement the following:

1. Macintosh IIcx connection direct on 16MB Token Ring.
2. Macintosh IIcx connection from a 4MB Token Ring to a 16MB Token Ring via some router or gateway and then onto an Ethernet backbone (Cabletron twisted-pair).

I currently have 180 +/- 15 systems on the network during peak periods. IBM will be putting in Model 80s supposedly with Office Vision in March. If they cannot make the deadline, they will use OS/2 and Windows-PM. Connectivity between the IBM and Apple systems would be very helpful.

There are some programs that may need to work in both residential areas (one session in the IBM camp, the next in the Apple camp). I cannot rewire the other buildings once the IBM wire is in place, so I need to connect to the 16MB Token Ring somehow.
This article has been archived and is no longer updated by Apple.
The TokenTalk NB Card does not support 16MB Token Rings, and we are not aware of a product for the Macintosh that will connect directly to a 16MB Token Ring. Therefore, we are not able to suggest a solution for option #1.

For option #2, there is a possibility. IBM has software for a PC that provides source-level routing between two Token Ring networks (including routing between a 4MB and a 16MB network). Since TokenTalk supports source-level routing, the TokenTalk packets would be routed by this bridge. The name of this IBM software product is "Token Ring Bridge Program".

One possible configuration for the network you described is:

Put the Macintoshes on a 4MB ring. This 4MB ring would be connected to the 16MB ring via a PC with two Token Ring cards (one 4MB and one 16MB).

Routing to the Ethernet will be somewhat trickier. You could have another PC running the bridge program as described above. Connected to the 4MB side of this machine would be a Macintosh with a TokenTalk NB Card and an EtherTalk Card running the Apple Internet Router.

This configuration will route only AppleTalk packets onto the Ethernet. Some other device would have to be responsible for routing other protocols onto the Ethernet.
Published Date: Feb 18, 2012

Macintosh Portable: Battery Rating

An Australian customs tariff for Macintosh Portable batteries states that the following requirement must be met:

"Accumulators, lead acid, including gel and lead calcium types, permanently sealed, rechargable, capacity NOT exceeding 11 amp-hours at the 20-hour rate."

What is meant by the 20-hour rate, and do our Portable batteries fall within this rate?

This article has been archived and is no longer updated by Apple.
The 20-hour rate is an indicator of battery capacity, a measure of how much current is required to drain the battery over a 20-hour period. Macintosh Portable batteries carry a rating of 5.4 amp-hours at 20 hours, so they fall within this guideline.

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Apple Portrait Display: Video Card Pinouts

I need the pinouts for the new Portrait Display Video Card that uses the DB-15 connector. I also need the pinouts of the cable that connects the new DB-15 card to the WD-13 on the Portrait Display.

This article has been archived and is no longer updated by Apple.
The pinouts for the new version of the Portrait Display Video Card are identical to those of the Macintosh IIci built-in video connector.

Pin	Signal
01	RED.GND Red Video Ground
02	RED.VID Red Video
03	CSYNC Composite Sync.
04	MON.ID1 Monitor ID, Bit 1
05	GRN.VID Green Video
06	GRN.GND Green Video Ground
07	MON.ID2 Monitor ID, Bit 2
08	nc (No Connection)
09	BLU.VID Blue Video
10	MON.ID3 Monitor ID, Bit 3
11	C&VSYNC.GND CSYNC & VSYNC Ground
12	VSYNC Vertical Sync.
13	BLU.GND Blue Ground
14	HSYNC.GND HSYNC Ground
15	HSYNC Horizontal Sync.
Shell	CHASSIS.GND Chassis Ground

The finished-goods part number for this cable is #590-0615.

The pin requirements for a cable between a new version of the Portrait Display Video Card (or a Macintosh IIci) and a Portrait Display are as follows:

DB-15 D Series-Size 3 (On Card)	Signal	(On Display)
1	RED.GND	A3 (Outer)
2	RED.VID	A3 (Center)
3	CSYNC	5
4	MON.ID1	9
5	GRN.VID	A2 (Center)
6	GRN.GND	A2 (Outer)
7	MON.ID2	8
8	nc	
9	BLU.VID	A1 (Center)
10	MON.ID3	3
11	C&VSYNC.GND	4,7,10
12	VSYNC	2
13	BLU.GND	A1 (Outer)
14	HSYNC.GND	1
15	HSYNC	6
Shell	CHASSIS.GND	Shell

Following are the signal assignments for the Portrait Display D-series size 3 connector, shown from the back of the monitor.

Pin	Signal Name
A1	Monochrome video
A2	75-ohm
A3	75-ohm

1 Hsync return 1 2 3 4 5
2 Vsync _____
3 Sense #3 \\ _ o o o o o _ _ /
4 Sense ground \\ |_| o o o o o |_| |_| /
5 Csync (not used) _____/
6 Hsync A1 6 7 8 9 10 A2 A3
7 Vsync return
8 Sense #2
9 Sense #1
10 Csync return (not used)
Shell Shell ground

Published Date: Feb 18, 2012

AppleShare PC And Lotus Printing Problem: Use Freelance Plus

Configuration

- Lotus version 2.0.1 (with the Lotus Value Pack, which provides PostScript printer support. Before this, PostScript was not supported.)

- DOS versions 4.0 and 3.2 and Compaq 3.3. The problem is the same with all versions.

- AppleShare PC 2.0 with LocalTalk

- LaserWriter Driver 6.0 on LaserWriter IINTX

- Impress, which allows Lotus users to combine text and graphics on the same page. It has its own printer drivers.

Problem

When I am sending jobs to the printer, there is some communication going on between the PC and the LaserWriter. The PC is flashing the wait message, and the green light on the LaserWriter is flashing, but eventually the PC displays a "system error" and needs to be restarted.

This article has been archived and is no longer updated by Apple.
We tested the problem you described and also got an error when trying to print to the LaserWriter IINTX. Using a LocalTalk packet Peek program, we could not find any PostScript code in the packets sent to the printer. We double-checked our installation of the PostScript drivers, and still got no PostScript code output from Lotus.

While verifying the installation, we found something that describes the above behavior: the Lotus Value Pack uses CONFIG.SYS to support PostScript. To use the PostScript drivers, you must install the DOS device driver, LOTUSPS.SYS, in the CONFIG.SYS file. To do this, Lotus has to intercept interrupt 17, which is used by MS-DOS for printing.

Since AppleShare PC is loaded after CONFIG.SYS, and it also intercept interrupt 17 to direct printing traffic over the AppleTalk network, AppleShare PC claims ownership of interrupt 17. Therefore, when you print from Lotus, AppleShare PC gets the data and sends it over the network to the printer because it assumes the data is in PostScript, and the Lotus device driver in CONFIG.SYS does not have a chance to convert it to PostScript.

The new version of Freelance Plus from Lotus -- which is smaller memory-wise and runs on all of the machines -- comes with a PostScript driver that not only works across the AppleTalk network, but can open and print the Lotus Printgraph files.

As you know, you can also use a Lotus "add-on" package, such as Allways or Impress, as a workaround.

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AppleShare PC & InterLAN Ethernet Card Compatibility

I work with a company that thousands of PCs. We are now buying into Macintosh technology in a big way but are concerned with PC use.

We are very big UNIX users and rely totally on NFS to supply us with our file server needs. On the PC side, we are using PC NFS, which allows them to use an Ethernet card from InterLAN.

We would like to use AppleShare PC, but only if we don't have to replace all our Ethernet cards. Has AppleShare PC has been tested with the InterLAN card?

This article has been archived and is no longer updated by Apple.
AppleShare PC 2.0 has not been tested with InterLAN's Ethernet card. Since Apple and Novell published the Open Datalink Interface (ODI), the third-party vendors are responsible for providing drivers to ensure compatibility.

ODI allows a separation between the network protocol stacks and the device driver. These drivers are specific to a particular network media, such as LocalTalk, Ethernet, or Token Ring. AppleShare PC 2.0 includes drivers for:

- 3COM's EtherLink II and EtherLink/MC (MicroChannel)

- Three IBM 802.2 Token Ring cards

- Apple's LocalTalk PC Card

- DayStar Digital's MCA LocalTalk Card (MicroChannel)

The best way to find out if this will work is to contact InterLAN to see if they support the Novell/Apple ODI specification -- or, if possible, to run a test with an InterLAN Ethernet card.

Published Date: Feb 18, 2012

Macintosh Finder: fPRT Resource Not a Virus

Is there an fPRT virus? Something appears to have added 144 bytes to the System 6.0.3 Finder and a new fPRT resource.

Is there anything strange about an fPRT resource being added to the Finder?

This article has been archived and is no longer updated by Apple.
The existence of the fPRT resource in the Finder is not an indication of a virus. Although there is no fPRT resource in the Finder as it is shipped on System Software disks, it is a resource belonging to the Finder. When you choose Page Setup from the Finder's File menu, the Finder stores the settings you have chosen in an fPRT resource for future reference.

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WDEF Virus: Information

This article contains information on spotting and neutralizing a new virus (sometimes called the "WDEF virus")
This article has been archived and is no longer updated by Apple.
There is a Macintosh virus (sometimes called the "WDEF virus") that uses a different method to transfer itself between machines. Because this virus attaches itself to the Desktop file of a disk, it infects a hard disk when the infected floppy disk is inserted into the Macintosh.

If you want to check a disk for infection, follow these steps:

1) Start your machine in Finder, NOT MultiFinder.

2) Run ResEdit.

3) Insert the suspect floppy disk.

4) Open the Desktop file.

5) If it contains a WDEF resource with ID=0, it is infected.

If you insert an infected floppy disk when running MultiFinder, the Desktop file is automatically opened, and your system will be infected.

here is a way to keep this virus from infecting your system:

1) Your current application must be the Finder. If you are running MultiFinder, you should have the Finder's menus in the menu bar.

2) Hold down both the Command and Option keys.

3) With these keys held down, insert the unlocked floppy disk.

4) You will be asked if you want to rebuild the Desktop file.

5) Choose "Yes". If you choose "Cancel" at this point, and the floppy is infected, you will infect your system.

Rebuilding the Desktop removes the virus.

Apple is aware of several virus tools that can automatically detect this virus:

- SAM v4.0.8
- Gatekeeper v1.3
- Virex v5.8
- Disinfectant v3.7.1 (Freeware)

For information on downloading the latest version of Disinfectant refer to:
TIL aritcle 30487: "**Disinfectant: Macintosh Anti-Viral Utility**".

The Tech Info Library article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
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Macintosh Portable: Battery DA Doesn‘t Exactly Measure Charge

I am evaluating 10 Macintosh Portables.

Eight were removed from their shipping materials and charged for 4 to 5 hours. They were then left untouched for 4 hours, and as soon as they were activated, the battery DA indicated that there was only a 3/4 charge.

After examining the documentation, it was apparent that the battery should be charged for at least 10 hours. Macintosh Portables number 9 and 10 were then charged (for the first time) for 12 and 24 hours, respectively.

From this point on, all systems were treated and behaved in essentially the same ways. When one system was tested, the "battery-low" warning appeared after only 3 hours of non-continuous use. On some occasions, after charging, the battery DA would say 3/4 full, then, although the machine had not been used, it would indicate almost completely full 2 hours later. On other occasions, one could actually watch the battery power level go down.

Is this kind of activity to be expected from the Portable Battery?

This article has been archived and is no longer updated by Apple.
The Battery DA is not an exact representation of battery state.

It indicates battery-low conditions by comparing the current battery state to the power curve of a "typical" Macintosh Portable battery. Since the actual curve for all batteries is not the same (some start higher and decay slower), the output of the DA cannot be considered exact.

A perception problem may also exist in regards to the portable battery DA. When the hard drive wakes up or the back lighting is turned on and off the battery DA fluctuates a significant amount. Many customers interpret this a 1 to 1 voltage drain on the battery and think their battery has suddenly lost most of it's voltage. Because of the increased load of the back-lighting the battery DA will fluctuate even more than it did on the original non-backlit portable. It is important that the customer understand that the batter DA is only a "rough" estimate of the battery voltage level and will vary significantly according the current load on the system.

(NOTE: Even after the first warning is received, the user should have about an hour before hardware shutdown occurs.)

There are many possible explanations for the situation you report: namely, the DA indicating a higher charge after the Macintosh sits inactive for a while.

First, a warm battery indicates a higher charge than a cold one. If the first reading was taken immediately after bringing the Macintosh Portable indoors, the DA would show a higher charge after the system reached room temperature. The same could hold true with the system operating.

The estimated time before the battery needs recharging depends on how the system is being used. For example, the charge life of a hard disk-equipped Macintosh Portable would be closer to 6 hours, while the same system using a RAM disk would last closer to 12 hours. The how-long-until-sleep setting in the Macintosh Portable CDEV also changes

battery life. Also, floppy disk-intensive applications require more power than those that use the more efficient hard disk.

As far as the low-power warning appearing after only 3 hours, it's unclear whether that system was one of the original eight that were undercharged to begin with. It's important to remember that the Macintosh Portable battery is lead-acid and not ni-cad. Ni-cad batteries benefit if they are charged completely and then fully drained each time. Lead-acid batteries are just the opposite; the more charged you keep the battery, the longer it holds a charge.

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FORTRAN: Unformatted I/O

This article has been archived and is no longer updated by Apple.
Statements of the form PRINT*, READ*, or WRITE* are not allowed.

All I/O is of the form:

READ (<unit number> [, <format identifier>]) <iolist>
WRITE (<unit number> [, <format identifier>]) <iolist>

Refer to pages 81 through 86 of the Apple FORTRAN Language Reference Manual for more information on the OPEN, READ, and WRITE statements.
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Macintosh IIci: How To Disable Built-In Video

Is it possible to disable the Macintosh IIci system's built-in video?

If so, does this mean that I can improve the Macintosh IIci computer's performance by adding a video card to the NuBus slot?

This article has been archived and is no longer updated by Apple.
Yes, it is possible to disable the built-in video of the Macintosh IIci:

1) Leave the RAM SIMM bank A empty.

2) Don't connect a monitor to the built-in video connector.

The built-in video circuitry disables itself if there is no RAM in bank A or if it fails to recognize a compatible monitor attached to the connector. The Macintosh IIci and the new version of the Macintosh II Video Card identify monitors by checking the states of three ID lines in the cable between the computer and the monitor. If no monitor is connected, it disables itself.

Using a NuBus video card can increase or decrease "performance", depending on what work is being done on the Macintosh IIci. The effect of built-in video's cycle-stealing on RAM bank A can reduce the speed of anything that accesses data in that bank by 6 to 51%, depending on the monitor and bit depth being used. On the other hand, moving large amounts of video data to the built-in video is faster than moving it over NuBus to a video card because there is no 10MHz NuBus limitation with built-in video.

What all this means is that a low-computation, high-graphic program tends to run faster on the built-in video, while a high-computation, low-graphic program tends to run faster with a NuBus video card. Optimal system configuration depends on what the Macintosh IIci is used for.

DayStar Digital's FastCache Card can help offset the cycle-stealing performance penalty.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Multiple Sessions Possible On VAX Systems

I'm using the White Pine Mac241 product as a terminal emulator for my two VAX systems, and I want to do multiple sessions on the VAX systems -- a session on each at the same time over LocalTalk. Does the LAT protocol needs to be supported to do this?

I think multiple VAX sessions are possible, but I do not know if the White Pines product supports it. Can you help?

This article has been archived and is no longer updated by Apple.

Digital's Local Area Transport (LAT) architecture is a set of protocols used by terminal servers to communicate with host computer systems over a high-bandwidth, high-reliability communications channel.

Multiple VAX sessions are currently supported by White Pine Mac240 and Mac241 using Digital's CTERM Network Protocols implemented in Alisa TSSnet. Any terminal emulators using the WPIO interface (as defined by White Pine Software) are supported. Contact Alisa for more particular information on the interface.

For more information, search under: "Alisa Systems" and "White Pine"

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Macintosh IIcx: Purpose of Jumper W3

What is the purpose of jumper W3 on a Macintosh IIcx logic board?

This article has been archived and is no longer updated by Apple.
The W3 jumpers are put in place after the testing phase of Macintosh IIcx production is completed. When removed, the test equipment can arbitrate directly with the MC68030 microprocessor. They should never be removed unless the logic board is being serviced by factory technicians.

Though the jumpers shouldn't be removed, the logic board will function properly without them -- as long as there is no bus master card, such as an accelerator, in any of the NuBus slots.

Published Date: Feb 18, 2012

AppleShare PC: Selecting a Printer From Microsoft Windows

When I try to print to a LaserWriter from PageMaker on a DOS machine (using AppleShare PC 1.1), nothing happens.

Other than during installation of Microsoft Windows and in PageMaker (where you can choose from the printers that are defined in WIN.INI) is there any other place to define what kind of printer you are going to use?

This article has been archived and is no longer updated by Apple.
When you first set up Microsoft Windows, you select the printer you'll use with your system. To change this selection, use the Add New Printer and Delete Printer commands from the Installation Menu in the Control Panel (run CONTROL.EXE from the MS-DOS Executive window).

Also, from the Setup Menu in the Control Panel, you can use the Printer command to specify a system default printer and set its output modes.

The system default printer is the printer that applications designed for Microsoft Windows will use. Printer output modes are printer-specific settings, such as Portrait versus Landscape, or color for plotters.

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TokenTalk: Source-Level Routing

Does you know what bridges/routers were used to test the IBM Source Routing capability of the Apple TokenTalk NB Card? Were there any incompatibilities with the AppleTalk Internet Router running in AppleTalk Phase 2 mode or with the Upgrade Utility? Is there a version of Peek that supports the AppleTalk Phase 2 and/or Token Ring LAP?

This article has been archived and is no longer updated by Apple.
The source-level routing that was used to test the TokenTalk NB Card and TokenTalk software was IBM's Token Ring Bridge Program running on a PC. However, any product that provides source-level routing should work with TokenTalk. There should be no compatibility problem with the Internet Router and the Upgrade Utility.

LocalTalk Peek can be used with both AppleTalk Phase 1 and Phase 2 networks. We are not aware of any TokenTalk Peek.

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AppleTalk Phase 2: Network Nodes Store "Recent" Network Info

On an AppleTalk Phase 2 network that has multiple levels of routers, does the workstation retain information about the local router or about all routers that exist on the network?

This article has been archived and is no longer updated by Apple.
EtherTalk 2.0 and TokenTalk 2.0 nodes store information about "recently heard from" networks and routers. The node does not store information about all routers on the Internet.

The first two paragraphs below are from the AppleTalk Phase 2 specification:

"The following information applies to AppleTalk Phase 2 nodes only. It is desirable for nonrouting nodes to send each packet to the router yielding the shortest route to the packet's destination network--the "best" router. Although the current specification does not require this, an optional strategy follows for implementing a "best routing" DDP algorithm in nonrouting nodes.

"When a packet arrives from an off-network node, DDP reads the data-link-level source. This is the address of the last router on the route from the originating network. This router should generally be the optimal "next router" -- in terms of hops -- in the route back to that network. DDP maintains a cache of "best routers" for "recently heard from" networks, and sends packets to those routers for forwarding to those networks. If there is no cache entry for a network, DDP sends the packet to any router, expecting that a response packet will provide the information necessary to make an entry into the cache."

The algorithm in the preceding paragraph is used by EtherTalk 2.0 and TokenTalk 2.0 nodes. The phrase "recently heard from" networks means, in Apple's implementation, networks that the node has heard from in the last 40 seconds or so. After that, the cache is cleared of the network entry.

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AppleTalk: Where to Find Encryption Algorithm Information

I am putting together a file server on a mainframe and need information on the password encryption algorithm Apple uses.

Does Apple publish that information?

This article has been archived and is no longer updated by Apple.
Inside AppleTalk (Addison Wesley, ISBN #0-201-19257-8), pages 13-28 to 13-30, discusses user authentication methods. Pages 13-29 and 13-30 discuss the AFP random exchange authentication method, which uses the NBS DES (National Institute of Standards and Technology Data Encryption Standard) algorithm.

For more specific answers about this algorithm -- or to get the algorithim itself -- contact the National Institute of Standards and Technology.

We also found a DES encryption program written in C starting on page 262 of a book called "UNIX System Security". The book, written by Patrick H. Wood and Stephen G. Kochan, is published by Hayden Books (ISBN #0-8104-6267-2).

For more information, search under: "National Institute of Standards and Technology"

Published Date: Feb 18, 2012

TA40833_Mathematica_Using_Macintosh_as_a_NeXT_Front_End_(TIL05057).pdf

Mathematica: Using Macintosh as a NeXT Front End

I want to use my Macintosh as a front end for Mathematica running on my NeXT computer. Is this possible?

This article has been archived and is no longer updated by Apple.
According to Wolfram Research Technical Support, the Macintosh CAN be used as a front end for Mathematica running on the NeXT computer.

To do this, you need Mathematica for the Macintosh and the NeXT. Wolfram has a document called "Macintosh TCP/IP Installation Guide" -- free to registered owners of Mathematica -- that describes how to use MacTCP and Mathematica to connect to the NeXT computer and how to use the Mathematica kernel on the NeXT computer. To get this document, contact Wolfram Research Technical Support.

For more information, search under: "Wolfram Research"

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TA40834_FORTRAN_FORT_Copy_protection_(TIL00506).pdf

FORTRAN: FORT2 Copy protection

This article has been archived and is no longer updated by Apple.
This applies to the Apple II, Apple II+, Apple IIe, and Apple IIc.

The Apple FORTRAN compiler is protected and cannot be copied. A Bad Block scan of the FORT2: diskette will show blocks 30, 31, and 32 as bad. Any attempt to "fix" these blocks will ruin the FORT2: diskette. See your local service center if your FORT2: diskette doesn't work.
Published Date: Feb 18, 2012

System 6.0.4: ColorSnap and Macromind Director Compatibilty

Is ColorSnap 32 by Computer Friends and Macromind Director by Macromind compatible with System Software 6.0.4?

This article has been archived and is no longer updated by Apple.
Computer Friends Tech Support states that ColorSnap 32 works fine with System Software 6.0.4. Since their new systems haven't arrived, they haven't tested ColorSnap 32 with a Macintosh Portable or Macintosh IIci.

MacroMind released MacroMind Director 1.0.1 the same day that the Macintosh Portable and Macintosh IIci were announced. Though MacroMind Director 1.0.1 is compatible with these new systems and System Software 6.0.4, earlier versions of Director are not. For a free upgrade, contact Macromind.

For more addresses and phone numbers, search the Technical Info library under "Computer Friends" and "Macromind."

Published Date: Feb 18, 2012

Macintosh: How To Determine Pantone Color Wheel Equivalents

I need documentation on the color wheel. I would prefer a chart that provides color information that can be typed into a color-wheel dialogue box. For example:

Forest green is composed of:

Hue: #####
Saturation:#####
Brightness:#####
Red:#####
Green:#####
Blue:#####

This article has been archived and is no longer updated by Apple.
Apple doesn't have a chart correlating the color wheel entries with the Pantone color chart. Although there are third-party products that display (dithered) Pantone colors on the screen and create color separations for output to a PostScript typesetter, these programs usually don't offer a formula or prescribed way to input values to obtain a specific output.

Many of those products can be located by searching on "Pantone" in the buyer's guides (Menu and Redgate libraries) on AppleLink. The only way we know of to achieve "Pantone" input values is to conduct a color analysis, entering then logging values on a match with a desired output. You can find to the color wheel and related managers, procedures, and so on in the "Inside Macintosh Cross-Reference."

Published Date: Feb 18, 2012

Macintosh: Connecting to an IBM 3090 with a ITT Courier 9440

At work, they are replacing an ITT Courier 9212 terminal (connected with coax cable) with the Macintosh using a channel-attached ITT Courier 9440 "Local Controller" (some kind of cluster controller).

Do you have any idea what this ITT Courier 9440 is? Is it a direct replacement for a 3274 cluster controller? Does the ITT Courier 9212 emulate a 3270 terminal? Is this going to work with the Macintosh?

This article has been archived and is no longer updated by Apple.
The ITT Courier 9440 is a 3274-A/41-A channel-attached controller. The ITT Courier 9212 does emulate a 3270 terminal. Therefore, you can substitute the Courier 9212 with a Macintosh running MacTerminal and an IrmaLine from DCA. For more details, search the Technical Info library under "DCA".

Published Date: Feb 18, 2012

Netware for Macintosh 1.1: Enhancements and Fixes

Here's information on enhancements and fixes for Netware version 1.1 for Macintosh. Note that Netware 2.1.5 revision C must be used.

This article has been archived and is no longer updated by Apple.
Enhancements:

- The NL/2 board is now supported.

- The Netware Control Center (an application that lets you view and modify network information) has been enhanced.

- System administrative functions (adding and deleting users and groups ONLY) can be done from the Macintosh workstation.

Problems that Have Been Fixed:

- IBM Token Ring Adapter (16K buffer)/shared memory address problem

- Losing connections with the file server

- Print queue losing connections with the file server

- File server not displayed in Chooser window

- File server could not read settings file for AQS and APS print VAPs

To obtain these updates, send Novell the following:

- Your name, address, and phone number

- If you are ordering the Netware update, designate disk size: either 3.5 or 5.25)

- Proof of Purchase (copy of invoice)

- A list of desired items.

You can Fax or mail your order to Novell. the information to 801-377-6743 or mail the data to:

Novell, Inc.
Attn: NSSG-ADMIN
122 East 1700 South
Provo, UT 84601

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Macintosh: Converter Is Necessary for V.35 Support

How should a Macintosh DIN-8 port be connected for V.35 cabling specifications? The clocking for the signal will be from an external device like a DSU.

This article has been archived and is no longer updated by Apple.

Although the built-in serial ports cannot directly support V.35 (due to the multiple timing/clocking elements the port must support), third-party converters are available to convert RS-232 or RS-422 to and from V.35. Such converters are available from Black Box and others. Additionally, depending on the application or functionality desired, the Serial NuBus card also supports V.35.

To locate a vendor's address and phone numbers, use the vendor name as a search string

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Xerox 6085 Data: Converting it to Macintosh Format

I have decided to change my office's Xerox desktop publishing systems (Documentor 6085) to Macintoshes. What do you recommend in the way of a document-conversion utility to convert the Documentor 6085 text and graphic documents to Macintosh formats.

This article has been archived and is no longer updated by Apple.
We don't know of any commercial conversion utilities that convert Xerox 6085 graphic files into a format recognized by the Macintosh. However, there are numerous ways to convert text.

You can find some Xerox 6085-to-Macintosh file conversion tips are in the Tech Info Library document "Macintosh-to-Xerox 6085 Connectivity" and in the Xerox Technical Bulletin "Xerox 6085 Interface to Macintosh". Additionally, conversion services like Pivar, Inc. will convert Xerox 6085 files to Macintosh.

The Tech Info Library article references Interpreter, Inc. For address details, search the Tech Info Library on "Pivar" and "Interpreter, Inc".

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Macintosh: Alternatives to Using a Mouse

I have little feeling in my hands, so I cannot sense where the button is. This means I cannot use the new-style ADB mouse, because of the angle of the mouse and because the mouse button is recessed. On the old-style mouse, the angle of the mouse was such that my arms could bend properly, and I could tell when my hand was on the raised mouse button. What can I do to use the newer Macintoshes?

This article has been archived and is no longer updated by Apple.

Because of mechanical and electrical design differences between the old-style mouse and the ADB mouse, you cannot modify an old-style mouse for use with ADB. However, there are a number of different vendors producing alternative input devices for use with the ADB interface. Listed below is information about several of these third-party products. You may also want to check the trade journals for other types of ADB input devices.

A+ Mouse and A+ Mouse ADB from Mouse Systems Corp.

A+ Mouse is an entirely electronic and consists of no moving parts. It uses its own mirror-like pad to reflect a tiny beam of light to track movement. It has exceptional digital cursor control for greater speed, accuracy, and reliability.

QuickStick and QuickStick ADB from Kraft Systems, Inc.

QuickStick combines the cursor response of a mouse with the speed and convenience of a joystick. As such, it is a dual-purpose device allowing cursor control with joystick design and functions.

Trackball ADB from Kraft Systems, Inc.

The Trackball ADB connects to any Apple Desktop Bus port and works with all "mouseable" software. Sensitivity is adjustable to match a user's individual preference. The Trackball includes drag and double-click buttons. An optional foot pedal provides total one-handed control.

Turbo Mouse Plus and Turbo Mouse ADB from Kensington Microware, Ltd.

Turbo Mouse is an input device that puts the mouse ball on the top rather than on the bottom like a standard mouse. The heart of the Turbo Mouse is a patented technology called "optical levering". This opti-mechanical technology eliminates virtually all moving parts with the exception of the bearings required to support the trackball. This increases the precision of the Turbo Mouse and Turbo Mouse ADB to 200 counts per inch, as well as increases their reliability.

The Turbo Mouse has an automatic acceleration feature that senses the speed at which a user is working and moves the cursor further as the mouse ball is moved faster.

Two buttons are included, which allow for either right- or left-handed use. One button serves as a regular click button; the other is a click lock. A user controls which is which by setting a DIP switch hidden in the back of the unit.

Turbo Mouse ADB also offers a unique "chording" feature that is activated by pressing both buttons simultaneously. By adjusting the DIP switch on the back of the Turbo Mouse ADB, a user can have it do one of seven functions: New, Open, Close, Save, Print, Quit, or Undo.

Turbo Mouse Plus is compatible with a Macintosh and Macintosh Plus. Turbo Mouse ADB is compatible with a Macintosh SE and Macintosh II.

Published Date: Feb 18, 2012

TA40842_FORTRAN_Data_file_limits_(TIL00507).pdf

FORTRAN: Data file limits

This article has been archived and is no longer updated by Apple.
Apple FORTRAN can only allow a total of 16 files to be opened within a program; this number is based on of file identifier blocks available within the Pascal operating system. However, the upper limit on the number of files any one program may open is more likely to be based on the available buffer space (memory) for those files.
Published Date: Feb 18, 2012

System 6.0.4 Installer: How to Access the "Remove" Button

The new Installer is great, but it appears to be missing the ability to remove previously installed resources. Will this be fixed?

This article has been archived and is no longer updated by Apple.
That is a great idea and, fortunately, that feature is already part of the "new" Installer, version 3.0 which ships with System Software 6.0.4.

To invoke it, either hold down the Option key while launching the Installer, or after launching the Installer, press Customize, then hold down the Option key. Note that holding down the Option key changes the "Install" button to a "Remove" button. Releasing the button key changes to button back to Install.

Published Date: Feb 18, 2012

LaserWriter IINTX: Compatible Hard Drives

I am trying to connect a DataFrame XP to a LaserWriter IINTX. It's not working. I noticed that the "Winter Solstice" manual states that some third-party drive won't work if they cannot state their size. Is the DataFrame one of these drives?

This article has been archived and is no longer updated by Apple.
SuperMac Technology reports that the newer DataFrame 20 and XP-30, -60, and -100, all work on the LaserWriter IINTX. These drives have been shipping since March 1, 1989 and have built-in fans and no vents on the top of the housing. Earlier drives don't work, because they don't have embedded SCSI controllers that are able to pass all the parameters from the HDA to the LaserWriter IINTX, which the LaserWriter IINTX requires.

Additionally, Adobe has tested and confirmed that the following drives work with the LaserWriter IINTX:

Seagate ST225N
Rodime 650 series (RO651, RO652, RO751, RO752)
Quantum Q200 series (Q250, Q280)
MiniScribe 8425-SCSI
MiniScribe 80515

Generally, we have found that only drives using embedded SCSI controllers are compatible. For more information on this issue of "MacWeek."

Published Date: Feb 18, 2012

VideoWorks Accelerator: Macintosh IIci Incompatibility

I have a Macintosh IIci with System Software 6.0.4, a MacroMind accelerator, and PhotoMac. I get the error message, "System needs the Jackson Pollock software patch or system may not start up". Have you heard of this error?

This article has been archived and is no longer updated by Apple.
Receiving the error message, "System needs the Jackson Pollock software patch or system may not start up", indicates that the application isn't calling 32-Bit QuickDraw properly. Alternatives include not using 32-Bit QuickDraw or obtaining an update from the software manufacturer that corrects this incompatibility.

Some versions of VideoWorks Accelerator aren't compatible with 32-Bit QuickDraw nor with the Macintosh IIci. Running it under these configurations results in the above error message. A revision of Accelerator that fixes this problem is now available. It is free of charge to Accelerator owners on a request basis only.

PhotoMac is reportedly compatible with the Macintosh IIci and 32-Bit QuickDraw.

Published Date: Feb 18, 2012

A/UX: Shared Memory Error Message (9/94)

I am an A/UX developer porting an HP X Window System application using the "Big C" C compiler on a Macintosh IIci with 8MB RAM. The issue is the use of the memory with swapping of shared memory.

I modified the kernel for use of shared memory with:

SHMMAX 2097152
SHMSEG 12

During the creation of the fifth partition of shared memory, the following message appears:

shmget: Not enough space (errno:12)

Other information:

RAM: 8MB
Swap Space: 49352 blocks.
Size of the segments of shared memory:

1) 2020 bytes
2) 1004664 bytes
3) 381536 bytes
4) 386536 bytes

Why am I getting this error message? Does A/UX keep the shared memory in RAM? Can it not be swapped to disk?

This article has been archived and is no longer updated by Apple.
The key is the "shmget: Not enough space (errno:12)" error message that occurred during the creation of the fifth segment of shared memory. It means that the available, system-wide, total, shared memory space (in pages) is not large enough to accommodate the shared memory segment to be created. The default maximum system-wide total shared memory size is 512 pages defined in the "shminfo" data structure (shminfo.shmall). The total size of your four shared memory segments is about 433.3 pages.

You may change the default size of "shmall" in the same way you modified for the "shmmax" and "shmseg" using "adb".

Generally, A/UX keeps the shared memory in its virtual address space after doing the "shmget" and "shmat" system calls. The "shmget" system call with the IPC_CREAT flag creates a new shared memory region, and the kernel verifies the size and allocates a region data structure. Then the kernel saves a pointer to the region table entry in the shared memory table and sets a flag to indicate that no memory is associated with the region. The kernel allocates memory for the region only when a process attaches the region to its address space via the "shmat" system call.

For the shared memory segment not to be swapped to disk, two commands (SHM_LOCK and SHM_UNLOCK) can be used in the "shmctl" system call (the shared memory control system call) to lock or unlock the specified shared memory segment into the physical memory. The SHM_LOCK and SHM_UNLOCK are defined in the /usr/include/sys/shm.h file.

For information on the shared memory, refer to the shmget(2), shmat(2), shmctl(2), ipcs(1), and ipcrm(1) manual pages.

Article Change History:
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

TA40847_Mac_VAP_from_Novell_Is_Available_(TIL05076).pdf

Mac VAP 1.1 from Novell Is Available

Who can I contact at Novell to get the new Mac VAP?

This article has been archived and is no longer updated by Apple.
The newest 1.1 Mac VAP is available. Novell sent it automatically to all customers who sent in their registration cards. If there is a problem, contact Novell's tech support group. For more details, search the Technical Info library under "Novell."

Published Date: Feb 18, 2012

Creating FORTRAN Data files

This article has been archived and is no longer updated by Apple.
An error in the FORTRAN "CLOSE" statement causes the operating system to mishandle the disk file space. If, within a program, even the smallest data file is created, closed, and reopened, then the system will report that there is no room left on the volume because the CLOSE statement does not release blocks not used in closing the file. When FORTRAN first goes to OPEN a file with STATUS="NEW", FORTRAN looks for, finds, and reserves all unused blocks in the largest available space for the new file. The CLOSE statement does not release the blocks that really are unused after the close, so the second time the OPEN statement (with STATUS="NEW") looks for all unused blocks in the largest available space, OPEN doesn't find any.

One way to avoid this problem is to "Make" a file of the size you will be needing on the given disk; this file will then have STATUS="OLD" and when accessing it, OPEN will not reserve records CLOSE can't release. For example, your program might be creating a data file (by the name of "MYFILE") which will eventually occupy 100 blocks on your data disk (let's call the disk "DATA"). From the Filer, type "M" (for Make), followed by "DATA:MYFILE[100]". This will create the directory entry, reserving 100 blocks for the data file. The FORTRAN program can then OPEN the data file with STATUS="OLD", and the space will be managed correctly. When all the blocks are actually filled, the expected error messages will occur.
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Asante Technologies, Inc.

Asante Technologies, Inc. (Formerly h-three Systems, Corp.)
This article has been archived and is no longer updated by Apple.
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URL: **http://www.asante.com**

Company Profile:
Hardware and networking products, specializing in PCI (Peripheral Component Interconnect) and Token Ring cards; also network and systems consulting.
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AppleTalk: WangNet Gateway Not Yet Available

I want to connect a LaserWriter directly to a Wang VS system. I also want to maintain Macintosh access to the LaserWriter while doing this.

Is there some way to connect a LaserWriter directly to a Wang VS? If yes, is there some way that Macintosh output can still be directed to the Wang system?

I also have made extensive use of Wang PCs with WangNet in another office, and, consequently, have very few ADCs or EADCs. I want to have access to the Wang systems from the Macintoshes over a network without having to buy dozens of Shiva NetSerials and Wang ADCs (our current solution). Is there anyway to replace the Wang terminals with Macintoshes having a window into the VS world.

Do you know of a WangNet/AppleTalk gateway? Do you have any other suggestions for connecting Macintoshes to a Wang VS without having to purchase ADCs?

This article has been archived and is no longer updated by Apple.
WangNet uses a dual-cable topology and has divided the cable's bandwidth among a number of services: Wang Systems (also called Wang Band) dedicated interconnect services (now Multivendor Services) Utility Band (Utility Service) and the Peripheral Attachment Service. Each WangNet service uses its own set of transmission techniques, each with its own form of access control, its own data transmission rates, and its own place on the network's frequency spectrum. Each also uses its own interfacing hardware.

Though Multivendor Services is an 802.3 service, accessible to Macintoshes with Ethernet cards via their MAUs, as of December, 1989, there was no gateway between the Wang Systems and Multivendor Services. Similarly, there was no WangNet/AppleTalk gateway.

You might consider alternatives like serial connections for file transfers or terminal emulation. These techniques that are well-documented in the Tech Info Library and in the Apple Multivendor Network Solutions Guide.

One mail gateway is SNADS Gateway/MSMail from SoftSwitch, Inc. This product lets Microsoft Mail 2.0 users exchange files with users of Wang Office, DISOSS, PROFS, ALL-IN-1, and Hewlett-Packard Desk.

For more details, search the Tech Info library under "SNADS."

Published Date: Feb 18, 2012

FORTRAN: Making the Most of your Disk Space

This article has been archived and is no longer updated by Apple.
When using FORTRAN in a multiple-drive system, it is not necessary to duplicate system files on both FORT1: and FORT2:. However, since the SYSTEM.COMPILER cannot be copied, it is necessary that FORT2: have at least that one file, but the majority of FORT2: can be dedicated to developing programs. Follow the procedure for formatting diskettes and transferring files which is described in the Pascal or FORTRAN reference manuals.

Here are two possible FORTRAN configurations. Your setup will depend on your methods.

1. If you normally don't intend to use the system work file, you may wish to use this configuration:

FORT1: (boot disk) FORT2:
SYSTEM.APPLE SYSTEM.COMPILER
SYSTEM.PASCAL
SYSTEM.MISCINFO
SYSTEM.CHARSET
SYSTEM.EDITOR
SYSTEM.FILER
SYSTEM.LINKER
SYSTEM.LIBRARY
FORTLIB.CODE

With this configuration, FORT1: will have only 26 unused blocks, but FORT2: will have 182 blocks available for text and code files. If you exit the Editor by Writing a named file to FORT2: instead of Updating SYSTEM.WRK, you'll have plenty of room to compile and link your FORTRAN programs.

2. If you plan to use the system work file, use the following configuration to leave the majority of free space on the boot disk. This setup may also be used for writing files, of course. The remaining space on FORT2 can be used for files you don't use during development of a particular program.

FORT1: (boot disk) FORT2:
SYSTEM.APPLE SYSTEM.COMPILER
SYSTEM.PASCAL SYSTEM.LINKER
SYSTEM.MISCINFO SYSTEM.EDITOR
SYSTEM.LIBRARY SYSTEM.FILER
SYSTEM.CHARSET
FORTLIB.CODE

For development of text and code with a single-drive system, please consult your FORTRAN reference manual.
Published Date: Feb 18, 2012

Macintosh: Data Aquisition, Analysis, and Display

I want a package that can pull information directly from an oscilloscope and graph it so that the chart can later be integrated into a Macintosh word processing document. I know of National Instruments' products, but they aren't appropriate for my application. Do you have any alternatives?

This article has been archived and is no longer updated by Apple.
We searched the Macintosh Buyer's Guide on AppleLink and found two companies that may be able to help.

Ansan Industries, Ltd's MacScope

MacScope from Ansan Industries, Ltd. is a turnkey data-acquisition system that combines the measurement capability of Gould's model 1425 Digital Storage Oscilloscope with the high-resolution graphics and user interface of the Macintosh. Desktop engineering and desktop publishing are combined in a system that can handle data acquisition and presentation tasks. MacScope can do in-depth computation and analysis and generate presentation graphics or technical documents. Data is captured at two samples to two megasamples per second for one-shot events. Repetitive waveforms can be stored with a 20MHz bandwidth in the equivalent time mode.

Spectral Innovations' MacDSP24MC and MacDSP16K

Spectral Innovations' MacDSPSW-002 is an interactive signal-processing package that offers real-time spectral and time analysis, filtering, modulation, and other signal processing techniques at a mouse click. This lets you see effects on processed data immediately.

Analog and digital signals are sampled at up to 1MHz using Spectral Innovations' data-acquisition expansion cards. Sampled signals are instantly processed by the MacDSP signal processing card with screen updates 20 times per second. Real-time color displays include oscilloscope, spectrum analyzer, waterfall, spectrogram, and three-dimensional contour graphs.

For more details, search the Tech Info ibrary under "Ansan Industries" and "Spectral Innovations."

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HyperCard: Fix for DateBook Stack

I found a problem in HyperCard's DateBook stack. The DateBook stack updates itself from January to June with the new dates for 1990. Then, when I click on the first week of January, it asks if I want to update the weekly calendar, and I answered yes. After finishing this, I went to the Home card and clicked on the Calendar icon again and then on the first week. At this point, nothing happened. If I click on week 2, it works perfectly, and I get the weekly calendar for the second week. Can you explain?

This article has been archived and is no longer updated by Apple.
There are the two minor changes you need to make to avoid this problem, part of which has to do with backgrounds. Note to long-term users: This problem will occur again in 2001 and 2018 and every 11 and 16 years afterward:

In the DateBook's stack script, change the "goweekly" handler from this:

```
set lockScreen to true
find startOfWeek(myDate) in bkgnd field "WeekSecs"
```

To this:

```
set lockScreen to true
go bg "Weekly"
find startOfWeek(myDate) in bkgnd field "WeekSecs"
```

Also, in the stack script, change the GoSixMonthly handler from this:

```
visual effect zoom open
find thisHalfYear(myDate) in bkgnd field "MySecs"
```

To this:

```
visual effect zoom open
go bg 1
find thisHalfYear(myDate) in bkgnd field "MySecs"
```

These changes will solve both the problem of not going anywhere when you click on the first week in January and the "can't understand bracketweek" message.

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Macintosh IIci: Use Rev D.2 of NB-GPIB Card

National Instruments' NB-GPIB card is slot-dependent and needs to be stationed in slot 3. The card works fine in a Macintosh IIcx, but on the Macintosh IIci, the slot appears to be slot 6 to the application software. Is there any way around this?

This article has been archived and is no longer updated by Apple.
According to National Instruments, the NB-GPIB card is not slot-dependent and works without any problem in the Macintosh IIci. However, an early revision of this card (Rev D.1) had a compatibility problem with some systems. The problem was with one noise logic chip on the card, the AS02 at card location U19. The Rev D.2 NB-GPIB cards have an LS02 at location U19.

You can exchange the Rev D.1 card with National Instruments for a card that have the LS02 installed. Or, you can upgrade a Rev D.1 NB-GPIB card to Rev D.2, by changing the IC at U19 from the AS02 to an LS02. However, users who change the chip will void the warranty on the NB-GPIB card.

Note: when running the NB-GPIB card test utility, the card may show a failure, depending on the version of the software used. Below is a listing of the software revisions.

Software

Release 3.0
PIO: Pass
DMA: Pass
ibconf: Pass

Release 2.3
PIO: Pass
DMA: Fail
ibconf: Pass

Release 2.2
PIO: Pass
DMA: Fail
ibconf: Fail

Published Date: Feb 18, 2012

Applesoft: HCOLOR= and HPLOT TO

HCOLOR immediately followed by a HPLOT TO X,Y draws a line using the previous color:
This article has been archived and is no longer updated by Apple.
HPLOT TO assumes that the internal color mask has already been set up by HPLOT. A HPLOT is required to plot with the new color.
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Macintosh: Control Panel 3.0 Incompatible with System 3.2

This article has been archived and is no longer updated by Apple.

The new Control Panel 3.0 is not backward compatible with older System files. Previously, the setting of the mouse scaling option (set by the Control Panel and used by the System file) was stored in a single bit in the battery backed-up parameter RAM. Because the new system offers a larger choice of scaling options, the format of the saved setting had to change. This is why older version of the System file can't properly read the settings saved by the new Control Panel.

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AppleShare PC: Memory Solution

Can you recommend a memory expansion card for MS-DOS machines that makes memory available after AppleShare PC 2.0 loads?

This article has been archived and is no longer updated by Apple.
The HiCard from RYBS Electronics is a PC/XT/AT/386 memory card and software that lets MS-DOS machines have more memory available after AppleShare PC 2.0 is loaded In fact, it leaves as much as 546K on XTs and more on ATs). It is called the HiCard from RYBS Electronics.

There is a HiCard memory cards for PC, XT, AT, 386, and MicroChannel DOS computers. It extends memory but not in the usual fashion. Most memory cards add Extended Memory or Expanded Memory (LIMM), but problems exist, because many DOS applications cannot make use of these types of memory. HiCard adds additional conventional memory, which can be used by most DOS applications, device drivers, and RAM-resident utilities. Software comes with the card to load the device drivers that make the extra memory work. In addition, you can also add AMS (HiMem) memory and Expanded memory.

The product works by taking advantage of the available address space between 640K and 1MB in MS-DOS computers. They state that this area in RAM is usually reserved for ROM BIOS, video adapters, and network cards, and that the RAM space is never completely used. Thus, they can extend usable memory to 736K (total DOS) on a PC, with an additional 256K for AMS memory. RAM-resident utilities and device drivers can be loaded into memory above 736K (AMS memory), thus freeing conventional memory for applications. According to RYBS, you can put BUFFERS, FILES, LASTDRIVE, and other DOS device drivers and TSRs into high memory as well.

Our system consisted of a 640K XT-compatible from CompuAdd and the HiCard board containing 256K RAM running MS-DOS 4.0 and AppleShare PC 2.0.

We loaded AppleShare PC with the desk accessory RAM resident. One AppleShare File Server volume was automatically mounted as the D: drive on the PC. With 640K total RAM, the CHKDSK program showed 655K total memory, and 313K remaining (one other unrelated RAM-resident utility was loaded at startup).

I tried to mount another AppleShare File Server as the E: drive. The Chooser interrupted with the error message, "Not enough memory" and the second volume would not mount.

I installed the HiCard. After running the configuration program, setting DIP switches, and installing the card, a CHKDSK showed 720K available, with 626K free.

I was then able to mount a second file server volume as drive E:, and a third as F: with no problems.

Here's a chart outlining memory use before and after the HiCard was installed:

- Before HiCard:

Normal DOS boot 561K RAM remained available

Boot with AppleShare and the DA
in RAM 313K RAM remained available

- After installing HiCard and software:

DOS boot 626K RAM remained available

Boot with AppleShare PC, DA in RAM, 546K RAM remained available and as much as possible in High Memory

Boot with AppleShare PC, DA NOT in 599K RAM remained available RAM, and as much as possible in High Memory

Presumably, this extra memory also could have been used for application space, so I tested it by running Lotus 1-2-3, exiting to the DOS shell, and running WordPerfect. Exiting to the DOS shell left 192K available, and WordPerfect launched fine in this memory.

The manufacturer also claims that their card and software work with Banyan, StarLAN, 3COM, DCA 10Net, IrmaLAN, PCSA, Novell, PC-NFS, TOPS, Token Ring, and other networking cards. We were unable to test the card in these scenarios.

The CompuAdd PC we used for testing did have a few minor compatibility issues. However, the excellent technical support from RYBS helped us to work around the problems.

Here are the hardware and software switches that worked on the CompuAdd PC:

DIP Switches:
All ON except: 1 OFF 5 OFF 7 OFF 8 OFF

Autoexec.bat: (Note: The Moremem line is particular to each machine and configuration):

```
\\AMS\\MOREMEM -B000 D000-F000
PATH C:\\ASPC2;C:\\DOS;C:\\MAIL;C:\\AMS;
\\AMS\\DEVICE /H C:\\DOS\\ANSI.SYS /X
@ECHO OFF
SET COMSPEC=C:\\DOS\\COMMAND.COM
VERIFY OFF
APPEND /E
APPEND C:\\DOS
C:\\DOS\\GRAPHICS
C:\\DOS\\GRAFTABL 437
VER
KEYB US,,C:\\DOS\\KEYBOARD.SYS
```

Startup AppleShare PC with DA in memory:

```
cd \\aspc2
C:\\ASPC2\\lsl.COM
\\ASPC2\\ltalkp /NAME=LTALK$
C:\\AMS\\LOADHIGH C:\\ASPC2\\atalk.COM
C:\\AMS\\LOADHIGH C:\\ASPC2\\asp_ws.COM
C:\\AMS\\LOADHIGH C:\\ASPC2\\pap_ws.COM
C:\\AMS\\LOADHIGH C:\\ASPC2\\compat.COM
C:\\ASPC2\\aprint
c:\\AMS\\LOADHIGH C:\\ASPC2\\ashare.COM
\\ASPC2\\minses.EXE
\\ASPC2\\redir /S:4
\\ASPC2\\anet.EXE auto
set path=c:\\pm;c:\\dos;c:{;c:\\mail;c:\\aspc2;
set basspec=c:\\dos\\basica.com
set pmdir=c:\\pm
C:\\AMS\\LOADHIGH c:\\aspc2\\da.EXE /r
cd \\
```

Startup AppleShare PC without DA in memory:

```
cd \\aspc2
C:\\ASPC2\\lsl.COM
\\ASPC2\\ltalkp /NAME=LTALK$
C:\\AMS\\LOADHIGH C:\\ASPC2\\atalk.COM
C:\\AMS\\LOADHIGH C:\\ASPC2\\asp_ws.COM
C:\\AMS\\LOADHIGH C:\\ASPC2\\pap_ws.COM
C:\\AMS\\LOADHIGH C:\\ASPC2\\compat.COM
C:\\AMS\\LOADHIGH C:\\ASPC2\\aprint.COM
c:\\AMS\\LOADHIGH C:\\ASPC2\\ashare.COM
\\ASPC2\\minses.EXE
c:\\AMS\\LOADHIGH C:\\ASPC2\\redir.EXE /S:4
\\ASPC2\\anet.EXE auto
set path=c:\\pm;c:\\dos;c:{;c:\\mail;c:\\aspc2;

set basspec=c:\\dos\\basica.com
set pmdir=c:\\pm
C:\\AMS\\LOADHIGH c:\\aspc2\\da.EXE
```

Published Date: Feb 18, 2012

System 6.0.4: Installer Problem with Duplicated Disks

I copied all of System 6.0.4 files from the original disks to a server. I then copied all the appropriate files back to blank disks, so that they mirrored the original disks. However, when I tried to use the Installer with these new disks, the Installer did not work. I did a disk-to-disk copy of the original disks to the blank disks, and the Installer did work. Can you explain?

This article has been archived and is no longer updated by Apple.
We were able to use the Installer successfully from a set of disks created in the manner you describe. The steps we used to copy each disk are:

1) Copy the Installer disk to the server volume by dragging its icon to the server volume's icon or window. Confirm the "The two disks are different types..." dialog by clicking OK. A new folder is created on the server volume with the Installer disk's name and files.

2) Open the newly created folder.

3) Insert a blank 800K disk and name it exactly the same as the original. This should be the same name as the folder you opened in the previous step.

4) Copy all items from the opened folder (in step 2) to the new disk by dragging them to the disk's icon or opened window. Do not copy the entire folder--only the files and folders within it.

The Installer can become confused and not recognize a seemingly valid Installer disk if you move files between folders or remove files or folders. It is important to make nearly exact duplicates of the Installer disks, with no changes in disk, folder, or filenames. As you experienced, a disk-to-disk copy is a reliable way to make duplicates.

Published Date: Feb 18, 2012

Pascal: Using Library Units in FORTRAN

FORTRAN that runs under Pascal version 1.1 does not access the SYSTEM.LIBRARY in order to find the location of each library segment. Therefore, as a FORTRAN program that uses Library Units ($USES <filename>) starts to execute, it almost immediately incurs a stack overflow
This article has been archived and is no longer updated by Apple.
A Pascal program which will repair the segment dictionary of a FORTRAN code file is included on the FORT2 diskettes. If your FORTRAN package does not include this program, you may get a copy from your dealer, regional support center, or the International Apple Core on their April 1981 Disk of the Month, named ATTACH. This Pascal program should be used after compiling and linking, but prior to the first execution of each FORTRAN program.

Or you may use another method of forcing the operating system to load the locations of each segment by compiling the following Pascal program:

```
PROGRAM READTABLE;
USES TURTLEGRAPHICS; (* or any other intrinsic unit *)
BEGIN
END.
```

Place the code file on your FORTRAN boot disk, and name that code file SYSTEM.STARTUP. The program will be executed automatically during each boot and will cause the table to be read in.
Published Date: Feb 18, 2012

A/UX: Big C Compiler Error Message--"too many defines"

Article Change History

08/31/92 - REVIEWED
* For technical accuracy

My Big C compiler who gives the "too many defines" error message. How can I raise the number of usable arguments/functions?

This article has been archived and is no longer updated by Apple.
The error message "too many defines" that occurred while compiling with the Big C compiler indicates that too many #define directive statements were defined in the C source program. This error message was detected by the "cpp", the C PreProcessor, while compiling the C source file. Currently, the maximum number of the #define directives defined by the Big cpp in A/UX 1.1 is around 2000. These numbers are used for the #define variable memory allocation.

We have tested a simple C program (with about 1985 #define directives) compiled under the Big C compiler of an 8MB A/UX 1.1, and the Big cpp complained with the same "too many defines" message.

To prevent this problem, reduce the number of #define directives in each C source file.

Published Date: Feb 18, 2012

A/UX: Apple Outline Fonts and the toolboxdaemon (8/95)

Can I use Apple Outline Fonts in A/UX 1.1 without the toolboxdaemon running? That is, can I put the routines in libraries?

This article has been archived and is no longer updated by Apple.
Support for any of the Macintosh Toolbox features under A/UX requires the use of the toolboxdaemon. Essentially, the toolboxdaemon provides the equivalent of the libraries you are referring to. Without the complete Macintosh environment available, none of the Macintosh calls would function.

Furthermore, A/UX 1.1 and A/UX 1.1.1 do not support Outline Fonts or any of the new technology target areas as specified in the documentation that has been released about the new Macintosh System Software directions. This means that the underlying Font Manager necessary to use Outline Fonts is not available even if the toolboxdaemon is running.

A/UX 2.0.1 supports the Adobe Type Manager.
A/UX 3.0 fully supports System 7 TrueType outline fonts.

Article Change History:
07 Aug 1995 - Reviewed, reformatted, made minor corrections.
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

IBM TCP/IP for VM and MVS and the InterLink NFS Server

This article describes IBM TCP/IP for VM, IBM TCP/IP FOR MVS, and InterLink's products.

This article has been archived and is no longer updated by Apple.

1) IBM TCP/IP for VM:

IBM TCP/IP for VM is a program that operates on a 9370, 43XX, or 30XX to provide the VM user with the capability of participating in a network that uses the TCP/IP protocol. This participation includes the ability to transfer files, send mail, and log on to a network-connected system or host.

TCP/IP for VM uses an S/370 channel to attach to a variety of controllers for connection to the selected network. It supports these network controllers:

a) LAN Channel Station (8232)
b) Series/1 with Real Time Programming System

Highlights

IBM TCP/IP for VM includes

- File transfer using FTP (File Transfer Protocol).
- Access to IBM 3270 applications from workstations using Telnet 3270 protocols.
- Remote terminal access using the Telnet protocol to access multivendor hosts.
- Compatibility with IBM Token Ring, IBM PC, Ethernet, ProNet, or X.25 networks.

Additional Features

IBM TCP/IP for VM also has

- Network File System Feature (Server). NFS enables the VM system to act as a file server for vendor systems that have the NFS 3.2 client function installed. Does not include the NFS Client function. This NFS feature also includes Remote Procedure Call (RPC). Both the NFS and RPC protocols adhere to the External Data Representation (XDR) specification so that protocols can be independent of internal machine formats.
- 9370 Integrated X.25 Subsystem (driver)
- CMS X Window System (client) (Version X.11)
- Remote Execution Daemon (server)
- SNA Network Link
- HYPERchannel support (driver)

2) IBM TCP/IP FOR MVS:

As with TCP/IP for VM, this program operates on a 9370, 43XX, or 30XX to provide the MVS user with the capability of participating in a network that uses the TCP/IP protocol.

In addition to the network controllers supported by TCP/IP for VM, this program also supports the 37x5 Communications Controller (X.25).

Highlights

IBM TCP/IP FOR MVS has the same features as TCP/IP for VM, plus:

- Electronic mail to remote terminals using a TSO user interface to the Simple Mail Transfer Protocol.
- C and Pascal subroutine interface to TCP and UDP.

As with TCP/IP for VM, this program also supports:

- Network File System (NFS) Feature (Server)
- Network connections via SNA or X.25 (including DDN)
- X Window System client function

3) InterLink

InterLink implements DECnet as an application under the IBM MVS and VM operating systems. The IBM host becomes a peer node in the DECnet environment allowing transparent communications between IBM and DECnet networks. InterLink's evolving product line includes support for multiple protocol (SNA, DECnet, TCP/IP) connectivity applications.

InterLink and Sun Microsystems jointly developed MVS-based NFS services for the UNIX networking environment. InterLink NFS/Connect software coupled with Sun's specialized IBM channel-connected workstation offer record-level data access to data stored on IBM MVS operating environments.

Published Date: Feb 18, 2012

AppleShare PC 2.0: 3COM EtherLink MC Card Name Identifier

Does the 3COM EtherLink MC (MicroChannel) card have an identifier for AppleShare PC 2.0?

This article has been archived and is no longer updated by Apple.
When trying to identify Ethernet boards for AppleShare PC 2.0 use, the 3COM EtherLink MC (MicroChannel) card is also known as the 3COM 523 card.

Published Date: Feb 18, 2012

PowerBook G3 Series: The Modem is Not Listed in the Remote Access Setup Control Panel

This article discusses why The Modem is Not Listed in the Remote Access Setup Control Panel.
This article has been archived and is no longer updated by Apple.
Reinstall the modem software.

If that doesn't help, then reinstall the Apple Remote Access software.

If you are using a PC Card modem, make sure the modem file for your modem is in the Modem Scripts folder inside the Extensions folder (in the System Folder).

If it is not, check the software that came with your modem.

If you locate a file for your modem, put it in the Modem Scripts folder.

Contact the modem manufacturer to see whether your modem can use the settings for another type of modem.

This document contains information from the PowerBook G3 Series User's Manual.

Published Date: Feb 18, 2012

TA40865_Graphics_Tablet_Area_Calculation_Errors__(TIL00512).pdf

Graphics Tablet: Area Calculation Errors (11/96)

This article explains problems with the Graphics Tablet and area calculation.
This article has been archived and is no longer updated by Apple.

Area calculation for the graphics tablet are not totally accurate. It was not designed for critical situations but rather as an example of the way such a tool could be used. The simplicity of the code and the inaccuracies in BASIC may account for the error encountered.

Article Change History:
18 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

PowerBook 5300: SCSI Equipment Doesn‘t Work, or No Hard Disk Icon

This article describes what to do if SCSI Equipment Doesn't Work, or No Hard Disk Icon appears.
This article has been archived and is no longer updated by Apple.
You may not be able to use password protection with your PowerBook in SCSI disk mode. Turn password protection off in the Password Security control panel. Check that all cables are connected securely, that the devices are plugged into working outlets, and that the devices are turned on.

IMPORTANT Make sure that all equipment is turned off before connecting or disconnecting cables.

Make sure that you turn on SCSI equipment before you start up the PowerBook. Check that each connected SCSI device has a unique ID number
between 1 and 6. Make sure that SCSI cable terminators are correctly positioned.

This document contains information from the PowerBook 5300 User Manual.

Published Date: Feb 18, 2012

Apple IIe and IIc: Can‘t Use Desktop

The Desktop program, although it runs under ProDOS 8, was not designed to run on an Apple IIe or Apple IIc.
This article has been archived and is no longer updated by Apple.
If you look at the memory locations starting at 1000, you'll see:

1000: 18 FB 5C 04 E0 D0

When disassembled, they translate into

1000: 18 CLC
1001: FB XCE
1002: 5C 04 E0 D0 JMP E0D004

This is the segment of code that the Desktop executes when it exits back to ProDOS. However, those assembly language instructions are implemented only on the Apple IIGS's 65816, not on the Apple IIe's and IIc's 6502.
Published Date: Feb 18, 2012

Color StyleWriter: Print Quality is Poor

This article explains why Print Quality is Poor.
This article has been archived and is no longer updated by Apple.
Most image problems are caused by problems with an ink cartridge or with your choice of paper. Don't use the following types of paper:

erasable typing paper
damaged, wrinkled, or stapled paper
multipart forms (carbonless carbons)
glossy paper, unless it's especially designed for StyleWriter printers

Plain papers can vary widely. If you're not happy with one kind of paper, try a different brand.

This document contains information from the Color StyleWriter Setup manual.

Published Date: Feb 18, 2012

A/UX: Drive Corrupted when Copying Disk (8/94)

I just copied an external HD80 SC (SCSI ID=2) loaded with A/UX onto an internal HD80 SC on a Macintosh IIx with the following command:

dd if=/dev/rdsk/c2d0s31 of=/dev/rdsk/c0d0s31 bs=24576

After approximately 15 minutes, the prompt returned with a message giving the number of blocks transferred. When I tried to restart the machine, I found the internal drive is corrupted. All I get on startup is the disk with the flashing question mark.

I tried to clear the internal drive with both HD Setup and Disk First Aid,
and none worked. The returned messages are "Unable to read the required table from the selected", or "Fail to read the table".

If I start up the machine using the external A/UX drive, I'm able to mount the internal A/UX partition (SCSI-0) using the following command:

mount -v /dev/dsk/c0s0s31 /tmp

Can you help me fix the corrupted table on my internal A/UX drive?

This article has been archived and is no longer updated by Apple.
To ensure disk integrity when copying from one disk to another, we suggest the following:

1) Do a "fsck" on the source disk to make sure the original disk file system is good.

2) Use bs= multiple of k (1024 bytes) or b (512 bytes block) rather than the number of bytes on the "dd" command. The bs=24576 is actually bs=24k or bs=48b, which is fine because it is a multiple of 512 bytes.

Are you sure you gave this number? If the number is not a multiple of 512, it could create a corrupted A/UX disk, because the A/UX file system requires a 512-byte block or 1024-byte boundary.

3) Do a "fsck" on the newly-created disk to ensure that the target disk file system is good.

We don't think that there is a way you can correct the corrupted file system, if the created or "dd" file system's block size was not a multiple of 512 bytes.

It is not clear how the error messages "Unable to read the required table from the selected" or "Fail to read the table" was generated. Which step of HD Setup ("Initialization", "Update", or "Partition") encountered these messages?

It is unusual to mount the entire disk /dev/dsk/cXd0s31 on a directory. If you do a "mount -v /dev/dsk/c0d0s31 /tmp", you will get the error message:

mount: /dev/dsk/c0d0s31 on /tmp: Invalid file system

Just a reminder, by default:

/dev/[r]dsk/cXd0s0 is for Root&Usr file system
/dev/[r]dsk/cXd0s1 is for Swap file system
/dev/[r]dsk/cXd0s2 is for Usr file system
/dev/[r]dsk/cXd0s31 is for entire disk

We don't mount Swap file system and entire disk.

Can you see the internal disk partition map using "dp" under A/UX?

Last, we suggest that you use HD Setup to "Initialize" the internal hard disk, and follow the above suggestions to clone the disk.

Article Change History:

TA40869_AUX_Drive_Corrupted_when_Copying_Disk__(TIL05132).pdf

24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

Color StyleWriter: Thin Lines Fade or Break Up

This article explains why Thin Lines Fade or Break Up.
This article has been archived and is no longer updated by Apple.
Pick a darker color for the affected object, or try printing with the Pattern half toning option selected. (In the Print dialog box, click the Options button, then click the Pattern button.)

This document contains information from the Color StyleWriter Setup manual.

Published Date: Feb 18, 2012

ADB Keyboard: Problem with Function Keys When Emulating VT240

I am having problems using VT240 terminal emulators with Macintosh SEs with Apple SuperDrives (formerly Apple FDHD) and extended keyboards. The problem is that I can't use some function keys (PF2, PF3, and PF4), like the six keys above the arrow keys on the extended keyboard.

It seems to be a CPU-related problem, because I have tried all the possible combinations between the old and the new extended keyboard, reinstalled system software 6.0.3, and used the latest revisions of the two emulators (VersaTerm Pro and Mac240). I have problems only when using the Macintosh SEs with SuperDrives. Everything works fine with older CPUs.

What's going on?

This article has been archived and is no longer updated by Apple.
We tested Mac240 on our Macintosh SE with a SuperDrive, and the function keys are working exactly the same as on the Macintosh SE with 800K drive.

According to page 82 in Appendix A of the Mac240 manual, DEC keyboard keys F1-F5 are not present on the ADB keyboard.These keys perform local functions on a VT240 terminal (Hold Screen, Print Screen, Setup, DataTalk, and Break). Equivalent operations are available in Mac240 menus. DEC keyboard F6 and up are mapped to ADB keys F1 and up as follows:

DEC Keyboard	ADB Keyboard
F1-F5	Not Present
F6	F1
F7	F2
F8	F3
F9	F4
F10	F5
F11	F6
F12	F7
F13	F8
F14	F9
Help	F10
Do	F11
F17	F12
F18	F13
F19	F14
F20	F15

Pressing the F1 key on the ADB keyboard is equivalent to pressing the F6 key on the VT240, which happens to be Control-C, the CANCEL key. Pressing F10 and F11 on the ADB keyboard is like pressing the Help and Do keys on the DEC keyboard. This was verified using DEC Edit/TPU program.

The six keys above the arrow keys on the ADB keyboard also worked correctly for us on the Macintosh SE with the SuperDrive and with the 800K drive. Keep in mind that they do not have the same meanings as their labels. They work like the DEC keyboard labels:

DEC keyboard	ADB keyboard
Find	help
Insert Here	home
Remove	page up

Select del
Prev Screen end
Next Screen page down

One other thing to check is to make sure that the terminal is set correctly on the host machine as VT200 series. On VAX/VMS, use the command:

$ SET TERMINAL/DEVICE=VT200

Published Date: Feb 18, 2012

Macintosh IIcx & IIci: 5.25-Inch Internal Hard Disk Installation

I want to purchase third-party (MicroNet) 5.25-inch hard disks with special mounting brackets for my Macintosh IIcx and Macintosh IIci systems.

1) What is Apple's position about using 5.25-inch drives in the Macintosh IIcx or Macintosh IIci?

2) Will these drives draw too much power?

This article has been archived and is no longer updated by Apple.
1) Apple's position is that the installation and use of an internal 5.25-inch hard disk in a Macintosh IIcx or Macintosh IIci voids the warranty of the computer.

2) An internal hard disk may draw 1 amp (5 watts) on the +5V line and .5 amps (6 watts) on the +12V line. On startup, a surge of 1.5 amps (18 watts) for 15 seconds is allowable on the +12V line. No surge is allowed on the +5V line.

Published Date: Feb 18, 2012

Graphics Tablet: Quick.Draw (11/96)

Below are two BASIC programs that demonstrate how to use Quick.Draw for the Graphics Tablet. Type both programs in, save with the titles listed below and then RUN "START.TEST". "START.TEST" will create an EXEC file and EXEC it. (See DOS manual for further information on EXEC.)

The EXEC file will load "TEST.QUICK.DRAW" above High-Res and run the program. The programs are written with the assumption the Graphics Tablet Interface is in slot 5. Line 20 of the second program controls the slot number.

This article has been archived and is no longer updated by Apple.

```
10 D$ = CHR$ (4)
20 PRINT D$"OPEN START.TEST"
30 PRINT D$"WRITE START.TEST"
40 PRINT "POKE103,1"
50 PRINT "POKE104,64"
60 PRINT "POKE16384,0"
70 PRINT "RUN QUICK-DRAW"
80 PRINT "RUN TEST.QUICK.DRAW"
90 PRINT D$"CLOSE"
100 PRINT D$"EXEC START.TEST"
```

* Save as "START.TEXT"

```
5 DIM X%(500),Y%(500)
10 D$ = CHR$ (4)
20 PRINT D$"PR#5"
30 PRINT "H1,S16,R"
40 PRINT D$"PR#0"
45 D% = 1:EP% = PEEK (752) + PEEK (753) * 256
46 N% = 0
47 HGR
50 CALL EP%
60 PRINT N%
70 N = N%: FOR I = 0 TO N: PRINT X%(I),Y%(I): NEXT I
100 TEXT
```

* Save as "TEST.QUICK.DRAW"

Article Change History:
18 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

TA40875_Macintosh_IIci_ROMs_Are_for_IIci_Only_(TIL05140).pdf

Macintosh IIci: ROMs Are for IIci Only

I heard that the Macintosh IIci ROMs can be put into a Macintosh IIcx or Macintosh SE/30 to improve performance. Is there any truth to this?

This article has been archived and is no longer updated by Apple.
The Macintosh IIci ROMs have been tested only in the Macintosh IIci. They may work properly in the Macintosh IIcx or Macintosh SE/30, but there would be no perceptible improvement in performance. Using the Macintosh IIci ROMs would not cause the Macintosh IIcx or Macintosh SE/30 to support the "burst mode" abilities of the MC68030 microprocessor. The Macintosh IIci and the Macintosh IIfx are the only Macintosh computers that have the hardware to support the "burst mode". We do not support using the Macintosh IIci ROMs in a Macintosh IIcx or Macintosh SE/30.

Published Date: Feb 18, 2012

Macintosh SE: Correcting Hierarchical Menu Delay

I have a Macintosh SE with a 20MB hard disk, the Apple SuperDrive (formerly Apple FDHD), and 1MB of memory. I have the basic fonts and DAs that come with the system. When I select a menu item that has a hierarchical menu attached, the hierarchical menu takes about 4 to 6 seconds to appear. I've tried:

- Programming on another Macintosh, and it worked fine.

- I used an application on the hard drive and then tried using the same program from a floppy disk. It still had the same problem.

- Reinstalling system software 6.0.3; the delay remained.

- Reformatting the hard drive and reinstalling everything--same result.

- Running SAM. No viruses were found.

- Removing nonstandard INITs from my System Folder.

- Setting up 64K and 96K RAM caches--neither had any effect on the delay.

- A technician ran Apple diagnostics tests on the computer, and it passed without a problem.

Can you help?

This article has been archived and is no longer updated by Apple.
There is a parameter in extended PRAM that controls how long a menu item must be selected before the hierarchical menu for that menu item appears. We suggest zapping extended PRAM by holding down the Shift, Option, and Command keys while opening the Control Panel. Restart the computer when the procedure is done. This resets the delay to the default value, and the hierarchical menu delay problem should disappear.

Published Date: Feb 18, 2012

PostScript: Macintosh and Sun Codes Are Different

Does Sun use the same version of PostScript as the Macintosh for printing? If yes, is there a way to use Sun documents on a Macintosh?
This article has been archived and is no longer updated by Apple.
There are differences between the actual PostScript code generated on the two different computers.

On the Macintosh, the PostScript code created relies on the Laser Prep dictionary. This means that there are many short codes in a Macintosh PostScript file that relate the Laser Prep dictionary. On the Sun machines, PostScript is generated as complete (sometimes called "raw") PostScript.

However, it is possible to move an EPS (Encapsulated PostScript) file from the Sun environment to the Macintosh environment. The ability to create and read an EPS file is application-dependent. An EPS file created in a Sun application can be moved to a Macintosh and read by a Macintosh application supporting the EPS file format.

Generally, a Sun EPS file will not display on the Macintosh screen but will print fine on PostScript printers. Most Macintosh applications present such a screen display as an empty area with a border. However, Macintosh application, like LaserTalk, can display the image defined by PostScript because the image is only a screen representation of PostScript code.
Published Date: Feb 18, 2012

High Speed Serial Interface Card: Qume Sprint 5 (11/96)

This article details the setup necessary for the High Speed Serial card and Qume Sprint 5 printer to function together.

This article has been archived and is no longer updated by Apple.

```
Qume Setup
----------
Form length           11 inches
Character spacing     10 or 12
Twintellect           Standard
Auto LF               On
Parity                Mark
Duplex                Test (For normal operation set to Full)
Baud rate             1200

The two switches inside the cover should be set to "MOD" and "HI".


High Speed Serial Card
----------------------
Ensure the P8A PROM is installed in location B2 on the card and the switchs are set to the following.

1   2   3   4   5   6   7
Off Off On  Off On  Off On


Enter and run this BASIC program
--------------------------------
10 PR# 1
20 PRINT CHR$ (27); CHR$ (26); CHR$ (14)
30 PR#0

The Sprint 5 printer will do the Self-Test and print "Self-Test OK", then it will print the entire character
set until the Duplex switch is set to Full.


Article Change History:
18 Nov 1996 - Reviewed for technical accuracy, revised formatting.
```

Published Date: Feb 18, 2012

AppleFax Modem: FaxGate Allows Some Networking Capability

Does anyone have any suggestions for a "networkable" AppleFax Modem?

This article has been archived and is no longer updated by Apple.
The AppleFax Modem and AppleFax software was not designed for use in a Fax server environment. You might take a look at Solutions International's FaxGate. It lets a Macintosh send a message to a second Macintosh with a locally-connected AppleFax Modem via QuickMail or Microsoft Mail. The sending Macintosh, running FaxGate in the background, transmits the message over the AppleFax Modem. Note that this product is for transmitting Fax messages, not receiving them.

Published Date: Feb 18, 2012

A/UX: lint Problems (9/94)

Article Last Reviewed: 21 September 1994

I have found four problems with lint:

1) The -o option generates the following error:

/usr/lib/lint1: illegal option -- o

2) The manual does not explain how to create the "llib-lx.ln" file in the
"-lx" option.

3) In this line, the -Dlint does not get defined:

cc -E -C -Dlint llib-lx | /usr/lib/lint1

4) There is no way to tell lint where to look for Lint libraries.

This article has been archived and is no longer updated by Apple.
A couple of lint problems have been found and reported in the A/UX Engineering SPR database. These include that

1) The -o option is not implemented in A/UX 1.1. However, it is implemented
in 2.0, 2.0.1, and 3.0.

2) The commands below described in the -lx option of lint(1) to generate
the llib-lx.ln from the llib-lx were not correct; "cc" expects a C source
file.

```
cc -C -C -Dlint llib-lx | \\
/usr/lib/lint1 -vx -H/tmp/lint$$ > llib-lx.ln
rm -f /tmp/lint$$
```

The purpose of the -lx option is to include an additional lint library, (named llib-lx.ln) in the /usr/lib directory to be searched. For example, the -lm for additional search on the mathematical lint library, /usr/lib/llib-lm.ln. There is a naming error on the /usr/lib/llib-port.ln; it should be named /usr/lib/llib-lport.ln for the portable C lint library.

Support Information Services

Published Date: Feb 18, 2012

A/UX: Sorting Large Indexes (9/94)

Is there any known A/UX-based software for sorting large indexes (20-40MB)?

This article has been archived and is no longer updated by Apple.
We aren't sure what you mean by "large indexes". A/UX includes the standard "sort" command, which is able to sort lines from one or more files. The maximum number of lines it can sort is limited only by disk space. If your needs go beyond sorting lines, you should investigate a database manager of some sort. Check with Oracle Corporation and Informix Software for information on their products (For more details, search the Tech Info Library under "Oracle" and "Informix.")

Article Change History:
22 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

TA40884_AUX_Using_Northern_Telecom_Memorybank_(TIL05157).pdf

A/UX: Using Northern Telecom Memorybank

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Will A/UX run on the Northern Telecom Memorybank? Can it access the Memorybank's tape drive?

This article has been archived and is no longer updated by Apple.
Yes, the Northern Telecom Memorybank works with A/UX. Northern Telecom provides configuration software to prepare their drive for use with the Macintosh OS, A/UX, or both. They also provide backup software that can do fully-automated backups to tape under the Macintosh OS and an advanced A/UX driver for their tape drive for traditional file backups under A/UX. For more information, search the Technical Info library under "Northern Telecom".

Published Date: Feb 18, 2012

TokenTalk: Sniffer MisReads AARP

Why does Sniffer see AppleTalk as a standard IBM Token Ring hardware and then as an Ethernet type=80F3? During the time I ran my tests, one of my PC LAN servers crashed in a big way, and I wonder if the TokenTalk card and software might have contributed to its demise.

This article has been archived and is no longer updated by Apple.
The Sniffer is displaying the AppleTalk Address Resolution Protocol (AARP). AARP performs three basic functions:

- It initially determines the unique protocol address of an AppleTalk node for a given protocol set (like the AppleTalk protocols).

- It maps between two address sets.

- It filters packets within a given protocol set.

In AppleTalk Phase 2, AARP packets are encapsulated in IEEE 802.2 format on data links that support this standard. To accommodate the large number of protocols, IEEE developed the SubNetwork Address Protocol (SNAP) standard. The SNAP allows multiple protocols to be used in one data link. It defines a 5-byte field to identify the protocol that is using the data link. It ensures that protocol identifiers from different vendors do not conflict. The SNAP protocol discriminator for AARP packets is $00000080F3; the Sniffer mistakenly reported this as Ethernet.

Nevertheless, these packets should not cause the LAN server to crash. We connected a Sniffer to a Token Ring LAN in our office and also saw these SNAP packets reported incorrectly, but the server and the network are operating normally.

We strongly suggest that you upgrade to the latest version of software. You must use the new 1.1.2 version of Apple File Exchange with SMB and TokenTalk 2.0 final.

Published Date: Feb 18, 2012

Apple IIGS: Problem Starting Up From Slot 5, Disk II in Slot 6

This article has been archived and is no longer updated by Apple.

If you try to start up from a 3.5" disk in a drive connected to slot 5, you may encounter a problem if you have a Disk II drive connected to slot 6. Unlike the UniDisk 5.25" drive, the Disk II drive can't deflect startup attempts if it contains no disk. Instead, it keeps trying to read from a disk that's not there. This is a problem when you want to start up from a 3.5" drive in slot 5.

There are three ways to start up from slot 5 if there's no disk in the Disk II in slot 6:

- Enter the Control Panel and set the startup slot to 5. (After turning on the computer, you have about a second to press Option-Control-Reset before the Disk II drive starts spinning.)

The second and third methods can be used after the Disk II starts spinning.

- Press Control-Reset, which put you in Applesoft BASIC (with the] prompt at the left of the screen). Then type PR#5 to start up from slot 5.

- Press Option-Control-Reset, set the startup slot to 5, exit the Control Panel, and press Control-Open Apple-Reset. This aborts the startup attempt from slot 6 and makes slot 5 the startup slot.

If you need the SCAN option to work properly, you need a Unidisk, Apple IIc External Drive, or an Apple 5.25" drive. These drives can be attached to the Apple IIGS either at the SmartPort connector in the back, with a UniDisk drive controller card, or in a daisy chain off an Apple 3.5" drive connected to the SmartPort. The firmware that drives them can abort a startup attempt if there is no disk in the drive.

Published Date: Feb 18, 2012

GS/OS 5.0.2: Solves "No Finder" Printing Problem

I just updated my server to GS/OS 5.0.1 and created startup disks with no Finder to speed startup. The workstations started up and ran applications, but they don't print. Is there a fix for this problem?
This article has been archived and is no longer updated by Apple.
Installing GS/OS 5.0.2 will resolve the problem encountered with the "No Finder" startup disk.

Note: GS/OS version 5.0.1 is NOT a released version of GS/OS. Copies were sent to the Apple SEs, but it has never been officially released. GS/OS 5.0.2 is the official release of the operating system for the Apple IIGS.
Published Date: Feb 18, 2012

A/UX: Find, Dump & Print an 8-Bit Window w/ X Windows (9/94)

I have been trying under X Windows to find and dump an 8-bit window as described in the "README" file under usr/lib/X11. If you set the window plane to the normal white and dump it, the xpr routine seems to work fine. However, if you set the background to a color (like solid blue with yellow text), and you bring back the window with the xwud routine and print it with xpr, you get a blank page.

I assumed that I had not found the proper plane, but I tried many parameters and could not get it to print. Can you give me an example to show how it works?

This article has been archived and is no longer updated by Apple.
We successfully used xwd, xwud and xpr to print both 1-bit and 8-bit windows on a LaserWriter. We also used the plane option of xwud to specify bit planes of xy format dump files. Here are the steps we followed:

1) On our 8-bit screen, we created an xterm window with a blue background and a yellow foreground (text), cursor, and pointer.

```
xterm -bg blue -fg yellow -cr yellow -ms yellow &
```

2) We dumped the xterm window to the file dump.xy with the xwd command.

3) We used the xy option to print to our non-color LaserWriter in the next step.

```
xwd -xy -out dump.xy
```

4) To print the dumped image, we used the xpr command with the output piped to our LaserWriter. The "device ps" option dumps the image in a PostScript bitmap. We added the rv (swap foreground and background colors) option to prevent a white on black image.

```
xpr -device ps -rv dump.xy | atprint
```

5) To display the dumped file on screen, we used the xwud command. The raw option greatly speeds up the display operation.

```
xwud -in dump.xy -raw
```

6) To display a specific plane of the file, we used xwud with the plane option, and a second monitor set to 1 bit. The plane option accepts a value in the range of 0 to 7.

```
xwud -in dump.xy -plane 0 -display :0.1
```

Article Change History:
09 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

Token-Ring: Macintosh SE Adapter Available

Do you know if there is a third-party Token Ring adapter available for the Macintosh SE or Macintosh SE/30?

This article has been archived and is no longer updated by Apple.
Asante Technologies, Inc. has a Token Ring card for the Macintosh SE.
The card supports the AppleTalk Internet Router but does not support Apple's SMB software.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

AppleFax-to-AppleFax Communication

I have tried file transfers between two AppleFax Modems using communications software at 9600 baud. I tried Microphone II to Microphone II and MacTerminal 2.3 to Microphone II. In all cases, I was given error messages or found the system hung. Why is this happening?

This article has been archived and is no longer updated by Apple.
After some extensive testing, we concluded is that you are better off using the AppleFax application for file transfers instead of using third-party terminal software. Third-party software does work, but it is much slower.

The AppleFax Modem has built-in error correction, rendering the error correction performed by MicroPhone, Red Ryder, MacTerminal, and so on redundant. Furthermore, adding those additional layers of protocols and error correction on top of the built-in error correction slows your transmissions down and potentially subjects you to timeout errors (which is probably what you are encountering), compounded by any noise on the lines.

For example, transmitting a .5MB file with the AppleFax application required approximately 14 minutes. Transmitting that same file using MicroPhone II 2.0 using their YMODEM/MacBinary Protocol Transfer Setting was stated by the program's status screen to require over 400 minutes! (Transmitting the same file using YMODEM-G would take approximately 3 hours.)

We didn't wait the nearly 7 hours to verify that it would take that long, because that status screen has been relatively accurate in the past. We did, however, monitor the file transfer for 20 minutes and multiplied the remaining number of bytes to be transferred by the transfer rate. We observed the extremely slow transfer rate and are convinced it would take a very long time. During the 20 minutes we monitored the file transfer, there were no errors reported, nor were there any errors reported with the numerous other small files we transferred using many of the other MicroPhone transfer settings. Though the files transferred successfully, the file transfers took much longer than when using the AppleFax software.

If you want to continue using MicroPhone or MacTerminal, we recommend using YMODEM-G or MacBinary, respectively, as they do error correction less often than the other options and don't use the other additional error correction options, like CRC.

Published Date: Feb 18, 2012

A/UX: Optimizing X Window Performance (9/94)

I am working on a port of an HP X Window System application, using a Macintosh IIci with 8MB of internal memory. The issue is X-Window display performance.

The display of the X Window System application is faster when the X-server part is used over the network on an HP Model 340, than when the X-display is used on the Macintosh IIci itself!

The kernel has been modified with kconfig as is described in the "X Windows System User's Guide," page 2-6.

Can I get additional optimization by modifying other parameters or in future versions of Apple's X Windows product.

This article has been archived and is no longer updated by Apple.
This is normal behavior for an X environment. Overall performance depends on the combined performance of the host running the X server and the host running the X clients. Network speed is also important, but assuming Ethernet speeds, not so much as computing performance. If both the client and server are running on the same computer, then the combined load will predictably degrade performance.

Because your customer is running the server on the Macintosh IIci, you should make sure they understand the implications of using NuBus versus built-in video with anything other than 1-bit displays. Using built-in video in 8-bit mode could severely impact performance.

Optimizing an X system is similar to optimizing any A/UX networking system. You can improve performance by optimizing the following:

- Available RAM. Install 5MB or more, 8MB if running both server and clients. In A/UX 3.0, at least 8MB of RAM is recommended.

- Kernel parameters like NBUF and NMBUFS. At least 600 block I/O buffers (NBUF) and 200 network buffers (NMBUFS) is recommended.

- Speed and location of swap space. This can be faster if swap space is located on a second drive.

Support Information Services
Published Date: Feb 18, 2012

Using an IBM Mainframe as a Virtual Disks

Is there any way to use an IBM 370 series mainframe as a file server?

This article has been archived and is no longer updated by Apple.
Sun's NFS (Network File System) runs on IBM 370 series mainframe. This means that with a Cayman GatorBox the mainframe will work as a virtual disk. In fact, a customer in Australia is using an IBM 3090 model 600e as a file server for 400 Macintoshes.

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This article has been archived and is no longer updated by Apple.
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Hardware, specializing in printers, monitors, and computers.
Published Date: Feb 18, 2012

Macintosh SE: Kodak Data Show‘s White Wire Connection

I was upgrading the memory of a Macintosh SE that had a Kodak Data Show card installed. The clip on the white wire that connects the Kodak card to a chip on the Main Logic Board came off. I have two questions: which chip was it connected to and which pin on that chip?

This article has been archived and is no longer updated by Apple.
The white wire connects to the GLU chip at D9 pin #19. If you are looking at that chip laying horizontally with the notch on the left, #19 is the second pin from the left on the top row.

Published Date: Feb 18, 2012

Quantum Disk Drives: Lubricant Effects on Head Seeks

I know the new Quantum ROMs do occasional seeks to overcome the lubricant problem on their hard disks. I thought that these seeks would take only a few seconds, but we're getting reports that the seeks go on for five minutes, usually just after a save. Is this correct?

This article has been archived and is no longer updated by Apple.

It's possible for this to happen, especially if the save resulted in a number of writes in a very small area. This would result in puddles of lubricant forming outside this "save" area. When the head tries to move elsewhere, it encounters the puddle and loops though a move sequence until it breaks through the puddle.

Your customers should not be overly concerned, because it's not a major problem, but the Quality group is looking into the issue.

Published Date: Feb 18, 2012

HyperCard: XCMD To Restart & Shutdown Macintosh

Do you know of a HyperCard XCMD that can restart the Macintosh?

This article has been archived and is no longer updated by Apple.
There are several XCMDs and XFCNs capable of restarting or shutting down a Macintosh. One, named "doRestart," restarts the Macintosh without any further notice. The other, named "ShutDown," does a normal shutdown as if you had selected Shut Down from the Finder's Special menu. The "Shutdown" XCMD eventually corrupts any stack it's used in. It's just a matter of time before the user shuts the system down without HyperCard having done its housekeeping chores. The shareware "SafeShutDown" by Christopher Watson seems to be safe (there have been no reports of corrupted stacks with it). None of these is an Apple-supported solution.

Caution should be used when executing these, especially while MultiFinder is running. It is possible that other applications may not be able to clean up properly before the system restarts or shuts down.

An easier, faster and safer way to do this is to create a QuicKey sequence for HyperCard to execute.

The HyperTalk script might look like:

```
on doMenu which
if which = "Quit" then
type "Q" with Command key and Option key
...
...
```

where Command Option Q calls a quicKey sequence that quits HyperCard and then does a Finder shutdown.

Published Date: Feb 18, 2012

Macintosh IIci: Internal Video Circuitry Versus Video Card

North American Philips Electronics makes a color RGB monitor that works well (with appropriate cable) with the Macintosh 8-Bit Color Video Card. However, when attached to the Macintosh IIci built-in video port, the monitor displays a blank screen.

They have tested their monitor with the Macintosh IIci in combination with the 8-Bit Video Card, and it works OK. Can you provide a specific list of differences (pinouts, voltages, signal characteristics) between the RBV port and the 8-bit card port?

This article has been archived and is no longer updated by Apple.
The most likely cause of the problem is that the cable or monitor being used does not ground pin 4. This is required for the built-in video circuitry to identify a monitor as an AppleColor High-Resolution RGB Monitor or equivalent. If none of the Monitor ID pins are grounded, the built-in video assumes no monitor is attached.

The following portion of text from the Macintosh IIci Technical Tour stack should clarify why the internal video circuitry of the Macintosh IIci behaves differently than the Macintosh II High-Resolution Video Card. Here is the text:

The Macintosh IIci has the equivalent of a video card built into the main logic board. This means that Macintosh IIci owners do not have to purchase a separate video card to use an Apple monitor with the unit. This also means that all three NuBus slots remain available for other NuBus cards. Other video cards can be added to any one of the three NuBus slots.

The built-in video circuitry supports the following monitors:

Apple High-Resolution Monochrome (@ 2, 4, 16, and 256 colors/grays)
AppleColor High-Resolution RGB (@ 2, 4, 16, and 256 colors/grays)
Apple Macintosh Portrait Display (@ 2, 4, and 16 colors/grays)

The pinouts for this port are as follows:

01 RED.GND Red Video Ground
02 RED.VID Red Video
03 CSYNC Composite Sync.
04 MON.ID1 Monitor ID, Bit 1
05 GRN.VID Green Video
06 GRN.GND Green Video Ground
07 MON.ID2 Monitor ID, Bit 2
08 nc (No Connection)
09 BLU.VID Blue Video
10 MON.ID3 Monitor ID, Bit 3
11 C&VSYNC.GND CSYNC & VSYNC Ground
12 VSYNC Vertical Sync.
13 BLU.GND Blue Ground
14 HSYNC.GND HSYNC Ground
15 HSYNC Horizontal Sync.
Shell CHASSIS.GND Chassis Ground

The pin requirements for making a cable for a Macintosh IIci to a Portrait display are as follows:

DB-15 (Macintosh IIci) DB-25 (Portrait)
---------- ----------
03 05

07 08
08 04
10 03
11 07,10
12 02
14 01
15 06
Shell Shell

There is an issue with some third-party video cables and third-party video cable extenders. Some of those cables included just the necessary pins to support the Apple High-Resolution Monochrome Monitor or the AppleColor High-Resolution RGB Monitor with the Macintosh II High-Resolution Video Card.

One problem with some of these cables is that pins 4, 7, and 10 are used to identify the monitor that is connected. With the Macintosh II High-Resolution Video Card, pin 4 was a ground line, but pins 7 and 10 were not used. With the color and monochrome monitors, the problem is that some of those cables leave out pin 4, and tie to another ground. In these cases, the built-in video fails to detect and identify the monitor. This causes built-in video to be disabled. However, if the cable or cable extender connects pin 4, the cable should allow the Macintosh IIci to correctly identify the Apple High-Resolution Monochrome and the AppleColor High-Resolution RGB Monitors. Most cables support the other signals required for these two monitors.

A second problem is that, given the fact that the new Macintosh IIci-to-Portrait Display cable has a 15-pin connector on one end, it can be connected to third-party video cable extenders. However, all of the lines that were unused by the Macintosh II High-Resolution Video Card are now used to support the Macintosh Portrait Display. As a result, any video cable extender that does not include these lines will not support the Portrait Display. In this case, the Macintosh IIci may not be able to identify the monitor because lines 7 and 10 probably will not be connected and the required video signal lines will not be there either.

SPECIAL NOTE: To meet FCC part 15 requirements, the Apple-supplied cables have to be used.

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Apple Displays: The Front Light of the Display is Flashing

This article describes what to do if the front light of the display is flashing.
This article has been archived and is no longer updated by Apple.

Symptom

On some Apple flat-panel displays, the power light can display a series of short flashes when an error has been detected.

Products Affected

- Apple Studio Display (15-inch flat panel)
- Apple Studio Display (17-inch flat panel)
- Apple Cinema Display (20-inch flat panel)
- Apple Cinema Display (22-inch flat panel)
- Apple Cinema HD Display (23-inch flat panel)

Solution

- If you see a repeating sequence of three short flashes, the monitor is detecting input in the wrong video format. Check that your monitor is compatible with your graphics card and that you've installed the correct display software, if your monitor came with installation software.
- If you see a sequence of two short flashes and a long flash, the monitor is detecting a problem with a backlighting lamp. Contact an Apple-authorized dealer or service provider.

Published Date: Feb 18, 2012

LocalTalk: High-Speed LAN Bridging at Speeds up to 57.6K BPS

I need a high-speed LAN bridge to link buildings on a business "campus." Can you help me?

This article has been archived and is no longer updated by Apple.

High-speed LAN bridging is possible with the Digital Access A-115 Asynchronous Line Driver and the Shiva TeleBridge. With these products, two LocalTalk LANs as far apart as 3.5 miles can be bridged at speeds up to 57.6K bps. All connections are over twisted-pair copper wiring. Installation is simple, and, because all connections are over existing wiring, there is no high installation cost. For more information, search the Tech Info Library under "Digital Access Corporation".

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LocalTalk PC Card: Accessing a Host Running TCP/IP

Is there a product for DOS that can be configured to use the Apple LocalTalk PC Card to open a connection to a host system running TCP/IP?

This article has been archived and is no longer updated by Apple.

Yes. The product is NCSA Telnet for DOS. Like the version for the Macintosh, the DOS version is available from the Supercomputer Research Center at the University of Illinois. Judging from comments on USENET, setting up the required configuration file is not for the faint-hearted.

For more details, search the Tech Info Library under "NCSA Telnet."

Published Date: Feb 18, 2012

A/UX: Internet Router Printing Problem (8/94)

I have a problem printing from AppleTalk for A/UX (Ethernet) through the AppleTalk Internet Router. I am running A/UX and have three printers--a LaserWriter IINTX and two AppleTalk ImageWriters on LocalTalk.

On the A/UX machine, I can launch a Macintosh OS application and print through Ethernet to the Internet Router and on to the LaserWriter with no problems. The Chooser works fine and shows all zones and printers.

However, when I try to print through A/UX, none of the three printers prints with lp, lpr, or atprint. The Printers and Zones show up and are chosen with the at_cho_prn script. Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
Because you don't have a printing problem via a Macintosh OS application, the problem seems to be on the A/UX printer spooler setup.

We have a couple of A/UX machines here configured with AppleTalk for A/UX printing via EtherTalk and the AppleTalk Internet Router without any problem when using the "lp" command or printing directly from the Macintosh OS application.

Here are some questions and suggestions:

- Is the /usr/lib/lpsched running? It usually starts up from the
/etc/inittab.

- If the printing interface is via EtherTalk, the following two lines must
be included in the /etc/appletalkrc file:

interface = ethertalk0
Ethernet = ae0

- Did you run the "ADD_AT servicename" command when you set up the printer
spooler? (Note that servicename is just a printer queue name. You can
give any name you want.)

- Try the "lpstat -t" command to display the current status information of your printer system. Make sure that the system default destination is the one you want to print to. Are the printer queue and the Class AppleTalk both accepting requests? Is the printer queue enabled?

- Make sure you have the Internet Router set to route the AppleTalk
Phase 2 packets.

Article Change History:
19 Aug 1994 - Changed title
31 Aug 1992 - REVIEWED For technical accuracy.

Support Information Services

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A/UX: vt220 termcap

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

I am looking for a UNIX platform to transport accounting applications. The main problem to transport is termcap. I need a vt220 entry.

This article has been archived and is no longer updated by Apple.
Here is a copy of the vt220 termcap entry adopted from a 4.3BSD UNIX machine. We don't have any VT220 terminal to test these entries though.

We've checked this and some contain the same entry as in A/UX 1.1, so you may need to change them to different entry names. Here is the entry:

```
dl|vt200|vt220|vt200-js|vt220-js|dec vt200 series with jump scroll:\\
:im=\\E[4h:ei=\\E[4l:mi:DC=\\E[P:dm=:ed=:al=\\E[L:dl=\\E[M:\\
:cs=\\E[%i%d;%dr:sf=\\ED:sr=\\EM:sb=\\EM:\\
:ce=\\E[K:cl=\\E[H\\E[J:CD=\\E[J:cm=\\E[%i%d;%dH:nd=\\E[C:up=\\E[A:\\
:so=\\E[7m:SE=\\E[27m:us=\\E[4m:ue=\\E[24m:\\
:md=\\E[1m:mr=\\E[7m:MB=\\E[5m:me=\\E[m:\\
:is=\\E>\\E[?3l\\E[?4l\\E[?5l\\E[?7h\\E[?8h\\E[1;24r\\E[24;1H:\\
:rs=\\E>\\E[?3l\\E[?4l\\E[?5l\\E[?7h\\E[?8h:\\
:tc=vt100:
d0|vt100|vt100-am|vt100am|dec vt100:\\
:do=^J:co#80:li#24:cl=50\\E[;H\\E[2J:sf=5\\ED:\\
:le=^H:bs:am:cm=5\\E[%i%d;%dH:nd=2\\E[C:up=2\\E[A:\\
:ce=3\\E[K:CD=50\\E[J:so=2\\E[7m:SE=2\\E[m:us=2\\E[4m:ue=2\\E[m:\\
:md=2\\E[1m:mr=2\\E[7m:MB=2\\E[5m:me=2\\E[m:is=\\E[1;24r\\E[24;1H:\\
:rf=/usr/lib/tabset/VT100:\\
:rs=\\E>\\E[?3l\\E[?4l\\E[?5l\\E[?7h\\E[?8h:ks=\\E[?1h\\E=:ke=\\E[?1l\\E>:\\
:ku=\\EOA:kd=\\EOB:kr=\\EOC:kl=\\EOD:KB=^H:\\
:ho=\\E[H:k1=\\EOP:k2=\\EOQ:k3=\\EOR:k4=\\EOS:pt:sr=5\\EM:vt#3:xn:\\
:SC=\\E7:rc=\\E8:cs=\\E[%i%d;%dr:
#
# From: Bracy H. Elton <elton@lll-crg>
dm|vt200-ss|vt220-ss|dec vt200 series with smooth scroll:\\
:is=\\E>\\E[?3l\\E[?4h\\E[?5l\\E[?7h\\E[?8h\\E[1;24r\\E[24;1H:\\
:rs=\\E>\\E[?3l\\E[?4h\\E[?5l\\E[?7h\\E[?8h:\\
:tc=vt200:
dn|vt200-w|vt220-w|vt200-wj|vt220-wj|dec vt200 series; 132 col.; jump scroll:\\
:is=\\E>\\E[?3h\\E[?4l\\E[?5l\\E[?7h\\E[?8h\\E[1;24r\\E[24;1H:\\
:rs=\\E>\\E[?3h\\E[?4l\\E[?5l\\E[?7h\\E[?8h:\\
:co#132:tc=vt200:
do|vt200-ws|vt220-ws|DEC vt200 series; 132 col.; smooth scroll:\\
:is=\\E>\\E[?3h\\E[?4h\\E[?5l\\E[?7h\\E[?8h\\E[1;24r\\E[24;1H:\\
:rs=\\E>\\E[?3h\\E[?4h\\E[?5l\\E[?7h\\E[?8h:\\
:co#132:tc=vt200:
```

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AppleTalk: Macintosh ROM Version Numbers (4/93)

Article Change History

04/06/93 - UPDATED
* To include new computer models, and the effect of System 7.x and AppleTalk version in Macintosh ROM. Article retitled.

What is the version of AppleTalk found in the Macintosh ROMs?

This article has been archived and is no longer updated by Apple.
The ROM version of AppleTalk is irrelevant today. Starting with System 7, AppleTalk is included with System Software. In most cases, the version of AppleTalk that is included in the version of System 7.x is newer than what is built-in to ROM.

For Macintosh systems that can use System 6, we recommend using the latest Network Software Installer to install AppleTalk software. This is a good idea for System 7.x users as well. This ensures that the customer is using the most up-to-date AppleTalk software with their systems. In almost all cases, this will provide AppleTalk software that is newer than what is available in ROM.

Below is a list of the AppleTalk versions in the ROM of various Macintosh systems:

System ROM	AppleTalk Version
Macintosh 512Ke	19
Macintosh Plus	19
Macintosh SE	48
Macintosh II	49
Macintosh IIx	49
Macintosh SE/30	49
Macintosh IIcx	49
Macintosh Portable	52
Macintosh IIci	52
Macintosh IIsi	54
Macintosh IIfx	54
Macintosh IIvx	54
Macintosh Classic	46
Macintosh Classic II	56.0.1
Macintosh Color Classic	57.0.4
Macintosh LC	54
Macintosh LC II	54
Macintosh LC III	57.0.4
Macintosh Quadra 700	56.0.2
Macintosh Quadra 900	56.0.2
Macintosh Quadra 800	57.0.4
Macintosh Quadra 950	56.0.2
Macintosh Centris 610	57.0.4
Macintosh Centris 650	57.0.4
Macintosh PowerBook	Require System 7.x and will load AppleTalk version 56 (System 7.0 and 7.0.1), or version 57.0.4 (System 7.1)

TA40903_AppleTalk_Macintosh_ROM_Version_Numbers__(TIL05187).pdf

Published Date: Feb 18, 2012

Macintosh Finder: Changing the Maximum for Open Windows

What is the maximum number of windows that I can open at once under the Finder and MultiFinder? Can I increase this?

This article has been archived and is no longer updated by Apple.
Finder 6.x allows a maximum of 13 windows open at once. You can use ResEdit to change this value. Here are the steps:

1) Work only on a COPY of your Finder.

2) Start ResEdit.

3) Open the Finder file from ResEdit.

4) Open the LAYO resource named ID=128. (It's probably the only one of that type.)

5) Scroll until you find the layout default called "Max # of windows". It's at the bottom of the list.

6) Change this to the desired value.

7) Quit ResEdit and answer Yes to "Save 'Finder' before closing?"

Changing this value to a higher number causes the Finder to use more memory. You may have to allocate more memory for the Finder, if you are running MultiFinder.

Published Date: Feb 18, 2012

Macintosh to IBM AS/400 Connectivity

How do you connect the Macintosh to IBM AS/400s, and are there other ways to connect local Macintosh computers to AS/400 without using a KMW box?

This article has been archived and is no longer updated by Apple.

You can to connect Macintosh computers into the IBM AS/400 with both Apple and third-party products. You may use either Apple's SNA*ps 5250 stand alone product, or SNA*ps 5250 GC with one of the SNA*ps Gateway products. Two third-party companies, IDEAssociates and Andrew Corporation, provide terminal emulators for connecting a Macintosh computer to an IBM AS/400.

The IBM AS/400 uses System 3x architecture. The recommended connection is the 5250 family of devices.

The AS/400 will also support 3270 devices in pass-thru mode to locate mainframes using LU 6.2. This support is for IBM's SAA.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

Interleaf: How To Display Output on a Macintosh

Can you give me in any tips about displaying Interleaf output files on the Macintosh?
This article has been archived and is no longer updated by Apple.
Some of the challenges inherent in this situation included incompatible versions of the software on the Macintosh and the Interleaf environment. Here is a list of the current Interleaf software offerings.

- Interleaf Publisher - Macintosh II, desktop publishing application combines word processing, drawing and painting, charting and graphing, long document management, page layout, and workgroup publishing tools.

- Technical Publishing Software - Provides PostScript output on the Sun, DEC, Apollo, or IBM RT PC machines.

- IBM Interleaf Publisher - Provides PostScript output for the IBM 386 PC.

- PC ViewStation - IBM PCs and compatibles, WYSIWYG document viewing program that lets users display and annotate Interleaf documents.

This product runs on a PC-XT or compatible. SoftPC, from Insigna Solutions, provides PC-XT emulation. Using SoftPC on the Macintosh, we were able to view the Printerleaf file as output from the Technical Publishing Software. Therefore, the software incompatibility issue became a moot point. Just to recap, using SoftPC running the PCViewstation software, you can view and annotate the Interleaf output files.

Published Date: Feb 18, 2012

Macintosh Portable: Displaying Color

I would like to make my Macintosh Portable generate color output to a color monitor. Is this possible?

This article has been archived and is no longer updated by Apple.
Aura Systems has a box that plugs into the SCSI port of a Macintosh 512Ke, Macintosh Plus, Macintosh SE, and Macintosh Portable.

ScuzzyGraph II produces high-resolution, color graphics. ScuzzyGraph II can ouytput 16 colors and is QuickDraw-compatible. It gives users screen sizes up to 650 percent larger than the built-in Macintosh SE screen with resolution up to 1,280x1,024 pixels. You can print color on the ImageWriter II or ImageWriter LQ with a color ribbon in place or on an HP PaintJet printer.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

TokenTalk NB Confidence Test: Incompatible with System 6.0.4

Why can't I run the TokenTalk NB Card User Confidence Test on my Macintosh IIci?

This article has been archived and is no longer updated by Apple.

The TokenTalk NB Card User Confidence Test cannot run on any Macintosh that requires system software version 6.0.4 or later because of a code conflict problem. The Confidence Test ships with version 6.0.3 and was designed to start up as a diagnostic.

If you copy the test to a startup disk or a Macintosh hard drive running version 6.0.4 or later, the system software loads the test code incorrectly into system RAM. The upshot of this is that the test either fails the card or hangs the Macintosh in the process of running the test.

Users should run the test only on a Macintosh that can start up the test disk. There is no other workaround.

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A/UX: NFS Record Delimiters and VAX RMS Formats (9/94)

My VAX systems use four file formats: LF, CR/LF, Fortran, and Variable Length. However, the VMS systems use LF, and the Ultrix systems use CR/LF. Both must go through a conversion process to use the files across VAX platforms. Which file format does Apple's NFS and Cayman's NFS support to avoid having to support a third file format.

This article has been archived and is no longer updated by Apple.
NFS on A/UX uses LF, and the Macintosh OS uses CR for record delimiters. The Cayman GatorBox automatically converts files from one format to another.

The items you mentioned are not file formats. Rather, LF and CR/LF are variations of the Stream record format. Variable Length is a record format, and FORTRAN carriage control is a record Carriage-Control attribute. CARRIAGE_RETURN attribute is the default and specifies that each record is preceded by a line feed and is followed by a carriage return when the record is written to a carriage-control device, like a line printer or a terminal. FORTRAN attribute specifies that the first byte (byte 0) of each record contains a FORTRAN carriage-control character. A space in this byte means single-space, a 0 (zero) means double-space, a 1 means Page Eject, and so on.

Here is a description of the file and record formats supported by VAX RMS. VAX Record Management Services (RMS)--the file and record access subsystem of the VAX/VMS operating system--supports three file organizations. These are sequential, relative, and indexed. It also supports four record formats:

- Fixed length: all records in a file are the same length.
- Variable length: each record is only as long as the data within it requires.
- Variable length with fixed-length record (VFC): similar to variable-length records except that a fixed-length control field is prefixed to the variable-length data portion.
- Stream: records are delimited by special characters or character sequences called terminators, which are part of the record they delimit.

Within the Stream record format, there are three variations:

- STREAM_CR: each record is terminated using a carriage return character.
- STREAM_LF: each record is terminated using a line feed character.
- STREAM: you have the option of specifying the terminating character from a limited set of special characters, including the carriage return character (CR), the carriage return/line feed character (CR/LF) pair, the form feed (FF) character, or the escape (ESC) character.

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Support Information Services

Published Date: Feb 18, 2012

A/UX: Available Third-Party Optical Drives

Can you give me a list of optical drives for A/UX?

This article has been archived and is no longer updated by Apple.
This article includes information on tape drives from:

- Conversion Dynamics, Inc
- Macsetra Technologies International, Inc. (Canada)
- Peripheral Land, Inc.
- Racet Computers, Ltd.
- Ricoh Corp. (Peripheral Products Division)
- Software Architects, Inc.
- Storage Dimensions
- Summus Computer Systems
- Sumo Systems

All the listings below were valid as of December, 1989. For further manufacturer information, search the Tech Info Library under the manufacturer's name.

Conversion Dynamics, Inc.

Conversion Dynamics's Optirase is an external SCSI, 5.25-inch, erasable optical-disk subsystem. It has a total capacity of 600MB for storage and provides a convenient way to back up or offload data from any mountable volume and distributes the information from one system to another.

Macsetra Technologies International, Inc. (Canada)

Macsetra's Genesis 6000 is a rewritable 600MB optical drive using fully-removable 5.25-inch cartridges. It is a fully bootable device and makes use of Macintosh icons, system utilities, backup routines, and ejectability. Its own proprietary software includes automatic bad-block management and sophisticated memory caching to increase all-around speed and performance.

Peripheral Land, Inc.

Peripheral Land's Infinity Optical is a fully rewritable, magneto-optical drive that has a formatted capacity of 573MB. It features sustained data transfer rates of 7.4 megabits per second and an average access time of 75ms. It has the option of 512K or 1024K sectors. The double-sided, 5.25-inch cartridges can be formatted to be compatible with Macintosh OS, MS-DOS 3.0, or A/UX. It comes bundled with backup software, laser printer spooler, RAM-based disk drive accelerator, disk optimizer, defragmentation software, and security software.

Racet Computers, Ltd.

Racet's Stand-Alone Series Cosmos 600 is a magneto-optical erasable drive and has a formatted capacity of just under 300MB per side on two-sided media. It provides regular archive backups and has full-featured, system-level software. Access times are 70ms average, with a burst transfer rate from 128K on-board cache of 1.2MB per second.

Ricoh Corp. (Peripheral Products Division)

Ricoh's RO-5030E is a rewritable, optical drive that provides speedy data access in only 71ms. It offers 594MB of fully rewritable storage on a removable, two-sided, magneto-optical disk. The transfer rate at the unit's SCSI interface is up to 1.4MB per second. Its mean time between failures

is rated at more than 20,000 hours of operation.

Software Architects, Inc.

Software Architects, Inc. have an optical disk drive (both Sony and Ricoh) product called Formatter II for A/UX. It is a read/write magneto-optical disk drive with a capacity of about 610MB (about 300MB on each side). This product comes with the driver, utility, and scripts for A/UX. The utility lets you initialize and partition very much as the Macintosh HD Setup program does. The shell scripts allow manipulating the operation of optical disk in A/UX (for example, ejecting the cartridge).

Storage Dimensions

Storage Dimensions's LaserStor Erasable is an erasble optical disk drive, featuring a SCSI interface and one 1GB (1,000MB) erasable media cartridge. ANSI standard cartridges are also available in capacities of 650MB. MacinStor Installer software, featuring device driver, partitioning, password-protected partitioning, drive diagnostics, and automatic reallocation of bad blocks, is included. It provides an average seek time of 35ms and data transfer rates of 10Mbps.

Summus Computer Systems

LightDisk-512 is a rewritable, magneto-optical disk drive with a capacity of 600MB per optical disk. It provides the convenience of removable media with performance approaching that of fixed drives (an average seek time of 90ms with a data transfer rate of 680Kbps).

Sumo Systems

RSSM600 is a rewritable optical disk subsystem that includes a 600MB optical disk in an enclosure with power supply, SCSI cable, and INIT-installation software package. It has a fast access time of 50ms and can be used as the boot device. The software has advanced features, like automatic on-line formatting, automatic defect management, automatic cartridge change control, and intelligent SCSI interface providing a high data-transfer rate.

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Applesoft: Using TRACE with DOS Commands

TRACE doesn't work with DOS commands unless you define D$= CHR$(13) + CHR$(4):
This article has been archived and is no longer updated by Apple.
DOS expects that the control-D to be the first character on a line of output, while TRACE does not send out a RETURN.
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Apple IIGS: Getting the LaserWriter to Emulate an Epson Printer

This article has been archived and is no longer updated by Apple.

It is possible for the LaserWriter to emulate an Epson printer. The easiest way to do this is to modify the IWEM file on the Apple IIGS System disk. IWEM is simply a text file with PostScript commands that emulate the ImageWriter commands. If you are familiar with writing in PostScript, then you can change which control codes are recognized and what they do.

Published Date: Feb 18, 2012

A/UX: Available Debugging Tools (9/94)

What tools are available under A/UX for debugging Macintosh OS applications, particularly, Macintosh OS applications developed using MPW?

This article has been archived and is no longer updated by Apple.
The "sdb" and "adb" are two debugging tools currently available and supported by A/UX.

However, using "sdb" or "adb" to debug Macintosh applications on the console creates a problem; that is, once it is started, all input is grabbed by the toolbox interface, making it impossible to use the keyboard to communicate with "sdb" or "adb". A workaround to this was posted previously, and has been incorporated here for your convenience:

"There is a simple way to debug toolbox applications under A/UX. Log on from another terminal (connected over a serial line or network; that is, via 'telnet' or 'rlogin'), and start up the toolbox application with 'sdb'. The toolbox ALWAYS takes over the console (keyboard, screen, and mouse), so when started from 'sdb', it will run as expected. When you give an interrupt from the terminal you logged on with or for some other reason to get back, 'sdb' will be responding on the terminal you logged on with again.

"This is, in fact, a very useful feature: the console screen will not be disturbed by the debugging output."

You can get a third-party debugger called "CDB" for A/UX from Third Eye Software. This program was also available from APDA (Apple Programmers and Developers Association), but may not be any longer. It is an extremely powerful source-level debugger. Features include breakpoint, assertions, formatted structure dumps, full signal handling, command record and playback, alternate source directories, initialization files, statement- and instruction-level single-stepping, and more. For more information on "CDB" please contact Third Eye Software.

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Token Ring: Macintosh SE Card Available in Scandanavia

Is anyone marketing a Token Ring board for the Macintosh SE in Scandanavia?

This article has been archived and is no longer updated by Apple.
EuroComm, Inc. has the international marketing rights for MacRing SE from Asante Technologies, Inc. (formerly h-three) in North Carolina and uses Nova International as the Scandinavian distributor. MacRing SE is used for:

1) Macintosh SE to Macintosh over a Token Ring link

Shipped with each board is a completely TokenTalk-compatible driver allowing full access to AppleTalk over a Token Ring link at 4Mbps. Thus, any software designed to run over AppleTalk can be used, and the Token Ring link becomes transparent. It has been tested with Microsoft Mail, Word, Excel, TOPS 2.1, and Timbuktu.

2) IBM PC Access to AppleShare File Server

An IBM PC can access a Macintosh set up as an AppleShare File Server with AppleShare PC 2.0.

3) Macintosh Access to IBM File Servers

Miramar Systems' MacLAN lets the MacRing SE user access any IBM file server, like Novell, PCLAN, and 3COM.

4) 3270 support so that a MacRing SE user can access IBM mainframes using the same Token Ring-to-mainframe connections as PCs (for example, IBM 3174, IBM 37X5 T1C, and other Token Ring gateways).

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History
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9 February 1993 - Updated, h-three Systems, Corp. acquired by Asante Technologies, Inc.
15 February 1990 - Reviewed, for technical accuracy.

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A/UX: U.S. and International Encryption Differences (9/94)

The international version of A/UX contains only password encryption, while the U.S. version contains file encryption. Is this the only difference between them?

How does the file encryption works? Is there any command to encrypt the file or environmental setting for file encryption?

This article has been archived and is no longer updated by Apple.
Yes, the only difference between the U.S. and international versions of A/UX is the inclusion of encryption software. The U.S. version of A/UX includes file encryption software that is not included in the international version. This software is based on the National Institute of Standards and Technology DES (Data Encryption Standard) algorithm, and cannot be exported outside of the United States and Canada. The encryption software includes "crypt" and new versions of ed, ex, and vi.

There are no special environmental settings used by "crypt." It reads standard input and writes to standard output. It lets you enter the key on the command line, and prompts for one if none is supplied. Unencrypting works in much the same way, with "crypt" prompting for the key if none is supplied.

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Macintosh Display Cards Overview (2 of 3)

(This is a continuation of, "Macintosh Display Cards Overview (1 of 3)")
This article has been archived and is no longer updated by Apple.
- Convolution

The 8/24 Macintosh video cards address interlaced display flicker by running every pixel through a formula that averages the pixel with its individual neighboring pixels above and below. This technique is called convolution and it is part of the function of the CLUT/DAC chip. Convolution causes an averaging effect between scan lines so that a horizontal line includes at least a portion of the scan lines above and below its own scan line. A portion of the horizontal line remains visible during display of both the odd and even fields to avoid flicker. The convolution formula follows a 1:2:1 ratio where the current pixel value is given twice the weight of its neighbors above and below.

The 4/8 does not support convolution; the 8/24 supports convolution at up to 8-bits per pixel automatically turning it on where appropriate. If a Display Card 8/24 is driving an interlace display in 24-bit mode, convolution is disabled. If the card is driving an interlace display in 8-bit, or a lesser pixel depth, convolution is enabled.

- Underscan and Overscan

The full 640 x 480 active video display is visible on an interlaced monitor if the monitor operates in underscan mode. (Underscan means that the monitor screen is larger than the active video display.)

Many monitors do not show the full active video display area much because the picture extends beyond the edges of the screen. This mode is called overscan because the scanned image is larger than the display area. (Television sets use overscan.)

To guarantee that the whole image is visible on an overscan monitor, all three new display cards can be switched to overscan mode, which produces a smaller display with only 512 x 384 pixels.

The new display cards can support both overscan and underscan monitors.

- Memory Organization

The frame buffer controller is a custom gate array that serves as the controller for the 4/8 and 8/24 display cards. The frame buffer implements an address translation scheme that allows the cards to use only 1MB to support 24-bit graphics even though a 640 x 480 monitor displaying 24-bit graphics would normally require 1.2MB of VRAM. The 8 bits of data in each pixel that do not convey any color (or gray-scale) information are ignored. Such compaction allows 24-bit data for a 640 x 480 monitor to fit in just over 900K of VRAM. The eight bits that are ignored are defined as the alpha channel and, when maintained, can be used for special effects.

Macintosh Display Card 8/24 GC

The Macintosh Display Card 8/24 GC has the entire feature set of the Display Card 8/24, with rapid drawing of 24-bit images. Display Card 8/24 GC is a stand-alone display card that extends the 8/24 to include dramatic performance acceleration. Unaccelerated 24-bit imaging can be slow, but Macintosh Display Card 8/24 GC uses several methods to provide a thorough and integrated solution. Macintosh Display Card 8/24 GC accelerates the drawing of images by 5 to 30 times, with greatest acceleration when drawing very complex images. (Users of applications that circumvent QuickDraw will see very little

acceleration.)

The 8/24 GC supports convolution for interlaced displays at up to 8 bits per pixel. 8/24 GC resident video RAM is not compressed the way it is on the 4/8 and 8/24 cards, which means the the extra alpha channel byte is maintained.

- Accelerating Graphics

One effective method for accelerating graphic imaging is the use of a co-processor dedicated to drawing images. This frees the 680x0 to continue program execution without having to wait for the time-consuming imaging of 8 to 24-bit pixel images. The Macintosh Display Card 8/24 GC card uses the Am29000 RISC-based microprocessor to relieve the 680x0 of the imaging process. The AM29000 was chosen instead of a graphics processor because specialized graphics processors are inadequate for Display Card 8/24 GC; they are unable to handle complex QuickDraw operations and setup code.

- Inter-Process Communication

Display Card 8/24 GC uses a unique Inter-Process Communication (IPC), streamlined for low overhead and fast response time. The Display Card 8/24 GC resident IPC intercepts QuickDraw calls on the Macintosh and passes them and their parameters to the special version of 32-bit QuickDraw that resides on Macintosh Display Card 8/24 GC. The IPC also makes it possible for the customized Macintosh Display Card 8/24 GC QuickDraw to call specific routines running on the Macintosh.

- NuBus Data Transfer

Transferring large and deep bitmaps across the NuBus is the slowest part of the drawing process. Typical reads and writes, from the Macintosh to the display cards, are performed in 1000 and 500 nanoseconds respectively. NuBus data transfer time is affected by the need to re-arbitrate for control of the bus after each 32-bit word is transferred.

The Display Card 8/24 GC optimizes NuBus data transfer by reading only QuickDraw variables and small portions of data structures across NuBus. The bit maps are then created locally in the Macintosh Display Card 8/24 GC's VRAM. The Display Card 8/24 GC reads and writes to its frame buffer memory at a rate of 66 to 132 nanoseconds, and up to 2MB of DRAM on the card holds offscreen bitmaps.

- 32-bit QuickDraw Optimized For the Am29000

The Display Card 8/24 GC 32-bit QuickDraw produces the same graphic output as standard 32-bit QuickDraw. However, several algorithms have been modified, and internal organization has been altered to fit into the graphics accelerator architecture.

Macintosh Display Card 8/24 GC provides transparent acceleration of any Macintosh application. No extra work need be done by an application to take advantage of Macintosh Display Card 8/24 GC optimized 32-bit QuickDraw.

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A/UX 2.0: Overview

This article gives an overview of the A/UX 2.0. This overview includes

- New features
- New Hardware Support
- Software Enhancements
- Connectivity Enhancements
- Programming Features
- Standards

This article has been archived and is no longer updated by Apple.

A/UX 2.0 New Features

The Apple A/UX operating system Version 2.0 provides access to the Macintosh desktop within the UNIX environment. Users can run multiple Macintosh productivity applications, UNIX applications, and X Window System applications simultaneously.

The Macintosh Finder is hosted by A/UX Version 2.0 and is the default user environment. From the Finder a user can launch Macintosh binary files, UNIX Toolbox applications, "vanilla" UNIX applications in terminal windows, and X Window System applications. Both A/UX and Macintosh file systems appear on the desktop with point and click access to all available files (eliminating the need for the HFX utility).

A/UX Version 2.0 supports multiple, concurrent, Macintosh-Toolbox applications, in addition to concurrent UNIX and X applications in the Macintosh desktop environment. A/UX 2.0 implements the Macintosh Layer Manager and the MultiFinder interface.

Menu-driven commands provide easy startup, login, logout, and shutdown. The user no longer needs to know the technical details of the environment.

Macintosh applications that adhere to the specifications for the Macintosh 32-bit environment (referred to as "32-bit clean") run in the A/UX environment without change. A/UX 2.0 also supports Macintosh applications that are not yet 32-bit clean. At login, you specify creation of a 24-bit, 32-bit, or console emulator environment. To switch between environments, you log out and then log back in without restarting.

The A/UX Version 2.0 Commando interface for all UNIX commands provides dialog-based interfaces for all UNIX utilities that have command-line arguments. You have the choice of typing command line arguments in the conventional way, or running Commando.

UNIX shell windows are now accessible from the Apple menu on the desktop, and a Macintosh, mouse-driven editor eliminates the need to learn a text editor like vi. (The standard editing and processing utilities, including vi, ex, ed, ditroff, nroff, tbl, eqn, and pic are available as alternatives.)

A/UX Version 2.0 supports Callbacks, simulating Macintosh asynchronous I/O by associating a completion routine with a toolbox asynchronous I/O request. When the I/O request is completed, control dispatches to the established completion routine.

The Macintosh Sound Manager provides continuous sampled sound plus note and wavetable synthesizing with calls for both synchronous and asynchronous operations (with callbacks). The A/UX Sound Manager is compatible in all ways with its System 6.0.x counterpart. One notable difference, a result of A/UX virtual memory, is that the A/UX Sound Manager can play sound resources that are larger than physical memory. However, A/UX doesn't implement the MIDI interfaces.

A/UX 2.0 also supports Macintosh applications that require access to the toolbox slot manager and the serial driver providing support for direct-connect printer/plotter devices accessed by toolbox (non-UNIX) calls and for applications like AppleLink and MacTerminal.

A/UX Version 2.0 implements Gestalt (replacing SysEnvirons), providing a cleaner, more efficient method for applications to request information about the current hardware and software operating environment. Gestalt provides the ability to determine information about a large number of system dependent features, like these:

- Type of machine the application is running on
- Version of the System file, AppleTalk driver, and QuickDraw currently running
- Type of CPU, MMU, FPU, and keyboard
- Amount of available RAM, VM, and size of logical pages
- Whether A/UX is running or not

New Hardware Support

A/UX Version 2.0 runs on all Macintosh II systems and on the Macintosh SE/30. Macintosh IIfx support includes the new SCSI DMA, Floppy/ADB PIC (Peripheral Interface Controller) chip, and the SCC PIC chip.

Version 2.0 supports HFS-, A/UX-, and DOS-formatted floppies with capacities of 400K, 720K, 800K, and 1.44M capacities. The AppleCD SC drive can be used as a read-only UNIX file system of up to 500 megabytes, giving information systems providers an inexpensive distribution medium.

Software Enhancements

A/UX Version 2.0 includes the following software enhancements:

- There is now only one Eschatology partition. A new default partitioning scheme accommodates MultiFinder. Version 2.0.1 of HD setup software includes an option to partition a 160-megabyte hard disk.

- The newunix and autoconfig scripts have been augmented by a new script, newconfig. Newconfig uses the same command line arguments as newunix. As an example, to configure a new kernel with NFS and sound, you enter "newconfig nfs snd".

- Processes using the same library routines can share a single copy of the library's object code.

- The user address space, virtual memory maps, and page table management have all been enhanced.

- Accomodation of 32-bit clean ROMs results in smaller patch files.

- The data encryption code is included in the A/UX file system.

- The SASH has been made more Macintosh-like; UFS, System VFS, and A/UX floppies are now accessible through the SASH.

Connectivity Enhancements

A/UX Version 2.0 provides the following enhancements to connectivity:

- A/UX 2.0 supports both X11 (Versions X11R3 and X11R4) and MacX (Version X11R3). (These products are bundled together and sold separately from A/UX 2.0.)

- AppleTalk 2.0 for A/UX is rolled into the 2.0 release.

- A/UX 2.0 supports the MacTCP programmer interface.

- A/UX 2.0 offers access to AppleShare volumes from the Finder Desktop.

Programming Features

A/UX 2.0 offers an assembler, a C Compiler, debuggers, the Source Code Control System (SCCS), and related tools to assist in developing new applications or porting existing software to A/UX. Version 2.0 also includes a set of UNIX libraries that let C programs access the functionality of the Macintosh Toolbox. A/UX applications can thus present the Macintosh graphics-based user interface and the traditional UNIX appearance.

Standards

The A/UX operating system is source-licensed from AT&T and meets System V Interface Definition (SVID) specifications. Extensions from Berkeley Software Distribution (BSD) Release 4.3 are included in A/UX 2.0, and the release is the IEEE POSIX 1003.1 1988 Full-Use Standard (FUS) and ISO 9945-1.

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Macintosh IIfx: Burst-Mode Access and Page Mode Writes

This articles describes burst-mode memory access and Page Mode Writes as implemented on the Macintosh IIfx.

This article has been archived and is no longer updated by Apple.

Burst-mode Memory Access

The Macintosh IIfx, like the Macintosh IIci, supports burst-mode memory access. However, the Macintosh IIfx support burst access for reads and Page Mode Writes, while the IIci only supported burst reads. The FMC gives the Macintosh IIfx the ability to support burst-mode access. This enables the CPU to read and write groups of data in fewer clock cycles.

On the Macintosh IIfx, burst-mode reads are only done when the data is not located in the internal 256 byte and 32K Static RAM Cache. When the Macintosh IIfx reads from memory, the first access takes 6 clock cycles. The next 3 reads are performed at 3 clock cycles each. This is referred to as "6 3 3 3 burst reads."

Burst-mode access must be supported by the RAM as well as the memory controller. When memory is accessed, we use RAS (Row Address Selection) before CAS (Column Address Selection) to address the chip. We select the row of data we wish to access with a RAS, then assert the CAS lines to select the correct data column. It takes about 3 clock cycles for the chip to select RAS and 3 more cycles to address CAS before the data is ready to read or write.

When burst-mode is enabled, the RAS lines are held high until the burst cycle is over. The memory controller only has to change the column address (CAS) line to access the next bit of data in that row. It continues to change the CAS line until the burst cycle is over. Because the system does not have to readdress the RAS line, 3 cycles each read/write, it saves 9 clock cycles.

Page Mode Write

A Page Mode Write is similar to a burst-mode read. When data is written out, the system uses Latch Writes for the first write. If the instruction is also a write and the address is within the same page of memory as the previous write, Page Mode Write is used. Page Mode Writes keep the RAS line held high in the save "page" of memory.

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High Speed Serial Interface: Handshake Modification (11/96)

Most printers cannot run faster than 300 baud with the High Speed Serial Interface card because it has no printer busy line. This modification uses the existing data input line to sense if the printer is busy and inhibit output if necessary. This modification will work with cassette, DOS 3.2, or DOS 3.3.

This article has been archived and is no longer updated by Apple.

Before making any wiring changes, determine which wire your printer uses to indicate a printer busy or buffer full condition. Your printer's manual should contain this information; failing that, contact the manufacturer.

Examples

IDS 125/225 pin 4
HEATH H-14 pin 4
TI-810 pin 11
SPINTERM pin 19
COMPRINT pin 20

Wiring Change

The cable is the preferred place to do the wiring change, but it can also be done to the Serial Card or the printer. Disconnect the wire between pin 2 of the printer and pin 2 on the Serial Card. Then connect the wire with the printer busy signal to the wire for pin 2 on the Serial Card.

Software Patch

To make the software patch, determine which slot the interface will be placed in and type in the software patch below. The patch is customized for this slot number and will not work in a different configuration. The patch forces the computer to access the printer busy signal and wait if it is on.

For the slot number, enter the patch using the values from this table for the words in the <> brackets.

SLOT 1 2 3 4 5 6 7
DATA 90 A0 B0 C0 D0 E0 F0
CODE C1 C2 C3 C4 C5 C6 C7

Enter the monitor with CALL -155 and type in the following:

```
3B0:A9 <SLOT>
:20 95 FE
:A9 00
:20 ED FD
:A9 C5
:85 36
:A9 03
:85 37
:4C EA 03
:2C <DATA> C0
:30 FB
:4C 07 <CODE>
:00 00 00
```

To check your typing, type "3B0L" and compare your listing to the one below for slot 1.

```
03B0- A9 01 LDA #$01
03B2- 20 95 FE JSR $FE95
03B5- A9 00 LDA #$00
03B7- 20 ED FD JSR $FDED
03BA- A9 C5 LDA #$C5
```

```
03BC- 85 36 STA $36
03BE- A9 03 LDA #$03
03C0- 85 37 STA $37
03C2- 4C EA 03 JMP $03EA
03C5- 2C 90 C0 BIT $C090
03C8- 30 FB BMI $03C5
03CA- 4C 07 C1 JMP $C107
03CB- 00 BRK
03CC- 00 BRK
03CD- 00 BRK
```

Now return to BASIC with "3D0G".

To save the patch to disk, type "BSAVE PATCH, A$3B0, L$20".

The first time you use the printer you must load the patch into memory and initialize the interface. From immediate mode, type:

BLOAD PATCH CALL 944.

This may also be done from within a program by entering:

"100 PRINT D$;"BLOAD PATCH": CALL 944", assuming D$ is a CTRL-D.

If you need to turn off the printer, type "PR#0", or in a program enter "200 PRINT D$;"PR#0"

Then to reconnect the printer, all that is required is "CALL 954", or from a program "300 CALL 954".

If the printer does not print after the CALL 944, it is probably sending the opposite polarity busy signal. The patch can be changed to recognize the opposite polarity signal with by using "POKE 968,16".

If this doesn't work, have the printer checked.

The modification allows the speed, column width, and other variables to be changed with the POKEs listed in the card manual.

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Macintosh Display Cards Overview (1 of 3)

This article has been archived and is no longer updated by Apple.
The Apple Macintosh Display Cards 4/8, 8/24, and 8/24 GC greatly extend the performance and flexibility of the Macintosh video card product line. The Display Card 4/8 and the Display Card 8/24 provide the Macintosh II family with a single interface to all Apple displays, and a broad range of graphics capabilities. The Display Card 8/24 GC augments the features of the Display Card 8/24 with the power of a dedicated graphics coprocessor to provide sophisticated graphics capabilities at significantly faster drawing speeds.

The Macintosh Display Card 4/8 provides support for up to 256 colors or grays on the Apple High-Resolution Monochrome and AppleColor High-Resolution RGB Monitors. It also provides up to 16 grays on the Apple Macintosh Portrait Display and Apple Two-Page Monochrome Monitor.

The Macintosh Display Card 8/24 and 8/24 GC support all Apple displays to the maximum of their capabilities, including full 256-level "true grayscale" on all Apple displays. The cards also support full 24-bit "true color" capability on the AppleColor High-Resolution RGB Monitor, which allows users to display any of 16.7 million colors simultaneously. The combination of true grayscale and true color capabilities let you display and work with photographic quality images as well as lifelike simulations, animations, and visual effects.

The Macintosh Display Card 8/24 GC contains an Am29000 RISC-based microprocessor that runs a version of QuickDraw that has been optimized for a coprocessing environment. The Am29000 and the Macintosh CPU work together to speed the QuickDraw environment from five to 30 times depending on the application. As a result, graphics-intensive applications work faster and more smoothly, especially when using full 24-bit color.

All three cards support RS-170 standard timing for compatibility with numerous interlaced video devices. The Macintosh Display Card 8/24 and 8/24 GC provide highest possible quality interlaced video though the use of Apple Convolution.

Macintosh Display Cards 4/8 and 8/24

Macintosh Display Cards 4/8 and 8/24 offer 24-bit color at an affordable price. The following paragraphs discuss the advantages of 24-bit color and features of the 4/8 and 8/24 display cards.

- CLUT and 8-bit Color Images

With the earlier 8-bit Macintosh II video card, each pixel is represented by an 8-bit color value. The 8- bit value is used as an index into a "color look up table" (CLUT), where a 24-bit value is derived from the table of 256 pre-selected colors . The 24-bit value represents the nearest color to the one indicated by the 8-bit pixel value. The 24-bit color value consists of 8-bit values for red, green, and blue; each is then sent through one of the three 8-bit digital to analog converters (DACs) for conversion to analog color signals.

An 8-bit image is drawn by taking each 24-bit pixel value and, using the Color Manager, finding the closest approximation of that color within the CLUT. The 8-bit index of the closest approximate color is then placed in the frame buffer and represents that pixel's value.

Graphic imaging with 8-bit color video is reasonably accurate if the CLUT is set up with colors that are appropriate for the color mix of the image being drawn, and if the image does not require a large number of colors. Very complex colored images tend to lose much of their detail and shading because they tend to be drawn with a high ratio of "best approximation" colors. A

color printed copy of a complex color image scanned at 8-bit per pixel could look quite different from the original.

One drawback of 8-bit color is an effect known as "blocking," which refers to the result of several slight variations of a single color being CLUT represented by the same color. This effect makes it difficult to represent subtle shading and leads to a loss of detail. For instance, a very gradual lightening of the color red across an image may be completely represented by single red.

A similarly problematic side-effect of 8-bit color is known as "banding." Banding can be seen in an 8-bit representation of an image made of only a few different colors, but an almost infinite number of shades of those colors. A 256 color CLUT doesn't have enough colors to handle such an image, and it loses subtlety. Areas where one color gradually blends into the other eventually look like bands of one color blending into bands of the other, with each band of color being the CLUT's closest approximation of several marginally different colors.

Dithering is an effect that may allow a closer approximation to the original image. Dithered colors rely upon grouping a number of pixels in a certain pattern to give the effect of a color not found in the CLUT. Since pixels are so small and so close together, a grouping of blue and yellow pixels gives a similar effect to seeing green pixels. While dithering can improve the rendering of a complex image, the result is still an approximation.

- 24-bit Direct Color

24-bit color, also known as Direct Color, avoids the color approximation issues of 8-bit color by allowing 8 bits for each color. 24-bit color delivers an impressive 16,777,216 red green and blue combinations all the color shades discernable by the human eye.

With 24-bit color, color approximation and the CLUT are no longer necessary. 24-bit color is directly interpreted by the video card firmware as each 8-bit red, green, and blue color definition is fed to the appropriate digital to analog converter for output to the monitor. Images that are problematic for 8-bit color video cards can be drawn with all their brilliant nuances by Direct Color. The Display Card 8/24 supports 24-bit color on the Macintosh RGB 13" monitor.

- True Grays

The 256 shades of gray are accomplished by using 8-bits each of red, green, and blue of equal saturation. The 4/8 card supports true grays on all but the Portrait and Two-Page displays, where 16 grays are supported. The 8/24 card supports true grays on the Portrait and Two-Page displays. When driving the two larger monochrome displays, the 8/24 cards use only the blue signal in all its 256 saturation levels to accomplish the full gray spectrum.

- Monitor Support

A programmable pixel clock chip and a 100 MHz oscillator on the new display cards makes it possible to support all current Macintosh monitors. The pixel depth supportable on each monitor is a function of the amount of VRAM installed on the display card. Display Card 4/8 has 512K of VRAM and Display Card 8/24 has 1 megabyte. The 100 MHz oscillator provides support for the Macintosh Two-Page Display.

(This article continued in, "Macintosh Display Cards Overview (2 of 3)")

Published Date: Feb 18, 2012

Macintosh IIfx: Latched Writes

This article describes Macintosh IIfx latched writes.

This article has been archived and is no longer updated by Apple.
The Macintosh IIfx supports zero wait-state writes to memory by using 64-pin SIMM strips and the new memory-controller technique of latched writes. When the processor issues a write, the memory controller saves the data in a temporary location (the latch, hence the name latched write) and tells the CPU the write has finished (even though it isn't. It lies). The CPU is then free to execute the next instruction. The memory controller then takes data and does a normal write operation. If more data is written out in the next cycle, Page Mode Access is used to write the remaining data.

There are three phases of a latched write. These phases are:

1) The processor writes out the data.

2) The FMC (Fast Memory Controller) stores the data in the latch and tells the processor the write was completed successfully. The 68030 is now free to execute the next instruction.

3) The FMC then writes the data from the latch into system DRAM.

On a normal SIMM strip, the "D In" lines and the "Q Out" lines are tied together. Using 64-pin SIMMs, these lines can be separated and you can have data going in, while using the output bus of the SIMM at the same time. This lets the memory controller implement latched writes and provide zero wait-state writes.

Published Date: Feb 18, 2012

Macintosh IIfx: Input/Output Processors (IOP) Chips

This article describes the Macintosh IIfx's Input/Output Processors (IOP) Chips.

This article has been archived and is no longer updated by Apple.
The I/O Processor (IOP) is an Apple custom IC designed to provide intelligent support for I/O controllers. There are two of these IOP chips in the Macintosh IIfx computer: one for the SWIM and ADB and one for the SCC. The IOP sits between the main processor and the I/O controllers. The features of the IOP include:

- A built-in microprocessor (6502 running at 2 MHz)

- A 17-bit timer

- Two DMA controllers: one for each serial I/O channel (only used in the Serial IOP)

- Address and data busses for RAM used by the IOP and host processor

- Two digital I/O ports for controlling the ADB (on the SWIM-ADB IOP)

- 32K of external memory of IOP code and data storage

The 68030 communicates with the IOP through a set of control registers in the IOP that are mapped into the main processors' I/O space. The main processor can interrupt the IOP using a bit in one of the control registers, whereas the IOP can interrupt the 68030 by using an interrupt line.

Each IOP has 32K of external RAM that holds the driver and acts as a buffer for the data processed by the processor. The IOP contains a 16-bit auto-incrementing address register and an 8-bit data port that the host processor uses for access to the shared RAM.

Published Date: Feb 18, 2012

Macintosh IIfx: Overview

This article gives an overview of the Macintosh IIfx.

This article has been archived and is no longer updated by Apple.
The Macintosh IIfx is an extremely high-speed and elegantly-engineered personal computer that has been designed for people who need the ultimate in Macintosh responsiveness and new Macintosh capabilities.

To provide maximum Macintosh performance and responsiveness, the Macintosh IIfx incorporates a high-speed, 40-megahertz 68030 CPU, a 32K Static RAM Cache memory subsystem, and a 68882 floating-point coprocessor for high-speed program execution and calculations.

The Macintosh IIfx also introduces dedicated I/O processors to the Macintosh family. These custom-designed ASICs (Application Specific Integrated Circuits) boost system efficiency by managing all of the low-level I/O tasks for the Apple Desktop Bus, floppy disk drives, and serial ports. Previously, the 68030 processor had to handle these tasks.

In addition, the Macintosh IIfx contains a dedicated, SCSI, DMA controller that improved SCSI performance.

The Macintosh IIfx supports Macintosh System Software 6.0.5 or higher and A/UX 2.0 (Apple UNIX).

Users who need maximum system expandability will especially appreciate the versatility of the Macintosh IIfx. First, system memory can be expanded from 4 to 8 megabytes with Apple RAM, up to 128 MB with third-party RAM, for high-performance applications that demand superior, system responsiveness.

Second, the Macintosh IIfx includes six NuBus expansion slots that can accommodate a wide range of Apple and third-party expansion cards, like additional network interfaces and graphics cards. A new Processor Direct Slot (PDS) provides a high-speed interface for third-party hardware options. And six external interface ports accommodate peripherals like hard disks and printers, LocalTalk network connections, and color and gray-scale graphics systems.

For floppy-disk storage, the Macintosh IIfx uses the 1.4-megabyte Apple SuperDrive, which lets users read and write to 3.5-inch Macintosh floppy disks and 3.5-inch disks used in a variety of other personal computers. The Macintosh IIfx also can be configured with up to 160 megabytes of internal hard disk storage. It will also accommodate a second SuperDrive.

Best of all, the Macintosh IIfx is a Macintosh. This means that it still offers all of the benefits of earlier Macintosh systems: access to more than 3,000 of the most powerful, graphics-based applications available; ease of learning and ease of use through a consistent, graphics-based interface; choice without confusion in hardware and software; the convenience of "plug and play" compatibility; and the assurance that all Macintosh components work together smoothly.

Published Date: Feb 18, 2012

AppleShare File Server v.2.0.x: Concurrent Applications (9/94)

How many applications can run concurrently on an AppleShare File Server version 2.0.x?

This article has been archived and is no longer updated by Apple.
The AppleShare File Server v.2.0.x software allows for one foreground application to be active at any one time. Examples of foreground applications include the AppleShare Admin program and the AppleShare Print Server. The AppleShare File Server v.2.0.x software has no knowledge of background applications, like Microsoft Mail, InBox, QuickMail, and the AppleTalk Internet Router. Therefore, it cannot place any limit on the number of applications running at a given time.

It is possible to set up an AppleShare File Server v.2.0.x with the AppleShare Print Server running in the foreground and several other applications running in the background. It is important to note that more memory may be required on a file server that has several applications running in the background. If you are going to have several background applications, it is important to test them together on a file server to verify that they do not conflict with each other or cause random system crashes. Also, each application running in the background takes up CPU time and will affect the overall performance of the file server. If many background applications are running, one or more of them may fail due to lack of CPU time.

Article Change History:
09 Sep 1994 - Added notation of version 2.0.x of AppleShare File Server.

Support Information Services

Published Date: Feb 18, 2012

Apple IIGS: Entering the Control Panel

This article has been archived and is no longer updated by Apple.

On page 13, the Apple IIGS Owner's Guide (Apple Computer Inc., 1986, part no. 030-1292-A) says that holding down the Option key while turning on power to the computer takes you to the Control Panel. This doesn't always work.

Here are two other ways to access the Control Panel:

- Press Option-Control-Reset.

- Choose Quit from the Finder's File menu, then hold down the Option key while restarting the computer from the Start Next Program display.

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Macintosh: IBM Host File Transfer and EIS

I have both an AS/400 and 3090. I want to extract information from a database on the AS/400 and download it to the Macintosh, importing it into 4th Dimension.

1) Do IBM mid-range machines support IND$FILE?

2) What is the "standard" way to download data from an AS/400? Does KMW (or any other vendor) support this method? How can data be downloaded to the Macintosh?

3) What types of 5250 terminals are there?

4) When the site has ASCII-attached terminals to the AS/400, are they still doing 5250 emulation, or is it just TTY?

5) Are applications written for the Twinax-attached 5250 terminal compatible with the ASCII-attached terminals?

6) I am also interested in using a Macintosh as an EIS, emulating a 3270-type terminal to front-end their 3090. Does Avatar have HyperCard XCMDs to work with their API to handle 3270 sessions? What is the extent of services offered by these XCMDs? Can they be used to completely bypass the terminal emulation software. That is, can they log on to the host, choose host menus, extract data, and so on, through HyperCard?

This article has been archived and is no longer updated by Apple.

1) The AS/400 doesn't support IND$FILE.

2) The standard way for an IBM PC or PC-clone to download files is via the program PC Support, which offers LU62 connectivity for PCs.

Because there isn't a Macintosh equivalent offering a virtual disk attachment, the typical way one transfers files is by using the IDEAssociates, KMW (now Andrew Corp.), or Wall Data terminal emulators. Each has its own proprietary file transfer capabilities. Some manipulation of the file delimiters may be desired before downloading and importing into 4th Dimension. Such a report typically would be set up by the AS/400 system programmer.

3) The terminal types are Models 2-4, color, but, in general, these 5250 terminal types are being replaced by the newer 319x types, referenced in articles in the Tech Info Library.

4) ASCII-attached terminals are probably still considered a 5250-type terminal while running a VT100 emulator.

5) The mainframe applications usually don't care whether you have a Twinax- or serial-connected terminal.

6) A number of terminal emulation manufacturers offer HyperCard-based API toolkits for 3090s, including Avatar (now DCA), Tri-Data (now DCA), and DCA, which would be ideal for an EIS (Executive Information System). All have the log on feature or are capable of logging on to hosts and providing the other features you request. Because they are HyperCard-based, they are more easily customized and extended to incorporate any specific features required.

Here are some general observations on KMW (now Andrew Corp.), IDEAssociates, PCI, and Wall Data.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Andrew Corp. provides products consisting of hardware and software to connect to both the AS/400 and System 3x computers. They call their system "Series II Twinax."

IDEAssociates provides connections between the AS/400 computers and the System 3x computers. IDEAcomm Mac is the name of the package from IDEAssociates.

PCI makes SmartLink 5250/MacCom, a hardware protocol converter (Twinax or remote) and software to connect Macintosh computers to AS/400 and System 3x computers.

Wall Data provides products consisting of software to connect to both IBM midrange and mainframe computers. The SNA*ps product family provides both terminal and print emulators.

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HyperCard Network & Telecomm Issues

I want to use a Macintosh to keep telephone directories of people and click on a button to dial their phone numbers.

My office (in a school) has a AT&T Merlin telephone system. Is there any hardware (other than HyperDialer) that can do this? Will it support multiple lines?

Other than HyperDialer or using a modem to do the dialing, what other kinds of products exist to do dialing from the Macintosh?

This article has been archived and is no longer updated by Apple.
There are a few other hardware phone interface products, but none with built-in support to connect and arbitrate among multiple lines. However, none is prevented from using different lines if used with the appropriate interfacing module. Being able to choose multiple lines is usually a function of the telephone system and the handsets or interfacing modules connected to it.

The only interfacing module available for the Merlin System to connect modems, facsimiles, autodialers, or answering machine-type devices is the General Purpose Adapter sold by AT&T. (AT&T also sells expansion modules for creating modem pools.)

You could use one of the HyperDialer-type products to connect to the General Purpose Adapter. When combined with a HyperCard stack or database of your own design or one of the commercial programs available, you could do what you describe.

Some programs and products are listed below, but many other programs, including high-end and sophisticated products (these telemarketing products can cost thousands of dollars), are listed in the various buyers guides and on AppleLink (in the electronic buyer's guides).

Here are some products worth looking into:

School Administrator's Assistant from Chancery Software, Ltd.

The School Administrator's Assistant is a HyperCard stack that helps a user manage routine tasks.

The School Administrator's Assistant maintains staff information (including job descriptions, certification, objectives, and appraisals); prints a variety of reports; documents pupil behavior incidents and streamlines suspension paperwork; plans daily, weekly, and monthly activities with a reminder system; maintains an address and telephone directory; dials telephone numbers and keeps a record of calls; links information to word processing applications via mail-merge capabilities; searches and browses through data maintained in the stack; maintains memos and notes; sets password access to sensitive information; maintains a pool of pupil information; searches, sorts, organizes, and prints transportation information; and launches frequently-used programs and documents from within the stack.

HyperCable from Caseys' Page Mill

HyperCable is an audio connector that lets you dial a telephone from a Macintosh. It plugs into the audio output jack on the rear of a Macintosh and into the telephone jack. HyperCable works with HyperCard.

HyperDialer from DataDesk International

HyperDialer is an automatic telephone dialing device that autodials any

telephone number from HyperCard or from HyperCard stackware. It connects to the audio port on any Macintosh and can be connected to any telephone, including multi-line business phones, in less than a minute. HyperDialer eliminates the need for a modem or dedicated phone line for automatic dialing.

The BTM HyperCard Hands-Free Phone Dialer System from Business Technology Manufacturing, Inc.

Directly connects the "real world" of telephones and telemarketing to the Macintosh and programs, like HyperCard, FocalPoint, Microsoft Excel, and Microsoft Works; used with a telephone or headset. The system has two modes of operation: Hands-Free and HeadSet. It comes with all hardware and stackware needed.

In the Hands-Free mode, users simply touch the telephone icon, and they will hear the dialtone, the touch-tones as they are dialed out, and the ringing or busy signal--all without picking up the handset. When contact with the dialed party is established, picking up the handset automatically disconnects the dialer from the line and normal operation of the phone continues.

The addition of an operator-type headset turns the dialer into a complete telephone. In this mode, complete control of the dialer is from the Macintosh screen with many added features, such as Mute, Hold, Flash, Auto Redial, Dialer-On and Dialer-Off.

The dialer connects directly to the phone line using a standard RJ-11C phone jack, which is provided with the unit. Multi-line pushbutton and ComKey adapters are available as an option.

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Virex: Menu Options

This article discusses what the menu options are for Virex 7.x.
This article has been archived and is no longer updated by Apple.
The Virex 7.x menu options differ somewhat from the options that you have in the application itself. Some options are available from both locations.

Options that have keyboard shortcut commands associated with them show the Command key next to them. Keyboard shortcuts are a combination of key strokes that help you quickly perform actions without having to use your mouse. Where the SHIFT key is need as part of a keyboard shortcut, you will see an up arrow.

The menu bar offers the following options:

The Virex 7.x menu

About Virex gives version and copyright information for Virex 7.x

Preferences opens the Preferences dialog

Services presents further submenus that allow you to, for example, open the TextEdit application, grab screenshots and mail text to others.

Hide Virex Command-H makes Virex invisible on the screen. To open it again, click Show All.

Hide Others makes all running program windows invisible apart from Virex.

Show All is the antidote to the two Hide options.

Quit Virex Command-Q exits the Virex program and removes the Virex icon from the Dock.

The File menu

Save Results Command-S allows you to save the information in the Results area as a RTFD document in a location of your choice.

Page Setup Command-P lets you change the default page layout for any scan results that you print.

Print up arrow Command-P sends the information displayed in the Results area to the printer.

The Edit menu

Copy makes a copy of any text that is selected from the Results area and places it on the clipboard.

Select All highlights the information displayed in the Results area.

Clear Results Command-L removes the scan results displayed in the Results area and displays them with information that relates to the last set of DATs that you installed. Use the Clear option to refresh the DAT information after you update the DATs.

The View menu

Hide/Show Toolbar hides or shows the buttons on the Virex toolbar.

Customize Toolbar... lets you add, remove or arrange Virex icons in the toolbar then return to the default set as you choose. In addition, you can choose to display icons, text or both on the toolbar.

The Window menu

Minimize Command-M removes the Virex window from the desktop. Virex is still open and running and is represented by an icon on the Dock. Click the icon to expand Virex again.

Bring All to Front brings all the open Virex windows to the front of all other open windows.

The Help menu

Virex Help Command-? opens this Help utility.

Virus Information Center connects you to the McAfee Virus Information Library.

The FLAG

Keyboard Language options denoted by country flags

TA40933_Virex_Menu_Options.pdf

Customize Menu takes you to the International System Preferences pane.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: The Toolbar

This article discusses what is in the Virex Toolbar.
This article has been archived and is no longer updated by Apple.
You can hide the toolbar from view by clicking the toolbar button in the upper right corner of the Virex window.

Click the Preferences button to view and change your anti-virus settings.

Click the Virus Info button to view the Virus Information Center that tells you about:

Where viruses come from

How they infect your computer

New viruses

Virus hoaxes

You need a connection to the Internet to use this feature.

Click the Save button to save the scan results as a document, and open it later with Virex or another application.

The results are saved as a text document in RTFD, which you can view with TextEdit.

Click the Print button to print the information in the Results area of the main Virex window.

This information and more can be found at http://virexhelp.com

Published Date: Feb 18, 2012

Virex: The Scan Dialog

This article discusses what the scan dialog is.
This article has been archived and is no longer updated by Apple.
The Scan dialog in the Virex window is where you choose the items or location that you want to scan. By default, Virex is set to scan your Home folder.

You have the following scan options:

Home

Your Home folder is the default area on your computer where you save your documents, pictures and photographs. When you choose this option, Virex scans other folders too, for example, your Desktop, Documents and Public folders. After installation, Virex automatically scans this folder the first time you launch the software. This feature is enabled by the Automatically scan at login preference.

Documents

Desktop

Public

The Public folder is where you can store files that you want other users of this computer to see.

Applications

The Applications folder is the default area on your computer where all its software packages are installed.

Macintosh HD

Macintosh HD is the computer's hard disk. Choose this option when your computer activity is low as it can take some time to complete.

All Local Volumes

Local volumes are defined as any ZIP drives, floppy disks or CDs mounted at the time of the scan. Local volumes does not include network drives. To scan a network drive, use the Choose... option and navigate to the area that you want to scan.

Choose...

You can select which area on your computer that you want Virex to scan, for example, your iDisk location. To scan your iDisk location, you must know your iDisk user name and password.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Results Area

This article discusses what I can find in the results area.
This article has been archived and is no longer updated by Apple.
By default, the Results area shows information that relates to your current DAT files. However, when you run a scan, the area shows the following information:

The scan settings

When the scan starts

The folders and files included in the scan

Summary report showing the number of files scanned, the number of files scanned and the number of files that might be infected.

When the scan finishes

To turn off the detailed reporting option, go to the Preferences dialog and deselect the Show detailed results information.

You can print the information, or save it as a text document in RTFD format.

You can also select part of the results, and copy and paste it into another application, such as TextEdit.

Results from subsequent scans will append themselves to the original results until you use the Clear button in the toolbar.

NOTE: Use the Clear button on the toolbar to refresh the DAT information in the Results area after a DAT update.

This information and more can be found at http://virexhelp.com/

Published Date: Feb 18, 2012

Virex: Accessing the Virus Information Center

This article discusses how I can access the Virus Information Center.
This article has been archived and is no longer updated by Apple.
To access the Virus Information Center, either:

Click the Virus Info button on the toolbar.

Choose Virus Information Center from the Help menu.

You need a connection to the Internet to use this feature. If a connection is not available, you might see a message such as "The specified server could not be found".

The Virus Information Center contains the following information:

Where viruses come from

How they infect your computer

New viruses

Virus hoaxes

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Saving the Scan Results

This article discusses how I can save the scan results.
This article has been archived and is no longer updated by Apple.
You can save the information displayed in the Results area as a text document for your reference.

Click the Save button on the toolbar.

In the Save Results dialog, specify a name and location for the document and click Save.

The results are saved as a text document in RTFD format. You can view it with TextEdit.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Printing the Scan Results

This article discusses how I can print the scan results.
This article has been archived and is no longer updated by Apple.
You can print the information displayed in the Results area of the Virex window.

Before you print, we recommend that you:

Save the report. To do so, use the Save button on the toolbar.

Check the page settings. To do so, select File from the menu bar, then Page Setup.

Select a printer using the Print Center application (in the Applications' Utilities folder).

Click the Print button in the toolbar.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Printing Certain Types of Information Only

This article discusses how to print certain information from the scan.
This article has been archived and is no longer updated by Apple.
Normally, all a scan's results are printed. However, you can customize this. To do so:

Use your mouse to select the information that you want to print.

From the Edit menu choose the Copy option.

Open the TextEdit application.

On the Editmenu, click Paste.

Click Print.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Clearing the Results Area

This article discusses how to clear the results area.
This article has been archived and is no longer updated by Apple.
Scan results will append themselves to previous sets of scan results,

To clear the Results area, click the Clear button on the toolbar and the Results area displays the default information about the latest DAT files you installed.

NOTE: Use the Clear button on the toolbar to refresh the DAT information in the Results area after a DAT update.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: The Application

Virex 7.x: About the application.
This article has been archived and is no longer updated by Apple.
Virex 7.x is a native Macintosh OS X Cocoa-based application with "drag and drop" features, designed for the Aqua interface.

The application scans your computer for viruses and Trojan horses. You can use it to diagnose and clean a file, a folder or an entire volume, and to view a complete report of the results.

The application provides online HTML help in its main windows and in its preferences dialog boxes. ToolTips are also available - place the cursor over items in the Virex windows, then wait a few seconds for information to appear.

The product also provides access over an Internet connection to the McAfee online Virus Information Library, which contains comprehensive information about new and existing virus threats.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: The Command-Line Scanner

This article discusses the command-line scanner.
This article has been archived and is no longer updated by Apple.
Virex 7.x Command-Line Anti-Virus Scanner provides the same sophisticated virus scanning as the Virex application, but through a command-line interface.

The scanner can be run through the Terminal application in the Application Utilities folder. Online Help for the command-line scanner provided by its 'man' pages describes all the command options, syntax, return codes and examples, and explains how to update your virus definition (DAT) files.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: System Requirements

This article discusses what the system requirements are for Virex 7.x.
This article has been archived and is no longer updated by Apple.
Virex installs and runs on any Apple computer that meets these requirements:

Apple Macintosh OS X (10.1 or newer) operating system.
Power PC G3 or above.
At least 12 MB of free disk space.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Installation Steps

This article discusses how to install Virex 7.x.
This article has been archived and is no longer updated by Apple.
To install Virex software:

If your copy of Virex came on a CD, insert the CD into your CD-ROM drive.

If you downloaded your copy of Virex, the compressed file should decompress automatically to display a package icon.

Double-click the package icon.

The Virex Installer window appears.

Installing Virex

Follow the instructions in the window.

When the Installer has finished copying files to your hard disk, it notifies you with a dialog box.

Virex is configured to scan your Home folder after you log in. This feature is activated when you first launch Virex. The Home folder is scanned the next time you log in and continues to do so as long as the option is enabled in the Virex preferences.

Testing Your Installation

You can test Virex by using the EICAR Standard Anti-Virus Test File.

This file is a combined effort by anti-virus vendors throughout the world to implement one standard by which customers can verify their anti-virus software.

To test your installation:

Copy the following line into its own file, then save the file with the name

EICAR.COM.X5O!P%@AP[4\\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H*

The file size will be 68 or 70 bytes. Note that the third character is a capital O and not a zero. The text must all be on one line.

Start Virex and allow it to scan the folder that contains EICAR.COM.

When Virex scans this file, it will report finding the EICAR test file.

NOTE: This file is not a virus. Delete the file when you have finished testing to avoid alarming unsuspecting users.

You can also obtain a copy of the EICAR.COM file from the EICAR web site **http://www.eicar.com.**

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Updating Virex

This article discusses how often you should update Virex.
This article has been archived and is no longer updated by Apple.
Every month, hundreds of new viruses appear. To ensure that your computer is always protected, you must keep your anti-virus software up-to-date.

We develop regular virus definition files (DAT) files to combat new virus threats as they emerge. Each DAT file brings new detection and cleaning capabilities to Virex against not only Macintosh-specific viruses, but also Windows-based viruses and UNIX-based viruses. To ensure that you have the most effective protection available, download and install these files as soon as they become available.

We recommend that you scan your system immediately for new viruses after installing new DAT files.

NOTE: The latest DAT file includes all of the virus definitions available in previous virus definition files.

This information and more can be found at **http://virexhelp.com/**

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Virex: Updating Monthly

This article discusses how to update Virex monthly.
This article has been archived and is no longer updated by Apple.
To update Virex on a monthly basis:

Download the compressed DAT file from the following location. It is in a .DMG format.

www.mac.com/antivirus/update

This should automatically decompress to present a package.

Place the package on your desktop.

Double-click the package.

Virex is updated automatically. The date that you made your last DAT update dispays in the Results area of the Virex application.

This information and more can be found at **http://virexhelp.com/**

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Virex: Updating Weekly

This article discusses how to update Virex weekly.
This article has been archived and is no longer updated by Apple.
Your anti-virus software must be kept up-to-date to ensure protection against new viruses. Macintosh DAT files are normally updated monthly and contain the PC DAT files and the UNIX DAT files information.

By updating weekly, you can protect your system more often from harboring many PC-based and UNIX-based viruses, and scripts and macros. You use the command-line to update your DAT files weekly.

NOTE: To update the DAT files using this method, you need to be able to log in as root (you do this by using the su command); OS X system security prevents many files and folders being visible to users. We recommend that only experienced command-line users attempt the weekly method.

To update your DAT files on a weekly basis:

Create a folder called dats on your computer or on a shared network drive that your computer can access.

Download the new DAT files from an approved site, for example: http://www.mcafeeb2b.com/naicommon/download/dats/mcafee_4x.asp

The files are in a UNIX .TAR file or a Windows .ZIP format. Both these formats can be used on Macintosh OS X.

Select the UNIX platform. Put the file into the dats folder.

The downloaded file decompresses and creates a folder entitled "dat-xxxx Folder" where xxxx is an internal version number. The folder contains several DAT files and other files.

In a Terminal window, enter the command su root. When prompted, enter the root password.

Change directory to the "dat-xxxx Folder" using the command:

```
cd "/dats/dat-xxxx Folder"
```

Enter the following command, which copies the new DAT files to replace the existing ones:

```
cp *.dat /usr/local/vscanx
```

Close the Terminal window.

You may now delete the dats folder that you created earlier.
Your DAT files have now been updated.

Updating Virex

To scan the disk later with these new DAT files when logged on as a user, you will need to run the following command from the Terminal window:

Enter the command su root. When prompted, enter the root password.

This information and more can be found at **http://virexhelp.com/**

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Virex: Performing On-Demand Scans

This article discusses how to perform on-demand scans.
This article has been archived and is no longer updated by Apple.
You can scan any file or directory on your file system from the command line by adding options to the basic command. There are three groups of options:

Scanning options. These determine how and where the scanner looks for infected files.
Response options. These determine how the scanner responds to any infected files.
General options. These determine how the scanner reports its scanning activities.

Each group of options appears in its own table with a full description of its function.

Getting started

Once the software is installed and operating successfully, you run it by typing a command at the prompt in the Terminal window.

To access the Terminal window:

Click on the 'GO' Menu Option.

Select Applications from the menu.

Open the Utilities Folder.

Double-click the Application 'Terminal'.

You should now have a Terminal window open. You can drag Terminal into the dock for easy access.

Examples of how to use the software

In the Terminal window, you can type commands like those in the following examples. The command-line scanner is installed in the /usr/local/vscanx directory, and the following examples assume that this is your current directory.

The scanner runs quietly, that is, it displays no messages at all unless it detects a virus. Because of this, some command-line options are useful to have in every command. For example, with -v or --verbose the scanner displays the name of each file that it scans. Also, --summary gives a report which includes the total number of files scanned and cleaned.

Scanning the files in a folder

To scan all files within a folder, type this at the command prompt:

./vscanx -v --summary /folder-name

Scanning the entire contents of a folder

When the program scans a folder, it normally examines only the files, and not the contents of further folders within the folder. To scan everything (a recursive scan), type this at the command prompt:

./vscanx -r -v --summary /folder-name

Scanning your personal folder

To scan all files within a folder, type this at the command prompt:

./vscanx -v -r --summary /users/your-user-name

Producing a report of a scan operation

The summary of the scan operation can be redirected into a file, which you can view or print later. Type this at the command prompt:

./vscanx /usr/bin -v -r --summary > report.txt /folder-name

Measuring the time of a scan operation

To measure the time taken for a scan operation, type this at the command prompt:

/usr/bin/time ./vscanx -v -r --summary /folder-name

Displaying version information

To display the version of this scanner or to see which engine and DATs are currently used, type this at the command prompt:

./vscanx --version

Scanning with maximum security

For maximum security, you can scan inside compressed files, and apply heuristic analysis - a process that detects unknown viruses by analyzing files for possible virus-like characteristics. The scan time takes longer than a normal scan.

To scan all files within a folder with maximum security, type this at the command prompt.

./vscanx -v -r --secure --summary /folder name

This information and more can be found at **http://virexhelp.com/**

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Virex: Command-Line Conventions

This article discusses how to add options to the command line.
This article has been archived and is no longer updated by Apple.
Use these conventions to add options to the command line:

Type each option in lower case and separate each with spaces.
Do not use any option more than once on the command line.
Follow the syntax correctly.

For your convenience, you can type single consecutive switches as one switch.
For example, instead of:

-c -r --one-file-system

You can type:

-cr --one-file-system

To start running the program, at the command prompt, type:
./vscanx

To have the program examine a specific file or list of files, add the target directories or files to the command line after vscanx. You can also create a text file that lists your target files, then add the name of the text file to the command line.

NOTE: By default, the program examines all files, no matter what their extensions. You can limit your scan operation by adding only those extensions you want to examine to the command line after the --extensions option, or you may exclude certain files from scan operations with the --exclude option.

General hints and tips

To display a list of all the options, each with a short description of their features, type:

./vscanx --help

To display a list of all the viruses that the program detects, type:

./vscanx --virus-list

To display information about the version of the program, type:

./vscanx --version

To ensure maximum protection from virus attack, you must regularly update your DAT.

This information and more can be found at **http://virexhelp.com/**

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Virex: Configuring Scan Operations

This article discusses how to configure the scan operations.
This article has been archived and is no longer updated by Apple.
Instead of running each scan operation with all its options directly from the command line, you can configure a scan operation with the options you choose, then save it in a text file as a scan task.

This allows you to run complete scans with ease, and at any time. Your scan settings specify the actions that occur when a virus is detected.

To preconfigure a scan operation:

Choose the command options that you want to use.

You can choose more than one option.

Type the command options into a text editor just as you might on the command line.

Save your text as a file.

Type either one of these lines at the command prompt:

./vscanx --load <file> <target>

or

./vscanx --config <file> <target>

Here, <file> is the name of the text file you created, and <target> is the file or directory you want to scan.

Press the RETURN or ENTER key on your keyboard to run the scan operation.

If the scanner detects no virus infection, it displays no output.

Example 1

To scan files in the /usr/dos directory according to details given in the task
file, /usr/local/config1, type:

./vscanx --load /usr/local/config1 /usr/dos

The contents of the task file, /usr/local/config1, are:

-m /usr/local/viruses --ignore-compressed --maxfilesize 4

Using the Command-Line Scanner

They instruct the scan to move any infected files to /usr/local/viruses,
to ignore any compressed files in the target directory, and to examine only files smaller than 4MB.

Alternatively, the contents of the task file can be arranged as single lines:

-m /usr/local/viruses
--ignore-compressed
--maxfilesize 4

Example 2

To scan only files smaller than 4MB and to ignore any compressed files in three separate directories, type:

./vscanx --load /usr/local/config1 --file /usr/local/biglist

The contents of the task file, /usr/local/config1, are:

--ignore-compressed
--maxfilesize 4

The contents of the other file, /usr/local/biglist, are:

/usr/local/bin
/temp

TA40953_Virex_Configuring_Scan_Operations.pdf

/etc

This information and more can be found at **http://virexhelp.com/**

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Scheduling a scan in Virex

You can set up a cron schedule so Virex scans your hard disk on a regular basis.
This article has been archived and is no longer updated by Apple.
You can run the scanner using the cron scheduler to run automated scan operations. Cron stores the scheduling commands in its crontab files. For further information about cron and crontab, refer to your operating system documentation or view the help text, using man cron and man crontab.

Examples

To schedule a scan operation to run at 18:30 every weekday, add this line to your crontab file:

```
30 18 * * 1-5 /usr/local/vscanx folder-name
```

To schedule a scan operation to run and produce a summary at 23:50 every Sunday, add this line to your crontab file:

```
50 23 * * 0 /usr/local/vscanx --summary folder-name
```

To schedule a scan operation to run on the uz directory at 10:15 a.m. every Saturday in accordance with options specified in a configuration file conf1, add this line to your crontab file:

```
15 10 * * 6 /usr/local/vscanx --load /usr/local/conf1 /uz
```

To schedule a scan operation to run at 8:45 a.m. every Monday on the files specified in the file biglist, add this line to your crontab file:

```
45 8 * * 1 /usr/local/vscanx --f /usr/local/biglist
```

This information and more can be found at http://virexhelp.com/

Published Date: Feb 18, 2012

Virex: What To Do if the Scanner Detects a Virus

This article discusses what To Do if the Scanner Detects a Virus.
This article has been archived and is no longer updated by Apple.
If the scanner discovers a virus while scanning, it returns exit code number 13.

To clean infected files or directories, or move them to a quarantine location on your network.

The following examples show how you can use response options to respond to a virus attack. The examples assume that the scanner is available in your search path.

Example 1

To scan and clean all files in the /usr/dos directory and all of its subdirectories, type:

./vscanx -cr /usr/dos

The program scans /usr/dos and its subdirectories automatically, and cleans any infected files that it encounters.

Example 2

To scan and clean all files in the /usr/dos directory and its subdirectories, but ignore any other file systems that are mounted, type:

./vscanx -cr --one-file-system /usr/dos

The program scans without moving across file systems, and cleans any infected files that it detects.

Example 3

To scan all files, except compressed files, in the /usr/dos directory and its subdirectories, and to move any infected files to /usr/local/viruses, type:

./vscanx -m /usr/local/viruses -r --ignore-compressed /usr/dos

Example 4

To scan a file with a name prefixed with "-", type:

./vscanx -c -v - -myfile

The program scans the named file. It cleans any detected viruses and issues a progress message. This format avoids confusion between the names of the options and the name of the target. Without the "-" option, the vscanx command appears to have three options and no target:

./vscanx -c -v -myfile

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Handling an Infected File That Cannot Be Cleaned

This article discusses how to handle an infected file that cannot be cleaned.
This article has been archived and is no longer updated by Apple.
If the scanner cannot clean an infected file, it renames the file to prevents its use. When a file is renamed, only the file extension (typically three letters) is changed. The following table shows the method of renaming.

For file extensions with more than three letters, the name is usually not truncated. For example, notepad.class becomes notepad.vlass. However, an infected file called water.vapor becomes water.vir.

File renaming conventions

Original Renamed Description

Not v?? v?? File extensions that do not start with v are renamed with v as the initial letter of the file extension. For example, myfile.doc becomes myfile.voc.

v?? vir File extensions that start with v are renamed as .vir. For example, myfile.vbs becomes myfile.vir.
vir,
v01-v99 These files are recognized as already infected, and are not renamed again.

<blank> vir Files with no extensions are given the extension, .vir.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Macro Viruses

This article discusses Macro Viruses.
This article has been archived and is no longer updated by Apple.
A macro virus is a set of macro commands, specific to an applicationís macro language, which automatically execute in an unsolicited manner and spread to that applicationís documents.

The macro virus is commonly found in spreadsheets and Microsoft Word documents.

It is easier to create and modify Macro viruses than other virus types, and documents are more widely shared than programs, especially with instant e-mail distribution. It is also very easy to ìcatchî such a virus just by opening an infected document.

Any application that is used on many platforms can carry macro viruses. For example, Microsoft Word is available in Microsoft Windows computers and Apple Macintosh computers.

Some well known macro viruses

Laroux
Laroux is the first Microsoft Excel macro virus discovered in the wild. Excel Macro viruses are written in Microsoftís Visual Basic for Applications macro language. This language is supported in Microsoft Excel for the Macintosh 5.0 and later, as well as numerous PC versions of Excel on Windows platforms.

Laroux uses the ìauto_openî and ìcheck_filesî macros to replicate. It creates a hidden, blank worksheet in infected documents, but it is not intentionally destructive. Laroux does not infect or spread on Macintosh systems, but Macintosh systems can harbor infected files in a multi-platform environment.

Word Macro Family (including Concept)
The macro language in Microsoft Word is used to write Word Macro viruses. This language is supported in Microsoft Word for the Macintosh 6.0 and later, and on Microsoft Windows platforms.

These Word Macro viruses consist of a set of macros contained in a Word template document. All of these viruses take advantage of Word features that allow macros to execute automatically or override menu commands. While an infected document is open, one of its macros is triggered, allowing the virus to copy itself into Wordís global template file. Subsequently, while uninfected documents are open, a virus macro in the global template file may trigger and copy the virus into the document.

Other macros may be used to cause damage or interfere with the normal operation of the computer. These viruses spread among all platforms that can run Microsoft Word. Your Macintosh can be infected by transferring Word files to and from DOS, OS/2, Windows, or other non-Macintosh platforms.

The first Word Macro strain to receive attention was Concept, also known as Word Macro 9508. This virus is common because several thousand infected CD-ROMs were widely distributed before its discovery. New, more destructive strains often appear.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Trojan Horses

This article discusses Trojan Horses.
This article has been archived and is no longer updated by Apple.
A Trojan Horse is a destructive program that has been disguised (or concealed in) an harmless piece of software. Trojan Horses are not viruses because they do not reproduce themselves and spread as viruses do.

The mythical story of the original Trojan Horse is well known. Greek warriors concealed themselves in an attractive wooden horse and left it outside the gates of the besieged city of Troy. The Trojans assumed it was a friendly peace offering and took it in. The Greek warriors then came out and wreaked havoc.

Trojan Horse software works on the same principle. A program may seem attractive and innocent. It invites the computer user to copy (or download) the software and run it. Trojan Horses might be games or some other tempting software.

To protect your computer, Virex detects Trojan horses so you can delete them from your computer.

Some well known Trojan horses

ChinaTalk
The ChinaTalk Trojan horse is an INIT/extension that disguises itself as a ìfemale MacinTalk sound driver.î Upon system restart, after ChinaTalk has been installed, the Trojan horse erases the directories of the hard drives and floppy disks on the infected system.

CPro
The CPro Trojan horse was found in a file named CPro141.sea. To infect, CPro disguises itself as an update to a popular compression program. After a user launches the CPro application, the Trojan horse tries to format mounted hard disks and floppy disks, with internal floppy-disk drives being especially susceptible. CPro is only successful, however, in its attempts at formatting floppy-disk drives.

Fontfinder
The Fontfinder Trojan horse masquerades as a legitimate utility program called Fontfinder, but when launched destroys the directory of your hard drive and make the files on the drive inaccessible.

MacMag
The MacMag Trojan horse, also known as the Peace Trojan horse, masquerades as a product called New Apple Products. When it is launched, it generates the Peace Virus.

Mosaic
The Mosaic Trojan horse masquerades as a utility program which claims to paint pictures. When launched, it destroys the directory of your hard drive, making the files inaccessible.

NVP
When launched, the NVP (No Vowel Prank) Trojan horse modifies the currently active System file to keep the letters "a, e, i, o, u" from being entered from the keyboard. This Trojan horse started out as a prank called "No Vowels II", but has been distributed under other names without the means to reverse changes to the System file. The NVP Trojan horse and its infection of the System file does not attempt to spread to other files. Virex detects and removes the NVP Trojan horse, as well as clean affected System files.

Steroid
The Steroid Trojan horse masquerades as a game, but destroys the directory of your hard drive when launched.

SubSeven
Originally the chronic scourge of Windows users, the SubSeven Trojan has entered the world of Macintosh. The hacker group, Team2600 released a new version of SubSeven that targets Mac OS, making Apple systems vulnerable to remote takeover. At a 2001 DefCon convention in Las Vegas, the hacker group announced it had ported the Trojan to the Mac environment as a "remote-control utility based on the SubSeven protocol."

Tetricycle
The Tetricycle Trojan horse was originally discovered in Wales and masquerades as a game called Tetricycle. When the Tetricycle Trojan horse is launched, it infects System, Finder and application files with the MBDF virus (see MBDF A Virus). Users have reported experiencing long delays after launching the Tetricycle program and even System file damage if the computer is restarted while Tetricycle is running.

Virus Info
The Virus Info Trojan horse masquerades as a utility program. It claims to provide virus information, but when launched, destroys the directory of your hard drive and make the files on the drive inaccessible.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Report Features

This article discusses the report features of Virex 7.x.
This article has been archived and is no longer updated by Apple.
The program might take some time to complete a scan, particularly over many directories and files. However, the scanner can keep you informed of its progress, any viruses it finds, and its response to them.

The program displays this information on your screen if you add the --summary or --verbose options to the command line.

The --verbose option tells you which files the program is examining.

When the scan operation finishes, the --summary option identifies the following

How many files scanned.
How many files cleaned.
How many files not scanned.
How many infected files found.

Example

In the report information below, both the --summary and --verbose options have been used when scanning files in the /usr/data directory.

$ ./vscanx --summary -v /usr/data

Scanning /usr/data/*

Scanning file /usr/data/command.com

Scanning file /usr/data/grep.com

Summary report on /usr/data/*

File(s)

Total files: 2

Clean: 2

Not scanned: 0

Possibly Infected: ..0

This information and more can be found at **http://virexhelp.com/**

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Virex: Choosing the Options

This article discusses how to choose scan options.
This article has been archived and is no longer updated by Apple.
The following tables describe the options you can use to target your scan operation. The descriptions use these conventions to identify the options or required variables:

Short versions of each command option appear after a single dash (-).

Long versions of each command option, if any, appear after two dashes (--).

Variables, such as filenames or paths, appear in italics within brackets < >.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Scan Takes Too Long!

This article discusses why the scan takes a long time to run.
This article has been archived and is no longer updated by Apple.
By default Virex shows detailed scan results. If a scan is taking too long, you can:

Occasionally minimize Virex so your computer spends less time displaying the results.

Open the Preference dialog and deselect the Show detailed results information checkbox. This preference is active by default to give you detailed scan information. However, because it displays scan results for every item scanned, it uses more system resources and takes longer to display.

Try scanning a smaller area of your computer, for example, select each folder rather than an entire volume.

Deselect some of the preferences in the Preference dialog.

Try scanning thoroughly less often. Scan your working areas most often, at least once a day.

Some viruses might not be detected if you choose the last option.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Virus Info Button Does Not Work!

This article discusses why the virus info button may not work.
This article has been archived and is no longer updated by Apple.
Your computer needs a connection to the Internet to use this feature. If a connection is not available, you might see a message such as "The specified server could not be found".

This information can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: What is a Virus?

This article discusses what a virus really is.
This article has been archived and is no longer updated by Apple.
Computer viruses are programs that contain the software instructions necessary to make replicas of themselves and insert these instructions into other executable programs. Each time an infected program is run, the virus code is executed, and usually infects other programs.

Computer viruses usually replace the first few instructions in the host program, so that the virus can run first. The virus continues to look for uninfected files each time it is run, and may eventually spread to many of your programs.

Computer viruses vary in the degree of harm that they can cause. Some display a humorous or harmless message, while others are designed to cause catastrophic damage.

Even seemingly harmless viruses can inadvertently cause problems or unpredictable behavior with your programs, just by being present in the System folder or on the hard drive. For example, if the virus is using memory or disk resources that another program needs, that program might crash.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: How Viruses Work

This article discusses how viruses work.
This article has been archived and is no longer updated by Apple.
Computer viruses infect system files and documents created by programs with macro capabilities.

Some viruses are programmed specifically to corrupt programs, delete files, or erase your disk. Many of the currently known Macintosh viruses, however, are not designed to do any damage. They replicate themselves and might display messages. Nevertheless, virus writers are not usually expert programmers, so bugs within the viruses might cause your computer to behave strangely or even crash.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: How Viruses Spread

This article discusses how viruses spread.
This article has been archived and is no longer updated by Apple.
A virus can become active when you launch an infected program, start your computer from a disk that has some infected system files, or open an infected document.

For example, if a game program contains a virus, the virus becomes active when you run the program. After a virus is in memory, it usually infects any program you run, including programs on network folders or disks.

Viruses behave in different ways.

Some viruses stay active in memory until you turn off your computer. Other viruses stay active only as long as the infected program is running. Turning off your computer or exiting the program removes the virus from memory, but does not remove the virus from the infected file or disk. That is, if the virus resides in a system file, the virus activates the next time you start your computer from the infected disk. If the virus resides in a program, the virus activates again the next time you run the program.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: What Viruses Do Not Do

This article discusses what viruses do not do.
This article has been archived and is no longer updated by Apple.
Viruses do not infect files on write-protected disks.

Viruses do not usually infect documents.

Viruses do not infect compressed files. However, programs within a compressed file can become infected before they are compressed.

Viruses do not necessarily let you know they are there - even after they do something destructive.

Viruses do not infect computer hardware, such as monitors or keyboards; they only infect software.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

PostScript: How to Print an Image to a Disk

This article has been archived and is no longer updated by Apple.

How to print a PostScript image "to disk" rather than to a printer:

1. Use the Chooser to select a LaserWriter.

2. Choose the Print... command in the File menu.

3. Click OK.

4. Hold down (don't release them yet) the Command key, and either
- the K key (to dump a PostScript image with LaserPrep), or
- the F key (to dump PostScript without LaserPrep).
Hold the keys down until you see the Print Status dialog box.

The Print Status dialog box will say something like "Creating PostScript File." When the program is through printing, you will find a text file in your System folder called "PostScriptn," where n is a number.

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Virex: How Virex Works

This article discusses how Virex 7.x works.
This article has been archived and is no longer updated by Apple.
Virex uses two techniques to detect viruses: signatures and heuristic analysis.

A virus signature is simply a binary pattern that is found in a virus-infected file. Using information in its virus definition (DAT) files, Virex searches for those patterns.

This approach cannot detect a new virus because its signature is not yet known. Therefore another technique, known as heuristic analysis, is employed.

Programs that carry a virus often have distinctive features. They might attempt unprompted modification of files, invoke mail clients or use other means of self-propagation. Virex analyzes the program code to detect these kinds of computer instructions. Virex also searches for legitimate behavior, such as prompting the user before taking action, and thereby avoids raising false alarms.

In an attempt to avoid detection, some viruses are encrypted. Each computer instruction is simply a binary number, but the computer does not use all the possible numbers. By searching for unexpected numbers inside a program file, Virex can detect an encrypted virus.

By using these techniques, Virex can detect both known viruses and many new viruses and variants.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Virus Information

This article discusses virus information.
This article has been archived and is no longer updated by Apple.
More than 60,000 virus threats exist today. The McAfee Virus Information Center tells you where viruses come from, how they infect your system, and how to remove them.

In addition to information about genuine viruses, the Virus Information Center contains information about virus hoaxes, those dire e-mail warnings about disk-eating attachments that sometimes land in your in-box. WOBBLER and Good Times are two of the best-known hoaxes, but there are many others. Next time you receive a well-meaning virus warning (unless it came from us, of course!), check our hoax page before you pass the message on to all your friends.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Worms

This article discusses worms.
This article has been archived and is no longer updated by Apple.
Viruses are not the only maverick programs that can disrupt a computer system. Worms are designed to infiltrate legitimate data-processing programs and alter or destroy the data.

Often what people believe is a virus infection is, in fact, a worm program. This is not as serious, because worms do not replicate themselves. However, the damage caused by a worm attack can be just as serious as a virus, especially if it is not discovered quickly.

For example, suppose a worm program instructs a bankís computer to transfer funds to an illicit account. The fund transfers may continue even after the worm is destroyed. However, once the worm invasion is discovered, recovery is much easier because there is only a single copy of the worm program to destroy; the worm cannot replicate itself.

A well known worm

Simpsons
This is an AppleScript worm that is designed to propagate with MacOS 9.0 (or higher), and Microsoft Outlook Express 5.02. It arrives as an attachment to an e-mail message. When you run the attachment, it infects the local machine which is then used to propagate the virus.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Starting Virex

This article discusses how to start Virex.
This article has been archived and is no longer updated by Apple.
To start the Virex application, do one of the following:

Double-click the Virex icon.

Drag a file and drop it onto the Virex icon.

NOTE: Virex scans your Home folder every time you login, providing the Automatically scan at login checkbox on the Preferences dialog remains selected.

This information and more can be found at the McAfee support website (http://virexhelp.com).

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Virex: Scanning For Viruses

This article discusses how to scan for viruses.
This article has been archived and is no longer updated by Apple.
Before you use the Scan button, check the settings. To do so, either:

Click the Preferences button on the toolbar.

Choose Preferences... from the Virex 7.x menu.

Deselect the Clean any files infected with a virus checkbox. In the Scan dialog, select the location that you want to scan. Choose from:

Home

Documents

Desktop

Public

Applications

Macintosh HD

All Local Volumes

Choose...

Click the Scan button.

A status bar shows while Virex examines the selected item, and cleans infected files. The results appear in the Results area.

To stop the scan, click the Stop button in the upper-right corner.

Quick method

Select one or more items in a Finder window or on the Macintosh desktop.

Drag the item(s) onto the Scan button or the Virex application icon.

Items that can be dragged include documents, files, folders or volumes. You can also scan files by dragging them on to the Dock icon.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Cleaning Viruses

This article discusses how to clean viruses.
This article has been archived and is no longer updated by Apple.
Before you use the Scan & Clean button, check the settings. To do so, either:

Click the Preferences button on the toolbar.

Choose Preferences... from the Virex 7.x menu.

In the Scan dialog, select the location that you want to scan. Choose from:

Home

Documents

Desktop

Public

Applications

Macintosh HD

All Local Volumes

Choose...

Click the Scan & Clean button.

A status bar shows while Virex examines the selected item, and cleans infected files. The results appear in the Results area.

To stop the scan, click the Stop button in the upper-right corner.

Quick method

Select one or more items in a Finder window or on the Macintosh desktop.

Drag the item(s) onto the Scan & Clean button or the Virex application icon.

Items that can be dragged include documents, files, folders or volumes. You can also scan files by dragging them on to the Dock icon.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Setting Preferences

This article discusses how to set preferences.
This article has been archived and is no longer updated by Apple.
On the toolbar, click the Preferences button.

The Preferences dialog is divided in to the following areas:

Scan

Clean

Advanced Scan

After you make changes on the Preferences dialog, choose one of the following options:

Reset to Defaults to restore the default preference settings.

Cancel to cancel all changes that you made since you opened the Preferences dialog.

OK to save all changes that you made to the settings.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Why Update?

This article discusses why you should update.
This article has been archived and is no longer updated by Apple.
To offer you the best protection possible, the virus definition (DAT) files that this software uses to detect viruses are updated regularly. Although your software uses heuristic analysis that enables it to detect some previously unknown strains of viruses or malicious code, many new virus types and other agents appear frequently.

Often, your existing software cannot detect these intruders because the DAT files that came with it are outdated. For maximum protection, we strongly recommend that you update your files on a regular basis. There are two methods available to you:

Weekly updating by manually copying the DAT files in to the vscanx folder

Monthly updating by using the Virex 7 update package installer

We recommend that only advanced users choose the weekly method.

The date that you installed the most recent DAT update appears in the Results area of the Virex window.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: When is the Best Time to Update?

This article discusses when it is the best time to update.
This article has been archived and is no longer updated by Apple.
Your anti-virus software must be kept up to date to ensure protection against new viruses. This scanner detects not only Macintosh-specific viruses, but also Windows-based viruses and UNIX-based viruses. Macintosh DATS are normally updated monthly. However, by updating regularly, you can protect your system from harboring many PC-based and UNIX-based viruses, and scripts and macros.

Intermediate DAT files (called EXTRA DATs) are available occasionally to counter sudden appearances of new viruses. There are two methods to update your DAT files:

Weekly by manually copying the DAT files

Monthly by using the Virex 7.x update package installer

We recommend that only advanced users choose the weekly method.

To update your DAT files with minimum impact on your computer, you need to consider a time when the computer or network is not too busy, possibly during the night, or during the day but outside peak hours.

If you use your computer most at weekends, you might consider updating on Friday evenings and Sunday evenings.

The date that you installed the most recent DAT update appears in the Results area of the Virex window.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Printing Certain Types of Information Only

This article discusses how to only print certain types of information.
This article has been archived and is no longer updated by Apple.
Normally, all a scan's results are printed. However, you can customize this. To do so:

Use your mouse to select the information that you want to print.

From the Edit menu choose the Copy option.

Open the TextEdit application.

On the Editmenu, click Paste.

Click Print.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

AppleShare Print Server: Using a Macintosh 512Ke as a Server

Will a Macintosh 512Ke with 1MB RAM support five printers as an AppleShare Print Server? If not five, how many will it support? The manual refers only to Macintosh 512K configurations.

This article has been archived and is no longer updated by Apple.

A Macintosh system with 1MB RAM can capture up to five printers or two if an AppleShare File Server is running on the same machine.

A 1MB Macintosh 512Ke is not mentioned in the AppleShare Print Server manual, because Apple did not make or sell 1MB Macintosh 512Ke systems.

Published Date: Feb 18, 2012

Virex: Clearing the Results Area

This article discusses how to clear the results area.
This article has been archived and is no longer updated by Apple.
Scan results will append themselves to previous sets of scan results,

To clear the Results area, click the Clear button on the toolbar and the Results area displays the default information about the latest DAT files you installed.

NOTE: Use the Clear button on the toolbar to refresh the DAT information in the Results area after a DAT update.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: The Scan Area

This article discusses the scan area.
This article has been archived and is no longer updated by Apple.
Use the options in the Preference dialog's Scan area to determine how Virex scans for viruses and Trojan horses.

Scan inside compressed (.gz) and archived (.tar) files. This option is active by default. For more information, see Differences between compressed and archive files

Automatically scan at login.

Show detailed results information. This option is active by default.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: The Clean Area

This article discusses the clean area.
This article has been archived and is no longer updated by Apple.
Use the options in the Preference dialog's Clean area to determine how Virex handles infected files.

Remove macros from potentially infected files
Remove all macros from a Microsoft Office document if one macro is infected.

If you suspect that a file is infected, you can choose to remove all macros from a data file to prevent any exposure to a virus.

Automatically delete infected files
Delete virus-infected file if cleaning fails.

Virex reports every infected file, and attempts to clean any infected file. However, if Virex cannot clean the file, you can select this preference to delete the file.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: The Advanced Scan Area

This article discusses the advanced scan area.
This article has been archived and is no longer updated by Apple.
The option in the Advanced Scan area of the Preference dialog determines how Virex scans for unknown viruses.

Perform an advanced scan of applications and macros for previously unknown viruses. Virex scans for virus-like activity inside programs and macros.

If you suspect a file is infected, you can choose to remove all macros from a data file to prevent any exposure to a virus. To delete all macros in a file, use the Remove macros ... option in the Clean area. We recommend that you perform an advanced scan when your computer activity is low.

If you use these two options together, Virex deletes all macros even if Virex found no infection.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: Differences Between Compressed and Archive Files

This article discusses the differences between compressed and archive files.
This article has been archived and is no longer updated by Apple.
Some utilities can compress an executable file but still allow it to remain executable. When you double-click on such a file, code inside its header decompresses the remainder of file, and the file runs immediately.

If a virus is compressed, it might not be detected by the scanner, hence Virex provides the preference to examine compressed files.

Archive files are different. They cannot be executed directly. If you open an archive file, such as a ZIP or TAR file, no executable files run immediately. You may choose to scan the contents of an archive file after you have extracted them.

Virex lets you scan inside compressed and archive files. Virex supports many compression and archive formats.

This information and more can be found at **http://virexhelp.com**

Published Date: Feb 18, 2012

Virex: How to Avoid Viruses

This article discusses how to avoid viruses.
This article has been archived and is no longer updated by Apple.
Viruses can spread when you start your computer from an infected disk or when you run an infected program. Use these tips to avoid viruses:

Scan your computer regularly.

Update your anti-virus software regularly.
Update your virus-definition (DAT) files.

Scan files before you copy or run them.
Be careful with software that has not come from reputable sources, or was downloaded from the Internet, or that is attached to e-mail messages.

Back up your files regularly.
This will save your time if you have to rebuild your computer. Keep more than just the most recent backup. Make a backup copy of your data in its original form and after customization. Include System disks, fonts, folders and important data and application files.

Scan your servers regularly.
If you store Macintosh files on servers accessed by other types of computers, your own files can be damaged by UNIX-based and Microsoft Windows-based viruses. Virex also detects Windows and UNIX viruses, so it protects your Macintosh computers against this kind of cross-platform attack.

Stay informed about viruses.

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Virex: Web Links

This article provides links to Virex 7.x additional information.
This article has been archived and is no longer updated by Apple.
AVERT research laboratories-www.mcafeeb2b.com/avert

Download Site-www.mcafeeb2b.com/naicommon/download/

DAT File Updates-www.mcafeeb2b.com/naicommon/download/dats/find.asp

This information and more can be found at **http://virexhelp.com/**

Published Date: Feb 18, 2012

Macintosh II: Math Coprocessor Can Be Upgraded to MC68882

A third-party supplier told me that I can improve performance of my Macintosh II by upgrading the MC68881 math coprocessor to a MC68882. Is this correct?

Isn't the MC68881 optimized for use with the MC68020 in the Macintosh II? Would using a MC68882 with a MC68020 produce compatibility problems with some software expecting a MC68881? Is an upgrade advisable?

Likewise, can a MC68881 be used with the MC68030, or should the MC68882 always be used? What are the performance issues related to cross-matching CPUs and math coprocessors?

This article has been archived and is no longer updated by Apple.
The MC68882 Floating Point Unit (FPU) is a superset of the MC68881 and is software- and hardware-compatible with the MC68881 FPU. Generally, the MC68882 is 1.5 to 2 times faster than the MC68881.

The December 1987 issue of "Byte" has a two-page article (pages 120 and 121) testing the Motorola MC68882 math coprocessor chip. The tests show that with the MC68882 installed in a Macintosh II, benchmarks execute from 4 to 22% faster than with the MC68881. Installation in the Macintosh II is done by swapping chips.

The MC68881 can be used with the MC68030. The only concern here is that some software may be written to take advantage of the new features that the MC68882 provides. We can see no reason why you would have a Macintosh system with this combination, so no problems should arise.

Published Date: Feb 18, 2012

Nothing happens when you try to update Virex

You can update Virex so it can tackle the latest viruses.
This article has been archived and is no longer updated by Apple.

1. Open Virex.
2. Go to the Preferences pane.
3. Check "Customize my eUpdate server settings"
4. Click the "Server Settings" button.
5. Enter the information as follows:
    - type: FTP
    - Server URL: ftp.nai.com
    - Port: leave blank
    - username: anonymous
    - password: leave blank
    - account: leave blank
    - directory: /virusdefs/mac/virex7/
6. Click OK twice: once to exit the server settings and again to exit the preferences.
7. Click eUpdate.

This information and more can be found at http://virexhelp.com/
Published Date: Feb 18, 2012

LaserWriter IINT: -8132 Error Is Manual TimeOut Error

What is a -8132 error? I get it once in a while when I'm doing a large (200) envelope print merge to a LaserWriter IINT using Microsoft Works 2.0. When an envelope misfeeds and jams the printer (which happens with great frequency), by the time I pull out the paper tray, remove the jammed envelope, and open and shut the top to clear the error, one of two things happens:

- The print merge (which doesn't create a temp file) drops several envelopes.

- The print job aborts, displaying a dialog box with the message "Printing error -8132."

I've looked at the error codes sections in "Inside Macintosh", "Inside AppleTalk", and called Microsoft. They claim it is a network error, but I didn't find it in "Inside AppleTalk".

This article has been archived and is no longer updated by Apple.
The error -8132 means "manual timeout error", which, applied to your situation, fits perfectly. Once you manage to keep the LaserWriter from jamming on the envelopes, you should no longer experience this error.

Published Date: Feb 18, 2012

Full Impact: Steps to Recover a Corrupted File

I am having a problem when editing a Full Impact 1.1. file. The file is a weekly report, which is a spreadsheet containing data, formulas, paragraphs, and charts. I update the information weekly to generate a new weekly report. Updating includes changing the date, data, and charts and recalculating the formulas. For several weeks, I had been doing the updating without any problem. However, today, the system froze when I tried to change the date.

Specifically:

1) I opened the file.

2) I clicked on the cell containing the date information.

3) I edited the date.

4) I pressed the Return key.

Normally after pressing the Return key, the active cell is the cell below the Date cell. However, this time the screen froze and stopped at the same Date cell. The arrow pointer was still working. That is, it was free to move around the screen. I typed Command-period, but nothing happened. The only way to clear the screen was to restart the system.

I also tried this on other cells, and the same thing happened.

Do you have any idea what caused this problem?

This article has been archived and is no longer updated by Apple.
We suspect that the file has become corrupted, but before throwing it away, you may want to try these steps:

1) Open the damaged file, save a copy under a different name, and try to use the copy.

2) Re-install the System Software.

3) Repair the volume the file is stored on using Disk First Aid or a similar program.

4) Since the system crashed, try rebuilding the Desktop file by holding down the Option and Command keys while restarting.

If these steps don't help, you may be able to copy the information from the old spreadsheet, and paste it into a new one. If you have to recreate the spreadsheet, you might want to print copies of the spreadsheet, both the values and the formulas (this is possible with Microsoft Excel and other spreadsheets, and we assume it is possible to print formulas with Full Impact, too).

Published Date: Feb 18, 2012

FileMaker II: Multi-user Crash Recovery

A database was set up using FileMaker II 1.1.2 for multi-user access. A Macintosh Plus logged on to the database as a guest. In the process of printing some reports with this database, this system bombed (with the dialog box requesting a "Restart"). At this point, the address of this system was still registered as being connected to the database as a guest. As a result, it was not possible for the host of this database to log off because it requires all the guests to log off from the database before the host can quit.

After the system was restarted and logged on to the database again, the number of systems logged on to that database increased by one. That is, the previous address ID of this system still remained.

How can I remove the address of the Macintosh Plus that bombed? Is there a better way of using multi-user access so that this problem won't happen again?

This article has been archived and is no longer updated by Apple.
When you log onto FileMaker II again as a guest and then quit, your current entry, and the original, will be removed, allowing the host to shut down. However, until the guest logs on and quits, there are no options within the program allowing the host to quit FileMaker II. Resetting the host's system, or terminating the process with a debugger, if it is running MultiFinder, are poor but effective alternatives.

For more information about this issue, contact Claris directly. Meanwhile, you may want to investigate why the guest's system is crashing to minimize the impact it has running FileMaker II.

Published Date: Feb 18, 2012

Macintosh IIci: Launching Microsoft Word 4.0 Causes Bomb

A customer has a Macintosh IIci with System Software 6.0.4 on a network using a 3COM card running AppleTalk Phase 2. Occasionally, when launching Microsoft Word 4.0, his system locks. This happens approximately 50% of the time. The exact same setup on his Macintosh IIcx does not produce the problem.

This article has been archived and is no longer updated by Apple.
Microsoft Word, version 4.00b or later fixes the compatibility problem with the Macintosh IIci. All Macintosh IIci users should upgrade their copy of Microsoft Word to version 4.00b (or later). Apple also recommends that Macintosh IIfx, Macintosh LC, Macintosh Classic, and Macintosh IIsi users upgrade to version 4.00b (or later). This upgrade is available by calling Microsoft Customer Service. To locate a vendor's address and phone numbers, use the vendor name as a search string.

The problem details are:

Microsoft uses a synthetic handle (a "fake" rgnHandle) when doing certain operations involving drawing icons in the menu bar. The new, 24-/32-Bit Memory Manager in the Macintosh IIci does additional error and validity checks on all handles that it operates on. Due to Microsoft Word's placement in memory, this may cause a variety of apparently random crashes.

Often fake handles, built on the stack, point into I/O space if these handles have been incorrectly translated by the Memory Manager. The read access made to validate its zone header is probably what's causing the crashes. The Memory Manager does load a bus error handler on unused NuBus slots, so when the machine crashes, it is probably because the fake region is pointing at his 3COM card.

Published Date: Feb 18, 2012

Apple IIGS: RAMDisk Hides Second 3.5" Drive from Pascal 1.3

This article has been archived and is no longer updated by Apple.

When using Pascal 1.3 on an Apple IIGS with two 3.5" drives and a RAMDisk active, the second 3.5" drive can't be accessed. Here's why: using the RAMDisk causes the Apple IIGS SmartPort firmware to move the second drive to slot 2, drive 1. Because Pascal doesn't use this slot as a storage device, you can't access it there.

Published Date: Feb 18, 2012

TA41024_Macintosh_IIciPortable_Crash_May_Be_Caused_by_WDEF_Virus_(TIL05240).pdf

Macintosh IIci/Portable: Crash May Be Caused by WDEF Virus

Is there any history of floppy-disk errors occurring under System 6.0.4 that take the system down?

I been experiencing random system crashes (ID=0) when inserting or ejecting floppy disks. The disks are readable on systems running System 6.0.3, and the problem seems to appear only on the Macintosh IIci and Macintosh Portable.

I've rebuilt the desktops of the hard drive and the floppy disks, but the problem continues.

Is this problem characteristic of the WDEF virus? Is it likely that they are reinfecting their systems? Or is there another reason why this problem seems to be confined to the new machines?

This article has been archived and is no longer updated by Apple.
There isn't a history of disk errors that cause any system to bomb. However, as you mentioned, the symptoms are characteristic of a WDEF virus infection on a Macintosh IIci or Macintosh Portable. It is possible you are reinfecting your own systems. Perhaps if you are reinfecting your systems, you should acquire a virus interception program and run a virus detection program routinely.

Published Date: Feb 18, 2012

TA41025_AppleShare_Updating_From_Version_to__(TIL05241).pdf

AppleShare: Updating From Version 1.1 to 2.0

If an AppleShare volume has been prepared using an earlier version of AppleShare (pre-2.0), will AppleShare 2.0 be able to recognize that volume, or will it prompt the user with the "Do you want to prepare this volume for use with AppleShare" message? If so, and the user selects "OK", does the existing users/groups file get replaced by a new one, or simply get updated to work with the new version of AppleShare?

This article has been archived and is no longer updated by Apple.
Complete information about updating an AppleShare File Server from version 1.1 to 2.0 is outlined in chapter 5 of the AppleShare File Server Administrators Guide shipped with AppleShare 2.0.

In answer to your specific 1) Yes, the administrator will be prompted to prepare the volume(s) for use with AppleShare.

2) No, the users/groups file will not be replaced and, therefore, will not affect any folder access privileges.

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LaserTalk PostScript Development Environment

Do you know of an application or Desk Accessory for viewing PostScript formats (not EPSF) and/or converting them to PICT formats? I tried using "CuratorDA", but it doesn't seem to work.

This article has been archived and is no longer updated by Apple.
We are aware of a product that allows viewing full PostScript files is LaserTalk from Emerald City Software.

LaserTalk is an integrated PostScript development environment for the Macintosh. Features include: interactive access to the PostScript executive, real-time display of PostScript stacks and variables, on-screen viewing of PostScript images, integrated editor/debugger without the 32K limit, program tracing and breakpoints, dictionary browser, and on-line access to Addison-Wesley's "PostScript Language Reference Manual."

For more details, search the Technical Info library under "Emerald City Software."

Published Date: Feb 18, 2012

Macintosh-to-AT&T 3B2 Solutions

A customer wants to connect Macintosh computers to an AT&T 3B2 multi-user, UNIX-based machine. The customer wants terminal emulation, file transfer, and E-mail compatibility. Apparently, terminals are now connected with coax. I am still trying to get the actual name and version of the E-mail package they are using. Do you know of any solutions in this environment? The MultiVendor Solution Guide does not list AT&T equipment, and I did not find the information in the Tech Info Library. Any help will be greatly appreciated.
This article has been archived and is no longer updated by Apple.
The AT&T 3B2 is an AT&T System V-based, multi-user UNIX machine, and our A/UX is an AT&T System V.2.2 multi-user UNIX machine. Since UNIX is a general-purpose time-sharing system, it contains a full scope of capabilities, such as:

- Multi-user, multitasking ability
- A wide variety of software development
- Device-independent input and output
- Inter-Process Communication (IPC)
- Network protocols (TCP, IP, UDP, ICMP, SMTP, and so on)
- File transfer and remote login (FTP, Telnet, RLOGIN, and so on)
- NFS (Network File System)

On the UNIX side, A/UX can satisfy the customer's need for terminal emulation, file transfer, and E-mail. Terminal emulation lets you log on to a UNIX machine from different types of terminal--like VT100, VT52, ANSI, and so on. The file transfer methods include "ftp", "rcp", "nfs", and "uucp", for example. The popular E-mail mechanism is "sendmail", using SMTP protocol.

On the Macintosh side (Macintosh OS), there are many ways to connect a Macintosh to an AT&T 3B2 (or, virtually, any UNIX machine), while providing terminal emulation, file transfer, and E-mail.

For terminal emulation and file transfer, the new version of NCSA Telnet ("ftp" and "telnet") along with MacTCP can be used via Ethernet. If the 3B2 supports X Window System and a client application, like "xterm", MacX (an X server) can be used for remote login sessions. If no Ethernet or LocalTalk is involved, the terminal emulation can be done using any popular terminal emulation program--like MacTerminal, MacPhone, and others--via the modem serial port (hard-wired or modem/phone line).

For E-mail capability between a Macintosh and a 3B2 UNIX machine, QuickMail for the Macintosh probably can send and receive both UNIX mail and QuickMail from a Macintosh or a UNIX machine. QuickMail is a product of CE Software. For more details, search the Technical Info library under "CE Software."
Published Date: Feb 20, 2012

TA41029_Apple_IIc_Plus_Revised_IIc_Technical_Reference_Manual.pdf

Apple IIc Plus: Revised IIc Technical Reference Manual

A customer needs technical information on the Apple IIc Plus. Is there an "Apple IIc Plus Technical Reference" available or will one be published soon? Are there any other technical publications for this particular system?
This article has been archived and is no longer updated by Apple.
The "Apple IIc Technical Reference Manual, Second Edition" from Apple Computer is available from APDA. This publication includes sections specific to the Apple IIc Plus, unlike the original Addison-Wesley edition.

The part number is A2G0052/A; the "/A" indicates the second edition. For more details, search the Technical Info library under "APDA."

We don't know of any other technical publications specifically for the Apple IIc Plus.

The Tech Info Library Article 17159: "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.
Published Date: Feb 20, 2012

Macintosh: Information on Array Processors

I need some information about array processors.

1) What are their primary functions?

2) Who makes them?

3) Does the Macintosh interface with them?

4) Do you have any pricing information?

This article has been archived and is no longer updated by Apple.
1) Array processors are used to process math arrays. This is particularly helpful when working with three-dimensional objects. Three-dimensional objects are described in arrays and manipulated with matrix multiplication. Array processors are designed to expedite these array transformations.

2) Mini and mainframe manufacturers and related third-party companies manufacture array processors.

3) We don't know of any array processors for the Macintosh.

4) We have been unable to locate prices for these minicomputer and mainframe products.

The only products that come close are generic accelerators for the Macintosh. These are not the same type of product as the array processors, but increasing the speed of computation, in general, appears to be the only possibility for increasing the array processing desired.

Published Date: Feb 18, 2012

Serial NB Card: Use with Multiple Modems

I want to connect multiple modems to my Macintosh with the Serial NB Card, but is there software to support it?
This article has been archived and is no longer updated by Apple.
Apple Remote Access Multiport Server uses the Serial NB card to connect 4 modems for Remote Access connections. The Multiport Server software can support additional Serial NB cards expanding the modem ports even further. The limit will depend on the number of NuBus slots in your Macintosh.

For a non-ARA solution, Apple has software for the Serial NB Card, however, most often its the applications that do not support multiple modems. They use only one port of the card.

You could use any telecommunications application that can operate in the background under MultiFinder. MicroPhone II version 3.0 lets several copies run under MultiFinder. The three issues involved are:

- Background operation
- The ability to work with NuBus-based serial ports
- Each copy is using a separate serial port

The publisher of MicroPhone II, Software Ventures, suggests checking with their technical support group when trying to use NuBus serial cards. This is a good suggestion for any telecommunications application that may be used in this situation--not every application currently provides support for NuBus serial cards.

Published Date: Feb 20, 2012

Macintosh Portable: System 6.0.5 Fixes Excessive Battery Drain

A problem has been discovered with the Macintosh Portable that relates to reduced battery power.

When the Macintosh Portable has AppleTalk active (in the Chooser) and you select the "Shut Down" command, the SCC chip continues to draw excess current from the battery. If the machine is not used for 4 or more days, the battery will be drained and need a recharge. (Normally, the Macintosh Portable's charge will last about 4 weeks when stored in the shutdown condition).

This problem does NOT occur when AppleTalk is active and the "Sleep" command is selected instead of "Shut Down." This problem also does NOT occur if AppleTalk is inactive and "Shut Down" is selected.

This article has been archived and is no longer updated by Apple.
This problem was corrected with System Software 6.0.5. We recommend that you upgrade to System Software 6.0.5 or later.

Published Date: Feb 18, 2012

Macintosh II: Video Overview (1 of 3)

This is the first part of a three-part article describing how the Macintosh II produces video.
This article has been archived and is no longer updated by Apple.

HOW DOES THE MACINTOSH II PRODUCE VIDEO?

Digitized video is a rectangular array of pixels mapped into RAM. This is called bit mapping and it's used by both Macintosh and Apple II computers. At one bit per pixel for black and white images, bit mapping uses up lots of memory. Color images are even more memory-intensive, because each color pixel is defined by a group of bits. A Macintosh II display contains 307,200 pixels (640 x 480), requiring a minimum of 37.5 kilobytes of memory for a monochrome display. A color Macintosh II uses up to eight bits per pixel, and may require up to 300 kilobytes.

The Macintosh II's video card generation circuitry works independently of video memory updates from changing graphics. The signal that controls the speed of the image display process is called a pixel clock, which is produced by an oscillator on the card. Once a graphic image has been stored, it continues to be displayed at the speed of the vertical refresh scan rate: 66.67Hz on the Macintosh II video card. A full screen of video information (307,200 pixels) is displayed 66.67 times per second. This means it takes only 15ms to display an entire screen. A horizontal line (480 pixels) takes only 1/35,000 of a second or .029ms (35KHz scan rate).

The Macintosh II video signal is a linear electrical stream converted from the pixel information stored in the Macintosh II Video Card's RAM. This RAM is called a frame buffer. These bits represent the collective dots that make up the picture, hence the term bit-mapped graphics. A single bit can represent a single dot of the picture. For example, a bit value of 1 might signify a white dot, while a 0 represents a black dot. More than one bit is needed to represent the dots of a color picture -- a color dot might use eight bits to represent a single dot of a video picture.

Graphics on a Macintosh II are organized into consecutive bits (1, 2, 4, or 8) used to represent pixels. This is a chunky format, also known as pixel mapping. Other possible formats include adding different planes of bits. Each plane is a representation of the screen with a one-to-one correlation of bit to pixel. Adding the bit planes allows a pixel to have an increased value to represent variations in color (planar format). A combination of the two techniques, known as chunky planar, can also be used. An example of such a combination would be to use three separate bit planes or video maps, each with values for red, green, and blue intensities to be combined into the color value for each pixel. The Macintosh II Video Card uses an eight-bit look-up table and chunky format. In binary, a string of eight bits can represent 256 different values: 0 through 255. This allows 256 intensities of red, green, and blue to be defined for each pixel. The 24-bit combinations of 8 bit red, 8 bit green, and 8 bit blue available on the Macintosh II video card generate 16.8 million possible colors (2 to the 24th power). Of the more than 16 million colors, 256 are selected and stored in a look-up table. Colors are then requested by software, and the closest matching color within the table of 256 is selected and stored in the frame buffer for conversion into a video signal of a particular pixel within the picture.

CREATING A VIDEO SIGNAL

To create a video signal recognizable by an analog RGB monitor, each of the 'dots' is converted by the Video Card into a time period of electrical strength by a device known as a digital to analog converter (DAC). The analog signal, or video signal, is a series of picture dots converted into time periods of varying electrical amplitude. A monitor or television is able to convert the signals into an exposure intensity of its phosphor

dots known as pixels by a constantly moving electron beam. The beam is controlled by deflection, or sweep, circuits, which produce either electrical or magnetic fields that deflect the beam to hit the screen phosphors and cause them to give off electrons and thus glow. The persistence of the phosphor pixels after exposure to an electron beam creates the glowing dots of the video screen. If the persistence of the phosphor were very short, the video picture might show only a single dot moving across the screen as the electron beam sweeps down the screen, one horizontal line at a time. If the phosphor decay were not equal to the timing of the beam, a flicker may appear where the phosphors have decayed to black, or a ghosting image when the decay rate is longer than the scan. In the case of a color signal, instead of having one beam to turn on pixels, three beams are used. Each picture dot is made up of three pixels: red, green, and blue. Each of the three beams fires only on a color pixel assigned to it. The blocking of the separate beams is done through a shadow mask or aperture grill. This is a metal mask made up of wires on the Apple High Resolution Color Monitor. The spacing between openings in the shadow mask is known as the grill pitch. The size of the grill pitch enhances the sharpness of the image. When the green beam fires, it is only on the green phosphor dots. The same situation is repeated for the colors red and blue. The strength of the beam is controlled by the signal magnitude received while firing on a pixel and produces the intensity of the color. A color dot might contain all three pixel colors at varying intensities.

Published Date: Feb 18, 2012

EtherTalk 2.0.1: Improves Copy Performance

I'm having a problem when performing a Finder copy to an AppleShare File Server on an EtherTalk network. If you narrow the network down to a 2-node EtherTalk 2.0 network, you get these following results:

Copying a 3.3MB folder to a Macintosh II varies between server with an internal HD160 SC, the copy time 113 seconds to 700+ seconds using the same drive on different Macintosh II computers. The time varies on a single machine and across machines. Using the same drive in a Macintosh IIx, the same copy process consistently takes 48 seconds. When an internal 40MB drive was used on the offending machines, these problems were not observed.

1) Why does the time vary?

2) Why is the time for the HD160 SC so much slower than those we saw on the HD40 SC?

3) Why isn't the Macintosh IIx demonstrating the same problems?

This article has been archived and is no longer updated by Apple.
We were able to duplicate this problem with some interesting twists. In our case, the slower machines were the Macintosh IIx systems with a particular Macintosh II performing as you would expect. Furthermore, HD80 SC drives also exhibited these symptoms.

In our tests, we found that the results varied from machine to machine and hard drive to hard drive, so we have concluded that the problem is not with particular hardware.

The problem can be resolved by upgrading to EtherTalk 2.0.1. When we did this, all drives on all machines functioned as expected. We recommend that all machines (workstations and servers) be upgraded to EtherTalk 2.0.1.

Published Date: Feb 18, 2012

LaserWriter: Print Manager Calls for Selecting Print Driver

I am writing code in MacApp and have a question on the Print Manager. I have figured out how to use the value of a variable to determine if the printer chosen by the user is a LaserWriter or ImageWriter. However, I can't tell if it is a PostScript LaserWriter, a LaserWriter IINT, LaserWriter IINTX, or a LaserWriter IISC. What I need are the calls to determine if the chosen printer is a PostScript printer or not. The reason they need this information is that in their program they are printing encapsulated PostScript files. They want to display a dialog box warning users if they are going to a non-PostScript LaserWriter, they will not be able to print that image.

This article has been archived and is no longer updated by Apple.
You can get the information on what printer driver has been selected by inspecting the value of the fLastPrinterName field of the TStdPrintHandler object belonging to the view you are trying to print. The fLastPrinterName field is changed to reflect the printer driver most currently selected in the Chooser when a Print or Page Setup command is issued. For the LaserWriter IISC print driver, the value of this field is "LaserWriter IISC." If a network-based printer is chosen using the LaserWriter driver, the field contains "LaserWriter."

Published Date: Feb 18, 2012

MS-DOS Word/Works: Printing Problem and Fix

Microsoft and Apple have worked to resolve the problems of printing from Microsoft Word 5.0 for the PC to an AppleTalk LaserWriter or Print Server. (Users of Microsoft Works 2.0 for the PC may encounter the same problem and take advantage of the same solution outlined below.)

Microsoft will support these changes and plans to complete and distribute a new driver in the future.

The Problem

When using a spooler, users can't print (in PostScript mode) from within AppleShare PC. If a spooler is not involved, a user can print once without turning the LaserWriter off and then on.

This is because Microsoft sends two print jobs at one time--the first is the initialization file; the second is the user's print job. They are separated by a Control-D, the PostScript end-of-file character. The first part loads a permanent dictionary into the LaserWriter's memory. It works fine the first time. The second time a user prints, the LaserWriter sends a message to AppleShare PC saying that the print job is aborted (because the dictionary is already loaded). AppleShare PC then quits, and the second half (the user's file) of the job doesn't print.

This article has been archived and is no longer updated by Apple.

The solution is to modify Microsoft's POSTSCRP.INI and POSTSCRP.PRD files.

In order to print Microsoft Word 5.00 documents to an Apple LaserWriter through the Appleshare Print Server's spooler, you must modify Word 5.00's POSTSCRP.PRD print driver and POSTSCRP.INI initialization file.

Modifications to POSTSCRP.PRD:

You must first convert this binary file into a text file by running the MAKEPRD.EXE conversion utility provided with Word 5.00. For more information on running MAKEPRD.EXE, consult Chapter 6, Using the MAKEPRD Program, in the "Printer Information for Microsoft Word" manual.

1. Use MAKEPRD to convert POSTSCRP.PRD from a binary file into a text file.

2. Start Word and load the text file created by MAKEPRD.

3. Use the Search command to locate the text string "byte:O". The cursor will now be located on a line that reads:

   byte:O mod:O "%!PS-Adobe-2.0 ^M^JPSp"

   Remove the "%!PS-Adobe-2.0" header so the line reads:

   byte:O mod:O "^M^JPSp"

4. Save the file as a text-only file, then quit Word.

5. Convert the modified textg file back into a binary file with MAKEPRD.

Modifications to POSTSCRP.INI:

1. Start Word and load POSTSCRP.INI.

2. Remove line 1. This line reads: %!PS-Adobe-2.0 ExitServer]

3. Remove lines 8 through 15, which look like the following:

```
%%BeginExitServer:O
userdict/msinifile known
{msinifile (POSTSCRP) eq {stop} if} if
serverdict begin O exitserver
userdict/msorigstate know {msorigstate restore} if
save/msorigstate exch def
/msinifile (POSTSCRP) def
%%EndExitServer
```

4. Modify the /PSI definition (line 21) by adding the PostScript command "Initmatrix" after the capital E and before the "90" so the line reads:

```
def fonttable 1 get fontset E initmatrix 90 rotate 0-612 translate
```

5. Modify the /PSp definition (line 25) by adding the PostScript command "Initmatrix" after the capital E and before the "save" command so the line reads:

```
def fonttable 1 get fontset E initmatrix save statusdict begin
```

6. Use the Search command to locate the text string "/PSe". Remove the command "currentfile closefile" from the line so it reads:

```
/PSe {restore end} bind def
```

7. Move to the end of the file by pressing CTRL-PGDN. Delete the first CTRL-D (diamond shaped) character.

8. Save the file as a text-only file.

The POSTSCRP.PRD and POSTSCRP.INI files should now be compatible with the Appleshare Print Server.

Published Date: Feb 18, 2012

Third-Party Scanners: Macintosh Compatible

Is there a Macintosh-compatible scanner that scans 11 x 17 ink documents (like floor plans)?

This article has been archived and is no longer updated by Apple.

You might look into the following products:

Houston Instrument's DMP-60 Series are professional, drafting-pen plotters that have a resolution of 0.0005 inches, accuracy of +/- 0.010 inches, and support HPGL and DM/PL. The DMP-61 plots at 32 inches per second axial speed and handles media from ANSI A to D sizes. The DMP-62 plots at 24 inches per second axial and handles media from ANSI A to E sizes. Both models accept the following options: MP-80 eight- pen changer, the Scan-CAD optical scanner accessory, a Kanji character set board and a 1MB expanded internal buffer.

Sharp Electronics's JX-450 Professional Color Scanner can scan images up to 11 by 17 inches in 24-bit color, 256 gray scales and monochrome. The scanning resolution of 300 dpi is adjustable from 30 to 300 in increments of one. An optional mirror unit lets users scan 35mm slides and transparencies up to 8.5 by 11 inches. The JX-450 uses a GPIB (IEEE 488) interface.

Howtek's Scanmaster is a flatbed scanner that provides an effective way of converting hard copy color images into data that can be entered into an image-capturing computer. letlows a user store, modify, and enhance color images. Input copy can be in the form of line art, text, continuous tone, or halftone documents.

The Scanmaster scans continuous-tone and half-tone images up to 11 by 17-inches and film transparencies up to 8 by 10-inches.

The Scanmaster employs a single CCD sensor and an all electronic Red-Green-Blue (RGB) color separation method. It digitizes full-color or black and white images or color transparencies at 30 to 300 dpi and transmits the data over a GPIB interface.

Application software is also provided. A menu-driven package, Scan-It, provides immediate access to all of the scanner's features. Using a pull-down menu, a user can select an area to scan, zoom, crop, and size the image. A contrast and color correction menu lets an operator adjust the gamma correction (contrast) in the scanner to match a specific output display device and to color correct an image by modifying the scanner's internal color look-up tables (LUTs).

You can output color-corrected and sized images to one of three file formats: PICT II, RIFF (Raster Image File Format), and Howtek's SIM (Scanned Imaged file format).

Published Date: Feb 18, 2012

AppleShare PC: Bitmapped Graphics With Epson LQ2500

I have migrated from TOPS to AppleShare. I have a program written in BASIC that prints a form with half-graphic characters on MS-DOS.

This works fine with TOPS Netprint. However, I couldn't get this form to print with AppleShare. The half-graphic characters are converted. AppleShare PC has the Epson LQ2500 command set, and Netprint has the Epson FX80 command set. What exactly are the differences?

This article has been archived and is no longer updated by Apple.
The Epson LQ2500 command set is a superset of the command sets belonging to the Epson LQ1000, LQ800, LQ1500, EX series, FX series, LX series, RX series, MX series, Epson printer, Standard printer, and Draft printer. Your problem is not due to a command set difference; it is with the IBM graphics character definitions and those of the ASCII character set defined by AppleShare PC.

You are using IBM graphic text characters, which are not a part of the LaserWriter's PostScript or the U.S. Standard ASCII character sets. Unfortunately, the characters defined for use by AppleShare PC stop at ASCII value 176. The graphic characters of the IBM character set begin at a higher value within the ASCII range.

Page 104 of the "AppleShare PC 2.0 User's Guide," shows the characters available from the Epson LQ2500 AppleShare PC option. Printing Epson graphics while using AppleShare PC Epson option does work. A program printing through AppleShare PC must use bitmapped graphics to generate lines or other graphics when using the Epson LQ2500 option.

There are a couple of possible workarounds that the TOPS Netprint program may have used to avoid this situation. The optional symbol set within the LaserWriter does include some horizontal and vertical line symbols. These may have been mapped into the same characters used by your customer's program. You can also create new character definitions within PostScript, and the IBM characters may have been recreated and defined as part of the LaserWriters ASCII character set.

AppleShare PC does not include either of these options for printing IBM graphic characters. We can only suggest that you use a program that prints bitmapped graphics for its form design or use TOPS Netprint.

Published Date: Feb 18, 2012

A/UX: "sleep" and Flow Control Settings

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

A colleage told me that I needed to use the "sleep" command with the "stty" command when doing modem settings. He said that the purpose of "sleep 3600" is to force the tty to stay open, so that the later "cu" command can take effect with changed settings.

However, I was under the impression that flow control settings are maintained across last close (unlike the standard SVID termio settings) and therefore, don't need "sleep". Who's right?

This article has been archived and is no longer updated by Apple.
You don't have to issue the sleep command to keep the tty open. You are right as far as you go; the flow control settings are maintained across last close, unlike the standard SVID termio settings.

All tty flow control characteristics, like "modem", "-modem", "dtrflow", "-dtrflow", and so on, are maintained across last close. This means the flow control setting are "remembered" when a tty device is closed and reopened. However, all other termio characteristics, like speed (50, 75, 1200, and so on), parity (parenb, parodd), input modes (ignbrk, brkint), and so on, are set to the default settings when the tty line is closed.

Therefore, a statement like "sleep 3600" in a modem setting is not required, but for other settings, like the speed change, it is necessary.

Published Date: Feb 18, 2012

A/UX: Connecting to TCP/IP and NFS Network (9/94)

Article Last Reviewed: 31 August 1992

I am taking A/UX into an environment that consists of many Sun workstations and IBM systems with AIX. I want to evaluate A/UX with regard to the following:

Connecting to NFS
TCP/IP
X Window System

What is required to make the A/UX ready to connect to the NFS network, and what do I have to do to make the A/UX ready to connect to TCP/IP?

This article has been archived and is no longer updated by Apple.
To connect A/UX 2.0 and 3.0 to a network with TCP/IP and NFS:

1) Prepare Ethernet hardware (EtherTalk Card, Coax Ethernet cable, and terminators) and Internet information (Host name, Domain name, IP address,Broadcast address, and netmask), which will be asked for later.

2) Bring A/UX 2.0 or 3.0 up in single-user mode.

3) Create an NFS kernel with both client and server capabilities. To do this type the command:

/etc/newconfig nfs

The "/etc/newconfig nfs" command automatically adds the appropriate modules to the kernel for using NFS.

While newconfig is running, the Internet information mentioned in step 1 will be asked for.

4) Restart A/UX, by selecting Restart from the Special menu:

5) If A/UX is to be a NFS server, the exported file system(s) must be listed in the /etc/exports file. For instance, the entire root file system exported to a host named "sun1", the file should contain:

/ sun1

6) Update the /etc/hosts file to include all hosts that A/UX communicates with, and update the /etc/hosts.equiv file to include your trusted hosts. Also, let other hosts, like Sun or AIX, know about your A/UX hostname and IP address.

7) Modify the /etc/fstab file to mount your local and remote NFS file systems.

8) Bring A/UX to multi-user mode. To do this, boot to single user mode and then type the command:

init 2

9) All TCP/IP and NFS network services, like "rlogin", "ftp", "rcp", "telnet", "showmount", "netstat", "nfsstat", "mount", "ping" and so on, are now ready to perform. "ping" is a nice tool to use to see if your A/UX and/or other hosts are talking to each other.

This process is described in more detail in the "A/UX Network System Administration" manual.

Article Change History:
1 Sept 1994 - Reviewed.

Support Information Services

Published Date: Feb 20, 2012

Aristotle Setup: AppleTalk Slot Assignments (4/97)

The Aristotle Display progrma may generate the error message "AppleTalk must be installed to run this program" when launched. This article describes a possible solution to this problem.

This article has been archived and is no longer updated by Apple.

This error message can occur when the slot assignments are not correctly set. In particular, slot 7 needs to be set to "AppleTalk" when running the Aristotle Display program.

For network startup and general network operations to work correctly, the slot assignments must set as:

Slot 1 (or Slot 2) = AppleTalk
Slot 7 = AppleTalk
Startup = AppleTalk

Note: Network startup can take place, most applications can be launched, programming can take place in Applesoft BASIC and files can be saved on any available volumes, even though slot 7 is set to "Your Card".

Article Change History:
02 Apr 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 20, 2012

Apple IIGS: Displaying in Monochrome Mode

Some of my group's Apple II software applications run in color on the Apple IIGS and look terrible. (Most of the programs with the problem are written in BASIC.) Is there a routine or call for putting the Apple IIGS into monochrome mode?

This article has been archived and is no longer updated by Apple.
What monitor are you using? The AppleColor Composite Monitor (A2M6020) or the AppleColor RGB Monitor (A2M6014)?

AppleColor Composite Monitor

There is a switch behind the front access door that turns the Composite Monitor to a green character on black background display. This will help the displayed image to appear more clearly.

Additionally, the Apple IIGS Control Panel has the Monitor CDEV for selecting color or monochrome monitor. This may help if you're using the Composite Monitor in the single-color mode. This setting affects only the composite output of the Apple IIGS. This is the only method we know for setting the Apple IIGS to monochrome mode.

AppleColor RGB Monitor

There are certain issues that affect the display on the RGB Monitor's graphics page. If the graphic images are not placed on even nibble boundaries, there will be color bleed that many consider unacceptable. On the RGB Monitor, the only solution is to rewrite the programs, with the even nibble boundary issue in mind.

Published Date: Feb 18, 2012

3COM EtherLink/NB Card: EtherTalk Incompatibility Problem

My office is having trouble with system bombs while using EtherTalk. Can you help?

Problem Description

Macintosh IIx and Macintosh IIcx systems equipped with the 3COM EtherLink/NB card (ASSY 4042- 031 REV A or B) running EtherTalk 1.2 intermittently experience system bombs. Not all Macintoshes display the problem. For instance, given two identical workstations on the same Ethernet segment, only one may experience the problem.

Usually, the system bomb appears in the form of a blank rectangular box in the middle of the screen with no error code or message. However, a couple of users have noticed the System Error 12 appear then disappear. (System Error 12 means that an unimplemented trap was executed.)

We have been working with 3COM for the last two months on this and have determined that our LAN configuration is sound and that all our hardware and firmware is up to specifications. The problem seems to point to the EtherTalk driver, which was written by Apple.

Correlations

The problem seems to be correlated to the amount of Ethernet traffic on our LAN. During an experiment, I placed an Ethernet bridge between an entire floor that was experiencing the problem, effectively reducing traffic and eliminating the system bombs. Also, during extremely high traffic periods, we noticed that the Macintoshes were experiencing the bombs more frequently.

A Macintosh connected to our network via AppleTalk to a Kinetics FastPath does not experience the system bombs. However, as soon as I connect it to the Ethernet and activate the EtherTalk driver in the Control Panel, the Macintosh begins to experience the system bombs.

This article has been archived and is no longer updated by Apple.
This is a known problem that tends to surface on networks with high traffic levels. It is due to an incompatibility between the revision A and revision B 3COM EtherLink/NB cards and EtherTalk 1.2 or newer. Just as Apple has released revisions to the EtherTalk NB Card, 3COM has released revisions to their EtherLink/NB cards. The most current is revision L, which works with EtherTalk drivers through version 2.0.1. Contact 3COM for details on their EtherLink/NB card upgrade program.

Something else to note is that the latest version of 3+Share is 1.5. 3COM technical support stated that version 1.3.1 shouldn't be causing any problems in your installation, but that there are enhancements in version 1.5 worth looking into.

For more details, search the Technical Info library under "3COM."

Published Date: Feb 18, 2012

DAL: "dialup" and "dialvax" Issue

Could you confirm that the following "hosts.cl1" file contains the correct dial-in information to conduct Data Access Language (DAL, formerly known as "CL/1") demos. In question is the "dialup" and "dialvax" routines. All I receive when running these options is a carrier detect and then the line is dropped. Everything has been verified on my side. Do either of these options support line speeds greater than 1200 baud?

Here is the file content:

rem: BE AWARE THAT THIS IS AN EXAMPLE FILE ONLY!!
rem: You should get your systems administrator to modify it according
rem: to your site's configuration
rem: Hosts.cl1 connection names are CASE-SENSITIVE

rem: This is the DAL config file hosts.cl1, version 1.0

rem: Refer to the "Guide to DAL Developer's Toolkit" for documentation.

rem: This is an example of how to handle the standard (default) login sequence.
rem: Use it as a model to build your own custom async login sequence.
rem: It should work for both VAX/VMS & A/UX.
std:login:3tries:\\sexit\\r\\slo\\r:600:2000:\\r\\^y\\^d\\w3:\\r:\\M
\\w2\\u\\r\\P\\Msword\\p\\r\\P\\m$

rem: a direct 9600 serial line with no login script direct:async:com1:9600:Noparity:8databits:2stopbits:Bothxonxoff:128:Nomodem
direct1200:async:com1:1200:Noparity:8databits:2stopbits:Bothxonxoff:128:Nomodem

rem: same as above (with no login script)
async:async:com1:9600:Noparity:8databits:2stopbits:Bothxonxoff:128:Nomodem
rem: same as above except it uses the com2 serial port
com2:async:com2:9600:Noparity:8databits:2stopbits:Bothxonxoff:128:Nomodem

rem: 1200 baud modem dial up (with no login script)
dialup:async:com1:1200:Noparity:8databits:2stopbits:Boxonxoff:128:Modem:Tone:9,
,14082539402:32secs:1attempt
dialvax:async:com1:1200:Noparity:8databits:2stopbits:Boxonxoff:128:Modem:Tone:9
,,14082576888:32secs:1attempt

rem: appletalk (ADSP) connections
rem: format => <<Host Name>>:atalk:<<Decnet Node>>.<<Appletalk Zone>>
nivax:atalk:NIVAX.Network Innovations
nidev:atalk:NIDEV.Network Innovations
nisup:atalk:SUPORT.Network Innovations

rem: This is a custom vms async login sequence.
vax:async:com1:9600:Noparity:8databits:2stopbits:Boxonxoff:128:Nomodem
vax:login:3tries:lo:600:2000:\\r\\^y\\w2:\\r:\\Msername\\u\\r\\P\\Massword\\p\\r\\P\\m$

rem: This is a custom unix async login sequence.
unix:async:com1:9600:Noparity:8databits:2stopbits:Boxonxoff:128:Nomodem
unix:login:3tries:exit:600:2000:\\r\\^d\\w3:\\r\\saaa\\r:\\sbbb\\r\\Mogin\\w2\\u\\r\\P\\Massw
ord\\p\\r\\P\\m$

rem: End of Hosts.cl1 (Note: Last line must have a return at the end of the line.)
This article has been archived and is no longer updated by Apple.
Regarding the two dial-up format examples below:

rem: 1200 baud modem dial up (with no login script)
dialup:async:com1:1200:Noparity:8databits:2stopbits:Boxonxoff:128:Modem:Tone:9,
,14082539402:32secs:1attempt
dialvax:async:com1:1200:Noparity:8databits:2stopbits:Boxonxoff:128:Modem:Tone:9
,,14082576888:32secs:1attempt

1) These are both good examples of how to program a dial-up connection. To use the dial-up options, you need a valid phone number. You could connect a modem to your local DAL server (VAX or A/UX) and use its phone number, or you could use the services provided by Clear Access

Corp. (formerly Fairfield Software Inc.) as describe in the DAL distribution package sent to your office during late December 1989 (see the bottom of page 2 of the "CL/1!" letter included in the mailing).

2) All standard RS-232-D speeds are valid with DAL: (Partial list: 75, 110, 300, 600, 1200, 2000, 2400, 3600, 4800, 7200, 9600).

Please note the declaration at the top of the host.cl1 file:

rem: BE AWARE THAT THIS IS AN EXAMPLE FILE ONLY!!
rem: You should get your systems administrator to modify it according
rem: to your site's configuration
rem: Hosts.cl1 connection names are CASE-SENSITIVE
Published Date: Feb 20, 2012

Apple II Setup and GS/OS: Compatible Versions

I installed the software from the Apple II Setup 2.1.1 disk (680-5060-B) on top of Apple II Setup 2.0.1. I did the other setup steps and tried to start up an Apple IIGS from the server. A GS/OS-specific file could not be found, and I got an error $0046.

I went back to Apple II Setup 2.0.1, and all was well.

Can you explain?
This article has been archived and is no longer updated by Apple.
The $0046 error is a "file not found" error. This error normally occurs because part of GS/OS is not on the startup disk--in this case, the server. For the server to have a working GS/OS system to start up the Apple IIGS, the GS/OS Installer needs to be run from an Apple IIGS that is logged on to the server. Then you install the desired GS/OS configuration on the server volume. We believe that this is what is meant by "did the other setup steps".

If we are correct, it is most likely that an older version of the 16-bit operating system is on the server. The 2.1.1 version was a release specifically for version 5.0.2 of GS/OS. If version 2.1.1 was installed while ProDOS 16 (System Disk 3.2 or earlier) is used on the server, there will be a problem with versions being matched correctly. Version 2.0.1 was designed to work with ProDOS 16, the predecessor to GS/OS. The files used on version 2.0.1 are quite different from the files used with 2.1.1.

We suggest that you use version 2.1.1 of the Apple II Setup Installer with a server having GS/OS 5.0.2 installed. Use version 2.0.1 on servers providing the earlier ProDOS 16 system files, which are found on System Disk 3.2 and earlier.

Also note that GS/OS 5.0 provided a version of Apple II Setup labelled "2.1." This version should be used only with GS/OS 5.0. However, the best solution is to use GS/OS 5.0.2 and Apple II Setup 2.1.1.
Published Date: Feb 20, 2012

Apple IIGS: ROM Upgrade Information

I have a question about the ROM Upgrades sent to the field for the new Apple IIGS logic board.

The ROM sent to us by Support Engineering looks like two of the ROM chips on the main logic board. There were no instructions on which chip to replace. Should we have received two chips? If not, which chip is the one to be replaced?

This article has been archived and is no longer updated by Apple.
The ROM that was sent goes in the socket labeled UJ9 (FFEF). The new ROM has 28 pins. If your board has a 32-pin socket at UJ9, put pin 1 of the ROM into hole 3 of the socket. With the notched end of the chip towards the front of the Apple IIGS, there should be two holes exposed on each side of the socket. If the socket has only 28 holes, pin 1 goes to hole 1.

Published Date: Feb 18, 2012

Apple Writer 2.1: Revision Utility

There is a patch diskette that fixes the problem Apple Writer 2.0 has with Parallel Cards. With the patch, Apple Writer can work under ProDOS with interface cards that worked with Apple Writer's DOS versions. Although Apple cards will still function normally from patched software, please label this disk.

This article has been archived and is no longer updated by Apple.

The patch program is self-prompting. It asks for three or four disk swaps as it updates the Apple Writer disk with prodos 1.1.1 and updates the Apple Writer software with fixes. The fix changes Apple Writer's output routines so that commands go out with the the high bit set, allowing more interface cards to recognize commands.

ProDOS-based software used with parallel cards will probably continue to have this command recognition problem. Apple is telling hardware and software vendors about it and advising that future software and firmware updates take steps to alleviate the problem.

Published Date: Feb 20, 2012

MacLANConnect Gateway: Information

Do you know anyone who has used Miramar System's MacLANConnect Gateway against OS/2 LAN Server EE 1.1? What kind of results are they getting?

This article has been archived and is no longer updated by Apple.
MacLANConnect is a useful product for selling into environments, like OS/2 LAN Server EE and Banyan, where there is no AFP support at this time. We also suspect this product will work in the IBM's mid-range family, although we have not seen it work. They just released version 1.1, in January, which now supports AppleTalk Phase II and works with AppleShare PC 2.0.1.

The basic concept is that you can take an IBM AT/XT/386 and use it as a gateway from AFP to NetBIOS. The NetBIOS side is simply whatever software the server offers. In the case of IBM, it would be the DOS requester of the PC/LAN support software.

The network topology we saw was a single Token Ring network with:

- 1 Macintosh IIx, TokenTalk NB Card, System 6.0.3, AppleShare Client

- 1 PS/2 60, IBM 16/4MB Token Ring Card MCA, As MacLANConnect Gateway

- 1 PS/2 80, IBM 16/4MB Token Ring Card MCA, OS/2 EE 1.1, OS/2 LAN Server 1.1 EE

- 1 PS/2 60, IBM 16/4MB Token Ring Card MCA, PC cc:Mail Client

What we did:

1) We loaded the MacLANConnect Gateway with the IBM LAN support 1.11 software.

2) We loaded AppleShare PC 2.0.1 on to the MacLANConnect Gateway as instructed in AppleShare documentation.

3) We used the PC/LAN Support's DOS requester software to log on to the OS/2 LAN Server and mounted several network drives; that is, V: Y: N:.

4) We loaded MacLANConnect software, configured the software through panels similar to AppleShare PC and started the sever process.

5) On the Macintosh side, we selected the Chooser and the MacLANConnect Server appeared. We logged on to the server and mounted all published volumes as Macintosh HFS volumes, similar to Novell's.

We were able to use cc:Mail on the Macintosh, access the post office residing on the OS/2 LAN Server, and exchange mail with the PC on the ring loaded with cc:Mail PC. We discovered when loading the protocol stacks that AppleTalk stacks need to be loaded before NetBIOS.

Also, we found that MacLANConnect runs out of memory rather quickly,. We had to adjust the maximum number of open files to accommodate this. We may need to investigate moving the drivers to a higher memory location through a third-party DOS extender.

For more details, search the Technical Info library under "Miramar Systems."

Published Date: Feb 18, 2012

Macintosh: Displays Greater Than 72 dpi Not Yet Available

I want to implement scanned documents in conjunction with electronic mail. The scanned documents look good when printed but not as nice when viewed on the screen at 72 dpi. I need video cards and monitors that work at 100 or 150 dpi, but I cannot find anything other than 72 or 75 dpi. I don't want to change scale, just resolution.

Can you help?

This article has been archived and is no longer updated by Apple.
As of February, 1990, we don't know of any display system for the Macintosh that provides a resolution higher than 72 dpi without decreasing the size of the displayed image in direct proportion to the increase in resolution. In other words, the higher the screen resolution, the smaller the displayed image.

Published Date: Feb 18, 2012

Nine-Inch Color Monitor for Macintosh

I am using a Macintosh as the front end to a new product that will be used in an automobile. I need a 9-inch color monitor with the Macintosh and have located a unit from DisplayTek that has a vertical scan rate of 60Hz or 70Hz (selectable to one or the other only, not adjustable in a range) and a horizontal scan rate or 31.5KHz.

The horizontal can work +/- 0.5KHz from nominal. Is there a video board that works with these specifications? I have been told that an early version of the SuperMac video card might be able to work. As an alternative, is there another 9-inch monitor that I can suggest to them?

This article has been archived and is no longer updated by Apple.
Princeton Graphics makes a 9-inch multisync monitor on a special-order basis only. This monitor should work properly with the Macintosh II video card. For more details, search the Technical Info library under "Princeton Graphic."

Published Date: Feb 18, 2012

Distributing Apple Fonts Requires License

What is the policy for distribution of the fonts found in the System Software? I want to distribute a HyperCard Stack, and he need to install the New York font in it. I also would like to use other fonts, but need to know if it's okay to distribute them like this.
This article has been archived and is no longer updated by Apple.
If you are going to distribute a HyperCard stack containing any of the following fonts, you will need to get a license from Apple Software Licensing to distribute Apple System Software:

```
Athens          Cairo          Courier
Geneva          Helvetica      London
Los Angeles     Mobile         New York
San Francisco   Symbol         Times
                Venice
```

For information on using the fonts distributed with the LaserWriter family of printers or other information licensing Apple products, contact Apple Software Licensing at 408-974-4667 or eMail them at SW.LICENSE@apple.com
Published Date: Feb 20, 2012

Font Manager and Printer Driver: How They Relate

Could you give me a brief description of the relationship between the FOND resource, the Font Manager, and the printer driver.
This article has been archived and is no longer updated by Apple.
The FOND's style mapping and name tables contain the information for matching a PostScript font to a bitmapped font. The style mapping table is used by the LaserWriter driver and contains the font class and character encoding information plus a mechanism for getting the name of the PostScript printer font. When you request to print a particular font and style, the driver checks the "FOND" for a style mapping table. If the table is present, it then looks up the PostScript name of the style to print.

The name table is actually a table within the style mapping table that contains an array of indices that help build the font name suffix for each possible style in the font family. The name table has the following format:

```
NameTable = record
stringCount : integer;
baseFontName : str255;
{strings : array [ 2..stringcount ] of String; }
end;
```

The name table contains the number of strings followed by the base font name (the string count includes the base font name). The base font name is followed by strings containing suffixes or numbers specifying what suffixes to put together to get the real PostScript font name. Here's an example:

```
|_____Helvetica-BoldOblique
```

The "|_____" prefix is added by the driver (a vertical slash with six underline characters). The base font name is "Helvetica". The suffix to get the right font name to get the bold and italic style is "-BoldOblique", and the index in the index array for style $03 (BoldItalic) contains four. For our example, the string list for this font would have the following entries:

```
1 Helvetica
2 9 10
3 9 11
4 9 10 11
5 9 12
6 9 12 9 10
7 9 12 9 11
8 9 12 9 10 11
9 -
10 Bold
11 Oblique
12 Narrow
```

If you take a look at string 4, it has 9, 10, and 11 as entries. If you put these suffixes together you get "-BoldOblique". When the driver gets a name, it checks to see if the printer already contains it. If it does not, the driver checks the System file for a file with the name "HelveBolObl". If it finds one, it dumps the contents of the file to the printer and uses the font. Otherwise, it dumps a QuickDraw bitmap, which gets scaled to the right size.

The printer font filename (in our example HelveBolObl) is derived from the PostScript name using a simple algorithm. The filename is found by dissecting the PostScript name, contained the name table, into pieces based on capital letters and hyphens. The first five letters of the first piece followed by the first three letters of any subsequent components. The maximum number of letters that can compose a filename is 31 characters. This is a restriction of HFS. For example, given the following PostScript names, here are the equivalent printer font file names:

Palatino-Italic = PalatIta
Courier-Bold = CouriBol
Times-Roman = TimesRom
Published Date: Feb 20, 2012

PrintMonitor Error -36: Corrupted Volume or WDEF Virus (11/94)

I am getting an interesting error:

Print Monitor found an internal problem:

where = 80
why = -36

The system configuration is:

Macintosh IIcx
System Software 6.0.3
Background Printing: On

The problem occurs with different applications.

This article has been archived and is no longer updated by Apple.
This error indicates that Print Monitor encountered an I/O error while trying to open/create the "Spool Folder" or creating the "Spool File". This usually means that the disk that Print Monitor is trying to write to is somehow corrupted. The solution is to back up the disk and reformat it. It is also possible that a virus, such as WDEF, is causing the problem.

Article Change History:
14 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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SANE: Accuracy and Performance Information

I am interested in the accuracy of SANE when working with numbers that take SANE to its maximum accuracy potential. Also, what is the performance difference when using the most accurate SANE number format compared to using less accurate formats?

This article has been archived and is no longer updated by Apple.
Though different in detail, the MC68881 and SANE packages are both implementations of the IEEE Standard 754. Following are the range and precision of the data types supported by SANE:

	Single	Double	Comp	Extended
Size (bytes:bits)	4:32	8:64	8:64	10:80
Range of binary exponents				
Minimum	-126	-1022	-	-16383
Maximum	127	1023	-	16383
Significand precision				
Bits	24	53	63	64
Decimal digits	7-8	15-16	18-19	19-20
Decimal range approximate				
Maximum positive	3.4E+38	1.7E+308	9.2E18	1.1E+4932
Minimum positive norm	1.2E-38	2.3E+308		1.7E-4932
Minimum positive denorm	1.5E-45	5.0E-324		1.9E-4951
Maximum negative denorm	-1.5E-45	-5.0E-324		-1.9E-4951
Maximum negative norm	-1.2E-38	-2.3E-308		-1.7E-4932
Minimum negative	-3.4E+38	-1.7E+308	-9.2E18	-1.1E+4932

If the compiler is making direct calls to the MC68881, accuracy may suffer in some situations. For elemental functions, both SANE and the MC68881 have errors in the least-significant bits of the fraction part of extended-format results, but SANE's errors rarely exceed the last bit, whereas the MC68881 errors may extend to as many as the last five bits. The MC68881 is much more likely to return an error in a double-precision result than SANE is.

Due to the architecture of the Macintosh, and how SANE is implemented on the Macintosh, the extended-precision number format not only provides the most accuracy, but also provides better performance than the computational or double-number formats. The Macintosh converts double and computational numbers into extended number before using them, and thus takes more time than just using the extended-number format.

Single precision provides the most speed, but is hardly ever used because most high-level language compilers today generate code using the extended number format. You can use the single number format, but the code probably would have to be written in assembly language.

For more complete and detailed information, we suggest the "Apple Numerics Manual, Second Edition" from Addison-Wesley.

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Macintosh Portable: Printing to a LaserWriter IISC

I have a Macintosh Portable with 2MB RAM, and no INITs. I connected a LaserWriter IISC and am printing an Excel 2.2 spreadsheet. The spreadsheet is approximately 12 or 14 columns and about one page. I use landscape mode, reduce it to 75%, and print gridlines. This process takes five minutes to print. Is this print time typical, or is there something wrong?

This article has been archived and is no longer updated by Apple.

This is an issue that is inherent to applications such as Excel, Microsoft Word, MacDraw II, and other programs that don't display a watch or animated cursor while processing a print job.

The problem is that applications like Excel do not put up an animated or watch cursor while processing a print job. Since no other activity is taking place (like typing, moving the mouse, and so on), the Macintosh Portable falls into "Rest" mode. This is where 64 wait states are inserted so that the effective processor speed is slowed to 1MHz (this is done to reduce power consumption when no activity is taking place). If application manufacturers follow HIG and put up an animated or watch cursor, the CPU does not Idle and will finish the print job slightly faster than an Macintosh SE.

A suggested workaround is to deactivate "Rest", one of the power-saving features of the Macintosh Portable. This is done by opening the Portable CDEV and "Option-Clicking" on the words "Minutes until Automatic Sleep". A dialog box appears describing "Rest" and gives you the opportunity to turn "Rest" off. You can also prevent idle (aka "Rest") by performing actions such as moving the mouse, typing on the keyboard, and so on.

Using a document similar to the one described above, these were our findings:

Macintosh Portable
---
5 minutes 8 seconds with idle ON
2 minutes 55 seconds with idle OFF

Macintosh SE
---
3 minutes 8 seconds

In summary, this is an Excel compatibility problem that occurs on the Macintosh Portable when printing to any printer, not just the LaserWriter IISC. In addition, a user should have the 4X fonts installed for maximum performance when printing text in portrait. The fonts are bitmapped and can be printed directly from the Macintosh screen to the LaserWriter IISC. Printing is a little faster, too, when they are present. When printing horizontally or from graphics packages that use regions instead of polygons or bitmaps, performance suffers.

Published Date: Feb 18, 2012

High Speed Serial Interface: Manual Errata (11/96)

Listed below are corrections to the High Speed Serial Interface manual (030-0012-00).

This article has been archived and is no longer updated by Apple.

Corrections
==========

Page 16

The information for switch 4 is reversed, it should read:

ON = delay enabled
OFF = delay disabled

Page 32

Two labels on the schematic diagram are wrong:

XMIT XMIT
-----O B should be -----O C
WIRE WIRE
TO TO
PIN 3 PIN 3

RECV RECV
-----O C should be -----O B
WIRE WIRE
TO TO
PIN 2 PIN 2

P8A PROM

The P8A PROM interferes with the operation monitor routines that use $3C. The P8A uses this location as a temporary storage space and does not restore it.

Article Change History:
19 Nov 1996 - Reviewed for technical accuracy, revised formatting.
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Apple 410 Plotter: Compatible Plotter Drivers

I have an Apple 410 plotter. I have the pinouts for connecting it to an IBM PC. Because most of my applications won't have drivers for my plotter (Harvard Business Graphics, in particular), what other drivers can you suggest?

What other plotters is the Apple plotter compatible with?

This article has been archived and is no longer updated by Apple.
The Apple Plotter is based on the Yokogawa Electric Works (YEW) PL-1000. You should be able to use any plotter driver for the PL-1000 with the Apple Color Plotter.

Published Date: Feb 18, 2012

TA41065_TwoPage_Monochrome_Monitor_Bandwidth_(TIL05293).pdf

Two-Page Monochrome Monitor Bandwidth

What is the bandwidth of the 21-inch Two-Page Monochrome Monitor?

This article has been archived and is no longer updated by Apple.
The video bandwidth is 100MHz +/-3dB.

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A/UX: Sources for BSD Extensions (8/94)

Can you give me a source for BSD 4.3 extensions offered with A/UX, like signals and streams, or point me to a list of these items?

This article has been archived and is no longer updated by Apple.
Currently, there is no document that lists and describes all 4.[23] extensions offered by A/UX. Lists are scattered and explained among various A/UX documents. It is difficult to list them individually. However, this should provide some of the Berkeley BSD 4.[23] features supported by A/UX:

- TCP/IP Berkeley-Style network support. It is called B-Net in A/UX. The supported protocols include:

IP (Internet Protocol, RFC791)
UDP (User Datagram Protocol, RFC768)
TCP (Transmission Control Protocol, RFC793)
ICMP (Internet Control Message Protocol, RFC792)
ARP (Address Resolution Protocol, RFC826)
Telnet (RFC854)
SUBNET (RFC950)
FTP (File Transfer Protocol, RFC959)
SMTP (Simple Mail Transfer Protocol, RFC821)
BIND (Berkeley Internet Name Domain)

All servers and service programs are in the /etc/servers and /etc/services files. The programming interface routines are in A/UX Programming Reference manual, sections 2N and 3N, like accept(2N), bind(2N), connect(2N), getsocketname(2N), getsocketopt(2N), listen(2N), recv(2N), select(2N), send(2N), socket(2N), and so on.

- Berkeley-Style 4.[23] signals and system calls, like sigblock(2), sigpause(2), sigsetmask(2), sigstack(2), sigvec(2), killpg(2), and so on.

- Berkeley 4.[23] utility programs are in the /usr/ucb directory.

- C shell

- Berkeley-Style dump.BSD, rdump, restore, rrestore utilities.

- Termcap database and text editors, like vi and ex.

- Other utilities, like symbolic link, symbolic debugger, printenv, and so on.

Note that STREAMS is not Berkeley; it belongs to System V.3.

Article Change History:
19 Aug 1994 - Reviewed.
31 Aug 1992 - REVIEWED For technical accuracy

Support Information Services

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TA41068_AUX_Where_to_a_Find_List_of_Applications_(TIL05299).pdf

A/UX: Where to a Find List of Applications

Article Change History

08/31/92 - REVIEWED
* For technical accuracy

Where could I find an UPDATED list of applications ready to run under A/UX and/or could you list the applications?

This article has been archived and is no longer updated by Apple.
To find the list, use the following AppleLink path:

3rd Party Connection
Third Party Products/New Features
A/UX

Check that place often to get an updated list.

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Applesoft: CHAIN and user-defined functions Issues

User defined functions in Applesoft may cause problems when the CHAIN command is used.
This article has been archived and is no longer updated by Apple.
When Applesoft encounters a DEF FN statement, an entry is made in the simple variable table which points to the rest of the function in the text of the program. Strange and perhaps fatal things can happen if you use this functon defined in the previous program without having the same image of the function at the same memory locations.

The easy way around this problem is avoid using defined functions, or re-define all of your defined functions in each of the chained modules.

First program:

```
5 REM PROGRAM 1
10 DEF FN A(X)=X*X
20 PRINT FN A(2)
30 PRINT CHR$(4);"BLOAD CHAIN,A520"
40 CALL 520"PROGRAM 2"
```

Second program:

```
5 REM PROGRAM 2
10 DEF FN A(X)=X*X
20 PRINT FN A(2)
30 END
```

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ProFile: "Disk Full" Possible Causes and Fixes

An enhanced Apple IIe and ProFile 5MB hard disk is getting consistent Disk Full errors in an Applesoft BASIC program under ProDOS 8 1.8 and BASIC.SYSTEM 1.4. The errors have been increasing in frequency such that they happen two and three times per day. (They happened two or three times per year previously.) The hard disk is only 15% full, and two ProDOS volume checker programs (Mr. Fixit by Glen Bredon, and BagOfTricks2 by Quality Software) report no errors on the volume. The interface card has the new ROM, part number 341-0299.

System Configuration

AuxSlot: Apple Extended 80-Column Card
Slot 1: empty
Slot 2: Apple Super Serial Card
Slot 3: empty
Slot 4: empty
Slot 5: Applied Engineering TimeMaster II H.O. (clock card)
Slot 6: Apple DuoDisk Controller
Slot 7: Apple ProFile Interface

The program lines that generate the error are always PRINT statements that are printing data to an open ProDOS sequential text file. There is nothing unusual about the method used; that is, OPEN, WRITE, PRINT, CLOSE.

Can you pinpoint the probable cause of this problem? Could it be a problem in BASIC.SYSTEM 1.4, or a ProFile or controller hardware problem, or something in the 341-0299 ROM?

This article has been archived and is no longer updated by Apple.
We doubt that there is a problem with the hardware. It seems to be related to the way things are handled on the ProFile disk under ProDOS 8. Here are some possible causes:

- Even though the error message deals with disk space, it actually may be that the directory is full; that is, there is no space for additional file entries in the disk directory. This would be especially true in a system that stores many small files.

- ProFiles "spare out" any bad blocks found by its startup procedure. If all of the available blocks have been spared out and another block needs a spare, an error stating that the disk is full might be reported. In this instance, all spare blocks have used and no more are available, creating a form of disk full. The ProFile has only 32 spare blocks for use. Once used, the ProFile does not allocate any additional spare blocks.

- With many small files being written and rewritten to the ProFile, fragmentation can occur more quickly than if a few large files are used. With a heavily-fragmented disk, a "Disk Full" message might occur.

Some possible solutions have been suggested:

- If you have the Pascal "Crunch" utility, run this utility against the ProFile to resolve possible fragmentation of the drive.

- Use more subdirectories inside subdirectories to help slow the filling of directory entries.

- Do a file-by-file backup of the ProFile. Then reformat and restore the files to the ProFile.

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GS/OS 5.0.2: "File Not Found" Error

I work at an Apple IIGS (1MB RAM) that is on a network with Macintosh SE/30 with 4MB RAM and HD80 SC File Server.

After updating the GS/OS system files on the server via the Apple IIGS Installer, updating Aristotle likewise, and reinstalling the Apple II Setup disk, I received the following error message:

Sorry, system error $0046 occurred while loading the start FST file.

I checked all access privileges, and they are not a problem. Can you help?
This article has been archived and is no longer updated by Apple.
The $0046 error is a "file not found" error. There are two ways this can happen when starting up from the network.

1) The Icons folder and the System folder need privileges set to the Bulletin Board item found in the GS/OS Icon Info menu item. If these folders are set otherwise, GS/OS cannot "find" the files inside these two folders.

2) There is a file missing or misplaced on the server volume that the Apple IIGS requires for startup. Usually reinstalling GS/OS onto the server resolves the problem.
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ProDos GS/OS, and Instant Pascal: Launching and Quitting

We have an AppleTalk network system and have discovered some strange behavior with certain applications on the Apple II.

Using current software, there are three shell programs (besides BASIC) available for AppleTalk network system users. They are Aristotle, the Finder, and Let's Share. We have found that some applications work perfectly when launched from one of the shells, but not when launched from another. Also, when quitting, some return to the shell from which they were launched, while others return directly to the File Server Log-On screen.

Here are some examples:

- Mavis Beacon Teaches Typing (Software Toolworks) works fine when launched from Aristotle or the Finder, but not from Let's Share

- Medley (Milliken) always returns the user to the Log-On screen on quitting.

Some applications seem to return the user to the shell from which they were launched, while others return the user to the server-defined startup application. (I have no concrete examples of this, but here's an illustration)

- The user logs on and goes to Aristotle, his startup application. He launches the Finder from Aristotle and from there launches "Application X". On quitting Application X, he is returned to the Finder, and on quitting the Finder (Special Menu, Shut Down, Return to Launching Application), he is returned to Aristotle.

- The user repeats the above process to get to the Finder, but this time launches "Application Y". On quitting Application Y, he is returned directly to Aristotle, even though he launched Application Y from the Finder.

Do you have any clues about these differences? Do some of these shells leave memory in a different state than others when they launch applications? Are there any standards for this sort of thing? Is Let's Share a known offender, or does it follow whatever rules there are? Is there a standard GS/OS or ProDOS 16 Quit call? Is everyone not implementing it correctly?

Here's a related I have tried putting ProDOS applications that reside on floppy disks into Aristotle menus. If I put the disk in the drive and choose the menu item, the application launches properly and, on quitting, seems to return the user to Aristotle without a hitch. However, a colleague reports that when doing this with Instant Pascal, the server connection is dropped somewhere, so quitting fails. Do some applications disable network listeners or trash the memory where network files resides? Is there any way to tell what might work in this fashion and what might not?
This article has been archived and is no longer updated by Apple.
The behavior is determined by which operating system the application is written under: GS/OS or ProDOS 8.

The ProDOS 8 quit command is quite simple and does not have the ability to put the name of the application to return to on the return stack. ProDOS applications "quit to" the program named Start in the GS/OS volume. As shipped, this is the Finder. However, if the startup program has been set in the AppleShare Admin application, the Finder may not be the "start" program any longer. Whatever is set in Admin is the application to which the ProDOS 8 programs return.

GS/OS applications have the ability to put the name of the program to which one returns onto the return stack. If properly written, quitting a GS/OS application returns the user to the same application that launched the GS/OS program just quit.

For your examples:

- We defer to Russ Systems about all Let's Share issues.

- We are still trying to work a variety of issues out with Medley. We will add this one to the list to investigate.

- With Aristotle (ProDOS 8) as the Admin set startup application, launching the Finder (GS/OS), then launching "Application X" (apparently, a GS/OS application from the behavior described), and quitting "Application X", it would be correct to finish at the Finder, if "Application X" is, indeed, a GS/OS application. Quitting the Finder (GS/OS) would then return to the application that launched it, Aristotle.

- In the next example, instead of launching "Application X", the user launches "Application Y" (apparently, a ProDOS 8 application from the behavior described), then quits "Application Y", and finishes in Aristotle. This would be the correct behavior for a ProDOS 8 "Application Y".

Instant Pascal has several issues associated with it. The primary issue is that it is neither a ProDOS nor a GS/OS application. Instant Pascal has its own operating system with its own input/output routines. These I/O routines know nothing about the network. It is, thus, totally logical that Instant Pascal disregards all network activities. The only solution is to rewrite the Instant Pascal operating system. It is unlikely that this solution will ever be considered.
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IEEE-488 Interface Card: Time-Saving Hints (11/96)

Keep the following hints in mind when using the Apple IEEE-488 Interface:

This article has been archived and is no longer updated by Apple.

1. Use the IEEE card only from within an Applesoft program. If you try to use it in command mode, a SYNTAX ERROR will result, since the Applesoft prompt "]" will be sent to the interface. If you do not reset the I/O at the end of your program, a "CMD ERR" will result.

2. Issue the command "SC1" as one of the first commands in any new program. This command will cause the IEEE commands to be echoed to the screen for easier debugging. When the device works properly, the "SC1" can then be removed.

3. Ascertain whether the IEEE device you're using requires the REMOTE ENABLE command before it will accept anything you send it. (Many IEEE devices do require this command.) If the device requires the command and does not receive it, the device will not be enabled: it will handshake properly but won't recognize its address on the bus, and will therefore return a BUS ERROR the next time it's accessed. In some cases, the "RA" command can be used to turn on all remote devices on the bus; likewise, the "RM address list" command can sometimes be used to enable selected devices.

4. Understand the convention for listener and talker addresses. All devices on the bus have a device number in the range of $00 to $1E. If you want the device to act as a listener, use the address range $20 to $3E--that is, add $20 to the device number. If you want the device to act as a talker, use $40 to $5E--that is, add $40 to the device number. For example: If an HP 3438A has a device number of 3 and if you want it to be a listener you must use address $23. From the keyboard, $23 is a , so you could use (for example) PRINT "TG ". If the device is to be a talker, you must use address $43, which is an upper case C from the keyboard; an appropriate command to use would be PRINT "RDC".

Article Change History:
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TA41076_Integer_BASIC_The_X_Register_in_Machine_language_routines_(TIL00532).pdf

Integer BASIC: The X Register in Machine language routines

Integer BASIC keeps track of where it is in the lines of code by using the X register.
This article has been archived and is no longer updated by Apple.
Machine language routines that can be called from a multi-statement line should save and restore the X register.
Published Date: Feb 20, 2012

TA41077_EtherTalk_NB_Revison_K_card_Problem_with_Macintosh_IIci_(TIL05320).pdf

EtherTalk NB Revison K card: Problem with Macintosh IIci

Article Change History

01/05/93 - REVIEWED
*For technical accuracy

Apple engineering has discovered a performance problem using an EtherTalk NB Revison K card and EtherTalk 2.0.1 or 2.0.2 software on a Macintosh IIci that is using on-board video and 4 or more colors (in 2-bit or greater mode). Ethernet performance is degraded in this situation.

This article has been archived and is no longer updated by Apple.
To avoid Ethernet performance degradation on a Macintosh IIci, try any of these three alternatives:

- Use an EtherTalk NB Revision L card, or

- Do not use on-board video (i.e. use a video card), or

- Use only black and white video (1-bit video)

If you're using EtherTalk software, the Ethernet performance can be improved somewhat by starting the Macintosh IIci in 1-bit video and later switching to 2-bit or more video. We have found this workaround to be effective when using EtherTalk software (AppleTalk), but not MacTCP software (for example, MacX.)

The Ethernet performance can also be improved somewhat, if you start the Macintosh IIci in LocalTalk and then switch to EtherTalk. This wouldn't help in the MacTCP case either, unless you are running MacTCP over EtherTalk, rather than standard Ethernet.

To ensure that you avoid the Ethernet performance problems, use an EtherTalk NB Revision L card, or use a video card, or use only black and white video. Note that the Revision L EtherTalk NB card has been shipping since December of 1989.

Published Date: Feb 20, 2012

System 38 Files: How to Convert for Use on a Macintosh (8/94)

Is there a product that interprets IBM System 38 EBCDIC files with all character formatting (that is, Bold Type, Type Sizes, Underline, and so on) into a Quark Xpress document for page layout?

This article has been archived and is no longer updated by Apple.
Before a translation can take place, the files need to be moved from the System 38 to the Macintosh. This can be accomplished with Andrew Corp., IDEAssociates, or Wall Data products which are a combination of hardware and software that lets the Macintosh become a window in the System 38. These product provides file transfer methods to move the files from the System 38 to the Macintosh.

If the System 38 files are in an RFT/DCA file format, there are translation applications that convert to a MacWrite or Microsoft Word file format. Quark XPress can then open the MacWrite or Microsoft Word file for placement in the page layout.

Apple File Exchange provides one method of translation with the supplied documents. This is a basic RFT/DCA translator. Another method is to use Microsoft Word; it has its own mechanism for reading RFT/DCA files. Again, this is a basic translator. Also, DataViz publishes MacLink Plus/Translators that translates RFT/DCA files. Use of the DataViz AFE translators is probably the most comprehensive translation available.

If the System 38 files are not in an RFT/DCA format, it is not likely that the files can be transferred and translated while maintaining text style and formatting. A plain text file normally is all that is available if the RFT/DCA format is not used on the System 38.

In summary, first transfer the file from the System 38 to the Macintosh via the one of the terminal emulator products. Next, use one of the translation products to convert the transferred file into a MacWrite or Microsoft Word file format. Finally, open the translated file with Quark XPress and place the contents of the file in the layout.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
30 Aug 1994 - Updated list of terminal emulator vendors.
12 Feb 1993 - Updated KMW now Andrew Corporation.

Support Information Services

Published Date: Feb 20, 2012

TA41079_Needed_Teleprompting_Software_for_the_Macintosh_(TIL05322).pdf

Needed: Teleprompting Software for the Macintosh

Do you know of any Macintosh-based software for teleprompting?

This article has been archived and is no longer updated by Apple.
We don't know of a software-only solution for teleprompting. However, Listec makes the A-5000, a complete hardware system available from Listec. The A-5000 is a black box that connects to the printer port of a Macintosh. Any application that prints via a Chooser device can be used to supply the words for prompting. A print driver that outputs ASCII is needed--most daisy-wheel printer drivers provide ASCII output from the Macintosh. The A-5000 requires its input to be in ASCII text form.

The output of A-5000 needs to go to a teleprompting display device. Listec makes a variety of display devices, including the transparent glass prompters used by podium speakers and the video screens mounted on studio video cameras.

For more details, search the Tech Info library under "Listec."

Published Date: Feb 18, 2012

LocalTalk PC Card: How to Run TOPS on It

I have a problem with TOPS on my LocalTalk PC Card; I can't get it to start. I have talked with TOPS, and they told me to load Apple's driver in CONFIG.SYS. I am using TOPS 2.1 and AppleShare PC 1.2. What driver should I load in the CONFIG.SYS file to run TOPS on my LocalTalk PC Card?

This article has been archived and is no longer updated by Apple.
We believe that the file you are talking about is the ATALK.EXE file. This program is installed when you run the AppleShare PC Installer program, and when run, loads the LocalTalk PC Card driver into memory. We suggest that the best way to get all of the files installed in the right order and place is to run the Installer program. It places a line in the AUTOEXEC.BAT file that loads the LocalTalk PC Card driver at startup. Complete instructions on how to install all of the AppleShare PC program are in the "AppleShare PC User's Guide" on pages 7 through 14.

If you want to modify the AUTOEXEC.BAT file to load the ATALK.EXE file, it is important to get the order in which you execute the AppleShare PC installation files correct. The order of the six basic files is:

1) ATALK
2) ASHARE
3) MINSES
4) REDIR
5) ANET AUTO
6) DA/R

Instructions for this are on pages 184 and 185 of the "AppleShare PC User's Guide."

You also might have to change the "Lastdrive" command in CONFIG.SYS. This command specifies the maximum number of drives that DOS recognizes. The default hightest drive is E. To specify a greater number of drives, give the highest drive a letter you are likely to use. For example, "LASTDRIVE = F" gives you six possible drives. This is the only change that you may need to make to the CONFIG.SYS file.

Published Date: Feb 18, 2012

Think C Provides Cursor-Positioning and Inverse Video

I want to port an in-house application to the Macintosh. I want to have a true Macintosh interface on this application eventually. However, to service the people that already have Macintoshes, I first want a quick, direct port to the platform with the same DOS interface they have been using.

The program is written in C and uses basic screen positioning and reverse video calls to interact with the user. I are looking for a C compiler that has a "tty library" (or something similar) that they can link into their program to create a tty window on the Macintosh screen automatically and then be able to make calls to position the cursor within that tty window. I wouldn't mind if I lost the reverse-video capability, but I definitely need the cursor-positioning capability.

I would like to to write the Macintosh interface port of the application in MPW C, but I haven't seen a "tty library" in MPW that can do the job on the "quick-and-dirty" port. Does MPW or any other C compiler have such a library?

This article has been archived and is no longer updated by Apple.
Think C, from Symantec, offers an ANSI console package with cursor-positioning and inverse video capabilities. As of January, 1990, MPW C did not offer these functions. For more details, search the Tech Info library under "Symantec."

Published Date: Feb 18, 2012

AppleTalk for VMS 2.1: Contact Software Licensing

Is AppleTalk for VMS Phase 2 currently shipping? Where do you get it?
This article has been archived and is no longer updated by Apple.
AppleTalk for VMS 2.1, the functionally complete Phase 2 version of AppleTalk for VMS, has gone Golden Master.

It will not be available through APDA or on the price list. Licenses for customer internal development or redistribution can be obtained through Apple Software Licensing. You can eMail them at SW.LICENSE@apple.com

Article Change History:
02 Apr 1997 - Update eMail address.
Published Date: Feb 20, 2012

Integer BASIC: How to PEEK and POKE location 32768

Integer BASIC numbers are limited to the range -32767 to 32767.
This article has been archived and is no longer updated by Apple.
You can still access location 32768 by using -32767-1.

```
PRINT PEEK (-32767-1)
POKE -32767-1,0
```

Published Date: Feb 20, 2012

DAL: No Support for Oracle Long Data Type

Does Data Access Language (DAL, formerly known as "CL/1") support Oracle's long data types?

This article has been archived and is no longer updated by Apple.

If by long data types you are referring to LONGCHART (their data type that goes to 1 gigabyte), then no -- DAL does not yet (as of release 1.3.6) support it. The maximum size that will be supported in a future DAL release that extends size support is as yet unknown.

Published Date: Feb 20, 2012

Macintosh: Remote 3278 Connection

I need information on a bisynchronous modem and software to dial into the company mail system from my Macintosh SE at home. I need to emulate a 3278 and run SDLC at 2400 baud.

This article has been archived and is no longer updated by Apple.
First, there is no such thing as a bisynchronous modem. We think you're probably thinking of a synchronous modem in this case.

- MacMainFrame DX allows the option of remote connectivity over asynchronous modems and is a possible solution.

- A second solution is to run IBM 3278 emulation using MacTerminal on the Macintosh and dial into DCA IrmaLine (AppleLine) through a pair of Hayes-compatible, asynchronous modems. The IrmaLine is, in turn, connected to a cluster controller via coax. The cluster controller connects to the Front-End Processor (FEP) using synchronous modems.

- A third solution is SimWare's Mac3270, which supports remote mainframe access via asynchronous modems. Sim3278 software has to be installed on the host.

Published Date: Feb 18, 2012

Macintosh IIci Video: Supported Resolutions and Scan Rates

I want to use a Zenith VGA monitor with the Macintosh IIci. The horizontal scan rate for the monitor is 31.49, and the hertz rate is 60-70. Can I adjust the scan rate on the Macintosh IIci, so that it will work with this monitor?

This article has been archived and is no longer updated by Apple.
The Macintosh IIci RBV (RAM-Based Video) supports the following resolutions and scan rates:

ID1	ID2	ID3	Monitor type	Format	Vert.	Horiz.
0	0	0	Unsupported monitor (video halted)			
0	0	1	Unsupported monitor (video halted)			
0	1	0	Reserved for future use			
0	1	1	Apple High-Resolution Monochrome	640x480	66.7Hz	35KHz
0	1	1	AppleColor High-Resolution RGB	640x480	66.7Hz	35KHz
1	0	0	15-Inch Portrait Display	640x870	75Hz	68.86KHz
1	0	1	Reserved for future use			
1	1	0	Unsupported monitor (video halted)			
1	1	1	No external monitor (video halted)			

1=no connection; 0=grounded

For an analog RGB monitor to work on the Macintosh IIci, it needs to meet one of the above specifications.

Here are the pinouts for the Macintosh IIci RBV connector:

01	RED.GND	Red Video Ground
02	RED.VID	Red Video
03	CSYNC	Composite Sync.
04	MON.ID1	Monitor ID, Bit 1
05	GRN.VID	Green Video
06	GRN.GND	Green Video Ground
07	MON.ID2	Monitor ID, Bit 2
08	nc	(No Connection)
09	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3
11	C&VSYNC.GND	CSYNC & VSYNC Ground
12	VSYNC	Vertical Sync.
13	BLU.GND	Blue Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC	Horizontal Sync.
Shell	CHASSIS.GND	Chassis Ground

Published Date: Feb 18, 2012

TA41093_System_and_Finder_Versions_List_(TIL05337).pdf

System and Finder Versions List

Is there a listing anywhere System Software disks that shows what versions of the System and Finder are on each set of disks?

This article has been archived and is no longer updated by Apple.
We used the Copy Center disk images on the Information Source to put together this list:

Disk Set Name	System Version	Finder Version
System Software 1.0	System 3.2	Finder 5.3
System Software 1.1	System 3.2	Finder 5.3
System Software 2.0	System 4.1	Finder 5.5
System Software 2.0.1	System 4.1	Finder 5.5
System Software 5.0	System 4.2	Finder 6.0
System Software 5.1	System 4.3	Finder 6.0
System Software 6.0	System 6.0	Finder 6.1
System Software 6.0.2	System 6.0.2	Finder 6.1
System Software 6.0.3	System 6.0.3	Finder 6.1
System Software 6.0.4	System 6.0.4	Finder 6.1.4

Published Date: Feb 18, 2012

TA41095_Integer_BASIC_Firmware_Card_Switch_Options__(TIL00534).pdf

Integer BASIC Firmware Card: Switch Options (2/97)

Integer BASIC Firmware Card: Switch Options (2/97)

Listed below are the two options the user may select when using the Integer BASIC firmware card.

This article has been archived and is no longer updated by Apple.

The Integer BASIC firmware card was designed to supply Integer BASIC to Apple II+ owners. Both hardware and software can be used to supply Interger BASIC to the Apple II+.

Hardware

The position of the switch on the rear of the card is used immediately after a system reset to force the selection of one of two banks of ROMs: the firmware card or the motherboard. If the switch is up then the system will default to Integer BASIC, otherwise the system will default to Applesoft.

Software

By accessing address $C080, can select Integer BASIC, or, by accessing address $C081, Applesoft.

NOTE: For systems with Auto Start ROM, every time DOS gets control immediately after a reset, DOS forces a load of the version of BASIC DOS last used, regardless of the position of the switch.

Article Change History:
12 Feb 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 20, 2012

Peek, LTPeek, and Poke: Unsupported Internal Network Utilities

Is there any documentation available for the "LTPeek" and "Poke" programs? I am using the software to learn more about supporting AppleTalk Internets and was wondering if there is any documentation available.

Also, what are the most up-to-date versions of these programs? Is there an "LTPeek" that supports AppleTalk Phase 2 networks yet?

This article has been archived and is no longer updated by Apple.
There is no official documentation available for Peek or Poke. These programs have never been sold by Apple and were created as internal network utilities. At one time, they may have been distributed to developers, but they have never been supported for end users. Internally, LTPeek is the name of an Alpha 4.28 version of the Peek software. LTPeek and a similar utility used internally called EPeek or EtherTalk Peek are not public domain products and should not be made available to customers. They have been developed for our own testing and development purposes.

As far as we know, there are no LocalTalk Peek versions that specifically support AppleTalk Phase 2 networks. Peek captures the entire packet from the LLAP header down, so you should not have a problem using it from a LocalTalk cable.

We do not think that Peek and Poke are proper tools for learning to about supporting AppleTalk Internets. (This is analagous to learning to support UNIX by learning to use a debugger.)

A more informative approach for learning to support Internets would be to start with TrafficWatch, CheckNet, LAN Ranger, or other third-party "available and supported" products.

LocalTalk Peek only records and displays network data. If you want to read this data, you must first read "Inside AppleTalk." Poke is very similar. You must have a full understanding of the desired packets before they can be created. Poke requires the actual packet data to be typed into the data window by the user. It provides minimal help in creating a header. It is not designed as an end-user tool; it is a development tool.

Published Date: Feb 18, 2012

HyperCard: 1.2.5 with System 6.0.4 & Portable, IIci

What are the functional differences between HyperCard 1.2.2 and 1.2.5? Is there a custom procedure for installing a minimum System 6.0.4 configuration, which is necessary to run HyperCard 1.2.5?

I use HyperCard quite extensively and need to know how much of my installed base to upgrade to System 6.0.4. HyperCard 1.2.5 apparently has some new features that I want to use.

This article has been archived and is no longer updated by Apple.
There is an engineering document that describes the changes, but there is no release document that describes the programming code added to ensure compatibility with System 6.0.4. This is because the changes made were not additions to nor enhancements to any of HyperCard's functions. Changes were made to ensure compatibility with the Macintosh Portable and Sound Manager changes found in System 6.0.4.

The changes were:

- The method HyperCard uses to center a card on the display. This was changed so that it did a better job of centering on the Macintosh Portable display.

- Changes to the Sound Manager required changes to the HyperCard Dial command. Those changes are compatible only with System 6.0.4.

Any differences you may see within version 1.2.5 were probably added in version 1.2.2, and you're just now noticing these changes.

You do not need to run HyperCard 1.2.5, unless you are using a Macintosh Portable or Macintosh IIci. However, there is at least one advantage to installing System 6.0.4 and HyperCard 1.2.5 on all systems. You get the benefit of a fix to the 800K drive eject code. The code increases the reliability of the drive by moving the drive head away from the disk when it ejects. Installing a minimal 6.0.4 System for running HyperCard is not a problem.

If you want to upgrade your system, there are no special installation procedures other than running the System Installer for System 6.0.4. Installing HyperCard 1.2.5 means copying the file on to the customer's disk.

Published Date: Feb 18, 2012

A/UX: Partitioning Hard Drives (9/94)

My current system is a Macintosh IIx with 5MB of memory and three 80MB hard drives. The first 80MB drive is partitioned for Macintosh OS only. The second has a 2MB Macintosh OS partition, and the rest is the factory-installed A/UX. The third drive is not formatted or partitioned. On it, I want to create a 20MB Macintosh OS partition and a 60MB A/UX partition and file system.

Although creating the partition with HD SC Setup seems straightforward, what partition type should I assign to each? (Before, I used "Misc A/UX" and Macintosh OS.)

When I tried to use "mkfs" and "mount," I was able to create a file system and mount it. However, whenever I restarted the machine, I got an error tone, and the screen went blank. I had to restart the system and turn off the third hard drive. It then started up correctly.

What are the correct parameters or prototype file needed for mkfs for an Apple HD80 SC with the above configuration? If I do not use parameter files, what do I call the partition to mount it?

This article has been archived and is no longer updated by Apple.
It seems that you don't have problems creating partitions using the HD SC Setup program. We think that the partition types you chose for Macintosh OS (20MB) and Misc A/UX (60MB) are correct. You may also choose "UNIX Usr" or "Free UNIX Slice x" for A/UX partition type. If you choose "Usr" partition type, A/UX will assign slice number 2 (/dev/[r]dsk/cXd0s2) as the default.

Generally, the partition type "Misc UNIX" is best avoided, simply because of the inconvenience of using dp. Do not use the Autorecovery partition for personal files. You should never need to associate the Autorecovery partition with a slice because the autorecovery utilities will do this when necessary.

Note that if you chose the "Misc A/UX" partition type in HD Setup, you have to "pname" this partition to a slice before you can "mkfs" on that partition in A/UX. Here is an example to make a new file system on the "Misc A/UX" partition with SCSI ID #5 and slice 3:

Login as root
pname -c5 -s3 "Misc A/UX"
===> /dev/dsk/c5d0s3

Using the "dp" command to display the "Misc A/UX" partition map
information, write down the total number of blocks in the partition.
This number will be used in the "mkfs" command.
dp /dev/rdsk/c5d0s31
===> Command?

Make the file system on that partition with disk interleave factor 1 1
mkfs /dev/dsk/c5d0s3 total-number-of-blocks-from-dp 1 1

It is always good practice to do a "fsck" after "mkfs"
fsck /dev/rdsk/c5d0s3

Mount the "Misc A/UX" file system on a mount point, say "misc".
Create a "misc" directory from root, if it has not been created.
mount /dev/dsk/c5d0s3 /misc

Make a lost+found directory for "fsck" purposes.
cd /misc
mklost+found

This completes the task of making a new file system.

If you want to have an automatic "fsck" when A/UX is booting, insert this line in the /etc/fstab file:

/dev/dsk/c5d0s3 /misc 5.2 rw 1 2

Note that because /misc is a non-root file system, the pass # (the last field) should be greater than or equal to 2, so that it will be checked in /etc/rc automatically.

To pname automatically, insert this line in the /etc/ptab file:

Misc A/UX::5:0:3:Misc partition

or include the -a option in the above "pname" command. You also may want to add the -a option to pname. This creates a new entry in /etc/ptab for the partition. For example:

pname -a -c5 -s3 "Misc A/UX"

For more information on preparing a hard disk for A/UX, refer to the A/UX Local System Administration manual.

Article Change History:
20 Sep 1994 - Reviewed.

Support Information Services
Published Date: Feb 20, 2012

Needed: Kanji-to-English Translator

Article Change History ---------- 01/05/93 - UPDATED * To include information on a program called "The Translator". 09/16/92 - REVIEWED * For information accuracy. I need a Kanji-to-English (and vice versa) translator for the Macintosh. I have the Kanji software for the Macintosh. Do you know of any product that does this? Could something be developed to do this?
This article has been archived and is no longer updated by Apple.
We don't know of any product that can do this type of translation. If anyone is aware of a product that does this, please send an AppleLink to the TECH.DB address and we'll post the information here.

We are aware of a product called "The Translator" that is capable of doing an English to Japanese translation. It is produced by Qualitas Trading Company.

To locate a vendorıs address and phone numbers, use the vendor name as a search string.

Published Date: Feb 20, 2012

TA41105_Apple_IIGS_ProDOS_Version__(TIL00535).pdf

Apple IIGS: ProDOS/16 Version 2

This article has been archived and is no longer updated by Apple.

To support the new fast mode of the Apple IIGS, ProDOS/16 version 2 handles expanded Apple IIGS capabilities, features, and operating modes:

- ProDOS/16 is designed to accept system calls from applications running in either 8-bit or 16-bit mode (the 65816 micro-processor can run in either).

- ProDOS/16 can accept system calls from anywhere in the full 16MB range of memory in the Apple IIGS, and those calls can manipulate data anywhere in memory.

- ProDOS/16 relies on a sophisticated memory management system.

- System calls must be made to ProDOS/16 in order to access system global variables such as date and time, system level, and I/O buffer addresses. ProDOS/16 does not support a global variables page.

There are major differences from ProDOS 1.1.1. ProDOS/16 not strictly upward-compatible from previous ProDOS versions. Programs written to function under ProDOS on an Apple II will not run on the IIGS under ProDOS/16 without some modifications.

ProDOS/16 functions, however, are upward-compatible:

- There is a functionally equivalent ProDOS/16 call for almost every ProDOS system call, usually with the same name.

- Calls are made in nearly the same way as with earlier ProDOS versions.

- For passing values to functions, the parameter blocks have a structure similar to (but not exactly like) earlier ProDOS.

- ProDOS/16, using the same file system as earlier ProDOS, can read from and write to any disk volume produced by ProDOS, using the same file and volume structure, both disk resident and logical.

On the Apple IIGS, ProDOS/8 and ProDOS/16 are designed to the run in tandem, as a package. Whereas ProDOS/16 takes advantage of all the Apple IIGS's hardware and capabilities, ProDOS/8 is provided to maintain compatibility with ProDOS v1.1.1. In normal situations, you need not be concerned with which operating system is functioning; if you run an Apple IIGS application, ProDOS/16 is loaded automatically.

While most ProDOS/8 calls have functionally exact equivalents in ProDOS/16, some ProDOS/8 calls do not appear in ProDOS/16 because they are unnecessary:

- RENAME: The ProDOS/16 call CHANGE_PATH performs the same function.

- GET_TIME: Under ProDOS/16, the time and date are obtained through a call to the Miscellaneous Tools.

- SET_BUF: Under ProDOS/16, the memory manager, rather than the application, allocates file I/O buffers.

- GET_BUF: This call is unnecessary under ProDOS/16 because the OPEN call returns a handle to the file's I/O buffer.

- ONLINE: This call is replaced in ProDOS/16 by the VOLUME call.

Under ProDOS/16, you can:

- make ProDOS/16 system calls from anywhere in memory, using ProDOS/16 parameter blocks located anywhere in memory.

- make I/O data transfers to or from anywhere in memory.

- allow limited use of named devices. With ProDOS/8, you must refer to a device by its volume name or its slot and drive number.

- support up to eight system prefixes (ProDOS/8 supports only one).

- have an unlimited number of open files (ProDOS/8 allows only 8).

- have any number of online devices (ProDOS/8 allows a maximum of 14).

- support of at least 3 separate device protocols (ProDOS/8 supports only one block device protocol).

- extensivly support named devices.

- use a volume mounting function, not in ProDOS/8, which prompts the user to mount a needed volume.

Published Date: Feb 20, 2012

AppleShare PC: GatorBox Directory Display Problem

I am using the LocalTalk PC Card and AppleShare PC am trying to mount a VAX running Ultrix as an AppleShare volume through a GatorBox. The system knows that they are there because it shows in the Chooser. They have also been successfully attached to the VAX as the D: drive. However, when I do a D:DIR, it shows that there are 10 files and 2 directories (which is the case) but but fails to give a list of the names of the files or the directories. If they know the filename and directory, they can use the file.

The Macintoshes and PC are on LocalTalk, and the VAX is on Ethernet. They are running Ultrix 3.1. The PC is a Compaq DeskPro running the Compaq version of DOS. The IP address of the VAX was downloaded to the GatorBox. The GatorBox is publishing the AFP volume. NFS is running on the VAX.

Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
We ran some tests on our network and were able to duplicate your problem easily. Our test configuration consisted of a Macintosh running A/UX, a GatorBox, and AppleShare PC 2.0 running on an IBM AT.

In our test, we could not see any files or directories on the mounted drive. We could not type any files or change directories (using CD command), even when we knew their filenames. In fact, when we tried to change the directory, the GatorBox crashed, and all zones on the network disappeared from the Chooser.

We contacted Cayman Systems, and they confirmed that this is a known problem with the GatorBox. A fix is being tested and should be sent automatically to all users in a new version. This new version will also support AppleTalk Phase 2. Users with this problem should contact Cayman Systems for a release date.

For more details, search the Technical Info library under "Cayman Systems."

Published Date: Feb 18, 2012

AppleTalk-to-AS/400 Gateway

Does anyone sell a AppleTalk and AS/400 gateway?
This article has been archived and is no longer updated by Apple.
There are two third-party vendors who sell products that use AppleTalk networks and Gateways for connecting to an IBM AS/400, Andrew Corp. and Wall Data.

Andrew Corporation
Has an AppleTalk and AS/400 gateway. Net Axcess consists of a half-sized NuBus card for a Macintosh II and Net Axcess software. The gateway permits existing LocalTalk, EtherTalk, or TokenTalk cabling to connect the gateway and the users' Macintosh computers. Each Net Axcess card can connect as many as seven Macintosh computers on the network connect to the host.

Token Axcess client is designed for sharing IBM workstation sessions among Macintosh computers on an AppleTalk network (LocalTalk, EtherTalk, or TokenTalk) through Token Ring. Token Axcess uses LU6.2 services provided by the SNA*ps Gateway.

Wall Data
Has SNA*ps 5250 is a full-function 5250 display terminal emulation program that allows Macintosh computers to communicate with IBM AS/400 systems. This application provides multiple session windows that can be individually configured with different color settings, font sizes, connection paths, and host languages.

The SNA*ps 5250 application software works with the Apple Token Ring 4/16 NB Card or Apple Serial NB Card installed in any Macintosh II or Macintosh Quadra (NuBus capable) computer and supports directly connected or AppleTalk distributed 5250 sessions.

In an AppleTalk network with an SNA*ps Gateway installed, SNA*ps 5250 users can access AS/400 services from the Macintosh Plus and later systems. In addition, users can access multiple gateways for concurrent access to multiple AS/400 systems.

SNA*ps Print allows a Macintosh computer to receive print data from an IBM AS/400 system and print the data on any printer in the AppleTalk network.

To locate a vendor's address and phone numbers, use the vendor name as a search string.
Published Date: Feb 20, 2012

AppleShare: Restricting User Space and Hard Disk Partitioning

1) Is there any software that lets an administrator of an AppleShare file server limit the amount of space a specific user or folder can use?

2) Is there software that lets the administrator partition the hard drive in two or more Macintosh partitions that appear to the server as separate volumes?

This article has been archived and is no longer updated by Apple.

1) We don't know of any software that limits the amount of disk space that a user or folder can occupy

2) Any software that creates true partitions on a hard disk should work properly with the AppleShare File Server software. Silverlining, from La Cie, is an example of software that creates true partitions on a hard disk that work with the AppleShare File Server software. Software that creates a file on the hard disk instead of a true partition may not work. SUM Partition software, from Symantec, creates an invisible file on the hard disk and makes it appear as a separate volume to the Macintosh file system. AppleShare recognizes this as a separate volume.

Other software may also work. Please check with the manufacturer or distributor of disk partitioning software for compatibility with the AppleShare File Server software. For more details, search the Technical Info library under "La Cie" and "Symantec."

Published Date: Feb 20, 2012

System Software: Configs for Mac 128K, XL, 512, & 512KE (7/94)

What System Software (System, Finder, and AppleShare) versions can be used on the Macintosh 128K, Macintosh XL, Macintosh 512, and Macintosh 512KE?

This article has been archived and is no longer updated by Apple.

Macintosh 128K

Currently ships with: Product no longer available.
Supports: System 2.0 and Finder 4.1.
Recommended: System 2.0 and Finder 4.1.
For AppleShare, use: Can not be used as an AppleShare file server or workstation.

Macintosh XL

Currently ships with: Product no longer available.
Supports: System Software 1.0 and System Software 1.1.
Recommended: System Software 1.1.
For AppleShare, use: Can not be used as an AppleShare file server or workstation.

Macintosh 512K

Currently ships with: Product no longer available
Supports: System Software 1.0 and System Software 1.1
Recommended: System Software 1.1.
For AppleShare, use: The Macintosh 512K cannot use the AppleShare 2.0 workstation software. You can still use the AppleShare workstation software version 1.1 with a file server that uses AppleShare File Server 2.0, although you will not be able to take advantage of the new features of AppleShare File Server 2.0. System 3.3 and Finder 5.5 are installed by the AppleShare 1.1 Work Station Installer disk.

Macintosh 512KE

Currently ships with: Product no longer available
Supports: System Software 1.0, System Software 1.1, System Software 2.0, and System Software 2.0.1.
Recommended: System Software 2.0.1.
For AppleShare, use: System 3.3 and Finder 5.5 are installed by the AppleShare 1.1 Work Station Installer disk; System 3.4 and Finder 6.1 are installed by the AppleShare 2.0 Macintosh 512KE Work Station Installer disk. This machine can not be used as an AppleShare file server.

**For information on Macintosh computers newer than the models listed in this article, search for articles containing System Software Version and Enabler Matrix information.

Article Change History:
26 Jul 1994 - Revised article to only include early model Macintoshes.

Support Information Services
Published Date: Feb 18, 2012

TA41111_HyperCard_and_Intermittent_Laser_Font_Problem_(TIL00536).pdf

HyperCard 1.0 and 1.0.1: Intermittent Laser Font Problem

This article has been archived and is no longer updated by Apple.

When HyperCard documents are printed to a LaserWriter Plus, certain fields that contain LaserWriter fonts (Helvetica and Times for example) sometimes print as though they are not LaserWriter fonts. When Font Substitution is turned on, some Helvetica fields print in Helvetica, some are bit-mapped. With Font Substitution turned off, all Helvetica and Times are bit-mapped.

Published Date: Feb 18, 2012

AppleTalk: File Server Open File Limitations

A retailer asked if there is any limitations on the number of files you can have open on one server and if the limit is in AppleTalk.

He is going to have a database on a Novell server, and when they open a session to the database, they open a lot (close to 255) of files. If many users use the server at the same time, there will be a lot of files open at the same time. Are there any such limits in AppleTalk?

This article has been archived and is no longer updated by Apple.
Actually, AppleTalk (typically) would not be the limiting factor in a scenario of this nature. Under the Macintosh OS, there is a default limit to the number of files that you can have open at one time. If you have less than 1MB of memory, this default is 10; if you have 1MB or more, the default is 40. This limit applies to local volumes as well as network-based volumes. Most databases that are network-aware use AppleTalk Filing Protocol (AFP) calls to access the files on a server. Files opened via AFP calls, just like files opened via the native filing interface, are counted in the operating system limit.

You can modify the limit of the number of open files by modifying the boot blocks on your startup volume, but this is not recommended and is (typically) not necessary. For example, 4th Dimension opens a number of files from a server when it is running in multi-user mode, but you still have plenty of "room" to operate within the open file limit.

If you are concerned by the number of files that are open on the server and not the workstation, remember that one file opened by multiple workstations counts as only one open file on the server. On a server with 2MB of memory or more, the maximum number of files that can be opened at one time is 160. If you have 1MB of memory, the maximum number of opened files is 60.

The number of files that can be opened on other servers (like a Novell server) depends on that manufacturer's implementation of an AFP-based server, because there is no specific limit in AFP.

Published Date: Feb 18, 2012

Using the Old Monitor with the Apple Language Card

This article has been archived and is no longer updated by Apple.
This applies to the Apple II and Apple II+.

The Apple Language Card gives you all the advantages of the Auto Start ROM whether you have an Apple II or Apple II+. This is because there is an Auto Start ROM on the Language Card that is used instead of the F8 ROM on the main board. There is no way to disable this ROM if you want to use the old monitor in an Apple II. However, there are still two ways to use the old monitor with the Language Card.

1. Replace the Auto Start ROM on the Language Card with an old monitor ROM. In this case, you lose the Auto Start ROM's features when you are in the BASIC that is resident on the main board. The BASIC that is loaded into the Language Card will still be working out of an image of the Auto Start ROM that was loaded with the BASIC. For example, Applesoft would use the old monitor and Integer BASIC would use the Auto start ROM.

2. This method will give you the old monitor while in the BASIC that's in the Language Card but the BASIC on the main board will still access the Auto Start ROM. All you need do is load an image of the old monitor into the Language Card yourself. This is a two step process.

The hard part is to get an image of the old monitor into a DOS binary file. First, boot DOS 3.3 on an Apple II without a Language Card. Then type:

```
INT
BSAVE OLDMON, A$F800, L$800
```

Now all you need is a program or subroutine to load the monitor into the card. The following program fragment must be in Integer BASIC if you have an Apple II or Applesoft if you have an Apple II+. It can be added to the HELLO or APPLESOFT program on the DOS 3.3 Master diskette.

```
10 D$ = "": REM CONTROL D
20 A = PEEK ( -16255): A = PEEK ( -16255)
30 PRINT D$;"BLOAD OLDMON"
40 A = PEEK ( -16254)
```

The old monitor will stay there until you re-boot or reload the Language card.
Published Date: Feb 20, 2012

TA41116_Omnis_plus_Problem_Using_National_Fields_with_Macintosh_IIci_(TIL05371).pdf

Omnis 3plus: Problem Using National Fields with Macintosh IIci

In Omnis 3plus on a Macintosh IIci fields set up as "National" appear as garbled text. On the other hand, a Macintosh IIcx with System 6.0.4 works as fine.

Is there something in the Macintosh IIci ROMs (like international utilities or packages) that could cause this?

This article has been archived and is no longer updated by Apple.
A Tech Support Engineer at Blythe Software told us that their Omnis 3plus software had a problem running on the Macintosh IIci. As a temporary solution, they suggested that the customer reinstall System Software 6.0.3 and change the National fields to character fields. This process will not result in an identical sort, but it is functional.

As of February 1990, Blythe was preparing a fix. For details on how to contact them, search the Technical Info library under "Blythe Software."

Published Date: Feb 18, 2012

System 6.0.4: Problems Installing on CD Installer Disk

I tried to upgrade our AppleCD SC Installer disk to System Software 6.0.4. I selected "Minimum System Software for any Macintosh" and clicked Install. I got an error message saying, "There is not enough room on the disk. 52K available, 53K needed." I removed a couple of System documents and tried again. I got the same message, except this time it said, "83K available, 84K needed".

I removed more files from the System Folder on the CD Installer disk. This time the installation proceeded without giving the error message.

Also, during the disk-swapping process (I was working on a single-floppy system), there were two dialog boxes showing at the same time--one said to insert the "CD Installer Disk"; the other said to insert the "System Tools" disk.

I was able to complete the installation, but I'm curious about the problems I encountered.

Can you explain?

This article has been archived and is no longer updated by Apple.
We were unable to duplicate the situation you describe. However, the latest version of the AppleCD SC software does not require the Installer. The installation software is on AppleLink. Use this path:

Developer Services
Macintosh Developer Technical Support
Tools
CD-ROM

A Read Me file is also in the folder detailing changes in this release and instructions for installation.

Published Date: Feb 18, 2012

HyperCard: "Hey, I Can Print" Substitutes for "Reports!"

The popular "Reports!" software for HyperCard is no longer being sold; the company has gone out of business. Is there any other software available that performs similar functions?

This article has been archived and is no longer updated by Apple.
"Hey, I Can Print" from R & B Software offers functionality similar to the now discontinued "Reports!". For more details, search the Technical Info library under "R & B Software."

Published Date: Feb 18, 2012

AppleCD SC: With Macintosh IIci & Portable Use version 3.0.1

When will the Foreign File Access problems with the Macintosh IIci be corrected?
This article has been archived and is no longer updated by Apple.
Version 3.0.1 or later of the AppleCD SC software is fully compatible with the Macintosh IIci, Portable, and previous Macintosh models. Version 3.2 is now available for use under System 6.0.7, 6.0.8, or 7.0 with all current Macintosh models.

Below is a table of the CD Setup files and their version numbers for the latest release, version 3.2.

AppleCD SC Setup Files	3.2
Apple CD-ROM	2.0
CD Remote INIT	1.1
CD Remote DA	1.1
Foreign File Access	1.0.1
Audio CD Access	1.1
High Sierra File Access	1.0
ISO 9660 File Access	1.0

The latest Apple CD software can be downloaded from the Apple Software Updates site.
Published Date: Feb 20, 2012

VAX/VMS and TCP/IP Questions and Answers

1) Can someone running Telnet and using MacTCP or Telnet's the built-in communications on a LocalTalk Macintosh, communicate with a host on Ethernet through an AppleTalk Internet Router?

2) Can someone on a Macintosh using Telnet (with or without MacTCP) communicate with a VAX running VMS? Do you need other software on the VAX so that it can "speak" TCP?

This article has been archived and is no longer updated by Apple.
1) The user will not be able to communicate with the host without a DDP/IP gateway for this reason:

A DDP/IP gateway is a device that takes the AppleTalk-encapsulated IP packets from LocalTalk and decapsulates them. This device (such as the FastPath) then broadcasts them onto Ethernet as IP packets. The AppleTalk Internet Router is not a DDP/IP gateway and is not capable of this.

It is important to note that MacTCP 1.0 will not work across a router, AppleTalk Internet Router included, if class C IP addressing is being used. Class A and class B addressing work properly. If the user needs to use Class C addressing, please contact us for a temporary fix.

2) If the Macintosh is on LocalTalk, the user will need a DDP/IP gateway as explained above. If it is on Ethernet, the DDP/IP gateway is not needed. The VAX running VMS needs to run a communications package that supports TCP/IP. Digital Equipment Corporation distributes Network Research Corporation FUSION TCP/IP and the Wollongong Group's WIN/TCP and WIN/TCP-DDN through the Digital Distributed Software (DDS) program. Another example is the TCP/IP software for VAX/VMS by Process Software.

You may want to contact DEC's DECdirect Prepurchase Technical Assistance or Process Software departments directly. For more details, search the Technical Info library under "Digital Equipment Corporation."

Published Date: Feb 18, 2012

File Server: Dial-Back Access And Security

Do you know of a dial-back verification system for dialing into an AppleTalk network? I want remote access to a file server and as much security as possible for this type of access. I know of Liaison and Shiva NetModems, but I'm not sure what is available for dial-back security and user verification.

This article has been archived and is no longer updated by Apple.

Both Liaison and Shiva NetModems offer dial-back network access as a part of the software. For address information, check the Tech Info library under "Liaison" and "Shiva NetModem."

Published Date: Feb 20, 2012

Lisa Migration Package: Where to Get It

This article has been archived and is no longer updated by Apple.

This product, which allows users to "migrate" their data from Lisa to Macintosh, is no longer available from Apple. It is available from:

Sun Remarketing
3663 North Hwy. 91
Smithsfield, UT 84335
(801) 752-7631
(800) 821-3221

Published Date: Feb 20, 2012

System 6: Installing Fonts Into a Locked System File (11/94)

A customer was able to install fonts in a System file that had been locked from the desktop. He said that the installation appeared normal until he quit and entered an application to use the new font. The font was not there, so he quit and tried to restart his machine. It simply gave him the "?" icon and refused to start up. The failed installation apparently resulted in a seriously corrupt System file, and he had to reinstall the System Software. He had no indication of a problem during the installation.

Does the Font/DA Mover check for a locked System file? Is there any way that a user can install fonts or DAs in a locked System file?

This article has been archived and is no longer updated by Apple.
We tried to install a font and DA in a locked (via the "Get Info" dialog) System file and received an ID= -61 error. This error number indicates a write-permission error and that the Font/DA Mover attempted to write to a file that was locked. The Font/DA Mover does not check for a locked System file but does check for an error when attempting to write to a file.

With System 6, it is best to check that the System file is unlocked before installing any fonts or desk accessories.

Article Change History:
17 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

Burst Mode: Motorola Term for Fast Access to RAM

Is there another name for "Burst Mode RAM access"?
This article has been archived and is no longer updated by Apple.
The Motorola MC68030 Enhanced 32-Bit Microprocessor User's Manual uses the term burst mode for its fast access to RAM process. There is no other terminology used for this process.

Burst mode is described in section 7, pages 49 through 51, and section 12, pages 13, 16, and 17 of the manual.
Published Date: Feb 20, 2012

TA41127_Apple_IIGS_Moire_Pattern_Appears_at_Startup__(TIL05385).pdf

Apple IIGS: Moire Pattern Appears at Startup (11/94)

My Apple IIGS is showing a moire pattern on the desktop during startup. This occurs on a current model Apple IIGS and not on earlier versions. The VGC chip on the troublesome model is 344SOO46-4. The effect fades if the brightness is turned to maximum. It is more obvious if the brightness is set low. Have you noticed this problem?

This article has been archived and is no longer updated by Apple.
This moire pattern appears to be an interaction between the frequency of the dithering process being used to create the desktop color and the horizontal scanning frequency.

As you noticed, if you increase either the brightness or the contrast, the visibility of the pattern is reduced. Also, if you adjust the vertical size of the display, the pattern becomes harder to see.

Although this may be bothersome, it will not affect productivity nor is it indicative of an impending failure.

Article Change History:
17 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

Macintosh IIci: PageMaker and Video Card ROM Problem/Solution

PageMaker users using the Macintosh IIci with a Portrait Display Video Card or Two-Page Monochrome Monitor Video Card have been reporting display problems: incorrect character and word spacing, incorrect registration of line breaks between the screen and printed output, and reduced performance. Certain versions of the video card ROMs exhibit the problem while other versions don't. As a result, switching between a "good" card and the built-in video on a Macintosh IIci yields different results on the screen.

This article has been archived and is no longer updated by Apple.
Here's the solution of the Aldus PageMaker/video card problem. The problem relates to the configuration information carried in the video card ROM (and the video portion of the Macintosh IIci CPU ROM) and the way QuickDraw and PageMaker use this information. Each display in a Macintosh II carries a fixed-point representation of the horizontal and vertical pixel resolution in dots-per-inch. Because QuickDraw is an integer-based drawing system, it does not attempt to scale its object rendering to match this reported screen resolution. Instead, it assumes 72.0 dpi, which is the nominal resolution for the classic Macintosh and the 12-inch, high-resolution monitors.

The video software specifications (which also apply to third-party developers) have been updated to recommend that video configuration ROMs reflect the true screen resolution of the displays it supports. Although 32-Bit QuickDraw continues to ignore the resolution fields, all video hardware released since 32-Bit QuickDraw introduction includes appropriate resolution information; specifically, 80.0 dpi for the Portrait Display and 77 dpi for the Two-Page Monochrome Monitor. This applies to a post-introduction revision of the Portrait Display and Two-Page Monochrome Monitor Video Cards and to the Macintosh IIci built-in video software.

The problem is that PageMaker uses these resolution fields to scale font width tables for screen display based on a traditional low-memory global. This global is updated by the QuickDraw setup code to reflect the screen resolution of the main screen (the screen with the menu bar). The line-spacing problems happen because PageMaker scales the font widths, while QuickDraw and the Font Manager do not. The problems are not directly related to the video hardware or the CPU ROMs.

Solution

Upgrade to PageMaker 4.0, which takes into account QuickDraw's behavior with screen fonts. The problem described in this article applies only to PageMaker versions earlier than 4.0.

Other Notes

Many applications that run on both Color QuickDraw and Classic QuickDraw machines look at a collection of low-memory globals to determine system configuration. Although every effort has been made to keep these low-memory globals compatible with their original intent, many of them have become obsolete in a multiscreen/multidepth world. It is likely that other applications may display similar problems, particularly those programs with highly customized code for printing or other device-independent imaging.

Affected Revisions

All 68000-based Macintoshes (Plus, SE, and Portable) always report 72.0 dpi resolution and should not exhibit any problems.

Macintosh II Video Card: always reports 72.0 dpi

Macintosh II High-Resolution Video Card: always reports 72.0 dpi

Macintosh Monochrome Video Card: always reports 72.0 dpi

Macintosh SE/30 Built-In Video: always reports 72.0 dpi

Macintosh II Portrait Display Card:

- ROM Part 341-0699: reports 72.0 dpi on the Portrait Display and Two-Page Monochrome Monitor
- ROM Part 341-0732 (current): reports 80.0 dpi on the Portrait Display, 77.0 dpi on the Two-Page Monochrome Monitor

Macintosh II Two-Page Monochrome Monitor Card:

- ROM Part 341-#### (all previous versions): reports 72.0 dpi on the Portrait Display and Two-Page Monochrome Monitor

- ROM Part 341-0727 (current): reports 80.0 dpi on the Portrait Display, 77.0 dpi on the Two-Page Monochrome Monitor

Macintosh IIci Built-In Video: reports 80.0 dpi on the Portrait Display, 72.0 dpi on all other displays.

Published Date: Feb 18, 2012

TA41131_Language_Card_Loading_Integer_BASIC__(TIL00539).pdf

Language Card: Loading Integer BASIC (2/97)

Language Card: Loading Integer BASIC (2/97)

This article describes how Integer BASIC is loaded into the Language card.

This article has been archived and is no longer updated by Apple.

When you boot an Apple II with the BASICS diskette or the DOS 3.3 System Master Diskette, Integer BASIC and the Programmer's Aid #1 are loaded into the Language Card. The code between Integer BASIC and the Programmer's Aid #1 ($D800 - $DFFF) is loaded with a completely useless part of Applesoft.

This applies to the Apple II and Apple II+.

Article Change History:
12 Feb 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 20, 2012

PS/2 to LaserWriter: Problem Printing From LaserWriter IINT

I am having problems printing from my IBM PS/2 Model 30 over a LocalTalk PC Card to a LaserWriter IINT. I also have a Macintosh on the network, and it is not experiencing any printing problems.

Software includes DOS 3.3, AppleTalk PC Protocol Stack 2.0, AppleShare PC Card 2.0, Microsoft Word 5.0 (using PostScript), and DisplayWrite 4 (using Epson emulation).

The problem initially was that I couldn't print from Microsoft Word, but I fixed that. Now, I can print from either program, but when I switch from one program to the other, I have to go into the Chooser and change the printer designation. My understanding was that I should be able to set up both printer configurations (PostScript and Epson emulation) through the AppleTalk PC software, then indicate through the application which driver to use.

Am I misunderstanding the functionality of the software, or have I set up something incorrectly?

This article has been archived and is no longer updated by Apple.
It sounds like you are not switching between Epson emulation and PostScript mode within the AppleShare PC Chooser. You set the DisplayWrite 4 to use its Epson driver, and AppleShare PC is set to convert the Epson Print Code from the DisplayWriter driver to PostScript code. This is called Epson emulation. You also use Microsoft Word 5.0, printing with its PostScript driver, and AppleShare PC is set to pass all printer code directly to the selected printer (PostScript mode). You cannot do both of these through the same LPT port.

Because the two applications require different LPT port modes, you need to switch the LPT port's mode from the AppleShare Chooser or with ANET commands within a batch file.

Another method would be to have all Microsoft Word print jobs go to LPT1, and all DisplayWrite jobs go to LPT2. The applications provide for designating the LPT port within their printer options. The same LaserWriter can be assigned to both LPT ports. The difference is that LPT1 has been set from within the AppleShare Chooser to PostScript mode and LPT2 has been set to Epson emulation. This can be done even though both LPT1 and LPT2 are connected to the same LaserWriter.

Alternatively, you can use a single LPT port set to Epson emulation and print using an Epson driver from both word processors.

Published Date: Feb 18, 2012

TA41136_AUX_MaxStream_Tape_Drive_(TIL05394).pdf

A/UX: MaxStream Tape Drive

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Are you familiar with MaxStream from Archive? Can it be used to back up files only and not partitions from A/UX?

This article has been archived and is no longer updated by Apple.
According to Archive's technical engineering people, the MaxStream backup subsystem provides 60MB and 150MB storage-capacity drives and MaxStream backup software for both Macintosh OS and A/UX. The backup software for both the Macintosh OS and A/UX allows file-by-file and/or partition backups and restoration. The tape medium is the 5.25-inch standard, high-density DC600 tape cartridge. It has backup and restore speeds of up to 6MB per minute.

For more contact information, search the Technical Info library under "Archive Corporation."

Published Date: Feb 18, 2012

A/UX: TTY Flow Control Settings

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

I tried to change the default settings of /dev/tty0 (and /dev/modem) to connect an additional printer. Except for setting "modem" to "-modem" and some other options, the settings did not work for "-hupcl" to "hupcl", "istrip" to "-istrip", "echo" to "-echo", "echok" to "-echok".

Can you explain?

This article has been archived and is no longer updated by Apple.
All tty flow control settings, like "-modem", "dtrflow", "-dtrflow", and so on, are maintained across last close. This means that the flow control settings are "remembered" when a tty device is closed and reopened. However, all other termio characteristics, like speed (50, 75, 1200, and so on), parity (parenb, parodd, and so on), input modes (ignbrk, brkint, istrip, and so on), and local modes (echo, echok, and so on), are set to the default settings when the tty line is closed.

To put the "stty" settings into effect and still keep the tty port open, put a sleep statement ("sleep 99999", for example) after the "stty" command.

In your case, you can use this:

(stty hupcl -istrip -echo -echok; sleep 99999) < /dev/tty0 &

Published Date: Feb 18, 2012

Request for OS/2 Driver for DayStar‘s AppleTalk Card

I linked DayStar Digital the following Are you planning a driver to allow your MCA AppleTalk card to run in OS/2?

This article has been archived and is no longer updated by Apple.
DayStar Digital responded:

As the demand continues to increase, I believe that an OS/2 driver has got to be in our future; however, it will not be the near future. We may have had 20 calls in 1989 for the driver, so we have been waiting for demand to pick up. If the last month or so is any indication, it is time for us to get to work. Regrettably, even if we find someone to do the driver now, it will probably be 6 to 8 months before its release.

Published Date: Feb 18, 2012

Applesoft: Printing the 40-Column text screen to a printer

The following program will print the contents of the text screen.
This article has been archived and is no longer updated by Apple.
It uses the VTAB command to find the starting address of each line, then adds a character counter to index across the screen. This routine is easily included as a subroutine in an application program.

NOTE: This program will work for 40 columns only!

```
10 FOR V = 1 TO 24
20 VTAB V
30 P = PEEK (40) + PEEK (41) * 256
40 FOR H = 0 TO 39
50 PRINT CHR$( PEEK (P+H));
60 NEXT H
70 PRINT
80 NEXT V
90 END
```

Decreasing the limits of V and H in lines 10 and 40 limits the program to send only part of the screen.
Published Date: Feb 20, 2012

LOGO: Silentype printer

The Silentype dumps the High-Res screen whenever it is sent a CTRL-Q. Once the Silentype has been selected with .PRINTER, it is possible to change its parameters by using .DEPOSIT. Changing the direction parameter from bidirectional to unidirectional will result in significantly better graphics printing. Parameter changes stay in effect until a power cycle or Silentype cold start, so changes made to dump the graphics should be undone after the dump.
This article has been archived and is no longer updated by Apple.
A list of parameters with their addresses and possible values appears on page 45 of the Silentype manual. The decimal addresses in the manual are expressed as negative numbers. They can be converted for use with LOGO by adding 65,536 (two to the sixteenth power).

Here is a no-frills Dump with unidirectional printing:

```
TO DUMP :STSLOT
TYPE CHAR 17
END
```

CHAR 17 is CTRL-Q. :STSLOT should be set to the number of the slot that the Silentype interface is plugged into.

To dump a negative copy of the screen, with black on the paper where there was white on the screen, change the appropriate parameter:

```
TO NEGDUMP :STSLOT
TYPE CHAR 17
END
```

Published Date: Feb 20, 2012

AppleTalk Phase 2: Split Horizon RTMP

We have a large Internet distributed over five major hubs arranged in a star pattern. The main hub network (Network A) has a Hayes InterBridge half-bridge (using Hayes V9600 modems) to each of four other sites (Network B, Network C, Network D, and Network E). In addition to the main connection to Network A, Network D has a Hayes InterBridge half-bridge (with V9600 modems) to Network B and another to Network C. These redundant links have been working fine under AppleTalk Phase 1, and we expect them to work under AppleTalk Phase 2.

Questions
---
1) With these redundant links, will we see the benefit of the split horizon RTMP on the routers that make up this redundant link? If we highlighted the circular route that exists through the redundant links, would the routers on this path show a reduction in the size of the RTMP tables that are sent from each port of the InterBridge?

2) On the link to Network E, where there is no redundant link, will the size of the RTMP packets sent over the modem link be reduced versus the size of the packets under AppleTalk Phase 1? An example, assuming that there are five network numbers at Network E and 95 network numbers elsewhere in the network, AppleTalk Phase 1 would imply that there are 100 network entries in the RTMP packets sent from each end of the modem link. Would this number decrease to 95 from Network A to Network C and only five from Network C to Network A, which would, in effect, yield a reduction in overhead of 50% on this slow link?

This article has been archived and is no longer updated by Apple.
1) Split horizon reduces the number of redundant routing table entries exchanged by routers. The split horizon algorithm is: all entries whose forwarding port in the routing table is equal to the port out that the entry is being sent are omitted from the RTMP data packet. In other words, Router A will not include network numbers in RTMP packets broadcast on Network X when Network X is the path (forwarding port) for Router A to reach these other networks. The forwarding port is the shortest distance, in hops, from the sending router.

If there is more than one route from Network A to Network X, the router in Network A stores in its routing table the shortest distance, in hops, to Network X. If more than one of these routes is the same distance, in hops, and is the shortest distance, the router's routing table will be modified each time an RTMP packet is received from Network X via this route.

The split horizon algorithm reduces the amount of RTMP data broadcast onto the Internet. The RTMP data would be less if there were no redundant links. From what you have told us of the customer's Internet, the redundant links do not eliminate the benefits of the split horizon algorithm.

2) You are correct, an AppleTalk Phase 1 router would broadcast an RTMP packet that contained 100 network tuples to Network A and Network E networks. An AppleTalk Phase 2 router will broadcast an RTMP packet containing 95 network tuples on the TriCounty network and only five network tuples on Network A.

Note: Hayes has recently released a ROM upgrade for the Hayes InterBridge that is necessary for AppleTalk Phase 2 compatibility.

Published Date: Feb 18, 2012

Claris CAD: 3 D or 2.5 D

2.5D is a two dimensional profile with depth. 3D or three dimensional drawings show objects in a three space (x,y,z) coordinate system. Usually has automatic hidden line removal. Often objects may be rotated on screen to provide various views of the object. This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD is strictly a 2-D package. Claris CAD can be used for the preliminary work for a file that eventually will be drawn in three dimensions. For example, the basic floor plan of a building can be completed in Claris CAD, because of the easy and fast drawing tools, then import the drawing into a program that will create a 3-D drawing.

For some programs, the Claris CAD file will need to be translated into another format. Among these programs are Auto¥Cad, VersaCad and Architrion. These are high-end 3-D cad programs.

Some programs will read the ClarisÊCAD file directly. These programs include ModelShop (MacroMedia / Paracomp) and Virtus.
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Claris CAD: About Patterns and Hatches

Claris CAD has both variable fill patterns and hatches. This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Patterns are bit mapped images. They can be modified using the patterns dialog box where pixels can be filled with the 8 different colors available to MacDraw II.

If you are going to be plotting your file, you should avoid using the fill patterns, because they are bit maps, and the plotter is going to print each dot of the pattern separately, which will take a long time and will wear out your pens. You should use hatch patterns when plotting rather than fill patterns.

Hatches are composed of groups of lines that create a pattern. Since they are lines, they can be composed with the colors available to Claris CAD as you would with any other line. Several default hatches come standard including steel, aluminum, glass etc.

Objects to be hatched must completely enclose an area or the hatch will be unpredictable. For example, if you create a triangle with the line tool, the endpoints of the each line must match exactly the adjacent line's endpoint. If there is a gap, you will get a message when you try to hatch that warns you of an incomplete boundary. It will allow the hatch to be drawn, but the results might not be what you want.

One the hatch is created, it is an editable object composed of a group of lines. You can treat it like any other group of lines; the line weight and color may be changed, or you can ungroup the hatch and edit a single line or group of lines.

For more information, please refer to Chapter 2 of the User's Guide and Chapter 6 of the New Features Guide that comes with Claris Cad version 2.0.
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Claris CAD: Geometry Accuracy

How accurately is the geometry stored in Claris CAD and how does that compare with other packages? This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD stores object sizes and locations in a special data format that is usually equal to or better than 32 Bit floating point format. This compares favorably with other Macintosh drawing and CAD applications, which generally use integer (16 bit - roughly half the accuracy of Claris CAD) or long integer (32 bit - roughly the same precision).

VersaCAD and AutoCAD have double precision floating point accuracy (roughly twice as good as Claris CAD) - but because of this require:

- more memory for a given drawing
- floating point coprocessor for acceptable performance (redraw, rotate, etc.)
- double precision is necessary in only a few, very demanding applications
- if the drawing is to be used to drive CAM process
- if the drawing requires an exceptional level of detail

A great majority of users do not need this level of accuracy.

Claris CAD uses SANE (Standard Apple Numeric Environment) to access a math co-processor (if one is available).

Claris CAD uses a fixed format to store numbers (as opposed to a floating point format). Claris CAD uses one integer for the left side of the decimal and one integer for the right side of the decimal. An integer on the Macintosh is a number between -32767 and 32768.

So, the largest number that Claris CAD can store in its database of objects is 32,768. The smallest number it can store to the right side of the decimal place is 1/32767 = 0.0000305185094.

A one-inch line on the screen is 72 pixels. So, how close can Claris CAD come to an inch without actually being an inch?
Answer: 0.0000004238681872 or 1/(32767 * 72)

Using this same type of logic, we can calculate how accurately Claris CAD can approximate a 1 inch line when represented at various scales.

A one inch line on the screen represented as:
1 foot ..... is accurate to ..... 40 millionths = 0.00000508641 inches
100 feet ..... is accurate to ..... 5 ten-thousandths = 0.000508641 inches
1 mile ..... is accurate to ..... 1/32 = 0.026856288 inches
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Claris CAD: Associative Dimensioning

Associative Dimensioning is dimensioning that is linked with an object so that when the object is re-sized or moved the dimension is also updated.

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Claris CAD will do this when you group the dimension with the object. Associative dimensioning (also called Dynamic Dimensioning) means many things to many people. The most commonly understood meaning of associative dimensioning is that any change that you make to an object will automaticalyy change the dimension for that object. This is not supported in Claris CAD. However, dimensions can be selected or grouped with the object they dimension and will increase or decrease as you resize the object.

This is only strictly adhered to for objects in horizontal and vertical positions. For objects at other angles, repeated resizing will cause the dimension and group to drift apart at one end. This has to do with the fact that the bounding rectangle for a dimension is not actually the width of the object being dimensioned - rather it is the width needed to accurately display the dimension of the object being dimensioned.
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Claris CAD: A/E/C

What does A/E/C stand for?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This term is used to describe the Architectural, Engineering, and Construction market segment and related work fields.
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Claris CAD: Bearing Coordinates

What are bearing coordinates, and does Claris CAD support them?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Bearing coordinates are angular measurements referred to in units of degrees: minutes and seconds. There are 60 seconds per minute, 60 minutes per degree and 360 degrees per full revolution.

In Claris CAD, you can enter angular data (with the keyboard in show location, show info, and the clipboard) only in absolute degrees (whole degrees with fractional degrees), not in bearing coordinates. Angular dimensions can displayed in either absolute or bearing coordinates however.
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Claris CAD: Bezier Curves

Does Claris CAD offer Bezier curves?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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No. It does, however, offer B-cubic splines. Bezier curves need three points to define the curve, and spline curves need four.
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LaserWriter 6.0.1: Problem Saving PostScript Files to Disk

I want to send a file for printing to the terminal server's print queue, but I can't get the Command-K or Command-F function to work using LaserWriter 6.0.1 and System 6.0.4.

When I select the print function and press Command-K, my Macintosh beeps for as long as I press the keys. Can you tell me if this function still works with the LaserWriter 6.0.1 drivers? Do these commands no longer work in these applications? Is there another way to accomplish this?

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This feature is still present in the LaserWriter 6.0.1 drivers, but background printing must be turned off for it to work. (Note however that this feature is no longer available in System 7. Instead, there is an option in the Print dialog for generating a Postscript file to disk.)

It is also possible in this case that the Control K is being intercepted by an INIT or cdev like QuicKeys or MacroMaker.

There is an undocumented feature of the LaserWriter version 6.0.1 driver that allows saving a PostScript file to disk without resorting to the Command-F or -K method. Here is the procedure to reveal a check box in the Print dialog that saves the PostScript file to disk. You need ResEdit and a copy of the LaserWriter file. (Never use ResEdit on the original copy of a file.)

1) Open "LaserWriter" with ResEdit.
2) Open the "DITL" resource picker.
3) Open the DITL that has the print dialog (-8191).
4) From the DITL menu, select "Select dialog item".
5) Type "22" and click OK.
6) From the File menu, select "Open as dialog item".
7) You'll see the item has 0,0,0,0 as its rect. Set it to something like 80, 357, 100, 439 and close the window.
8) You'll see the "Disk File" checkbox. Resize it appropriately and move it to a convenient location.
9) Save changes and quit ResEdit.

Be sure to turn off Background Printing in the Chooser before printing. When you select print with the "Disk File" checkbox highlighted, you'll get a PostScript file when you click OK. This checkbox provides the same functionality as the Command-F method, which generates a PostScript file without the Laser Prep file. Remember to work with ResEdit only on a copy of the LaserWriter file.

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Claris CAD: Bill Of Materials

A feature available on many CAD systems that will survey a finished drawing and itemize all parts, their cost, etc. This allows the user to get a report that helps him estimate the job cost.

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ClarisÊCAD 2.0 has an object data feature. You assign ID numbers and you can export data about those objects as object data under Save As.

The only information about the feature is in the Object data sample file that ships with ClarisÊCAD. The sample file is a FileMaker II file.
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Claris CAD: Booting Without a Template

I have created a Claris CAD Options file as my preferred startup file, but sometimes I would like to boot up with the standard Claris CAD default file. How do I do this?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Hold down the option key while starting Claris CAD and it will not look for your startup file in the System Folder.
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Claris CAD: Cartesian Coordinates

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A coordinate system based on a grid of horizontal (x axis) and vertical (y axis) lines. Positions on this grid are measured by values of x and y.
Named for the French mathematician/philosopher Descartes.
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TA41157_Claris_CAD_Chain_Dimensioning.pdf

Claris CAD: Chain Dimensioning

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A series of dimension lines placed end to end to show the dimensions of individual parts of an overall piece.
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Claris CAD: Chamfer

What is Chamfer?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A technique used to intersect two lines by using a third line to connect the two lines so that they do not meet at a sharp angle. This gives the look of a "beveled" corner.

In Claris CAD, you chamfer an intersection of two lines with the chamfer tool. It trims each line by a default or user-specified amount and draws a diagonal line between them.

See also the record entitled 'Claris CAD: Fillet.'
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Claris CAD 2.0: Does Not Launch

Claris CAD just starts up and then returns to the finder. It never launches. What is going on?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Claris CAD 1.0 requires 1 megabyte of ram, Claris CAD 2.0 requires 2 megabytes. If you are running MultiFinder or System 7, you may need to allocate more ram to the application. You do this by selecting the application at the Finder and increasing the application (current) memory size.

Many Claris CAD users have extra or larger monitors, and this will require extra ram. Scanned images pasted or imported into a file can increase the amount of ram that it needs substantially.

See also the record entitled 'RAM Memory Required to Open a New Document.'
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Claris CAD: Color Support

Does Claris CAD support color? How many?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD supports 8 basic colors that can be combined to create many colors. The interface will be similar to the interface found in MacDraw II; a series of 8 color buttons will be offered without a color wheel.

Claris CAD 2.X offers color export through the MD II and (in 2.0v3) EPSF XTND filters.
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Claris CAD: MacDraw / MacDraw II Compatibility

Is Claris CAD compatible with MacDraw and Mac Draw II?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD can read files created in any version of MacDraw or MacDraw II. Just open Claris CAD and use the File Menu (Open command) to open the old documents.

This information applies to both Claris CAD 1.0 and 2.0.

In addition Claris CAD 2.0 can save files in MacDraw II format. If you select Save As... from the file menu, MacDraw II should appear in the pop up. If it does not check that the XTND system file and Claris Translators folder are located in the "Claris" folder in the System Folder, or located in the System Folder.
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Claris CAD: Complex Drawings

How well does Claris CAD handle complex drawings?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Drawing information:

-Document size - up to 100 X 100 inches which is 130 pages or 254 X 254 cm.
-Layering - adds complexity with ease
-9 pre-defined views allow easier maneuvering
-Zoom flexibility 3.5% to 3200% in user defined increments.
-Zoom box allows definition of an area that when zoomed into will fill up the entire screen
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Claris CAD: Construction Lines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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By a hand draftsman, a very light line drawn on the paper for a reference and not as part of the actual piece being drawn. In ClarisÊCAD, a line that goes all the way across the drawing to use as a reference. Construction lines do not print.

In Claris CAD, select the line tool and select the third method. Any line drawn with this method will cross the entire drawing. You can use the location bar to enter info about the line.

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Kodak DataShow and Macintosh II Hi-Res Video Card

The Kodak DataShow 480 projection pad does not work with the new video card, Macintosh II High-Resolution Video Card (661-0533). It works only with the 661-0492 card. How can I get it to work with the 661-0533 card?

This article has been archived and is no longer updated by Apple.
The Macintosh II High-Resolution Video Card requires pin 4 of its video connector to be grounded. It is likely that pin 4 is not used or connected to ground in the Kodak DataShow or its cable. A simple solution is to have a new cable made that grounds pin 4. This cable can replace the current cable or be attached to the current cable as an extension.

The Macintosh II High-Resolution Video Card can switch between two video modes. Grounding pin 4 selects the standard mode. The optional video mode is an interlaced video signal and is not compatible with the Apple High-Resolution Monitors or devices like the Kodak DataShow, that are designed for the card's standard video signal output.

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Claris CAD: Crashing With System Error (ID=15)

I am working on a Mac II and Claris CAD just crashed with ID 15, what is wrong?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you are using color, or 16 or more shades of black and white, there may not be sufficient memory to run Claris CAD effectively.

Select Control Panel from the Apple Menu. Select "monitors" a dialog box will appear allowing you to reset your colors. Select black and white and the number 2, so that you are working with two shades, black and white, only. This change will take effect immediately, there is no need to restart the machine or Claris CAD.

Color documents require substantially more RAM memory than do black and white documents.
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Claris CAD: Customizing Hatches

Can hatch patterns be customized? What about color hatches?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Hatch patterns can be defined and saved by the user. The number of lines, the repeat pattern, line dashes and line orientation can be controlled by the user. Hatch patterns cannot include arcs, ovals or circles. The color of the hatch pattern cannot be specified before the hatching is applied to an object, but since the hatch pattern is just a 'grouped object', it can be ungrouped and its component lines can be individually colored, dashed, etc.
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Claris CAD: Dashes on Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The user will be able to create dashed ovals, circles and arcs. To create polygons with dashed lines, the user can create a polygon, then unjoin the polygon into its component lines, and then dash the lines.

NOTE: Once circular objects are rotated, their dashed properties are not as good. This is due to a limitation in QuickDraw. Rotated dashed ellipses will not retain their dashes, they will revert to solid lines. If a user needs a rotated dashed ellipse, suggest that they create the ellipse with a method that allows them to create it rotated. This will circumvent the problem.

Why are dashes not implemented for polygons and freehand shapes?

Implementing dashed polygons and freehand shapes would have limited Claris CAD to PostScript output devices.
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Claris CAD: Datum (Baseline) Dimension

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Datum (Baseline) is single starting point for several dimensions.
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Claris CAD: Definition of Modifiers & Keyboard Shortcuts

The following are definitions of modifiers and keyboard shortcuts.

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A modifier is an icon which, when selected, modifies the meaning of the next mouse action in the drawing area (snap to end, tangent to an arc, etc.). As an example, selecting the endpoint modifier while drawing near the end of a line will force the object you are drawing to be drawn at that endpoint.

The following is a list of Claris CAD modifiers and their keyboard equivalents. You can have these equivalents show up in the modifier's icon box by selecting Show keyboard shortcuts in modifier icons under the General panel in preferences. You do not need to use the command key to activate these.

Any Point or Dynamic (N)
End Point (E)
Center (C)
Intersection (I)
Invisible Intersection (J)
Point on (P)
Box Corner (B)
Percent Of (F)
Perpendicular (P)
Tangent (T)
Offset (O)
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Claris CAD: Dimensions Window Description

Does Claris CAD have a "show dimensions" box? If so, which dimensions will show?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Yes, the show dimensions box allows the user to customize the display of the dimensions. It allows for position of the leader line, setting of the angle of label text, sets units of measurement, sets decimal places of accuracy.

In addition the user can set tolerances for any dimension. This is especially useful if the user is created mechanical drawings that will be used later for creation of metal parts. See the record entitiled 'Tolerances.'
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Claris CAD: Double Line Drafting

Claris CAD has a double line tool. It is also called the wall tool. It is very popular with architects for drawing walls and other objects that require close, side-by-side lines.

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Allows the drawing of two parallel lines simultaneously.

The user can also draw a second line with the offset modified and the second line will be parallel at a user defined distance.
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Claris CAD: Drawing Standards

What is 'support of drawing standards' and why is it important?

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Standards rigidly define the total appearance of the drawing. Items affected include drawing line thickness, dimension line thickness, text height, all aspects of the dimension construction (gaps, offsets, arrowheads, etc.).

In large companies and government work, standards must be supported - it is an absolute requirement.

Standards Claris CAD supports:

BS 308 - British standard for drafting.
JIS - Japanese standard for drafting.
ISO - International Standards Organization. This group set standards for most of Europe
DIN - The organization which sets many standards within Germany including drafting standards.
ANSI - American National Standards Institute. This organization sets many of the standards U.S. Y14.5 is a particular version of the ANSI standards which Claris CAD supports.
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Claris CAD: Explode or Unjoin Objects

Will Claris CAD explode polygons into their line components?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Yes. Select the object and select unjoin from the arrange menu (shortcut: Shift-Command-B). The object will now be broken up into its component lines.

NOTE: Since all the lines are selected, and the handles overlap each other, it will appear as though you have deselected the object. Click elsewhere in the document, reselect one side of the object and move it. If the polygon has been unjoined, just the line that you have selected will move. This can also be known as Super Ungroup or Smash.
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Claris CAD: Fillet

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An arc used to intersect two lines so that they do not meet at a sharp angle. This gives the look of a "rounded" corner. It is similar to a chamfer, but the trimmed area becomes an arc rather than a diagonal line.

By the way, it's pronounced 'fill-it', as in what you do to a gas tank, not 'fillay' as in' filet of sole."
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Claris CAD: Filleting Polygons

Can you use trim, chamfer and fillet on rectangles and polygons?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Yes. In Claris CAD 1.0 you must unjoined the object into its component lines first.

Claris CAD 2.0 can fillet rectangles and polygons directly. There is no need to unjoin them first.
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Claris CAD: Info Window Description

What information is displayed in the "Show Info" box? How can the information about objects in the Show Info box be used?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Show Info box displays specifications, allows accurate resizing for a selected object. It displays specifications like the show location bar, but allows the user to modify the specifications.

It includes information particular to the type of object selected such as: major and minor radius for ovals and arcs, x start, x end, y start, y end for lines and arcs.

In addition it displays calculated information including perimeter, diameter and area. The major difference with the Show Location bar is that the Show Info displays more information for a selected object and allows the user to change the object after it has been created. To change a parameter, the user selects the object, selects the parameter to be changed in the Show Info box and enters the new dimension.

In ClarisÊCAD 2.0, the Info window is where you enter an ID number for objects to be exported as object data.
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Claris CAD: Information Locations Description

I've heard that the way Claris CAD shows information about objects allows greater accuracy. How does this work?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD has a Show Info box, a Show Dimensions box and Show Location bar. All three of these can be shown or hidden. The Show Location can be used when creating or when modifying objects. The Show Info box allows the user to modify existing objects to exact dimensions. Show Info also show calculated dimensions such as perimeter, area, etc. The Show Dimensions box allows customization of of the display of dimensions, such things as location of the leader, places of accuracy etc.

The info window will only display in decimals and whole numbers. It does not have the ability to display object information in fractions of feet or inches or any other unit.
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Claris CAD: Integrating Multiple Drawings Into One

Can multiple drawings of similar items be easily integrated into a single drawing with Claris CAD?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Yes. An architect could give the basic floor plan of a building to a contractor, who in turn could give it to subcontractors for electrical, roofing, plumbing and kitchen work. Each subcontractor could use the floor plan as a template to draw over (using layers). When all layers were complete, they could be pasted into individual layers in one document to centralize all information.

You can cut and paste the layers into the new drawing (one at a time) or you can use the Place File... command to insert an entire drawing.
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Claris CAD: Integration With Other Claris Products

How can Claris CAD be used with other Claris Products?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Other Products:

- MacDraw reads and writes PICT files.
- MacDraw II reads MacDraw II files completely, can write PICT files. Claris CAD 2.X will save out as MacDraw II 1.1.
- MacPaint bitmaps can be pasted into Claris CAD, resized or traced.
- Claris CAD drawings or parts of drawings can be pasted into MacWrite or MacWrite II, and text can be pasted from MacWrite into Claris CAD.
- MacProject II project diagrams can be pasted into drawings.

The object date feature of Claris CAD outputs a tab delimited text file. This can be imported into MacWrite II, FileMaker II , FileMaker Pro, or Claris Resolve.
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Claris CAD: Large Monitors Supported

Which large monitors are supported (color, black and white, gray scales)?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
These were tested with Claris CAD: Radius Full Page Display and Radius Two Page Display (black and white monitors), SuperMac Color Monitor and E-machines Big Picture (color monitor).

See Redrawing information for common problems.
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Claris CAD: Leader Line

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Small horizontal line extending from the dimension to the dimension text for radial or diametrical dimensions. It just points out the link between the object and the dimension.

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Claris CAD: Learning Time

How long does it take to learn Claris CAD?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The in-box video tape and accompanying workbook, together with the intuitive interface of Claris CAD make it possible to learn 80 - 90% of the product and confidently start productive work in a single day.

This compares quite favorably with products like AutoCAD, which usually require several days of one-on-one training before the user can create the simplest drawings.
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Claris CAD: Macros

Can I customize Claris CAD?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ability to create new commands or functions by 'programming' is not supported. Since less than 20% of CAD users require and use the latter, Claris CAD provides the customization capabilities required by a large majority of the market.

There are third party utiliies, such as QuicKeys, that do allow users to record macros. While they have not been tested and we do not endorse any of them, some users have reported some success using them.
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Claris CAD: Mass Properties

What are mass properties and does Claris CAD compute them?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Mass properties are physical attributes of objects such as area, center of gravity and moment of inertia. Claris CAD does compute areas and perimeters of the basic drawing objects: circles, squares, ovals, rectangles and polygons. These computations are displayed in the Show Info window whenever an object is selected.

Does Claris CAD calculate the area of an object? If so, what kinds of objects?

Yes, by selecting the object and selecting Show Info from the Layout menu. It will display the area of all objects except lines, smoothed polygons, freehand objects and splines. To modify the area the user must modify the dimensions affecting the area. The area cannot be modified directly.

This information can be exported as object data in Claris CAD 2.0 or later.
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Printing to Network LaserWriter: The Process

What is the process taking place when a user prints to an AppleShare Print Server (from the user to the server and from the server to the LaserWriter)?

Where does the QuickDraw-to-PostScript process taking place?

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I will be addressing your question as a single process. The process you are asking for is the printing of graphics and text (the same thing on the Macintosh) to a PostScript printer using a network and print spooler, like the AppleShare Print Server.

The first step takes place when the user selects the Print option provided from within an application. The application has been programmed by its developer to print its documents to a PostScript printer. It provides this by using the Macintosh Print Manager Routines, which are a standard part of the Macintosh Operating System.

The application uses QuickDraw and Font Manager calls to draw to a GrafPort (display data structure). These calls create QuickDraw opcodes, which are stored in the GrafPort and converted to actual pixel information through QuickDraw low-level routines. Typically, the GrafPort controls an image displayed on a screen. The Print Manager uses a special form of GrafPort called the TPPrPort.

The TPPrPort is essentially a GrafPort that includes special data structures and drawing routines for a print driver, like the Apple LaserWriter PostScript driver. This enables QuickDraw to draw to a printer rather than a display device. QuickDraw high-level draw commands generated from the application now pass data to the selected driver. This is handled by the new low-level drawing routines, which route the data to a print driver and is generally transparent to the application programmer and the high-level QuickDraw commands being used to draw to the TPPrPort.

The application, having been directed by the user to print a document, redraws the selected document to a TPPrPort. The Print Manager, once directed to print the document, activates the currently-selected print driver. The print driver, previously selected through the Chooser, has its name stored in Parameter RAM and an access identifier stored in the Device Manager's unit table. The Print Manager uses the Device Manager to load the chosen print driver.

After the print driver loading process is completed, the driver tries to use the AppleTalk Manager to contact the LaserWriter. In the case of an AppleShare Print Server, where the desired LaserWriter has been "captured", the print server answers back to the driver that it is ready.

When the Macintosh Print Server bypass option is selected, the real LaserWriter does not appear as an option in the Chooser because during the capture phase of the print server, the LaserWriter device type has been changed to answer only to a special name. Essentially, the LaserWriter doesn't know it's a LaserWriter and calls itself something else. When searching for LaserWriters, the Chooser displays the names of network entities that answer back, when it searches for network devices of the type "LaserWriter." A print server with a captured LaserWriter answers the Chooser's AppleTalk lookup with the name of the captured LaserWriter.

The print driver within the user's Macintosh receives an answer from the print server that it is the selected LaserWriter and is ready to receive a print job. The print driver passes this information to the Print Manager, which passes on this information as a "No Error" to the application. After receiving a "No Error", the application creates the document for printing. The application

draws each page to the printer document using QuickDraw commands.

The print driver receives each of the pages as QuickDraw-generated opcodes and converts these opcodes to PostScript language commands and passes the data to the driver. The driver passes the information through its Printer Access Protocol routines to the AppleTalk Manager, which, in turn, delivers the data across whatever physical AppleTalk network is connected to the user's Macintosh to the print server.

The print server receives the PostScript commands through the AppleTalk Manager and the governing Printer Access Protocols. The PostScript commands are stored to disk, and the document is placed in a print queue. The print driver in the System Folder of the print server is accessed through the Print Manager routines on the print server.

The print server acts as an application that directly passes the PostScript code received from the user's Macintosh to the driver. The driver contacts the "real" LaserWriter and sends the PostScript data through the AppleTalk Manager, adding a set of its own Special PostScript routines prior to printing the job. These special routines let the print server keep track of the document name, number of pages, and any errors generated by the LaserWriter.

This is an overview of the process involved when printing to a print server and captured LaserWriter. Of course, the AppleTalk phase itself can be greatly complicated when routers are involved, and many parts of the process have been simplified here.

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Claris CAD: MultiFinder & A/UX Support

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Any version of Claris CAD will run under MultiFinder - and since it supports the clipboard - it will be very productive in the MultiFinder environment.

- Claris CAD 1.0v3, v4, v5 support A/UX 1.1.
- Claris CAD 2.0 supports A/UX 2.0.

Published Date: Feb 20, 2012

Claris CAD: Not Zooming to 3200%

Why can't I zoom to 3200 all the time?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The zooming capacity of Claris CAD is based on the size of the document. A one page document can be zoomed up to 3200%, at the largest size 100 X 100 inches, the user can only zoom to 400%. This is due to a limitation within the QuickDraw coordinate system.

Here are the highest zoom levels allowed for the following page sizes:
A 3200
B 1600
C 1600
D 800
E 800
Published Date: Feb 20, 2012

Claris CAD: Pan

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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On the Macintosh we call this scrolling. On non-Macintosh CAD systems it is called panning. It simply means moving around to different parts of the drawing.
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Claris CAD: PICT2 or Color Export

Does Claris CAD support PICT2?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD only exports to PICT files (black and white), not to PICT2. To export color PICT information from Claris CAD, two methods are available.

1) Export to a MacDraw II file (or copy/paste), then Save As to a PICT2 file

2) Use SuperGlue (by Portfolio Systems, Inc.) to print to a file on disk.

By using the correct EPSF filter and ClarisÊCAD 2.0v3, you export to an EPSF file and it will retain the color information. Refer to that record in this database.

Claris CAD can import color from certain applications.
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Claris CAD: Plotters Supported by MacPlot

The MacPlot plotter driver included with MacDraw II, Claris CAD and MacProject II directly supports the plotters listed below.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Hewlett-Packard plotters:
7400 Series: 7440A ColorPro, 7475A
7500 Series: 7550A, 7570A DraftPro, 7580B, 7585B, 7586B, 7595A DraftMaster I, 7596A DraftMaster II

Houston Instruments plotters:
DMP Series: 29, 40, 41, 42, 51, 51MP, 52, 52MP, 56A, 56A MP
PC 595A, PC 695A

MacDraw II, Claris CAD and Mac Project II will output to most common plotters on the market. The driver bundled these products with will output to plotters other than those listed above to the extent that the plotters emulate one of the above listed plotters. Check to see that your plotter emulates one of the Hewlett Packard or Houston Instruments plotters we support. Should you have a plotter that is not supported, please give Claris your name and address and we will suggest that your plotter model be added to the list.

Note: It's important to remember that for any plotter to work with MacPlot, the correct cable must be used. Refer to the appendix covering plotting in your MacDraw II, Claris CAD or MacProject II manual.
Published Date: Feb 20, 2012

Claris CAD: RAM Memory Required to Open a New Document

When I open a new document the system says it does not have enough memory. I have plenty of memory! How much memory is required to open a new Claris CAD document?

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The amount of memory required will depend on the screen size and number of colors set. The larger the screen and the more colors set in the Control Panel, the more memory you will need to open a new, untitled document.

Claris CAD sets aside a portion of the RAM for screen redraw. It then draws the image to this area and opens it up on the screen. That allows it to be faster, but requires it to be more memory intensive.

Apple 13" monitor with RAM needed to open new document

2 colors or grays set 40k
4 colors or grays set 70k
16 colors or grays set 150k
256 colors or grays set 300k
Millions of colors or grays set 1000k

Radius, RasterOps, E Machines 19" monitors
2 colors or grays set 100k
16 colors or grays set 300k
256 colors or grays set 1000k

Under Finder, Claris CAD, like any other Macintosh package, will use all of the available memory.

Under MultiFinder or Systems 7 or later, Claris CAD 1.0 has a preset allocation of 1350 K of memory, and 2.0 has a preset allocation of 1800k.

This is the amount of memory automatically set aside for Claris CAD to use. If you are getting out of memory messages and you have enough RAM, this number can be increased.

To do so, quit out of Claris CAD. Select the Claris CAD icon, by clicking it, then select Get Info from the File menu. Enter a value greater than 2000 into the "Application Memory Size". Close window to accept the value. When the application is restarted, it will then use the higher amount of RAM assigned to it. If you still get out of memory messages, increase the memory allocation in 100k increments until you no longer get the message.
Published Date: Feb 19, 2012

Claris CAD: Recreating Unjoined Objects

Which types of objects can you join together to form one contiguous object?

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This article has been archived and is no longer updated by Apple.
You can join a series of lines into a polygon, and arcs into ellipses or circles. You may not join arcs and lines together since there is no one defined object that could represent such a group. To see if the endpoints overlap sufficiently to be joined into one object, select one of the objects, use "select adjoining" from the Edit menu, then select join from the Arrange menu. If you get one set of handles, you have succeeded.

Can I recreate an object once it has been unjoined (smashed)?

Yes. Select the object and select join. To make it easy to find the lines that make up this object, select one of the lines and select "select adjoining", then select join.
Published Date: Feb 18, 2012

Claris CAD: Resizing Objects in Clipboard

Is it true that I can modify objects copied to the Clipboard before I paste them back into a document?

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Yes. You can modify such things as length, height and angle of rotation among others. When the object is pasted into a document it reflects the modifications.

Can you rescale an object by a user defined percentage?

Yes, the clipboard in Claris CAD lets you scale anything pasted from it by user defined value. The X axis and Y axis can be scaled separate values.

New in 2.0 - users can also resize by percentage using the scale command of the arrange menu. This command also allows text, line width and arrow size. See the record 'Scaling Objects, Text and Drawings.'
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Claris CAD: Saving Ruler Settings & Preferences in Stationery Files

Claris CAD lets you create a stationery file with your favorite settings and preferences.

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Each time you open the stationery file, it comes up as an untitled file which you can then name as you desire. The items you can set include anything that you can set or draw in a file: a default font, pen and ruler settings and objects you have drawn. As an example, you could have a title box with your company name and/or logo, set Times as a default font and create four layers. Every time that you launch the stationery file, a new untitled file will open that is exactly the same as your stationery file.

If you name the stationery file "Claris CAD Options" and place it in the System Folder, Claris CAD will automatically launch this file when you double-click the Claris Cad program icon. If you launch one of your drawing files rather than the program, the Options file will not affect it.

If you are running Claris Cad 2.0 or later, you may also place the Claris CAD Options file in the Claris Folder.
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Claris CAD: Scale Drawings

Can objects be scaled in Claris CAD?

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There are several ways to scale items in Claris CAD .

1) To scale obects or groups of objects, use the Scale... command, under the Layout menu. If you scale a bunch objects that are selected but not grouped, then each object will scale around the center of its own location. If you group the objects first, then the entire group will scale around the group's center point.

When scaling text the text will be scaled to the nearest integer point size to the amount scaled. In other words, if you have ten point type and scale it to 133%, it will return type that is 13 point.

2) Claris CAD provides fully customized rulers. The user can preset up to 6 ruler systems to rapidly change from one scale to another. The rescaling option means that objects moved within a document, or from one document to another, can be adjusted to the new scale, if the user decides to do so.

In ClarisÊCAD 2.X - users can define scales up to 1:1000. In 1.X the limit was 1:300. The scale limit will be 150 times the division per inch specified for a given ruler or 1000, whichever is smaller.

In addition, using the rulers dialog, users can change the rulers associated with an object without changing the size of the object. This is especially useful for CGT users, since drawings in other format often do not contain any scale information. To use this feature users would:

Select the object for which the ruler should be changed
Select "Rulers..." from the layout menu
Modify the scale selection to reflect the scale desired for the drawing.
Click "OK"

A dialog will appear asking users if they wish to change the ruler associated with the selected objects. To change the ruler, click OK.
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Claris CAD: Shearing or Trimming or Extending Objects

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Claris CAD 1.0 First, select an object, unjoin it into its component lines. Select the portion to be trimmed then the trim tool, click on the point to begin trimming and drag to the point where you want to stop trimming, release the mouse. Modifier can also be used to specify the beginning and ending points for the trimming. Trim is to cut away a segment of a line, arc, or circle. Claris CAD has a specific tool for this. Extend is a technique that will extend the length of a line or arc. It is the opposite of Trim.

Claris CAD 2.0 Objects like rectangles and polygons do not need to be unjoined before trimming. They can be trimmed directly. Also, the clean up function, new to 2.0, will cut away segments of objects more effectively than trimming. It is specifically designed for walls, but it will also function for all objects except rounded rectangles, splines and freehands.

NOTE: If you have two objects that are touching (for example, a circle with a line at a tangent) trimming one and not affecting the other can be awkward. In that situation, select the trim tool, select the one object you want to trim, and hold down the command key - Claris CAD will only trim the selected object.
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Claris CAD: Show Location Bar Info

What does the Location bar display?

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It shows the cursor's distance from the origin (x=0, y=0), as well as horizontal and vertical displacement of an object from its starting point. It display a line's length as well as its angle of creation. The show location bar can be used to set a dimension when the object is being created or while it is being modified.

When you have selected certain tools, it is used to set such things as the number of sides of a regular polygon, percentage along an object, radius of a fillet or length of a chamfer, etc...
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Claris CAD: Sizes of Arrowheads

How are arrowheads resized in Claris CAD?

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You can select the type of arrowhead and enter a size or angle for the arrowheads by selecting the Arrows... dialog from under the Pens menu.
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Claris CAD: Stroke Font

What are Stroke Fonts?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Stroke Fonts are fonts that are drawn by a series of lines (strokes) and are usually used for plotting.

With the MacPlot plotter drivers, Geneva is the only such font.
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Claris CAD: Tolerance

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A minimum and maximum value for the dimensions of a part. It is very important in determining the accuracy to which a part must be manufactured. Used very heavily in the machining industry.

For example,you need a tube made that is approximately 1" in diameter, but you want to show that it may be up to 1.1" or as small as .9". You would create a tolerance showing the 1" dimension as the desired diameter, and showinmg 1.1" and .9" as acceptable (tolerable) limits by selecting the dimension, and changing the Tolerances pop up in the Dimensions floater from none to two. You then enter the difference (.1") from the desired dimension that is acceptable.

One tolerance would mean that 1' is desired, but it can be as large as 1.1". Smaller than that would not be tolerable. If you select Limit as the kind of tolerance, then it would not show the optimum dimension, just the two limits that are acceptable (in our example, .9" and 1.1").
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Claris CAD: Using Bitmapped Images

Can I use bitmapped images in Claris CAD?

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Yes, Claris CAD keeps bit mapped images at their original density. It will not convert the image to 72 dpi. For example, and image created at 300 dpi will be stored at that density.

Claris CAD does not create bit mapped objects, but you can perform most of the editing functions on them that you can perform on other objects, such as scale, rotate. duplicate, etc.
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Claris CAD: Using Layers - Including Limits

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The layers of a document are analogous to transparency overlays. Architects and engineers can use the layers function to separate different kinds of information. One layer can be the basic floor plan, another the electrical wiring, and a third the plumbing details. The layers function allow you to keep the underlying format for use time after time and change upper layers as needed. The number of layers in a given document are only limited by the memory of the machine you are using.

There is only one active layer at a time. If you draw an object, it will appear on the active (or 'current') layer. You can select objects that are not on the active layer by holding down the option key while you click on the object. You can use modifiers or the selection filter to assist in selecting objects across layers.

You cannot group an object on one layer with an object on another layer.

If you copy an object you will lose the layer information for that object. In other words, when you copy an object from layer 2 in one file, it will paste to the current layer of the document you paste it into, whether that is layer 2 or not.

The maximum number of layers is determined by the amount of RAM in the Macintosh. According to our past experience, you will most likely not run into this limit.. You can name the layers, as well as hide, show, delete and create layers in the layers floating window. You access the window by selecting the Show layers command under the Layout menu (or shft-cmd-l).
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Claris CAD: Variable Zoom

Does Claris CAD have variable zoom?

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Yes. There are two methods to use to set variable zoom.

1. Select the zoom box, drag out the area you would like to zoom into. That area will fill your screen.

2. Click on the object to be zoomed in on. Double click on the zoom percentage display so that it will blacken. Then type in a selected zoom percentage between 3 and 2000% and press the enter key or the return key.
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Claris CAD: Two Dimensional Drawing Only Supported

Why Does Claris CAD Support Two Dimensional Drawing Only?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Three dimensional drawing on a two dimensional screen is difficult conceptually and even more difficult in practice. In addition, only 15% of most CAD work involves three dimensional work (IDC '87 data). Most people need only two dimensional capabilities. When three dimensional work is needed, a two dimensional Claris CAD drawing can be easily transferred via IGES or DXF to a high-end three dimensional CAD package.

Claris CAD is extremely useful for those who want to do their drawing quickly and accurately. Many users use Claris CAD to do 2-D drawings that they then import into 3-D programs. For example, a user may do the basic drawing in Claris CAD, translate the file to DXF and open it in AutoCAD to do his 3-D rendering. There are also programs that will open a Claris CAD file and extrude it into 3-D, such as ModelShop (Paracomp).
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Claris CAD: Witness Line

What is a witness line?

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A witness line is part of a dimension. It's the line that extends from the outside edges of the object being dimensioned, to where the dimension text is printed. It helps to point out what points on the object the dimension is measured from.

Note: MacDraw (any version) will not create dimensions, only auto-size lines. Auto-size lines do not have witness lines.
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Claris CAD: Trial Kit Contents

What is in the Claris CAD Trial Kit and where can it be purchased?

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The Claris CAD Trial Kit can be purchased from a Claris Dealer or from Alexander and Lord at (800) 628-2100.

The package contains:
Claris CAD Sample Software Program that will do everything except print, save cut and paste.
Claris CAD Utilities
Claris CAD Tutorial Files
Claris CAD Tutorial Video
Claris CAD Tutorial Workbook
Claris CAD Quick Reference Card

This price will be refunded if the customer purchases Claris CAD. They accomplish this by mailing back a refund request with their registration card.
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Claris CAD: Corrupt Tutorial Files

About 200 copies of Claris CAD were shipped with corrupt Tutorial Files.

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Examples:

1) When the user attempts to hatch the Fan Shroud, the hatch dialog box is not functioning correctly.
2) The Drill Adapter file is corrupt. Do a select all, copy, open a new document set the page size to B and paste. The Polar Duplicate center is incorrect. The correct values are X-Center 1.4567 and Y-Center 0.
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MacDraw II: Pyro Issues

Some users have reported problems when printing. These problems include lock ups, skipped lines and incomplete printing with the combination of earlier versions of Pyro and MacDraw II.

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These problems do not occur with version 3.3 of Pyro.

With Pyro 3.3 installed, MacDraw II menu options are grayed out. You can still select the options from the menus. To allow the menu options to be highlighted and selectable you have to exit out of MacDraw II and go back in.
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MacDraw II: Not a Multi-User Application

MacDraw II 1.x is not a multi-user application and should only be used by ONE person at a time.

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From an AppleShare File Server, MacDraw II will allow more than one person to open the same file, at the same time. The first person who saves any changes to that file will not have a problem. The others that try to save changes to the same file will get a message saying "someone has saved changes to this file while you worked on it, save under different name or replace one on server."

MacDraw II is not sold or supported as a multi-user application nor does the license agreement include any reference to this product as a multi-user application.
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Claris Applications: Basic Settings Guidelines for MacPlot

This article describes basic guidelines which ensure successful plotting using the MacPlot driver shipped with Claris applications. MacPlot places special demands on the hardware and software setup of your Macintosh and plotter. Sometimes, settings which work successfully with MacPlot defy conventional wisdom about how to configure your setup: for example, a cable which works fine with AutoCAD or other CAD programs may work unpredictably with MacPlot.

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The following settings and hardware configurations have been proven to be successful with the MacPlot driver. If you wish to explore other settings which may offer benefits of speed or convenience, you should start with these then experiment with variations.

MacPlot Configuration:
Begin with the default settings for baud rate, stop bits, parity, and paper. In particular, leave the default for "stop bits" at 2 Ñ an unusual setting, but it usually works.

MacPlot Pens:
Assign each pen a pen name, carousel name (recommendation: use the default "None"), and pen position. Make sure the pen position starts at 1, and is different for each assigned pen and color.

Cabling:
Custom cables often do not meet the rigorous requirements of the MacPlot driver. If you wish to make a custom cable, follow the directions in the TechInfo article, "Custom Cable Settings for MacPlot." Better yet, use one of the cables listed in the article, "Cables Recommended for Use with MacPlot."
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MacPlot: Recommended Cables

A large number of plotting anomalies can be traced to incorrect cabling between your Macintosh and plotter. It is not uncommon for carefully wired custom cables that work well with other plotting applications to exhibit problems with MacPlot.

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Here is a listing of several cables Claris knows to work correctly with the MacPlot software:

Apple Computer: the Mac to IW I cable, with DB9 to DIN8 adaptor, Service Part #'s 590-0169 & 699-0430. (This is two cables: a Mac II-to-DB9 adapter, and a Mac Plus-to-ImageWriter 1 cable)

Hewlett-Packard: 17302A (an all-in-one cable, 25 pin to DIN8). This is the best solution to hook up a plotter with a 25-pin connector to any Mac with a DIN8 serial port (i.e., any model Mac later than a Mac Plus).

Hewlett-Packard: 92219M (same as ImageWriter I cable) and any DB9 to DIN8 adaptor.

Roland: XY-2606.

Sun Remarketing (800-821-3221): DB25-DN8 cable is $24, part number 330-013 (direct connect between plotter and Macintosh). DB25-DB9 cable is $24, part number 330-011. DB9-DN8 adapter is $10, part number 330-003.

Claris cannot guarantee that other cables, especially custom cables, will work with MacPlot.
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MacPlot: Color Assignment

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Color objects will plot with a pen of the nearest diameter that is configured as that color in MacPlot Configure. Black objects which lack a corresponding pen in MacPlot will be drawn using the first pen listed in MacPlot Configure.

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HP 7550A: Dip Switch Settings

Listed below are the HP 7440A dip switch settings.

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Model: 7550A:
Data Flow: Remote, Stand Alone
Baud Rate: 9600
Bypass: Off
Stop Bits: 2
Handshake: Hardwire, Direct
Duplex: Full
Parity: 8 bits, None

1. You must press ENTER to save plotter settings.
2. This plotter is the only HP plotter that requires a socket to socket connector. This can be confusing. Users will sometimes try to connect to the wrong serial port.

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Custom Cable Settings for MacPlot

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Those who wish to build a custom cable for use with the MacPlot driver should follow the pin assignments below.

These are the corresponding pins for the MacPlot driver:

DIN 8	DB 9	DB 25 (male)
8	3	1
4	3	7
5	9	2
3	5	3
2	7	20

Note: The pin-out diagrams in the early manuals for MacProject II and MacDraw II were incorrect. Additionally, the wiring diagram was reversed.

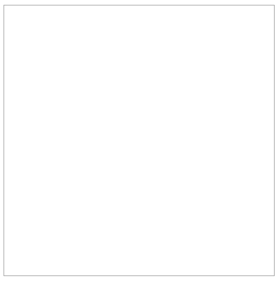

Figure 1: Correct Pinout Diagram for plotter cables used with MacPlot
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MacPlot: Font, Size, Style or Color Doesn‘t Match the Screen

Both MacDraw II and Claris CAD allow you to specify a different font, size, style and color for each character in a text block. MacPlot, however, is unable to vary character style within a text object and the entire block will acquire the characteristics of the last character in the block.

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You must create a separate text object whenever you want to change the style of your plotted text.

Note: This isn't an issue with MacProject II which doesn't allow you to use utilize various formats.
Published Date: Feb 18, 2012

MacPlot: "Not enough memory to plot this document" Error

Occasionally, you can receive a message indicating that there is not enough memory to plot your document. This error can occur even when it seems you have more than adequate free memory for plotting.

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This article has been archived and is no longer updated by Apple.
There is no precise formula for calculating the amount of memory required for a given plot. However, the following steps make the best use of the memory you have, and eliminate common causes of this message:

1. Turn off the RAM cache
2. If you are not using System 7, reboot under Finder (not MultiFinder) and attempt the plot again.
3. Reduce the number of different fonts used in your document. Geneva plots the quickest, and uses the least amount of RAM. Large bitmapped fonts are plotted pixel by pixel: they take an enormous amount of time and memory to plot, and can shorten the life of plotter pens.
4. Reduce the number of colors or pen widths being used.
5. If possible use a smaller paper size.
6. If the document is more than one page, plot one page at a time.
7. Simplify the bitmapped patterns in the document. Complex patterns require more memory to plot.
8. Check the document for damage: save the file as PICT, then open the PICT file and attempt to plot. Or, copy all the objects in a drawing, then paste the objects into a new file.

Published Date: Feb 18, 2012

MacPlot: Lockups when Using Background Printing

If you use MacPlot version 1.1 with System 6.0 or later, you may from time to time experience lockups or crashes when attempting to use the Background Printing option of MultiFinder. You may also notice problems at other times, such as when choosing a desk accessory. The problem lies in a defect with the early versions of the MacPlot driver, and is corrected by version 1.2 of the software. MacPlot 1.2 is sent free of charge to anyone who requests it.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Early versions of the driver improperly write certain information to system files when the background printing drivers (Print Monitor, Backgrounder) are present. The result is that the Print Monitor, Backgrounder, and the System file are corrupted. The damage is permanent, and cannot be corrected until you first remove, then re-install your system software.

Until you receive the new version, delete the files Backgrounder, Print Monitor, and System from your system folder, then use Apple's Installer program to restore the System. Before using the MacPlot driver again, remove the fresh Backgrounder and Print Monitor files that were copied to your system folder during the installation process.

Note: All Chooser devices modify the System file in some way. MacPlot 1.1 writes information properly for System software versions 5.0 and earlier, but does not write the information properly when System 6.0 or later is used.
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MacDraw II: Freehand Tool Will Not Autoscroll

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
All MacDraw II tools autoscroll except for the freehand tool.
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Claris CAD: Circle Centers Corrupting Documents

This occurs only in versions of Claris CAD prior to 1.0v3. This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Symptoms of a corrupted file: handles do no appear for selected objects, drawing size increases to the maximum size for no apparent reason and objects do not delete. A file will become corrupted if the following steps are applied: Create a new document, add a circle and place a circle center on it. Immediately save the document, close and re-open it. Now try moving the circle center. You should get an "Objects must be contained within boundaries" message. At this point the file is corrupted. What has happened is that 4 objects have been written to the file out of the file's boundaries.

SOLUTION: Use Claris CAD 1.0v3. The first time you open the file in 1.0v3, delete all circle centers, copy the remainder of the drawing into a new file. Now, recreate the circle centers. Everything should now be OK.
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Claris CAD: Tutorial Workbook Discrepancies

Listed below are corrections to the Tutorial Workbook.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The method icon for exercise 14 on page 1-23 is incorrect. It should not have an "R" and the dotted corner should be chamfered not filleted.

Exercise 6 on page 2-10 shows a zero in the dimensions colored in blue. It should be black.

The drawing on page 3-12 should be cleaned up so that all corners and endpoints meet exactly.
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MacDraw II: Conflicting Choices in Page Setup

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
With MacDraw II, changes in Page Setup are automatically reflected in the screen drawing area and the Drawing Size dialog box. For example, if you click Options in the LaserWriter Page Setup dialog box and then click Larger Print Area, the drawing size increases to reflect the new settings.

If you make conflicting choices, the last one becomes the active one.

For example, if you click the landscape orientation in the Page Setup dialog box, but specify a drawing size of 12 x 17 inches, the latter specification overrides the former setting and you get portions of pages in the drawing area. However, if you return to the Page Setup dialog box and click OK again, the landscape orientation becomes the last specification and expands the drawing area to consist of whole pages.
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MacDraw II: Fractional Character Widths

Fractional Character Widths offer very precise kerning (horizontal spacing between letters) and yields spacing very close to typeset text. Use this feature to achieve the best possible text spacing.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Fractional Character Widths check box is found in the Preferences dialog box from the Layout menu in versions 1.0v4, 1.1v1 and 1.1v2. The default is on with new documents since this is the way previous releases of MacDraw II (1.0v1, 1.0v2 and 1.0v3) handled text.

These versions had fractional character widths turned on internally (therefore, there was no way to turn it off). However, documents imported from MacDraw 1.9.x will automatically open with Fractional character widths off, the same way MacDraw 1.9.x handles text. Once a document is opened, you may turn Fractional character widths on or off as desired. The setting is stored in the document.

You may need to turn the fractional character widths option off if you intend to export your illustration to a program which does not support fractional character widths, such as some versions of Microsoft Word.
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MacDraw II: How to Determine Color(s) In Palette

Color patterns created with a black & white monitor will display on screen as the original black & white pattern it was created with. For a more effective pattern guide, use the white pattern as original and design the first letter of the color about to be created so that the color pattern is distinguishable on the pattern palette.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Follow these Step-by-step instructions:

1)Once within a MacDraw II document, double-click on the white pattern on the palette to bring up the Patterns window.
2)Click on the New button.
3)Draw bit by bit on the left square the first letter of the color you desire to create. You will see how it will be displayed on the right square. For example, draw "R" for red.
4)Click on the Color button and on the color you desire. Then press the Fill button.
5)Follow steps 2 through 4 to create more color patterns, then press the OK button. The color patterns will display in black & white with a letter describing the color.

Note: Technical Solutions for May 1989 (pages 11 &12), includes step-by-step screen shots on how to use color on an SE or Plus.

MacDraw II 1.1 ships with a file named "SE/Plus Color Stationery" already setup with a color pattern palette for SE's and Plus'.
Published Date: Feb 18, 2012

MacDraw II: How to Allocate Memory Usage

When I open a new MacDraw II document on a Macintosh with a color monitor, the system says it does not have enough memory. I have plenty of memory what is going on?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II automatically uses all available memory (RAM) when started from the Finder. However under MultiFinder, MacDraw has only as much memory as is allocated under "Get Info" regardless of how much memory is in the computer. MacDraw II is set to use 800K of memory (RAM) with MultiFinder. If you are using a color monitor or a large gray scale monitor, MacDraw II may need more memory. Memory requirements are also affected by the complexity of a drawing.

Please remember that the System software requires a significant amount of memory and that the MacDraw II application requires an additional 300K of memory. Desk Accessories, INIT's, and the RAM cache, will also affect available memory.

The following table lists the memory required to open one new untitled document in MacDraw II with a variety of color options.

Colors	Million	256	16	4	2
Monitor	-	-	-	-	-
Apple 13" Color	NA	298K	151K	77K	40K
19" color or gray scale	NA	1 MB	512K	N/A	128K

For example, if you want to create two new documents, each capable of 256 colors, on an Apple color monitor, you would need 300K for MacDraw II plus 298K for each document for a total of 896K of memory (RAM) in addition to whatever memory your system requires.

So to open documents users can take two approaches reduce the number of colors displayed, or increase memory allocation if working under MultiFinder.

To reduce the number of colors displayed:
1. Select Control Panel from Apple Menu.
2. Scroll down and select "Monitors" icon.
3. Choose a smaller number of colors or grays to display. MacDraw II only works with 8 colors. So displaying more than 16 colors on screen will have no effect on MacDraw II.

To allocated more memory to MacDraw II under MultiFinder
1. Quit out of MacDraw II
2. From the Desktop (Finder) , click the MacDraw II icon once and choose Get Info from the File menu. The Information dialog box will appear.
3. Change 800 to 1500 (or larger as specified in table above) in the Application Memory Size (K) text entry box in the bottom right corner of the Information dialog box, then close the box.
4. Restart MacDraw II with the additional memory.
5. If user gets out of memory message, repeat steps 1 to 4 and increase the amount allocated.

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LOGO: Reading the graphics screen

The following LOGO code allows the user to determine the setting of the bit of the graphics screen directly under the turtle (HITP), or at any point (DOTP).
This article has been archived and is no longer updated by Apple.
This code may not give the expected results for colors other than black and white. Depending on HEADING, HITP may not always see the turtle if it is shown.

```
TO HITP
LOCAL "ADDR
MAKE "ADDR (.EXAMINE 916) + (.EXAMINE 127) + 256 * .EXAMINE 128
OP BITP .EXAMINE 917 .EXAMINE :ADDR
END

TO RESTORE
SETPOS :OLDPOS
SETPEN :OLDPEN
IF :OLDSHOWNP [ST]
END

TO BITP :BITSIG :BYTE
IF NOT :BITSIG < 128 [MAKE "BITSIG :BITSIG -128]
OP 1 = INT ((REMAINDER :BYTE 2 * :BITSIG) / :BITSIG)
END

TO DUMP :POSLIST
LOCAL "OLDSHOWNP
MAKE "OLDSHOWNP SHOWNP
LOCAL "OLDPOS
MAKE "OLDPOS POS
LOCAL "OLDPEN
MAKE "OLDPEN PEN
PU
HT
SETPOS :POSLIST
IF HITP [RESTORE OP "TRUE]
RESTORE
OP "FALSE
END
```

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Macintosh: How To Access DOS EIS Application

I want to run a DOS application from a Novell server. The application is an Executive Information System (EIS), which exists on a Novell server on Token Ring. It requires EGA graphics. I plan to put a LocalTalk PC Card into a 386-based DOS machine. This machine already has a Token Ring card to connect it to a Novell server. I would like to run the Novell drivers and the necessary parts of the AppleShare PC package, along with PCAnywhere from Digital Microprocessor Associates on the DOS machine. On the Macintoshes, I want to run PCMacTerm (also from Digital Microprocessor Associates), which lets the Macintoshes act as terminals to the DOS machine. Can we run the Novell drivers, the appropriate AppleShare drivers, the Token Ring card, and the LocalTalk PC Card in the DOS machine and still have enough memory left to run the application? Can we run the Token Ring and LocalTalk PC Cards together in the DOS machine and access both services?

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Basically, it sounds like you want a Macintosh to gain access to a DOS EIS application running on a Novell Server, via a "PC Gateway". Conceptually, this sounds feasible. However, it would be prudent to test this configuration.

From a memory standpoint, you should be okay. The AppleShare PC software can be pared to 50K or so. The Novell software requires a little more room, perhaps as much as 80K or 90K. Those memory requirements combined with DOS (roughly 100K) still leaves 400K (640-50-90-100=400) for the application.

Even if you do run short of memory, third-party cards and programs may help you work around the limitation. Two such products are HiCard and MOVE'EM (information on each is in the Tech Info Library).

The minimum AppleShare PC drivers needed are LSL.COM, LTALKP.COM, ATALK.COM, and COMPAT.COM.

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MacDraw II 1.0v4: New ImageWriter II Print Options

What ImageWriter II Options are supported by MacDraw II v1.0v4.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II 1.0v4 now supports all ImageWriter print options.

1) Supports 50% reduction

2) Supports Tall Adjusted printing
Note: Click Tall Adjusted and Best in the Print dialog box for the highest possible print resolution from an ImageWriter.

3) Offers faster ImageWriter printing

4) Supports 33% and 66% print reductions with LQ ImageWriters

5) Supports less than 300 dot-per-inch (dpi) resolution on the Tektronix 4693 printer (e.g. it now supports 75 or 150 dpi) and requires less memory.

Use the Page Setup and Print dialog boxes to control these new features. All print options available for the printer youÕve selected will appear.

Important: The page setup is saved as part of documents created with previous versions of MacDraw II.
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MacDraw II: Converting Older Documents to Use ImageWriter Options

The page setup is saved as part of documents created with previous versions of MacDraw II. Therefore, to take advantage of all the ImageWriter II print options/features in a document created with an earlier version of MacDraw II follow the steps below.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Please follow these steps:

1. Open the document from within MacDraw II 1.0v4.

2. Open the Chooser dialog box under the Apple menu.

3. Select a printer other than your ImageWriter.
Note: You must have other Apple printer drivers (such as ÒLaserWriterÓ) in your system folder to perform this step.

4. Choose Page Setup from the File menu and click OK.

5. Reopen Chooser. (See your Macintosh ownerÕs manual if you need help using Chooser).

6. Reselect your ImageWriter.

Now when you choose Page Setup, all options will be available.
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MacDraw II: Lockup when Grouped Objects are Saved in Library

In MacDraw II 1.0, all versions, there is a issue when grouped objects are saved in a library.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To reproduce the problem follow the steps below:

1. Align two objects "to each other" so that the objects are one within the other.
2. Group these two objects.
3. Put them in the library.
4. Create two new objects and align them "to each other" so that the objects are one within the other.
5. Group these two new objects.
6. At this point the computer will crash.

This failure has been corrected in MacDraw II 1.1.
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MacDraw II: Opening Scanned PICT Files

What is the largest PICT file MacDraw II can open?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The largest scanned PICT file MacDraw II can open depends upon several factors:

1. The complexity of the graphic image that you've scanned (not necessarily the size of the file).
2. The method you use to scan (i.e.., Line Art, Half Tone, Gray Scale). A line art scan takes less memory to open than a gray scale or half tone scan.
3. The resolution you use to the scan the graphic image. A 300 DPI scanned images require more memory than an image scanned at 150 or 72 DPI.
4. Not all scanner software use the same PICT file format. o, some scanned images are saved as larger files than others.
5. Complex scanned images may require more memory than has been installed in your Macintosh.

If you are having difficulties opening a PICT file in MacDraw II:

1. Scan the image at lower resolution, like 72 or 150 DPI.
2. Using the scanner software, select only the area you need scanned, rather than scanning the entire document.
3. Scan the image in sections.

Note: Scanned images can be reduced in MacDraw II. Turn on Show Size and resize the image. Show Size will display the horizontal and vertical resolution in dots per inch (DPI).

For example, with this feature you can precisely resize (reduce) a 72 DPI image to a 144 or 300 DPI object. (This feature is not documented in the manual.)
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MacDraw II: PICT Will Not Print on All Pages

In MacDraw II, when printed to a LaserWriter, your PICT objects might appear on the first few pages, but not on the remaining pages. On screen, the objects are correctly displayed.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This problem has occurred under the following conditions:

- The document has more than 4 pages.
- The pages are printed vertically (as chosen in Drawing Size).
- Each page contains a PICT object

Confirm that LaserWriter 5.2, or above, is being used. Now, try printing under the Finder (this bypasses the Print Monitor). Then, try deselecting Graphics Smoothing in Page Setup.

Also, the type of LaserWriter doesn't seem to matter, as the same characteristics are exhibited on the LaserWriter Plus, LaserWriter II NT, and NTX.
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MacDraw II: Linotype Printer Issue

MacDraw II v1.0 had a issue printing patterns to a Linotype printer.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If a file had more than one patterned graphic object, the first one would print fine, but the second would print a coarse pattern.

NOTE: Linotypes use the Apple's LaserWriter driver. Treat Linotype problems as you would a LaserWriter printing problem. For example: What version of the driver is used? Check for multiple LaserPrep files. Any DA, INIT or CDEV conflicting with the application or the driver? Etc.

Solution:
This issue was fixed in v1.0v2, so anyone with this problem should upgrade to v1.0v2.

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MacDraw II: Print Spooler Issues

There is a issue with some print spoolers and MacDraw II.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
We have successfully used:

Tops Spool - Remember that you will need 2 Mb of RAM to run TOPS successfully.

Print Monitor - The MultiFinder spooler from Apple does work fine but:
1. If you print a PICT file with Print Monitor under low memory conditions, the document will print incorrectly or will not print at all. For example, scanned (bitmap) objects may not print, or the bitmap will print with the right and left halves reversed.
2. If you print to a LaserWriter with PrintMonitor on and later plot using MacPlot 1.1, you won't be able to print to your LaserWriter using Background Printing. MacPlot 1.2 update prevents this problem.
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MacDraw II: Kerning Not Consistent

I print the exact same document in MacDraw II twice from the same Macintosh, each copy about two minutes apart and when I compare the copies the kerning is different in each. Why is this happening?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Most likely you have more than one System file and/or more than one LaserPrep file.

Use the Find File DA to search for "system" and then "laser". Remove the extra system and laser prep files and reboot. If the problem still prevails, then your LaserPrep may have become corrupted. Remove it from the hard disk and re-install it.
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Claris CAD: MacSink Incompatibility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

A Claris CAD user has reported that the combination of MacSink, a word processor accessible as a DA, and Claris CAD, resulted in a system crash with Claris CAD 1.0v1.

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MacDraw II/MacDraw Pro: Pasting from Illustrator & Freehand

When copying / pasting from Adobe Illustrator or Aldus Freehand into MacDraw II or MacDraw Pro, hold down the option key while selecting the cut or copy command. The objects will paste correctly.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When copying / pasting from Illustrator, the objects may appear solid black.

This is because a black mask of the objects has been pasted into MacDraw over the desired objects. To remove this mask, after pasting, deselect all objects, click the solid black object, then delete. The desired objects will be visible.
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MacDraw II: Compatible Graphics Tablets

What graphics tables are compatible with MacDraw II?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II was tested with both the Kurta and the Summa Graphics tablets and found to be compatible.
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MacDraw II: What Is Tall Adjusted?

What is the Tall Adjusted print option used for?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Macintosh has 72 dpi screen resolution. The ImageWriter default print resolution is set for 80 dpi.

Basically, "Tall Adjusted" makes up for the difference between the screen and print resolution, thus giving the user a more WYSIWYG print out.
For the best print out, always use the "Tall Adjusted" print option.

If text is not staying in the boundaries on the print out, the user has NOT selected "Tall Adjusted".
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Claris CAD: Accessible File Formats

Claris CAD can open and save files in several different formats. These are formats whose object types are contained within Claris CAD's object types.

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This article has been archived and is no longer updated by Apple.
Claris CAD 2.0 can read (or "open") drawings that have been saved in any of the following file formats:

- Claris CAD
- Claris CAD Stationery
- MacDraw (version 1.9.8 and earlier)
- MacDraw II (versions 1.0 and 1.1)
- MacPaint 1.0
- MacPaint 2.0
- PICT
- PICT 2 (Color PICT)
- TIFF

Claris CAD 2.0 can save drawings in the following file formats:

- PICT
- Claris CAD Stationery
- MacDraw II
- A tab delimited object data file

Claris CAD 2.0 v3 can save out an EPSF file. The EPSF kit, which contains the correct XTND engine and filter and instructions, is available without charge from Claris Customer Relations.

If you do not see all of these options in your Claris CAD file's Open... or Save As... dialogs, see Chapter 1 of the New Features Guide about correct installation of the XTND filters.

Also, Claris offers a separate translator program, the Claris Graphics Translator (CGT). CGT 1.1 offers translations from:

- Claris CAD 1.0
- Claris CAD 2.0
- IGES 3.0
- IGES 4.0
- DXF 9
- DXF 10
- DXF 11
- MacDraw
- MacDraw II
- PICT

and translations to:

- Claris CAD 2.0
- IGES 3.0
- IGES 4.0
- DXF 10
- MacDraw II 1.1
- PICT

The translator also offers several convenient features, such as timed translations and report generating. Please note the Claris Graphics Translator can translate the file, but it cannot transfer it between computers. This file transfer can be accomplished with a network, modem, a serial cable connecting the computers (with communications software), with Apple File Exchange and an FDHD (Apple's high density floppy drive) equipped Macintosh, or an Apple PC drive or DaynaFile. The best method of file transferring depends on the types and proximity of the computers involved, as well as the available peripherals and software.
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Claris CAD: Use of Modifiers for Alignment Help

In order to align things exactly in Claris CAD the user does not need to zoom in. They can use modifiers to help in alignment.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Modifiers can apply to any movement in Claris CAD. For example to make one endpoint of an already existing line tangent to a given circle or ellipse, you can used modifiers.

To do so:

1. Select the endpoint modifier.
2. Pick up the line by a point close to the endpoint you want to be tangent. Hold the mouse button down.
3. Select the tangent modifier, by either dragging the mouse over to it and releasing the mouse.
4. Move the line to the point on the circle that you want it to be tangent to. Click the mouse over that point.

The endpoint of that line will snap to the circle with the line becoming a tangent to the circle.
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Claris CAD: Modification to Arcs Issue

In Claris CAD 1.0v1, whenever a circular or elliptical arc was modified, it would lose any decimal values in its incremental angle (e.g. 55.43¡ would become 55.00¡).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
As a result, there would be a gap between the arcs and other objects like lines and polygons.

"Modified" includes: Mirroring, Mirror Duplicating, Rescaling while pasting, Resizing, Rescaling in the Clipboard, Flipping Horizontally and Flipping Vertically.

Note: This was fixed in Claris CAD v1.0v3.
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Claris CAD: Area Calculation

Does Claris CAD calculate the area of an object? If so, what kinds of objects?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Yes, by selecting the object and selecting Show Info from the Layout menu. It will display the area of all objects except lines, smoothed polygons, freehand objects and splines. To modify the area the user must modify the dimensions affecting the area. The area cannot be modified directly.
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MacDraw II: Using With A/UX (UNIX)

Will MacDraw II work with A/UX?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A/UX is Apple's version of the Unix operating system. It is based on AT&T Unix version V.

MacDraw II 1.1 has been tested with and will run under the A/UX 1.1.1 operating system. However, complete compatibility tests were not performed. Some of the characteristics of using A/UX with MacDraw II are given below.

- The maximum length of a file name cannot exceed 13 characters. (Unix and A/UX normally allow 14 characters)
- Saving a document in either PICT or Color PICT2 file formats will result in an error ID=4

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Claris CAD: Carriage Returns in PICT Files

In Claris CAD 1.0v1, carriage returns were not saved in text blocks as part of documents saved in PICT format.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue was fixed in Claris CAD v1.0v3.
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MacDraw II: Compatible Software

The importing and exporting capabilities of MacDraw II have been tested with several other applications.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is a sampling of some of the programs that appear to be compatible with MacDraw II: PageMaker 3.0, Canvas, Cricket Draw, and Ready Set Go 3.0.

Some users have reported problems importing PICT files into QuarkXPress and MacDraft.
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Claris CAD: Error ID=12

If the user tries to launch Claris CAD under System 4.2 and Finder 6.0, error ID=12 will occur.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The solution is to update to the recommended system version, 6.0.2.
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Claris CAD: Tear-Off Menus Issue

If you get a System Error ID =01 when attempting to Copy or Paste (or simply access the edit menu item) with a Library Item open in Claris CAD, it may be due to an incompatibility with a Startup document (INIT), Tear-Off Menus.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you remove this Startup document (INIT), the problem should go away. Tear-Off Menus can be turned off from the Control Panel. Tear-Off Menus is made by Advanced Interface Programming.
Published Date: Feb 18, 2012

Claris CAD: Crash When Opening Libraries

Claris CAD 1.0v1 may crash if a library is opened while the Show Info window is showing.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Workaround: Close Show Info before opening a library, or upgrade to later version.

Note: This issue was fixed in Claris CAD v1.0v3.
Published Date: Feb 18, 2012

MacDraw II: Creating PostScript Files

This article discusses how to create Postscrip files using MacDraw II.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Under Systems 5.x, 6.x

To create a PostScript file from MacDraw II (and most other Macintosh applications) with earlier versions of the LaserWriter driver (6.0.2 and before), do the following:

- Turn off Print Monitor or any other print spoolers.
- Select Print from the File menu.
- Click OK in the print dialog, then immediately press and hold the command and F keys.
- Continue holding down the Command and F keys until you see the "Creating PostScript File" message.
- In the Finder you will see a file named "PostScript0". This is the PostScript file.

Notes:

- Command-K will also create a PostScript file. This file includes the Laser Prep routines and will be much larger.
- If you're using TOPS and are unsuccessful at creating a postscript file, try disabling TOPS. To disable TOPS, reboot and hold down the mouse after the happy Mac appears on startup.
- Creating of a PostScript file within MacDraw II or any other Claris application using this technique is a feature of the LaserWriter driver. It has nothing to do with the application and is NOT guaranteed to work.

Under System 7.x

The easiest way to create a Postscript file from MacDraw II is to acquire LaserWriter driver version 6.1 or 7.0. These versions offer the option to "print" to a Postscript file on disk from the print dialog box.

However, these versions of the LaserWriter do not give the user the choice of a "Command-K" file or a "Option-f" file. It creates a "Command-K" file only.

This Postscript file has additional information in it which is different from the previous files. Truetype font information will be included along with the LaserPrep routines found in earlier versions.

Also, Apple has released a utility that will strip out the additional information from the 7.0 files to make them equivalent to the previous versions. This file has been placed on Genie and other bulletin boards.

Published Date: Feb 18, 2012

Claris CAD: Dashed Lines at Slight Angles

In Claris CAD 1.0v1, dashed lines at angles of less than 5¡ from an orthogonal (e.g. 85¡,95¡, 5¡, 268¡, etc.) did not display at percentages greater than 500%.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue was fixed in Claris CAD v1.0v3.
Published Date: Feb 18, 2012

Claris CAD: Supported Digitizer Tablets

Which digitizer tablet is supported with Claris CAD?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Kurta tablet was tested with MacDraw II, and therefore will work with Claris CAD. We have found however, that it will not trace accurately, which is what most people want to do. Kurta can be reached at: 602-276-5533

We have also tested the Summagraphics Bit Pad Plus (an ADB tablet plugging into the mouse port) and it seems to work well. It is easy to set up and traces accurately. Summagraphics can be reached at: 203-384-1344.
Published Date: Feb 18, 2012

Claris CAD: Dimensioning With Radius Hardware

The Radius Accelerator uses a SANE (also called Radius Math) file that processes the math very quickly with both the 16 MHz and 25 MHz accelerators. However this speed reduces the accuracy of the calculations.

The result in Claris CAD is that dimensions, dimensions typed into the show info window and show location bar will not be precise. For example, instead of getting 1.00 inches as a measurement, a user might get 0.99 inches.

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This article has been archived and is no longer updated by Apple.
Workaround:
They can remove the Sane/Radius Math file from their system folder and reboot. This forces the Radius Accelerator to use the sane equivalent built into the Macintosh ROM's that is slower but more accurate.

Also, there are new versions of Radius' files. Some were created in February of '89 and should have a version number of 1.2. These are more accurate, but still not as accurate as the built in "Sane", so please encourage your customers to update themselves to these versions.

There is another accuracy issue involving the Info window that was fixed in 2.0v3. If the user enteres 1.0 and always gets .99 then the problem is probably the SANE init mentioned above. If the user get different numbers, such as .99 the first time, then 1.02 the next, see the record entitled 'Incorrect Numbers in Show Info Window'.
Published Date: Feb 18, 2012

Claris CAD: Linear Dimensions Issue

In 1.0v1, Claris CAD would crash when attempting a Linear Dimension using the Three Point draw method under low memory conditions.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue was fixed in Claris CAD v1.0v3.
Published Date: Feb 18, 2012

Claris CAD: Error: Limitcheck; OfgCmnd: Framedevice

What does "Error: limitcheck; OffendingCommand: framedevice" mean?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
"Error: limitcheck; OffendingCommand: framedevice".

To quote from the PostScript Language Reference Manual, Page 259:

"The PostScript Language itself imposes no restrictions on the sizes or quantities of things described in the language, such as numbers, arrays, stacks, paths, etc. However, a PostScript interpreter running on a particular computer in a particular operating environment does have such limits. The interpreter cannot execute programs that exceed these limits; if it attempts to perform some operation that would exceed one of the limits, it executes the error 'limitcheck'. Encountering a 'limitcheck' during execution of a page description is almost always an indication of an error in the PostScript program, such as an unbounded recursion on one of the stacks." This most commonly is due to a polygon or freehand having many points. Reduce the number of points/vertices and it should print.

Appendix B of the PostScript Language Reference Manual, Page 260-261, gives the implementation limits of the LaserWriter.

What is probably occurring here comes from a problem with MacDraw exceeding these implementation limits. Simplifying the drawing and restarting the printer often solves this.
Published Date: Feb 18, 2012

MacDraw II: Exporting Rotated Rectangles

In MacDraw II, 1.0v4 and earlier, customers using System 6.0.2 and exporting rotated rectangles to other applications via PICT, will notice that these rectangles will NOT print.

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This article has been archived and is no longer updated by Apple.
The solution is to upgrade to version MacDraw II 1.0v4.
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Claris CAD: Filleting Circles

In Claris CAD 1.0v1 a fillet could not be created between a circle and another object after the circle had been resized, but still remained a circle.

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This article has been archived and is no longer updated by Apple.
This issue was fixed in Claris CAD v1.0v3.
Published Date: Feb 18, 2012

Claris CAD: Filleting "Objects Out of Bounds"

If you have one or two lines at angles slightly off the orthogonal (e.g. 269.98, 270.05, 89.02, 180.06) under certain conditions you will get the message "Objects must be contained within document boundaries" when attempting to fillet them.

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After this, the document will be corrupted. You will get handles in reverse, i.e. objects that are not selected will have handles and objects that are selected will not. The handles will reset themselves if you redraw the screen, but the document will have problems from then on.

See the article 'Repairing Corrupt or Damaged Claris CAD Documents'.
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Claris CAD: Hatching

In Claris CAD you may hatch any series of objects that form one continuous outline. However, the objects must have overlapping endpoints.

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This article has been archived and is no longer updated by Apple.
If the object endpoints do not overlap, a dialog box will appear stating "Crosshatch boundary is not completely closed. Proceeding may produce an incorrect crosshatch." If you click OK, Claris CAD will try to create the crosshatch. If it is unable to produce any crosshatch it will beep.

TIP: To see if endpoints overlap sufficiently, select one of the objects, and from the Edit Menu, pick "Select Adjoining". Adjoining objects become selected.
Published Date: Feb 18, 2012

MacDraw II: How the Font Menu Works

There is no limit to the number of fonts you can use with MacDraw II, other than the system limitations of memory and disk space.

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This article has been archived and is no longer updated by Apple.
The more fonts, desk accessories, startup documents, and control panel devices you use, the less RAM is available for use. Also, the size of the System file may grow quite large.

It can seem that MacDraw II places a limit on the number of fonts you can use. The font menu may not contain all the fonts installed in your System, or some fonts may appear grayed out, and not selectable.

Here's what is happening.

MacDraw II lets you customize the font menu to show only those fonts you may need for a particular document. In other words, once the font menu has been customized, this unique selection stays with the document. A new document will again show only the default fonts. The font menu starts out with a minimal set which includes New York, Geneva, etc. Choose Fonts from the Font menu to add more fonts from your system to the font selection for the document you're working on.

If it is desirable to have a greater selection of fonts with each newly created document, customize a document by adding the desired fonts and save this document as a MacDraw II Options file.

MacDraw II remembers the names of fonts used in your document. If you use a unique font when creating your document, then open the file on a Macintosh which does not have this font installed, the name of the missing font will appear in the font menu, grayed out, to alert you to this condition. You can then either install this font with the Font DA/Mover or remove the font from the MacDraw II font menu using the Fonts option from the Font menu.
Published Date: Feb 18, 2012

MacDraw II: Importing Patterns from MacDraw I

When importing MacDraw I documents into MacDraw II, the patterns may change.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The reason is the gray scales are different in MacDraw II. The workaround is to change the fill (pattern) in MacDraw II.
Note: Version 1.04 solves this problem.

When importing old MacDraw files for the best result (especially with text) turn off fractional spacing in MacDraw II version 1.v04 before importing the file.
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Claris CAD: Joining Objects

Which types of objects can you join together to form one contiguous object?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You can join a series of lines into a polygon, and arcs into ellipses or circles. You may not join arcs and lines together since there is no one defined object that could represent such a group.

To see if the endpoints overlap sufficiently to be joined into one object, select one of the objects, use "select adjoining" from the Edit menu, then select join from the Arrange menu. If you get one set of handles, you have succeeded.
Published Date: Feb 18, 2012

MacDraw II: Print Leading

How do MacWrite and MacDraw determine leading when outputting to the LaserWriter or any other PostScript device? Is it determined by measuring the height of the largest character in one line to the top of the largest character in the next line, or is leading measured from baseline to baseline?

Also, does the current LaserWriter driver make a conversion from PostScript points (72 points to the inch) to true points (72.27 points to the inch)?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Leading is determined by the font or fond. A character cell is a matrix of pixels that determines the maximum size of a character. If there is a cell matrix of 10 X 10 and there are two rows of unused pixels at both the top and bottom of the cells, then there will be four rows of blank pixels between the top and bottom of the characters since the cells are stacked vertically on the page.

Leading would add blank rows in between the character cells. Leading is set to zero in the Macintosh. In your terms, the leading is determined from baseline to baseline because the cell size is not modified. The LaserWriter driver does not convert to output to 72.27 points.
Published Date: Feb 18, 2012

MacDraw II: Linotronic Typesetter

I have read that MacDraw II will support the Linotronic Typesetter. Is this typeset driver included with MacDraw II?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Linotronic Typesetter uses the Apple LaserWriter drivers. Make certain you are using the current drivers.
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MacDraw II: Library Window Issue

There is a issue in MacDraw II 1.0v1, 1.0v2 and 1.0v3 that occurs when you open a document and a library.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The problem can be reproduced as follows:

- Click on the document window.
- Select the text tool and type some text.
- Then, while the text box is still active, click on the library window.
- Now click back on the document window.

The machine will either freeze, or you'll get a bomb, ID=25 or so.

Note: This issue has been corrected in MacDraw II 1.0v4.

Workaround:
Until a new version of MacDraw II can be obtained, always click outside the text block before you access the library.
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MacDraft: PICT Files & Arrow Heads Issue

There is a issue importing MacDraft PICT files (that have arrow heads) into MacDraw II 1.x.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The arrow heads come into MacDraw II with the arrow heads missing.

Background Info: PICT formats are NOT all alike as not all programs have the same drawing features, hence the PICT file formats reflect these differences and will vary from program to program.

Note: MacDraft has been updated, but we have not tested the current version.
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MacDraw II: Orchid Techology ColorView

Will ColorView from Orchid Technology that allows the Mac SE to display color work with MacDraw II?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
No, it is not supported by MacDraw II.
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MacDraw 1.x: Character Spacing Issues

In MacDraw II 1.x, the words in the menus are too wide (e.g., the Edit menu has wide spaces between the letters). Or, the text in text blocks is incorrect (too wide or too narrow).

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This article has been archived and is no longer updated by Apple.
Delete the font from the System file (all sizes. With Monaco, Chicago and Geneva, delete as many sizes as the computer will allow). Then, reinstall the font from a current system / font disk. Check the computer to make sure that only one version of the font is installed.

Explanation: Character spacing problems occur for four known reasons:

- The font is a pre - System 5 font, which lacks all the font information required by MacDraw II
- The font itself is corrupt.
- A font is installed from two different sources (e.g., both the TrueType and Adobe versions of Helvetica are installed). If so, delete one of the fonts.
- The font exists in two places (e.g., using Suitcase or Master Juggler, the computer is accessing a font that exists in both the System file and a suitcase file, or in multiple suitcase files). Be sure that all installed sizes of a font reside in the same file (either the System file or a suitcase file).

Published Date: Feb 18, 2012

Claris CAD: Modifiers Not Working Correctly

When using a modifier in placing an object tangent at the intersection of an arc, it is possible to have Claris CAD place the object at an "incorrect" position. Claris CAD would be inaccurate, and just miss the arc.

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In this example I placed a line tangent to an arc. The line cuts through the arc instead of ending at the arc. This is a display problem. The arc has an incremental angle value that contains decimals (e.g. 53.98). QuickDraw does not understand such arcs, so to display the object, it must be defined as a polygon, leading to the inaccurate display. THE DATABASE IS CORRECT. So the modifier is finding the point of true intersection, even though the display is incorrect.

Workaround:
Round arcs to nearest whole decimal value (e.g. 54), then display will be correct. This problem will not be fixed until there is a new version of QuickDraw.

Q. When I use a modifier to resize an object, the object is not resized accurately. (i.e. the line extends past the intersection point). This did not happen in Claris CAD 1.0. What am I doing wrong?

A. You're not doing anything wrong. This sometimes happens when the preview cursor is off. We suggest using the preview cursor when using modifiers. You can tell that the preview cursor is on if when you hover over an object, the cursor turns hollow. You can quickly turn the preview cursor on or off when you type "k" or "K" key on your keyboard.

Note: This problem has been resolved in 2.0v2.
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MacDraw II: Objects Jump When Moving Them

A customer reports when moving objects they jump rather than move gracefully.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Have the customer check the caps lock key. When the caps lock key is down, the mouse constraints go into effect.
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MacDraw II: Printers Supported

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IMAGEWRITERS:
ImageWriter
ImageWriter II
ImageWriter LQ

LASER PRINTERS:
LaserWriter
LaserWriter Plus,
LaserWriter II SC, NT and NTX
Linotype L300 (actually almost any Linotype PostScript printer)
Varityper VT-600
General Computer Personal Laser Printer

COLOR PRINTERS:
Tektronix ColorQuick (inkjet printer) - plain paper, overheads
Hewlett-Packard PaintJet (inkjet printer) - special paper
Tektronix 4693D, 4693DX, Phaser (thermal wax printer) - plain paper, overheads
Howtek PixelMaster (thermoplastic color ink printer) - plain paper
Any ImageWriter with a color ribbon
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MacDraw I & II: PICT Format

The PICT format for MacDraw 1.x and MacDraw II are very similar. The differences are mainly related to rotated text and objects, and dashed lines.

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This article has been archived and is no longer updated by Apple.
PICT file format information is available from APDA (Apple Programmers and Developers Assn.) (408/562-3910). In addition, Inside Macintosh Volume V describes the PICT file format. The earlier versions of Inside Mac also have limited descriptions of PICT file formats.
The PICT file format for MacDraw II is available from Claris Technical Support. This document includes the information about the PICT header for MacDraw II files. This information is not proprietary and does NOT require a Non-Disclosure Agreement.
Published Date: Feb 18, 2012

MacDraw II: Polygons Shift When Printed

There is a confirmed issue with MacDraw II, all versions, that occurs when you paste objects into other applications, including MacWrite, WriteNow and PageMaker, then print to a LaserWriter. Some objects will be shifted slightly.

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This article has been archived and is no longer updated by Apple.
This can be reproduced as follows:
1. Draw a polygon in MacDraw II. Place other objects near the corners of the polygon as a reference.
2. Copy the objects to the clipboard.
3. Paste into another application.
4. Print the document to a LaserWriter.

The objects look correct on screen but may appear to be shifted up and to the left by a pixel or two in the printout.

Important Notes:

- This only occurs when the objects are pasted into and then printed from within another application.
- The objects WILL print correctly from within MacDraw II.
- Applications other than the ones mentioned above might be affected.
- Graphic objects other than polygons (such as arcs, lines, circles, etc.) might be affected as well.

A partial workaround is to use even pen widths (i.e., 1 point, 2 point, 4 point, etc.) and zoom to 400% to align the objects. Also, if at all possible, use either all polygons, or arcs with non-polygon objects.

This might be related to the differing coordinate systems that PostScript and QuickDraw use to place objects. QuickDraw places objects from the upper left corner, while Postscript places objects from the lower left corner.
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MacDraw II: PostScript Fonts Look Unreadable Screen

If a user reports that a PostScript font looks funny on the screen, yet it prints well using MacDraw I or II, then most likely they have installed old fonts prior to system software 5.0.

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Solution:
Reinstall the fonts with system software 5.0 or above. Or, they need Apple's screen fonts instead of Adobe's screen fonts. Adobe also sells the screen versions of the standard LaserWriter fonts. This includes Helvetica, times and courier.

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MacDraw II: Printing With ImageWriter Fonts

There is a issue with printing text in boxes with ImageWriter fonts to an ImageWriter II. The text displays correctly but when it prints, the text extends over the box.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The workaround is to use PostScript fonts or increase the size of the box.

Note: This was resolved with MacDraw II 1.0v4 (turn off Fractional Character Widths in the preferences box).
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MacDraw II: QuickDraw and PostScript Differences

What is the difference between QuickDraw and PostScript. Is MacDraw II based on PostScript or QuickDraw?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
QuickDraw is a collection of routines built into the Macintosh ROMs that the Macintosh uses to define text and graphic objects. PostScript is a page description language that is used by the Apple LaserWriter and other output devices. QuickDraw is native to the Macintosh operating system while Postscript is not. In addition, some programs are Postscript-based, while others are QuickDraw- based. A Postscript-based program defines each object (such as a line or box) within a data file using Postscript commands. When printing to a Postscript-based printer, the program can send these Postscript commands (instead of pixels) directly to the printer (thus printing at the maximum resolution of the printer). However, when printing to a non-Postscript printer, such as an ImageWriter II, the program will print at screen resolution (or at least, not at maximum printer resolution).

Conversely, a QuickDraw-based program defines the objects in its data files using the native QuickDraw routines. When printing from a QuickDraw-based drawing program, such as MacDraw II, printing will occur at the resolution set by the print driver, regardless of whether or not the printer is Postscript-based. This is normally the maximum resolution of the printer. When printing to a Postscript-based printer, the LaserWriter print driver converts the QuickDraw routines to Postscript instructions, then sends these instructions to the printer for imaging.

Contrary to popular belief, there is no such thing as a QuickDraw printer. (There aren't any printers that have QuickDraw in their ROMS). In reality, QuickDraw printers function on a Mac because their print drivers convert the QuickDraw routines to bitmapped images.
Published Date: Feb 18, 2012

MacDraw II: Resized Objects Change in Unexpected Ways

When resizing a group that contains rotated objects, the rotated objects may resize in an unexpected way. This resize behavior occurs in both MacDraw II and MacDraw Pro.

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When resizing, MacDraw "remembers" the non-rotated position of each object in the group, and resizes each object based on its non-rotated state. For example, if you resize a group to widen it, and the group contains an object that's rotated 90 degrees, the rotated object will become taller rather than wider.

One option is to save out the group as a PICT or PICT2 file, then open it back into MacDraw. This object will then resize as expected. Another option in MacDraw Pro is to save as an EPSF file, although the objects in an EPSF file cannot be edited.
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Claris CAD: Resizing After Repositioning Ruler

In Claris CAD 1.0v1, after the ruler has been repositioned, many rotated objects cannot be resized correctly in Show Info.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The parameters affected are: width, height, x and y centers of rotated rectangles and rounded rectangles and other polygons, splines and freehand objects.

Note: Resolved 1.0v3.
Published Date: Feb 18, 2012

Claris CAD: Rotate Attempted More Than Once Issue

With Claris CAD 1.0v1, a polygon, freehand or spline cannot be rotated more than once using the Show Info Window. The object can be rotated fine the first time, but will not rotate at all on subsequent attempts.

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This article has been archived and is no longer updated by Apple.
In Claris CAD 1.0v1, after the ruler has been repositioned, many rotated objects cannot be resized correctly in Show Info. The parameters affected are: width, height, x and y centers of rotated rectangles and rounded rectangles and other polygons, splines and freehand objects.

Note: Resolved in Claris CAD 1.0v3
Published Date: Feb 20, 2012

Claris CAD: Rotating About a Specific Point

How can I rotate an object about a specific point? For Example, how can I rotate a rectangle about a portion of another object?

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Select the object to rotate. Select Rotate from Arrange Menu. Press the Command Key and select and hold the point to rotate the object about. Now twist the mouse; you should see the shadow of the object rotate about the chosen point. Release when you have achieved the desired position or enter the angle of rotation desired into the Show Location bar and press enter. You can also use modifiers to select your point or rotation.

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MacDraw II: SuperMac Monitors

Some SuperMac monitors can only support 256 or 2 colors.

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16 color support may not be available, and therefore will not appear in the Monitors CDEV.
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MacDraw II: Viking "Moniterm" Gray Scale Monitor

A customer with a Macintosh II (1 Meg) with a stripped down standard system (version 5.0) and a Viking "Moniterm" gray scale monitor who was unable to open MacDraw II at all.

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This article has been archived and is no longer updated by Apple.
The issue was solved by setting the number of grays in the monitor section of the control panel to 2.

Note: We have a Viking monitor in the department, but were not able to duplicate the problem.
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Claris CAD: Menus Grayed out in Pyro

Customers have reported an incompatibility using Pyro with Claris CAD. Claris CAD menu choices are grayed out periodically.

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You can still select the options on the menu screen. To allow the screen menu options to be highlighted you must force the menu bar to redraw itself. Under MultiFinder this is easy, just exit to the Finder and return. Under Finder, try accessing a desk accessory and returning, or quit the application and return.
Published Date: Feb 20, 2012

Claris CAD: Finite Element & Structural Analysis

Claris CAD is intended to be a 2D drafting package and is not capable of performing complex engineering computations such as finite element analysis or structural. Some very high-end workstation applications have such capabilities, but 3D is a prerequisite.

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This article has been archived and is no longer updated by Apple.
Customers who need such computation capabilities can be referred to MacNeal-Schwendler Corporation. MacNeal-Schwendler is a leading developer of engineering software for both the PC and the Macintosh.

MacNeal-Schwendler Corporation
815 Colorado Blvd.
Los Angeles, CA 90041-1777
(213) 258-9111

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Published Date: Feb 20, 2012

Mac Draw II: About Version 1.0v1

This article discusses the MacDraw II 1.0v1 release.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II 1.0v1 released June 5, 1988.

Issues discovered in this version

MacPlot drivers with the following creation dates had Issues:

- June 6,1988. This driver is defective and will not work at all.
- June 14,1988. This version will work with MacDraw II but will NOT work with MacProject II. (Contained Background Printing Bug.
- June 23,1988. This driver will work with both MacDraw II and MacProject II. Contained Background Printing Bug.

The above drivers all shipped with MacDraw II 1.0v1

Note. All MacPlot Issues are documented in greater detail elsewhere in this file.

Printer Issues:

- ImageWriter I & II
  - Text in boxes, prints over the box, looks fine on screen.
  - Printed rotated text (especially text larger than 12 pt.) is unacceptable.
- LaserWriter
  - Random Printing streaks appear in printouts.
  - Cannot print complex polygons with more than 256 vertices.
  - Overlapping text with Laser Driver 5.0.
- QMS
  - Cannot print in color with LaserWriter driver since MacDraw II doesn't send the color PostScript commands.
- Tektronix 4693
  - Cannot print at 150 & 75 dpi if you have only 4MB of memory.
- General Computer PLP
  - Rotated text prints out bitmapped (resembling ImageWriter output).

PICT Issues:

- Rotated object in PICT and opened in PageMaker, MacDraft or MacDraw 1.9.6.
- Importing PICT files larger than 32k. (There appears to be a problem in flipping and opening imported PICT scanned images larger than 32K.)
- Exporting PICT files (via clipboard or through PICT) to other Applications.
- Graphics shift after exporting.

Font Issues:
No font substitution allowed.
Old fonts lacking the FOND resource causes unreadable menu bar and splash screen (solution reinstall the fonts using fonts created with system software 5.0 or later).
Text gets truncated on the right side, after exporting because most applications do not handle Fractional Character Widths.

Miscellaneous Issues:
Layer Crasher bug (1.0v4 fixed this bug).
Published Date: Feb 18, 2012

MacDraw II: About Version 1.0v2

This article discusses the MacDraw II 1.0v2 release.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II 1.0v2 released June 20,1988.

Resolved these issues:

- Color separation gray screen density has been set to 60 lines per inch rather than 45 lines per inch.
- Patterns are now printed correctly on Linotronic and LaserWriter printers.
- Smoothing of polygons imported from MacDraw 1.9.x has been corrected.
- You can select the plotter driver from the chooser with the version of MacPlot shipped with MacDraw II 1.0v2.

Published Date: Feb 20, 2012

MacDraw II: About Version 1.0v3

This article discusses MacDraw II 1.0v3 release.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II 1.0v3 released August, 1988.

Resolved this issue:

- Minor international fix related to dates.

Published Date: Feb 20, 2012

MacDraw II: About Version 1.0v4

This article discusses MacDraw II 1.0v4 release.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II 1.0v4 released October, 1988.

Resolved these issues:

- ImageWriter I, II and LQ can print in 50%, 33% and 66% reduction, and Faster quality.
- Tektronix 4693 now prints at 75 or 150 dpi (this takes significantly less memory).
- Large (over 32K) scanned PICTs are handled better.
- Complex polygons with up to 500 vertices can now be printed to a LaserWriter (or any other PostScript printer).
- Fractional Character Widths can be turned off in Preferences. This can be used to eliminates clipping of text objects exported via the clipboard.
- More precise alignment of text and graphics when printing.
- Displays System and ROM information, including System and ROM versions. Hold down the Option key and choose About MacDraw II.
- Exports rotated rectangles without getting the rotated and unrotated objects. Due to a change in the System 6.0.2 software, PostScript printers will not print rotated rectangles exported, or saved as PICT files using earlier versions of MacDraw II. This has been remedied in version 1.0v4, but you will need to re-save the PICT file or re-export those rotated rectangles.
- Layer problem fixed. After using 1.0v4, try selecting the objects and pasting them into a new layer, in a new file. Symptoms include: crashing in a one particular layer. In previous versions, deleting an object and then immediately saving could cause a layer crasher.
- MacDraw files opened in MacDraw II retain their letter spacing.

Problems discovered with this version:

- Brought lower resolution for non-Postscript printers, including the LaserWriter SC and all ImageWriters.
- Printed rotated text is now unacceptable, due to lower print resolution
- LaserWriter IISC: Returns are arbitrarily added and deleted in printed text
- Carriage returns were stripped out when the file was saved as PICT
- ImageWriter I, II must use Tall Adjusted to get WYSIWYG output
- Diagonal polygon lines are thicker than vertical or horizontal
- Random printing streaks appear in printouts, occurrences increased
- Polygons were re-defined and standard arrowheads are larger than arrow heads in earlier versions
- Grouping-Library crasher bug

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MacDraw II: About Version 1.1v1

This article discusses MacDraw II 1.1v1 release.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II 1.1v1 released February,1989.

New features:

- Slide presentations manager
- Spelling checker
- Note tool
- Export PICT2
- Online help
- More Command-Key equivalents
- Ability to draw a box and immediately type text
- Command-clicking feature of MD 1.9.6 is back
- MacDraw II Options file
- New features in the Rulers option
- Distinction between changing the default and changing the current selection

Resolved these issues:

- Random black streaks appearing in LaserWriter printouts
- Grouping-Library crasher bug

Issues discovered with this version:

- Custom line widths will not print correctly to a LaserWriter and will not be correctly saved as PICT. Line widths less than one point will print as one point to a LaserWriter. Documents from any version of MacDraw II, opened in 1.1v1 will have this problem. Corrected in 1.1v2
- White text in black background will not stylize. It will only print as plain text to a LaserWriter. Corrected in 1.1v2
- Black overprint will not drop out. Corrected in 1.1v2
- Without first selecting a line, choose Arrow At Both Ends from the Pen menu. Now select Arrow At Start. Re-check the Pen menu. Arrow At End will be selected
- Command + . (period) while in the help stack will cause a crash
- H/P Paint Jet and Tektronix 4693 cannot print at lower resolutions
- Resaving an existing MacDraw II Options file with deleted set views will cause the file to lock-up.

Published Date: Feb 20, 2012

MacDraw II: About Version 1.1v2

This article discusses MacDraw II 1.1v2 release.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II 1.1v2 released April,1989.

Resolved these issues:

- Line widths printed or saved as PICT are correct.
- White text in black background will stylize.
- Black overprint will drop out.

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Claris CAD: Clipped PICT Images

In Claris CAD 1.0v1 or 1.0v3, the top and left edges of a drawing may be clipped slightly when the file is saved in the PICT format.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The amount of clipping is minimal and seems to be limited only to lines. Such clipping will be apparent when a PICT file is re-opened in Claris CAD or when a PICT graphic is pasted into a compatible application such as PageMaker.

To recreate, do the following:
- open a new document
- draw a rectangle anywhere on the screen
- unjoin the rectangle to break it up into 4 lines
- save the drawing as a PICT file
- open the PICT file (it will be converted back to the Claris CAD format while it is opened)

One or more of the 4 lines should be missing.

One work around for customers is to draw a white rectangle a little larger than the drawing itself. Send the rectangle to the back so that it is positioned behind all other drawing elements. Because the rectangle is white, it will not affect the way the drawing looks, but it will increase the size of the drawing's bounding box when it is saved as PICT. If anything is clipped, it will be the white rectangle which will not be noticeable.

The best workaround is to upgrade to a later version of the program.
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MacDraw II: Novy Accelerator

A customer report that the combination of the Novy Accelerator and MacDraw II resulted in a crash.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
No other information is available.
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Claris CAD: Saving As PICT Issue

When saving a file in the PICT format, it is possible to get into a dialog box loop.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This only occurs if the user is saving one PICT file over an existing PICT file with the same name.

To recreate this problem, do the following:
- open a PICT file (the drawing will be converted to the Claris CAD format as it is opened)
- close the file

Claris CAD will display an alert asking if you want to save changes.
- click Yes to save changes
- leave the name the same and select the PICT format
- click Save

A standard systems dialog box will be displayed asking if you wish to save and replace the existing file.
- click Yes to save over the existing file

Instead of freeing you at this point to continue working, Claris CAD displays a dialog box again asking if you would like to save changes.

It is really asking if you would like to save the file as a Claris CAD document. If you select Yes, an alert will appear stating that the file on disk has been changed while you have been working with it, and it asks if you would like to save your changes.

This alert provides three possible responses: Cancel, Replace, and Save As.

- Cancel simply negates the whole operation and returns you to the open drawing.
- Replace will simply put you in a loop until you select No.
- Save As will allow you to save the file in the Claris CAD format, but if the PICT format is again selected, you will enter the dialog loop all over again.

There are two ways to avoid this loop:
1) Save the file with a different name or save it in a different folder than the original file.
2) After the first Save has been executed and after Claris CAD asks if you would like to save changes again, just click No. It might seem disconcerting to click No at this point if you have just made some important changes, but the changes were definitely saved the first time around.

NOTE: This problem does not occur in ClarisÊCAD 2.0.
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MacDraw II: Autosize Lines with Decimal or Fractional Values

In MacDraw II and MacDraw Pro, you can create an autosized line that will display decimals or fraction values.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To create an autosized line with a decimal value displayed to one decimal place:

- Turn the autogrid ON (in the Layout menu, the item should read Turn Autogrid Off).
- In the Layout menu, select the Rulers command; set Divisions / inch to 10.
- Draw a horizontal or vertical line.
- Select Autosize Line from the pen menu.

To create an autosized line with fractional value displayed:

- Turn the autogrid ON (in the Layout menu, the item should read Turn Autogrid Off).
- From Rulers, the Divisions/inch setting will specify the fraction.
- If Divisions/inch is set to 8, the autosize line will display fractional values every 1/8 inch. 1/64 inch is the minimum increment that can be displayed in the denominator of the fraction (you may need to zoom to 200% to create 1/64th inch increment lines.

TIP: to create angled lines with fractional or one-decimal-place values, follow the steps above, drawing the line either horizontally or vertically to the desired length. Then use the Rotate command to rotate the line to the desired angle (with or without the Autogrid on).

Note: If an autosized line is created with fractional values displayed and the "Show Units" option in the Rulers dialog is turned off, the format will default to decimal values and will not show the fractional values.
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MacDraw II: Changing the Default Settings

In MacDraw II 1.1 you can change any of the default settings (preferences) such as: rulers, fonts, patterns, pen sizes, etc., and save them as a MacDraw II Stationery document. From now on, each time you open MacDraw II or create a new document, all of the customized settings will be the default settings.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following procedure explains how this is done.

1. Select New from the File menu.
2. Change any of the default settings to those you routinely use.
- i.e. customize the menus, change the pattern palette, etc.
3. Add any graphics, such as a letterhead or logo, that routinely appear in your documents.
4. Choose Save As from the File menu.
5. Type in the filename ÒMacDraw II OptionsÓ and click Stationery.
6. Select either the System Folder, or the Claris folder within the system folder, or the folder that contains the MacDraw II application as the folder in which you want to save this file.
7. Click Save.
8. Choose quit from the File menu.

The MacDraw II version 1.1 "New Features Guide" discusses the above in detail on pages 37 to 39.

The same concept applies to other Claris Applications like MacWrite II, Claris CAD, etc.
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MacDraw II: Multiple Laser Preps Problems

I print the exact same document in MacDraw II twice from the same Macintosh, each copy about two minutes apart. When I compare the two, printed copies of the same document, the kerning is different in each. Why is this happening?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Most likely you have more than one system and/or more than one Laser Prep files. Use the FindFile DA that comes with your system to search for "system" and then "laser". Remove the extra system and laser prep files and reboot. If the problem still prevails, then, your laser prep may have become corrupted, remove it from your hard disk and then re-install it anew.
Published Date: Feb 20, 2012

MacDraw II: Printing Color on an ImageWriter II

With MacDraw II, how can I get colored text to print to my Apple ImageWriter II?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you need to print in color, you must first select Print Options from the File menu, and select Color Patterns. Then print your document.
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MacDraw II: Saving PICT images W/ Lines

In MacDraw II, sometimes a issue results when saving lines to PICT.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If the user saves lines with widths less than one point to PICT and there is nothing to the left or above them, the object will not be saved to PICT. Therefore it will not come back in to MacDraw II and Claris CAD .

For example, if you draw a square with 0.1 mm width lines, save that as PICT and bring it back into Draw/ClarisÊCAD , the upper line and the left line of the square, most often are gone. In ClarisÊCAD the easiest way to do this is draw a rectangle, unjoin it and save to PICT. To prevent objects from disappearing place another object up and to the left of the line.
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MacDraw II v1.1: Tips and Shortcuts

Tips and Shortcuts for MacDraw II version 1.1

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

1. If you need to use the same tool successively, double-click the tool. The tool icon in the tool palette will turn black. Now you can draw as many of the same type of objects as you wish without having to reselect the tool.

2. To copy and paste custom patterns from one document to another, fill an object with the pattern you want to move and simply copy the object to the other document. MacDraw II will add the pattern to the far right end of the pattern palette. You might need to scroll all the way to the right to see it.

3. To see the outline of an object as you drag, hold down the command key while dragging. This can help you position objects more quickly when you move them.

4. Use the "shift" command keys to help navigate the menus. MacDraw II supports a number of "shifted" command keys which work together in pairs.

Command
G Group
H Lock
E Smooth
J Move Backward
F Move Forward
W Close Window
O Open Document
= Check Spelling

Shift Command
G Ungroup
H Unlock
E Unsmooth
J Move to Back
F Move to Front
W Move Window to Back
O Open Library
= Spell Check Word

5. To rotate objects more precisely, move the mouse further away from the object you are rotating. For even more precision, zoom in as far as possible. For the maximum precision (.01 degree), use the Preferences dialog to specify the exact angle. Then hold down the shift key while rotating and the object will rotate to the precise angle specified.

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MacDraw II: White Text Won‘t Print Stylized

With MacDraw II 1.1v1, white stylized text prints as plain text (i.e., without any style at all underlining, outline, italic bold, etc.) to a LaserWriter.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This was fixed in MacDraw 1.1v2.
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MacDraw II: Exported Text Get Clipped on the Right

When copying and pasting text from MacDraw II or MacDraw Pro into another application, the right side of the pasted text may be clipped.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This can happen if the setting for "Fractional Character Widths" (FCW) is different between the two applications (i.e., if FCW is on in one application and off in the other application).

If the other application supports Fractional Character Widths, turn this option on in both MacDraw and the other application. FCW is turned on in the Preferences dialog box in MacDraw. Consult your user manual for information regarding FCW in the other application. Then copy and paste normally.

If the other application does not support FCW, turn FCW off in MacDraw, then copy and paste normally.
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Claris CAD: Plotting Issues

With the first version of Claris CAD users noticed several issues with plotting.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
These are all symptoms of Claris CAD sending information to the plotter at 72 dpi:
- arcs plotted very jagged
- arcs would often not line up with adjacent lines
- the incorrect pen often would be picked up (e.g. 0.25 mm pen in place of a 0.35 mm).

Note: Resolved in Claris CAD 1.0v3
Published Date: Feb 20, 2012

Claris CAD: ANSI Dimensioning Tolerances

Engineers often need to denote geometric tolerances between objects. For example they need to represent on a drawing that one object is parallel or perpendicular to another one. This can be referred to as ANSI tolerances, geometric tolerances, etc...

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD has implemented this in the form of a font. The font contains the symbols that represent the various geometric constraints. A disk containing the font with instructions on how to install and use it is available on request from Technical Support.
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MacPlot: Choosing Incorrect Pens

Occasionally, MacPlot will choose a pen of the incorrect weight when plotting from MacDraw II. Or, your document may contain several lines of varying widths, but the plotter does not change pens at all.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The is caused by a 72 dpi limitation in plotting from MacDraw II. All pen widths are rounded up to the nearest whole point size, so pens of .25 mm and .35 mm will both round to 1 point, and only one of the pens will be used when plotting.

This does not occur when using Claris CAD 1.0v3 or later, or when using the MacPlot Professional driver from Microspot.

To work around the problem, you should try one of two approaches:

1) Use colors to differentiate subtle changes in line width. Although all your plotter pens may actually be of the same color, indicate in the MacPlot driver Pen Info window that the .25 mm pen is red, and that the .35 mm pen is, say, blue. As you construct your illustration in MacDraw, color all the .35 mm lines in blue, and all the .25 mm lines in red. This will force the plotter driver to use a different pen.

2)Construct your document using line widths of whole-point increments.
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Claris CAD: Snapping Objects to Meet Exactly

What is the easiest way to move two objects so that they meet exactly in Claris CAD?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The easiest way is to use modifiers. These features of Claris CAD allow you to pick up an object by a specific point, and snap it to a specific point on another object.

For example, if you had objects like this:

To line the arc up with the rest of the object, one easy way with modifiers is to use the endpoint modifier. Double click it to use it repeatedly, then pick the arc up by a point near, but not on the endpoint closer to the line.

If you held the arc in one position, you would notice that the arrow would not be pointing at your selection point, but would be pointing exactly at the endpoint at the upper part of the arc. The endpoint modifier would still be selected, because you double clicked, so to snap arc into place, you would release the mouse on the line.

You can use a similar procedure to resize a line to an endpoint. You would need to change the angle and length of the line so that it snaps to the endpoint of the arc. To do so you would, pick up the line by the endpoint nearest to the arc. You would see a gray shimmering line as you moved the mouse across the screen.

Now, move your mouse up the the endpoint modifier, and release the mouse on it. Now, click on the arc. You should see the line's angle and length change so that the line and the arc meet precisely. Instead of selecting the modifier by releasing the mouse on it, you may also type a keyboard equivalency for a modifier.

For the endpoint modifier, the equivalency is e. Equivalences for other modifiers are listed in the Claris CAD Quick Reference.
Published Date: Feb 20, 2012

Claris CAD: X and Y Centers in Polar Duplicate

When using the polar duplicate feature to duplicate objects on an arc, I must specify the X and Y centers about which to duplicate. Is there any easy way to specify this point?

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This article has been archived and is no longer updated by Apple.
Here are two methods:

1) With the object of group to be duplicated still selected, hold down the command key and click (using a modifier if so desired) at the point that you want the duplication centered around. Now when you go to Polar Duplicate the X and Y location of the point that you have clicked will automatically entered in the dialog.

2) You can reposition the zero (x=0,y=0) point to the x and y center of duplication. To reposition the zero point click in the small box in the upper-left most corner of the ruler (it shows the active ruler number) and drag it onto your drawing. Your arrow will now point to crosshairs across your screen. Wherever you release the mouse is where the new zero point will be. You may also specify this point using a modifier.

For example, you could reposition the zero point to the center of a circle using the center on modifier.

To return the zero point, just click on the active ruler number again.
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Claris CAD: Slow Redraw

Under system 6.0.2, Macintosh II customers can experience very slow screen redraw when in 4 or 16 color mode.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To experience this, do the following:

- open a default Claris CAD document
- select Monitors under the Control Panel and select either 4 or 16 colors
- exit the Control Panel and notice that objects redisplay normally
- now open the Control Panel and select Color
- exit the Control Panel and notice that Claris CAD redisplays objects very slowly

To get out of the slow redraw mode, simply go back into the Control Panel, select Monitors, and select a different number of colors. When you exit the Control Panel, Claris CAD will redisplay objects normally.
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Claris CAD: Printing Polygons to LaserWriter

Claris CAD prints polygons to PostScript the same way MacDraw II 1.0v1 did. It defines 2 vertices per vertex in order to use the PostScript pen for the lines. This gives better WYSIWYG and makes lines at all angles the same width. However, the LaserWriter has a limit of about 500 vertices that can be described for a single object.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Since Claris CAD is defining 2 vertices per vertex, this means that a polygon with more than about 256 vertices WILL NOT PRINT. Anything above that limit results in such errors as "Limit check: Curveto", or "The objects are fine, but cannot be printed." or the file will print with the offending object missing.

If you would like to confirm how many vertices a polygon has, select the polygon and select"Show Info" from the Layout menu. The "number of points" corresponds to the number of vertices.

Workaround: Polygons can be unjoined and rejoined into smaller polygons that will print correctly to the LaserWriter.
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Claris CAD: Changes in 1.0v4

Claris CAD 1.0v4 is a very minor update that was created to fix some localization issues.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
These are issues found by users of Claris CAD on non-English operating systems.

- Spacing was corrected when drawing Chain and Datum dimensions with the text above or below the dimension line.
- Four strings that were "hard coded" in the program were placed in resources.

Claris CAD 1.0v4 also fixed one corruption issue. It had been possible to make a line tangent to a circle then reselect the tangent modifier and attempt to make it tangent to the same circle again. Geometrically, this is not possible. The result is that the document would become corrupt.
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Claris CAD: Displaying Dimensions With No Units

Claris CAD 1.X allows you to dimension an object and have the dimension values display without units. For example, a simple '1.5' instead of '1.5" (inches)'.

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This article has been archived and is no longer updated by Apple.
There is an easy way to do this, both in Claris CAD 1.0 and in MacDraw II.

1. Select "Rulers..." from the Layout Menu
2. Deselect "Show Unit Name"

Any dimensions you create from then on will not show unit names.

In Claris CAD 2.0 this option has been placed on the Dimension Floater. Select "Show Dimensions" from the layout menu to access this option.
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Hewlett-Packard: DraftPro 7575A (DXL) 7576A (EXL)

Hewlett-Packard released two new plotters, the DraftPro 7575A (DXL) and the 7576A (EXL), late in 1989. These popular models were introduced after the MacPlot driver was written, so MacPlot does not support them directly, and Claris has not tested them for compatibility with our software.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
According to Hewlett-Packard technical representatives, these new models are similar to plotters in the DraftMaster series. You can try the following settings:

DraftPro DXL
Set the plotter's DIP switches to emulate a DraftPro. Under MacPlot Configure, indicate you are using a Hewlett-Packard DraftMaster I.

DraftPro EXL
Set the plotter's DIP switches to emulate a DraftPro. Under MacPlot Configure, indicate you are using a Hewlett-Packard DraftMaster II.

Their plotters will function to spec. with one difference: the 7575A and 7576A have a larger plot area than the DM series. You must purchase MacPlot professional if you wish to take advantage of the full plotting area available to you.
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MacPlot: Microspot Plotter Driver

The MacPlot driver formerly shipped with Claris CAD, MacDraw II and MacProject II was a customized version of the MacPlot Professional plotter driver available from Microspot.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Claris version of the driver supports a limited set of plotters and works only with the Claris applications listed. The driver supports other plotters only if they emulate the supported plotters.

Current limitations of MacPlot 1.2
1- Not compatible with 32-bit addressing
2- No support for architectural paper sizes to HP plotters
3- Not compatible with virtual memory
4- Cannot create HPGL Plot Files
5- Does not support using Adobe Type Manager with Claris CAD.
6- Does not offer direct support for Calcomp, Roland, and other manufacturers.

If you have a plotter not supported by the Claris version of MacPlot, want to plot your work from other applications, or need to plot to disk, contact the developers of the plotter driver at the address below. They are currently offering their product to Claris MacPlot users at a reduced price.

Microspot
Suite 6
12380 Saratoga-Sunnyvale Road
Saratoga, CA 95070

Sales/Orders Only:
(800) MAC-PLOT
(800) 622-7568 Sales

(408) 253-2000 voice
(408) 253-2055 fax
(408) 257-4000 Technical Support

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MacPlot: Drawing Size Becomes Zero x Zero

In early versions of the MacPlot driver, selecting an architectural D-size paper caused an incorrect drawing size to be displayed. If the drawing size is reset under Drawing... by clicking in the gray box, the paper size becomes Zero x Zero.

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This article has been archived and is no longer updated by Apple.
Versions of the MacPlot driver created after October 1989 do not exhibit this issue.
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Data Transfer Services: For AppleWorks, ClarisWorks and FileMaker (All)

Synergy Data Transfer offers data transfer services to and from a number of Macintosh, IBM, and Apple II formats. They're especially good at handling files stored in proprietary formats, such as those created by older Apple II word processors and data bases (e.g., PFS format).

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Jerry Berkowicz
Synergy Data Conversion (formerly Burke Software Data Transfer Division)
808 N. Delphia Ave
PO Box 477
Park Ridge, IL 60068
(800) 662-6088
(708) 698-4673
There is $50 minimum charge.

In addition, there is a company that converts data to and from any other formats (UNIX, etc.) to the Macintosh, and vice versa:

Bob Moore
Data Direct (formerly Data Accord)
1620 Oakland Road, Suite 204
San Jose, CA 95131
(408) 441-7447
Conversion convert AppleWorks, ClarisWorks, Filemaker

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Claris CAD: Multiple Splines Cause Crashes; ID=01

In some instances, selecting spline curves in documents with several layers would cause the application to quit prematurely with a System Error ID=01. Although this was corrected in release 1.0v5 of Claris CAD, users of older versions will discover that the layer they were working in when the lock-up occurred is now corrupted.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here are some explanations and workarounds that may be helpful:

1) Place some of the splines on another layer.
The problem seems to be caused by having many splines on one layer.

2) Use smoothed polygons and freehand shapes in lieu of splines.

3) If layer is corrupt try these techniques to recover as much information as possible:

1.Select objects on that layer with the mouse, by dragging a rectangle around them. Do not use the Select All command, as this will not remove the corruption.
2.Use the Cut command to remove the selected objects.
3.Past the objects onto a new layer or into a different document.
4. Delete the damaged layer.

The file should work properly after these steps.

Note: This was resolved in Claris CAD 1.0 v5
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Claris Graphics Translator: Transfer IGES/DXF

In addition to applications like Claris CAD and MacDraw II, Claris produces a translator to convert between its applications and DXF and IGES.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Graphics Translator is designed to convert the internal format of a file to the internal format of Claris CAD (and vice versa). It requires that the files it translates be on a disk which is available to the Macintosh running the program. Usually this means you must find some method of transporting the file to the Macintosh. Because DXF and IGES files are text files, the process is easily accomplished through a number of methods. Here are some of the most popular techniques, and an overview of how each one is accomplished:

Apple File Exchange
Apple provides this translation/conversion utility with all Macintosh computers. If your computer is equipped with a high-density drive (sometimes called a SuperDrive, or FDHD drive) you can use AFE to copy the file from an MS-DOS format 3.5-inch disk to any Macintosh disk. You boot the AFE program, insert the disk containing the MS-DOS file, and click the "Translate" button.

Telecommunications
If both you and the person with whom you are exchanging files have a modem, you can use communications software to transmit the file between machines. You can either transmit the text, or use one of the popular telecommunications transfer protocols to accomplish the transfer.

Networks
Many mixed-platform networks Ñ AppleShare, TOPS, Novell Ñ include provisions to "mount" a MS-DOS or Unix volume as if it were a Macintosh disk. Once you can see the file on your desktop, you can copy it to your local machine and perform the conversion.

Dedicated Transfer Units and Add-In Boards
There are add-in boards or software designed especially to allow the Mac to read MS-DOS format diskettes or run MS-DOS programs. These products provide built-in utilities that let you transfer data between the two formats.

All of the above methods also work if you are transferring data from the Macintosh to the other platform.
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Claris CAD: Black Areas Covering Printout

Claris Technical Support has received reports of printing failures when using Claris CAD on a Macintosh IIci in combination with LaserWriter driver 5.2, and DialogKeys (a utility shipped with the QuicKeys macro package).

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This article has been archived and is no longer updated by Apple.
Removing DialogKeys solved the problem in all reported instances.
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Claris CAD: Objects Appear Aegmented or Broken up on Screen

In MacDraw II 1.0 or Claris CAD objects appear "broken up" or segmented. Rectangles may appear as two lines; circles could show as two or three arcs and objects may draw about 1/4" away from the hot spot on the cursor.

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Explanation:
MacDraw II 1.0 assumes that it is working with a 72 dots-per-inch (dpi) monitor. Normally, this does not cause a problem, because the interface card handles conversion between 72 dpi and whatever density the monitor actually uses. However, newer Apple interface cards (including the interface built-into the Macintosh IIci) and some third-party cards will not perform this conversion in the way MacDraw II expects.

Note: Claris CAD also assumes that it is working with a 72 dots-per-inch (dpi) monitor.

MacDraw II version 1.1 works properly with all Apple interface cards, including those with the new design.

If you need to remedy the problem before your update arrives, here are some workarounds you can use short-term:

1) Use one of the older-style monitor cards in lieu of the built-in interface of your IIci.
2) If you have two monitors, use the Macintosh Control Panel to set the "other" monitor to be the startup monitor.
3) If you have two monitors, use the Macintosh Control Panel to set the "other" monitor to be the startup monitor; often the problem disappears on both screens when you use this configuration.
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Claris CAD: Problems Printing to Color Postscript Printers

When printing from MacDraw II 1.x or Claris CAD 2.0x to color Postscript printers (such as the QMS or Tektronix), polygons and freehands may print with the wrong fill color or pattern.

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The following points explain how MacDraw II and Claris CAD print to color Postscript printers. (There may be slight variations between brands of printers in printing behavior. MacDraw Pro offers full support of color Postscript printing).

- LaserWriter driver 6.0.1 or later must be used to print color
- Rectangles, lines, ovals and arcs will print with both the correct pen and fill colors.
- Bitmap objects colorized in MacDraw II also print with the correct pen and fill colors.

Polygon and Freehand Objects

- Polygons & Freehands with a solid pen color and a white or transparent fill pattern print correctly. Also, Polygons & Freehands with a solid pen color and a black & white dithered fill pattern print correctly.
- Polygons & Freehands with a solid pen color and a solid colored fill pattern will print using the pen color for both the pen and fill. Thus, a polygon with a black pen and a red fill will print with a black pen AND black fill. In addition if the 7.0 LaserWriter driver is used, it will generate a "stack error: underflow, Postcript error: color". To print a polygon with the correct solid fill pattern, set the pen color to transparent. Workaround: to print a polygon with both a pen and fill, create the polygon, add the desired pen and fill color, duplicate the polygon, move the duplicate on top of the original, change the pen color of the topmost polygon to transparent.
- Polygons & Freehands with a solid pen color and a colored dithered fill pattern (two or more colors mixed together) will print as a gray fill. Thus, a green and yellow dithered fill pattern will print black and white. There is no workaround for this.
- Polygons & Freehands with a non-dithered colored pen pattern (brick pattern, striped pattern, etc.) will print one color black and the rest white. There is no workaround for this.
- Polygons & Freehands with a dithered pen pattern will cause the document to not print at all.

Note: MacDraw Pro and Claris CAD 2.0 correct this problem.
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MacPlot: Lockups when Using with IIci, IIfx, or IIsi

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed with Claris MacPlot driver 1.2.

Two issues can occur when using the Claris MacPlot 1.1 driver:

1) Not compatible with the Macintosh IIci, IIfx, or IIsi. If you attempt to use this version with of these, the computer will lock up or return a system error. The new version also corrects issues associated with the Background Printing feature of MultiFinder.

2) Not compatible with Background printing. If Background printing is turned on while the MacPlot driver is selected in the Chooser, the System file will be corrupted and need to be replaced.
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MacDraw II: Hewlett-Packard PaintJet Options Not Available

Many users of MacDraw II and Claris CAD report success when using the Hewlett-Packard PaintJet printer with MacDraw II. However, some versions of Hewlett Packard's print driver combined with some versions of MacDraw II will not allow the use of all printer effects.

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With the Hewlett-Packard PaintJet driver version 1.0, the "50% reduction" and "Precision bitmapping" options are only available with the following versions: (ones with "yes")

MacDraw 1.0v1 ..... no
MacDraw 1.0v4 ..... YES
MacDraw 1.1v1 ..... no
MacDraw 1.1v2 ..... no
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Claris CAD: HP PaintJet Page Setup Options Not Available

Some versions of Hewlett-Packard's print driver combined with some versions of Claris CAD will not allow the use of all printer effects in the Page Setup dialog box.

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With the Hewlett-Packard PaintJet driver version 1.0, the "50% reduction" and "Precision bitmapping" options are only available with the following versions: (ones with "yes")

Claris CAD 1.0v1 ..... yes
Claris CAD 1.0v3 ..... no
Claris CAD 1.0v3 (Customized High Resolution version) ..... no

With the HP PaintJet driver 3.07 and Claris CAD 2.0v3, the "Precision Bitmap" option is always grayed out (ie, is not available). This is true even if the "more options, less resolution" option is checked in Preferences.
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Plotter: Liquid Ink Pen Sizes

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1 pt. = 1/72 inch = 0.352 mm = 1 pixel on Mac SE.

Liquid ink plotter pens are commonly available in four sizes:
0.25 mm
0.35 mm
0.5 mm
0.7 mm
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MacPlot 1.1: Eight Pen Limitation

MacPlot version 1.1 cannot access pens that are higher than position eight.

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It will allow you to define a pen at a higher position, but when you try to plot using any pen number higher than #8, it will plot using pen #11. This is only an issue with Houston Instruments plotters that can hold up to 14 pens.

This problem has been fixed in MacPlot 1.2.
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ClarisWorks: Rounding Up, Rounding Down

Different ways to round a number in FileMaker and ClarisWorks.

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Rounding Up:
The Round() function in FileMaker Pro rounds numbers to the nearest significant digit, which may be either up or down. The Round() function can be programmed to always give you either a rounded-up or a rounded-down result.

To always round up to the next nearest integer, the calculation formula would be:
Round (Number + .499999, 0)

The addition of .499999 is just slightly less than one-half. If one-half is added to an integer and rounded, the result would incorrectly return the next higher integer.

To round up to the nearest penny (.01), your calculation formula would be:
Round (Number + .00499999, 2)

To round up to the nearest nickel, $.05:
INT (SellingPrice * 20 + .5) / 20 - where SellingPrice is a number or calculation field.

To round up to the nearest fifty cents, $.50
INT (SellingPrice*2 + 0.5) / 2 - where SellingPrice is a number or calculation field.

To round up to the nearest $5.00:
INT ((Dollar Amount+4.99)/5) * 5

To round to the nearest even integer:
INT((Number + 1)/2) * 2
Numbers with even integers will stay the same, losing their decimal values. Odd integers will become a rounded even integer. Example: 22.3 becomes 22 whereas 23 becomes 24.

Rounding Down:
To return the next lower integer, one-half can be subtracted, because subtracting one-half from an integer and then rounding, results in the integer. Therefore, the calculation formula would be:
Round (Number - .5, 0)

Since the above formula rounds down to an integer, a more efficient way would be to use the IntÊ() function. The calculation formula can be modified to:
Int (Number)

To round down to the nearest penny, your calculation formula would be either:
Round (Number - .005, 2)
or
Int (Number * 100) / 100

To round to the nearest 5 as it is with weights in a fitness center (5, 10, 15, 20) you can take the number and use the Round () and Int () functions:
Round ((Int (((Number) + 2.50) / 5) * 5), 0)

This will take any number and round it up or down to the nearest 5 and keep it a whole number rounded with no decimal points. (e.g.; 28 will round up to 30, 42 will round down to 40, 4 will round up to 5)

If you are using a ClarisWorks database, the formulas above would be written as follows:

To round up to the next nearest integer:
ROUND('Number'+0.499999,0)

To round up to the nearest penny:
ROUND('Number'+0.00499999,2)

To round up to the nearest nickel, $.05:
INT('SellingPrice'*20+0.5)/20

TA41325_ClarisWorks_Rounding_Up_Rounding_Down.pdf

To round up to the nearest fifty cents, $.50:
INT('SellingPrice'*2+0.5)/2

To round up to the nearest $5.00:
INT(('Dollar Amount'+4.99)/5)*5

To round to the nearest even integer:
INT(('Number'+1)/2)*2

Rounding Down
To return the next lower integer:
ROUND('Number'-0.5,0)

Or, alternately:
INT('Number')

To round down to the nearest penny:
ROUND('Number'-0.005,2)
or
INT('Number'*100)/100
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Claris CAD: Can‘t Set Zero Tolerance For Dimensions

In Claris CAD, you can set the tolerances for any dimensions shown.

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If you try to set a tolerance of -0.000 or +0.000, your entry will be reset to ±0.005. Claris CAD considers a +/- 0.000 tolerance an error, because in such situations it would be more appropriate simply to set the tolerance to 0 (without a sign).

You must enter in a zero, without a plus or minus sign, for Claris CAD to set the tolerance to zero.
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LOGO: Saving graphics to disk

The High-Res pictures can be saved to disk, at the expense of LOGO and the user's workspace.
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A DOS 3.3 slave diskette should be placed in the disk drive. (Refer to the DOS 3.3 manual for information on slave vs. master diskettes.)
Assuming that the disk interface card is in slot 6, type .PRINTER 6 to LOGO; this command boots the diskette, trashes LOGO and the user's workspace, but doesn't damage the High-Res screen buffer.

Now that the Apple is running BASIC with DOS 3.3 in its memory, it is possible to save the High-Res screen buffer as a binary file:

BSAVE <filename>, A$2000, L$2000

To view the picture, type:

HGR
BLOAD <filename>
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QuickDraw: RGB Color Values

Below is a list of the RGB values for the standard 8 QuickDraw colors.

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These are the eight colors in MacDraw II and Claris CAD. They are also the eight solid colors in the Style Bar in MacDraw Pro.

RGB values range from zero to 65535:

Color	Red	Green	Blue
Red	56683	2242	1698
Green	0	32768	4528
Blue	0	0	54272
Yellow	64512	62333	1327
Cyan	577	43860	60159
Magenta	62167	2134	34028

RGB values as percentages:

Color	Red	Green	Blue
Red	86	3	3
Green	0	50	7
Blue	0	0	83
Yellow	98	95	2
Cyan	1	67	92
Magenta	95	3	52

Note: These are not pure colors. For example, the Cyan is not a pure Cyan. These colors are simply designed to match the default colors built into standard "black and white" QuickDraw. If you print these colors to a color printer, especially cyan, yellow and magenta, you will notice that these colors print with dots of other colors. This is normal, as the printer is printing using normal dithering to print these colors.

To print pure colors, use colors with these color values:

RGB values range from zero to 65535:

Color	Red	Green	Blue
Red	65535	0	0
Green	0	65535	0
Blue	0	0	65535
Yellow	65535	65535	0
Cyan	0	65535	65535
Magenta	65535	0	65535

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MacDraw II: Word/QuickSwitch not Supported

Included with Microsoft Word is a utility called QuickSwitch (it used to be called "Switcher"). QuickSwitch lets you switch back to your graphics application while bypassing the Finder. It supports SuperPaint 1.1 (which is also included with MS Word), but it doesn't support MacDraw II.

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The programs will function properly, but when you paste a graphic into Word using the Paste Link Command, you will get a dialog box that says "No Link Info in the Clipboard."
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Graphics: Converting between Macintosh and PC

PICTure This, from FGM Inc., Herndon, Virginia, enables graphics files from various computer systems to be converted into PICT files and consolidated on the Macintosh where they can be displayed or edited.

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PICTure This can take images created in the following formats and convert them to PICT files: Targa-16, CGM, Dr. Halo CUT, Gem IMG, Lotus PIC, PCX (IBM PC), Sun Raster (Sun), IFF, RIFF (Commodore Amiga), GIF, RLE (CompuServe), TIFF, X11 Bitmaps (industry standard), Macintosh Encapsulated Postscript (EPS), and MacPaint. PICTure This can be used as either a stand-alone application or a desk accessory. It requires a minimum of one megabyte of memory and runs on the Macintosh SE/30 or Macintosh II series of computers.

For pricing and availability, contact: Michael Morehouse, FGM at 703-478-9881

Hijaak, from Inset Systems, Brookfield, Connecticut, is a MS- DOS application that makes compatible more than 2,000 possible combinations of graphics formats and their various 'flavors'. Industry standard formats like TIFF, CGM and FAX are often unrecognizable to your PC application, and Hijaak 2.0 recognizes and correctly handles the many different formats. In addition, Hijaak 2.0 translates graphic files across machine platforms - PC to Mac, and back.

For pricing and availability, contact: Inset Systems at 203-740-2400 or 800-828-8088.
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MacWrite II: Removing Blank Lines in Mail Merge

MacWrite II can close up the empty space left by a blank (empty) field in a MacWrite II mail merge document, when some of the records have an empty field. See below for information on ClarisWorks.

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For example: Some of the "Company" fields are blank, and some of them have values. The addresses that have a blank in the Company field will have a gap between the name and address fields.

To close the gap whenever a record has an empty field the IF command is used.

The setup below uses the IF command to print Company and the Return character which follows it only if there is text in the Company field:

First Name Last Name¦
IF Company Company¦
ENDIF Address¦
City, State Zip¦
¦

Text between IF and ENDIFÈcommands will print only if the condition in the IF command is true. In our example, IF Company is a short way of saying, If there is something in the Company field, then print the following text, up until the ENDIF marker.

Note: The relevant point is that the carriage return by the line to be omitted must be surrounded by a conditional statement, however it is expressed.

Note also that MacWrite II understands the reverse of a condition, without needing it expressed. For example, in the formula above we don't need to include a condition describing what to do if Position is blank. If Position is there, it will be printed; if not, everything between the If and ENDIF, including the carriage return, will be omitted.

* PLEASE NOTE:
When ClarisWorks performs a mail merge, and there is no entry on a specific line of that merged data, ClarisWorks (1.0, 2.0, 2.1, and 3.0) automatically removes the blank line. There is no feature like MacWrite's IF statement to eliminate the blank line, because it is unnecessary.
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WordPerfect: Reading and Writing Files

MacWrite II 1.1, MacWrite Pro, MacDraw Pro and ClarisWorks 1.0 and 2.0 ship with translators for WordPerfect 4.2 and 5.0 for MS- DOS. The 5.0 translator can successfully open some but not all 5.1 files. It is unknown what qualities of a file prevent its successful translation, but it is most likely the use of features new to version 5.1.

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Your choices are to purchase MacLink Plus from DataViz Corporation (see below) or to save from WordPerfect 5.1 as a 5.0 or 4.2 file which Claris products will be able to open.

Write/Draw/Works can only save as a WordPerfect 4.2 file. However, WordPerfect 4.2 files can be opened by WordPerfect 5.0 and 5.1.

Tip: when opening WordPerfect 4.2 PC files in Write/Draw/Works, in the Open dialog box, select WordPerfect in the file type popup menu first, then click on Open (do not leave the popup on 'All Available').

WordPerfect Mac
ClarisWorks 2.0 and MacWrite Pro come with a WordPerfect 2.x Mac translator which can both open and save. MacWrite II and ClarisWorks 1.0 owners must upgrade to obtain this translator.

DataViz Translators
MacLink Plus by DataViz (800-733-0030) includes a WordPerfect 5.1 translator which supports reading and writing WordPerfect 5.1 PC files. MacLink Plus adds additional XTND translators as well, including one for WordPerfect 2.x Mac.

NOTE: The XTND technology is built into the MacWrite II 1.1 application, therefore a Claris XTND System does not ship with MacWrite II.
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HyperCard Stacks: Browsing From Within Claris Help System

Since the Claris Help system uses SymmetryÕs HyperEngine as its base, you can browse HyperCard stacks without launching HyperCard, by working through the Help system. Even if you are using a 1 megabyte machine running under Finder, you can access your HyperCard stacks and retrieve information from them without quitting your Claris Application.

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Note: This is only applicable to HyperCard Versions Prior to 1.2.5.

MacWrite II was used in the following example.

Here's how it works:

1. Launch MacWrite II 1.1.
2. Press command-?, or hit the "Help" button on the extended keyboard. The MacWrite II Help stack will now appear on screen.
3. Press command-m to bring up the HyperCard message box.
4. Type "go" and hit return.

You will now see the familiar ÒOpen...Ó dialog box. Actually, it will be asking ÒWhere is?Ó, but any HyperCard stack that you click on, such as your address book, will appear in the place of the Help stack.

To copy text from a stack launch in this manner simply hold the option key down and place the cursor at the beginning of a HyperCard text field. Drag across the text to select and copy normally. The information is now in your clipboard waiting to be brought into MacWrite II. To copy graphically, hold the command key down, and drag across the region you want, copy, and paste into MacWrite II.

Most buttons and navigational features will operate normally, and you can use your stack as you usually would, understanding that since HyperEngine is a subset of HyperCard, and doesn't support all of HyperTalk, not all features, such as scripts involving repeat loops, will be available, nor will all XCMDs operate properly.
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MacWrite: Application is Busy or Missing Alert

MacWrite Pro, MacWrite II (1.1vX) and ClarisWorks (1.0 and 2.x) can open files from MacWrite 4.5 and later. These applications use the MacWrite 5.0 XTND translator, which can translate files from MacWrite 4.5 and later.

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Issue:
When attempting to open a MacWrite file, you see an alert that says "Application is busy or missing", or "The document XXX could not be opened, because the application program that created it could not be found".

Solution:
You're trying to open the file by double-clicking on it. This method will attempt to open the file into the old MacWrite application, not MacWrite II, MacWrite Pro or ClarisWorks. Instead, launch MacWrite Pro or ClarisWorks. Then select the Open command from the File Menu. If in ClarisWorks (versions prior to 2.1v1), select Word Processing for the document type. Locate the file in the Open dialog box, then open it.

Tip for System 7 Users:
You can also open the file by drop-launching it. To do this, while in the Finder, drag the MacWrite or MacWrite II file icon onto the MacWrite Pro (or ClarisWorks) program icon. When the program icon turns dark, release the mouse button.

Tip: There are third party utilities that will allow you to set an alternative application to open if the original cannot be found. In other words, by using one of these utilities, you can set your computer so that when you double-click on a MacWrite file, the file opens in ClarisWorks or MacWrite Pro. These utilities include SpeedyFinder7, HandOff or Easy Open.

Issue:
When attempting to open a MacWrite file using the Open command in the File menu of MacWrite II / Pro or ClarisWorks, either no window opens at all or you see an alert that says "The MacWrite translator cannot read this file."

Solution:
This file is saved from MacWrite 2.2 or MacWrite 1.0, the original versions of MacWrite. The translator included with MacWrite II/Pro cannot read these files.

To get these files into MacWrite II/Pro:
1) Open the files into MacWrite 5.0 or Microsoft Word
2) Save As a MacWrite 5.0 or Microsoft Word file.
3)Open these newly saved files into MacWrite II/Pro or ClarisWorks.

Note: MacWrite 5.01 will open and save using System 7.1 and earlier, but only on older Mac models (Quadra 700 and earlier). As a rough rule, if the Mac uses a System Enabler, MacWrite 5.01 may not launch.

Issue:
MacWrite files are not listed in the Open dialog box in MacWrite or ClarisWorks.

Solution:
Be sure that the translator files are installed properly. Please refer to the installation instructions included with MacWrite II, MacWrite Pro or ClarisWorks for installing the translators.

Note: The Easy Install option of MacWrite Pro and ClarisWorks automatically installs the translators. If, after installing the translators, your files still are not listed in the Open dialog box, do the following:

1) Quit the program
2) Locate and trash the file called "XTND Translator List". It's in the Preferences folder, which is in the System Folder
3) Relaunch MacWrite Pro or ClarisWorks
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Claris CAD: Version Notes/Features

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Claris CAD 1.0: Initial release.

Claris CAD 1.0v2: Not released to public.

Claris CAD 1.0v3: Improved resolution of plotter output. Fixed a problem related to the Show Info window and a circle center problem.
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MacDraw II: GateKeeper Incompatibility

There appears to be an incompatibility between some versions of GateKeeper and MacDraw II.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This combination seems to result in random, intermittent problems with MacDraw II files. When you re-save an existing MacDraw II document, the new file may save with a different name. Or, the dialog box "File Not Found" may appear.

This problem has not been tested or confirmed by Claris. However, customers report that removing GateKeeper eliminates the problem. (The GateKeeper info. file does admit to an incompatibility with MacDraw II).

This problem does NOT seem to be present with the GateKeeper Aid INIT, which is different than GateKeeper.
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MacDraw II: Printing Rotated Text Without Clipping

When text is rotated in MacDraw II, MacDraw Pro or Claris CAD, then printed from another program, such as Microsoft Word, one or more corners of the text may print clipped.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The issue occurs when text is imported into the other application via PICT or the clipboard, and usually when multiple-line text objects are rotated. The program printing the document may not properly interpret Claris' method of rotating text when the image is transferred via PICT or the clipboard.

Workaround from MacDraw Pro or Claris CAD 2.0v3:
Save the drawing as an EPSF file. This EPSF file can be imported into the other program and should print correctly.

Workaround from MacDraw II, or when transferring to another application that can't import EPSF images: try pasting the image to another application, such as Aldus Persuasion, then copy/paste into the destination program.

Or, try the following steps:

1. Create a rectangle that is white and has no border. This rectangle must be large enough to accommodate the text in it's original and rotated format. In other words, the rectangle must be as wide as the text was before rotating, and as tall as the text is after the rotating.
2. Now center the text on the rectangle. Be sure the rectangle is behind the text.
3. Group the rectangle and the text together.
4. Use the copy command to Copy the picture.
5. Move to the destination program and paste the picture.
6. If the text gets cut off when printing, go back to MacDraw II and make the rectangle larger.

The blank area surrounding the graphic may be quite large, but MacWrite II and other programs let you remove the blank area by cropping the image with the mouse.
Published Date: Feb 20, 2012

Paper Sizes: Standard and Printable Areas

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following are the standard media paper sizes:

A ..... (8 1/2 X 11 in)
A4 ..... (210 x 297 mm)
B ..... (11 x 17 in)
A3 ..... (297 x 420 mm)
C ..... (17 x 22 in)
Architectural C .....(18 x 24 in)
A2 ..... (420 x 594 mm)
D ..... (22 x 34 in)
Architectural D ..... (24 x 36 in)
A1 ..... (594 x 841 mm)
E ..... (344 x 44 in)
Architectural E ..... (36 x 48 in)
A0 ..... (841 x 1189 mm)

LaserWriter and LaserWriter Plus (Postscript)

Letter 8 x 10.78 in
Legal 6.75 x 12.84

LaserWriter NT and NTX

Published Date: Feb 20, 2012

MacPlot: Vector vs. Raster Fonts When Plotting

MacPlot driver uses vector or raster to print out depending on whether you've chosen Draft or Final mode for text .

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Draft text quality: All fonts are printed using the Geneva Plain font that's built into the plotter, which is a vector-based font.

Final text quality: Only the Geneva Plain, italics and underline text are printed using the plotter's built-in vector-based Geneva font. All other fonts and font styles are printed using the screen's bitmapped font. These bitmapped fonts will look like ImageWriter quality, will take much longer to print, and will wear out the plotter pens faster.
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Claris CAD: Version Notes/Features

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Version 1.1:
Initial release from Claris

Version 1.2:
Corrected problems associated with printing from a Macintosh IIci, IIfx, or IIsi and with Background Printing. Also allows for plotting from the Desktop.

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Microspot

Microspot publishes the MacPlot software included with MacDraw II, Claris CAD, and MacProject II (on request for MacProject Pro).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The company produces an expanded utility, MacPlot Professional, which offers two major areas of improvement over the driver shipped free with the above Claris products:

Additional Plotter support

- including Graphtec, Benson, Roland and Calcomp series plotters, etc.
- including electrostatic plotter support

Additional Functionality

- "Print Command file to Disk" option
- handle up to 30 pens in a carousel
- choose between bitmapped fills and preprogrammed hatch patterns
- support of outline font technology
- vector optimization while plotting reduces plotting time by calculating reduced pen/paper movement and pen changes

Here's how to contact Microspot:

Microspot
Suite 6
12380 Saratoga-Sunnyvale Road
Saratoga, CA 95070

(800) 622-7568 Sales
(408) 253-2000 voice
(408) 253-2055 fax
(408) 257-4000 Technical Support

Note: Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation.
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Claris CAD & MacDraw: Symbol Libraries Available

A library allows fast access to standard drawings and objects stored within the application. You avoid repetitive work in the design process and speed up the retrieval time considerably. Combined with the rescaling and clipboard modification features, you need to create an object once and it can be modified for each different ruler scale.

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This article has been archived and is no longer updated by Apple.
Here are some prepackaged libraries we know of that work with Claris CAD and/or MacDraw II:

Berol
Berol USA offers four libraries: Electrical/Electronic, Mechanical Design, Residential Architecture, Commercial Architecture

Berol USA
P.O. Box 990
San Fernando, CA 91340
(818) 365-8661
(800) 323-2454 (orders)

Advanced System Design, Inc.
ASD offers the "Professional CAD Library," a collection of more than 2400 architectural, electrical, plumbing, hardware, welding, landscape, and interior symbols.

Advanced System Design
1010 Stagecoach Blvd.
P.O. Box 3131
Evergreen, CO 80439
(303) 674-2222

Northstar Engineering Design
The company's Engineering Symbols Library contains over 1500 symbols available in both MacDraw or PICT format. Mechanical, chemical, process flow, electronics, piping, nuts, bolts and screws are included.

Northstar Engineering Design
1704 Chatham Ave.
Arden Hills, MN 55112
(612) 636-1216

Marketing Graphics, Inc.
4401 Dominion Blvd.
Suite 210
Glen Allen, VA 23060
(804) 747-6991

Note: Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation.
Published Date: Feb 20, 2012

Claris CAD: Loss of Precision with Radius MATH Utility

If you use a Radius accelerator card, you may notice that your directly entered dimensions are rounded to a lower precision.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Radius MATH (older versions are called Radius SANE) is a startup document that comes with Radius accelerator cards. To increase performance, the Startup document (INIT) truncates math computation from 20 to 16 places.

When this Startup document (INIT) is installed, all measurements entered into Claris CAD will be rounded down to a lower precision. Removing this optional Startup document (INIT) restores normal operations in Claris CAD.
Published Date: Feb 20, 2012

Claris CAD: Radius QuickCAD Boards

Radius has an add-on called the QuickCAD board, which is designed to speed the screen display of some Mac-based CAD products.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
CAD applications that are rudimentary translations of MS-DOS programs often operate quite slowly on the Macintosh, because rather than change their software to take advantage of built-in Macintosh graphics routines, they preserve their own, internal, "vector" method of displaying images. The QuickCAD board is designed specifically for those applications which use the vector method of graphics display.

Claris CAD does use the Macintosh toolbox, and therefore the speed improvement from a QuickCAD board does not seem to be significant. This applies to both Claris CAD 1.0 and 2.0.
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DataViz: File Transfer And File Format Translation Products

Claris tries to provide the most commonly needed translators with our products. However, due to the number of formats and the frequency of upgrades, it is not possible for Claris to provide a comprehensive and fully up-to-date set of translators. DataViz concentrates their business on filling this need.

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Their product lineup is:

- MacLinkPlus Easy Open Translators - For the Macintosh owner who already has a way of moving PC files to their Mac or is just translating between different Mac formats.
- MacLinkPlus Translators Pro - For the Macintosh owner who needs to translate files from DOS disks and wants PC Exchange, which can mount DOS disks on the desktop and is an easier solution than Apple File Exchange.
- MacLinkPlus PC Connect - For the Macintosh owner who doesn't have compatible floppy drives on his Mac or PC. This package includes a cable and communications software for transferring files between computers.
- Conversions Plus for Windows - This product provides Mac to PC and PC to PC translators as well as software that can mount a Macintosh disk on a PC.

All three MacLink Plus packages include Macintosh Easy Open which pops up a list of applications to choose from when you double click a file for which you don't have an application. You can also batch translate files by dragging files or even folders over pre-set Document Converter files.

DataViz, Inc.
35 Corporate Dr.
Trumbull, CT 06611
(800) 733-0030
(203) 268-0030
(203) 268-4345 Fax

URL: <http://www.dataviz.com/Products/prodinfo.html>
Published Date: Feb 20, 2012

MacDraw II: Rotated Text Prints at Low Resolution

If you own an Hewlett-Packard DeskWriter, you may notice that rotated text prints at low resolution (72 dpi), and does not use fractional character spacing.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The issue occurs only with MacDraw II version 1.0v4. MacDraw II 1.1 prints rotated text at high resolution, using the scalable fonts provided by Hewlett-Packard with the DeskWriter.
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MacPlot: Plotting Over a Network

The MacPlot driver shipped with Claris products requires that the plotter be directly connected to your Macintosh; it will not access printers located on a network.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
One workaround to this limitation is to use Shiva's NetSerial device. With a NetSerial interface, you can share serial device like plotters and direct-connect ImageWriters among several users on an AppleTalk network.

The lastest version of the Shiva Net Serial Device is 3.6.6 (as of 10/22/91).

The following is important:
1. Under Configure - go to the pop up menu to Shiva Config.
2. Select modem port under serial emulation.
3. Be sure and turn off "Narrate" and "never disconnect."

(This must be done from every workstation.)

4. Go to the Chooser, select Net Serial and then the MacPlot driver. Be sure to also select Modem port.

The NetSerial is normally able to emulate the printer port via AppleTalk and should not need to tie up the modem port as in this workaround. This is a valid workaround, however, the problem here lies in MacPlot. It checks to see if AppleTalk is busy rather than if the port is busy. This means that MacPlot thinks because AppleTalk is on then the port must be busy. This is not the case when the NetSerial is emulating the printer port.

Microspot says that their Professional version 4.0 fixes this. You can contact them at:

Microspot
Suite 6
12380 Saratoga-Sunnyvale Road
Saratoga, CA 95070

(800) 622-7568 Sales
(408) 253-2000 voice
(408) 253-2055 fax
(408) 257-4000 Technical Support
Published Date: Feb 20, 2012

MacDraw II: Saving Changes to a Locked File on AppleShare

MacDraw II 1.1v2 has a bug that allows users to make and save changes to a file on an AppleShare Server that is locked from the Finder.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you open the file users will get a message that says "File is locked...can't save changes". But if users go ahead and make some changes, save them, and close the file, the file will save normally, and the GET INFO box will show that the file is unlocked.

Note: This will only happen when saving to an AppleShare server. MacDraw II 1.1v2 will behave normally when working on a locked file on a local hard disk.
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Claris CAD: Using Symbol Libraries Designed for Other Applications

In general, these 'add-ons' are specific to the package and cannot be transferred to Claris CAD.

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This article has been archived and is no longer updated by Apple.
If a symbol library is in IGES or DXF format you can use Claris Graphics Translator to transfer the symbol library to Claris CAD format, then build the symbol library in Claris CAD.
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MacDraw II: Incompatible Desk Accessories & Startup Documents

The Desk Accessories (DA) and Startup Documents (INIT) listed below have been reported as incompatible with MacDraw II. The problems associated with these products have disappeared when the DA or INIT was removed or replaced with the most current version. Please contact the manufacturer to make sure you have the latest version.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
IMPORTANT: Some of these incompatibilities have been reported by customers and have NOT been confirmed by Claris Technical Support. Do not assume that these products are incompatible. The incompatibility could be version specific, system specific, or caused by something else entirely.

Hier DA
Hyper DA
Font DA Juggler
Locator
HD Partition
Blank (screen saver)
Flex (screen saver)
Stepping Out
Menu Clock
Shield

To attempt to deal with a problem relating to one of these files, or a similar file, you can adjust the loading order of your Startup and Control Panel Documents, or boot your Macintosh from a floppy disk to try to isolate the problem.
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MacDraw II: Rescaling a Scanned Image

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In MacDraw II, to precisely rescale a scanned image, first turn Show Size on. When a scanned image is selected, show size displays the horizontal and vertical resolution of the scanned image in addition to the size of the bounding box. You see these values change as you resize the object by dragging one of its handles. For instance, a 72 dpi image can be resized smaller to create a 144 dpi image.

You cannot resize scanned images using the Rescale When Pasting feature of MacDraw II.

Published Date: Feb 18, 2012

MacDraw II: Saving Color PICT2 Files

In MacDraw II, why is the PICT2 selection dimmed when I try to save as..? Sometimes, a message will appear warning that the machine is incapable of saving in this format (but will allow you to save as a PICT instead).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You cannot save files as Color PICT2 on a Macintosh SE or Macintosh Plus due to the ROM versions on these machines.
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MacDraw II: 35 mm Film Recorders

There have been no 35 mm film recorders certified for use with MacDraw II. It was decided to establish a Claris Authorized slide service instead.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Autographix is a Claris Authorized slide service bureau that can generate 35 mm color slides and overhead transparencies from a MacDraw II document, within 24 hours. Once the document has been created, use their Chooser-level driver and their specially-designed communication utility to send your files via modem or disk mailer to the nearest Autographix Service Center.

To order a starter kit, call Autographix's customer support @ 800-548-8558 ext 6440, 9am-5pm EST.
Published Date: Feb 18, 2012

MacDraw II: Importing and Exporting Color PICT2 Files

This article has been archived and is no longer updated by Apple.
MacDraw II 1.1 will export PICT2, but does not support the importing of Color PICT2 files, except for the existing eight colors (white, black, red, green, blue, cyan, magenta, yellow). Other colors will appear either as B & W or as multiple objects.

MacDraw II 1.0 does not support the import or export of Color PICT2 files.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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MacDraw II: Raster Ops Color Cards

Raster Ops manufactures a number of video boards that operate in 8 bit and or 24/32 bit modes.

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This article has been archived and is no longer updated by Apple.
The boards that can operate in an 8 bit mode will generally work with MacDraw II. To do this, you might need to remove the 32 Bit QuickDraw document from the system folder. However, if the video card only operates in a 24/32 bit mode, it will not work with MacDraw II.

RasterOps Model 108 Color Card will work with MacDraw II. You will need to remove the 32 bit QuickDraw document from the system folder, then set the monitor to 256 colors (8 bit mode).

Model 264, 24 bit Color Card has not been tested. It is believed that if you set the card to 256 colors there will be no problems using it with MacDraw II.

Model 232 & 364 Color Cards will not work with MacDraw II. They only operate in the 32 bit mode.

MacDraw Pro will work correctly with all models.

If you have any further questions regarding these configurations, you can call Raster Ops technical support at: (800) 729-2656.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.
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MacDraw II: Zoom View‘s Purpose

The purpose of the zoom levels in MacDraw II is to aid with the alignment of objects on screen at the resolution of your output device.

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For example, if you want to manually align a text object to a graphic object and will be printing to a LaserWriter, you need to make the alignment at 400%. The resolution at that zoom view is 288 dots per inch (dpi) which is the closest to the LaserWriter's resolution of 300 dpi.

Sometimes objects aligned at 3200% look fine, at 400% look bad and at 100% look good again. A 0.1 point line created with the zoom level at 800% with be one pixel wide on the screen. The same line displayed at 100% will still be one pixel wide.

Because the zoom levels are multiples of 72 dpi its easy to convert from percentage zoom to dpi. Conversion of percentage zoom to dpi:

100% - 72 dpi
200% - 144 dpi
400% - 288 dpi
800% - 576 dpi
1600% - 1152 dpi
3200% - 2304 dpi

Additionally, the capacity to zoom is based on the size of the document. A one page document can be zoomed to 3200%. At the largest size, 100 x 100 inches, the user can only zoom to 400%. This is due to a limitation within the QuickDraw coordinate system.
Published Date: Feb 18, 2012

MacDraw II 1.1v2: Defective Copies

There are some defective copies of MacDraw II 1.1v2 with a creation date of April 4, 1989. About 100 or so were shipped. If you type Command-Enter you will crash with an ID=12 error.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Apparently some debugging traces were unintentionally left in the code. If you have a debugger (like MacsBug) installed you will not crash but will end up in the debugger.
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MacDraw II: Garbage/Streaking At Bottom Of Minitor Window

When scrolling downward in a MacDraw II document window, the bottom part of the window scrolling into view may be filled with random garbage.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is due to an incompatibility between MacDraw II and the Large Menu Bar feature of the Radius monitors software.

With a Radius monitor, garbage will be displayed near the bottom of the screen if Large Menus are turned on in the control panel. To eliminate this problem, turn off the large menu bar feature, which you can access by selecting the Radius monitor CDEV in the Control Panel.
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MacDraw II: Polygons and Lines Look Different When Printed

Using MacDraw II 1.1v1 or 1.1v2, when a polygon is printed to a LaserWriter it is drawn with the Postscript pen, if it has 256 or fewer vertices. The lines that compose the polygon will have a constant width at any angle and the endpoints will be blunt. At the vertices, the endcaps will be pointed and will extend beyond the grab handles. Additionally, if the angle of the vertex is very small the endcap for that vertex will be blunt.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Line segments and polygons with more than 256 vertices are printed using the QuickDraw pen. The QuickDraw pen has the following characteristics that are more visible with thicker lines: horizontal and vertical lines print with constant thickness. Diagonal lines will get thicker as the angle of the line moves towards 45¡. For polygons with more than 256 vertices, the endcaps at each vertex will be blunt rather than pointed. The endpoints of lines and polygons might not be blunt. Rather, the endpoints might have a point.

Using the Line tool with the Polygon tool, if you where to draw a thick diagonal line first using the Line tool, then continue the diagonal line using the Polygon tool, the line will look fine on the screen. When printed to a LaserWriter, at the point where the Line tool was changed to the Polygon tool the width of the line will decrease slightly. Again, this is caused by the difference between the QuickDraw and Postscript pens.

The net result is that thick, diagonal lines drawn with either the QuickDraw or Postscript pens will appear differently when printed to a LaserWriter. These differences cannot be corrected or worked around.

With MacDraw II 1.0v4, the QuickDraw pen is used exclusively to draw polygons with the characteristics described above. Polygons with up to 500 vertices could be drawn.

In MacDraw II 1.0v1, v2, v3, all polygons were drawn with the Postscript pen. But, it wasn't possible to print polygons with more than 256 vertices. The LaserWriter would return a Limit Check Postscript error.
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MacDraw II 1.1: Extremely Slow Performance

If a document is created in MacDraw II 1.0v4 with a large number of objects (several thousand), several layers, large drawing size, and later opened in MacDraw II 1.1, there might be a significant reduction in performance. It might take a minute or two to open the document. It might take several seconds just to select a tool or to scroll.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The MacDraw II file formats were significantly changed from v1.0 to v1.1. It is thought that this might be the source of the problem. There is no workaround except to continue to use MacDraw II 1.0v4 with those documents.
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MacDraw II: Black Streaks, Stripes or Objects in Printout

Documents printed to a LaserWriter have been reported to have unexplained streaks or solid black objects that appear in random locations throughout the printout.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Try the following workaround:

- Select All.
- Turn Autogrid off.
- Move object one pixel to the right then one pixel to the left.
- Print document.

Note: This is corrected in MacDraw II 1.1
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MacDraw II: ImageWriter II or LQ Won‘t Print in Color

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
First, make sure that "Print Color Patterns" is selected in Print Options. If the print is still black-and-white, do a printer self-test.

Here's how:

1) Turn the printer off
2) While holding down the form feed button, turn the printer on. Release the form feed button.

The printer should print lines of text in different colors. If it doesn't, the printer ribbon is probably not pushed down tight enough. Push the ribbon down FIRMLY. This is necessary to depress the detector switch below the ribbon that tells the printer that a color ribbon is present.
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MacDraw II: Tour Disks Will Not Run

On later-model Macintosh computers, including the Mac Classic, LC, IIsi, IIci, IIfx and the Portable, you cannot run the MacDraw II Tour disks by starting the computer from the Tour disk. (The instructions tell you to do this).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is because recent model Macintosh computers require a version of the System that is later than the version on the Tour disks. Instead, these alternative methods will work:

1. Start the computer from the hard disk. From the Finder, insert the tour disk, then double-click on the Tour Engine file. (If you're running MultiFinder, first increase the Application memory size of the Tour Engine file to at least 960K. Do this by single-clicking on the Tour Engine icon, selecting Get Info from the File menu, then changing the application memory size to 960K or greater).

2. Alternately, you can create a self-running tour disk. Using your System Tools disks, install a minimum System configuration onto a blank formatted high-density floppy disk. Then copy all the files from the Draw II Tour disk onto this high density disk (except the System file). This will create a self-running bootable tour disk.
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MacDraw II: Line Widths Printing To A Linotronic

Line widths from MacDraw II and some other QuickDraw based drawing applications may not print at full device resolution on high resolution Postscript printers, such as a Linotronic.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The reason is the LaserWriter print driver rounds the width of lines to the nearest 1/300". So even though MacDraw II will allow you to define line widths at greater than .001" precision, the LaserWriter driver will print line widths from MacDraw II no finer than 1/300" of an inch.

Note: MacDraw Pro contains code to override this problem with the LaserWriter driver. MacDraw Pro WILL print lines in their actual pen width.
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MacDraw II: Pasting from Cricket Graph

Users who resize graphs pasted into MacDraw II 1.1 from Cricket Graph 1.3.x may notice the graphics behave strangely. The handles of the new objects may appear in the wrong place, may disappear altogether, or extra handles may show up. Additionally, the document may grow to a large size with no visible objects in the expanded drawing area.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To resolve this problem, you can:

1. Paste the graphic into MacDraw II, and choose the Ungroup command twice. (This ungroups down to the individual object level.)

2. Choose the Group command, and then resize the graphic.

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Claris CAD: Running From A Floppy Disk

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Claris CAD manual and packaging both state that a hard drive is required to use Claris CAD. However, it is possible to install Claris CAD 1.0 on a high density floppy and use the HD floppy to run the program.

High Density floppies work only with computers that have the SuperDrive (FDHD) floppy disk drive installed. This includes the following Macintosh models: SE/30, IIcx, IIci, IIfx.
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MacDraw II: Configuration Program

Claris has a utility program available for registered owners of MacDraw II v1.1. This program is available at no charge on an as-needed basis.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This program modifies your MacDraw II application in the following ways:

For users of non-Postscript printers (including the ImageWriters I / II / LQ and LaserWriter IISC):

- Provides higher print resolution
- Disables some printer options, including Faster printing and reduced printing

For users of high-resolution Postscript-based printers (including the Linotronic):

- Increases the lines per inch of the line screen for fill patterns
- Sets the degrees of rotation of the line screen for the four print colors.

Users of 300 dpi Postscript-based printers (including the LaserWriter Plus / IINT / IINTX) will not benefit from MacDraw II Configure, as MacDraw II is already optimized for the best print quality to these printers.

Instructions
1. Check that you have MacDraw II version 1.1 . To verify this while in MacDraw II: hold down the option key and select About MacDraw II from the Apple menu.

2. Run MacDraw II Configure. When the file dialog box appears, click on your working copy of MacDraw II, then click on the Open button. Do not modify your original disk. You will now be at the main screen (see Figure 1 below).

3. Non-Postscript printer users only: Select the button "Always use highest printer resolution".

4. Postscript-based printer users only: Type in the desired number of lines per inch for the line screen for the four colors. Optionally, you can change the rotation of the line screen for each color. This can be useful to reduce moire patterns which can occur during 4-color printing.

5. Click the Save button, then select the Quit command from the file menu.

You can restore your working copy of MacDraw II to its original settings. To restore, run the MacDraw II Configure command, click the Preset button, then the Save button. Finally, select the Quit command from the file menu.
Published Date: Feb 18, 2012

MacDraw II: Can‘t use Rescale When Pasting

You cannot resize scanned images or text using the Rescale When Pasting feature of MacDrawÊII. Text cannot be rescaled. You can only change the size of text by selecting a different font size.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
However, you can resize a scanned image manually using the Show Size feature as a guide. With the scanned image object selected, Show Size shows the horizontal and vertical resolution of that image. With this technique, a 72 dpi image can be reduced to create a 144 dpi image, for example.

Text and bitmaps can be rescaled in MacDraw Pro using the Scale Selection command.
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MacDraw: Out of Memory Message

If your computer displays an "out of memory" alert when opening the MacDraw II or MacDraw Pro or when opening another document window, try the following.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
1) (MacDraw II only) Go to the Control Panel and select Monitors. Set the number of available colors to 256 colors or less. MacDraw II will NOT run properly if the video card is set to "thousands" or "millions" of colors. If a document is opened using the Apple 8¥24 GC card set to millions of colors, you'll see horizontal lines through the document or a "Collision with stack heap" alert instead of the "out of memory alert".

2) If running System 7 or System 6 with MultiFinder, increase the Application memory size. To do this:

- Quit MacDraw. Go to the Finder
- Click ONCE on the MacDraw application icon (not a folder icon).
- Select Get Info from the File menu, or press command-I
- Change Application memory size (or Current Size) to the following (larger numbers may need to be entered to open large or multiple documents):
- MacDraw II, 13" color monitor: at least 1300K
- MacDraw II, 19" gray or color monitor: at least 2000K
- MacDraw Pro 1.0, 19" gray or color monitor, 256 colors: at least 2500K
- MacDraw Pro 1.0, 19" gray or color monitor, millions of colors: at least 3500K
- MacDraw Pro 1.5, any monitor: will open at least one average size document with default RAM size of 2000K.However, with larger monitor and/or millions of colors setting, MacDraw Pro may turn off the screen buffer off unless you allocate more memory to the application. See the MacDraw Pro 1.5 New Features Guide for further information on the screen buffer.

Published Date: Feb 18, 2012

TA41372_Apple_II_HighSpeed_SCSI_Card_Description__(TIL05425).pdf

Apple II High-Speed SCSI Card: Description (2/97)

This article describes the Apple II High Speed SCSI Card.

This article has been archived and is no longer updated by Apple.

The new Apple II High-Speed SCSI Card provides faster data transfer primarily because of a new feature called "direct memory access" (DMA) data transfer. Data is transferred directly between the computer's memory and the SCSI peripheral, with minimal interaction from the computer's microprocessor. The result is improved, data-transfer performance. With the new high-speed card, data transfers at a rate of up to 1MB per second on the Apple IIGS computer, and up to .5MB per second on the Apple IIe computer. In addition to DMA, the SCSI manager and firmware have been improved and also contribute to the increased performance.

Compatible with all SCSI peripherals, the Apple II High-Speed SCSI Card requires only that device-specific applications and drivers be installed on the system. The card ships with drivers and applications for hard disk and CD-ROM drives, so that users can take advantage of these devices immediately. Device drivers for the tape backup drive and scanner will be made available to developers. Users will be able to take advantage of these devices as applications are developed. In addition, the new card enables users to connect as many as seven SCSI peripherals to their computer.

Another feature of the card is an on-board terminator, which simplifies setup when connecting SCSI peripherals to the computer. Previously, the Apple II SCSI Card required users to understand rules regarding placement and quantity of terminators between SCSI devices. With the new card, you place one terminator at the end of the chain of SCSI devices.

The Apple II High-Speed SCSI Card also includes improved, hard-disk utilities. These utilities make it easy to handle hard-disk management tasks, like data backup, disk partitioning and disk verification. The partition and verify utilities take advantage of the improved firmware commands for hard disk drives. The backup utility can now handle the resource forks that are part of the IIGS files. Because these are ProDOS utilities, they can be used by both Apple IIe and Apple IIGS users.

As far as system requirements, the Apple II High-Speed SCSI Card works on an Apple IIGS computer or an Apple IIe computer with a 65C02 microprocessor. The Apple IIGS requires a 3.5-inch disk drive, while the Apple IIe requires either a 5.25- or a 3.5-inch disk drive. Both require a device with a SCSI port, appropriate SCSI cabling and one SCSI terminator.

Article Change History:
28 Feb 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

ClarisWorks: "Curly" Quotes Printing as Strange Characters

You may notice that quote marks in MacWrite II or ClarisWorks documents do not display properly when the file is transmitted over a modem, or printed in a non-standard font.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The issue is caused by the font or other computer platform not being compatible with the "smart quotes" feature, which automatically substitutes attractive, "curled" quotes (",") whenever you type the "neutral" or standard typewriter quote

For example:

The crowd liked the new "Imaginarium" display at the festival.
- becomes -
The crowd liked the new "Imaginarium" display at the festival.

There are three solutions:

1. Turn off Smart Quotes, by clicking that option in the Preferences dialog box under the Edit menu.

2. With MacWrite II, you can use a Shift-Command-Quote (instead of the standard Shift-Quote) to get a straight quote mark without deselecting the Smart Quotes option in the Preferences dialog.

3. In an existing document with curly quotes, you can use the Find/Change command in the Edit menu to replace curly quotes with regular ones:
- Turn off smart quotes
- Search for Option-[and replace with "
- Search for Shift-Option-[and replace with "
- Search for Option-] and replace with '
- Search for Shift-Option-] and replace with '

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MacDraw II: Aligning by Distribution

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When distributing objects with the Align Objects command, the first object and last objects do not move. MacDraw II / Pro only moves the objects between the first and the last. Therefore, when using the Distribute feature, first position the first and last objects correctly in the series of objects to be distributed. Then use the Distribute command to position the objects in between.

Distribution by height or width places an equal distance between the boundary of each object.

Distribution by center distributes objects such that the distance between the center of one object and the center of the next object is equidistant for all objects.
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MacDraw II: Printing Freehands & Polygons Incorrectly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed with the GCC PLP driver 2.2 and later.

The Personal Laser Printer from GCC with a driver previous to 2.x will print smoothed polygons and freehand objects from MacDraw II 1.1 incorrectly. The objects will print, but malformed shadows of the objects will also print.

GCC Technologies, Inc.
580 Winter St.
Waltham, MA 02154

GCC Sales and Information can be reached at 617/275-5800
GCC Technical Support can be reached at 617/276-8620
Published Date: Feb 18, 2012

MacDraw II: Maximum Printable Area for LaserWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When a LaserWriter is the chosen printer, MacDraw II establishes default drawing sizes for US Letter and US Legal paper sizes as specified below. You can increase the drawing area slightly by selecting Larger Print Area (select Options in Page Setup to find this setting).

MacDraw II Default Drawing Sizes
Letter ..... 7.67 by 10.13 in.
Legal ..... 6.72 by 12.50 in.

Larger Print Area Selected
Letter ..... 8.00 by 10.77 in.
Legal ..... 8.00 by 13.59 in.

It's important to note that despite the maximum drawing size the application allows, the final drawing size is determined by the printer. Below are the maximum printable areas for the LaserWriter, LaserWriter II NT/NTX and LaserWriter II SC. Notice that the LaserWriter isn't capable of printing the entire drawing area for US Legal when Larger Print Area is selected.

Maximum Printable Areas:

LaserWriter & LaserWriter Plus
Letter ..... 8.00 by 10.78 in.
Legal ..... 6.75 by 12.84 in.
A4 ..... 7.41 by 10.86 in.
B5 ..... 7.69 by 10.16 in.

LaserWriter II NT & NTX
Letter ..... 8.00 by 10.78 in.
Legal ..... 8.00 by 13.78 in.
A4 ..... 7.79 by 11.08 in.
B5 ..... 6.45 by 9.76 in.

LaserWriter II SC
Letter ..... 6.72 by 10.27 in.
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MacDraw II: Paracomp‘s Draw Tools

Paracomp's DrawTools consists of three DA's that work with MacDraw II: Sizer, Adjacency, and DrawTools.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Sizer: Brings up a window with object's area, angle, width, height, diagonal measurement and an object scaling option by percentage.

Adjacency: Moves a selected object next to another object without overlapping points.

DrawTools: After selecting this from the Apple menu, a new menu item will appear on the menu bar called Tools. This menu allows the user to do fillets, extend or clip a line or arc, and snaps lines (moves a line's point to a point on another line).

Paracomp offers the support on this package. Their phone number is 415-453-3848.

Customers with problems relating to the use of any of these three Desk Accessories should contact Paracomp's support department for assistance.
Published Date: Feb 18, 2012

MacDraw II: Precision of Rotate Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

You can rotate objects at .01¡ increments if you zoom in at 3200%.

At 100%, you can rotate objects at .1¡ increments if you drag away from the object after you started the rotation.

The farther you drag, the more precise the rotation. Also, turning the Autogrid Off can let you rotate in smaller increments.

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MacDraw II: Printing to QuickDraw Printers

Most non-Postscript printers (including all ImageWriters, the LaserWriter IISC and the GCC PLP) will print MacDraw II rotated text at very poor quality. This is true even when printing in Best quality mode. (This problem refers to 1.0v4 through 1.1v2, the current version).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Rotated text print quality is greatly improved by using the MacDraw II Configure utility program. This program increases the printing resolution to non-postscript printers. For details, see the related record in this file regarding MacDraw II Configure. In addition, turning off Fractional Character Widths can improve the printing of rotated text.

Additional note: for the best quality, be sure to have the proper font sizes installed. The LaserWriter IISC uses a 4X font size to print text in Best quality. The IW LQ uses a 3X font size to print text in Best quality.

LaserWriter IISC only) The thinnest line width that prints with the LaserWriter II SC is 1 point.

MacDraw II 1.0v4 and later versions created a problem for LW IISC users. When printing text, carriage returns will be arbitrarily added. Currently, the only workaround is to create separate text blocks for each line of text.

According to the Technical Support Department at GCC, the above also applies to ClarisÊCADÊ1.0, and SmartForm Designer. There are, however, no Configure utilities available for these products. The problems with these additional products have not been verified by Claris.

GCC Sales and Information can be reached at 617/275-5800
GCC Technical Support can be reached at 617/276-8620
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MacDraw II: Defective MacPlot Driver

MacDraw II 1.0v1 was shipped with a defective version of the MacPlot plotter driver. The creation date of the defective driver is June 6,1988. This driver had some key resources missing.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The symptom of the issue is as follows: select MacPlot in the Chooser and then try to go into the MacPlot Configure program. It asks you to choose MacPlot in the Chooser. But, you've already done so. Thus, you end up in a loop.

MacPlot with a creation date of June 14,1988, will work with MacDraw II but will NOT work with MacProject II. The version dated June 23,1988, will work with both MacDraw II and MacProject II. The above drivers all shipped with MacDraw II 1.0v1.

Note: All version of MacPlot prior to 1.2 contained the Background Printing bug. This issue is documented in further detail elsewhere in this file.

To confirm whether or not the MacPlot driver is defective, single-click the MacPlot icon. Now choose Get Info from the File menu. If the creation date is June 6, 1988, it is defective and should be replaced.

MacDraw II 1.0v4 shipped with a version of MacPlot that doesn't exhibit the defect found in the original version. MacDraw II 1.0v4 is a free upgrade available to all MacDraw II customers.
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MacDraw II: CalComp Plotters

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When buying a CalComp plotter, the dealer will give you a choice between getting an HPGL ROM or a proprietary CalComp GL ROM. The MacPlot driver included with selected Claris packages will work well with the CalComp plotters that emulate HPGL (i.e., those that have the HPGL ROM installed). CalComp offers the HPGL ROM pack - for those that didn't initially purchase one.

An alternative would be to purchase a plotter driver that offers direct support for the CalComp plotters. MacPlot Professional from Microspot, Inc., the publishers of MacPlot, supports the CalComp GL.

Microspot
Suite 6
12380 Saratoga-Sunnyvale Road
Saratoga, CA 95070

(800) 622-7568 Sales
(408) 253-2000 voice
(408) 253-2055 fax
(408) 257-4000 Technical Support
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MacPlot: Corrupted Driver Error Messages

If your Macintosh loses power, crashes, or locks up while you are specifying information about your pen settings with MacPlot 1.2, it is possible that the MacPlot driver is damaged.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You will know the plotter driver is damaged when you receive the message, "Sorry, this MacPlot Driver Can't be Used" when you select the driver from the Chooser. You may also receive the error, "The directory could not be printed. Check that there is a printer in the System folder and that the printer is chosen in the Chooser" when choosing Page Setup.

To correct the problem, simply re-install the MacPlot Driver and the MacPlot Configure application.
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MacDraw II: Font Substitution

Fractional Character Widths must be turned off in the Preferences dialog box in order for Font Substitution to work in MacDraw II 1.x.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When Font Substitution is active it will, for example, replace the Geneva screen font with the Helvetica outline (or PostScript) font, giving you higher resolution on a LaserWriter. Additionally, New York is replaced by Times, and Monaco is replaced by Courier.

Be aware that character widths vary from one font to another. As a result, a line of type may be longer or shorter than it was before a font is substituted.
Published Date: Feb 18, 2012

MacDraw II: London & San Francisco Fonts Print Poorly

Most fonts that are named after cities, such as: Chicago, Geneva, London, San Francisco, New York, etc., are "screen" or "ImageWriter" fonts that have no corresponding LaserWriter outline font.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Screen fonts are "bit mapped" representations of the fonts so they can be displayed on the monitor (screen) at 72 dots per inch (or pixels per inch). All screen fonts are contained within the Macintosh System and are installed into the System with the font D/A Mover.

On the other hand, Outline fonts are mathematical descriptions of fonts in a language called PostScript. These font descriptions are designed to allow a LaserWriter printer to recreate the font at the highest possible resolution. 35 outline fonts are contained within the ROM's of a LaserWriter Plus, and the LaserWriter II NT & NTX. Other outline fonts are available from software publishers such as Adobe Systems, Inc.

If a document contains fonts that have no corresponding outline fonts, Font Smoothing, in Page Setup, could be used to make the font more presentable and less "jaggy".
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MacDraw: Objects Shifting or Distorted when Pasted

When you copy objects from MacDraw or Claris CAD (any version) into another program using the PICT format, the objects may import into the other program incorrectly. Any method of copying objects that uses the PICT format may exhibit problems, including copying/pasting via the clipboard, saving as a PICT file, or using Publish and Subscribe. (All subsequent references to saving to PICT include all three of these PICT methods). Symptoms include: objects may shift apart or become misaligned; polygons, bezigons and freehands may become distorted, especially smoothed objects; dashing, gradient fills and other attributes may be missing or incorrect when copied to the other program; line widths may be rounded to the nearest whole point. These problems can happen when copying objects to any other application on a Macintosh or PC, including Microsoft Word, PowerPoint and PageMaker.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Solution:
The issues are due to limitations of the PICT format. As such, they are an inherent system level limitation, and there is no fix. However, you can minimize the shifting issue in MacDraw or Claris CAD by setting the AutoGrid on, and using a ruler setting of 36 or 72 divisions per inch BEFORE you create your drawing. If you align objects to this grid after drawing, you will align only one part of the object to the grid (like the upper left corner). You won't align all the object handles to the grid. This is why aligning after drawing is not a fix.

These PICT format limitations can be avoided by saving as an EPSF file, then importing the EPSF into the destination application. MacDraw Pro 1.0/1.5 and Claris CAD 2.0v3 can save as an EPSF file, if the EPSF translator is installed. MacDraw II cannot save as an EPSF, but MacDraw II files can be imported into MacDraw Pro and Claris CAD. Of course, using EPSF is only a viable option if the destination application supports EPSF, and if the image will be printed on a Postscript printer.

Explanation:
Issue - Shifting of objects, objects become distorted

In a PICT file, the position of objects is limited to 1/72 of an inch. MacDraw and Claris CAD have much higher precision in placing objects. When you take objects from MacDraw and Claris CAD into the clipboard, a PICT file or a Publisher Edition file, the placement of objects is shifted to the nearest 1/72 of an inch. This can cause objects to shift apart.

Note: This does NOT mean that PICT has a "resolution" of 72dpi. PICT is an object-based file format, and as such does not have an inherent resolution. What this does mean is that objects are placed to the nearest 1/72 of an inch.

In addition to the placement of the object as a whole, the placement of each of the object handles that define the object is rounded to the nearest 1/72 of an inch in a PICT. You can see the object handles of a line, rectangle, arc or oval by clicking on the object. You can see the object handles of a polygon, bezigon or freehand by selecting the Reshape command. When the object handles get shifted to the nearest 1/72 of an inch, the object may become distorted. This is especially noticeable with smoothed objects.
Problem - object attributes, including dashing or gradients, are missing or incorrect

The PICT file format is "weak" by today's graphic standards. That is, graphic programs have features that are not fully supported by the standard PICT format. To get around this problem, a PICT file has a customizable section, called the "Header", that is unique to each application. Dashing, rotation and other features not supported by the regular PICT are supported in the header information. If you save to PICT and the destination application cannot read the source program's PICT header information, this information will be lost when the PICT is copied to the destination program.
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MacDraw II: Page Setup And Print Options Grayed

Some MacDraw II users may notice that when printing to an ImageWriter II the Tall Adjusted and 50% Reductions options are grayed out in the Page Setup dialog box. Additionally, the Faster option is grayed out in the Print dialog box.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II 1.0v1, 1.0v2, and 1.0v3 all print at 144 dpi, which is higher than the normal resolution of the ImageWriter II (72 dpi), but at the sacrifice of the options described above.

MacDraw II 1.0v4 and 1.1 address this issue. Both print at the ImageWriter standard of 72 dpi, and are able to use the Tall Adjusted, 50% Reduction, and Faster options, though they lose the ability to print 0.5 point lines.
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MacDraw II: Libraries

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In MacDraw II, you can create libraries of objects which can easily be moved between documents. Simply select the object or group you wish and choose the Library command in the Arrange menu. You can then name the item, and click the Add button.
Published Date: Feb 18, 2012

MacDraw II: Importing Scanned PICT Images Issue

Scanned line art saved as PICT does not display correctly in MacDraw II 1.0v1.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
AppleScan PICT files of images scanned at resolutions of 100 dpi or greater print incorrectly and, if flipped or rotated, display incorrectly from MacDraw II and can crash the program.

This was a issue with MacDraw II 1.0v1. Any version of MacDraw II from 1.0v4 and later does NOT have a problem with scanned images.
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MacDraw II: Patterns Not Printing on the Tektronix 4693 DX

With MacDraw II, when printing to the Tektronix 4693 DX (with Phaser option) you may notice that your patterns will not print out. Because this is not a problem with a specific object type, circles, rectangles, polygons, freehands and arcs will show this same problem. This problem will only appear if you have the Phaser Laser Option.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The solution is to use the "Print Station Administrator" software that comes with the Phaser station and remove the "Set Screen" document from the "INIT Jobs Folder." You will then need to restart the Phaser Station for this change to take effect.

Note: Restarting the Phaser Station should take approx. 4 minutes.

The information below is provided by Tektronix Technical Support
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The SetScrn InitJob corrects several compatibility problems with the Phaser PrintStation. Several programs, notably the Informix WINGZ product and PowerPoint (by Microsoft), seem to exhibit these problems. The difficulty arises when the application attempts to send output to the printer at something other than the default (37 degree) halftone screen angle that the Phaser PrintStation uses.

This file will smooth out "banding" in areas of swept color, most notably in Microsoft PowerPoint slides. In addition, it will speed up printing time of applications that use screen angles to create color. Informix WINGZ shows the most improvement, with print times reduced from several hours to only a few minutes. Take note, however, that colored areas in WINGZ will be solidly filled and will no longer contain "patterns". Also, you will be limited to eight colors. For most charting applications this is usually sufficient, but if you need access to more than eight colors you will have to remove this patch by turning the PrintStation off and rebooting it.

For some applications like MacDraw II, the Setscrn InitJob will cause Fill Patterns to "smear". SetScrn InitJob will need to be removed when sending a MacDraw II file that contains patterns within the image.

The software vendors have stated that they will incorporate fixes into upcoming releases of their software.
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MacDraw II: How to use the Spell Word option

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Spell Word option from the Spelling sub-menu is only available if Beep on questionable spellings has been selected from the Spellings Options dialog box.
Published Date: Feb 18, 2012

MacDraw II: Newsletter Indexes

Below is an index listing the MacDraw II information covered in the Technical Solutions newsletters dated January, 1989 through January, 1990.

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January 1989 Index:
Article: "Advancing the Standard"
This article highlights changes and improvements in MacDraw II 1.0v4. Major headings include: ImageWriter Print Options, Page Setup, Fractional Character Widths, Memory and Memory Usage, MultiFinder and a Color Monitor, Memory Requirements.

Q & A:
Constraining mouse movements: The Caps lock key is depressed.
Opening MacDraw 1.9.x files.

Tips:
Precision Alignment.
Changing Pen Patterns.
The Move Feature.
Creating MacDraw II Templates.
Selecting Objects Throughout a Document.
Color Text.

Misc.:
"Claris Ups the Ante"
Section on what MacDraw II 1.1 will contain.

March 1989 Index:
Article: None this issue.

Q & A:
How to create color text.
MacDraw II on a 512k Mac.

Tips:
Cross-Hatch effects.
Distributing objects evenly.
Quick selection.

May 1989 Index:
Article: None this issue.

Q & A:
Printing color text to an ImageWriter II.
Inconsistent kerning. Possibly multiple LaserPrep files.

Tips:
Distinguish colors on a Black & White screen.

July 1989 Index:
Article: "Print it Right" Section on MacDraw II includes:

Description of fractional character widths.
Print Options: MacDraw II 1.0 Vs. 1.1
Plotting.

Q & A:
Rescale-Paste
Draft mode on an ImageWriter.

Tips:
Using scanned images.

Printing: Printing using the Slide mode.

Misc.:
"Claris Graphics Translator"
MacDraw II 1.1 and MacDraw are mentioned in this article.

September 1989 Index:
Article: "Plotting With Claris"
MacDraw II is mentioned in this article.

Q & A:
Using MacDraw II 1.1 with other applications; Text gets cropped on right side.
Saving preferences as Stationery; MacDraw II Options

Tips:
Reactivating tools.
Entering text into graphic objects.
Toggling from a tool to the selection arrow.
Optimizing text and object alignment.

November 1989 Index:
Article: None this issue.

Q & A:
Objects pasted into other applications print slightly out of alignment.
Handles on locked objects are grayed.
Printing a single copy of a document using Command-Option-P
Symbol libraries from 3 vendors.

Tips:
MacDraw II rotates objects in two different ways; Corner/Center control.
Version numbers without quitting; Option-About MacDraw II
Keyboard Equivalents for spell checker.

January 1990 Index:
Article: None this issue.

Q & A:
Reshaping polygons.

Tips:
Editing notes.
Reducing scanned images before pasting into MacDraw II.
Published Date: Feb 18, 2012

MacDraw II: LaserWriter Resolution is 288 DPI

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To improve text and object alignment in MacDraw II, the LaserWriter's resolution has been set to 288 dpi (dots per inch), rather than 300 dpi.

The resolution of the Macintosh screen is 72 dpi. You need to zoom to 400% for precise alignment of text and graphics. Since 72 is a multiple of 288, the 288 dpi resolution works well by maintaining the alignment on the printout that was achieved on the screen.

To change the print resolution of the LaserWriter to 300 dpi, hold down the Option & Command keys while selecting the Preferences dialog box. (No message will appear that the resolution has been changed.)
Published Date: Feb 18, 2012

MacDraw II: Printing High Resolution Scanned Images

In some situations, you might not be able to print large, high resolution scanned images on a LaserWriter. This is not an issue in MacDraw II, but rather a system issue.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are a couple of ways to work around this problem:

1. Print the document with Background Printing turned off. Or, print under the Finder.

2. Seek out a LaserWriter with more memory. A LaserWriter II comes with 2.0 Mb and can be upgraded. A LaserWriter and LaserWriter Plus have only 1.5 Mb and cannot be upgraded. Also, if a LaserWriter II NTX is available,see if the document will print to it.

3. If 300 dpi resolution isn't absolutely necessary, try scanning at a lower resolution.

Typical error messages indicating this problem: LIMIT CHECK and TIME OUT.

Note about LaserWriter resolution:
Images scanned at 300 dpi and imported into MacDraw II will print with a resolution of 288 dpi. Therefore, these images will print with a slightly lower resolution than they were scanned. To print these images at 300 dpi from MacDraw II, hold down the Option & Command keys while selecting the Preferences dialog box. This will switch the LaserWriter print resolution to 300 dpi and will allow your 300 dpi, scanned images to print at the correct resolution.
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MacDraw II: LaserWriter Printing Troubleshooting Tips

If you're having problems printing to a Postscript LaserWriter (no printout or objects missing on the printout), try the following.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

1) Go to the Chooser, select the LaserWriter driver (not the LaserWriter IISC driver). Under the text "Select a LaserWriter," make sure that the name of your LaserWriter is listed AND selected.

2) Turn off Background Printing [MultiFinder only]. (Go to the Chooser, select the LaserWriter, click Background Printing OFF). Try printing again. If the document prints correctly, you may be able to print using Background Printing by allocating more memory to Print Monitor. (From the Finder, click once on the Print Monitor icon, select Get Info from the file Menu, increase Application Memory Size from 72K to about 200K).

3) Check which LaserWriter driver version is being used. MacDraw requires LaserWriter 5.1 or higher. MacDraw Pro requires LaserWriter 6.01 or higher. Are both LaserWriter and LaserPrep of the same version (LaserWriter 6.0.2 and earlier versions only)? Is the version of PrintMonitor being used compatible with the LaserWriter and LaserPrep.

4) Check for multiple System Folders. If another System Folder is found (that contains another LaserPrep), remove it.

5) If LaserWriter 6.0 or higher is being used, try deselecting Color/Gray Scale by selecting Black & White in the Print dialog box.

6) Are any print spooling applications (other than PrintMonitor) running? If so, disable or remove them.

7) Does the document contain scanned images or other bitmaps? In Page Setup, try deselecting the Printer Effects, especially Graphics Smoothing and Faster Bitmap Printing.

8) Try copying and pasting everything to a new document. All the objects will paste into a single layer in the new document). Try printing again.

9) Try increasing the memory partition for MacDraw. To do this, quit MacDraw. Click once on the MacDraw application icon, then select Get Info from the file menu. Increase the application memory size by a few hundred K, close the Get Info window, then launch MacDraw and try printing again.

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MacDraw II: Minimum System Requirements

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You will get the best performance from MacDraw II if you use the appropriate system software for your Macintosh. The chart below shows recommended configurations.

System 6.0 (System 6.0, Finder 6.1) or above - Recommended

System 5.1 (System 4.3, Finder 6.0) - Not Recommended
- or -
System 5.0 (System 4.2, Finder 6.0) - Not Recommended

System 4.0 (System 4.1, Finder 5.5) - Not Supported

LaserWriter 6.0, 5.2, 5.1 - Required

All previous LaserWriter versions - Not Supported
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System 6.0.5: Technical Information

DETAILS OF SYSTEM 6.0.5

This document provides technical information on System 6.0.5. This information is intended for technically knowledgeable users; it is not needed to operate the Macintosh.

This article has been archived and is no longer updated by Apple.
System 6.0.5 is required when using any of the following products: Macintosh IIfx, Macintosh Display Cards 8/24 and 8/24 GC, and third party software or hardware products that require System 6.0.5 (these third party products carry the label requires 6.0.5 or later on the outside of their packaging). Inaddition, Apple recommends using System 6.0.5 with any of the following products: Macintosh Portable, Macintosh IIci, and 32 Bit QuickDraw.

The recommended version of HyperCard for use with System 6.0.5 is HyperCard 1.2.5.

IMPROVEMENTS FOR ALL MACINTOSH MODELS

- Floppy disk initialization is more reliable during LocalTalk or hard disk activity.
- Communications applications no longer drop characters when changing monitor settings.
- The following improvements were made to MacroMaker: playback now works properly with more applications; switch-launching works; and problems pulling down menus no longer occur.
- Creating a screen shot works properly when using a color video card that requires 32-Bit QuickDraw.
- Apple HD SC Setup now erases all data when initializing (or erasing) any Apple hard disk.

IMPROVEMENTS FOR MACINTOSH PORTABLE

- Excessive drain on battery life caused by LocalTalk activity is eliminated.
- Occasional problems communicating with an AppleShare server are corrected.
- Devices connected to the modem or printer port work properly after coming out of system sleep.
- High speed (57.6K baud) communications with the modem port work during floppy disk activity.
- International and nonstandard U.S. keyboards no longer revert to the standard U.S. keyboard layout after coming out of system sleep.

IMPROVEMENTS FOR MACINTOSH IIci

- Communications applications perform properly when transmitting or receiving the Break signal or when hardware handshaking flow control is used.
- International and music font characters are drawn correctly.
- Screen dimmers work properly with color video cards that require 32-Bit QuickDraw.

IMPROVEMENTS TO 32-BIT QUICKDRAW 1.2

- You can automatically upgrade 32-Bit QuickDraw to version 1.2 (only if

a previous version of 32-Bit QuickDraw is present) by selecting "Easy Install".
- 32-Bit QuickDraw 1.2 does not work with system software versions previous to 6.0.5.
- The 32-Bit QuickDraw icon does not appear in color on the Macintosh IIci or Macintosh IIfx. These models have 32-Bit QuickDraw in ROM, and System 6.0.5 contains patches that make the ROM version equivalent to 32-Bit QuickDraw 1.2.
- Performance is improved for many drawing operations.
- The contents of color windows that span multiple monitors are drawn better.
- Color icons now draw properly on all monitors.
- 32-Bit QuickDraw works with more third party printers.
- Some third party screen shot utilities work better with 32-Bit QuickDraw.
- The lasso and paint bucket tools from some paint applications now work properly on monitors set for "Thousands" of colors.

IMPROVEMENTS FOR MACINTOSH SE

- Apple File Exchange works properly with one megabyte of RAM and two floppy disk drives.

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MacDraw: Some Patterns Print as 300 DPI Screens

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are nine dot patterns in the default pattern palette that have been specially arranged so that when they print to a LaserWriter printer they print as true, 300 dpi screens, rather than 72 dpi patterns.
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MacDraw II: Courier Text Doesn‘t Line Up With Graphics

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Left justified Courier text will not stay aligned with graphics placed near the right end of the text, when printed to a LaserWriter. Because Courier is a monospaced font, deselecting Fractional Character Widths has no affect on this problem. All versions of MacDraw II are affected by this. System version does not influence the problem either.

To reproduce the problem, type a line of 14 point Courier text. Draw a vertical line just before the first character of the text object, and another vertical line just after the last letter. Now, print to a LaserWriter. The printout will show a significant gap between the end of the text object and the rightmost vertical line.

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MacDraw II: Text Does Not Align With Graphics

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a problem with all versions of MacDraw II, except 1.0v4, regarding alignment of objects with multi-line text blocks. Specifically, if a text block has many lines of text, and you align objects to the lines of text, they will not be aligned when printed. They will look aligned on the screen, even when magnified. However, they may be misaligned when printed

The problem can be duplicated as follows:

1. Create a text block with many lines of text
2. Add graphic objects, such as boxes, lines, arrows or bullets to some of the lines of text.
3. Print to a Postscript LaserWriter.

You'll notice that the text and graphic objects are not aligned on the printout. It will look as though the text has crept down slightly.
The only current workaround is to break up the text block into smaller text blocks, or print using 1.0v4.
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Claris CAD: Plotting Dashed Curves

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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You can plot dashed freehand lines from ClarisÊCAD with MacPlot Professional. What you do is this:

1. Color all the lines and shapes that ClarisÊCAD can't dash on its own with the same color (i.e. green).
2. Use MacPlot Pro to create a parameter file that will dash all green lines.
3. Plot

For more information, consult the MacPlot Professional manual.
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Claris Software: Bar Code Fonts & Bar Code Scanners

A listing of companies that manufacture bar code scanners and/or bar code software.

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FileMaker Pro, and other Claris applications are suitable for use in conjunction with various bar codes and scanners. The most common types of bar codes in use include:

- POSTNET: used to print for bulk mail
- UPC (Universal Product Code): retail stores
- Interleaved 2 of 5: industrial purposes, shipping containers
- Code 39 - popular because it contains all numbers, letters and some other characters.

Some of these bar codes translate characters directly, so that a simple font can be used. For example, there are public domain versions of the "Code39" bar code font which are available from user groups and bulletin boards. Other bar codes, however, need some sort of translation software.

Note: FileMaker Pro has no provision for special bar code scanner hardware. There are several bar code scanners on the market that enter the data just like it was typed on the keyboard. In order to connect a bar code scanner to FileMaker Pro for the Macintosh, the bar code scanner must connect through the ADB port. In order to connect a bar code scanner to FileMaker Pro for Windows, the bar code scanner must connect to the cable in between the keyboard and the computer. Neither FileMaker Pro for the Macintosh nor FileMaker Pro for Windows can access bar code scanners that enter data through the serial port on the computer.

Additionally, when using a bar code font, be sure that the font style for the field (or text object, as the case may be) is set to Plain Text.

Note: information about proper usage of postal bar codes can be obtained from the post office. This publication may also be on the Web at **http://www.usps.gov/**

Here are some companies that produce scanners and scanner/bar code software:

American Microsystems (Bar Code Scanners and Software)
2190 Regal Parkway, Euless, TX 76040
800-648-4452
817-571-9015
817-685-6232 (fax)
http://www.amltd.com

IBS Intelligent Barcode Systems, Inc. (Macintosh and PC Bar Code Scanners and Software)
16031 Kaplan Ave., City of Industry, CA 91744
800-765-2271
818-968-6265
818-968-5527 (fax)
http://www.barcodesystems.com

Metrologic Instruments, Inc. (DOS and Windows Bar Code Scanners)
Coles Rd at Rt 42, Blackwood, NJ 08012
800-ID-METRO
609-228-8100
609-228-6673
http://www.metrologic.com

Percon Incorporated (Macintosh and PC Bar Code Scanners)
1720 Willow Creek Circle, Suite 530, Eugene, OR 97402-9171
800-929-3221
541-344-1189
541-344-1399 (fax)
http://www.percon.com

Datapath Systems (ADB Compatible Scanners, Bar Code Fonts, & Software)
220 California Avenue, Suite 110, Palo Alto, CA 94306
(800) 988-1914
415-325-0379
415-325-1779 (fax)

http://www.inpath.com
info@inpath.com

Bear Rock Technologies (Mac, DOS and Windows Post Script Bar Code Fonts and Bar Code Scanners)
4140 Mother Lode Dr., Suite 100, Shingle Springs, CA 95682
(800) 232-7625
(916) 672-0244
(916) 672-1103 (fax)

Worthington Data Solutions (Windows Label software and Bar Code Scanners for Mac, Win)
(800) 345-4220
(408) 458-9938
(408) 458-9964 (fax)
(353) 1-6614-566 (Ireland phone #)

River City Grafix (Windows Bar Code fonts)
11765 West Avenue, Suite 321, San Antonio, TX 78216
(210) 496-5109
(210) 490-6544 (fax)

Rivers Edge (Windows Bar Code Fonts)
10902 Forest Summit, San Antonio, TX 78233
(210) 590-9528
(210) 656-8993 (fax)

Synex
692 Tenth St, Brooklyn NY 11215-4502
(718) 499-6293
(718) 768-3997 Fax
(800) 447-9639
Web: http://www.snx.com

Vendors of POSTNET postal fonts:
Azalea Software, Inc.
PO Box 16745, Seattle, WA 98116
206-932-6028
206-937-5919 (fax)

Barcodet

Barcodet 5.0 is a suite of 15 modules that allow you to process and print a variety of bar codes directly from within FileMaker Pro. No longer must you export data to standalone external programs that produce only static bar code images. Now you can generate all the bar codes you will ever need without ever leaving FileMaker.

For more information visit the publisher, Life $ucess Institute, at http://www.lifesuccess.org/
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TIFF Formats: Supported by TIFF XTND Translator

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Beginning with FileMaker Pro 1.0v1, Claris applications will ship with an XTND filter for TIFF (Tagged-Image Format) files. Although this "standard" was set by a committee consisting of Altsys, Aldus, and other industry leaders, quite a bit of variation has been introduced into the file format. The wide variety of possible formats causes us to focus on those programs which generate the most "standard" kinds of files. Here is a preliminary, partial listing of formats we will support via XTND.

IBM PC and Mac (all files must have a "type" signature of "TIFF")
1 Bit, 2 Bit, 4 Bit, 8 Bit, 24 Bit
ImageStudio
PhotoMac
Studio 8
AppleScan
MicroTek
Digital Darkroom
Greyview

Currently, the TIFF filter does NOT support
Compressed TIFF Files
HP ScanJet files

The design of the TIFF filter is modeled after the one used by Aldus for PageMaker and FreeHand. Thus, if your file can be opened in an Aldus product, you should be able to open it in our applications.
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Macintosh II: Outlined & Shadow Text are Transparent

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Early Macintosh computers (Plus, SE, Classic) displayed Outline and Shadow Text Styles as opaque. The inside of the letters was opaque rather than transparent. For example, if Outline Text was placed on top of a filled object (solid or patterned), you could not see through the letters.
Macintosh II and newer computers display Outline and Shadow Text Styles as transparent.

Macintosh II-class computers do not display Outline or Shadow Text Styles properly. The inside of the letters will be transparent rather than opaque. So, if you place Outline Text on top of a filled object (solid or patterned), you can see through the letters to the pattern underneath.

The image will print as opaque even though it may be displayed as transparent on screen.
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Macintosh IIci: The Price of Progress

The Macintosh IIci represented one of the most significant steps forward in the evolution of the Macintosh architecture since the introduction of the original Macintosh II. Whenever a product with as many significant architectural enhancements as the Macintosh IIci is introduced, incompatibilities are bound to be revealed.

This article has been archived and is no longer updated by Apple.
The Macintosh IIci was not only the first Macintosh with a higher clockspeed and built-in video, it was also the first system with 32 bit QuickDraw in ROM and the first system to utilize non-contiguous memory and the PMMU for memory addressing. These were all significant internal modifications, intended to strengthen the Macintosh architecture and provide even greater flexibility for future hardware and software developments.

The majority of the modifications that third-party developers had to make to support the Macintosh IIci were changes that were necessary to support future CPUs and future versions of the Macintosh operating system.

- Addressing changes necessary to support non-contiguous memory and the utilization of the PMMU were changes that would be required to run correctly with VM in System 7.0.

- 32-bit QuickDraw will be built into all future ROM's which offer color support.

- The Built-in video monitor identification scheme will be built into future CPUs and is also part of our new video cards.

- Changes to the ADB manager and the video configuration (i.e. gamma correction table) will both be included in future systems.

- And, the fact that Apple will design systems that run at greater than 16Mhz is obvious.

For more information, see the four-part article on Macintosh IIci compatibility problems.
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Claris CAD: Accelerator Cards and the SANE Math

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If you use an accelerator card, you may notice that entities such as boxes, circles & Dimensions drawn by hand or using the location bar will not be drawn correctly. For example try to draw the following box with the location bar. (1,-1 by 2,-2) what you will most likely see is a box drawn from .87,-.87 to 1.87,-1.87.

You can turn off SANE Math in most Accelerator cards by selecting the Control panel device and finding the correct check box to turn it off.

If you are using a Prodigy Control Panel device then choose "Off" next to "Sane/881"

You can turn off the SANE portion of the Prodigy CARD by selecting the Prodigy Control panel device and choosing "Off" next to "Sane /881." Unlike the Radius Accelerator you should not restart your machine. If you do you will need to go back into the control panel and turn it off again as the Prodigy board resets SANE when the Macintosh is first turned on.

Note: When you turn Off Sane /881 math will be slower but more accurate.
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MacPlot 1.2: Automatic Paper Feed

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When using the MacPlot 1.2 driver, you may notice that there is a automatic mode on the print dialog box that is grayed out. This function is only available for the 7550A and 7596A DM II.

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Claris CAD: Document Occupies Large Amount of Disk Space

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Sometimes, you may be surprised to discover that a Claris CAD document with few or no objects occupies a large amount of space on disk. This is because Claris CAD "remembers" recently deleted objects for the purposes of the Undo command. If you delete several objects from your drawing, save the file, then open the file, you will be able to choose the "Undo" command; all your objects will re-appear.

To permanently delete your objects, you may want to copy the objects into a new document and save the new document. Or, perform some other operation that will force the "undo" command to store something less dramatic. Simply drawing a line will put the line into the undo buffer and delete the previously stored information.
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DeltaGraph: Charts Paste in as Blank or Scaled Graphics

Using Select All and Copy to transfer a DeltaGraph chart can result in a blank objects also being copied. This results in a large object which may appear scaled or blank.

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When you select all and copy in DeltaGraph, a charting application, you may copy the ENTIRE page, not just the area of interest. This can particularly happen if you have deleted text, but not the text block which surrounds it. Delta Graph apparently does not delete this empty text block, even after saving the document.

MacWrite II/Pro
MacWrite II sees the object as a full page and tries to fit it into the space which youÕve allowed. If the space is too small, MacWrite II will attempt to scale it, blank space and all. If this occurs, try selecting just the chart you want to copy instead of using Select All. Alternatively, Select All and check for blank text boxes which appear as blank objects with handles (small black squares) around them. Delete any you find and try copying and pasting the chart again.

ClarisWorks
In ClarisWorks, a DeltaGraph chart will paste in as expected, but if you choose Ungroup Picture, the graphic disappears. The large blank object has moved to the front. Click outside the graphic to de-select everything. Then click over where the graphic appeared to try to select the blank object. Press the delete key. If this doesn't work, use the recommendations offered above for MacWrite. This problem may also happen with ClarisImpact.
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Macintosh IIci: Causes for IIci Incompatibilities (Part 1 of 4)

This is part one of a four part article detailing the changes which caused the compatibility problems the Macintosh IIci faced. A significant number of Macintosh IIci compatibility problems were related to the improvements outlined below. Keep in mind that the majority of applications were not affected by these changes and that most of those that were have been updated.

This article has been archived and is no longer updated by Apple.

Leading Causes for Macintosh IIci Incompatibilities

1) Non-contiguous memory

On all Macintosh systems prior to the Macintosh IIci physical memory is represented as one "contiguous" range of addresses. Despite the fact that memory is typically located in two separate banks with separate physical address ranges, these two ranges are presented as one "contiguous" range. The knitting together of bank A and bank B is taken care of by the memory controller. During startup the memory controller determines the amount of memory in bank A (i.e. 1MB or 4MB in case of Macintosh II) and then maps the starting address of the bank B range on top of the final address of the bank A range, which makes the two physical address ranges contiguous.

Making memory's physical addresses contiguous allows the contiguous logical memory map which is presented to software to be identical to the physical memory map. All Macintosh systems up to the Macintosh IIci utilized this 1:1 translation which means that starting at address 0, all logical and physical addresses are the same and an application knows where in physical memory an address is located.

On the Macintosh IIci the lowest physical address of bank B is fixed at physical address $0400 0000, regardless of where the highest physical address of bank A is located. This leaves a gap between the top of bank A and the bottom of bank B which is a condition referred to as non-contiguous.

The move to non-contiguous physical memory on the Macintosh IIci was made to reduce the clock cycles associated with address translation and provide greater flexibility when configuring the system. By making physical memory non contiguous you may have as many banks of memory as you like and you can put whatever density RAM in whichever bank you like.

Non-contiguous memory requires the use of the PMMU on the 68030. The PMMU performs a translation of logical to physical addresses which permits the two to be different. And, in fact on the Macintosh IIci they are different. The address ranges of the two RAM banks are made logically contiguous even though the physical address ranges of the two banks are not contiguous. The PMMU plays the role of a dispatcher. On the one side it is accepting logical address requests made by software. On the other side it is mapping these logical address requests to physical locations in RAM.

This means that the operating system must keep track of the physical location it assigns a particular logical address. It also means that an application no longer knows where a given logical address is located in physical memory. While this change did not have an impact on most developers, it did have an impact on Nubus master card developers.

A Nubus master card is any Nubus card which possesses the intelligence necessary to take over either Nubus or the CPU bus. Examples of Nubus master cards include communications co-processor cards (i.e. Apple's MCP card), high-end video overlay and graphics cards, and intelligent I/O

cards (i.e. DSP or SCSI DMA). One of the standard operations a Nubus master card performs is the reading and writing of data stored in the CPU's main memory.

When a Nubus master card wants to utilize main memory it must create a buffer within main memory, which it requests from the memory manager. This request specifies not only the size of the buffer but also that it be contiguous, non-cacheable and non-relocatable. In all Macintosh II systems before the Macintosh IIci, after the memory manager returned a logical address range that met these criteria the Nubus master card could immediately begin directly addressing physical memory. This was possible because in all designs up to the Macintosh IIci a given logical address range had an identical physical address range, which meant that a Nubus Master card could determine the location of the physical addresses by virtue of the logical address range it was provided.

With the Macintosh IIci design a Nubus master card must take some additional steps before it can begin accessing physical memory. The first step is the same, the card requests a contiguous, non-cacheable and non-relocatable chunk of memory from the memory manager, and in turn the memory manager will return a logical address range. However on a Macintosh IIci, because the logical addresses are not the same as the physical addresses the master must make two additional requests. First, it must request that in addition to the logical address range being contiguous, the physical address range must also be contiguous. Second, it must request the location of the physical address range. Only after these requests are returned may the Nubus master begin to access physical memory directly. These two additional steps meant that all Nubus master card developers were forced to re-write their drivers to work with the Macintosh IIci.

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MacDraw II: MaxPage PostScript Emulation Cartridge Won‘t Print

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The MaxPage PostScript Emulation Cartridge for the HP LaserJet IIP, from Pacific Data, will not print MacDraw documents. The documents go to the printer safely, but there is no output. There is no workaround at this time.
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Claris CAD 1.0v5: Paste Issue

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There has been a confirmed issue with Claris CAD 1.0v5. It occurs when you paste or try to do an import into Power Point 2.01 or Persuasion 2.0. In most cases, the machines will either freeze and the mouse will not move, or you will get a bomb message. This has been corrected in Claris CAD 2.0.

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MacPlot: Print Spooling

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Claris and MicroSpot have confirmed that SuperLaser Spool 2.0.2 is compatible with both MacPlot and MacPlot Professional. However, you may experience difficulties when Pattern/Line quality is set to Final. The amount of memory required by MacPlot to do "hidden line removal" is considerable and may exceed the SuperLaser Spool's default buffer setting. If you need to use Final quality, make sure that the print buffer is set to at least 1024K within LaserQueue.

Please note that this is the only print spooler that will spool from MacPlot.
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Macintosh IIci: Causes for IIci Incompatibilities (Part 2 of 4)

This is part two of a four part article detailing the changes which caused the compatibility problems the Macintosh IIci faced. A significant number of Macintosh IIci compatibility problems were related to the improvements outlined below. Keep in mind that the majority of applications were not affected by these changes and that most of those that were have been updated.

This article has been archived and is no longer updated by Apple.
Leading Causes for Macintosh IIci Incompatibilities (Con't)

2) Utilization of the PMMU - No invalid addresses

Another change related to the utilization of the PMMU in the Macintosh IIci memory addressing architecture is the rejection of invalid addresses. This is perhaps the most prevalent cause for software compatibility problems on the Macintosh IIci. As described above the PMMU plays a critical role in interfacing between logical and physical memory. As part of the process of translating logical to physical, the PMMU also evaluates the "validity" of the logical address requests it receives. An address is considered valid if it falls within the valid address range and the valid address range is determined by how much physical memory is available. A 2MB configuration has a 2MB valid address range and a 5Mb configuration has a 5MB valid address range. This is determined at startup, and the PMMU tables are set accordingly. If an application requests access to an address that lies outside of this range, the PMMU generates a bus error. That all sounds logical. So why should this cause a problem?

Because on previous systems invalid addresses were not identified. When an application requested access to an address it would go straight to RAM, which would decode whatever bits within the address it could and ignore the rest. For instance if you had 1MB of RAM installed, your valid address range would theoretically include all addresses up to 20 bits wide (2 to the 20th is 1024K), which means that memory would only be capable of decoding up to 20 bits of address information. Now let's say an application requests access to a 21 bit address that is beyond your 1 MB address range. On all systems up to the Macintosh IIci, RAM decodes the lowest 20 bits (ignoring the 21st bit) and grants access to an address within the valid address range. The fact that a bad address had been written was concealed. There is the potential for problems with this model if an application overwrites data stored in a particular address or it reads in bad data, but often the problem is never revealed.

In the case of a Macintosh IIci this errant behavior is always revealed and therefore a number of applications, CDEVs, INITs, and drivers that worked fine up until the Macintosh IIci suddenly broke. Embarrassingly enough, this change revealed problems with two internally developed Apple products, version 3.0 of the CD-ROM driver and version 2.3 of MacTerminal.

The majority of developers who have encountered this problem are aware of it and have either already made the corrections or are in the process of making corrections necessary to make their applications Macintosh IIci compatible. However this problem, which is difficult to diagnose, took many developers by surprise.

IMPORTANT NOTE: It is important to understand that both the move to non-contiguous memory and the utilization of the PMMU to capture invalid addresses presaged changes that were required for compatibility with System 7.0 and virtual memory.

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TA41413_Macintosh_IIci_Causes_for_IIci_Incompatibilities_Part_of__(TIL05431).pdf

Claris CAD: Claris CAD Font and Undefined Characters

When I use the Claris CAD Font I see lines on the screen. I know that these characters should be symbols such as the degree symbol or the plus minus character. Why do these not show up?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Claris CAD font does not define these symbols in versions prior to the one that shipped with Claris CAD 2.0v2.

Published Date: Feb 18, 2012

Claris CAD: Moving the Gravity Point to Another Monitor

When I try to move the gravity point (for the floaters) from my start-up monitor to a secondary monitor, I cannot move it higher then a certain point.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The gravity point cannot be moved higher then the top of the start-up monitor. This can be changed, however, by selecting "Monitors" from the Control Panel. There you'll find a window with icons of the monitors in use. The startup monitor is monitor #1. If the icon for the start up monitor is moved so that it's located higher than the icon for the second monitor, you'll be able to move the gravity point to anywhere on the secondary monitor.

Published Date: Feb 18, 2012

Claris CAD: Selection Filter Does Not Work For Colors

Why does the selection filter not work for colors?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The selection filter in Claris CAD 2.0 will find pen colors. The selection filter will not find fill patterns with specific colors. Also, when using the selection filter, you must have the first 9 colors in the patterns bar set in the following order:

Transparent
White
Black
Red
Green
Blue
Yellow
Cyan
Magenta

If the first 9 colors are not set in this order, you will get an error message when trying to use color in the selection filter.
Published Date: Feb 18, 2012

Claris CAD: Tools Palette doesn‘t Pop Up On Current Monitor

When using Claris CAD 2.0 the Tools & Modifier pop-ups appear on my start-up monitor although my document is on another screen. How can I fix this problem?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Tools & Modifier pop-ups will always appear on the start up monitor, but the location of the document at start up can be changed by selecting "Monitors" from the Control Panel. When you have two monitors connected to your computer, both their icons will appear in the "Monitors" window. The start up monitor is shown as #1 and the second monitor is shown as #2.

If you move the icon for the start up monitor (#1) so that it's the monitor on the left, the Tools & Modifier pop-ups will appear on the same screen as the document when you launch Claris CAD. Once you've started, if you want to drag a Claris CAD 2.0 document to the right monitor, you can.

This is corrected in Claris CAD 2.0.

Published Date: Feb 18, 2012

Claris CAD: Terms Defined

These terms relate the technique used to display an object.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Bird's Eye: A bird's eye view is a perspective drawing taken from above the center, looking down.

Elevation: If you have an elevation of a wall, it would be drawn as though you were standing directly in front of the center of the wall.

Exploded View: An exploded view is a drawing that shows all of the components of an assembly and how they fit together. Anyone who has assembled a model car or airplane has worked with exploded view drawings.

Orthogonal: An orthographic projection is a drawing that shows in a single drawing, what the object or assembly would look like from three angles (usually front, side and top) by the use of outlines, dashed lines and projection lines.

Perspective: In a perspective view, you would view the wall at an angle, with lines showing the depth of the wall and indicating a vanishing point.

Projection Lines: Projection lines are dashed lines, ending in arrows, which indicate the part of the projected view as it relates to the ÔrealÕ view of the object.

Published Date: Feb 18, 2012

Claris CAD: Custom Line Types Have Disappeared

I've added custom line types to my Claris CAD 2.0 document and they no longer appear in the floating window. What has happened?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When you change the drawing standard that you're using in Claris CAD 2.0. (such as ANSI to DIN), Claris CAD will remove the custom lines styles from the line types menu. You should also notice that any changes that you have made to the original line types menu will be reset to the "Standard" defaults of Claris CAD 2.0.

Those standards have their own set of standard pen, arrowhead and line styles. When you tell ClarisÊCAD that you want to use those standards, it will display on the standard styles.

If you want to use the standards and have your own custom styles, select the standard before you specify the custom style that you want.
Published Date: Feb 18, 2012

Claris CAD: What Are Fillets and Chamfers?

What are fillets and chamfers?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
These terms come from wood and metal working terms. An edge that is cut at a 45 angle is said to be chamfered. A corner that is smoothed until it is rounded is filleted.

As an example: Let's say that you are making table legs out of wood. Perfectly square table legs might look cheaply finished, so a common detail is to cut the sharp edges of the legs at a 45 angle. The name of that cut would be a chamfer.

If you were making a part that had a sharp edge, you might fillet the edge so that is not sharp.

Published Date: Feb 18, 2012

Claris CAD: Installer Rejects Disks; Won‘t Install

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

You may encounter difficulties if you use the Claris CAD Installer from of a copied set of disks. If the installer repeatedly asks for a disk and ejects it when inserted, the disk may not have been named correctly when the user copied it.

To use copied disks with the Installer, the disks must have the exact same name as the original disks:

1) Claris CAD Program 1
2) Claris CAD Program 2
3) Claris CAD Utilities
4) Claris CAD Help

Extra spaces will make a difference. The match must be exact.

Published Date: Feb 18, 2012

Claris CAD: "Out of Memory" errors

There are several reasons that Claris CAD may crash or not open files with an "Out of Memory" error.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Converting a Claris CAD 1.0 document to version 2.0 v1 may result in an out of memory error due to an incorrect parameter setting in some CAD 1.0 documents. Claris CAD version 2.0v2 corrects this problem.

Claris CAD users frequently have high-end equipment or special monitors which require more memory than a standard Macintosh set-up. Items that require extra memory include large monochrome or gray-scale monitors, color monitors (the most frequent cause of out of memory messages), extra monitors, or having the monitor set to many colors. Since Claris CAD only uses eight colors, having the monitor set to 256 or higher merely wastes memory. Since there is no setting for 8 colors, the optimum setting is 16 colors.

There may also be insufficient memory to open a given file. For example, if a Macintosh has only two megabytes of memory, a color monitor, and you are trying to open and large file while another file is open, there may not be sufficient RAM for Claris CAD to open the file.

Another cause of out of memory errors is related to the amount of memory taken up by the System software. If you have many fonts and desk accessories, these can use up a lot of memory. Certain INIT's, such as those which add color to icons, also use a lot of memory. INIT's or CDEVs that control the system's sounds frequently use a lot of memory. Check the "About the Finder" box to check the total memory versus the system size.

Corrupt documents can also cause out of memory errors. If the program behaves well but won't open a particular file, it may be that the document is corrupt. While it is sometimes possible to recover a corrupt Claris CAD file, the best idea is usually to revert to a back up copy. You can also try translating the file with a utility like the Claris Graphics Translator. Translate the file to another format, then translate it back to Claris CAD .
Published Date: Feb 18, 2012

Macintosh IIci: Causes for IIci Incompatibilities (Part 3 of 4)

This is part three of a four part article detailing the changes which caused the compatibility problems the Macintosh IIci faced. A significant number of Macintosh IIci compatibility problems were related to the improvements outlined below. Keep in mind that the majority of applications were not affected by these changes and that most of those that were have been updated.

This article has been archived and is no longer updated by Apple.

Leading Causes for Macintosh IIci Incompatibilities (Con't)

3) 32 bit QuickDraw in ROM

The Macintosh IIci is the first CPU to incorporate 32-bit QuickDraw in ROM. With previous systems users had the option of installing 32-bit QuickDraw in RAM through the addition of an INIT file to their system folder. Although 32-bit QuickDraw was engineered for high compatibility with the original QuickDraw and Color QuickDraw programmer's interfaces, certain programming practices could lead to problems with this new software. Users of the 32-bit QuickDraw INIT could optionally deactivate the software if there proved to be a compatibility problem. Because 32-bit QuickDraw is in ROM on the Macintosh IIci, it cannot be defeated.

- Video card problems

Generally, existing video cards have no compatibility problems with 32-bit QuickDraw. However, newer cards designed to take advantage of 32- bit QuickDraw's features such as 16 and 32-bit direct color pixels and large frame buffers need to follow a special initialization sequence at startup to allow the card's special features to be activated after the 32-bit QuickDraw INIT has been loaded. On the Macintosh IIci, 32-bit QuickDraw (and the new Slot Manager) are in ROM, so a simpler, but different, startup sequence needs to be executed. Some third-party developers unaware of this alternate sequence were incompatible with the Macintosh IIci when it was first introduced.

- Software Problem

One major change in 32-bit QuickDraw is that the frame buffer memory is always accessed in 32-bit addressing mode rather than the 24-bit addressing mode used by previous versions of QuickDraw. This allows the applications to access frame buffers up to 16MB in length, as opposed to 1MB with non-32-bit versions of color QuickDraw. This additional frame buffer address space is becoming increasingly important as the use of 24-bit color becomes more prevalent.

For a user to benefit from this 32-bit addressing mode they must install a video card capable of taking advantage of it. In turn, a video card possessing these capabilities must test the system to determine if 32-bit QuickDraw is present or not. If it is present then 32-bit QuickDraw capabilities of the card will be enabled, which means, among other things, the card will expect to be accessed in a 32-bit addressing mode. If 32-bit QD is not present most cards will default to the 24-bit addressing mode. In this way, a new card possesses the flexibility to adjust to whichever QuickDraw environment it finds itself in.

In a system where 32-bit QuickDraw is present and there is a 32-bit QuickDraw capable card installed, there is the potential for incompatibilities with certain applications that directly address, (i.e. bypassing QuickDraw) the video frame buffer. A number of paint applications fall into this category. Previously, these applications could directly access all frame buffers in 24-bit addressing mode and know that

they would work. However if an application is running on a system with 32-bit QD installed and a 32-bit QuickDraw capable video card is also installed and the application attempts to directly address the frame buffer a problem occurs. The application is attempting to access a 24-bit address in 32-bit addressing environment. In this case, the address request will be redirected to the 24-bit alias of the 32-bit buffer and you end up with garbled screen data or a system that hangs.

Keep in mind this situation can occur on any machine with 32-bit Quickdraw and a 32- bit QuickDraw capable card installed. The difference is that on a machine with 32-bit QuickDraw as an INIT in RAM, the INIT can be deactivated and the system will revert to 24-bit addressing for the frame buffer (although it will lose new features). Because on a Macintosh IIci, 32-Bit QuickDraw is in ROM, it cannot be defeated, so these applications will not work correctly, and require revision. Once again, this problem occurs only with new video cards that expect 32-bit QuickDraw.

IMPORTANT NOTE: The revision to HyperCard from 1.2.2 to 1.2.5 was required to address this issue.

4) Built-in video

One of the features of the Macintosh IIci's built-in video design is the fact that it is self configuring, which means that all the user has to do is plug the monitor into the video port and the system automatically recognizes what monitor is attached and configures itself accordingly. Offering this feature required that there be some type of monitor identification scheme included in the design. The scheme used in the Macintosh IIci is to designate three of the 15 pins within the video connector for monitor identification. This gives the system a 3 bit value (3 pins pulled high or low, where high = 1 and low = 0) for identifying up to 8 different conditions, (7 different monitors + 1 no-monitor condition).

It is significant to note that this scheme originated with the introduction of the revised 4*8 bit video card introduced in the spring of 1989. It is also important to note that it is utilized on both the 8*24 and 8*24GC cards, and in the future it will be utilized in all future systems which incorporate built-in video and in all future video card designs from Apple.

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MacDraw II: Drawing Size Shows Only One Solid White Square

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you boot up with a plain system without a print driver you'll notice that when you select Drawing Size, you'll see only one solid white square. You will not see the divisions of the page breaks. MacDraw II needs a printer to reference to in order to set page breaks.

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Claris CAD: Generic Icons

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in Claris CAD 2.0v2.

Sometimes, Claris CAD 2.0v1 and related files will appear as generic icons on the desktop.

The problem should occur only under the following conditions:

1) 1.0 remains on the hard disk after 2.0 is installed, and;
2) 1.0 is closer to the system than 2.0.

In other words, if the system finds 1.0 before it finds 2.0v1 upon booting or installing 2.0v1 it will assign the 1.0 icons to the 2.0v1 files, since they have the same creator type. Unfortunately, there are fewer icons for 1.0 than for 2.0v1.

To remedy the problem (if you insist on keeping 1.0 on the hard disk) is to put 1.0 one folder deeper than 2.0v1 and restart or rebuild the old desktop. It may be necessary to rebuild the desktop more than once.
Published Date: Feb 18, 2012

Claris CAD: Printing Rotated Text To An ImageWriter Using ATM

I'm printing to an ImageWriter I from Claris CAD 2.0 using ATM. The text that I've rotated does not print as heavy as text that's vertical on the page. This didn't happen in Claris CAD 1.0.x. Why is this?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

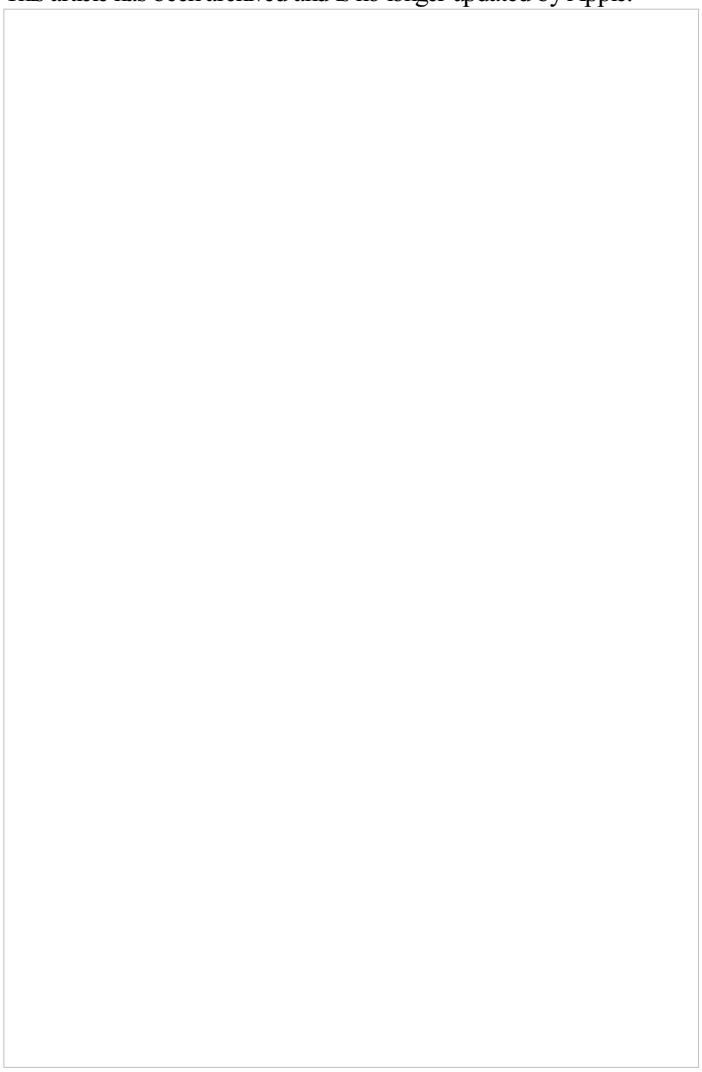
This article has been archived and is no longer updated by Apple.
This printing problem will only occur when printing to an original ImageWriter printer. At this time, we suggest that you print to another printer for the best quality printout.
Published Date: Feb 18, 2012

Claris CAD: Documentation / Publications Error

On pages 6-7 of the Claris CAD "Getting Started" manual it says that a document named "8 Color Stationery" can be found on the Claris CAD Program Disk. This document does not seem to be on any of the Claris CAD 2.0 diskettes. Where can I find this document?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.



The Claris CAD manual was misprinted. You can easily create this document for your color monitor system by following these steps:

1. Open Claris CAD 2.0 and select "Show patterns" from the Layout menu.
2. Select "Patterns..." from the Layout menu.
3. Click on "Add Colors."
4. If you would like to add other color patterns then refer to the Claris CAD users guide.
5. Click on OK.
6. Select Save As on the file menu.
7. Click on "Stationery" as the file type.
8. Type in the name "Claris CAD Options".
9. Navigate to your System Folder and click on Save.

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Claris CAD: System Bombs When Translating DXF into CGT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue fixed in CGT 1.1

When translating a DXF file through CGT to another file format you may get a bomb. This may occur when the file is saved from a program that can save an "objects only file" or an "entities only file." You can tell if the file is an "entities only" file if you open the file with a text editor and the first four lines start with:

0
Section
2
Entities

If this is the case do a find for the word "Insert." If an insert exists within the file, then the behavior may be caused by the following:

1. The insert that was saved out refers to a block or library object that should have been saved in an area called "blocks" in the DXF file file.

2. If the software which saved the DXF file did not save out the blocks section, then the file is saved out incorrectly. You will find this to be true when an Auto CAD user saves a DXF file using the "entities" option.

Published Date: Feb 18, 2012

Claris CAD 2.0, MacDraw Pro: Rodime Cobra Series Bombing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This problem is fixed with version 1.11 of the Rodime Cobra Utilities software

There is an issue with the Rodime Utilities software that causes Claris CAD 2.0 or MacDraw Pro to bomb with an id=03 when users access the Preferences menu. This only occurs with Rodime Cobra Series drives formatted with versions 1.03,1.09 or 1.10 of the Rodime Utilities. Rodime has acknowledged this and is working on a fix for it (the fix will probably be a new version 1.11 of the Rodime Utilities).

In the meantime there is a workaround: Launch the Rodime Utilities program and choose the correct disk drive on the SCSI bus (there will be a graphic for each drive on the SCSI bus). Click the Update button. A dialog box will appear stating that you are about to over-write the existing driver, and you will be given three options: Help, Okay and Cancel. Don't choose any of these options. Instead, type "Shift-N" and wait for the next dialog box which states that the changes will take effect after you restart. Click okay to exit out of this window, and each subsequent window. Restart the Macintosh.

The issue lies in the way Rodime Utilities is allocating memory. Apparently it conflicts with the way Claris CAD 2.0, MacDraw Pro and some other applications allocate memory. "Shift-N" apparently re-writes the driver differently and alleviates the conflict. The behavior only occurs with the Cobra Series drives. If users have further questions, have them contact Rodime at 407 994-5585.

Published Date: Feb 18, 2012

Claris CAD: Dimension is Incorrect

I've used the Location Bar or the Info window to designate the Length, Width or Height of an object. When I dimension the object, the dimension comes out incorrectly.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This is a known issue with Claris CAD 2.0v1. It happens only on some ruler settings. There is an issue of rounding the numbers correctly to the number of digits of precision that you are using. There are two workarounds.

1. If you have a ruler set at something like 1 = 10 and you are showing 5 digits of precision, change the ruler to .1 = 1.

2. Display less precision.

This is fixed in 2.0v2.

If you are using 2.0v2 or later and still have difficulties with incorrect dimensions, there is another known issue which may be the cause. Some CPU accelerator cards come with INITs which can intercept numeric calculation calls from Claris CAD to Apple's SANE code. Contact the manufacturer of your accelerator card for more information about this compatibility issue.
Published Date: Feb 18, 2012

Claris CAD: Entries Show As Multiples Of Twelve

When I type in a number in the following locations:

Object ID field
Percent Modifier field
Linear Duplicate
Polar Duplicate

my number is multiplied by 12.

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This article has been archived and is no longer updated by Apple.
This is fixed in Claris CAD 2.0v2.

This is a known issue with Claris CAD 2.0v1. There are three workarounds. It occurs when you have the following types of rulers set:

Inch = Foot
Centimeter = Foot
Millimeter = Foot

and you have set Location Entry: Feet 2.5 = 2' 6" in Preferences.

1. You could leave all settings as is and then divide by 1. An example: If you wanted the Object ID to be 12 you would type:

12/1 in the Object ID field.

You would type in the number, divided by one in any box that you are having problems with.

2. You could use the Location Entry feature that says Location Entry: Inch 2.5 = 2 1/2 instead of Location Entry:Feet 2.5 = 2' 6"

3. You could use another ruler setting that doesn't use a scale which uses feet.

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Macintosh IIci: Causes for IIci Incompatibilities (Part 4 of 4)

This is part four of a four part article detailing the changes which caused the compatibility problems the Macintosh IIci faced. A significant number of Macintosh IIci compatibility problems were related to the improvements outlined below. Keep in mind that the majority of applications were not affected by these changes and that most of those that were have been updated.

This article has been archived and is no longer updated by Apple.

Leading Causes for Macintosh IIci Incompatibilities (Con't)

5) ADB manager

In an effort to reinforce the ADB standard, protocols surrounding the polling of ADB devices were more explicitly defined. Clarifying the rules surrounding the polling process revealed the fact that certain developers had made false assumptions. This especially affected developers using an ADB hardware lock for copy protection. As it turns out there was really only one third-party vendor affected by this change. However the impact was magnified because this one developer sold their lock to a number of third-party software developers who include the ADB lock as a standard part of their application. Once the problem was diagnosed, Apple worked with the developer of the ADB lock on a solution.

6) 25Mhz Clock Speed - "Too fast"

Certain applications were designed around the assumption that a call to a particular chip or location in memory would be returned within a given interval of time. Those developers who made this assumption ensured that their product would break when Apple introduced a higher clock speed system. The Macintosh IIci turned out to be that higher speed system. This change affected only a small number of developers who had instituted timing-dependent copy protection schemes and developers who designed timing-dependent games.

7) Gamma correction

Since its introduction, all Macintosh II systems perform color correction, commonly called "gamma correction", on video displays to compensate for non-linearity in the monitor's phosphor response. The effect of a proper gamma table is to make a monitor appear brighter and colors more vivid. Theoretically each brand of monitor has its own unique phosphor composition and therefore each monitor should have its own "device specific" gamma table.

The fact is that most third-party vendors do not provide a gamma correction table data with their monitor, so machines released prior to the Macintosh IIci set all displays to the gamma correction designed for the Macintosh Hi-Res RGB Display. While this was not really correct, it nonetheless ensured that all displays had at least some form of gamma correction.

In order to encourage third parties to offer their own gamma correction information, the new video card architecture (incorporated into the Macintosh IIci ROM) supports improved methods of carrying this device-specific data with each card. As a result of this change the Macintosh IIci scans for gamma table data in each video card and sets each card with its own customized gamma tables. In many cases, third-party cards do not properly initialize their own hardware, expecting to be set with the Hi-Res RGB gamma table. As a result, displays connected to these cards are left uncorrected, which means that they tend to look significantly darker when connected to the Macintosh IIci.

As an aid to improving the appearance of old cards on the Macintosh IIci, Developer Technical Support made available source code to an INIT that allowed developers to load the appropriate gamma table information.

8) Problems related to bugs in the Macintosh IIci ROM

In addition to those problems that we were aware of, there were a number of unanticipated problems that were discovered in the Macintosh IIci ROM. These changes have been corrected through bug fixes incorporated into the 6.0.5 release of system software.

- Palette Manager

There was a patch file for the Palette Manager which failed to be included in the final Macintosh IIci ROM. This patch file helps to correct a minor problem in the 32-bit color QuickDraw code built into the Macintosh IIci ROM, which determines the color palette for an application when it is opened. By not including this patch, certain paint and image processing applications ended up displaying colors incorrectly.

- Zero-width Characters

This is a bug which was inadvertently introduced in the Macintosh IIci ROM. It causes zero-width characters to not be drawn. Zero-width characters include characters used for musical notation, foreign languages (i.e. Kanji and Arabic) and mathematical notation. This caused particular problems for developers doing musical typesetting and some mathematics programs.

- Serial Driver

Due to an anomaly in the serial driver code, when a Macintosh IIci is being used with a modem and a break character is returned during a communications session, the system will crash or hang. This does not occur frequently, but does occasionally occur when a user is engaged in a session with one of the remote information services.

- TextEdit

There were a handful of bugs in TextEdit which were incorporated in the Macintosh IIci ROM. The majority of these problems are cosmetic and do not cause the system to fail. TextEdit is used by a number of applications including AppleLink and HyperCard. In addition, TextEdit is used in all dialog boxes that appear on your screen.

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MacPlot: Using Adobe Type Manager

MacDraw II and MacProject II can benefit from using ATM when Text Quality is set to Final. Both of these programs send information to the plotter at 72 dpi.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Claris CAD 1.0v3 and higher attempt to utilize the full accuracy of the plotter and will send information at a resolution which matches the capabilities of the configured plotter. This can vary from 254 to 2032 dpi. Unfortunately, MacPlot is unable to benefit from ATM when printing at this resolution. Instead it will scale the largest size of the font you are using. As a result, your Postscript fonts will be smoothed on screen but will plot with jaggies.

Note: Restricting output to 72 dpi from MacPlot Professional will not allow ATM to smooth your plotted text. Claris CAD would need to send information to MacPlot at a lower resolution for ATM to have an affect.

MacPlot Professional v3.7.4 addresses this issue.
Published Date: Feb 18, 2012

TA41434_Claris_CAD_Rapid_Design_Sampler.pdf

Claris CAD: Rapid Design Sampler

On Page 9 of the Claris CAD "Getting Started" manual it says that a document called "Rapid Design Sampler" can be found on the Claris CAD Program Disk. This document does not seem to be on any of the Claris CAD 2.0 diskettes. Where can I find this document?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This document is a sample library created by Berol USA. If you are interested in obtaining a sample library, please contact them at:

Berol USA
P.O. Box 990
San Fernando, CA 91340
(818)365-8661
(800)323-2454 (orders)
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Claris CAD: Use of Location Bar Can Cause Crashes

In Claris CAD 2.0v1, if an object is drawn through the Location bar (the bar of "x", "Y", "H", "V","L","A" parameters, etc. at the bottom of the screen), sometimes guidelines are left behind and the system crashes, lock up, bombs or gives and unexpectedly quit message.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This is especially common on Macintosh IIfx, si and certain other 68030 Macintosh computers. However, this will still occur with other model computers, just not as readily. Any users with the 68030 computers that use the location bar should use a newer version of Claris CAD.

The easiest way to reproduce this problem is to:
-Select the Rectangle tool.
-Click and drag in the document.
-While dragging, type H and release the mouse.
-Type a value, tab to V and type another value.
- Click in the document to enter the typed values.

Guidelines will be locked in the document and almost any subsequent action will cause the system to bomb.

Note: This has been fixed in 2.0v2.
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MacPlot: Paper Sizes by Plotter

This article lists the paper sizes for most common plotters.

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This article has been archived and is no longer updated by Apple.

The * symbol means the plotter supports this size and that the MacPlot supports this size. The - means that the paper size is available to the plotter but not supported by our version of MacPlot but may be supported by the professional version or by Plottergeist, another plotter driver.

	ANSI					ARCH.					METRIC						
HP Plotter	A	B	C	D	E	A	B	C	D	E	A4	A3	A2	A1	A0	Other	Expand
7440A ColorPro	*										*						
7475A	*	*									*	*					
7550A	*	*									*	*					
7570A DraftPro			*	*				*	*				*	*			X
7580B	*	*	*	*				*			*	*	*	*			X
7585B	*	*	*	*	*			*			*	*	*	*	*		X
7586B	*	*	*	*	*			*			*	*	*	*	*	*36" Roll	X
7595A DM I	*	*	*	*	*		-	-	-		*	*	*	*	*		X
7596A DM II	*	*	*	*	*		-	-	-		*	*	*	*	*	*36" Roll	X

	ANSI					ARCH.					METRIC						
HI Plotter	A	B	C	D	E	A	B	C	D	E	A4	A3	A2	A1	A0	Other	Expand
DMP 29	*	*									*	*					
DMP 40	*	*									*	*					
DMP 41			*	*													
DMP 42								*	*				*	*			
DMP 51/51MP			*	*													
DMP 52/52MP								*	*				*	*		*Arch-C 001/2	
DMP 56A/56A-MP	-	-	*	*	*			*	*	*	*	*	*	*	*	*A0 Oversize	X
PC 595A	*																
PC 695A	*	*															

* Indicates MacPlot Supported Sizes

Note: Neither MacPlot 1.2 nor MacPlot Professional can take advantage of expanded page sizes.

Non-Supported Plotters

	ANSI					ARCH.					METRIC						
HP Plotter	A	B	C	D	E	A	B	C	D	E	A4	A3	A2	A1	A0	Other	Expand
7575A DraftPro DXL	-	-	-	-		-	-	-	-		-	-	-	-			X
7576A DraftPro EXL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		X
7595B DM SX	-	-	-	-	-			-	-	-	-	-	-	-	-	-Arch.30x42	X
7596B DM RX	-	-	-	-	-			-	-	-	-	-	-	-	-	-Arch.30x42	X
7599A DM MX	-	-	-	-	-			-	-	-	-	-	-	-	-	-Arch.30x42	X

	ANSI					ARCH.					METRIC						
HI Plotter	A	B	C	D	E	A	B	C	D	E	A4	A3	A2	A1	A0	Other	Expand
HI ImageMaker	-	-									-	-					
DMP 56C	-	-	-	-	-			-	-	-	-	-	-	-	-	-Arch.30x42	X
DMP 61/61MP/61DL	-	-	-	-	-			-	-	-	-	-	-	-	-	-Arch.30x42	X
DMP 62/62MP/62DL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-Arch.30x42	X

Published Date: Feb 18, 2012

MacDraw II: Limitcheck Error When Printing

When printing to a LaserWriter or other Postscript printer, you may see the following alert: "Error:_____ Offending command__ " with the possible additional word "limitcheck". When this occurs, it is usually because the document contains polygons or freehands that have more vertices than can be imaged by the printer. This frequently occurs when printing clip art of maps, where the objects have been filled with a pattern or color. The maximum number of printable vertices is fewer for filled objects.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
What to do:

1) Determine which polygon or freehand object(s) may be causing the behavior. In MacDraw II, this can be done by trial and error: by deleting some polygons, then reprinting. If printing is successful, one of the deleted objects is causing the behavior. Refer to step #2 below. In MacDraw Pro, it is easier to determine the number of vertices of a polygon or freehand. To do so, select Show Size from the View menu. Click on a polygon or freehand. The number of vertices is displayed in the Show Size bar at the bottom of the window. Refer to page A6 in the MacDraw Pro User's Guide to see the maximum number of vertices per object that can be printed to a Postscript printer. If you locate a polygon or freehand that appears to have too many vertices, try deleting the object, then reprinting. If printing is successful, the deleted object may be causing the behavior. Refer to step #2 below.
2) Try one of the following actions to print successfully:
- Redraw the polygon or freehand as two or more adjacent polygons, each with fewer vertices.
- Edit the polygon or freehand to reduce the number of vertices.
- Smooth the polygon or freehand, which will also reduce the number of vertices. (Freehands in MacDraw II are automatically smoothed).
- Remove any fill pattern or color

3) (MacDraw II only) Try printing the file using MacDraw II 1.0v4 or MacDraw Pro.

4) Try printing the file to a laser printer with more RAM, or to a QuickDraw printer.

Why this happens:

1) The laser printer may running out of RAM imaging the polygon. Some printers have more memory than others. So, it is possible to create objects that can't be printed by some printers.

2) A polygon may exceed the limitations of the Postscript interpreter in the laser printer or of the LaserWriter driver itself. Most versions of Postscript have a hard-coded limitation of 1500 vertices per polygon (750 for filled polygons, fewer for filled and smoothed polygons). Due to the way polygons are printed from MacDraw II, the maximum number of printable vertices per polygon is about 512 for an unfilled polygon, 256 for a filled polygon.
Published Date: Feb 18, 2012

Claris CAD: Wrong Document Printed at Print Time

When I print to my LaserWriter from Claris CAD 2.0, the wrong document sometimes prints. What am I doing wrong?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Don't touch the mouse when you print.

Here's why: When you have multiple documents open, Claris CAD will print the window that is active just before the driver starts printing. If you have chosen Print from the "File" menu and in between the dialog boxes you accidentally click on another document, it will print the document that you have selected.

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Claris CAD 2.0: Conflicts With DiskTop 4.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A customer reported conflicts between Claris CAD 2.0 and DiskTop 4.0. DiskTop is a desktop launcher utility from CE Software. The issues involve this product and the Claris CAD 2.0 command key equivalents.

DiskTop comes with an INIT package called CE tools and another called DiskTop extras. With the DiskTop extras installed, you will see a menu just above the DA list and below "About the Finder". If you select the item DiskTop, and launch it, a menu comes up which allows you designate command key equivalents for GOfer, for example, Command-Shift-G. Command-Shift-G will intercept the Command-Shift-G for the Claris CAD Ungroup command, causing conflicts.

Solution: Undefine the hot-key combination or define it as something else which will not conflict with Claris CAD.
Published Date: Feb 18, 2012

MacPlot: DIP Switch Settings for the HI DMP 29

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

```
Model: DMP 29  Baud Rate: 9600  Stop Bits: 2  Parity: None  Paper: US
                          0   1
                 Baud | OFF    - S1
                      |
                      |     ON - S2
                      |
                      |     ON - S3
                      |
               Parity | OFF    - S4
                      |
                      | OFF    - S5
                      |
                    0 | OFF    - S6
                      |
           Inch/Cent  | OFF    - S7
                      |
         Pass-Through | OFF    - S8
                          0   1
```

Published Date: Feb 18, 2012

MacPlot: DIP Switch Settings for the HI PC 595A

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

```
Model: PC 595A  Baud Rate: 9600  Stop Bits: 2  Parity: None
                             0   1
                        ON - S1
                        ON - S2
                        ON - S3
                       OFF - S4
                        ON - S5
                      OFF  - S6
                             0   1
```

Published Date: Feb 18, 2012

MacPlot: DIP Switch Settings for the HI PC 695A

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Model: PC 695A Baud Rate: 9600 Stop Bits: 2 Parity: None

```
                      0   1
                          ON - S1

                     OFF      - S2

                     OFF      - S3

                     OFF      - S4

                     OFF      - S5

                          ON - S6
                      0   1
```

Published Date: Feb 18, 2012

MacPlot: DIP Switch Settings for the HP 7440A ColorPro

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

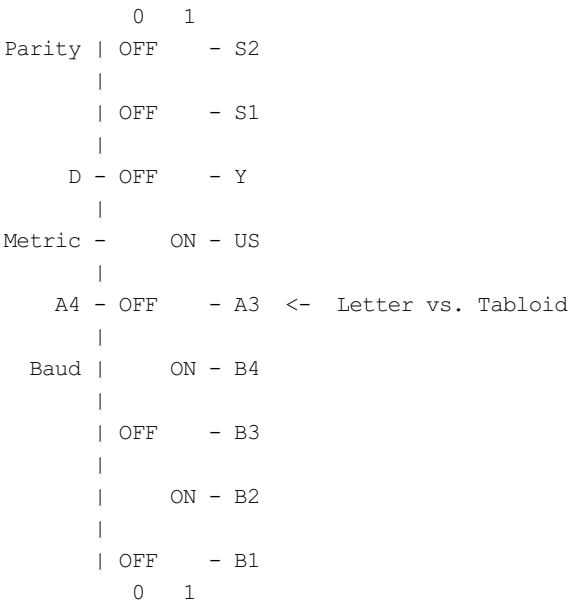
```
Model: 7440A  Baud Rate: 9600  Stop Bits: 2  Parity: None  Paper: US


                      0   1
           Parity | OFF    - S2
                      |
                      | OFF    - S1
                      |
            A4 -     ON - US  <-  Metric vs. US paper sizes
                      |
           Baud |     ON - B4
                      |
                      | OFF    - B3
                      |
                      |     ON - B2
                      |
                      | OFF    - B1
                        0   1
```

Published Date: Feb 18, 2012

MacPlot: DIP Switch Settings for the HP 7475A

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Model: 7475A Baud Rate: 9600 Stop Bits: 2 Parity: None Paper: US



Published Date: Feb 18, 2012

MacPlot: DIP Switch Settings for the HP 7570A DraftPro

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

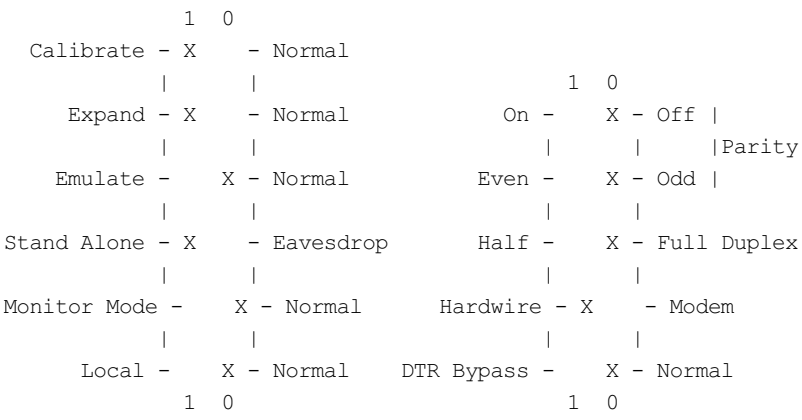
Model: 7570A DraftPro Baud Rate: 9600 Stop Bits: 2 Parity: None

Published Date: Feb 18, 2012

MacPlot: DIP Switch Settings for the HP 7580 Series

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Models: 7580B,7585B,7586B Baud Rate: 9600 Stop Bits: 2 Parity: None



Note: If this configuration doesn't work, set Expand Off.

Published Date: Feb 18, 2012

MacPlot: Soft Settings for the HI DMP 40

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Model: DMP 40 Baud Rate: 9600 Stop Bits: 2

This plotter doesn't require configuration.
Published Date: Feb 18, 2012

MacPlot: Soft Settings for HI DMP 41, 42, 51, 51MP, 52, 52MP, 56, 56MP

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Models: DMP 41,DMP 42,DMP 51,DMP 51 MP,DMP 52,DMP 52 MP,DMP 56A,DMP 56A MP

Baud Rate: 9600	Bits per Character: 7, Bit 8=0
Stop Bits: 2	UART Parity: None
Parity: None	Handshake: Toggle

All HI plotters require a female to female adapter (gender changer). Make sure that this adapter doesn't switch pins 2 and 3.

Published Date: Feb 18, 2012

MacPlot: Soft Settings for the HP 7595A DM I and HP 7596A DMII

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

```
Models: 7595A,7596A                    Data Flow: Remote, Stand Alone
Baud Rate:  9600                           Bypass: Off
Stop Bits:  2                           Handshake: Hardwire, Direct
                                          Duplex: Full
Note: You can attain the proper           Parity: 8 bits, None
configuration by the holding              Expand: On
down the control panel's "Fast"           Rotate : Off
button down while turning the              Invert: Off
plotter on.                               Emulate: Off
```

Published Date: Feb 18, 2012

MacPlot 1.2: Spaces Not Printing Or Block Characters Appearing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacPlot 1.2 doesn't print single tab sequences. When using Geneva font, multiple tabs will print as a single block character. If specified with non-Geneva font, they will appear as a single space.

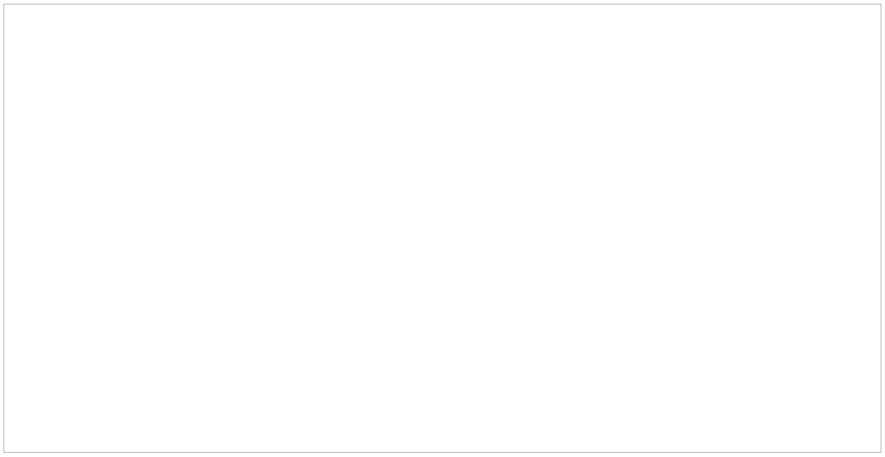
People often use a tab in MacDraw II or Claris CAD to generate a non-proportional space. When using MacPlot 1.2, you should use an option-space instead.
Published Date: Feb 18, 2012

Claris CAD 2.0: How Do I Enable the New Features?

When opening a Claris CAD 1.0.x file some features of Claris CAD 2.0 are turned off. What do I need to do to turn all of them on?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You can make these changes very quickly:

1. Open a Claris CAD 1.0.x document in Claris CAD 2.0.
2. Go to preferences and click on the "Graphics Guide" Icon. (See Picture)
3. Select "Guideliner on." Claris CAD will start tracking points that your mouse travels over when this option is on.
4. Select "Preview on." When this option is set to "OK", Claris CAD will give you hints regarding picking up objects and will preview lines during modification.
5. Click "OK" to close the "Preferences" Dialog Box.
6. Click and Drag on the "Dynamic Modifier" on (See Picture).



See the New Features Guide for additional information.
Published Date: Feb 18, 2012

MacDraw Pro: Translating Documents to IGES or DXF

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Graphics Translator 1.1 (CGT), does not translate to or from MacDraw Pro. To translate a file from MacDraw Pro into IGES or DXF format, follow these steps:

1. Open the drawing in MacDraw Pro.
2. In the Save As dialog box, choose MacDraw II 1.1 as the file type from the pop-up menu.
3. Open the MacDraw II 1.1 file in CGT, then translate to IGES or DXF as usual.

TIP: When you save the MacDraw Pro file in MacDraw II format, the color fill and pen patterns will be converted to the eight QuickDraw colors supported by MacDraw II. Therefore, to ensure accurate translation of the document, use only the standard eight QuickDraw colors. You can find these colors in the Style bar.

To translate IGES and DXF files to MacDraw Pro, translate them into MacDraw II format in CGT. Then, open the MacDraw II file in MacDraw Pro.
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Claris CAD 1.0v4: Quark XPress Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Claris CAD documents saved as PICT may not print properly if imported into Quark Xpress. The initial version of Quark XPress 3.0 had some trouble printing PICT images, and this was corrected by the current version. Old versions can be updated with a "Zapper" utility available from Quark and online groups.

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Claris CAD: Changing Languages When Opening 1.0 Files In 2.0v1.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Claris CAD 2.0 has difficulties opening 1.0 files created in languages other than the language in which 2.0 was localized. The difficulty lies in the conversion of "Set View" in the Layout menu. Claris CAD 2.0 is looking for these words in the language it is localized in. For example, the English version of Claris CAD 2.0 will look for "set view", whereas the French Claris CAD 2.0 will look for the French translation of "set view". If the program finds these words in another language, it gets hung up.

The workaround is:

1. Open the files in the Claris CAD 1.0 localized in the same language as their copy of 2.0. For example, if you have English 1.0 and wish to upgrade to French 2.0, you should open your files in French 1.0.
2. Select "Set Views..." from the Layout menu.
3. Save the File.

If you do not wish to save this view, you may delete the view by:
4. Selecting "Delete Views..." from the layout menu.
5. Open the file in the desired version of Claris CAD 2.0.

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Claris CAD 2.0: Compatibility With 8/24 GC Video Card

When using the Apple 8/24 GC card I have noticed that circles sometimes do not show up or that the circle goes around all the way or 180 degree circles are inverted. What can I do to fix this?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This will happen when the 8/24 GC card is accelerated. This will not occur when the 8/24 GC accelerator is turned off.

Background - We did not run into this when testing a pre-release version of the 8/24 GC card during the testing period prior to the release of Claris CAD 2.0v1. A change was made to the GC card before the release of the card, but after Claris CAD 2.0v1 was released. Make sure that you have the current version of the card and its software.
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Claris CAD 2.0: Bombs with ID = 28

When changing the tolerance values in the Dimensions floater, I crash with an ID = 28. What can I do?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This happens on the Macintosh Plus or SE when changing one of the tolerances. If you double click on the second tolerance, it will cause a bomb. If you tab from one tolerance to another this crash will not occur.

This has been fixed in Claris CAD 2.0v2.
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ClarisWorks: Standard Deviation of a "Sample"

How to determine the Standard Deviation using ClarisWorks, and its difference from FileMaker.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

FileMaker Pro and FileMaker II provide a StDev function that allows you to calculate the standard deviation of an entire population represented by values in a repeating field. There is also a summary field option to calculate this result over a range of records. You cannot use these built-in functions, however, if you need to calculate the standard deviation of a sample. Certain professions require that the standard deviation of a sample be used, rather than the standard deviation of a population. To find the correct deviation of a sample, you must calculate the value the "long" way:

Suppose you want to find the sample standard deviation given Measurements, a repeating field containing the values 90, 85, 87, 50, 92, 95, and 100.

1. Define a new calculation field, D, with the same number of repetitions as Measurements, and a number result. Use the formula:

```
( Measurements - Average ( Measurements) ) ^ 2
```

2. Define another calculation field, StDev.sample, with a Number result. Use the formula:

```
( Sum ( D ) / (Count ( Measurements ) -1) ) ^ .5
```

The result of StDev.sample will be 16.46.

And, to further complicate matters:

FileMaker Pro and ClarisWorks give two different results for Standard Deviation. This is because FileMaker Pro uses the formula for Standard Deviation based upon a population, and ClarisWorks uses the formula for Standard Deviation based upon a sample.

To determine the variance (based upon population) of a group of numbers, perform the following steps:

1) find the average (mean) of a group of numbers. That is, add up all the values of the numbers and divide by the number of entries.

For the series of numbers 115, 121, 130, and 156, the mean is:

```
(115 + 121 + 130 + 156) / 4
(522) / 4
130.5
```

2) subtract the mean from each of the entries to yield the deviations;

```
115          15.5
121          9.5
130          0.5
156          -25.5
```

3) square the deviations

```
115          15.5          240.25
121          9.5          90.25
130          0.5          0.25
156          25.5          650.25
```

4) add the square of the deviations

```
240.25 + 90.25 + 0.25 + 650.25 = 981
```

5) divide the sum of the deviations squared by the number of entries yields the variance.

```
981 / 4 = 245.25
```

6) the square root of the variance is the standard deviation

```
245.25 ^ 0.5 = 15.6604597633658
```

The result from step 6 is the same as FileMaker Pro using either StDev() function within a calculation field Standard Deviation within a summary field, whichever is applicable.

To obtain the standard deviation based upon a sample, change step 5 to:

5) divide the sum of the deviations squared by the number of entries minus one. That is:
981 / (4 - 1)
981 / 3
327

The same formula for step 6 is used. That is, take the square root of the variance.
327 ^ .5 = 18.0831413200251244

The results in steps 5 and 6 correspond to the VAR() and STDEV() functions, respectively, using ClarisWorks.

Published Date: Feb 18, 2012

Claris CAD: Low Memory Alerts on Macintosh SE, Classic, Plus

Working with Claris CAD 1.0 on Macintosh SE's and Pluses that have 1 MB of RAM is a tight squeeze.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
In order to free up memory to run Claris CAD :

- Create a new folder called "Storage".
- Open your existing System Folder.
- Choose "by Kind" from the View menu. This will organize all the files by the type of file they are.
- Place all "Startup documents" and "Control Panel documents" in the "Storage" folder.
- Restart the computer.
- Launch Claris CAD.

If this works, return any control panel and startup documents to the system folder, in order of importance. Restart the computer each time you return documents to the System Folder, then test to insure Claris CAD will run.

One other thing you may wish to look at is the number of fonts and desk accessories present in the System File. Each font or desk accessory uses additional memory.

Claris CAD 2.0 or later requires 2 megabytes of RAM under system 6, and 4 megabytes under System 7.
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Claris CAD 2.0v2: Incompatible with FileMaker Pro EPSF Filter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When you use both Claris CAD 2.0 and FileMaker Pro 1.0v2 on the same system, the EPSF XTND filter will be displayed in the the Open, Save As or Place File windows in both applications. Although Claris CAD 2.0v3 recognizes the EPSF XTND filter from FileMakerÊPro, and your EPSF file names will be listed in the Claris CAD Open dialog box, this filter is not compatible with Claris CAD 2.0v2. Since there is no way for Claris CAD to ignore this filter, we recommend that you do not select the FileMaker Pro EPSF filter while in CAD 2.0v2.

Claris CAD 2.0v3, under System 7, is compatible with the EPSF file that shipped with MacDraw Pro.

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MacPlot: GD&T Font Plotting With Incorrect Characters

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The GD&T font included with Claris CAD will only plot when plotting using Final Text Quality. If you try to use Draft Quality all characters will be plotted in MacPlot's built-in Geneva stroke font.
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MacPlot: Rotated Dashed Lines Plot With Wrong Pen

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Rotated dashed lines may plot thicker when at a non-ninety degree angle. This is true for both Claris CAD and MacDraw II.

If plotting in Draft mode, they will not plot at all.

Published Date: Feb 18, 2012

Claris CAD 2.0: Exporting (Using CGT) to IGES/DXF

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Note: CGT 1.1 will translate Claris CAD 2.0 files directly. This article only applies to users who have not recieved the 1.1 update and are still using CGT 1.0.

To export a file created in Claris CAD 2.0 to IGES or DXF format using Claris Graphics Translator (CGT) 1.0 follow the steps below.

1. Open the Claris CAD 2.0 drawing and choose Save As from the File menu.
2. In the Save As dialog box, choose MacDraw II 1.1 from Save As pop-up menu.
3. Open the MacDraw II 1.1 file in CGT 1.0 and then transfer to IGES or DXF as usual.

You do not need to save files in MacDraw II 1.1 format when importing into Claris CAD 2.0. Claris CAD 2.0 reads Claris CAD 1.0 files directly.

This information can also be found on the last page of the Claris CAD 2.0 release notes.
Published Date: Feb 18, 2012

MacDraw II: Horizontal Lines Appear in a Document

When opening a new blank document in MacDraw II, horizontal lines appear all over the document.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The computer has the newer 24-bit GC video card, set for millions of colors. Set the card back to 256 or fewer colors to resolve the issue.

Published Date: Feb 18, 2012

Claris CAD 2.0: Hardware Certified/Verified to Work (Compatibility List)

The following hardware has been certified to be fully functional using Claris CAD version 2.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

1. Monitors
- Apple 480 x 640 monochrome monitor
- Apple 480 x 640 color monitor
- Apple Full Page Display monochrome monitor
- Radius Full-Page monitor
- Radius Two-Page monitor
- SuperMac 19-inch Color Monitor

2. Video Cards
- Apple Full Page Display Card
- Apple Macintosh II Video Card
- Apple Display Card 8*24
- RasterOps 232 Graphic Card

3. Printers and Plotters

Printers:
- Apple LaserWriter/LaserWriter Plus
- Apple LaserWriter II NT/NTX
- Apple LaserWriter IISC
- Apple ImageWriter I/II (AppleTalk and Direct Connect)
- Apple ImageWriter LQ (AppleTalk and Direct Connect)
- Hewlett-Packard DeskWriter (AppleTalk and Direct Connect)

Plotters
- Hewlett-Packard:

7440A, 7475A, 7550A, 7580B, 7585B, 7586B, 7595A, 7596A
- Houston Instruments

DMP series: 29, 40,41, 42, 51, 51MP, 52, 52MP, 56A, 56A MP, PC 595A, PC 695A

4. Input Devices
- Apple Standard Mouse
- Apple Standard Keyboard
- Apple Extended Keyboard
- German, French and Swedish Keyboards

Although they have not been certified with Claris CAD 2.0, the following hardware items have been tested for basic functionality with Claris CAD, and seem to work fine with the program:

1. CPU's/Cards
- Radius SE 16 Mhz 68020 Accelerator Card
- Apple Mac LC - prototype model available during development

The product does not run on a Macintosh 512KE or earlier.

2. Disk drives
- HD20SC, 80SC external hard drive
- PLI removable cartridge hard disk drive
- Jasmine 20 Mb external hard drive

3. Monitors
- Radius 24 bit color monitor
- Radius Swivel Monitor prototype model available during development

4. Video cards
- Apple 8*24 GC card - prototype model available during development
- Micron Technologies Xceed Cache Card

- SuperMac 24-bit color card
- SuperMac QuickDraw Accelerator card

5. Printers
- QMS ColorScript 100

- QMS ColorScript 100, model 10
- Tektronix 4693DX
- Tektronix ColorQuick
- GCC Personal Laser Printer
- QUME printer
- Hewlett-Packard DeskJet

6. Input Devices
- Turbo Mouse
- Apple Extended Keyboard II
- Kurta 8.5-inch by 11-inch (ADB) tablet
- Summagraphics Bit Pad Plus (ADB)
- CalComp WIZ

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Claris CAD 2.0v1: Crash Using ‘Show Info‘ on Macintosh Plus, SE, Classic

When using Claris CAD 2.0v1, my Mac Plus, SE, Classic or Portable crashes or unexpectedly quits when working with show info. It might crash when opening Show Info, or when changing a value in the Info floater.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This has been corrected with 2.0v2

Under certain circumstances, a user working with a document with more than one layer, on a Mac Plus, SE or Classic, a will crash occur when opening or editing a show info value.
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InitCdev and Virus Detectors May Conflict

I've been using InitCdev 2.0, a freeware INIT management utility. With the AppleComm Toolbox on my system, when I invoke InitCdev, it crashes with ID=17 (package 0 not present--list manager).

Can you explain?

This article has been archived and is no longer updated by Apple.
Try moving a couple of virus detectors around, so that SAM Intercept loads before the InitCdev, and Vaccine loads after InitCdev, then the Apple Communication Toolbox should work fine.

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MacDraw II: Top Of Page Not Printing To Personal LaserWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing from MacDraw II (all versions), if Larger Print Area is enabled in the Page Setup Options dialog box, the top 1/8" or so won't print. The only workaround is to disable Larger Print Area, or to print to a different printer, such as the LaserWriter IINT/NTX.

MacDraw II gets its information about the printable area from the LaserWriter driver. However, not all printers can print to the maximum printable area that's defined in the print driver.

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Claris CAD: Missing Or Distorted Objects When Printing To LaserWriter

I am printing to a LaserWriter. Some of the objects in my drawing print distorted (circles print as ellipses) or are entirely missing (arcs, lines etc.). What is going on?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This is corrected in 2.0v3

Print Monitor and Background Printing

Some Claris CAD 2.0v1 and 2.0v2 will not print all the objects present in the document. There are specific conditions in Claris CAD that appear to be causing the difficulty.

To print correctly:

- The simplest way to avoid the issue is to insure that all floaters are closed. A floater that is open or collapsed will cause the difficulty.

- PrintMonitor can run out of memory in processing drawings, especially large drawings. To test whether this is the issue, turn off background printing in the chooser and attempt printing the drawing again. If this works, increase the memory allocated to Print Monitor.

Other Spoolers
This same phenomenon can also occur with spoolers like SuperSpool , SuperLaser Spool or TOPS spool. To test if this is the case, attempt printing without the spooler. If it works, allocate more memory to the spooler.
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Claris CAD 1.0: Arcs Adding Loops or Extensions

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD 1.0 had an anomaly where arcs smaller than one degree would often have a loop, tail or curly extension. To see this, create an arc with a large radius (10") and very small visible segment (around 1 degree). Zoom in on the arc--you will see a looped extension.

In Claris CAD 2.0 this is basically fixed. However arcs, after they have been modified by being moved, duplicated, flipped can often have extensions to them. This is caused by some random information being added by the modification to the decimal portion of arc. There is a way to delete the random information and correct the display.

- Select the arc.
- Show Info
- Highlight the decimal portion of the Radius of the arc and delete it and press Enter. (e.g. if the radius is 53.425, delete .425)
- Retype decimal portion press Enter (e.g. type .425).

(You should not cut and paste the decimal portion because doing so will not remove the random information present in the internal information about the arc.)
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Claris CAD: Scaling Text Block Of Mixed Sizes

Scaling a text block of mixed sizes scales all text to one size.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The following steps recreate the behavior:

Create the text block "Testing font sizes".
Make the word "testing" 24 point.
Make the words "font sizes" 12 point.
Scale the text block 50%.

The entire block becomes 12 point, when only the first portion should be 12 point.
The second portion should be 6 point.

This is specific to text blocks whose first run of text is 24 point. Text blocks scale correctly if the first run of text is other than 24 point.

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Claris CAD 2.0: Object Missing From Printouts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Some Claris CAD 2.0 files will not print all the objects present in the document. The customers reporting these problems are using Background printing to a LaserWriter.

There are specific conditions in Claris CAD that appear to be causing the behavior.

To print correctly:

- The simplest way to avoid the issue is to insure that all palettes are closed. A palette that is open or collapsed will cause the problem.
- A second way to avoid the issue is to turn off background printing. This generally is the only solution if the document contains bitmaps or scanned images.

This is corrected in Claris CAD 2.0v3.
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Claris Software: Incorrect Fonts Print in EPS Graphic

This article explains why your EPSF image sometimes prints the text in a font other than the one you originally intended.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Situation:
An EPSF image contains text that prints as Courier instead of the actual font.

Explanation:
The EPSF image uses a font that is not built-in to your printer. Some applications (like Quark XPress) scan the EPSF image before printing and automatically download (send the font from your computer to the printer) the fonts that are not resident in the printer, but Claris applications don't. They just send the Postscript code from the EPSF graphic to the printer. Thus, when the printer attempts to print the font that hasn't been downloaded, the printer will substitute Courier. FileMaker Pro 2.0v4 and later and MacDraw Pro 1.5v2 and later may help alleviate the situation.

Workaround:
In your drawing, type one or two characters in a text object using the same fonts used in the EPSF image. Be sure to use the exact same font, not just a font from the same font family (e.g., if the EPSF image uses Goudy Italic, use Goudy Italic in the text object, not Goudy Plain). Then, with the text object selected, choose Send to Back in the Arrange menu. To make this text object not print, place it behind the EPSF image or another object, or draw a rectangle (white fill and pen) over the text object to mask it.

When printed, the text object will be sent to the printer, causing the font to be downloaded. Then, when the EPSF image is sent to the printer, the font will already be resident in the printer. Thus, the text in the EPSF will print correctly.

This workaround sometimes fails when you have several download fonts in your document, or if the graphic is complex. The printer will receive the font information, but may discard the font if it needs the RAM to process the image. If this happens, try enabling the "Unlimited Downloadable Fonts..." option in Page Setup/Options. Alternatively, you can download the font in advance using the Font Downloader program, which is included with Adobe fonts.

Alternately, you can use the "Convert to Outline" command in Adobe Illustrator 3.0. Alter the EPSF image with the Convert to Outline command, then reimport the EPSF image into FileMaker Pro. This command will convert text elements of your illustration into graphic outlines. Once this is done, you'll have no need to worry about fonts. (The image will print faster, too.)

Exceptions (FileMaker Pro).
Although this behavior was - for the most part - fixed with FileMaker Pro 2.0v3, there are exceptions if the EPS file was saved from either QuarkXPress 3.11 or Adobe Illustrator 3.2.

Tests have been made by Claris Technical Support which confirm that an EPS graphic saved out of either QuarkXPress 3.11 or Adobe Illustrator 3.2 and then imported into a FileMaker Pro 2.1v1 layout does not download the correct fonts to the printer. Instead, any text embedded into the EPS graphic which use fonts that are not resident in the printer will print using Courier.

The solution for this is to include a text block on the layout which uses the same font of the text in the EPS. Since this new text block must be downloaded to the printer first, place it at the "back" of the layout using the "Send To Back" menu item under the "Arrange" menu. Also, as mentioned earlier, since this new text block should not actually show up on the printed page, either set its color to white using the "Text Color" menu item under the "Format" menu, or position it behind the EPS image, or mask it.

Note: tests indicate EPS graphics saved from MacDraw Pro 1.5v1 and imported into FileMaker Pro print correctly.
Text in EPSF Image Prints Using Courier

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MacDraw II: Center Shadow Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In MacDraw II there is an anomaly with centering Shadow Text when you use the alignment feature. The text will appear centered on the screen but will not print centered. This has been corrected in MacDraw Pro.
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MacDraw II: Compatible PICT Clip Art

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here is a partial list of MacDraw-compatible clip art. These are packages that are available in MacDraw and/or PICT format. Additional clip art is also available in MacPaint and EPSF formats which can be used with MacDraw but must be either copied into the clipboard from another application or converted into PICT.

Ad/Art/Plus
MacDraw or PICT
Freemyers Design
575 Nelson Ave.
Oroville, CA 95965
916-533-9365

Clip Art From France
PICT
Le Coq Branch
c/o H. Robertson
73-450 Country Club Dr.
#291 Palm Desert, CA 92260
619-568-6773

DeskTop Art
MacPaint, MacDraw, MacDraw II
Artfolio1, Borders & Mortices 1, Business 1, Education 1, Four Seasons 1, Graphics & Symbols 1, Sports 1, Health Care 1
Dynamic Graphics, Inc.
6000 N. Forest Park Dr.
Peoria, IL 61614
309-688-8800
800-255-8800

Digit-Art Laser Graphics
PICT
Image Club Graphics
1902-11th St. SE, Suite. 5
Calgary, Alberta, Canada
T2G 3G2
403-262-8008
800-661-9410

DrawArt Clip Art For Presentations
PICT
Graphic Designs & Borders, Sports & Leisure, Business & Education, Business Forms

Desktop Graphics
268 E. 16th St., Suite. 6
Costa Mesa, CA 92627
714-760-7272

ImageWorks
MacDraw, MacPaint, PICT
Eykon Computer Graphics
PO Box 2142
Round Rock, TX 78680
512-388-7099

Military Art
PICT, Paint
Defense graphics library designed for military and industry professionals.
NOVA
Cube 14 Jarrell Farms
Newark, DE 19711
302-234-2098

TA41475_MacDraw_II_Compatible_PICT_Clip_Art.pdf

MacAtlas Professional Version
MacDraw, PICT
Map templates
MicroMaps Software, Inc.
PO Box 757
Lamertville, NJ 08530
609-397-1611
800-334-4291

PICTures
PICT
Ad-Techs
2505 Glen Oaks ct.
Bedford, TX 76021
817-354-1632

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MacDraw II: Printing Handouts To A DeskWriter

Printing Slide Handouts (2 or more) on an HP DeskWriter will not print the bottom of each slide. The bottom of each slide is missing on the printout. It is worse when printing two slides per page than when printing three or six per page.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This behavior exists with all current versions of MacDraw II (1.1v2) and DeskWriter software (2.1)

There is no workaround, other than to print one slide per page, then reduce them on a photocopier.
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MacDraw II, Claris CAD: Closepath Error Using LaserWriter Driver 6.0x

When printing some MacDraw II documents to a Postscript printer, you may get an error message that says: "Offending command: closepath." This is a message from Postscript. This usually occurs in drawings with polygons that have many vertices while using LaserWriter driver version 6.0x.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The best workaround is to print using LaserWriter driver 5.2. There are some differences between versions of the LaserWriter drivers in the way polygons are converted to Postscript. This is not a common issue. Most MacDraw II documents print fine using 6.0x.
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Claris CAD 2.0: Finding the Distance Between Two Points

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In Claris CAD 2.0, you can find the distance between two points by using the arrow cursor and the L box in the Location bar.

The point resize icon (between the zoom percent indicator and the X box of the location bar) must be set to resize from the point clicked. The diagonal line should not be through the box.

Let's say that you wanted to find the distance between the endpoints of two lines.

1) Select and lock the endpoint modifier
2) Click on the first endpoint and release the mouse
3) Drag the mouse (with the button up) to the second line's endpoint, so that the cursor indicates that it has selected the line. Do not click the mouse.
4) The L box in the Location bar will indicate the distance between the two points.

If you click on the second point, it will select that point as the last point clicked and the L box will show you how far the cursor is from that point.

The whole idea is that the L box will show you the distance from the last point clicked to the point where the cursor is or where a modifier is selecting a point.
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MacDraw, MacDraw II: Objects Shift When Pasted/Imported To Other Programs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Objects drawn in MacDraw II or MacDraw Pro, then brought into other applications, may shift apart slightly. Also, smoothed polygons and freehands may become distorted. This can happen if the objects are brought in via the clipboard, or imported from a PICT file. This happens because the PICT format (which includes the clipboard), rounds the horizontal and vertical placement of the data points that define each object to the nearest 1/72 of an inch.

What to do to reduce this

(MacDraw Pro only) This can be avoided by saving as an EPSF file, then importing the EPSF file into the document in the other application. Use this approach when printing to a Postscript printer.

If using a QuickDraw printer and/or MacDraw II, try the following seven steps:

1) Open the drawing in MacDraw II or MacDraw Pro:
2) Make sure all objects are ungrouped.
3) Turn the Autogrid ON (the menu item should read "Turn Autogrid Off"
4) Go to Rulers, set it to 1 inch = 1 inch, 36 or 72 divisions per inch. Click OK
5) Select All objects
6) In Alignment, choose Align to Grid, Align Left and Align Top
7) Re-copy and Paste into the other application

These steps may reduce the behavior with an existing file. However, it may not be eliminated entirely, as this will not align all the objects' data points to the grid, just the upper left corner. Instead, you'll get better results if you do steps 3 and 4 BEFORE drawing the objects.
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MacDraw II: CorelDraw & PICT Format

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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CorelDraw (an MS-DOS drawing program) can save files as PICT files. However, if you transfer the PICT file to a Macintosh, MacDraw can't open the file.

This is because the PICT file does not have a file type. PC files do not have file types/creators and are unable to assign these attributes to a file. After the file is transferred to a Macintosh, you must use a program that can edit the file type. (These include ResEdit, DiskTop, and MacTools). The file type should be changed to PICT (all caps). The file will then be openable by MacDraw by using the Open command in the file menu.
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MacDraw, MacDraw II: No Out Of Paper Message From DeskWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In MacDraw II and MacDraw Pro, when there is no paper in the paper tray of a DeskWriter, you do not get a "no paper in tray" message. It seems to be the driver that does not send the message.

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MacDraw Pro: Colors are Incorrect In Imported Image

When video is set to 256 colors (8-bit) or less, the colors in an imported PICT or TIFF may appear incorrect. Imported color PICT and TIFF images may contain many colors that do not exist in the Claris Colors palette (or whatever palette you're using).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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Set the monitor to display thousands or millions of colors, OR

1. Select the imported image.
2. Tear off the color palette.
3. From the Special menu in the color palette, select Image Colors.

The colors in the imported image will now be correct. However, colors of other objects may now be incorrect. To correct this, copy and paste all the colors of the new color palette into the Claris colors palette or whatever other palette you're using. (In the palette menus, choose Select All, then choose Copy, then choose Claris Colors, then choose Paste.) If the pasted colors appear dithered, select them, then select the Solid command from the palette's Special menu.

Explanation: MacDraw Pro is preset to use the Claris Colors palette, which is a collection of 168 predefined colors. Eleven other colors exist as colors in the Style Bar and as reserved colors, for a total of 177 colors. If your monitor is set to display 256 or fewer colors, it may not be able to display all the colors in the current palette, the Style Bar and the imported PICT/TIFF image.

If the number of colors in a single palette exceeds the number of colors that your monitor is set to display, the extra colors will be displayed as dithered patterns, simulating the extra colors. If your monitor is set to thousands or millions of colors, you can correctly display all the colors in the document without having to place all the colors in a single palette.
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MacDraw Pro: Library Window Obscured By Document Window

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In MacDraw Pro, if the library window is completely covered by the document window, you can bring the library window forward by typing Command-Shift-W. There is no pull-down menu command to do this.

This is similar to the way MacDraw II functions.

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Applesoft Firmware Card: Options

The Applesoft firmware card was designed to supply floating point BASIC to Apple II owners. There are two options on the card that the user may select.

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1. Most obviously, the position of the switch on the rear of the card is used immediately after a system reset to force the selection of one of two banks of ROMs: the firmware card or the motherboard. If the switch is up then the system will default to Applesoft, otherwise the system will default to Integer BASIC.

2. Software, by accessing address $C080, can select Integer BASIC, or, by accessing address $C081, Applesoft.

Unfortunately for systems with Auto Start ROM, every time DOS gets control immediately after a reset, DOS forces a load of the version of BASIC DOS last used, regardless of the position of the switch.

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TA41485_AppleShare_File_Server_and_Viruses_Continued_(TIL05440).pdf

AppleShare File Server and Viruses, Continued

Since an AppleShare file server can be infected with WDEF, can the existence of WDEF on the server affect its performance? Also, since the server uses a different format of the Desktop file, which file gets infected?

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The WDEF virus causes a significant performance lag on the file server during the time the Desktop file on the server is being written to. After the initial infection, there won't be a performance problem.

The file called "Desktop" is the file that is infected. Remember, this is the file at the root level of the volume. The "Desktop DF" and "Desktop DB" files created by the Desktop Manager INIT are in the Server Folder, and are not bothered by the WDEF virus for two reasons:

1) The Server Folder is not accessible by any program on a workstation.

2) WDEF looks for a file called "Desktop" to infect, not "Desktop DF" or "Desktop DB".

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MacDraw Pro: Slower When Colors Set To "Thousands"

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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MacDraw Pro may be significantly slower in operation when the number of colors is set to "thousands" (16 bit) instead of "millions" (24/32 bit) or other video modes. This is because the computer is faster (more efficient) in accessing the memory on the video card at some monitor settings (bit depths) than at others; it is not due to MacDraw Pro. In general, any video card may operate faster in some video modes than in others.

This slower operation will include selecting objects, selecting tools, zooming and scrolling. If the speed is objectionable, the best solution is to use a different video mode. Going to a video mode with more colors, however, may require making more memory available to MacDraw Pro.

You can check the current video mode by selecting About MacDraw Pro from the Apple menu. It will show you the available colors for MacDraw Pro. If this number is followed by " * Currently limited by memory ", MacDraw Pro (1.0 only) is operating with fewer colors than is set in the Control Panel. MacDraw Pro 1.0 may actually switch itself from 24/32-bit mode to 16-bit mode if necessary when you enlarge a window or change the Monitors settings in the Control Panel while a document is open.

Note: MacDraw Pro 1.5 does not switch monitor bit depth to free up memory as MacDraw Pro 1.0v1 does. Instead, MacDraw Pro switches the offscreen buffer off (drawing directly to the screen/video memory).
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MacDraw Pro: Memory Limitations and Colors

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Certain actions, such as enlarging a document window or increasing the number of colors in the Control Panel while a MacDraw Pro document is open, can cause MacDraw Pro to need more memory than is available to it. When this happens, MacDraw Pro 1.0 will display the following warning message: "Warning! Different colors or patterns may appear in some windows because of memory limitations." MacDraw Pro will automatically switch to a video mode with fewer colors to compensate for the shortage of memory on the application and allow for the desired operations to be performed. This is a feature, since the alternative would be to not allow the change in window size or video mode at all.

The changed video mode is not indicated in the Monitors Control Panel. You can see the current video mode by selecting "About MacDraw Pro" from the Apple menu. The line "Available colors: xx*" will be followed by an asterisk. Below that, you will see: "* Currently limited by memory."

MacDraw Pro will drop to the next lowest video mode. If that is insufficient, it will drop even further if necessary. The lower video mode that MacDraw Pro selects may be a video mode that is not selectable by the Monitors CDEV. For example, it may drop from "millions" of colors (24/32 bit) to "thousands" of colors (16 bit), even though "thousands" may not be an option in the Monitors Control Panel. This can happen, for example, with the Apple Macintosh Display Card 8*24.

To use all the colors that are selected in the Monitors Control Panel, make more memory available to MacDraw Pro.

Note: The video mode will not affect printing. Also, this information applies to version 1.0 only. MacDraw Pro 1.5 does not change the bit depth of the video to free up RAM. Instead, MacDraw Pro disables the offscreen buffer (drawing directly to screen/video RAM).

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MacDraw Pro: RAM Requirements Affected By Window Size

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In MacDraw II, the RAM required to load a file into RAM is dependent on (among other things) the screen size. In MacDraw Pro, the RAM required is dependent on the size of the document window and the screen resolution. In other words, if you make the document window smaller, you'll need less RAM to operate the file. This can be useful if you're running low on memory, because you can make more memory available by shrinking the document window(s).

To see the effect of window size, try the following steps.
1) Open a blank file in MacDraw Pro
2) Select About MacDraw Pro from the Apple menu. Notice the amount of RAM used by the blank file. Close the About box.
3) Shrink the window of the blank document.
4) Select About MacDraw Pro from the Apple menu again. Notice the amount of RAM used by the blank file is less.

TIP: If you're trying to open a document with the Open command, but are getting "not enough memory" messages, try this:

1- Open a new blank document.
2- Shrink the window size to the minimum.

3- Use the Place File command to place the file you want into the blank document.

When a file is opened with the Open command, MacDraw Pro attempts to open the file in full-screen window (this includes all translated files). Using the Place File command to place the image into a small document window requires less memory. Remember, though, that the Place File command only places the objects from the file; it does not bring with it the layers, palettes, or menu settings of the placed file.

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MacDraw Pro: Slow DeskWriter / LaserWriter IISC Printing of Gradients

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Printing gradients to a DeskWriter, LaserWriter IISC or StyleWriter from MacDraw Pro 1.0 is extremely slow. In fact, it may take several hours to print a document with gradients. The computer will display the standard dialog box that says "Now printing page x" and will appear to be inoperable. If you wait long enough, however, the document will probably print.

The following will significantly improve printing speed:
1- Upgrade MacDraw Pro to version 1.5
2- Upgrade the DeskWriter driver to 3.0 or later

In addition, the quality of the gradients may be very low (8-12 gradient steps). This is a function of the print driver, not due to MacDraw Pro. To print better gradients, use a print driver that supports grayscale. This includes:

DeskWriter - 3.0 driver
DeskWriter C, 550C - any version
LaserWriter IISC, Personal LaserWriter SC - WonderPrint Utility
StyleWriter - use StyleWriter II driver or WonderPrint utility

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Claris CAD: Text Prints Without Spaces To ImageWriter

Some text may print without spaces when printed landscape mode to an ImageWriter.

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This article has been archived and is no longer updated by Apple.
To get the text to print correctly, go to Print options under preferences and select Lower resolution, more options. On 72 DPI ImageWriters, this will not affect the output.
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Claris CAD 2.0: Too Much Constraint or Snapping of Objects

Sometimes an object placed at one location may unexpectedly snap to another. This unexpected movement is most noticeable when zoomed in and the grid points are not all visible on the screen or when the object snaps to a point off the screen.

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There is a hierarchy that determines where an object will snap as it is created or moved. At the top of this hierarchy is the modifier that is chosen followed by the Dynamic Modifier, Guideliner, Autogrid, and Caps Lock key. These features exist to help you with precision drawing. To reduce the amount of automatic constraining or snapping of objects, first make sure you are using the correct modifier. Then turn off the Dynamic Modifier, Guideliner, Autogrid, or release the Caps Lock key. Please note that the Caps Lock key is last in the hierarchy. It cannot override those items ahead of it in the hierarchy.

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MacDraw Pro: 32-bit QuickDraw Required on SE/30

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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MacDraw Pro requires that the 32-bit QuickDraw INIT be installed in the System Folder when running on an SE/30 with System 6.0.8 or earlier. This is because the SE/30 has color ROMS. MacDraw Pro requires the 32-bit QuickDraw INIT on all machines with color ROMS, whether or not there is a color screen attached.

The 32-bit QuickDraw INIT is on the Printing Tools disk, which is one of the System Software Disks.

To install:
1 - Copy the 32-bit QuickDraw INIT from the Printing Tools disk into the System Folder on your hard disk.
2- Restart the computer.

The 32-bit QuickDraw INIT contains programming code which fixes issues with some code in the ROMS related to color. MacDraw Pro uses this code in 32-bit QuickDraw to operate reliably on color Macintosh computers.
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MacDraw Pro: Can‘t Select Image Colors for an EPSF Object

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When an EPSF object is selected, you can't select the Image Colors command from the Special menu in the Color Palette.

MacDraw Pro cannot extract the colors from an EPSF image. However, you can use the eyedropper tool to pick up colors from the PICT Preview part of the image.

The colors that you see are from the PICT preview portion of the EPSF object. These PICT colors are merely approximations of the actual colors, which are in the Postscript part of the EPSF object. Even if Image Colors were selectable for EPSF objects, the extracted colors would be of little use since they are not the exact colors used for printing.
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MacDraw Pro: Hidden Preferences

In MacDraw Pro 1.0v1 and 1.5, there is an undocumented category available in Preferences called Hidden. This category is available only by holding down the Option key while selecting Preferences. As it is a hidden feature, it is not officially supported by Claris.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
There are three options in Hidden preferences:
1- Key Shortcuts
Key shortcuts allow you to display Command-key shortcuts within several dialog boxes. The default setting is ON. Turning this off means that the Command - key shortcuts don't display in the dialog boxes when the command key is pressed. There is little end - user benefit to this. This option exists so that our writers can take screen shots of these dialog boxes without displaying the Command - keys.

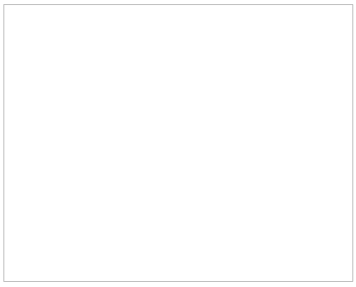
2- Use even-odd clipping
This feature allows you to work with polygon objects where the polygon keeps any overlapping points area empty or unfilled. i.e., if you draw a filled polygon in the shape of a star, the center of the start will be left unfilled when you print it out. This was implemented specifically for Associated Press who needed to have this feature.

3- Enable Screen Only Options
When enabled, three features are available:
a) You can apply both a fill pattern and a gradient to an object. This is a screen-only option because objects filled with both a gradient and a fill pattern may not always print properly. Improper printing occurs more often with rotated objects. As a screen-only option, it can be used for screen display, slide shows, etc. If you need to print rotated objects with both a pattern and a gradient, save the file as an EPSF file. The EPSF object should print correctly.

b) You can make the background color in a pattern transparent (version 1.5). You'll need the LaserWriter 8 driver (Postscript Level 2) if you're printing to a Postscript device. To do this:
- select an object with a fill pattern that you want a transparent background pattern applied.
- tear off the pattern palette. The pattern for the selected object is highlighted.
- double-click the highlighted pattern to display the Pattern Editor
- click the transparent pattern in the pattern palette once. This changes the background (white) pixels in the Pattern Editor to transparent.

- click OK to dismiss the Pattern Editor window.
- Click on the highlighted pattern in the pattern palette once again to reapply it to the object.

c) Option-shift clicking the eyedropper on a gradient will pick up just the color directly under the eyedropper, rather than the entire gradient.



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MacDraw Pro: Linear Blend vs Four-Corner Blend

In the Color Editor, there are two methods of blending CMYK colors?Linear Blend and Four-Corner method.

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Linear Blend: If you select a block of colors in the color palette (several adjacent rows or columns), then click the Blend button, you'll get a Linear Blend. The colors in the upper-left and lower-right corners are unchanged, while the colors in between are blended between the two colors. The result is that the colors selected in each row are the same color.

Four-Corner Blend - An alternative method of blending is the four-corner blend. This is done by holding down the Option key while clicking the Blend button. In this method, the four colors in the corners of the selected colors are unchanged, while the colors in between are blended from the corners. The result is that every color will be different.

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Ethernet Backbone and Seed Routers

Here are some questions and answers about supporting AppleTalk on a corporate Ethernet backbone -- specifically, a group-managed, Macintosh-based Internet router which would be the sole seed router for the Ethernet.

This article has been archived and is no longer updated by Apple.

Q) Can all third-party routers that support the AppleTalk Phase 2 protocol accept seeding from the AppleTalk Internet Router?

A) All third-party routers that Apple Tech Comm is aware of can receive their network information from the AppleTalk Internet Router. It is best to confirm this information with the manufacturer of the routers that your account plans to use. Remember, there must be a seed router on every physical cable.

Q) What is the effect on the network if the seed router goes down for 24 hours or more?

A) Nothing, other than losing the ability to route packets to the networks on the other side of the seed router. If a router that depends on the seed router goes down, when it attempts to come back up it will not get a network number for the physical cable common to both routers and will not route.

Q) What is the effect if a user brings up a non-seed router with different network numbers and zone names?

A) All the routers of which Apple Tech Comm is aware will report that there is a network number and/or zone name conflict and will not come up. If a router did allow you to enter with an incorrect zone or network number information, many problems would occur. Network devices may not appear, or they may appear in different zones. Packets will be lost and many network errors will be generated.

Q) If I need to expand the seed routers network range and zone list, must I bring the other routers down for the update?

A) Yes, the seed router will attempt to run and notice that the network number range and/or zone name is different and report an error regarding the conflict. This necessitates bringing down the other routers on the same physical cable that get their network information from the seed router. As usual, the seed router must be up and running before the other routers are brought up.

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MacDraw Pro: "Out of Memory" When Making Changes After Deleting Object.

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When an object is deleted, the memory used by the deleted object is not immediately freed up for other objects or operations. MacDraw Pro must keep the object in memory to allow an Undo of the deletion. This can be a problem, for example, if you delete a large bitmap or EPSF object from your document, then immediately attempt to cut/copy other objects while there is very little unused memory. (A large bitmap or EPSF object can use over a megabyte of memory in a MacDraw document). If this occurs, you will see a warning box that says, "Sorry cannot cut or copy current selection to the clipboard." This can also impair other memory-intensive operations, such as importing a large color palette.

To free up the memory used by the deleted object, perform another Undoable action.
1- Drawing a new object
2- Resizing, moving or otherwise altering an existing object.
3- Deleting another object. The deletion of that object will no longer be Undoable, so MacDraw can then free up that memory for other purposes.

Tip : An easy Undoable operation to perform: before selecting the cut/copy command, press one of the arrow keys on the keyboard. For example, pressing the Down Arrow key moves the selected object one pixel or one grid point downward. Then select the cut/copy command. Or, press the Down Arrow, then the Up Arrow key. This moves the object, then moves it again to its original spot. Then copy the selected object.

If you still can't cut/copy the object, see the entry titled "Sorry cannot cut or copy current selection to the clipboard."

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MacDraw Pro: "Out of Memory" When Opening MacDraw II Documents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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A document created in MacDraw II may not open in MacDraw Pro on the same computer. This is because there is less memory available for documents when running MacDraw Pro. (Normally, this would only happen under extreme circumstances, such as reducing the RAM allocation for MacDraw Pro to 1000K, then trying to import a MacDraw II document).

The XTND engine and the MacDraw II filter also have to be loaded into RAM to function. This, combined with the increased memory usage of MacDraw Pro (vs. MacDraw II), means that you'll have less memory available for opening MacDraw II documents.

There are a few steps to allow more memory for MacDraw Pro to work with converted MacDraw II documents:

1. Turning off the RAM cache and removing INITs, then restarting the computer.
2. Increasing the MultiFinder memory allocation for MacDraw Pro (or restarting the computer under single Finder).

This will give you the maximum possible memory size for opening documents.

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MacDraw Pro: When Selecting "Turn On Slide Show", Slides Are Too Small

MacDraw Pro reduces the view to show the entire drawing size when turning on Slide Show.
Extra whole pages are added to the drawing to hold objects that you've moved, resized or pasted if the objects are touching or overlapping the page boundaries.

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Reduce the Drawing Size of your document.

- Select the Drawing Size command from the Layout pull down menu, then click in the small white square(s) in the upper-left corner of the gray drawing square, then click OK.

This reduces the drawing size to the minimum number of whole pages needed to hold the objects.

If MacDraw Pro won't let you reduce the Drawing Size to the number of pages you want, move these objects off the unwanted pages, then try reducing the Drawing Size again.

TIP: Setting the Drawing Size by clicking on the white squares in Drawing increases or decreases the document only in whole-page increments. You can resize the drawing size in finer increments than whole pages by typing in the drawings width and height. An easy way to reduce the drawing size to the minimum size without moving objects is by typing the number 1 into the width entry box, and the height entry box. MacDraw Pro will change your entries to the minimum dimensions necessary to hold your objects.

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MacDraw Pro: "Sorry cannot cut or copy current selection to the clipboard."

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"Sorry cannot cut or copy current selection to the clipboard."

This message means that there isn't enough unused memory available to hold these objects in the clipboard.

The following operations may make more memory available, thus allowing you to successfully perform the cut/copy.

1. Close another MacDraw Pro document that's currently open.
2. Shrink the size of the drawing window.
3. Select fewer colors in the Monitors cdev in the Control Panel.
4. If you're cutting/copying immediately after deleting another object, try moving the object, then retry the cut/copy operation.
5. If running MultiFinder, allocate more memory to MacDraw Pro.

(Please refer to your MacDraw Pro documentation for information on increasing the Application Memory Size.)
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MacDraw II: Tips and Shortcuts-(cont.)

Tips and Shortcuts for MacDraw II version 1.1

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6. To save memory when using many copies of a scanned image (like a logo in a presentation), use the Duplicate command instead of the copy and paste. When you duplicate a bit-mapped object and donÕt change it, MacDraw II will save memory be only keeping a single copy and displaying it multiple times.

7. To quickly change the pen pattern, use the option key while clicking on the pattern palette. The new pen pattern will be displayed to the right of the pattern palette.

8. You can select all objects of a particular type by first selecting the corresponding tool from the tool palette, then choose Select All from the Edit menu. For example, you can select the Text tool followed by Select All. Now, any change you make will affect all text objects.

9. To see a smoothed curve while editing smoothed polygons, hold down the command key. MacDraw II will display the curve exactly as it will appear when you release the mouse button.

10. Use command + spacebar to activate the last tool you used.

11. To enter text into a graphic object, draw the object and begin typing text. For example, draw a rectangle and with the rectangle selected, begin typing text. The text will stay in the boundaries of the rectangle. If you want to enter text into a rectangle that you previously created, Option-Click on a rectangle and begin typing. The text will stay within the boundaries of the rectangle.

12. Use the <Enter> key to toggle from a tool back to the selection arrow.

13. To create a new slide, press command-shift-N.

14. To open a New MacDraw II document with all the default settings, hold down the Option key when you select New. This is only necessary if you have created a MacDraw II Options file.

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Claris Software: Viruses, How to Remove

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Viruses, How to Remove

The message "Your copy of 'application name' has been corrupted or modified by another application or a virus. Please make a new copy from locked master disks." can result from two sources:
1) viruses
2) manually modifying the app. with ResEdit or some other program.

Explanation and Solution
This alert is intended to serve as a warning that there is something wrong. Normally, you can proceed past this alert and use the application. However, as virus-infected software can be unreliable, you should eliminate the infected files from your disks as soon as possible.

It is unnecessary to reformat a hard disk to get rid of viruses. The basic steps are:
* Using a virus detection utility check the hard disk and any floppy diskettes for viruses.
* Trash all infected applications and system software.
* Replace infected files from uninfected locked master disks. If a master disk is infected, obtain new master disks from the software manufacturer.

More detailed and step-by-step explanation:

How viruses are transmitted
There are two main types of known viruses on the Mac. Some viruses embed themselves in the Desktop file (e.g. WDEF). These viruses can be transmitted by simply inserting an infected disk into a disk drive. Other viruses infect applications and system software by infecting them when they're launched or running. For example, when you double-click a Claris application to run it, the virus may immediately infect the application, which will cause the alert to be displayed. If you trash this application, reinstall it, then rerun it, the new copy of the application may become immediately infected. Thus, it may appear that the original disks are infected.

The most reliable way to prevent the spread of viruses is to lock or write protect disks. This is done by moving the black tab in the back of a diskette into a position that allows you to see through the hole. This is especially important for original copies of applications. Please lock all your original disks.

Steps to detect viruses
1- Get virus detection and removal software. These are available as shareware / freeware from user groups and online services, and as commercial software from computer and mail order firms. Be sure to get the latest version of the software.
2- Locate a disk with a System Folder on it, such as the system disks that come with your computer. Lock this disk. Restart the computer from this disk, so that the computer is running from the System folder on this disk.
3- Lock the floppy disk with the virus detection software on it.
4- Insert this disk, then run the virus detection software to check the system disk you used to restart the computer. If this disk is not infected, proceed to the next step. Otherwise, locate an uninfected system disk and start over at step #2 above.
5- Using the virus software, check all original floppy disks for viruses. If any original disks are infected, contact the software publisher for replacement disks.
6- Using the virus detection software, check the hard drive. Set the virus software to remove any viruses from any infected applications and system software. Print or save a report listing all files that have been uninfected.
7- Trash all files from the hard drive that were uninfected in the previous step.
8- Replace all files that were trashed in the previous step by recopying/reinstalling from original disks.
9- Run virus detection utility on the hard drive again to double-check that it's still virus-free.

Tips to prevent viruses
* Lock disks whenever possible. Viruses cannot spread themselves to a locked disk.
* Check all floppy disks before using on your computer. Often viruses are spread because someone ran their software or data files on another person's computer.
* Check data disks given to you. Some viruses can embedded themselves in the directory of a disk. These viruses can be easily transmitted by simply inserting a disk into your own disk drive.
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MacDraw II: Objects pasted into other applications missing

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Issue #1:
Objects copied from MacDraw II and pasted into another application are missing on screen. Try this to help locate where the difficulty is occurring: In MacDraw II, copy the objects to the clipboard. Switch to the Finder. In the Finder, select Show Clipboard. Expand the clipboard window and view the objects. If the objects are all there, then they are exporting out of MacDraw successfully. The difficulty is probably due to something happening in the other application. If objects are missing in the Finder's clipboard, then they have not exported successfully from MacDraw. The difficulty is happening in MacDraw.

Try the following:
1) Copy and paste to the scrapbook, then copy / paste from the scrapbook to the other application
2) Save As to a PICT file, then import the PICT file into the other application
3) Check the destination application for Preferences - type options that may affect importing or pasting graphics.

Issue #2:
Objects copied from MacDraw II and pasted into another application are visible on screen, but not printing. This is usually due to a conflict with Print Monitor or other print spoolers. Try turning off the print spooler and printing again. Also, try turning off all options in page setup, then printing again.

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MacDraw Pro: Cannot Change Fill of an Object

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Check the fill indicator (the bucket) in the top left corner of the Styles Bar.

The fill indicator may not be selected. With the object selected, click on the fill indicator (or shift-click to leave the pen indicator chosen as well), then select the fill pattern/color combination.
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MacDraw Pro: Cannot See Handles on a Selected Object

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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There are a few instances when the handles of selected objects are not readily visible:

1. The object may be grouped with other objects. The handles would then be at the corners of the entire group. Select the Ungroup command. You should see the handles appear at the corners of the object.

2. On color monitors, the handles may be similar to the color of the objects in the background. MacDraw Pro always attempts to make the colors of the handles contrast with the colors of the objects in the background. However, for certain color combinations, the contrast between the handle color and the object color may be very slight.

If so, try the following:
- Temporarily move the selected object to a blank area of the drawing.
- Temporarily change the color of the objects in the background.
- Temporarily place the background objects on a different layer, then hide the layer.

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MacDraw Pro: Cannot Apply Pattern to an Object

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On black and white non-grayscale monitors, both colors and patterns appear as patterns, thus appearing very similar. You may apply a pattern to a colored object and see little or no change in the display of the object.

This can make it difficult to use the Style Bar if you put both patterned and colored items into it. The item you're selecting in the Style Bar may be a color and not a pattern at all.

You can select the correct color or pattern by using the colors or patterns pop-up palettes.
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HyperCard: Microsoft Mail Conflict & Fix

I am experiencing problems using System Software 6.0.4, Microsoft Mail 2.0, and HyperCard 1.2.5.

While using HyperCard, I receive a Microsoft Mail message. At that point, my machine produces a high-pitch tone. (This tone cannot be stopped unless I quit HyperCard or initiate a beep tone from my Macintosh within HyperCard.

What's going on here? Is there a fix?
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HyperCard also has a similar conflict with some versions of InBox.

As of April, 1990, the only workaround is to turn off the notifying chime until the problem is resolved.
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MacDraw Pro: Cannot Remove Pattern from an Object

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Selecting a color in the color pop-up palette will only change the color of the existing fill/pen pattern of a selected object. It will not change the pattern to a solid pattern.

To do this, you must select the solid pattern in the patterns pop-up or from the Styles Bar.
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MacDarw Pro: Color Palette Shows Few Colors When Opening MacDraw II Document

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If a MacDraw II document has at least one color other than black and white, MacDraw Pro creates a new color palette with only those documents colors in it when it imports that MacDraw II document.

It names this palette the MacDraw II document name and automatically makes this the active palette. When you click on the color palette icon, you may see a fewer colors than in the default Claris Colors palette.

To use the colors in the Claris Colors palette, tear off the color palette pop-up, then select the Claris Colors palette in the View menu.
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MacDraw Pro: Documents with Gradients Are Slow

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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To speed up the operation of documents with gradients, select the Fast Display of Gradients option in Preferences (or press Command-Option-G on the keyboard).

The gradients will appear banded (version 1.0v1), or coarsely dithered (version 1.5). However, the document will display much faster. This Fast Display of Gradients mode will not effect printing.

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MacDraw Pro: Double-clicking in Style Bar to Edit; Nothing Happens

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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You cannot edit items in MacDraw Pro's Style bar as you could in MacDraw II's Pattern Bar. This is because items in the Style Bar can contain combinations of patterns, colors and gradients.

To edit an item in the Style bar that has both a color and a pattern would require MacDraw Pro to be able to open both the pattern and color editor windows simultaneously.

To edit these items, you must edit them in the appropriate palettes for patterns, colors, or gradients , then place these items back into the Style bar.

TIP: If the item in the Style Bar does not exist in the palette, you can drag it from the Styles Bar into the palette with your mouse. Edit the pattern, color or gradient as desired in the appropriate palette, then drag it back into the Style Bar.

Here is how to edit a color/pattern combination:

1) Drag a color from the color pallette onto the Style Bar.
2) Select a pattern or drag a new pattern onto the Style Bar and select it.
3) Select the color. The patterned color should now show up in the fill indicator. Make sure you have no objects selected.
4) Drag the fill indicator onto the Style Bar.
5) You can get rid of the original pattern and color if you want at this time.
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MacDraw Pro: Gradients Print With Wide Bands

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If gradients are printing with noticeable bands rather than smooth transitions, check the following:

1) Are you printing from a color - capable Macintosh? Non-color ready Macintosh computers cannot print Gradients with smooth color blends (Mac Plus, SE, Classic, Powerbook 100). They lack the Color QuickDraw information in the ROMs needed for printing gradients (and for dithering solid colors in a document to equivalent grays when printing to black-and-white printer). MacDraw Pro allows users of non-color Macs to create full 32-bit color documents. However, these documents must be printed from color-capable Macs to achieve smoothly printed gradients.

2) Is the print dialog box set to print "Black & White" rather than "Color/Grayscale"? To print gradients with smooth gray changes, Color/Grayscale must be selected in the Print window when printing with the LaserWriter driver.

3) In Preferences, click the printing icon, then increase the number of gradient printing steps from 32 to a higher number, say 128. This will improve print quality to most Postscript printers and DeskWriters (version 5.0 of DeskWriter driver tested).

TIP: To make the gradient printing steps less noticeable, edit the gradient so that there is less contrast between the beginning and ending colors. For example, a gradient that shades from all white to all black would contain the maximum possible contrast between the beginning and ending colors. Try using a gradient that shades from, say 80% white to 20% white. The shade transitions will be closer together, so the banding in the gradient will be less noticeable when printed.

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MacDraw Pro: Gradients Print Less Banded From EPSF

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Gradients will print smoother and with less banding from an EPSF image than as a MacDraw Pro object. This is because the EPSF XTND translator produces better gradient printing Postscript code than the LaserWriter driver.

Save the MacDraw Pro document as an EPSF file, then open the EPSF and print. The print quality difference is not really noticeable when printing to a 300 dpi printer, but is noticeable when printing to higher resolution printers, such as the Linotronic.

The "number of gradient steps" preference item in the printing preferences panel affects only native Draw Pro objects with gradients. It does not affect the quality of the EPSF file version that Draw Pro exports.

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MacDraw Pro: Objects Copied to Clipboard Not Viewable in Finder Clipboard

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When copying complex objects to the clipboard, then switching to the Finder and selecting Show Clipboard, you may see the message "Unable to Display the Clipboard. "

The Finder displays this message because it doesn't have enough memory to display the contents of the clipboard when it contains complex objects. These complex objects include large smoothed polygons, freehands, bezigons, EPSF objects or large color bitmaps. The objects are, in fact, in the clipboard and will paste into a document in another application.

To view the contents of these objects in the Finder, you can allocate it more memory, just as you can allocate more memory to MacDraw Pro. For more information, see the section on Memory in the MacDraw Pro Troubleshooting Guide.

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MacDraw Pro: Objects get Converted to B & W Patterns on Color Screen

This may happen if you use an utility such as Switcharoo to switch to 2-color mode while a document is open in MacDraw Pro, change to go to another application in MultiFinder, then change back to MacDraw Pro.

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If you then use Switcharoo to switch to a color video mode, the objects will still appear on screen as black and white patterns.

To refresh the screen properly, select the Control Panel, then close it. Or, just wait about 10 seconds or so. MacDraw Pro will check the bit depth every 10 seconds or so, then redraw the screen to match the new video settings.

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MacDraw Pro: Objects Not Visible When Switching From Slides To Layers

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When you select Turn Layers On to switch from Slides to Layers, all layers except Layer #1 (which becomes the Master Slide) and the active layer are hidden. Therefore, objects on the other layers will not be visible.

To quickly view all layers:

1) Select the Layers command.
2) Choose Select All from the Edit menu.
3) Click Show, then click OK.

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MacDraw Pro: Slow Opening or Placing a MacDraw II file

MacDraw Pro opens MacDraw II files slower than MacDraw II.

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This is because the MacDraw II file has to be converted to MacDraw Pro format through the MacDraw II 1.1 Translator. The conversion process takes more time than opening a MacDraw Pro document, or opening a MacDraw II document in MacDraw II.

This conversion process includes converting all the colors and color patterns to similar solid colors in MacDraw Pro. Also, smoothed polygons in the MacDraw II document are converted to bezigons in MacDraw Pro.

A MacDraw II drawing with thousands of objects may actually take an hour or more to open in MacDraw Pro.
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Hard Drive: Making It Read-Only

I want my internal disk drives to have a jumper that allows me to set the drive for read-only access. Can I do this? If so, which one and how do you set it?
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There is no jumper or switch on Apple hard drives that make them read-only. However, there are ways to do this via software.

The first method requires that the hard drive be formatted by Apple HD SC Setup 2.0:

1) Start up from a floppy disk and run HD SC Setup 2.0 from that disk.
2) Select the hard disk that you want to make read only.
3) Click the "Partition" button.
4) A new dialog appears; click the "Custom" button.
5) Click on the Macintosh partition (the hard disk name appears in the partition).
6) A new dialog appears; click the "Lock" button.
7) Click the "Done" button.
8) Quit HD SC Setup.

The Macintosh partition of the selected hard disk is now write protected.

You can also use a disk editor, such as FEdit (this method works with hard disks formatted by earlier versions of HD SC Setup):

1) Open the hex representation of the volume that you want to lock.
2) Go to sector number 2. (This should be the third sector on the disk, with each sector having a length of 512 bytes.)

3) The sector should look something like this:

****
```
4244 9FAE F13C 9FAF 228B 0000 0010 0003
0000 063A 0000 0200 0000 0800 0004 0000
0020 0488 0855 6E74 6974 6C65 6400 0000
```
..... and so on,

where the 4244 begins at the zero byte of the sector.

4) The key location is where you see the word with the "****" over it. It should be located at the tenth byte and be $0000.

5) If the 8000 is at the tenth byte, change it to $8000 and write the sector to disk.

6) Restart the system to have the change take effect. (This information is usually stored in memory and won't be updated until you restart.)

Running software from a locked disk is not advised unless the locked device is NOT the startup disk. Many applications create scratch files in the System Folder of the startup disk. If it's locked, the software probably won't run. Some software even expects its home disk to be unlocked. If the locked device is not the startup disk, and the user is only going to read from it, then everything should be okay.
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MacDraw Pro: Place Command Does Not Import Palettes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When using the Place command to place one MacDraw Pro document into another, the palettes from the placed file are not imported.

The Place command places only the objects from the placed file. It does not import file settings. This includes palettes, gradients, custom pen widths, Set Views, etc.

You can import the palette by selecting the Open Palette command in the Color Palette pop-up, then selecting the same file that you Placed.

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MacDraw Pro: Applying Color to Gradient-filled Object Removes Gradient

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you fill an object with a gradient, then apply a color to that object, the color replaces the gradient. The object is then filled with a solid color.

The correct procedure is to create a gradient with color, then apply that colorized gradient to the object, replacing the black-and-white gradient.

At first, it might seem that applying a color to a gradient-filled object should colorize the gradient in the object. However, a gradient can have up to 4 colors in its definition: the beginning color, the ending color and one or two intermediate transition colors. If you try to apply a color to a gradient-filled object, there is no way to specify which of these gradient colors to substitute for the new color. This is why it is necessary to create new gradients with colors in them.

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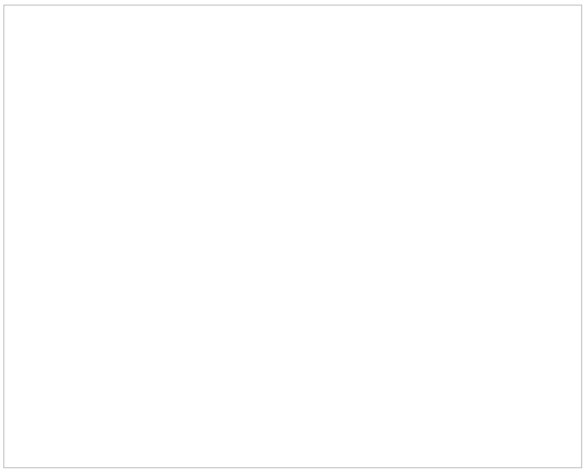
MacDraw Pro: Character Spacing Increments

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When editing text, the Show Size bar will display the inter-character spacing of the text. You will see two vertical lines with a number to the right " || x ". This number is a multiple of 4/256ths of the point size of the first character of the selected text.

The displayed number is the change in character spacing (positive or negative) from the default spacing.

The default setting is zero, which means that no extra spacing exists for the selected text.

Refer to the MacDraw Pro Users Guide for information on how to adjust the inter-character spacing.
(See Graphic.)



Published Date: Feb 18, 2012

MacDraw Pro: Gradients Appear Banded When Zooming In

This article has been archived and is no longer updated by Apple.
When the magnification level is above 200%, MacDraw Pro automatically displays gradients in the Fast Display mode.

This is true even if Fast Display of Gradients is unchecked in Preferences. This is done for performance reasons. There is no way to disable this feature. As a workaround, you could scale the gradient-filled object larger, thus allowing an enlarged view while the document is at 200% or less magnification.

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MacDraw Pro: Listing Library Objects In Alphabetical Order

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When new objects are pasted into a Library, then named, the new object names will not be listed in alphabetical order. To view all library object names in alphabetical order, just click in the Find entry box.

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MacDraw Pro: MacDraw II Multi-colored Patterns Converted to Solid Colors

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Patterns from a MacDraw II document appear in MacDraw Pro as solid colors.

Color patterns in MacDraw II are frequently used to simulate solid colors, since MacDraw II is limited to the eight QuickDraw colors. When MacDraw II documents are opened in MacDraw Pro, patterns are converted to their solid color equivalents. Usually this is desired, since the resulting solid color is what was being simulated in MacDraw II. However, multiple-colored non-dithered patterns in MacDraw II are converted in MacDraw Pro even when a solid color is not the intended end result (for example, a two-colored brick pattern). There is no workaround at this time.

This pattern conversion takes effect when the "Convert Patterns to ... Colors" checkbox is set for the MacDraw II 1.1 Import settings in the Preferences/Translators dialog box of MacDraw Pro.

"Convert Patterns to ... Colors" is CHECKED ? This is the default setting. When checked:
1- Dithered patterns that include white and one other color are converted to solid colors.

- The MacDraw II XTND filter contains a table of about 200 dithered patterns. As the MacDraw II document is converted, each pattern is compared with the patterns in the XTND filter's pattern table. Any patterns that match those in the table are converted to solid colors.
2- Non-dithered patterns that include white and one other color are NOT converted (e.g., the brick pattern, diagonal lines pattern, etc.)
3- All patterns that include two or more non-white colors (dithered and non-dithered) are converted to solid colors. (MacDraw Pro only supports patterns that include white and one other color.)

"Convert Patterns to ... Colors" is UNCHECKED -- When unchecked:
1- Dithered patterns that include white and one other color are NOT converted to solid colors.
2- Non-dithered patterns that include white and one other color are NOT converted (such as the brick pattern, diagonal lines pattern, and so on)
3- All patterns that include two or more non-white colors (dithered and non-dithered) are converted to solid colors. (MacDraw Pro only supports patterns that include white and one other color.)

Why doesn't MacDraw Pro support more colors in its patterns? MacDraw Pro is not limited to the standard eight QuickDraw colors to define its colors, as is MacDraw II. MacDraw Pro uses Color QuickDraw and 32-bit QuickDraw. Patterns defined using Color QuickDraw (called a "pixpat") may not print reliably unless the pattern contains only white and one other color. This is a system-level issue not associated with MacDraw Pro. (Other drawing programs that attempt to offer full-color pixpat support may also have difficulties printing). MacDraw Pro was created to support only these white/2-color patterns to avoid these printing difficulties.

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MacDraw Pro: Recommended Memory Levels Using MultiFinder

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following are the minimum recommended memory levels for operating MacDraw Pro under MultiFinder.

These memory levels are required to open one document with the window at full screen size. More memory may be needed to open multiple files or large files.

Configuration RAM required

Configuration	RAM required
Built-in 9" B&W monitor	1000K
Apple Color 13" Hi-Res RGB Monitor: 256 Color	2000K
thousands/millions colors	4000K
19" Color Monitor: 256 Color	2500K
thousands/millions colors	4000K

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MacDraw Pro: Select All Command Not Selecting Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If the Select All command does not select objects, MacDraw Pro may be in the Reshape mode. You can exit the Reshape mode by selecting the Reshape command, or pressing the Enter key.

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MacDraw Pro: Printing Drawings With Gradients

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If drawings with gradients are printing slowly, you can reduce the number of gradient steps in the Printing Preferences. The fewer the steps, the faster the document will print. Conversely, more gradient printing steps will print much smoother transitions between gradient steps, but can increase printing time tremendously.

There is no benefit to increasing the number of gradient steps beyond what the printer can support. For example, most 300 dpi LaserWriters (without PhotoGrade or some other enhancement) can print a maximum of 32 gradient steps. This is the maximum gray levels that the LaserWriter can support with acceptable resolution. Selecting more than 32 gradient steps when printing to a LaserWriter will not result in better print quality of gradients, just longer printing times.

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MacDraw Pro: Text Appearing On Screen Slowly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Text is drawn to the screen more slowly in MacDraw Pro 1.0 than in MacDraw II or MacDraw Pro 1.5.

The following points explain text behavior and suggest methods of creating text which will offer the fastest performance:

1) Caption text is slower drawing to the screen than typing into a text block.
(Caption text is when you select the text tool, click on the document, then start typing. Thus, you're typing without defining a right border for the text.). Instead, create a text block, then type into the text block. You create a text block by selecting the text tool, then drawing a rectangle on the document. This sets the borders for the text block on all four sides. Then start typing.

2) Inserting text in the middle of a text block is slower than typing text at the end of a text block. (Breaking the text into smaller text blocks speeds up the text editing/redraw.)

3) Text redraw is slower when Kerning by Pairs is on. Turning Kerning by Pairs OFF will speed up text redraw.

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AppleShare File Server and Virus Protection

What are your recommendations on virus protection for file servers?

Also, can a server be infected with the WDEF virus? If so, since WDEF is spread by a machine coming in contact with an infected disk's Desktop file, how is it spread? Does a server access a workstation's Desktop file?

This article has been archived and is no longer updated by Apple.
Apple Tech Comm does not recommend using INITs that offer virus protection on file servers. A server will freeze if a dialog appears alerting the nonexistent user about an infection attempt. We suggest that instead you use a program that scans the AppleShare File Server for viruses on a regular basis.

The AppleShare Server Folder itself is quite secure when the server is running. Is it not accessible by any system call, whether high-level or low-level. A virus can attack only folders and files for which the user of the infected program has write access privileges. It is not necessary or recommended to install Vaccine in the Server Folder on the AppleShare File Server. If the server is running at the Finder level, it is just as susceptible to viruses as any system.

An AppleShare file CAN become infected with the WDEF virus. When any new volume is mounted, the WDEF virus looks for a file called "Desktop" at the root level and copies itself into it. Once the file server is infected with the WDEF virus, the virus is dormant because the Desktop file is not accessed by workstations and is not used by the file server.

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MacDraw Pro: Creating Angled Lines of Exact Fractional Lengths

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When drawing objects, you can make MacDraw Pro show the dimensions in the Show Size bar in exact units without decimal values.

Examples:
4'-8 1/2" (4 feet, 8 1/2 inches)
12p6 (12 picas, 6 points)

You do this by setting the appropriate ruler settings. For example, to display in feet and inches, in Rulers, set the ruler for Scaled Size to "Feet" increments, then set the divisions per inch to 12 (or 24, or some other multiple of 12). When you draw an object, the Show Size bar will display in feet and inches (and fractions) instead of decimal amounts. You must also have the Autogrid ON when drawing for this to occur.

Drawing angled lines, however, will usually result in the line length being displayed as a decimal. This is because the distance between grid points is usually not an even amount for angled lines.

If you need an angled line of an exact unit or fractional length, draw the line horizontally or vertically, then rotate the line to the desired angle using the Rotate command.

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MacDraw Pro, MacDraw II: Drawing or Rotating to an Exact Angle

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Drawing a line at a specific angle can be difficult for fractional angles (for example, 23.34 degrees). Likewise, rotating an object to a fractional angle can be difficult. You can save time and steps by drawing the line horizontally or vertically, then use the Mouse Constraint feature while rotating the line. Likewise, this technique can be used to rotate any object to an exact fractional angle.

1. Select the Preferences command from the Layout pulldown menu. (Shortcut: double-click on the corner-center control.)

2. Select the Mouse Option.

3. Click the radio button marked "Custom" under Mouse Constraint, and enter the degrees rotation into the Entry box.

4. Click OK to close the Preferences window.

5. Select Rotate, and rotate the object while holding down the shift key.

The rotation will be limited to 90 degree increments and the custom angle. For example, setting a custom mouse constraint of 15 degrees limits rotation to 0, 15, 75, 90, 105, 165, 180, 195, 255, 270, 285 and 345 degrees.

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MacDraw Pro: Rotating In Small Increments

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When rotating an object, the rotation degree increments depend on several things.

1) If the grid is on, the rotation conforms to the grid. Increasing the rulers divisions will allow you to rotate in finer increments. Likewise, turning the grid OFF will allow you to rotate in pixel-level increments.

2) How far you drag from the pivot point. After selecting the objects handle to rotate, you can drag away from the object while rotating. This will give you a wider "sweep" or circumference around the pivot point of rotation. A wider sweep will let you rotate in finer increments.

3) The zoom level. If you zoom out to a reduced view, then drag away from the pivot point while rotating, you'll get an even wider sweep.

To get the maximum precision in rotating, turn the grid off, zoom out to a reduced view, then drag away from the object's handle while rotating.
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MacDraw Pro: "Out of Memory" Message In Layers Dialog Box

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you delete layers in the Layers dialog box, then attempt to add or duplicate layers, you may see an "Out of Memory" message.

Deleted layers are not purged from memory until you click the OK button. This is necessary in order to allow you to click the Cancel button, thus canceling deletions and other changes made in Layers. If this happens, delete the layers, click OK, then reselect the Layers command and create or duplicate other Layers.

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MacDraw II: PICT file created by Design/IDEF

MacDraw II is unable to read a PICT file created with Design/IDEF from Meta Software

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
It appears that the format of the PICT is different than the PICT supported MacDraw II. Other applications can open the file, however, MacDraw Pro is able to open the file.

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Claris CAD: Info Window Changes Numbers Unpredictably

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If a user enters a number into the info window and it changes when he presses enter, there are two possibilities. If the number always changes to something very close to the original and always changes to the same number (i.e. 1.000 becomes .999) then it is the SANE INIT rounding problem, and he should remove the INIT from their system folder. But...

If the number changes to a different number (i.e. 1.000 becomes 1.023, then on the second try it becomes .987) then it is a known issue with Claris CAD 2.0v1 and 2.0v2 that is fixed in 2.0v3.

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Claris CAD: CGT Issue With AutoCAD DXF Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When Claris Graphics Translator translates a DXF file from AutoCAD sometimes difficulties can arise.

1. Make a back-up copy of your AutoCAD .DWG file.

2. In AutoCAD do the following.

3. Use the command Handles and type in "destroy" and Autocad will come with a message that gives you the opportunity to destroy all handles. (Note: The Handles function is equivalent to Claris CADs' "object data".) This message will be unique every time that you use the "destroy" option. There will be a phrase in quotes that you must type in to verify destruction.

4. Bring this new file to Claris Graphics Translator and translate the file.

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EtherTalk 2.0: Needs AppleTalk Driver v53

You may discover a compatibility problem with some networks (usually demonstration networks where many different types of software have been used).
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The problem occurs when a server has first had EtherTalk 2.0, installed, then later has had EtherTalk 1.0 or 1.2 installed. AppleTalk driver version 53 -- which is installed with EtherTalk 2.0 -- does not work with earlier versions of the EtherTalk driver.

When switching from EtherTalk 2.0 to EtherTalk 1.0 or 1.2, AppleTalk driver v53 must be removed from the System Folder and replaced with AppleTalk driver version 52, which works with EtherTalk 1.0 and 1.2.

The removal must be done manually, by dragging the AppleTalk driver icon from the folder. Installing the new version can be done either with a Finder copy, or through the EtherTalk 1.0 Installer.

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MacPlot: Rotated Text Isn‘t Plotting Smoothly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Claris CAD 2.0v1 and earlier will print all rotated text as a rough bitmap. However, Claris CAD 2.0v2 will print text smoothly as long as it is rotated in a multiple of 90 degrees.

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AppleShare PC: Printing to ImageWriters

Can you print to an AppleTalk ImageWriter from a PC using a LocalTalk PC Card and AppleShare PC 2.0? Also, does the current version of AppleShare PC include the drivers that allow printing to this device?

I have heard that AppleShare PC prints to both the ImageWriter II and the ImageWriter LQ printers.

This article has been archived and is no longer updated by Apple.
The AppleShare PC Desk Accessory does provide a network choice for the ImageWriter II and ImageWriter LQ printers.

AppleShare PC has included AppleTalk Printer Drivers for the ImageWriter II and ImageWriter LQ since version 1.1. This was not available in AppleShare PC 1.0. Anyone using a version of AppleShare PC that does not have the ImageWriter drivers as a desk accessory option should upgrade to the latest version of AppleShare PC version 2.01.

About ImageWriter printing:

AppleShare PC first requires the PC application to choose its own Epson driver or ImageWriter driver. If the application has an ImageWriter driver, AppleShare PC will manage only the AppleTalk connection. If the application supports only Epson printing, AppleShare PC will handle the AppleTalk connection to the ImageWriter and convert the application's Epson commands to ImageWriter commands. This requires the user to configure the AppleShare PC connection to the ImageWriter with the Epson print option.

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Claris Software: TrueType (System 7.0) Compatibility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Text printed in Final mode with MacProject II and MacDraw II shows a marked improvement with the addition of TrueType.

However plotting text in Final mode from Claris CAD 1.0v3 or higher (which plot at a higher resolution), takes more memory and more time to plot than before. In fact, it will stroke each letter hundreds of times as if it were drawing with a "very" small pen. With some paper this will result in "laser-quality" text while other paper may be become torn in this process. This behavior is not witnessed in the 3.7v4 version of MacPlot Professional which provided compatibility with outline fonts.

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MacDraw II: Not Opening PICT Files (Developer Info)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This info is for developers who are writing applications that save out to PICT files.

If MacDraw II can't open the PICT file, check the following:

1) No empty groups. Don't issue a Begin Group call, immediately followed by an End Group

2) No Invert Calls (call Paint instead)

3) no objects out of PICT frame

4) If an object is filled and framed: fill first, then frame second

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MacDraw II: Printing Gray Text With MacDraw II

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In order to get a gray text look with MacDraw II using the color patterns:

1. Install LaserWriter driver 6.01.
2. Select "Print Color Patters" from Print Options under the File Menu.

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MacPlot: Generating An HPGL Plot File On Disk

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The MacPlot plotter driver included with Claris software does not include a print-to-disk capability. However, MacPlot Professional from Microspot does allow printing to an HPGL file on disk. Call Microspot at 800-622-7568 (Sales).

Microspot can be contacted at:
Suite 6
12380 Saratoga-Sunnyvale Road
Saratoga, CA 95070

(800) 622-7568 Sales
(408) 253-2000 voice
(408) 253-2055 fax
(408) 257-4000 Technical Support
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Claris CAD: Radius Monitors And Video Cards

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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With a Radius monitor, garbage will be displayed near the bottom of the screen if Large Menus are turned on in the control panel. From within the Radius software, turn Large Menus off to correct this.

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MacDraw Pro: Color PICT2 Files Print In Black And White

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Color PICT2 files print in black and white from black and white Macintosh computers (Mac Plus, SE, Classic). This is because black and white Macintosh computers do not support Color QuickDraw. (Note: Mac SE/30 has color QuickDraw in ROM, even though the monitor is B&W.)

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MacDraw Pro: Color Separation Information

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro does not have built-in color separation capabilities.

To print color separations of a MacDraw Pro document, you must save as an EPSF file, then open the EPSF file in another program that can print color separations. This is explained in the MacDraw Pro Color Guide pg. 3-6, 3-7.

Programs that can print color separations from an EPSF image include Quark XPress, Adobe Separator, Aldus Preprint, Aldus Freehand.

Some programs produce more accurate color separations and offer better separation controls than others. If you take the same EPSF image from MacDraw Pro and produce color separations in different programs, the color separations will not be identical. Thus, if the color separation is not accurate, it is possibly due to the abilities of the color separation program, and not due to the quality of the EPSF image produced by MacDraw Pro.

Claris Software Quality Assurance has found that Quark XPress seems to produce the most accurate color separations (based on the versions of tested products available as of April 1991).

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MacDraw Pro: Colors on Screen Change When Launching

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When opening the MacDraw Pro application or the Color Editor, you may see colors in other windows and in images on the desktop flash to other colors.

This happens because the Claris Colors palette that MacDraw Pro uses is different than the Macintosh System color palette. If your video interface is set to 256 colors or less, it cannot simultaneously display all the colors in the Claris Color palette and the Macintosh default palette.

You can eliminate the flashing color changes in the background by:

1) Setting your monitor to display more than 256 colors, or
2) Use the Apple System Color palettes to create your drawings instead of the Claris Colors palette. MacDraw Pro disks include a choice of three Apple Colors palettes.
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MacDraw Pro: Command-Spacebar Not Working

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Command- Spacebar is a shortcut to select the last tool used.

If Command- Spacebar does not function, check to see if SCSI Probe is installed. SCSI Probe 3.0 is preset to use Command-Spacebar to mount volumes. To fix this, select SCSI Probe in the Control Panel, click the Options button, then type a different keyboard command. The new key combination you type will replace the Command-Spacebar option.

Now if you try the Command- Spacebar in MacDraw Pro, it will behave as expected.

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LaserWriter as a Serial Printer

I've been doing some work with the Asynch LaserWriter drivers, testing a mixed DOS/Macintosh environment.

1) When the LaserWriter is used as a serial printer, does it respond to ASCII codes with the 8th bit set the same as codes with the 8th bit not set? For example: Is 83h = 03h, 84h = 04h, 93h = 13h, 91h = 11h?

2) Does the LaserWriter respond to the above control codes when in AppleTalk mode as well as when in serial mode?

This article has been archived and is no longer updated by Apple.
These questions are interrelated, and the answers may be easier to follow if we answer #2 first.

2) A control code is used by a printer for a specific printer function. When the printer is in AppleTalk mode, the PostScript program language is used, and uses words to activate or invoke printer functions, not control codes. However, the printer uses control codes if it is in Diablo or LaserJet (if available) emulation mode.

1) If the printer is in Diablo or LaserJet mode, the above is correct if it is set for 7-bit data with no parity check, as the 8th bit is dropped -- but if the printer is in 8-bit mode, the mapping is not equivalent.

(NOTE: Part of the printer configuration requires you to select whether 7- or 8-bit communication and parity is used, so
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MacDraw Pro: Drawing Objects With Freehand Tool Won‘t Autoscroll Window

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When drawing with the freehand tool, if you draw outside the window, the window will not scroll.

This is different than other drawing tools, which will autoscroll the window when drawing. However, if you draw outside the window boundary, the freehand object will be drawn on the drawing. You can manually scroll the window after drawing to see the effects of this drawing. MacDraw II functions the same way when drawing freehand objects.

To replicate this:

1) Set the drawing window so that it doesn't go to the right edge of the screen.
2) Draw with the freehand tool, dragging past the right side of the document window.
3) Scroll the window to the right. You will see that the freehand tool drew as if the window had extended farther to the right, although the window didn't scroll to make that area of the drawing visible.

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MacDraw Pro: Gradients in EPSF are of Low Quality

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Gradients in EPSF images may appear lower quality on screen than the original gradient object. This includes EPSF images created in MacDraw Pro and viewed in other applications. Likewise, a gradient created in another application, such as Freehand, then imported into MacDraw Pro as an EPSF, may also look poor on the screen.

When viewing an EPSF image on the screen, you are viewing the PICT preview portion of the image. You are not viewing the Postscript definition of the objects. Thus, what you see on the screen is only an approximation of what will print.

The gradients in the EPSF will print correctly, even though they look poor on the screen. In fact, the print quality of a gradient in an EPSF image is slightly superior to a gradient in a native MacDraw Pro object.
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MacDraw Pro: Gradients in PICT Files Viewed With Other Applications

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you create a document with gradients, save as a PICT file, then open the PICT file in other graphic programs, the gradients may not be correct. This is due to the other program's inability to read our gradient information in the PICT file, and not due to any problems in MacDraw Pro. The following information outlines the performance of other programs reading gradients from MacDraw Pro PICT files.

Studio 8: Gradients look banded, with very coarse transitions between gradients. Studio 8 is mapping the colors in our gradients to match the colors in its own color palette.

Studio 32: Gradients look very good, with very smooth color transition. No problems observed.

SuperPaint: Gradients appear as solid black fill, with no color transition at all.

PixelPaint Pro: Gradients look very good, with very smooth color transition. No problems observed.

Freehand 2.0: Gradients appear with smooth color transition. However, the gradient spills out way beyond the border of the object, especially with bezigons.

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MacDraw Pro: Handling of Text Tabs versus MacDraw II

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II does not support tabs. (Tabs are treated as spaces.) MacDraw Pro supports true text tabs. When opening a MacDraw II document in MacDraw Pro, tabs are converted to spaces. This is done so that the character spacing will remain the same.

However, when saving a MacDraw Pro document as a MacDraw II file, tabs are not converted to spaces. The tab characters remain in the text blocks. Since MacDraw II treats the tab as a space, tabs will cause only a single space to appear at the tab.

MacDraw Pro users should create their documents accordingly. If the user knows that they are creating the document for MacDraw II users, they should not space text with tabs, as this feature is not supported. (Of course, this goes for any other feature that MacDraw II doesn't support, such as gradients, most colors, etc.)
Published Date: Feb 18, 2012

MacDraw Pro: Multiple Topics Highlighted In MacDraw Pro Help

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
More than one topic gets highlighted in the MacDraw Pro Help Table of Contents.

This appears in the Table of Contents only. It is an issue with the Claris Help System file, which is a runtime version of HyperCard.

1) Click down on one of the topics.
2) With the mouse button held down, drag to another topic, then release the mouse button.
3) Click on any topic.
4) Two topics will be highlighted.
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MacDraw Pro: MultiMaster Incompatibility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MultiMaster 2.0x is partially incompatible with MacDraw Pro 1.0v1. If you use the Hide windows feature in MultiMaster while having a large clipboard in MacDraw Pro, MacDraw Pro will crash.

MultiMaster is a program launcher very similar to On Cue. It is included with Now Utilities 2.03. This problem has been reported to Now Software Inc.

Note: MultiMaster 3.0 has not been tested for compatibility with MacDraw Pro.
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Claris CAD: Scaled Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When scaling text in Claris CAD 2.0 using the Scale command, the text will be scaled to the nearest integer point size to the amount scaled. In other words, if you have ten point type and scale it to 133%, it will return type that is 13 point.

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MacDraw Pro: Gradients Become Banded or Undithered

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When enlarging a large gradient-filled object, the display of the gradient may lose its dithering. The gradient will appear with noticeable bands of color, without dithering. This effects screen display only, not the quality of printing. This only occurs when the video is set to 256 colors or less.

Increase the memory for MacDraw Pro, or switch to 24/32-bit video mode (millions of colors). Additional workaround: see explanation below.

Gradients are defined in MacDraw Pro using 32-bit QuickDraw, even though the monitor may be set to display fewer colors, such as 256. In this way, gradients can be printed in the highest possible quality regardless of the number of colors that can be displayed on screen. When displaying gradients on a color screen set to 256 colors or less, MacDraw Pro dithers the colors in the gradients. This dithering results in a gradient with smoother looking color transitions (without noticeable bands of colors). The gradient may be displayed using only the 256 available colors, but the dithering gives the appearance of more colors.

A large gradient-filled object requires lots of RAM. For example, a full-screen rectangle with a gradient displayed on a 13-inch color monitor may use about a megabyte of memory. Increasing the size of a gradient-filled object increases the RAM used. If you increase the size of a gradient-filled object, MacDraw Pro may run low on available RAM. When this happens, MacDraw Pro will switch to displaying the gradient in Fast Display mode to conserve RAM (no dithering).

The RAM used to display gradients in high quality is not shown in the memory usage indicator in the About MacDraw Pro window. Thus, even though this indicator may show that there is a megabyte or more of available memory, MacDraw Pro may be using most or all of this memory for things like displaying gradients in high quality.

TIP: When a gradient is displayed using the Fast Display mode, MacDraw Pro uses the colors defined in the current color palette to display the gradient. If the current color palette contains few intermediate colors between the 2-4 colors that define the gradient, MacDraw Pro will have few colors to display the gradient. Thus, the gradient may display with only a few very wide bands of color, instead of many smaller bands of colors.

If you add colors to the current palette that are intermediate to the colors in the gradient definition, MacDraw Pro will display the undithered gradient with more colors. Thus, you can make the undithered gradient display quality better. You can create these intermediate colors by creating colors that are a blend of the colors in the gradient definition. You can then place all the colors (the gradient colors and the intermediate blended colors) in the Style Bar. This way, if the total colors in the Color Palette and Style Bar exceeds the number of colors that your video card can display, these colors will be given priority for being displayed as solid colors.

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MacDraw Pro: Some Colors Appear As Dithered Patterns

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Some colors appear as dithered patterns, instead of solid colors. This effects screen display only, it has no effect on printing.

To change the dithered colors to solid colors:
1. Select the color(s) in the Color Palette, then Choose Solid from the palette's Special menu.
2. Place preferred colors in the Style Bar.
3. Increase the number of colors in the Monitors Control Panel.
4. Eliminate unused colors from the active Color Palette, thus decreasing the total number of allocated colors.

If the total allocated colors exceeds the colors that can be displayed on screen, MacDraw Pro will dither some of the colors. (Total allocated colors includes all the colors in the current palette, plus all the colors in the Style Bar, plus a few reserved colors). This dithering allows you to create documents with thousands of colors even though your monitor may be able to display only 256 colors. The additional colors beyond 256 will be displayed as a dithered pattern, closely simulating the true solid color that it represents. If you want to change a dithered color back to a solid color, select the dithered color in the Color Palette, then select the Solid command from the Special menu. MacDraw Pro will revert the dithered pattern back to the solid color. However, MacDraw Pro will then have to convert other colors in the palette to dithered colors to accommodate this action.

If you have certain colors that you want to always display as solid colors (such as colors used to display gradients), place those colors in the Style Bar. Colors in the Style Bar are given priority over colors in the palette for display as solid colors.

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Claris Software: Problem Pasting Excel 3.0 Charts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is an issue with pasting charts from Excel 3.0 into MacDraw II, as well as other drawing programs (MacDraw Pro, Claris CAD, Canvas 2.1, Freehand, SuperPaint and MacDraft). The axis text comes in all on one line, instead of at each axis point. Also, in one test chart, the bars in the bar graph did not paste at all.

These same charts do paste into MacDraw 1.9.X with the text placed correctly. Thus, one workaround is to paste the chart into MacDraw 1.9, then copy and paste into MacDraw II. Excel 3.0 charts DO paste properly into programs that read the chart as a single graphic object (MacWrite II, Word, PowerPoint, SmartForm, PageMaker, etc.)

In addition, when copying cells as a graphic using Excel's camera tool (which automatically converts the selected group of cells into a clipboard graphic) an ungrouped bunch of text and graphic objects is created. This group, when pasted into MacDraw Pro or II, can be fully manipulated. There have been reported difficulties with the clipboard handling graphics across company programs, i.e. Excel to Word is not an issue, but Excel to MacDraw Pro, MacWrite II, or Canvas causes the items to drop out, or run together. Solution Three solves this.

Solution One: Microsoft has released an update, 3.0a.

Solution Two: PictFixer - This shareware INIT permits charts to be copied from Excel 3.0 into several popular drawing programs which currently don't understand Excel's new clipboard info. These programs include MacDraw II, Canvas 2.1, DeskDraw 3.0 and Superpaint 2.0.

File: PictFixer Release _.sea (18421 bytes)
DL time (2400 baud): < 2 minutes
Download count: 17
Uploaded on: America Online AUTHOR: Morgan Belford

Solution Three: Microsoft has released an init to allow users to correctly paste their Microsoft Excel 3.0 charts into MacDraw II and MacDraw Pro, Canvas, etc. If you have any further questions about the INIT - Chart Pasting, or, if you have difficulty installing the INIT, please contact Macintosh Excel Product Support at (206) 635-7080. Technicians are available from 6 am to 6 pm PST. The init is available on CompuServe in the Microsoft Forum:Excel Library:CopyIn.

The following is a copy of the Read Me document that accompanies the Chart Pasting INIT from Microsoft:

7/25/91

This disk contains:
ChartPaster INIT
Read Me

The ChartPaster INIT is designed to allow you to copy charts to all draw programs without loosing the positioning of your text. The INIT should also eliminate any text positioning problems with worksheet pictures pasted into certain draw programs.

Note: You must be running under MultiFinder for the INIT to be effective.

How to install the ChartPaster INIT:
System 6.0.x:
Drag the INIT from the diskette, and place it in your System Folder. Note that the INIT will not be functional until after you restart your Macintosh.

System 7.0:
Drag the INIT from the diskette, and place it in your Extensions folder. This folder is located within your System 7.0 folder. Note that the INIT will not be functional until after you restart your Macintosh.

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EPROM Burners for Macintosh

Is there an EPROM programmer device or software that can be connected to the Macintosh ?

This article has been archived and is no longer updated by Apple.
You have quite a few options. If you search the Redgate Buyer's Guide or MENU/Software Library on the keywords EPROM and Macintosh, you'll get a list of many software applications. Many of these programs generate object files in Motorola S, Intel Hex, and TEK-Hex (Tektronics format) record formats, used by a majority of PROM burners. Some programs have their own built-in communication emulation package, while others require you to use a terminal emulation program, such as MicroPhone or MacTerminal, to downloaded to an emulator or EPROM programmer connected to the Macintosh modem or printer port.

We have also seen various PROM burners advertised in the Macintosh magazines. A check of back issues should help you develop a list of names.

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MacDraw Pro: Bitmaps Print with Lines or Moire Patterns

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacDraw Pro documents with 72 dpi bitmaps may print the bitmaps with patterns, lines or moire patterns in them when printing to 300dpi printers (such as the LaserWriter and DeskWriter).

In the Page Setup Options, turn on the Precision Bitmap option (or other similarly worded option) to reduce the printing by 4%.

72 dpi bitmaps are not an even fraction of a 300 dpi printer. By reducing the printing by 4%, the bitmap will be 25% of the resolution of the printing (72 Ö 288). Thus, the bitmap will print without patterns in it.

This is not specific to MacDraw Pro. It is required when printing 72 dpi images from all Mac software.
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MacDraw Pro: Can‘t Place 32-bit TIFF Or PICT Graphics

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When trying to place 24 / 32-bit graphic images, such as TIFF or PICT, the image is not placed into the document. No warning box or dialog box is displayed.

Install the 32-bit QuickDraw INIT, then restart the computer.

To place 32-bit graphic images into MacDraw Pro, the 32-bit QuickDraw INIT must be installed (or in ROM). This is true even for Mac Plus, SE, and Classic, which do not otherwise require the 32-bit QuickDraw INIT to run MacDraw Pro.

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MacDraw Pro, Claris CAD: Colorized Bitmaps Saved As EPSF Print Black

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in the EPSF translator included with MacDraw Pro 1.5

Colorized bitmaps print black when saved as EPSF using the EPSF Translator v1.0 for MacDraw Pro 1.0v1 and Claris CAD 2.0v3

The following steps recreate the behavior:

1) Import a black and white bitmap (such as those from MacPaint or HyperCard)
2) Colorize the bitmap by selecting colors for the pen and/or fill of the bitmap
3) Save as EPSF
4) Print the EPSF

The bitmap will print as black and white.

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MacDraw Pro: Duplicated Objects At Odd Zoom Levels Appear Different

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Object duplicated at a zoom level may appear to be different in size.

This is due to rounding error that can occur at certain odd zoom levels. The objects are, in fact, the same size.

The following steps will illustrate:

1. Set the pen width to 0.01 point.
2. At 100% zoom, draw a square about 1/2 inch wide.
3. Duplicate the square and drag it to the right.
4. Zoom to 351%.
5. Duplicate the first square again and place the duplicate over the second square.

Although both squares are 1/2 inch wide, one will appear to be a pixel larger than the other.

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MacDraw Pro: EPSF Image Via Clipboard Doesn‘t Print High Quality

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If an EPSF object is copied from MacDraw Pro, then pasted into another application, only the PICT preview portion of the EPSF is pasted. The Postscript portion is stripped out. The resulting image that is pasted is not an EPSF object, but a PICT with a single object, a 72dpi bitmap. Thus, printing the object will be poorer quality than printing the EPSF object.

The Macintosh clipboard does not support the EPSF format. To move EPSF from one program to another, the EPSF must be exported to disk, then imported / placed into the other program.

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MacDraw Pro: How To Create Slide Show With Colored Background

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When viewing a slide show with a colored background, white strips 1-2 pixels wide may appear on the left and top of the screen.

To create a background color that fills the screen when viewing a Slide Show, try the following procedure on the Master slide:

1. Turn the Autogrid OFF.
2. Set the current pen width to zero points. You may have to select the Pens... command to create this as a custom pen width.
3. Go to the Master Slide and draw a rectangle to fill the entire drawing.
4. Use the cursor keys to nudge the rectangle towards the upper left corner of the drawing. Scroll to the lower right corner of the drawing and, if necessary, expand the rectangle to fill the entire drawing. (You may want to zoom in to expand the rectangle with more precision.)
5. Change the fill and pen of the rectangle to the desired color/pattern/gradient combination and send the rectangle to the back if needed.
6. Select Turn on Slide Show.

To create a slide show that doesn't shrink to fit the screen, set the drawing size to 8.89 inches wide and 6.67 inches high.

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MacDraw Pro: Imported Objects With Zero Line Width Not Rescaling

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you import an object with a zero line width from other drawing programs, then attempt to resize the object using the Rescale When Pasting command, the objects may not resize. (This includes objects from MacDraw 1.9.)

This is due to the objects frame not being defined by the other program.

The workaround is to change the pen width of the objects, then rescale.

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MacDraw Pro: Alignment Of Mixed-size Multi-line Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A text object with multiple line of text in different point sizes will not be perfectly aligned left.

To recreate:

1. Create a text block with several lines of text.
2. Change the first character(s) in each line to various sizes.

Look at the left alignment of the first character in each line of text. The first letters may not be left-aligned perfectly. (The discrepancy might be so small, you need to zoom in to notice.)

This is because the character definitions include white space to the left of the character (the character widths defined in the fonts are wider than the actual characters and include some leading white space). Larger font sizes will have more leading white space than smaller sizes. Thus, if the first character in a line of text is a larger font size, the line may appear to be shifted to the right by a very small amount. This may occur with some fonts more than other fonts. Also, some TrueType fonts may be off more than their Postscript equivalents.

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MacDraw Pro: Paragraph Line Spacing Precision

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When setting Line Spacing with the Paragraph command by number of lines, you can set the line spacing in 1/2 line increments. The line spacing is displayed as a decimal, which implies that it can be set in 1/10th line increments. However, the actual increments are by 1/2 point. To set line spacing in finer increments, change the line spacing to inches, mm, cm or points.

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MacDraw Pro: Saving To Novell Server Gives Warning Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you save a MacDraw Pro document to a Novell file server and shortly after save it again, you may see the alert: "The document on disk has been updated while you worked with it. Do you still want to save your changes?"

This is an erroneous alert due to the way Novell handles saving of a file. Although the file was initially saved, the Novell software may not update the save time of the file for a few minutes. The message can be ignored. Click OK to save your changes.

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TA41571_HewlettPackard_Connectivity_Update_(TIL05449).pdf

Hewlett-Packard 3000 Connectivity Update

This article has been archived and is no longer updated by Apple.

Tymlabs, Inc., publishers of the Sessions series of terminal emulators for the HP 3000 series, now includes (HP-style) Ethernet support to each of their packages. (Previously, each of the packages supported serial connections only.)

Incidentally, the packages are also available for PC and Macintosh from the HP price list as "Advance-Link".

For more information, search under: "Tymlabs"

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MacDraw Pro: Slide Show Showing With Reduced Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When viewing a slide show, MacDraw Pro will shrink the entire drawing size to fit the screen. Thus, if the drawing size is larger than the screen, the objects will be reduced along with the drawing to fit the screen. Bitmapped objects that are reduced may appear distorted on screen.

To create a slide show that doesn't display the slides reduced, set your drawing size to the following sizes:

Apple Color 13" RGB (or any monitor with 640 x 480 resolution):
8.89 inches wide x 6.67 inches high

You can set your drawing to this size by typing these dimensions into the Drawing Size dialog box. If you've already created objects that are beyond these dimensions, you will have to move them to within these dimensions before you can reduce the drawing size.

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MacDraw Pro: Text Clipped When Opening Or Placing Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Text may be clipped on the right when opening or placing text in a font not installed in your system.

If you open a text file that contains a font not installed in your System, an alert box will appear telling you that a font in the document is not available and that an available font will be substituted.

The installed font used to display the text may have wider characters than the actual text font, clipping your text on the right.

MacDraw Pro will not automatically widen the text block to accommodate the substituted font's character widths. You can either widen the text block with the selection handles, or install the missing font in your system.

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MacDraw Pro: Text Scaling Precision With Scale Command

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When scaling text with the Scale Selection command, text is scaled to the nearest 1/4 point. Thus the size of the text may not scale in the exact percentage entered into the Scale Selection command. This may cause slight alignment problems if text and graphics are placed tightly together, then Scaled. For example, if you scale 18 point text scaled to 71% size will scale to 12.5 or 12.75 points, not 12.78 points (18 * .71).

When you select text that has been scaled and is not a whole-point size, the font size will not be checked in the Size menu. The Size menu can display only whole-point sizes.

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Claris CAD: SuperMac Compatibility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Users have reported intermittent difficulties with SuperMac monitor cards and Claris CAD 2.0. We have been able to pinpoint it to 2 sources:

- On Macintosh IIfx, IIci and certain other Macintosh systems, intermittent difficulties were solved by updating to Claris CAD 2.0v2 or newer.

- Users with SuperMac Series II cards: Some users had cards that are not placed into their slots entirely correctly. The best way to correct this is to call SuperMac for a service call to reseat the card. However, if you want to take a chance, here is the process to reseat the card yourself:

1. Turn off the computer
2. Move the card from its current slot into another empty slot. Place it in the slot carefully, making sure it sits well in the slot.
3. Restart the computer with the space bar held down.

The computer will search for the card in the new slot and re-initialize it.

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MacDraw Pro: Adjusting Print Halftone Screen Frequencies And Angles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro always prints using the default halftone settings of the printer. You cannot adjust the halftone screen frequencies and angles for printing within MacDraw Pro. In contrast, MacDraw II prints using a 60 line screen to all Postscript printers, unless adjusted using the MacDraw II Configure utility.

The halftone settings can be adjusted in the EPSF translator for export.

1. Select the Preferences command.
2. Click the Translator button.
3. Select EPSF export in the pop-up menu, click Set, then click the B&W or Color radio buttons.

Entry boxes will appear to enter new settings for the line screen frequency and angles for the four print colors (a single set appears for B&W). When you save your image to an EPSF file, the file will be saved using the new settings. Open and print the EPSF file to use the new line screen frequency and angle settings.

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MacDraw Pro: Default Fill Of Some Objects Always Transparent

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The default fill of text, arc, freehand, polygon and bezigon objects is always transparent. Any color, pattern or gradient placed into the fill indicator is ignored when these objects are created.

To fill these object types, select the object, then click on a pattern in the Pattern Pallette.

You can set freehands, polygons and bezigons to auto-fill on creation by turning on this option in the Preferences... Polygons, under the Layout menu.

Text and arc objects, however, always auto-fill with a transparent fill.

Rectangles, rounded rectangles and ovals always auto-fill with the current fill pattern when they're created.

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MacDraw Pro: EPSF Images Pasted into MacWrite II or MS-Word

EPSF images copied and pasted from MacDraw Pro into MacWrite II or Microsoft Word will print at a low (screen bitmap) quality.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Macintosh clipboard doesn't support EPSF. The graphic object that pastes into MacWrite II/ MS Word is the PICT Preview portion of the EPSF, which does not contain the Postscript portion of the EPSF.

Neither MacWrite II nor Word 4.0 support EPSF. (The EPSF filter from FileMaker Pro shows in the MacWrite II Insert File pop-up list, but only the PICT Preview is read. Word does not have any file Import commands to import graphic files from disk).

The following workarounds are available:
1) Importing EPSF objects into Microsoft Word: instructions for doing this are on page 288 of the Word Reference manual. You can import EPSF files by holding down the shift key when selecting open. You have to alter the bounding rect of the graphic (there are instructions).

2) Work with non-EPSF objects to transfer (MacDraw Pro objects, PICT, TIFF and/or bitmap objects). These objects will copy/paste correctly. Or, save as a PICT file and import into MacWrite II.

3) If the MacDraw Pro document includes both MacDraw Pro objects and EPSF objects imported from another program: consider locating the source documents for the EPSF and bringing these objects into MacDraw Pro as PICT. Or, consider combining the text and graphics in a page layout program, rather than in a word processor.

4) If the MacDraw Pro drawing takes up a full page, leave a blank page in your word processing document where the graphic would have gone. Then leave your drawing as a MacDraw Pro document and print it separately. The word processing document will paginate correctly, and you'll get maximum print quality.

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MacDraw Pro: Right-Justified, Bold Text Truncated In Clipboard

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When copying right-justified text to the clipboard the text might be truncated on the right.

The following steps recreate the problem:
1. Create a single line text block that is right-justified and bold text.
2. Turn off Fractional Character Widths (FCW) and copy the text to the clipboard.
3. Select Show Clipboard.

The text may be truncated on the right in the clipboard. The text may Paste and print truncated. This only occurs with some fonts, including Helvetica.

When copying right-justified text to the clipboard for pasting into other applications, turn on FCW. This will give you the most accurate character widths without truncation on the right. To do this, the application you're pasting into must support FCW and have it turned on.

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MacDraw Pro: "Not Enough Memory To Print" Message Using StyleWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When printing large rotated text blocks to the StyleWriter with MacDraw Pro, you may see a message that says "Not enough memory to print."

The workaround is to break up the rotated text block into multiple text blocks.

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LaserWriter: Suppressing Control Characters

This article has been archived and is no longer updated by Apple.

A customer who is spooling PostScript files from a VAX to a LaserWriter wants to know if it's possible to suppress the LaserWriter's EOT acknowledgment or timeout messages.

There is no way to suppress the LaserWriter's EOT acknowledgment. In the PostScript Language Reference Manual, pages 278-279 (copyright 1985, Adobe Systems, Inc., Addison-Wesley Publishing Co., ISBN 0-201-10174-2): "Certain character codes serve special purposes, such as control-D to mark end-of-file. The server performs a job by reading and executing a PostScript program from the serial channel. When it reads the end-of-file character and the program terminates, the server sends an end-of-file character, ends the job, and starts a new one."

The LaserWriter's timeout and job flush message are generated in response to the CONTROL-G from the spooler. The LaserWriter's PostScript command interpreter does not understand the CONTROL-G and generates an error. The spooler does not know the printer is in a timeout/flush mode and continues to send data to the printer. Error messages from the LaserWriter are generated spontaneously and are directed to the standard output file and cannot be suppressed.

Note: The customer may want to consider using DTR for the handshake, eliminating the need for two-way communications with the LaserWriter. This way, the spooler can neither confuse nor be confused with extra control characters. To use DTR on the LaserWriter, the ROMs in the LaserWriter must be revision 2.0.

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LaserWriter IINTX-J Printing Problems

Article Change History:

09/29/92 - REVIEWED
* For technical accuracy.

I'm having printing problems with a Kanji LaserWriter. I need to print both Japanese and English documents on the same LaserWriter IINTX-J. Can you answer these questions?

1) LaserWriter 5.2 works, but very slowly. In fact, a page in Osaka prints faster on a LaserWriter IINTX (bitmapped output) than on a LaserWriter IINTX-J.

2) LaserWriter 5.3 works OK in Kanji on the LaserWriter IINTX-J but does not support printing in Roman characters. We cannot print a page of plain text in Times or Helvetica. Can you explain?

3) Does Apple have a Kanji PrintMonitor/Laser Prep/LaserWriter 6.0 Driver?

This article has been archived and is no longer updated by Apple.
1) This is an interesting problem and will be obvious once explained. There are variables that need confirmation and reconciliation, however.

Osaka is a bitmapped font and has no PostScript equivalent; therefore, the optimal print times will be the same if everything is equal (actually, a bitmap print job is a little faster on a LaserWriter IINTX-J because the printer ROM version is newer, and the LaserWriter IINTX-J is usually configured with more RAM than a stock LaserWriter IINTX).

In your case, print jobs are probably slower on the LaserWriter IINTX-J because Font Substitution is most likely selected, causing the driver to perform additional searching (it attempts to locate and use a "double-wide" Kanji font on the printer) prior to printing. (The question to ask that will help verify the problem is whether both outputs are bitmapped, or if the LaserWriter IINTX-J substitutes a built-in PostScript font.) If it is printing a bitmapped font, even though Font Substitution is selected, the wrong version of "Kanji" fonts are being used or the font is damaged. We recommend that you always install the version of "Kanji" fonts that comes with the drivers and OS, and don't mix and match older fonts with newer drivers, for instance.

(NOTE: The above suggested workarounds are, of course, negated if you are using a program like MacPaint, which outputs a bitmap. This answer assumes that you are using a word processing or other type of application.)

2) This is very peculiar, and should work! We suspect the wrong versions of fonts are being used with the wrong version of driver. Less likely is that the application, drivers, or OS is damaged. Again, it is best to replace old Kanji fonts with the new ones that accompany the drivers and OS when updating the drivers. To investigate this further, we would need more details. Eventually, you may want to upgrade the account to the latest version of the driver, when you obtain it.

3) You can obtain the J1-5.3 driver from the Technical Support Information Source CD on the Utilities 2 disk.

Performance Tips

- For optimal appearance of the output and throughput, you might want to use a

built-in PostScript Kanji font, Gothic or Saimin, particularly if you are doing any scaling.

- If you are using both Kanji and Roman fonts in your document, for optimal printing speed, don't use a font menu to select between the fonts. Instead, use the Roman fonts built in to the Kanji font. You can change back and forth between the Kanji characters and Roman characters, say in Kyoto, by pressing Command-space. This minimizes the number of font bitmaps the printer must build when printing a job, which can decrease the amount of timerequired to print.

Published Date: Feb 18, 2012

Claris CAD: StyleWriter Prints at Incorrect Scale

When I print to the StyleWriter from Claris CAD 2.0vX it prints at the wrong scale/size. What is wrong?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

This a known problem with Claris CAD and the StyleWriter Driver, particularly if the drawing size of a document is greater than 91.01", horizontally or vertically. If you go to "Drawing..." in the "Layout" menu and change the height and width of your drawing size to 91.01" or below, the StyleWriter will print the proper scale. If you can't modify the drawing size then go to the Layout Menu, choose Preferences..., select the Printer icon, and choose "More options, less resolution".

Note: This problem may be fixed with the StyleWriter 7.2.2 and the StyleWriter II drivers.

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MacDraw II: Lines on Screen or Cannot Address Million of Colors

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacDraw II (any version) will not run when the Monitors Control Panel is set to thousands or millions of colors. On most Macintosh computers, if you try to run MacDraw II more than 256 colors, you'll see a "Not enough memory" alert. With an Apple 8¥24 video board, the application will launch, but the document window displays a series of lines on the screen.

On the Power Macintosh, if you try to launch MacDraw II with more than 256 colors, you may get a Type 11 error. For both of these problems, the fix is to assign more memory to MacDraw II and to set the monitor colors to 256 or less.

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MacDraw Pro: Can‘t Drag or Smooth Bezigon Near Drawing Edge

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Can't drag a bezigon close to the edge of the drawing, or the computer beeps attempting to smooth a bezigon or polygon which is close to the edge of the drawing.

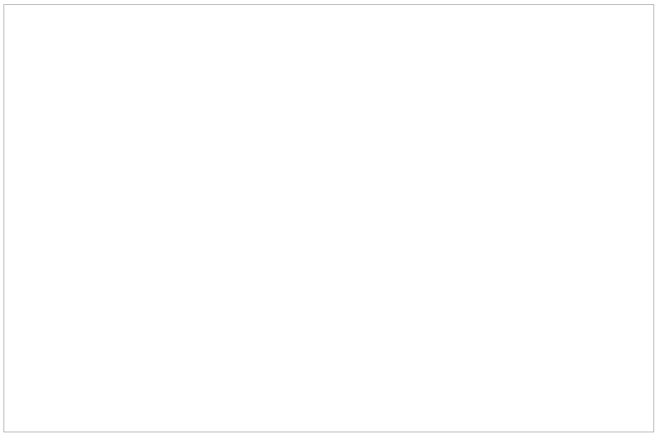
Drag the polygon/bezigon away from the edge of the drawing.

The bounding box of a bezigon or smoothed polygon is larger than a regular polygon. (The bounding box is an invisible rectangle that defines the outer boundaries of all objects. When you select an object, the four resize handles that appear are at the corners of the bounding box.)

Draw a polygon, and notice that the four resize handles are very close to the visible boundary of the polygon. Draw a bezigon with control handles that extend away from the bezigon and notice that the four resize handles are much farther away from the visible boundary of the bezigon. This is because the bounding box that defines the bezigon includes the positions of the control handles. (Select the bezigon, then choose Reshape, then choose Select All to see all the control handles of the bezigon. Notice that the reshape handles just enclose the entire bezigon and the control handles.)

This means that a bezigon might not be able to be placed close to the edge of the drawing, as this would cause the control handles at the corners of the bounding box to be off the drawing. Also, if a polygon or bezigon is placed as close as possible to the drawing edge, you may not be able to smooth the polygon/bezigon. Smoothing causes the bounding box to increase.

{See the graphic for an example. Note, this graphic has been 'faked' to show simultaneously the control handles and the resize handles of the bezigon}



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MacDraw Pro: Image Colors Cannot Be Deleted Or Cut

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Image colors from imported TIFF or PICT images cannot be cut or deleted from their palette, even when you delete the imported image from your document.

The following steps will recreate the behavior:
1) Import a color TIFF or PICT image
2) With the image selected, choose Image Colors from the Special menu in the Color Palette
3) Delete the image
4) Attempt to delete or cut colors in the color palette

You won't be able to do this. You can, however, copy the colors to another color palette, then delete the palette with the image colors.
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MacDraw Pro: EPSF Files Not Printable From Finder

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

EPSF files saved from MacDraw Pro 1.0v1 cannot be printed from the Finder when using System 7. The EPSF file must be opened or placed in MacDraw Pro to print.

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MacDraw Pro: Switching To Low Resolution Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In MacDraw Pro 1.0v1, when a QuickDraw printer is the chosen printer, if you deselect the Maximum Resolution option in printing Preferences, the drawing size may increase.

Maximum Resolution has the same effect as selecting Precision bitmap alignment, (4% reduction) from the Page Setup option.

In Claris CAD, select More options, less resolution under the printer icon for preferences.
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MacDraw II: Text Cut-off

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Subject:
Printing a document where the text gets cut-off in the (screen or printout) right hand side and/or the wrap arounds on the text for that text block doesn't match what shows on the screen (not WYSIWYG).

Solution:
Find out if there are any type of extra large LaserWriter fonts installed for that particular font face like 32, 48, 56, 72. If this large font sizes are installed, the text will not print properly, even when the sizes used are the standard font sizes like 10, 12, 14, etc. It seems that the font address table gets corrupted. The fonts need to be completely removed, meaning all font sizes, a new system re-installed, before you can print the form without the text cropped off. The font will still print because it is in the printer.

The situation here is that you then don't have that font available for a new document.

Using Suitcase doesn't solve the situation. Once you Open the file in Suitcase and try to address it the situation still persists and Closing the large font file doesn't clear it.

This large LaserWriter font file, LaserWriter LSF, is being distributed by Autographix for the users of their services.

Published Date: Feb 18, 2012

MacDraw Pro: Certain Print Options Are Grayed Out

When printing to QuickDraw printers, certain printing options such as reduced printing and print quality options may be grayed out.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To make those print quality options available in MacDraw Pro, select the Preferences command. Select the Printing preferences icon. Deselect (uncheck) the option for "Maximum Resolution." You will now have all printing options selectable.

In order to use the maximum printing resolution (instead of the default resolution, which may be lower) of the printer, certain options have to be disabled.

These options include reduced printing, and may also include print quality options, such as the Faster mode on the ImageWriter. MacDraw Pro is preset to use the Maximum Resolution setting, as the highest possible print quality is usually more reliable for accurate printouts. This means that the user must turn off the Maximum Resolution option to gain access to the disabled printer options.

ClarisDraw is not able to print using the Faster mode on the ImageWriter. "Draft" printing is available, but this is for text only--and even then, the result will be so poor as to be almost useless. The only workaround is to save as PICT and open the document in an application that supports both PICT and printing in "Faster" mode to an ImageWriter (such as ClarisWorks or MacDraw II)
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MacDraw Pro: EPSF Objects Count as Two Objects in About Box

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When you select About MacDraw Pro..., the dialog box displays information about the number of objects in the current layer and in the document.

EPSF objects usually are counted as two objects (one for the PICT Preview, one for the EPSF object).

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System 6.0.4: Problem with Two-Floppy Macintosh SE and AFE

When trying to run Apple File Exchange on a Macintosh SE configured with two Apple SuperDrives (formerly Apple FDHD), running under System v6.0.4, I get an "ID=02" bomb. I also experienced the problem when starting up from the v6.0.3 System Tools disk; however, when I started up with a startup disk created from the System v6.0.3 Installer, I could get AFE to run.

I have tried several combinations of drives. The bomb occurs any time a SuperDrive is plugged into the drive slot marked "Upper" on the main logic board. Apparently the same problem occurs when starting from an external hard disk (until the upper drive is disconnected).

What's going on?

This article has been archived and is no longer updated by Apple.
This is a little-known incompatibility with dual-floppy Macintosh SEs, those having either SuperDrives or 800K drives. As of April, 1990, there is no fix available for system software v6.0.4.

If you need to get the configuration working, however, one of the following workarounds may do the trick:

- Disconnect one of the floppies and connect an internal or external hard disk.

- Configure a disk using earlier versions of AFE (say 1.1.1 with system software 6.0.3) as you described above.

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MacDraw Pro: Importing Text into Slides

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When the "Put each page break on a new layer" option is enabled in the Preferences Text to Graphics translator, each page in the text file is imported into a separate slide/layer.

The translator only recognizes "hard" page breaks in the text document. That is, page breaks that are manually entered with the Insert Page Break command (or equivalent).

This option is most useful for bringing multiple pages into separate slides and affects all text translators, including the MacWrite II and Word translators.

If multiple pages of a text document are imported into one layer, that means the document has "soft page breaks." Soft page breaks, page breaks that occur due to normal pagination by the word processor, are not recognized.

Re-open the text document in the word processor, then manually enter the page breaks at the desired positions. Then, import the text file into MacDraw Pro again.
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MacDraw Pro: Notes Don‘t Print On Handouts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Notes (objects created with the Note tool) do not print on handouts.

Notes don't print on handouts even if you select "Print Notes" and "Handouts Only" in the print dialog box. This is the intended way for MacDraw Pro to function.
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Claris Software: Objects Printing Reduced to the StyleWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
***This is fixed with the StyleWriter driver version 7.2.2 ***

When printing to the StyleWriter, objects may print smaller than they should.

If the drawing size exceeds 91 inches, either horizontally or vertically, and Page Setup is set to 100% Scale, it will print reduced on the StyleWriter. Likewise, if the drawing size exceeds 18.2 inches and Page Setup is set to 20% scale, the drawing will print reduced. (18.2 inches Ö 0.2 equals an effective drawing size of 91 inches).

The behavior occurs with all versions of MacDraw II through 1.1v2, MacDraw Pro 1.0v1, and all versions of Claris CAD through 2.0v3. It occurs when printing using any version of the StyleWriter driver before version 7.2.2
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MacDraw Pro: Slide Images Printing Very Small In Handouts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing handouts, the entire drawing area of the slide is reduced, not just the area of the drawing with objects on it.

Therefore, if the drawing size is much larger than is needed to hold the objects, the reduced handout printout will be very small.

The solution is to reduce the Drawing size to the smallest size possible to hold the objects before printing handouts.

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MacDraw Pro: Spell Checking Document In Background

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In MacDraw Pro, when two documents are open and the topmost document window is sized very small, the spell checker will sometimes check words in the non-active document (in the larger window in the background).

The solution is to enlarge the active document window.
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MacPlot: Using MacPlot 1.2v2 with System 7.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Compatibility Checker states that MacPlot 1.2v2 isn't fully compatible with System 7.0.

To install the MacPlot Driver under System 7.0:

1. Double click on the System Folder to open it and drag the MacPlot Driver into it. If you try to drag the driver onto the system folder without opening on it, the system will want to place the driver into the extensions folder.

Don't drag the driver onto the System Folder or it will be placed in the Extensions Folder and MacPlot Configure 1.2v2 won't be able to find it.

2. Choose the MacPlot Driver before running MacPlot Configure.

As always, if the MacPlot Driver isn't chosen, MacPlot Configure will present a dialog with a button labeled "Use Chooser". However, this button will not bring up the chooser under system 7.0 and will display an alert that says it is "Unable to run the Chooser". Choosing the driver first will avoid this.

3. Set Virtual Memory and 32-bit addressing off in the Memory Control Panel and re-boot (this is true also when using Mode32).

The MacPlot Driver version 1.2v2 will not work with either Virtual Memory or 32-bit Addressing.

If any of the above solutions are not viable for your use, you may purchase a different plotter driver. Other drivers are available from MicroSpot.

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MacDraw Pro: "Slides per page" Explained

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The number of slides per page pop-up in the Page Setup is to select the number of slides per page to be printed when printing Handouts only. You can select 2,3 or 6 slides per page.

It does not effect printing slides only. Slides always print full size, using as many pages as needed.
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MacPlot 1.1: Plotting Color With System 7.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Users report that using the older version of MacPlot (1988 &1989) under 7.0, only parts of a color drawing were printed. Plotter would start to plot, switch colors, and never return to original color to finish objects. This was corrected by installing version 1.2.

However, updating from one driver to the next causes problems. Here are some workarounds:
- Re-install the system software
- Install new version of MacPlot and configure it.
- Choose another driver (e.g. LaserWriter)
- Open drawing that was not plotting correctly, chose page setup. Click Ok.
- Choose MacPlot Driver, choose page setup.

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MacDraw Pro: Superscript Style Different Than "Footnote" Style

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Superscript style used in MacDraw Pro functions correctly. That is, a superscripted character has its size unchanged while raising the text about one-half line space. This leaves the character size too large if what you want is to create things like footnotes.

Footnotes (as in MacWrite II) use a stylization called Superior. Superior-styled text is raised while the character size is reduced to about 2/3 the original point size. In doing so, the top of the superior-styled text is about even with the top of the surrounding text.

You can simulate Superior stylization by doing the following:

1) Select the character(s) to apply the style
2) Select Superscript in the Style menu
3) Select a character size that's about 2/3 the size of the original. For example, if the surrounding text is 12 point, make the selected character 8 point.
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MacPlot: Roland Plotters

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Both HP & Roland agree that Roland plotters emulate HPs very well. Therefore, in troubleshooting Roland plotters, we treat them as HP plotters. The paper size is the best guide for establishing a correspondence relationship between the two brands. The (0,0) below refers to the origin of the plotter's coordinate system.

To be specific, for:

* For 880A,885,980,980A,990 & DXY 1100,1200,1300 use HP 7475A or 7550A - (0,0) is at lower left.

* For DPX-2000, 2200, 3300, 3500 use HP 7580 or 7585 - (0,0) is Cartesian.

* For GRX-300, 300AR, 400, 400AR use HP 7580 or 7585 - (0,0) at center; number of pens is less in Roland models than in the HP models.

* For LTX-120 use HP 7475 or 7550A

* For LTX-320, 420 use HP 7580 or 7585

* For CAM 1,2,3 use HP 7580.

Note that Roland currently does not have a model featuring page advance with roll feeds, but when they do, our driver will treat it as an HP 7586.

If you have trouble communicating with a Roland plotter set it for 7 data bits, 1 stop bit and even parity. MacPlot doesn't have a setting for data bits (it always uses 7) so set it for 1 stop bit and even parity.

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MacDraw Pro: Saving Colors & Patterns In Style Bar

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Colors, patterns and gradients can be saved to separate files from the palettes. There is no way to save out items in the Style Bar to a separate storage file.

However, you have two options available to have the colored patterns to be used in other documents:

1. Save out a file with your favorite colors/patterns/gradients to a stationery file
2. Create an object, such as a rectangle, filled with each color/pattern/gradient combination, then add this object to a library. You can then copy the object containing the desired pattern to your main document, then use the eyedropper to pick up the pattern.

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MacDraw Pro: Text Binding To Curved Path

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro 1.0v1 does not feature support for text binding to a curved path.

For this feature, you can use Adobe TypeAlign in conjunction with MacDraw Pro. Follow these steps:

Printing to a Postscript printer:
1) Create the text on a curve using TypeAlign
2) Save the text to an EPS file
3) Place the EPS file into the MacDraw Pro document.

To work successfully, the text MUST be saved as an EPS file from TypeAlign. Copying and pasting to MacDraw Pro will result in printouts to a Postscript printer that look like barcodes.

Printing to a QuickDraw printer:
1) Create the text on a curve using TypeAlign
2) Copy and paste the image into MacDraw Pro
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MacDraw Pro: Gradients Don‘t Rotate or Flip

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Gradient fills do not rotate nor flip horizontally or vertically. Thus, when you rotate or flip a gradient-filled object, the gradient will be unchanged.

The gradient will appear as if it still has the same "light source" as the original. This may mean that oval or circular objects with gradients focused on their centers may have their gradients appear to be off center when flipped or rotated. You may need to create new gradients with different focus points to fill the rotated/flipped objects.

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MacDraw Pro: Arrowheads Not Printing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When a document is zoomed to 3200%, arrowheads (non-rotated) don't print to the LaserWriter from MacDraw Pro or MacDraw II.

Change to a different zoom level before printing.

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MacDraw Pro: Can‘t Select Copy Ruler

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Copy Ruler command in MacDraw Pro is not selectable unless the document is in text-edit mode (i.e., the cursor is blinking inside a text object).

Merely selecting a text object with the selection tool does not put the document in text-edit mode, so the Copy Ruler command won't be selectable.

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MacDraw Pro: Increase RAM for HP PaintJet Printing of Gradients

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing gradients to the HP PaintJet printer, MacDraw Pro may need 2 MB or more of available (unused) RAM within MacDraw Pro to print successfully.

The PaintJet driver needs this RAM to image the file. It seems to need to image an entire page at once, thus needing lots of RAM to print.

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MacDraw Pro: Newly Installed Fonts Not Listed in Font Menu

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Newly installed fonts do not automatically show listed in the font menu of existing documents. MacDraw Pro saves the current font list whenever the document is saved. These new fonts must be added to the font menu of existing documents using the Fonts... command.

Newly installed fonts do not automatically list in the font menu of new documents when a MacDraw Pro Options file exists. To make these fonts list in new files, open a new document, add the new fonts to the font menu, then resave the MacDraw Pro Options file.

Tip: To make a new file with all installed fonts listed, hold the option key while selecting New (or opening MacDraw Pro). This creates a new file without using the MacDraw Pro Options file.
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MacDraw Pro: No Easy Install to Floppy

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When installing MacDraw Pro with the Installer, an Easy Install to a floppy disk cannot be done. For example, installing MacDraw Pro to a High Density (1.44mb) disk.

Instead, do a Custom install, or install to a hard disk, then copy the application to a floppy disk. (The documentation for MacDraw Pro does say that a hard disk is required.)
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MacDraw Pro: Notes Not Drawn Aligned to the Grid

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

To create Notes that are automatically aligned to the grid in MacDraw Pro, create paragraph notes (with the Autogrid ON).

To create a paragraph note (as opposed to a caption note), select the Note tool, then drag a rectangle on the document to define the note size and type the note text.

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MacDraw Pro: Printing Notes In An EPSF File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Notes contained in an EPSF image print in the stacking order in which they were created, not in their actual stacking order.

These Note objects appear on screen in their correct stacking order, though, so the situation isn't detectable until the EPSF object is printed.

Move the notes to the front of the stacking order, then resave as EPSF. (Click the Note tool, choose Select All, choose Move to Front, then Save As to an EPSF file.)
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MacDraw Pro: Text in Colored Autosize Lines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If an autosize line is colored, the text in the autosize line will change to black if the document is switched to a different color palette. The text will print in the correct color, though. This occurs when the video is set to 256 colors or fewer.

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Claris CAD: How Can I Learn Claris CAD Quickly?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here are some suggestions about learning Claris CAD or speeding up your drawing technique:

1) View the video tape. It offers an excellent overview of the program along with its key drawing concepts.

2) Go through the tutorial files. These offer good examples of common drawing techniques.

3) Use the Quick Reference Guide. Knowing the keyboard shortcuts can really speed up your drawing, especially if you are using a large monitor.

4) Go through all of the modifiers and drawing methods. There are many, and you will find that once you have a good grasp of how they work, even the most complicated drawing is relatively quick to produce.
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Claris CAD: Repairing Corrupt or Damaged Documents

You can sometimes repair corrupt Claris CAD documents. These documents may not open and/or return an "out of memory" error message. Or you may not be able to edit the document, but instead receive the message "sorry, objects must remain within document boundaries". Generally, a corrupt document contains an object with a coordinate that attempts to place it outside of the drawing area of Claris CAD (the 100" X 100" area, not the page that your drawing is on).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here are some common situations:

1) The file begins to open, but stops and returns an error number -36 or -39.

This means that the file is actually physically damaged on the disk, or the operating system cannot handle the file. The first test is to see if you can make a copy of the file. Try dragging the file's icon to another disk or select it and choose Duplicate under the File menu from the Finder. If it won't copy, then the file is damaged and you can probably only get it to open using a utility that repairs damaged files, like Symantec Utilities or Norton Utilities. If the file does copy, read the following paragraphs and follow those suggestions.

2) The file begins to open but it stops and you get an out or memory error.

The file probably has a corrupt object, or it may have damaged resources. Try opening a new Claris CAD file and using the Place file... command to insert the file into the new file. If the original file has damaged resources, this may allow you to save the drawing. You can also use ResEdit to copy new resources to the file.

If the file will not place into a new file, then there is probably a corrupt object in the document. Try using a translation utility (like the Claris Graphics Translator) to see if translating the file to and from another format will filter out the corrupt object.

3) The file opens, but every time that you click on the drawing or try to move something you get the "sorry, objects must remain within document boundaries" error message.

This is caused by having an object that has a coordinate off the drawing boundary. The program will give you this message every time that it thinks that it has to redraw or move the suspect object. There are several strategies for finding and removing the object:

1) Go under the Layout menu to Fit to Window. You will probably see several seemingly blank pages or handles (the little rectangles that surround an object) that don't seem to be attached to an object. See if clicking on one of the blank pages will show you some handles. If so, hit the delete (or backspace) key on your keyboard. If you don't see any handles, try to click-drag the arrow cursor around your drawing to select everything on it. Don't surround the blank pages. See if you can copy the items to a new file.

2) See if you can go to another layer and copy and paste that layer to a new document. Sometimes hiding the layer with the corrupt document will allow you to copy and paste the other layers to a new document.

3) Try using a translating utility like the Claris Graphics Translator to translate the file to and from another format.
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Claris CAD: Shifting Polygons when Transporting Images

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Due to the difference between the way that different programs print PICT files, you may not get an accurate print out of a Claris CAD drawing if you print it from a word processor or page layout program. It will be most obvious if you have objects of different types lined up in a drawing. If your drawing is made up completely of lines, then you can avoid it by cutting and pasting and saving as PICT.

If you have different types of objects in your drawing, take the following steps:

1) Set divisions per inch to 72 in the Rulers dialog of the drawing. Draw with the Autogrid on.

2) Group the entire drawing before copying or saving as PICT.

MacDraw Pro ships with a filter that allows you to save as an EPSF file. This filter will also work with Claris CAD 2.0v3 or later and is available on request. This will solve the shifting polygon anomaly as long as the destination of the drawing is a program that will accept EPSF files.

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Claris Software: Seiko ColorPoint PS14 Page Sizes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Seiko ColorPoint PS14 is a high-end color Postscript LaserWriter. It can use the Apple LaserWriter drivers, but also provides its own modified versions of those drivers. What the modified drivers allow you to do is access much larger image areas than the Apple standard drivers.

Since the printer uses rolls of paper, the available image areas can be quite large. However, simply selecting a larger print area in the Page Setup dialog is not enough. The image area must ALSO be selected on the control panel of the printer itself, and the printer must be taken offline to do this. It actually is not too difficult, but is a necessary step. If you don't do this, the printer will use the last setting, or the default of A4 size paper (roughly US Letter equivalent). Currently the Seiko ColorPoint has shipping versions of modified System 6.0.1 drivers. Their System 7 driver is not currently available at this time (June 20, 1991), but should be soon.

One reported problem with pre-release versions of their System 7 driver is that if any option is selected in the LaserWriter Options section of the Page Setup dialog, then the driver becomes confused about the appropriate image area for the document, and crops the picture. Removing the checked options in the Options solves the situation.
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MacDraw Pro: Adobe Type Reunion Incompatibility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In MacDraw Pro 1.0v1 and 1.5, with Adobe Type Reunion installed, saving as a MacDraw II file will cause a system error (bus error). To save to a MacDraw II file, deinstall Type Reunion. This has been verified with Type Reunion versions 1.0 and 1.0.1

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MacDraw Pro: AutoTrace & Text Distortion

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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MacDraw Pro 1.0 does not have an autotrace feature. Likewise, MacDraw Pro 1.0 does not have features to distort text, such as skewing, perspective, and so on.

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MacDraw Pro 1.0, 1.5: No Filling Text With Gradients

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro 1.0 / 1.5 does not support filling text with a Gradient.
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Multi-User Relational DBMS for Both Macintosh and PC

Article Change History

1/15/93 - UPDATED
* Changed vendor name.

I need a set of database programs that run on both the Macintosh and PC and can use a common set of relational database files on a server (multi-user type).

I know that some Macintosh products can read and run dBASE, but do they work on a network?

This article has been archived and is no longer updated by Apple.
Omnis 5 from Blyth Software and FoxBASE+ (used with FoxBASE+/LAN) from Microsoft both allow data files to be shared in a combined PC and Macintosh network environment.

FoxBASE+ includes tools that allow simple entry/retrieval forms to be drawn, and these tools can generate the code to handle the simple forms. FoxBASE+ also can directly use dBASE code from Borland International's dBASE.

We are not aware of a multi-user relational database that works on both platforms on a network and does not use a programming language.

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

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MacDraw Pro: Menus Dimmed Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following combination can cause all the menus except File and Edit to become dimmed in MacDraw Pro 1.0v1.

1) Having a palette torn off.
2) Using the Place command to Place a word processing document (MacWrite II, etc.) with an uninstalled font.

The solution is to bring forward another window (new file, Help screen, Etc.).
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MacDraw Pro 1.0v1: Multiple Palettes Created

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When Placing a word processing (text) document that contains color graphics, MacDraw Pro 1.0v1 will create a new color palette for each page in the document instead of a single new palette for the entire imported file.

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MacDraw II, MacDraw Pro: Opening/Recovering Corrupted Files

An explanation of recovering MacDraw II and MacDraw Pro files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
First, eliminate other possible causes. Disable INITs, reinstall the application with INITs diabled, try opening a known good file, like one of the sample files, etc. If the behavior appears to be file specific, the following explains recovery possibilities and techniques.

What to do if you can get the file open.
If the computer crashes or displays a system error after you've successfully opened the file, it may be a corrupt object or layer. The solution is to eliminate it by trial and error. You might try hiding layer(s). If a corrupted layer is hidden, it is less likely to cause a system error. Once you have narrowed it down to a specific layer, try copying and pasting the objects to a new layer, then delete the corrupt layer. If this doesn't solve the situation, a group is corrupted. Try selecting all the objects on the layer and Ungrouping several times. If this doesn't solve the situation, an object may be corrupted. You'll have to determine the corrupted object by trial and error.

Note that if you've used a corrupted object or group in several files, which is common when using libraries, this may cause all these files to have difficulties. This can make it hard to determine if the behavior is file-related or application- or system-related.
Tip: You might also try saving out to PICT, then reopening the file. Note that this may cause some objects to be shifted or distorted, and objects on all layers will be placed on a single layer.

What to do if the file won't open.
Is the file recovered with file recovery software?
If a file is recovered or unerased using recovery software and it won't open, there is no way to repair the file. MacDraw files are complex binary files, unlike simple ASCII text files, for example. If the file is not recovered completely intact, there is no way to repair the file.

MacDraw II Layer Corruption Issue
There is a rare but known issue with MacDraw II files becoming corrupted. Specifically, the top layer can become corrupted. Opening these files in MacDraw II results in a "not enough memory" alert or a System error -39, even when there is plenty of memory available to open the file.

To recover these files, open them using MacDraw Pro. The MacDraw II XTND translator can detect and repair these files. The corrupt layer will be discarded. You can then save these files back as MacDraw II files. If the file is not openable by MacDraw Pro, then the corruption is due to some other issue and the file is not recoverable.

MacDraw Pro Layer Corruption Problem
MacDraw Pro files may also, in rare cases, exhibit the same layer corruption behavior as MacDraw II files described previously. However, there is no simple way to recover these files. In some cases, we have been able to recover these files.

Other Issues
A MacDraw II file may have other forms of corruption not known or directly attributable to MacDraw. Opening the file may result in a -36, -39, or -108 System error. The file may have a damaged resource fork and may be salvageable.

To recover the file, open the file with ResEdit. Delete all the resources. Open a known good MacDraw II file. (Open a file from the same version of MacDraw as the corrupted file). Copy and paste all the resources from the good file into the corrupted file. Save the corrupted file. This file should then be openable. This objects in this file should then be copied (via clipboard or Place File) to a new empty file.

If the resource fork is extremely damaged, ResEdit may not be able to open the file. This makes things very difficult, since you need to open the file in ResEdit to delete the resources. In this case, open the file in SUM Tools. Select the resource fork. Set the EOF marker to zero. Save out the file. Then, open the corrupted file and copy and paste all the resources from another good file into the corrupted file. The file should then be openable. This objects in this file should then be copied (via clipboard or Place File) to a new empty file.

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MacDraw Pro: Palette Corruption

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This is fixed in MacDraw Pro 1.5.

In MacDraw Pro 1.0v1, pasting into an empty color or gradient palette will corrupt the palette. The workaround is to not delete all the cells in a palette before pasting new colors or gradients.
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MacDraw Pro: Importing MacWrite II Documents

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Two problems are known importing / Opening / Placing MacWrite II documents:

1) Dates that are formatted with the month name displayed first (e.g., Jun 25, 1989 or June 25, 1989) will open into MacDraw Pro with the day of the week inserted at the beginning of the date.

2) The line spacing of text may not exactly match that of the same text in MacWrite II, even though the line spacing indicator shows the same value. The spacing difference varies with the font and size. For example, the following is single line spacing:

Font MacDraw Pro MacWrite II
Times 12 13 point 12 pt.
Times 24 26 point 21 pt.
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MacDraw Pro: Shape Burst Gradient in Arc

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The following will recreate the behavior.

1. Create a shape burst gradient with the focal point at the extreme lower left corner and the minimum size.
2. Draw a 90 degree arc with the radius at the lower left corner.
3. Fill the arc with the gradient

The gradient will not correctly fill the arc. The arc will have both dark and light bands extending from the focal point, as if it were a shape burst/circular hybrid.
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Claris Software: XTND Translators Not Listed

You can't open a file that requires the XTND translators. This can occur in any Claris application that uses the XTND translators, including MacDraw Pro, MacWrite II and MacWrite Pro, FileMaker Pro, Claris CAD and ClarisWorks. Symptoms of this issue:

1. When using the "Open", "Insert", "Place File" or "Import Picture" commands in the File menu, you see an alert that says "XTND Translators Not Available" or "File not Found".
2. The translators are not listed in the popup menu. That is, you click on the "Show All Available" popup and the XTND translators are not listed (which may include MacDraw II, MacWrite II, TIFF, EPSF, etc.). or you receive a message like "XTND Translators Not Available" or "File not Found". The file you're trying to convert probably is not listed in the scroll bar inside the dialog box.
3. The application may hang or display a system error message.

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Solutions:
Following is a list of solutions, in order of most common to least common. Try the solutions one at a time, restarting the application after each solution to see if the issue is fixed. If the behavior persists, quit the application, and try the next solution.

* Quit the application if it's running. Look for files called "XTND Translator List" and "Claris XTND Preferences." If you're using System 7, these files are in the Preferences folder, which is inside the System Folder. If you're using System 6, these files are in the Claris folder, which is inside the System Folder. If either or both of these files are present, trash them.
Note: ClarisWorks Office 5.0 deletes this file as part of the installation process. The file is then rebuilt when you launch ClarisWorks. However, if you have subsequently installed additional translators, such as MacLink Plus, included with OS 8, and the behavior occurs, try trashing this file.

* Verify that the translator files are installed properly. If you have installed the application using the installer program, you should see that these files have been installed correctly. You should see a folder inside the System Folder named "Claris". Inside the Claris folder, you should see a file called "Claris XTND System" and a folder called "Claris Translators". (Notes: if you're using MacWrite II, you won't have a Claris XTND System file. If you're using ClarisWorks 1.0, you should see an additional file inside the Claris folder called "ClarisWorks Translators" in the Claris folder). If any of these files are not present, run the Installer. Do a regular (not a Custom) install.

* Inside the System Folder, look for a duplicate copy of the Claris XTND System file. If found, trash it.

* A system extension or INIT may be conflicting with the Claris XTND System. If you have System 7, Restart your Macintosh and hold down the shift key until you see the message "Extensions off." If you have System 6, create a new folder on your hard drive, drag System, Finder and the Claris folder into it, and Restart your computer. To solve the situation, you'll have to try one INIT or Extension at a time, by trial and error.

*Create a new folder on your hard drive at the same level as the System Folder (in the hard drive window). Move everything from the real System Folder (EXCEPT Preferences Folder) to Untitled Folder and restart your computer. If this solves the situation, then move any required preferences files (QuickMail, etc) from the old System Folder's Preferences Folder into the new Untitled Folder's Preferences Folder. Note: you will not be able to copy the Finder Preferences. Throw away the old System Folder and old Preferences Folder; then change the name of the Untitled Folder to "System Folder."

* This is an alternative to the previous method of moving everything but Preferences into another folder. In the Finder, go to your main (top level) hard drive window. Create a new folder, which will be titled "untitled folder" or "empty folder". Open your System Folder. Drag these items into the untitled folder: Finder, System, any System Enablers and the Claris folder. Restart the computer. Run your Claris application and attempt to translate a file. If successful, quit the application. Open the untitled folder, then drag the Finder, System, any System Enablers and the Claris folder back into the original System Folder. Also, in the untitled folder, you'll see a newly created Preferences folder. Open it. You'll see a file called XTND Translator List. Drag this file into the Preferences folder inside your original System Folder. Restart the computer, then trash the untitled folder. Note: if these steps solve the situation, there may be an issue with the Desktop and/or directory files on your ha
rd drive. Rebuild the desktop by holding down the command and option keys while restarting the computer. Install System Update 3.0, a system updater from Apple available from the usual sources for Apple system software. Then run Disk First Aid and/or Norton Disk Doctor. Disk First Aid is included on the System Update 3.0 disk. Instructions are included in your computer's owners manual.

* If XTND filters have been added to the Claris Translators folder while MacDraw Pro or MacWrite Pro is running, those new filters will not be listed in the pop-up menus in the Open, Insert, Place or Save dialog boxes. To list these newly added filters, select the Translators icon in Preferences, then click on the Update XTND List button.

* Under System 7, versions of Adobe Type Reunion earlier than 1.0.2 will cause the XTND translators to not appear in preferences.

* MacWrite Pro Only:
If you install MacWrite Pro 1.0v2 or earlier to a drive that is not the startup drive, such as an external hard drive or a server volume, the XTND translators will not function. Even if the files are all installed in the correct location in the application folder (not in a System Folder on the non-startup drive), the translators will not function. The solution is to update to MacWrite Pro 1.0v4 or later. A workaround is to copy the XTND files

to your computer's Claris folder, inside the System Folder.

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Claris CAD: Moving Objects With Precision

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This article has been archived and is no longer updated by Apple.

Q. I want to move an object or a group of objects precisely. I want to move a circle's center to the end point of a line. Is there a quick method of moving objects that will move them all in one step?

A. Yes, there is. Claris CAD 2.0 added this feature. Please follow the directions below.

1. This procedure is easier if you use the graphics guide. First, choose a modifier to help select the point you want the object moved to. Next, click and drag from the ruler number box (the small number in the upper left of the window, where the rulers meet) and move the zero, zero location to the final place that you want the objects to be positioned. For example, if you want to move the center of a circle to the end point of a line, select the End-Point modifier then move the zero, zero location to that endpoint.

2. Select object(s) that you would like to move.

Note: Claris CAD uses it's reference point to relocate the items. The "Reference Point" is also the last point that you clicked on the screen. If you hold down the Option Key and the Command Key at the same time you can see the "Reference Point." It is graphically shown as a circle with a plus on top of it.

3. With the object(s) still selected choose a modifier, hold down the Command-Key and click on the point that you want to move the information from.

For example, if you want to move the center of a circle to the end point of a line. Select the Circle modifier & Command-Click on the center of the circle.

4. Type in the following:

The key marked "\\"
Type an "x"
Type "0" - Note this should be the number zero.
Hit the Tab Key
Type "0" - Note this should be the number zero.
Hit the Enter Key - This key is located on the right side of your keyboard by the keypad

Practice using different modifiers and different object types and groups. With a little practice with this technique you can move a point on any object or group of objects to any other location on the screen.

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Claris CAD: Cannot Decrease Drawing Size

I have added some objects to my drawing and Claris CAD expands the Drawing Size larger even though my object does not extend to another page. What is happening?

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This article has been archived and is no longer updated by Apple.

Even though your object(s) are located on the other pages that have been expanded, Claris CAD enlarges the "Drawing Size" based on the "Handles" of object. A problem that you may see is that an arc with it's center will extend to the right or left of the current page. The handles of the Arc that extend off the page will increase the "Drawing Size."

If you have deleted or moved the objects and there are sill empty pages, you can delete them by selecting Drawing... under the Layout menu. There will be a large square on the right of the dialog that shows the current drawing size. Clicking in the upper left hand corner of the square resizes the drawing area so that it only accomodates objects and handles that are actually on the drawing.

There is one anomaly that we are aware of in Claris CAD 2.0 that will still not allow you decrease the drawing size of your document, even if you do not have any Arcs on your drawing.

If you have selected objects that are on different layers and dragged them to a different location on the same page and typed Command-D (for Duplicate) as you were still dragging these objects, you may not be able to resize the drawing size. If you do an undo right after you see this happening you will be able to decrease the drawing size. If you have done any other drawing function in Claris CAD you will not be able to recreate the drawing size of the document.

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MacDraw Pro: Can‘t Install by Clicking On Installer Script

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This is fixed in MacDraw Pro 1.5

Double-clicking on the Installer Script file will NOT launch the Installer program, even though they both have the same creator type. The solution is to double-click on the Installer application. The installation instructions for MacDraw Pro state that you must click on the Installer file, not the Installer Script file.
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Apple IIGS: Choosing Networked ImageWriter

I have two networks at two different schools. The first network has approximately 30 Apple IIGS systems, one Macintosh SE (acting as an AppleShare File Server), a Macintosh SE with HD20 SC, and four ImageWriter II printers with LocalTalk Option Cards. The network is connected with PhoneNET cabling and the machines are placed in no particular order around the network.

When the last LocalTalk ImageWriter II is added to end of the network, the LocalTalk ImageWriter II printers drop from the Chooser and become invisible to the Apple IIGS systems. The Macintosh SE can still see and print to the ImageWriters, however. If the LocalTalk ImageWriter II is moved to another location on the network with PhoneNET cable and connector box and another LocalTalk ImageWriter II is put in its place, the same thing happens. If the ImageWriter II is removed from the network, the Apple IIGS systems can see the other printers.

The second network uses a StarController and PhoneNET. One channel of the StarController has a Macintosh SE/30 AppleShare File Server; the second channel has 12 Apple IIGS systems, one Macintosh SE, and one LocalTalk ImageWriter II; the third channel has 15 Macintosh SE systems and three LocalTalk ImageWriter II printers. At some point, when enough machines are added, the same thing as above happens -- that is, the Apple IIGS systems can't see the ImageWriters, but the Macintosh systems can.

I ran Inter-Poll on one of these networks after the failure occurred. All Apple IIGS systems and all ImageWriter II printers were visible.

Note that in both cases the Apple IIGS systems start up from the network. What might cause this? Can you recommend any steps to cure this problem?

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NOTE: We are assuming that when you speak of using the Chooser, you're talking about the network ImageWriter CDEV found in the GS/OS Control Panel.

The GS/OS Control Panel network ImageWriter CDEV cannot handle more than three networked ImageWriters. When the fourth ImageWriter is added to the network, all networked ImageWriters disappear. There is no way to change the CDEV's performance.

When using GS/OS applications, the only workaround is to switch off ImageWriters until only three are active on the network; make the printer selection via the CDEV; then power on the remaining printers. Once the selection process is complete the printing process will work properly. Even though the CDEV cannot locate a printer, the GS/OS Print Manager can.

When using ProDOS 8 applications, using Chooser.II allows all available network ImageWriters to appear. Using Chooser.II does not work with GS/OS applications because Chooser.II stores its choices in the ATINIT file associated with that user. GS/OS applications look to the CDEV choices for printing operations.

In summary:

- For ProDOS applications, use Chooser.II.

- For GS/OS applications, use the Control Panel's network ImageWriter CDEV.

When using GS/OS with more than three ImageWriters on the network, perform printer choices when only three ImageWriters are powered on. Once chosen, all printers can be powered on and used normally.

Other than these workarounds, as of April, 1990, there is no solutio to the GS/OS Control Panel CDEV problem.

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MacDraw Pro: Installer Doesn‘t Work With A/UX

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The Installer does not install MacDraw Pro properly while using A/UX.

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MacDraw Pro: Items in Palette‘s Menus Dimmed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If the commands in the Palette's menus (File, etc.) are dimmed, the palette's editor window is probably open.

Therefore, commands such as New Palette and Open Palette are not selectable.

The editor window opens automatically when you select the Colors..., Patterns... or Gradients... commands from the Layout menu. Closing the editor window also closes the Palette window. If you select these commands from the Layout menu, you won't be able to access the pulldown menus within the palettes.

To access these commands, you must tear off the palette from the icon.
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MacDraw Pro: Installing to Disk Without System Folder

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When using the Installer program to install MacDraw Pro to a disk or volume without a System Folder...
- You CAN install using the Customize button
- You CANNOT install using the Install button

This includes installing to hard drive partitions without a System Folder, as well as 1.44 MB high density floppies. This is a limitation of the Installer program, not MacDraw Pro.
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Claris CAD 2.0v2: Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This release includes several important changes to Claris CAD, which are described below.

1) Improved import of Claris CAD 1.0 files
* Attempting to open certain Claris CAD 1.0 files in Claris CAD 2.0 would inappropriately generate the alert - Sorry, there is not enough memory available to open "xxxxx". This was due to an invalid value saved with the document. These files can now be opened in Claris CAD 2.0v2.
* Claris CAD 1.0 rotated circular arcs are now properly converted when opened in Claris CAD 2.0v2.
* Files created in international versions of Claris CAD 1.0 and MacDraw II 1.1 will now import directly into U.S. or other international versions of Claris CAD 2.0v2.

2) Improved stability on Macintosh IIfx, IIci, SE, Plus, and Portable computers
* On a IIfx or IIci, using the Location bar in conjunction with the GuideLiner sometimes caused system errors. This has been corrected in Claris CAD 2.0v2.
* On a SE, Plus, or Portable, updating the Info window with multiple layers or editing a tolerance value in the Dimensions window caused a system error. This has been corrected in Claris CAD 2.0v2.

3) Updated files
* The Claris CAD font, contained in the GDT Font suitcase, and its associated ClarisCADFon PostScript font file have been updated to include +/-, * and O characters
* The latest version of the MacDraw II 1.1 XTND file filter has been included.
* The 8 Color Stationery file and the Berol RapiDesign sampler are now included on the Claris CAD Help disk.

4) Improved accuracy when using modifiers with the GuideLiner Preview feature turned off

5) Improved handling of symbol libraries
* Cutting, deleting, or ungrouping library objects could cause system errors, corrupt files, or inappropriate floater operation memory alerts. This has been corrected in Claris CAD 2.0v2
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MacDraw Pro: Drop-launching Documents

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With System 7.0, you can drag a document icon onto the creator application's icon, which will open the document into the application. This is called drop-launching

MacDraw Pro 1.5 will drop launch native files from MacDraw Pro 1.0/1.5 (document and palette files) and any file that will be opened using an XTND filter. PICT files from other applications and MacDraw 1.9 files will not drop launch.

MacDraw Pro 1.0 v1 will "drop-launch" only its own native files, even though it has translators to other type of files.

If files do not drop-launch correctly after installing MacDraw Pro 1.5, rebuild the desktop on the hard drive.
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Claris CAD: Objects Not Showing up on EPSF File

I have used the new EPSF filter for MacDraw Pro with Claris CAD 2.0 and although the picture looks fine in other applications some of the object do not get printed out. What could be happening?

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The filter that you are referring to was originally written to be used with MacDraw Pro. If you used Claris CAD 2.0v3 with Claris XTND System 1.2v2 most of these difficulties should disappear. If you are using 2.0v1 or 2.0v2 of Claris CAD some objects will not be saved out. If you are using 2.0v3 of Claris CAD you will need to unjoin Points and Walls for them to exported out correctly. At this time all type 3 fonts will not be exported out to the EPSF file. There is no work around at this time.

Note: It is important to realize that the GD&T (formerly called GDT) font and the ClarisCAD font will not be exported out because they are type 3 fonts.

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MacDraw Pro: PaintJet/PaintWriter Not Printing Color Patterns

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MacDraw Pro 1.0/1.5 will not print color patterns to the PaintJet or PaintWriter from System 7.
Color patterns print as black and white patterns.

It WILL print color patterns correctly from System 6. This includes print driver versions current as of July 1991.

Patterns may print solid black to the HP PaintJet XL 300 color printer.

Hewlett Packard provides two drivers with the PaintJet XL 300. One is named "PaintJet XL 300" and is a QuickDraw driver. The other is named "PaintJet XL 300 PS" and is a PostScript driver. To print patterns correctly, you must use the QuickDraw driver.
Published Date: Feb 18, 2012

MacDraw Pro: Crashing/System Error Launching

MacDraw Pro 1.0v1/1.5 crashes with a system error (usually a bus error) when launched/opened.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The following are steps to correct this:

* Turn off any INITs or Extensions (System 6: Drag the System and Finder to the Desktop; restart the computer; drag the System and Finder back into the System Folder. System 7: hold down the Shift key while restarting the computer). Launch MacDraw Pro to see if it is fixed.

* Check the root level of the hard disk (the desktop and the hard disk window) for a file called Claris XTND System. Also check the System Folder. If found in either location, trash it, then re-launch MacDraw Pro. (This could be an older version of the file from FileMaker Pro 1.0. The only copy of this file should be in the Claris folder, which is the version installed by MacDraw Pro).

* If the difficulty persists, reinstall the System Software and the MacDraw Pro application. Turn off all INITs before reinstalling MacDraw Pro.

* If the difficulty persists, rebuild the desktop (hold down the command and option keys while restarting the computer), then run Disk First Aid or Norton Disk Doctor. Disk First Aid is included on your System disks. Instructions are included in your computer's owners manual.

* If the difficulty persists, it could be a corrupted XTND preferences file. Delete XTND Translator List and Claris XTND Preferences, which reside in the Preferences folder in System 7.

* The software used to format the hard disk may be incompatible with System 7 and/or MacDraw Pro. Obtain a current version of this formatting software. For non-Apple brand drives, contact your dealer or hard drive vendor for the latest version of their formatting sofware. When obtained, you do NOT need to reformat the hard disk. Instead, you'll need to update the SCSI driver file on the hard drive. The way to do this varies from program to program, so you'll need to refer to instructions for your software on how to do this. (Usually there is a button or pull-down command worded something like "Update" or "Install Driver" or "Update SCSI driver").

One known incompatibility seems to be hard drives formatted with older versions of the Rodime hard drive formatting software. To fix this, launch a current version of the Rodime utilities software. There are two options for installing the SCSI driver file. Choose the one labeled something like "install standard driver," then install / update the driver file. MacDraw Pro should open successfully.
Published Date: Feb 18, 2012

MacDraw Pro: Can‘t Replace Claris XTND System File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Installer with MacDraw Pro 1.0v1 and 1.5 cannot replace/update the Claris XTND System file (v1.2) from FileMaker Pro. When attempting to install MacDraw Pro with v1.2 of this file present, a dialog box appears telling you that installation cannot take place. Here's what to do:

1. Quit the Installer.
2. Trash the Claris XTND System file currently on the hard disk (don't just drag it to the desktop).
3. Run the Installer again.

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MacDraw Pro: Installing Color Support Software

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
(MacDraw Pro 1.0) In the Installer, one Installation option is called Color Support Software. This option installs 32-Bit QuickDraw and LaserWriter 6.0.2 files.

If the Installer is launched with System 6, Color Support Software is listed to be installed when performing an Easy Install. However, if the Installer is launched with System 7, Color Support Software will NOT be listed to be installed using the Easy Install button. (This is appropriate, since these files are not required with System 7.)

If Color Support Software is selected using the Custom Install feature while running System 7, the Installer will install 32-Bit QuickDraw and the LaserWriter 6.0.2 files into the System Folder. These files are installed even though they are not appropriate for System 7. These files will not cause any problems if left there, but they are unnecessary additions to the System Folder. (The LaserWriter files are installed into the System Folder, not the Extensions folder.)

When using the Custom Install feature, the Installer installs all the files related to the chosen installation options, whether those files are appropriate or not. The Installer only checks system and CPU types (to modify what it will install) for use with Easy Install.

Published Date: Feb 18, 2012

HyperCard: Don‘t Refer to Cards by ID in Non-Static Stacks

I'm working on a HyperCard application that makes extensive use of card ID numbers while also doing a lot of copying/cutting and pasting of cards for various reasons. The problem is that ID numbers occasionally change after cards are cut and/or pasted. As a result, functions that rely on the old ID numbers are upset.

Is there a way around this? When are card ID numbers changed; when are they not? Is there a way to force the ID number to remain the same or to change the ID number of an existing card?

My current solution is to check the ID number before and after copying, and if changed, laboriously replace all instances of the old ID number string with the new in all scripts (unsatisfactory, but better than nothing). In particular, I am working with two separate stacks, copying cards from one stack and placing them in another with the hope that the ID number will be the same on the new stack. There doesn't seem to be a pattern to when the ID number changes and when it doesn't.

This article has been archived and is no longer updated by Apple.
Referring to cards by their ID number is a great idea in static stacks. ID numbers are guaranteed to be unique, so the user can be sure no conflicts result. When working in a constantly changing stack, it's best to reference the card by name. When a card is created, we suggest that the user use something like:

```
set the name of this card to "C" & the ID of this card
```

to name the card. That way, names are reasonably unique (conflicts will be extremely rare) and cutting and pasting won't change the item referenced. The letter in quotes (in this case "C") can be any character, although it's safer to use letters. The purpose of the leading letter is to keep HyperCard from referencing card NUMBER "xxx" instead of card NAME "xxx".

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MacDraw Pro: Using Custom Install

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Attempting a Custom Install of the MacDraw Pro application (1.0v1) to a Mac SE (System 6, MultiFinder on), a dialog box sometimes appears saying that MacDraw Pro cannot be installed.

The dialog box appears at the end of the installation process, after the Installer disk has been reinserted. This has been observed on Mac SEs (with less than 4MB of RAM), but may occur with other models.

Install using single Finder, or increase the MultiFinder application memory size for the Installer application from 600K to 750K.
Published Date: Feb 18, 2012

MacDraw Pro: Printing Color/Grayscale Bitmaps

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

To print colored or grayscale bitmaps correctly to a black and white Postscript printer, you need to print to a Postscript Level 2 printer (e.g., LaserWriter IIf, IIg, LaserWriter Pro) and use a Postscript Level 2 print driver (e.g., LaserWriter 8 driver). If you print using an earlier print driver or printer, the bitmap will print as black and white. The colored or grayscale pixels will not print dithered.

This includes:
1. Color screen shots or screen captures,
2. Black and white bitmaps from MacPaint, HyperCard (and similar programs) that are subsequently colorized in MacDraw Pro.

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MacDraw Pro 1.0v1Compatible Hardware

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Verified Systems and Equipment

Hardware

* CPUs

1) Macintosh Portable
2) Macintosh Plus
3) Macintosh Classic
4) Macintosh SE
5) Macintosh SE/30
6) Macintosh II
7) Macintosh IIx
8) Macintosh IIcx
9) Macintosh IIci
10) Macintosh IIfx
11) Macintosh IIsi
12) Macintosh LC

MacDraw Pro does not run on a Macintosh 512KE or earlier. While it does run on a Portable, a Plus, and SE, and a Classic, these CPUs are not recommended. MacDraw Pro is not certified to run on an SE/30, a Macintosh II, IIx, or IIcx unless 32-bit QuickDraw 1.2 is installed.

* Peripherals

*** Disk drives

1) 800K internal disk drive
2) 800K external disk drive
3) HDFD internal disk drive
4) HD20SC external hard drive
5) 20 Mb internal hard drive
6) 40 Mb internal hard drive
7) 80 Mb internal hard drive
8) 120 Mb internal hard drive
9) 40 Mb PLI removable drive

An 800K disk drive is required for installing the application to a hard disk. The application cannot be run from an 800K floppy disk.

*** Monitors

1) Apple 9" display (Plus, SE, SE/30, and Classic)
2) Apple 12" color monitor
3) Apple 11" grayscale
4) Apple 13" RGB monitor
5) Apple Portrait monochrome monitor
6) Apple Two Page display grayscale monitor
7) Radius Full Page Display monitor
8) Radius Two Page Display monitor
9) Radius Two Page Display RGB monitor
10) Radius Pivot Display monitor
11) SuperMac 19" color monitor
12) SuperMac 19" monochrome monitor

While MacDraw Pro has been tested on all of the above monitors there are a number of known anomalies that are specific to several of the third party monitors.

*** Video display cards

1) SuperMac 24-bit card with accelerator
2) Radius 24-bit card
3) RasterOps 264/30 24-bit card (for use in SE/30)
4) RasterOps 264 24-bit card
5) Raster Ops 262 32-bit card
6) Apple 4*8 card
7) Apple 8*24GC card with accelerator
8) Apple on-board video (IIci)

*** Printers

1) Apple LaserWriter/LaserWriter Plus
2) Apple LaserWriter II NT/NTX
3) Apple LaserWriter IISC
4) Apple Personal LaserWriter NT
5) Apple Personal LaserWriter SC
6) Apple Personal LaserWriter LS
8) Apple ImageWriter I/II
9) Apple ImageWriter LQ
10) Apple StyleWriter
11) Hewlett-Packard PaintJet
12) Hewlett-Packard PaintWriter
13) Hewlett-Packard LaserJet IIID
14) Hewlett-Packard DeskWriter
15) Qume Crystal Print
16) QMS ColorScript 100
17) Seiko ColorPoint PS
18) Tektronix Phaser 4693DX
19) Tektronix 4693D
20) Varityper VT600
21) Linotronic L300
22) GCC Personal LaserPrinter (with driver version 2.31)
23) Montage slide printer (film recorder) (with problems noted in another entry)

*** Plotters (tested with MacPlot version 1.2)
1) Hewlett-Packard
a) 7596A DraftMaster II
b) 7475A DraftPro
c) 7550A
2) Houston Instrument
a) DMP 60 DL Series

A number of bugs were reported that were identified as printer driver bugs. All of these reports have been passed on to the responsible parties.
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MacDraw Pro 1.0v1: Read Me

The following is the contents of the Read Me file on the Program 1 Disk:
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Welcome.
This addendum is provided to communicate information and workarounds not available in printed documentation. You can also find important tips in the MacDraw Pro UserÕs Guide Troubleshooting section (Appendix A).

INSTALLATION NOTES
Please remember to remove all virus checking software from your system before installing MacDraw Pro software, and then to re-install your virus checking software afterward.
The installation process will leave some temporary files on your hard disk. These files are automatically removed by your Macintosh when you restart (if you need to recover disk space after installation, Restart your Macintosh).

FONT SUBSTITUTION
MacDraw Pro uses processes to place text as accurately as possible when printing. These processes are not compatible with Font Substitution in the LaserWriter Driver.
To ensure proper printing of high-resolution fonts, please use Helvetica, Times, and Courier instead of Geneva, New York, and Monaco.

MACDRAW II IMPORT
Improved text placement in MacDraw Pro may cause line breaks to change slightly within text blocks in imported MacDraw II files. This is due to letter spacing contracting (or in some cases expanding) slightly. Manually adjusting the letter spacing of words on a line above a new line break will return the line break to its original position.

To increase (decrease) character spacing for a word:
1. Select the text tool, and click on the text block.
2. Double-click the word to select it.
3. Hold down the option key and press the right (left) arrow key.

STYLEWRITER INFORMATION
The Apple StyleWriter printer uses the memory in your Macintosh to rotate blocks of text. Depending on available memory, large blocks of rotated text may not print. Try the following steps:
1. Break the text block into smaller parts, and delete extra carriage returns. The total amount of memory required to print rotated text varies in direct proportion to the total size of the text block, so smaller blocks need less memory.

2. Increase available memory. Instructions on increasing available memory may be found in Appendix A of the MacDraw Pro User's Guide.

ADOBE TYPE REUNION INFORMATION
Adobe Type Reunion substantially reduces the performance of MacDraw Pro for many interactive operations (such as selecting objects). You may experience significant performance gains by removing Type Reunion from your system folder and restarting your system before using MacDrawÊPro.
Additionally, an incompatibility exists with Type Reunion when saving files in MacDraw II format which can result in system instability. Please do not Save As MacDraw II with Type Reunion installed.

COMPLEX POLYGON OBJECTS
Complex polygon, bezigon, and freehand objects may not print in some cases. Please see the UserÕs Guide Troubleshooting section for information on approximate point guidelines, and tips on printing. Additionally, gradient fills may not appear in complex polygon objects.
Simplifying complex polygons will result in faster printing and faster screen display. To simplify these objects, use the Reshape command, select the object, and remove some points. Also, try to reduce points of overlap on an object (where lines on the object cross).

A/UX INSTALLATION
If you are installing under A/UX 2.0, you will be able to install the application using the Installer, but will need to install ancillary files manually (by dragging them from the disks). Please do not use the Easy Install feature. Instead:
1 Create a folder called "MacDraw Pro Folder" on the root directory of your A/UX volume. Then, install the MacDraw Pro application following the steps in the Installation Options section of Getting Started. (Essentially, create the "MacDraw Pro Folder" on your "/" volume, launch the installer, click the customize button, click the item titled ÒMacDraw Pro ApplicationÓ and press the Install button.)
2. Drag the other files you wish to have installed from the MacDraw Pro disk set to your hard disk. To ensure proper operation of spelling dictionaries, help, and the XTND file translation system, install your files as listed in ÒChecking the InstallationÓ in Getting Started. (Note: if you already have a "Claris" folder with spelling dictionaries installed, you do not need to update your dictionary files. If you already have a "Claris Translators" folder, drag the translators from your MacDraw Pro disk set into the existing folder.)

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TA41647_MacDraw_Pro_v_Read_Me.pdf

Claris Resolve: Creating a series of numbers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are two methods to create a series of numbers in Claris Resolve:

Method 1:
Put the number 1 in cell A1. In cell A2 put the formula: =A1 + 1. Then select a column of cells starting with A2. Choose Fill Down from the Calculate menu. The formula will be copied all the way down and give you a series of consecutive numbers.

Method 2:
Select a range of cells. Do a 'Fill' command (or command-L). A consecutive series of numbers starting with '1' will be created. If you want the series to start with something other than 1, put that number in the first cell before selecting the range. If you put a number in the last cell of the range, the Fill command will give you a series of numbers that are segmented between the first and last cell.
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Claris Resolve: Split Screens and Multiple Views

Does Claris Resolve have a 'split-screen' feature?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve handles the need for split screens in a more versatile manner than other spreadsheet programs. Claris Resolve allows you to open the same spreadsheet multiple times and set them as views. You can then toggle the views back and forth using the mouse or by selecting an item from the 'View' menu.

Multiple screens allow you to lock Title cells vertically in one screen and horizontally in another.

Multiple screens allow you to hide tools on one view and keep them visible in another.

Multiple screens allow up to 32 views open at the same time (under system 7; 16 views under system 6.x).

Note: Clicking on the Grow Icon zooms all views of that spreadsheet.
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Claris Resolve: Using Custom Numeric Formats

The customer forgets how they have designated a custom number format in Claris Resolve. How can the format be shown?
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To see how all the predefined formats are designated, go to the 'Numeric" and then 'Set Formats' menu (or command-J). Select the name of the format you wish to analyze from the 'Menu' side of the dialog box. The criteria for the chosen format will appear at the bottom of the screen above the OK button.
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Claris Resolve: Using Operator Feature with Paste Special

The 'Add' operator is used in the Paste Special command, but nothing happens.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

All of the operators within the Paste Special command apply on to values and not to formulas. If you copy a cell, you automatically copy the formula (if there is one -- the value if there isn't). It isn't logical to 'add' a formula to a formula, so Claris Resolve merely pastes in the original formula instead of adding in the value.

Published Date: Feb 18, 2012

MacDraw Pro: AppleShare Print Server Error Message

Installing the LaserWriter 6.0.2 printer driver with the MacDraw Pro 1.0 Installer can create printing difficulty when printing using the AppleShare Print Server software.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This occurs because the AppleShare Print Server software uses the Laser Prep file on the AppleShare server to initialize the LaserWriter printers, not the Laser Prep file on the user's computer. After installing MacDraw Pro, the Laser Prep file on the user's hard disk may be a later version than the Laser Prep on the AppleShare server (which may be version 5.2 or earlier). This will cause an "Incompatible version..." message when trying to print.

To print correctly using an AppleShare Print Server, you must update the Laser Prep file on the AppleShare server to be the same version as that on the user's hard disk. (System 7 disks include a Laser Prep file specifically for placement on the AppleShare server). Then reset the laser printer. Also, be sure that there is only one Laser Prep file in the AppleShare server's System Folder.
Published Date: Feb 18, 2012

AFE: Problem May Be Faulty Cable or Missing SMB Server

I received this message when launching AFE to do SMB file transfer:

"The Token Ring interface driver could not be opened."

The Apple File Exchange then launches without file transfer capability.

I'm running a Macintosh IIcx with System 6.0.4, EtherTalk NB Card, video card, and TokenTalk NB Card.

Can you explain?

This article has been archived and is no longer updated by Apple.
This error message appears when there are problems with cable connections or when the SMB File Transfer Utility cannot find an SMB server on the ring.

Make sure that the cable is fully connected to the TokenTalk NB Card and the MAU, and ensure that the SMB file server is still running on that ring.

If that does not correct the problem, you might try a different TokenTalk NB Card, or try a different cable and connect it to a different port on the MAU.

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MacDraw Pro: TrueType Used Before Bitmaps

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In System 7, bitmaps have priority over TrueType for screen display.

MacDraw Pro 1.0v1, however, uses TrueType even if the bitmap is present. This is a specific design decision. Although text can take longer to display, the text placement is more accurate at all zoom levels and printer resolutions.

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MacLinkPlus 8.10 / 9.0: Translator List

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacLinkPlus Version 9.00 (current version)
Released in October 1996

New Translators
Corel WordPerfect 7 (Windows 95)
Corel Quattro Pro 7 (Windows 95)

Now Power Mac Native
Translations up to 4 times faster
68k Macs are also supported

New Word Processing Features
Automatic Bullets, Numbers & Multilevel Outlines
Hypertext Links and Bookmarks
Absolutely Positioned Objects (Text and Graphic Frames)

Updated HTML Translator
Supports Netscape 3.0 cache searching

MacLinkPlus 8.10 Translator List by Dataviz
Latest information is available at http://www.dataviz.com
Newest Translator Additions...

ClarisWorks v.4 WP, SS, DB (Mac and Windows)

Other Recently Added Translators.
HTML
GIF
JPEG

The above are part of the Internet Translation Kit.

Lotus 1-2-3 v. 4 & 5 (.WK4)
Microsoft Word for Windows 95 v. 7
Microsoft Word for Windows 95 v. 7
Microsoft Works for Windows 95 v. 4 WP, SS, DB
Nisus Writer v. 4
Quattro Pro for Windows v. 6
WordPerfect Mac 3.5
WordPerfect for Windows 6.1
WordPerfect Works v. 2

All translators paths in the tables below are valid when translating any format listed on the left to any format listed on the right.

PC Formats to Mac Formats

Word Processing

PC formats	Mac formats
Ami Pro (Windows) v. 1, 2, 3.x	ClarisWorks v. 1, 2, 3 , 4
ClarisWorks (Windows) v. 1, 3, 4	FrameMaker (MIF) v. 2, 3
DCA-RFT	MacWrite v. 4.5, 5
HTML 2.0 (HyperText Markup Language)	MacWrite II
Multimate through v. 4	MacWrite Pro v. 1, 1.5
Office Writer v. 5, 6	Nisus v. 3, 3.4
Professional Write v. 2	Nisus Writer v. 4
RTF	Publish Text
Text	RTF
Word (DOS) through v. 6	Text

Word for Windows v. 1, 2, 6, 7 (Win95)	Word Mac v. 3, 4, 5.x, 6
WordPerfect (DOS) v. 4.2, 5.x, 6.x	WordPerfect Mac v. 1, 2.x, 3.x
WordPerfect (Windows) v. 5.2, 6.x	MS Works Mac v. 2, 3, 4
WordPerfect Works (Windows) v. 2	WriteNow v. 2, 3, 4
Wordstar v. 3, 4, 5, 6, 7	AppleWorks (Apple II) v. 2.1, 3
MS Works (DOS) v. 2, 3	
MS Works (Windows) v. 2, 3, 4 (Win95)	
XYWrite III	

Graphics

PC formats	Mac formats
AutoCad.DXF	
GIF	
Harvard Graphics.CGM v. 2 , 3	
JPEG	
Lotus.PIC	
Lotus Freelance.CGM	GIF
PC Paintbrush.PCX	JPEG
TIFF	PICT
Ventura Publisher.GEM	TIFF
Ventura Publisher.IMG	
Windows Bitmap.BMP	
Windows Metafile.WMF	
WordPerfect.WPG, WPG2	

EPS PC (TIFF Thumbnail)	EPS Mac (PICT Thumbnail)

Database

PC formats	Mac formats
ClarisWorks (Windows) v. 1, 3, 4	ClarisWorks v. 1, 2, 3 , 4
dBASE (DBF) II, III, IV	FoxBASE
FoxBASE	MS Works v. 2, 3, 4
MS Works (DOS) v. 2, 3	AppleWorks (Apple II) v. 2.1, 3
MS Works (Windows) v. 2, 3, 4 (Win95)	
WordPerfect Works (Windows) v. 2	

Spreadsheets

PC formats	Mac formats
ClarisWorks (Windows) v. 1, 3 , 4	ClarisWorks v. 1, 2, 3, 4
Excel (Windows) v. 2, 3, 4, 5, 7 (Win95)	Excel v. 2, 3, 4, 5
Lotus 1-2-3 (WKS, WK1, WK3, WK4)	MS Works v. 2, 3, 4
MS Works (DOS) v. 2, 3	SYLK
MS Works (Windows) v. 2, 3, 4 (Win95)	AppleWorks (Apple II) v. 3
QuattroPro (DOS) v. 4 (Win) v. 1, 5, 6	
SYLK	
Symphony (WRK, WR1)	
WordPerfect Works (Win) v. 2	

Mac Formats to PC Formats

Word Processing

Mac formats	PC formats
ClarisWorks v. 1, 2, 3, 4	Ami Pro (Windows) v. 1, 2, 3.x
FrameMaker (MIF) v. 2, 3	ClarisWorks (Windows) v. 1, 3, 4
HTML (HyperText Markup Language)	DCA-RFT
MacWrite v. 4.5, 5	Multimate through v.4
MacWrite II	Office Writer v. 5, 6
MacWrite Pro v. 1, 1.5	Professional Write v. 2
Nisus v. 3.0, 3.4	RTF
Nisus Writer v. 4.0	Text
Publish Text	Word (DOS) through v. 6

TA41655_MacLinkPlus_Translator_List.pdf

RTF	Word for Windows v. 1, 2, 6, 7 (Win95)
Text	WordPerfect (DOS) v. 4.2, 5.x, 6.x
Word Mac v. 3, 4, 5.x, 6	WordPerfect (Windows) v. 5.x, 6.x
WordPerfect Mac v. 1, 2.x, 3.x	WordPerfect Works (Windows) v. 2
MS Works Mac v. 2, 3, 4	Wordstar v. 3, 4, 5, 6, 7
WriteNow v. 2, 3, 4	MS Works (DOS) v. 2 , 3
AppleWorks (Apple II) v. 2.1, 3	MS Works (Windows) v. 2, 3, 4 (Win95)
	XYWrite III

Graphics

Mac formats	PC formats
	GIF
	JPEG
GIF	PC Paintbrush.PCX
JPEG	TIFF
PICT	Windows Bitmap.BMP
TIFF	Windows Metafile.WMF
	WordPerfect.WPG & WPG2
EPS Mac (PICT Thumbnail)	EPS PC (TIFF Thumbnail)

Databases

Mac formats	PC formats
ClarisWorks v. 1, 2, 3, 4	ClarisWorks (Windows) v. 1, 3, 4
FoxBASE	dBASE (DBF) II, III, IV
MS Works v. 2, 3, 4	FoxBASE
AppleWorks (Apple II) v. 2.1, 3	MS Works (DOS) v. 2, 3
	MS Works (Windows) v. 2, 3 , 4 (Win95)
	WordPerfect Works (Windows) v. 2

Spreadsheets

Mac formats	PC formats
ClarisWorks v. 1, 2, 3, 4	ClarisWorks (Windows) v. 1, 3, 4
Excel v. 2, 3, 4, 5	Excel (Windows) v. 2, 3, 4, 5, 7 (Win95)
MS Works v. 2, 3, 4	Lotus 1-2-3 (WKS, WK1, WK3, WK4)
SYLK	MS Works (DOS) v. 2, 3
AppleWorks (Apple II) v. 3	MS Works (Windows) v. 2, 3, 4 (Win95)
	QuattroPro (DOS) v. 4 (Win) v. 1, 5, 6
	SYLK
	Symphony (WRK, WR1)
	WordPerfect Works (Win) v. 2

Mac Formats to Mac Formats

Word Processing

ClarisWorks v. 1, 2, 3, 4	ClarisWorks v. 1, 2, 3, 4
FrameMaker (MIF) v. 2, 3	FrameMaker (MIF) v. 2, 3
HTML 2.0 (HyperText Markup Manguage)	MacWrite v. 4.5, 5
MacWrite v. 4.5, 5	MacWrite II
MacWrite II	MacWrite Pro v. 1, 1.5
MacWrite Pro v. 1, 1.5	Nisus v. 3.0, 3.4
Nisus v. 3.0, 3.4	Nisus Writer v. 4.0
Nisus Writer v. 4.0	RTF
RTF	Text
Text	Word Mac v. 3, 4, 5.x, 6
Word Mac v. 3, 4, 5.x, 6	WordPerfect Mac v. 1, 2.x , 3.x
WordPerfect Mac v. 1, 2.x , 3.x	MS Works Mac v. 2, 3, 4
MS Works Mac v. 2, 3, 4	WriteNow v. 2, 3, 4
WriteNow v. 2, 3, 4	AppleWorks (Apple II) v. 2.1, 3
AppleWorks (Apple II) v. 2.1, 3	AppleWorks GS v. 1.1
AppleWorks GS v. 1.1	

Graphics

GIF	GIF
JPEG	JPEG
PICT	PICT
TIFF	TIFF

Spreadsheets

ClarisWorks v. 1, 2, 3, 4	ClarisWorks v. 1, 2, 3, 4
Excel v. 2, 3, 4, 5	Excel v. 2, 3, 4, 5
MS Works v. 2, 3, 4	MS Works v. 2, 3, 4
SYLK	SYLK
AppleWorks (Apple II) v. 3	AppleWorks (Apple II) v. 3

Databases

ClarisWorks v. 1, 2, 3, 4	ClarisWorks v. 1, 2, 3, 4
FoxBASE	FoxBASE
MS Works v. 2, 3, 4	MS Works v. 2, 3, 4
AppleWorks (Apple II) v. 2.1, 3	AppleWorks (Apple II) v. 2.1, 3

Transfers:

Binary
MacBinary
PageMaker
Postscript
PowerPoint
Text
TIFF
Quark
Other Formats:
DIF
SYLK
WKS
Comma Separated Values (CSV)
Tab Text
Tab Values
WriteNow NeXT v. 1, 2
SunWrite v. 1.1 (write only)
MIF (NeXT/Sun) v. 2, 3

Published Date: Feb 18, 2012

MacDraw Pro: Text Insertion Point Misplaced

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When editing text at odd zoom levels (e.g., 344%), the cursor may appear placed incorrectly. That is, instead of being between letters, it may be over the middle of a letter or out of the text object entirely. To fix this problem, turn ON Kerning by Pairs in Preferences. This will space the text properly so it can be edited at zoom levels that are not an even multiple or fraction of 100%. Or, zoom back to 100% or some even multiple, such as 50% or 200%, to edit text.

This symptom can also occur when running the Mode 32 INIT with MacDraw Pro 1.0v1. Update to MacDraw Pro 1.5 to use with the Mode 32 INIT.

Published Date: Feb 18, 2012

Claris Resolve: Calculations not Updating Correctly

I have a calculation based on the result of the 'Distribution' function. But when I update my distribution criteria, the calculation does not update. What is going wrong?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Some calculations in Claris Resolve 1.X do not update automatically. Sometimes you can force an update by selecting 'Calculate Now' -- even though the 'Auto Calc' feature is turned on. Otherwise, you have to reenter the calculation to force the update.

Published Date: Feb 18, 2012

Claris Resolve: Inserting a Row

The 'Insert' command only moves cells over to the right -- not down.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The 'Insert' command will only insert a row when you select the row heading on the far left side of the spreadsheet. Otherwise, 'insert' will only allow you to enter in blank columns or cells to the left of the selected cell. The only way to get a selected row of blank cells is to cut and paste.

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MacDraw Pro: Installing on Systems 6.0 & LaserWriter 7.0 Machines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
(MacDraw Pro 1.0) MacDraw Pro prints and works correctly with System 7 drivers, even on Macintosh that are running Sys 6.0.x.

When performing the standard installation, the Installer looks at the System to learn its version. When it sees a System 6.0.x machine with a LaserWriter 7 version, (actually it looks for any non LaserWriter 6.0.2 driver) it alerts that cannot replace it and recommends to remove the LaserWriter and LaserPrep before performing the installation. It will NOT continue the installation, and alerts you that it was not performed.

What they should do in a mixed environment network is to perform a Customized installation and select all the files in the Installer script to be installed EXCEPT the Color Support Software which installs then the LaserWriter 6.0.2 files. (Actually if they select a file within the Installer script window, it will explain "exactly" what it would do if they will select to install the Color Support Software.)

Then, they can install all MacDraw Pro files and still keep the LaserWriter and LaserPrep 7.0 untouched on those System 6.0.X machines.

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Claris CAD: Version 2.0v3

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
What's been changed:

1. System 7.0 compatible
2. GDT is known as GD&T for legal reasons.
3. Characters have been added to ClarisCAD font
4. GD&T has been made Postscript and System 7.0 compatible
5. Black and white color stationery will be provided on request (see the record 'Documentation Errors - Stationery & Berol Rapid Design Sampler - Command Keys')
6. Resolution preferences now includeStyleWriter and LaserWriter LS options
7. EPSF XTND filter (objects saved out only) availble on request

Bugs fixed for System 7.0 (items that don't function with 7.0 and previous versions of ClarisÊCAD)
1. Objects are transferred from the Claris Cad clipboard tothe System's clipboard
2. Option-Shift-Z and Option-Shift-M (zoom in and out) works
3. GD&T font works
4. Gravity point redraw works correctly
5. PrintMonitor and open floaters bug (wouldn't print) fixed
6. Aliases work correctly
7. Chamfer single click method fixed
8. Info window bug fixed
9. Location bar/fractional readout bug fixed

Published Date: Feb 18, 2012

VersaTerm Pro 3.1: Needed for Macintosh Portable

When running VersaTerm Pro 3.0.1 on a Macintosh Portable with the keypad option installed, the system does not map the PF2 and PF3 keys properly.

Is this a known problem?

This article has been archived and is no longer updated by Apple.
VersaTerm Pro version 3.0.1 is NOT compatible with the Macintosh Portable keyboard. VersaTerm Pro version 3.1 is the correct version to use on the Macintosh Portable. For upgrades, please contact Peripherals Computers & Supplies, Inc.

For more information, search under: "Peripherals Computers & Supplies"

Published Date: Feb 18, 2012

Claris CAD: Create Wall and Door Openings

You can employ the wall tool creatively to create openings quickly and accurately.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

There two primary ways to approach placing windows and doors in Claris CAD. You can create opaquedoor or window objects to paste over the wall (saving them as library objects makes them readily available) or you can modify the wall itself using the Clean Up tool.

If the overlapping object is another wall segment, and you use the Clean Up tool, you can actually modify the wall itself, creating a permanent opening without destroying the integrity of the wall. (The use of the Clean Up tool is covered on pages 3 and 4 of the Claris CAD New Features Guide.)

For this example, you'll draw a horizontal wall 20' long (using 1/4" = 1 foot scale) and put a 33" opening in the center of the wall.

1) Draw a horizontal wall 20' in length.
2) Now draw a vertical wall. The length isn't important, as long as it completely intersects the first wall. Use the Width box of the Walls floating window to set the width of the vertical wall to 33".
3) Select the Clean Up tool. (Here is where we follow the instructions in the New Features Guide.) Use the lower left method, the 'overlapping intersection' method,' from the Clean Up floater.
4) Hold down the command key and click on the vertical wall.
5) Still holding down the command key, click the horizontal wall.

You will now have two horizontal walls with a 33' opening centered between them. While drawing the walls you can use the usual modifiers to position them.

You can use Claris CAD s "cleanup" feature to make quick work of doors and other wall openings. Here's how to do it:

1. Make sure the main wall, the one that will contain the door, is not selected.
2. Select the wall tool if it is not already selected.

The Walls palette will appear. (If it doesn't, choose Show Walls from the Layout menu.)

3. Set the width of the new wall to the size of the gap you need. The example in Figure 2 will create a 3-foot gap in the main wall.

4. Draw a "wall" perpendicular to the main wall, intersecting it as in Figure 2.

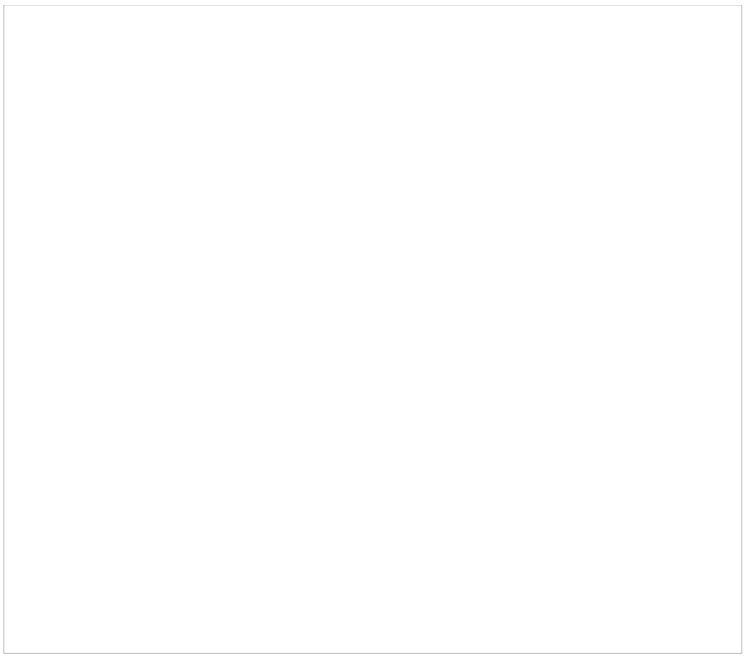
5. Choose Clean Up from the Edit menu. The Clean Up palette appears.

6. Select the over-under method from the Clean Up palette (bottom row, left).

7. Command-click the wall with the window/door width and then command-click the main wall.

You will now have the original wall broken with end caps, at the location and width of the second wall.

TA41662_Claris_CAD_Create_Wall_and_Door_Openings.pdf



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MacDraw Pro, Claris CAD: Long Dashed Lines in EPSF

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Long dashed lines with short dashes saved as EPSF from MacDraw Pro 1.0v1 or Claris CAD cause a Postscript error when printed. This is an issue with the EPSF XTND filter (version 1.0) available with MacDraw Pro 1.0v1 and Claris CAD 2.0v3.

Workaround: try using a line with longer (hence, fewer) dashes. Or, create two or three lines overlapping end-to-end, instead of a single line. (In Claris CAD, try using the cutting tool to cut the line into two or more segments.)

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MacDraw Pro: Issues With Demo Version

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following issues have been confirmed with the demo version of MacDraw Pro 1.0v1:

-- With the Scrapbook in the application partition (option - selecting the Scrapbook in MultiFinder, or selecting the Scrapbook in single Finder), choosing Hide Clipboard twice will cause a crash.

-- Under MultiFinder (or System 7.0), if an object has been copied to the application clipboard, import into the application from the System clipboard is disabled.
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MacDraw Pro: Issues with Network Version

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following are known issues with the network (concurrent use) version of MacDraw Pro 1.0v1:

-- When launched from a server, the application will crash when the user attempts to use it or quit after the server has been disconnected.

-- If a copy of the application is active anywhere on the network, the application cannot be copied from the server to a System 7.0 volume. It will be flagged as busy. The following are workarounds:
- Have all users quit the application from the server, then copy.
- Duplicate the application from the Finder, then copy the duplicate.

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Claris CAD: Scanned or Bitmapped Pictures

I would like to scan images and paste them into Claris CAD. With these images in Claris CAD, I would like to:

1. Accurately dimension them (Claris CAD does not have a way to find specific points on bitmap)
2. Edit portions of them (Claris CAD does not have paint tools).
3. Delete portions of them (Claris CAD does not have paint tools).
4. Calculate out the amount of area being used by a specific portion of the bitmap (Claris CAD cannot define the different areas in bitmap).
5. Translate this bitmap to other platforms (The DXF & IGES formats do not support bitmaps).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The above items are virtually impractical to do in Claris CAD, unless the person is willing to trace over these objects or use something like "Streamline by Adobe" to trace over simple line drawings.

You can dimension the distance between points on a bitmap if you use the point tool to place points on the bitmap and then dimension between the points.

Why do we allow customers to paste in Bitmaps into Claris CAD? You still can do a few things, for example rotate them, scale them and print them. Bitmaps are a Macintosh Graphics standard so for Claris CAD not to allow customers to do these things would not be a good decision on our part.

(A note on Streamline. A new version of "Adobe's Streamline" can save out DXF files, if the customer has a simple line drawing, for example, a scan of a house. They can trace it in Streamline. Save it as DXF. Translate it through CGT and work with it in Claris CAD.)

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Published Date: Feb 18, 2012

MacDraw Pro: Slow Printing to QuickDraw Printers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
TIP: to print as fast as possible to QuickDraw printers (ImageWriter, DeskWriter, LaserWriter IISC, GCC PLP (General Computer Corporation Personal Laser Printer) and so forth), do the following:

1- Use MacDraw Pro 1.5, not 1.0v1
2- If using System 7, use Tuneup 1.1.1.
3- Turn OFF the "Maximum Printing Resolution" option in Preferences. However, note that rotated text will print very poorly with this option disabled.
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MacDraw Pro: White Pen Objects Printing/Viewing Black

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Objects from MacDraw Pro 1.0/1.5 created with a white pen, and saved as a MacDraw II file are printed and/or viewed as black from MacDraw II.

Reselect the objects in MacDraw II, then reset the pen color to white.

In MacDraw Pro 1.0v1, create an object and set the pen color to white. Save As the document to MacDraw II format. Open the file in MacDraw II.

The objects will have a black pen color on non-color Macs. The objects will appear to have a white pen color viewed on color Macs. The objects will print to a Postscript LaserWriter as black from either Mac.
Published Date: Feb 18, 2012

MacDraw Pro: Installing With Gatekeeper and System 7

Installing MacDraw Pro under System 7 after using Gatekeeper's built in disabling feature resulted in a copy of MacDraw Pro that displayed the virus warning upon startup.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Installing MacDraw Pro after starting up with the shift key (to disable all extentions) resulted in a copy of MacDraw Pro that would startup without complaints.
Published Date: Feb 18, 2012

MacDraw II: Lines per Inch

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The MacDraw II configure program allows MacDraw II users to define how many Lines Per Inch (LPI) the hi-resolution printers will address per color. The default (preset) settings are 60 LPI for all colors.

Here are some guidelines of what is the "norm" in the industry according to Publish magazine.

Newspapers (low res) usually work with 85-100 LPI
Magazines usually work with 120-150 LPI
Publish Magazines uses 133 LPI
Advertising Materials usually work with 200 LPI or more.
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Claris Resolve: Potential Issue with Monitor Extensions

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In Claris Resolve, you have the ability to move one screen at a time with the command-arrow key combination. However, the RasterOps monitor extensions uses the command-right arrow and command-left arrow combination to zoom-out and zoom-in, respectively. Therefore, with such monitor extensions installed, the customer will get a surprise zoom when expecting to move one screen over.

The only resolution to this is to select the"Monitors" control panel device and click the "Options" button in the associated dialog box. From there you should be able to disable the zoom.
Published Date: Feb 18, 2012

LaserWriter: Problem Printing Multiple Copies

I'm having a problem printing multiple copies of a document with a LaserWriter IINT through the AppleShare Printer Server. If the number of copies to print is greater than 6, the LaserWriter IINT doesn't stop when it reaches that number.

I increased the timeout delay on the printer (using SENDPS application) to send PostScript code to the printer, and installed LaserWriter Driver 6.0.1 and Laser Prep. Neither of these measures corrected the problem.

Can you help?
This article has been archived and is no longer updated by Apple.
This is a known problem with the LaserWriter family of printers that is particularly noticeable when printing to a LaserWriter via a LaserShare or an AppleShare Print Server. Macintosh Technical Note #123 describes the problem.

If a user prints more than 15 copies of a document, a timeout condition may occur, causing the print job to abort. With LaserShare or AppleShare Print Server, this problem can happen with as few as nine copies. This problem is a result of the LaserWriter not sending packets at the proper times to maintain the connection to the device sending the print job. Because of this, the connection times out after about 2 minutes. The AppleShare Print Server then sends the job to the LaserWriter again causing a duplicate set of printouts. This happens only when the LaserWriter is extremely busy.

The LaserWriter IINTX seems least affected by this problem.

As of April, 1990, we know of no solution.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

Claris CAD: Runs Slowly with RasterOps Monitor

Claris CAD 2.0 will run very slowly with a Raster Ops GS 30 gray-scale monitor (with a GS 434 card) set to more than 16 shades of gray.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you change the monitor to colors instead of grays, the screen redraw will speed up. If you set the grays to 16, it will be much faster. If you set it to16 colors it will be as fast as on a standard monitor.
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MacDraw Pro: Point Spacing to MacWrite II Line Spacing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacDraw Pro Point Spacing to MacWrite II Line Spacing equivalents.

Font and Size	1 Line in MW2 = Pts in MDP	1.5 Lines in MW2 = Pts in MDP	2 Lines in MW2 = Pts in MDP
Avant Garde 10 pt	11	16	20
Avant Garde 12 pt	13	18	23
Avant Garde 14 pt	15	21	27
Avant Garde 18 pt	19	26	33
Avant Garde 24 pt	26	36	45
Bookman 10 pt	11	15	19
Bookman 12 pt	13	18	23
Bookman 14 pt	15	20	26
Bookman 18 pt	19	26	33
Bookman 24 pt	24	33	42
Chicago 12 pt	16	22	28
Courier 9 pt	11	15	19
Courier 10 pt	12	17	21
Courier 12 pt	12	17	22
Courier 14 pt	15	21	26
Courier 18 pt	18	25	31
Courier 24 pt	23	32	40
Garamond 10 pt	11	15	19
Garamond 12 pt	13	18	22
Garamond 14 pt	15	21	26
Garamond 18 pt	19	26	33
Garamond 24 pt	26	35	44
Geneva 9 pt	12	17	22
Geneva 10 pt	13	18	23
Geneva 12 pt	16	22	28
Geneva 14 pt	19	26	33
Geneva 18 pt	23	32	41
Geneva 24 pt	29	40	51
Helvetica 9 pt	11	15	19
Helvetica 10 pt	12	17	21
Helvetica 12 pt	14	19	24
Helvetica 14 pt	15	21	26
Helvetica 18 pt	18	25	32
Helvetica 24 pt	25	35	45
Monaco 9 pt	11	16	20
Monaco 12 pt	16	22	28
New Century Schoolbook 10 pt	11	16	20
New Century Schoolbook 12 pt	13	18	23
New Century Schoolbook 14 pt	15	21	27
New Century Schoolbook 18 pt	19	26	33
New Century Schoolbook 24 pt	26	36	45
New York 9 pt	12	17	22
New York 10 pt	12	17	22
New York 12 pt	16	22	28
New York 14 pt	19	26	33
New York 18 pt	23	32	40
New York 24 pt	29	40	50
Palatino 10 pt	12	17	21
Palatino 12 pt	12	19	24
Palatino 14 pt	16	22	28
Palatino 18 pt	20	28	35
Palatino 24 pt	25	34	43
Times 9 pt	11	15	19
Times 10 pt	12	17	21
Times 12 pt	12	17	21

Times 14 pt	15	21	27
Times 18 pt	19	26	33
Times 24 pt	24	33	42
Zapf Chancery 10 pt	11	15	19
Zapf Chancery 12 pt	13	18	23
Zapf Chancery 14 pt	15	21	27
Zapf Chancery 18 pt	19	26	33
Zapf Chancery 24 pt	26	36	45

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MacDraw Pro: Gradients on PostScript and QuickDraw Printers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Postscript Printers (LaserWriter NT, etc.)
On screen, MacDraw Pro dithers gradients so that the transition between bands of color are almost undetectable. However, most 300 dpi Postscript printers are limited to about 32 levels of gray when printing and cannot print with perfectly smooth color/gray transitions. This is due to resolution limitations of 300 dpi printers. (Some 300dpi printers, such as the LaserWriter IIf and IIg, which utilize PhotoGrade technology, can print more gray levels). The solution is to print to a printer with higher resolution and increase the number of gradient printing steps in the Preferences/Printers window.
TIP: the gradient will print somewhat better as an EPSF image than as a MacDraw Pro object.

QuickDraw Printers (ImageWriter, LaserWriter SC, DeskWriter, etc.)
Many non-Postscript printers cannot print gradients with smooth color transitions. Instead, the gradients print with only a few (8 -12) steps, each step being a wide band without a smooth transition to the next step. Increasing the number of gradient steps in the Printing Preferences will have no effect on the print quality.

This is a limitation of the printer driver. It is not caused by MacDraw Pro. The print driver has to convert the colors in the gradient to gray levels. Each print driver has a limit to how many gray levels it can print. Print drivers that cannot print smooth gradients include all ImageWriters, the StyleWriter (original), the LaserWriter LS and the LaserWriter IISC. Note: some third-party print drivers (MacPalette II by Microspot; WonderPrint by Delta Tao) support dithered printing (smooth gradients) to these printers. All DeskWriters and the StyleWriter II can print fairly smooth gradients using printer drivers current as of 4/93. Tip: try increasing the number of gradient printing steps in the Preferences/Printers window.

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MacDraw Pro: EPS TypeStyler Problem

A customer has reported that MacDraw Pro will not import a TypeStyler EPS file. An "out of memory" error is generated. It will handle a TypeStyler Pict or PostScript(Text) file.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
MacDraw Pro fails to DISPLAY the text objects of EPS files created with TypeStyler--it prints them fine.
Published Date: Feb 18, 2012

Claris CAD 2.0v3: Installing Fonts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In order to install Claris CAD fonts, you must use Font/DA Mover 3.8 or later. Any version below 3.8 will not recognize the Claris CAD fonts, because they are the newer NFont type fonts.

To install the font under System 7, simply drop the font onto the System folder and click OK when it asks if you want to put it in the System file. You could also drag it directly onto the System file.
Published Date: Feb 18, 2012

Claris Resolve: Sending Apple Events from HyperCard 2.1

You can send Claris Resolve Script commands from HyperCard to Claris Resolve, but there is a limit to how many characters can be sent.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Note: It is recommended that you have the following versions of software: System 7.1.1 or System 7.5 or newer; AppleScript 1.1 or newer.

AppleScripting Level: Intermediate

You can send almost any Claris Resolve Script command from HyperCard 2.1 to Claris Resolve using Apple Events. Claris Resolve, however, has a 254 character limit for each "dosc" event (the event which HyperCard sends with the HyperTalk "Send" command.

You will generally receive a -1708 error as theResult of your Send command if you exceed this limit.

The following script will let you send scripts of any length from HyperCard to Claris Resolve in the most efficient manner possible. It sends as many lines as possible within the 254 character limit.

```
on mouseUp
put empty into scriptChunk
put 0 into counter
put 1 into i
repeat until i > the number of lines in field "Script"
add ( the number of chars in line i of field "Script" + 1 ) to counter
if counter > 254 then
send scriptChunk to program "Claris Resolve"
If the result is not empty then
answer the result
exit mouseUp
end if
put empty into scriptChunk
put 0 into counter
else
put ( line i of field "Script" & space ) after scriptChunk
add 1 to i
end if
end repeat
send scriptChunk to program "Claris Resolve"
answer "Your script is complete!"
end mouseUp
```

Where:
* Field "Script" is a field containing the Claris Resolve script you wish to send (you may need to specify it as a card field if it is not a background field).
* It is assumed in this example that Claris Resolve is already running on the same machine.
* Modifications to this script are required if you wish it to launch Claris Resolve or if it resides on a different machine. In the second case, you need to specify the full network pathname of the application.
* This method does not allow for logical structures such as For loops or IF statements. Logical structures must be sent in one complete chunk or errors will occur.

You can also create a simple loop that sends the commands one line at a time. This method, however, will be slower - especially when sending Apple events across a network.
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Claris Resolve: Hide Utility Causes Crashes

There is a bug in Claris Resolve 1.0v2 in the Hide Utility. It has been corrected in Claris Resolve 1.0v3.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
In Claris Resolve 1.0v2 there is an issue with the Hide command under the Utilities menu. Here are the steps necessary to reproduce it:

1. The Cell must contain text (not numbers)
2. The Cell must be right aligned
3. The column which contains the cell is collapsed to just 1 pixel wide.

If the first two cases are true for any cell in the column, Claris Resolve will hang when the column is collapsed to just 1 pixel wide. This only happens in the 1 pixel case. 2 pixels or 0 pixels works fine.

The Claris Resolve Demo files use quite a bit of right aligned text, so the behavior is commonly reported by operators of this demo. It will also occur on a new worksheet, however, if the correct conditions exist.

This was corrected in Claris Resolve 1.0v3.
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Claris Resolve: Selecting Polylines--Documentation Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Selecting Polylines - Documentation / Publications Error

Page 5-23 of the Claris Resolve Users Guide (U91-600-001A) states "To select a polyline, click the line rather than inside the area bounded by the line. A polyline is a line, not a closed object."

This seems to be a mistake as you can click inside a polyline to select it. It appears that even though a polyline is a line, it still needs a bounding rectangle to define it. Therefore, selecting within the polyline keeps the click within its bounding rectangle and thus selects the object.
Published Date: Feb 18, 2012

AppleShare Print Server: Problems Using with Macintosh IIfx

There are some bugs in the AppleShare Print Server that only show up when the print server is run on a Macintosh IIfx machine. The bugs will be fixed in the AppleShare Print Server software in a future release that will ship subsequently to the release of the Macintosh IIfx machine.

NOTE: These bugs only occur under heavy load, for example when the server has captured 3-4 printers and all those printers are in use.

The bugs and the recovery mechanisms are described below:

This article has been archived and is no longer updated by Apple.

Bug: While the spooler is running under heavy load, sometimes it puts up adialog box with an error message saying something like "A fatal error happened so the print server attempted to clean up before releasing the printer. Error code -1104" or -91". When you click OK, the spooler closes the connection with the affected printer (stops spooling for that printer). Spooling on other captured printers goes on as usual.

Recovery: Re-capture the printer you just lost. Things should return to normal at that point.

Bug: While the spooler is running under heavy load, if you try to capture and release printers several times, sometimes the spooler crashes (with bus error) while trying to release a printer.

Recovery: Reboot the machine and restart the spooler.

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MacDraw II, Claris CAD: Window Size Cannot Be Changed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

After launching Claris CAD or MacDraw II on a small start-up monitor and moving the window to a larger monitor, the window on the larger screen cannot be resized.

Both Claris CAD and MacDraw II set your window size to the size of your start-up monitor. The window size is set at this point and CANNOT become any larger. A work around would be to change your start-up monitor to the larger monitor and then launch Claris CAD or MacDraw II.

Published Date: Feb 18, 2012

MacDraw Pro: Changing Background Color of Patterns

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro 1.0 does not allow the background color of a pattern to be changed to non-white. All patterns must have a white background color.

MacDraw Pro 1.5 does allow the background color of a pattern to be edited to be non-white. To print color patterns directly to a Postscript printer, you need a Postscript Level 2 print driver (e.g., LaserWriter 8 driver) and a Level 2 printer (e.g., IIf, IIg, LaserWriter Pro). To print color patterns with an older printer driver or printer, save to an EPSF file, open or import the EPSF file, then print. If saving to an EPSF file, you must use the EPSF XTND translator included with MacDraw Pro 1.5v2.
Published Date: Feb 18, 2012

MacDraw Pro: Changing Background of Scanned Image to Transparent

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro 1.0 / 1.5v1 does not support changing the white pixels of a bitmap, such as a scanned image, from white to transparent. Thus, placing a scanned image over another object will mask out the other object, rather than seeing through the "blank" areas of the scan to the object beneath. There are two workarounds to this problem. The following information applies to black and white (line art) bitmaps. Color/grayscale scans cannot be made to have transparent pixels.

Workaround #1
Resave the scanned image in another file format. For example, the AppleScan and Ofoto scanning software save the blank areas of a scan as white pixels to a PICT file, but as transparent pixels to a TIFF file. Other scanning sofware may behave similarly.

Workaround #2
MacDraw II 1.1 allows changing the background color of a bitmap to transparent. Thus, one workaround to this problem is to open the bitmap in MacDraw II, save, then Open/Place the file in MacDraw Pro.
Published Date: Feb 18, 2012

Claris Resolve: Minimum System Require - Document / Publications Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In the Getting Started Guide (U91-606-001A), page 1-3, it says the Minimum System Requirement is 6.0.2. The Product Box and all Marketing materials say that it is 6.0.5.

The Actual Minimum System Requirement is 6.0.5.

{keywords: Documentation / Publications Error}
Published Date: Feb 18, 2012

Printing and Plotting with Radius Rocket Accelerator

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
NOTE: A fix for this problem is available from Radius.

Problem: Using an HP Draftmaster in Final Mode and about 3-4 minutes into the plotting, the plotter just stopped. This occurred on many documents with sufficient memory to plot.

Cause: Per Radius, there is a serial problem between the Radius Rocket Accelerator and the ImageWriter II, LQ, and HP DeskWriter. It is manifested by a loss of handshaking whereby the buffer overflows and the printer just stops.

Temporary Solution: Turn off the Accelerator when plotting. In addition, have the customer call Radius so that they may be logged in to receive their fix when it becomes available.
Published Date: Feb 18, 2012

MacDraw Pro: EPSF Objects Display Incorrectly when Zoomed Out

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following steps recreate the problem:

1) In MacDraw Pro 1.0v1, create a rounded rectangle and an oval
2) Fill them with any fill pattern
3) Save out as an EPSF file
4) Open the EPSF file as a new document
5) Zoom out

The fill pattern may not be visible on the screen. Diagonal line-type fill patterns seem to disappear at about 50% zoom level. Dark gray fill patterns disappear at about 25% zoom level.

The EPSF will print correctly, however. This is only a screen preview problem.
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Claris CAD: Exporting EPSF Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You can export Claris CAD files to EPSF by using EPSF XTND filter version 1.2v2 or later and the EPSF filter that ships with MacDraw Pro, ClarisWorks, ClarisDraw and ClarisImpact. The translator (EPSF Kit, which includes instructions) are available on request from Customer Relations. You will need Claris CAD 2.0v3 or later to export EPSF.

The EPSF translator that ships with FileMaker Pro will not work in Claris CAD. This translator is named EPSF PFLT. The correct filter will just be EPSF.

To use the filter, just select EPSF in the Save As dialog. The file will be translated upon saving.
You cannot import EPSF into Claris CAD.

Instructions for using the filter are also provided on page 6 of the Release Notes. What you need to know is:
1) Points created with the point tool will not be exported.
2) Type 3 downloadable Postscript fonts will not be saved.
3) Walls need to be unjoined before exporting.

To unjoin all of the walls in a drawing quickly:
1) Open the Layers floater and click on Multi-layer selection.
2) Select the wall tool.
3) Select all.
4) Go under the Arrange menu and select Unjoin.

If you have CGT, you can translate a file from IGES or DXF to EPSF. Translate the file from IGES or DXF to Claris CAD format via CGT, then open the file in Claris CAD and save it out as EPSF.
Published Date: Feb 18, 2012

MacDraw Pro: Minimum Memory Requirements

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro REQUIRES 2 MB (with System 6) and 4 MB (with System 7).

This information is different than the information in some of our literature. Some literature was printed earlier when the memory requirements were confirmed. (For example, literature states that "1 MB is required, 2 MB is recommended). If customers ask about the memory requirements of MacDraw Pro, please state the 2/4 MB minimum requirements.
Published Date: Feb 18, 2012

MacDraw Pro: Printing Gradients is Slow to StyleWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Printing gradients can be very slow when printing to the StyleWriter. Printing in Faster mode will significantly speed up the printing of gradients. (To do this, you'll have to uncheck the Maximum Resolution option in printing Preferences.)

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MacDraw Pro: Issue Word 3.0 XTND Filter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacWrite II 1.1 comes with an XTND filter for Word 3.0 (Macintosh) files. If this filter exists in the Claris Translators folder AND you use the Place File command in MacDraw Pro to place a Word 4.0 file AND you leave the popup menu in Place File set to show "All Available", MacDraw Pro will attempt to use the Word 3.0 translator to open the file. The result is an error message which says that the file is incompatible with the translator, and the file is unopened.

Solution:
1) remove the Word 3.0 translator, or
2) in the Place file translator popup menu, click on "All Available" and select "Word 4.0" instead.

Published Date: Feb 18, 2012

ImageWriter LQ: Temperature Sensor Prevents Overheating

I have a problem with my ImageWriter LQ. Every month I do a payroll run, printing continuously for 2 to 3 hours. Often, at some stage, the printer just stops.

Is it overheating? If so, how long can an ImageWriter LQ print before it overheats?

This article has been archived and is no longer updated by Apple.
Yes, it is very likely that the ImageWriter LQ is overheating. There is a temperature sensor in the printhead that causes the printer to stop printing when the printhead temperature reaches approximately 190 degrees Fahrenheit. The ImageWriter LQ printhead reaches this temperature after printing pure black for about 1 hour. Depending on the text being printed, the printhead may overheat after approximately 2 to 6 hours of continuous printing.

Published Date: Feb 18, 2012

Claris CAD: Clipboard Looks Incorrect (Splines)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is corrected in Claris CAD 2.0v3

Q. I have copied a spline to the clipboard and when I look at the clipboard it looks incorrect. Why is this.

A. Claris CAD shows two versions of the Spline on the clipboard. The smoothed and the unsmoothed versions. There is no problem when you paste this object from the clipboard. (I.E. If the spline is supposed to be smoothed then it will be smoothed when copied from the clipboard.
Published Date: Feb 18, 2012

Claris CAD: Point Tool (ID=28)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q. When using the "Point tool" in Claris CAD 2.0 (v1,v2 and v3) I get an ID=28.

A. This will happen when you are creating point number 2 or above and you do a "Command - Period" before clicking on the screen. If you do not hold down the Command Period keys before and during clicking on the screen to create a point this issue will not occur.

Q. When using the "Point tool" I do a select all and it seams that the points have exploded. Have I done something wrong.

A. No, you have not done something wrong. This will happen when you are creating point number 2 or above and you hold down the "Command - Period" while clicking on the screen. If you do not hold down the Command Period keys before and during clicking on the screen to create a point this will not occur.

Important Note: If either of the two above issues have occured this customers document is most likely broken. We should suggest that the customer create a new document and copy and paste the information into the new document.

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LaserWriter LS Print Dialog Shows 75% & 50% Reduction Options Grayed Out

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: Using the LaserWriter LS 1.0, the print dialog box displays the 50% and 75% options as grayed out.

Solution:
In Mac Draw Pro 1.0v1 / 1.5, the "Maximum resolution" print preference setting checked--unchecking it allows for reduction printing. That's why the message '(may limit QuickDraw printer options)' appears.

In MacDraw II, any version, you can only print at 100%. You cannot print at 50% or 75%, as these options are grayed out. There is no workaround. MacDraw II Configure will not fix this.
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MacDraw Pro: Possible Conflict Master Juggler

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There may be a problem using MacDraw Pro 1.0v1 with Master Juggler. This is a customer-reported problem that has not been confirmed by Claris. The version of Master Juggler used is not known.

The issue: Adding some Adobe fonts, then removing about 10-15 fonts. After removing the fonts, the font menu became corrupted (presumably the MacDraw Pro font menu). The customer may have been adding / removing fonts while MacDraw Pro was open, but this is not known.

The same scenario was repeated using Suitcase without problems.
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MacDraw Pro: Issue with EPSF XTND translator 1.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue exists with MacDraw Pro 1.0v1 with the EPSF XTND translator 1.0

The following steps recreate the issue:
1. Import or paste a bitmap with transparent pixels into MacDraw Pro
2. Draw a square or other object, fill with a color and place behind the bitmap. The filled object should be visible through the bitmap.
3. Save As to an EPSF file. Open the EPSF file and print a color separation.

The bitmap will mask out the colored object underneath, as if the transparent pixels were white. There is no current workaround for this issue.
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MacDraw II vs. Pro: Text Line Spacing Differences

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Open a MacDraw II file with multiple-line text blocks in MacDraw Pro. The line spacing will be different if the text is Times 12 or Helvetica 12. Other fonts and sizes appear to be unchanged between MacDraw II and MacDraw Pro. The line spacing can be changed in MacDraw Pro to match the line spacing in MacDraw II by using the Paragraph command in the Size menu, then resetting the line spacing in points. Here is a comparison of line spacing between MacDraw II and MacDraw Pro:

	MacDraw II	MacDraw Pro
Times 12	12 pts.	14 pts.
Helvetica 12	14 pts.	13 pts.

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MacDraw Pro: Grouping Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in MacDraw Pro 1.5v1

There is a confirmed issue in MacDraw Pro 1.0v1 where it may crash when you click on a group. The critical factor is the number of objects in the group. This number of objects is not a fixed number , but varies depending on other factors. Fortunately, it only happens when the Hide Notes command is selected, which is not the default setting. Here are the workarounds:

1) Select Show Notes. With Notes showing the issue will not happen. If you want to hide notes, do step #2, then select the Hide Notes command.

2) Ungroup the group. Either leave it ungrouped or change the number of objects in the group. For example, adding a transparent object to the group is acceptable.
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Claris Resolve: Switched Menus

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

My Apple Menu has been moved to the right side of the screen while I am using Claris Resolve. What is going on?

A combination of Tempo II Plus (2.0.1) and Coach Professional (3.1) has been reported as the culprit and does cause the Apple menu to change position. Remove one of these startup items and the issue disappears.

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Claris Resolve: Totaling Time Adds Up to More than 24 Hours

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When I add or sum up hours in Claris Resolve, the total is less than it should be. What is going on?

If the total should be more that 24 hours, the information below will apply to you.

Claris Resolve stores time as a percentage of a day. So 2 hours and 40 minutes is stored as .1111, while 26 hours and 40 minutes is 1.1111. When the hours format is applied to a number greater than 1, only the decimal value used.

Here are some formulas that account for both the integer and decimal portions of the value:

=(Int(Sum(range)*24))&":"&(ATime(Sum(range),"nn:sc"))
Will display the total time in this format: 25:23:22 - (Hours:Minutes:Seconds)

=(Int(Sum(range)*24))&":"&(ATime(Sum(range),"nn"))
Will display the total time in this format: 25:23 - (Hours:Minutes)

=(Int(Sum(A1..A12)*24*60))&":"&(ATime(Sum(A1..A12),"sc"))
Will display the total time in this format: 153:45 - (Minutes:Seconds)

Explanation: These formulas calculate a sum of the range of times you wish to add, multiplies it by 24 and takes the integer, which peels off the decimal. This correctly calculates the total number of hours in the range. A colon is then added and the minutes and seconds are added to the end using the ATime function.
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MacDraw Pro: Inconsistent Printing of Returns to LaserWriter LS

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Returns typed in a text block do not always get printed when working with the Personal LaserWriter LS. This has occurred when working under system 6.0.7 and the 1.0 version of the LS driver (Feb, 1991).

The issue did not occur when printing the LS with the 1.1 version of the LS driver (the one released with System 7.0, created in April, 1991)

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MacDraw Pro: Installation Error Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When I attempt to install my copies of MacDraw Pro or Claris Resolve I get the message "The disk has the correct name but is not the correct disk. Click continue, then try inserting a different disk with this name, or click stop to stop any further installation" . What is going on?

The disks used for installation may not be exact copies of the original disks as shipped from Claris. That is, files on the disk may be missing or renamed, or one or more of the disks may be renamed.

If this is not the case, the user may have received a bad or incorrect disk. Please send a replacement.

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Claris CAD: Conflict with Laplink

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There have been reports from customers that having Laplink active can cause Claris CAD files to become corrupted.
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MacDraw Pro: Plotting Gradients

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro will not plot gradient fills with either MacPlot 1.2 or MacPlot Professional.

This behavior was implemented for the following reasons:

1. It's impossible to get a smooth blend since the plotter only supports seven colors.
2. Plotting gradients could be very time consuming and would wear out your pens.
3. MacDraw Pro implements Region Clipping when printing gradients and none of today's plotter drivers support this. In fact, MacDraw Pro is unable to recognize when you are printing with PLOTTERgeist and will end up plotting gradient fills beyond an object's boundaries because it is unable to clip it.

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MacDraw Pro: Print Dialog Box Appearing when Page Setup Selected

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There is a conflict between MacDraw Pro 1.0 and 1.5 and NOWMenus (an INIT included with Now Utilities). The same issue occurs with Automenues and HandOff II. The issue: when the Page Setup command is selected, the Print dialog appears. You can still access Page Setup via the keyboard (command-shift-P). This issue is corrected in Now Utilities version 4.01.

With NOW Menus, the issue occurs when the "No Click Needed" checkbox is checked. Unchecking this checkbox (in the NOWMenues Control Panel) will fix the issue.

Figure 1: Deselct "no click needed" tif you use Now Menus 3.x

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Claris Resolve: Opening Excel 3.0 Documents

Claris Resolve 1.0 cannot open Excel 3.0 documents, but Claris Resolve 1.1 can.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This has been corrected in version 1.1

Claris Resolve 1.0vX does not open Microsoft Excel 3.0 documents directly. The customer can save their 3.0 document as a 2.2 document, and then open it in Resolve.

Upgrading to Claris Resolve 1.1 resolves this issue.
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MacDraw Pro: Text Pasted into PowerPoint not Underlined Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Underlined text from MacDraw Pro into Powerpoint 2.0 via the clipboard prints incorrectly to a LaserWriter. The text will appear correctly on the screen, but only the first half of the first character prints underlined.

Importing into PowerPoint via EPSF files works correctly.

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MacDraw Pro: Adobe Illustrator won‘t Open EPSF Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Adobe Illustrator does not open EPSF files from MacDraw Pro by using the Open command. Instead, you must Place the EPSF image.

The Place command will read in the EPSF file as a single object. Thus, the individual objects within the file will not be editable.
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Claris CAD: Book and Newsletter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Book: Technical Drawing with Claris CAD
Publisher: Scott Foresman Professional Books, Carmel, IN 46032 - 800-969-4360

Over 500 pages of useful tips and hints, real-world examples and interesting case studies, Technical Drawing with Claris CAD shows readers how to solve specific drafting and design problems. It covers through Version 2.0 and Claris Graphics Translator. Find out why industry leader Dr. Joel Orr says: "Unquestionably the most cost-effective 'peripheral' a Claris CAD user can buy." It includes information and techniques for Claris CAD 2.0, a comparison with Auto*Cad and the forward is by Craig Young of CASE.

The book covers...

* Organizing and planning the Claris CAD work environment
* Mechanical and architectural drafting and design
* Schematics, wiring diagrams, charts and other diagrams
* Technical Illustration
* Informative case studies
* Claris CAD & AutoCAD comparisons and integration
* Use of Claris Graphics Translator
* Networked Installations
* Benchmarks

Order the newsletter...

Join today and receive a quarterly newsletter containing up-to-date information and news about Claris CAD, Claris Graphics Translator and co-operative applications and utilities. The newsletter is written for all levels of users, from beginners to experts, and covers all disciplines such as mechanical, architectural and engineering. A must for all serious Claris CAD users.

Claris CAD Newsletter:
* Tips and Hints
* Reviews of third-party products and utilities
* Clearinghouse for custom libraries, example drawings, macros
* Case studies
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MacDraw Pro: Spell Check Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in MacDraw Pro 1.5

Issue: Spell checking by selecting different text with the text tool can cause the computer to crash. The following steps illustrate the issue:
1- Create 2 text fields.
2- Double-click the text tool and click in the first text field.
3- Spell Check Selection.
4- When done, immediately click in the next text field.
5- Spell Check Selection again.

Solution: Do not spell check with the text tool double-clicked. Instead, single-click the text tool, check the spelling of the first text selection. Then select the text tool again (command-spacebar is the fastest way to do this), then check the spelling of the second text selection.

Or, select the text objects with the selection tool instead of the text tool, then check spelling.
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Claris Resolve: Possible Conflict with SFVol Init 1.5

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It has been reported that the extension SFVol version 1.5 will not allow Publish and Subscribe to work on Claris Resolve. Remove the extension and everything is OK.

Claris SQA has not confirmed this.

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MacDraw Pro: Screen Color does not Match Printed Color

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Q: When I print from MacDraw Pro, ClarisDraw or ClarisImpact, the printed color does not match the screen color.

A. MacDraw, ClarisDraw and ClarisImpact do, in fact, output correct color information to the printer and screen. However, both monitors and printers vary greatly in the way that they output color. All monitors and printers output color with some degree of inaccuracy. In addition, no monitor or printer can reproduce the entire color spectrum, so there will be colors that can be viewed that can't be printed accurately, and vice versa. This is a issue that affects all color software. However, there are some things that you can do to improve the predictability of your color output.

1) Use Colorsync. This is a Control Panel by Apple that makes the colors on your screen display more accurately. Apple includes Colorsync settings for all Apple monitors. Many third party monitor manufacturers have Colorsync support files for their monitors as well.

2) Use a screen calibrator. Several companies sell screen calibrators that can improve the accuracy of color display.

3) Print a test page with color samples. Then choose the colors for your document based on this color output. If you're using different color printers for proofs and final output, remember to use a test print from the final output as your reference.
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Claris Resolve: How to Add Items to the Utilities Menu

Here are some guidelines for adding items to the Utilities Menu and a short description of the items that are automatically loaded.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following UTILITY scripts files are supplied with the program: Startup, Sounds, Zoom, Audit, Hide, Total, Print, Picture (Claris Resolve 1.1 adds the HostAccess script). These files may be used for the extra functionality they provide or as examples as to how to write your own scripts. These scripts may be found in the Utilities scripts folder on the Claris Resolve Samples Disk.

If you have a script named "Startup" in your "Resolve Scripts" folder or the Claris Resolve application folder, it is automatically run when the program launches. When this particular Startup file is run, it searches for specific scripts at the launch path or in the Resolve Scripts folder and, if found, installs them into a "Utilities" menu. Startup assumes that utility scripts are in Resolve Scripts folder or launch path (the folder in which the Claris Resolve application is located).

You can add your own scripts to the Utilities menu by following the conventions documented in any of the scripts listed below. Specifically, each script should

* Set the variable Startup:failed to FALSE().

* Add a menu item to the menu Startup:utilMenu which makes a call to a function in the utility script.

* Add a call to load the script in Startup using CALL loadScript("<script name>").

Read the comments in the Startup script for more details on this procedure.

The "Hide" script collapses entire rows or columns and places a button for expanding and collapsing the row or column. This makes creating a summary sheet easy.

"Audit" checks for and "circles" Errors, References to Blank Cells, Unreferenced Cells, Locked Cells, and Circular References for more accurate worksheets.

"Picture" allows you to open any PICT file and place it into your worksheet.

"Print" provides the convenience of printing any selected range of cells without having to select Page Layout.

"Sound" creates a button and allows you to record a sound to attach to it. This requires System 6.0.7 or 7.0.

"Total" automatically totals the columns and/or rows of a selected range of cells. It creates a "total" row and/or column. Note: If the the right column or bottom row are blank, then Total will only sum into those cells. If the cells designated for totaling are not empty, then Total will alert the operator that it can not delete existing data.

"Zoom" will resize a worksheet window to any of four different sizes. If you are
developing a custom template and want to see how it will appear on a operator's machine with a different monitor, you can quickly make changes.
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Claris Resolve: How to Import PICT Images

Here'a a technique for importing PICT images into Claris Resolve without using the Clipboard.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve has the ability to import a PICT image without using the clipboard. This is done with an associate script called GET PICTURE which ships with the program. The Get Picture function requires the Utilities menu to be on the menu bar.

Simply select a range of cells (you need not be very specific) and choose get picture under the utilities menu. Choose the PICT image through the generic open dialog box. You can then drag picture to your desired location.

For instructions on how to install the Utilities menu, search for "How to install the Utilities Menu."
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Claris Resolve: Adding Sound to a Worksheet

Here's how to add sound to your Claris Resolve worksheets.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To add sound to a Claris Resolve Worksheet:

1. Place all sound and startup utility scripts inside the Resolve Scripts Folder inside the Claris Folder inside the System Folder. Connect a sound recording device (MacRecorder with its 1.01 Init and Virtual Memory off or equivalent) or use a machine with built in sound input.

2. Launch Resolve

3. Make sure that the Utilities Menu is in the menu bar. If it does not appear there, select "run script" and choose the Startup script in the Resolve scripts folder.

4. Close the Worksheet you want to add sound to.

5. Go to the Utilities menu and pull down to Sound... Add sound...

6. The Standard file dialog will come up and ask you to choose a Worksheet to add to...

7. If you have the microphone or other input device hooked up correctly, you should now see the audio palette and be able to hit record, say something and close the palette and get an audio button dropped on your worksheet which, when pressed, plays your sound.
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Claris Resolve: ArrowLength, Documentation / Publications Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a Documentation / Publications error in the Claris Resolve Functions and Scripts manual, pages A-4 and B-3. There is no ArrowLength() function or ARROW LENGTH command.

These functions exist in WingZ but were removed from Claris Resolve. We automatically size our arrow heads based on the width of the line.
Published Date: Feb 18, 2012

Claris Resolve: Charts Not Updating Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a known issue in Claris Resolve 1.0v2 that, under certain circumstances, will cause a chart not to update when data is changed.

If the chart and the data are not in the same window range (i.e. they are not both visible in the window at the same time). A chart may not be updated properly when the data is changed.
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MacDraw Pro: Exporting Rounded Rectangle as EPSF

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The EPSF filter does not export Rounded Rectangles correctly. If a Rounded Rectangle has Round Ends turned on (from the Round Corners dialogue box) and is saved out as an EPSF file, then imported (either into MacDraw Pro, PageMaker or Quark Express, etc...), the arcs will shift when they are printed. The rectangle will look fine on the screen.

A workaround is to use a custom radius for the rectangle. This should allow the rectangle to export properly.

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Claris Resolve: Negative Precision

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Format(15) command returns the absolute value of the current format's precision. If the precision is negative, therefore, you will get an inaccurate result from this function.

Not listed in the Scripting Reference due to a very late addition, is the Format(32768) function. This new argument to the Format() function determines whether or not the precision is negative.

You can use these arguments in conjunction with the If function to return the proper precision:

If(Format(32768), 0 - Format(15),Format(15))
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MacDraw Pro: PICT File is Larger than Original File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a known issue saving out to a PICT file from MacDraw Pro 1.0v1 or 1.5v1/v2. The PICT file will be slightly wider and taller than the original MacDraw Pro file.

This issue is most noticeable when saving out drawings with a colored background, such as creating slides to be sent to a slide bureau. The colored background is created by filling the entire drawing with a colored rectangle. When this is saved as PICT, the drawing is slightly larger than the colored rectangle by about 1/4", both horizontally and vertically. This extra width and height will, of course, be empty. Thus, the slide will not be entirely filled with a background color.

There is no current workaround to this issue.
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MacDraw Pro: Text Not Printing to Personal LaserWriter LS

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Note: this issue is only occasionally reproduceable. It does not appear to be strictly related to Truetype usage or memory levels.

When printing from MacDraw Pro 1.0v1 to a Personal LaserWriter LS, horizontal (non-rotated) text will only print on page 1. Horizontal text will NOT print on any succeeding pages. This issue has been reproduced when printing from a Macintosh LC / 6.0.7 / TrueType. This issue did not occur when printing from a Macintosh IIci with ATM.

Workaround:
1) Select all the text objects. (Click the text tool, press command-A; the text objects should be ungrouped)
2) Click the corner-center control to set it to the corner position. (See page 1-7 of the MacDraw Pro User's Guide to see where the corner-center control is at.
3) Rotate the text objects 180 degrees. (Select the Rotate command. While holding the Shift key, rotate the text 180 degrees, so its upside down. Each text object will rotate around its center.).
4) Flip Horizontal, then Flip Vertical. The text will appear reoriented to its original position. It will now print correctly.

Here are some other characteristics of the issue:
- Rotated text will print correctly
- The issue occurs with either 1.0 or 1.1 of the LS driver
- Printing back-to-front is not a workaround. Horizontal text only prints if its on the page in the upper-left corner of the drawing
- Changing the color has no effect
- Print monitor settings have no effect

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Claris CAD: Line Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q. I have just translated a document from DXF to Claris CAD and every time I try to edit Line Styles within Claris CAD my machine bombs. What can I do to fix this issue?

A. We are aware of this issue. The actual document is not damaged when this occurs. If you copy the current document to the clipboard and paste it into a new document everything should work correctly.

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MacDraw Pro: Autographix Driver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There has been some confusion about using the Autographix driver with MacDraw Pro. Apparently, some customers have been told by Autographix bureaus that they don't take MacDraw Pro files.

The Autographix driver IS compatible with MacDraw Pro. They are working on an update for MacDraw Pro to fine-tune it, but the current driver does work.
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MacDraw Pro: 20-Tab Limit for Text Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a limit of 20 user-set tabs that can be created in a MacDraw Pro text object. This limit is hard-coded into the program. If you try to add a 21st tab into an object's text ruler, you will not be able to grab the tab from the tab well. This limit applies to tabs set by the user, not the preset tabs that occur every 1/2".
Published Date: Feb 18, 2012

Claris Resolve: 32k Maximum Allowed in Text Fields

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue has been corrected in Claris Resolve 1.0v3

Text fields and object scripts (buttons and fields) in Claris Resolve can have a maximum of 32k of information per object.

There is another issue, however, relating to this limit. Claris Resolve will allow you to put more than 32k in an object but will not warn you! Once the file is saved and closed, you will not be able to reopen the file.

Files saved by WingZ or saved in the WingZ format will not exhibit this issue when opening in Claris Resolve. The reason? We do not check the contents of objects when converting a WingZ file. This is not to say that WingZ does not have the same 32k limit, they just fail to check for it when opening their files.
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Claris Resolve: Memory Requirements

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve has a maximum cell capacity of 32,768 rows by 32,768 columns, provided you have enough memory.

How much memory?

A 1000-row by 1000-column worksheet, including numbers 1 through 1,000,000, requires a minimum of 17MB allocated to Claris Resolve. Even at this setting, you may not have enough memory to perform all operations, but the worksheet will open. Complex operations will require additional memory.
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MacDraw Pro: Mode 32 Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in MacDraw Pro 1.5

There is an incompatibility between MacDraw Pro 1.0v1 and Mode 32. The symptom is that text will not select or highlight properly. When attempting to select text, the highlighting is in the wrong place on the screen. The cursor may appear away from the text.

Mode 32 is an INIT that allows Mac II / IIX / IICX / SE30 to use virtual memory, thus allowing the computer to address more than 8 MB RAM (for example, a Mac II could address up to 14 MB RAM).
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TA41733_GOSIP_Government_OSI_Profile_Information_(TIL05465).pdf

GOSIP (Government OSI Profile) Information

What is GOSIP? How close is it to being a standard?

This article has been archived and is no longer updated by Apple.
The Federal Information Processing Standard has already adopted the Government Open Systems Interconnection Profile (GOSIP).

GOSIP defines a common set of data communication protocols that let systems developed by different vendors interoperate and lets the users of different applications on these systems exchange information. These Open Systems Interconnection (OSI) protocols were developed by international standards organizations, primarily the International Organization for Standardization (ISO) and the Consulative Committee on International Telephone and Telegraph (CCITT). GOSIP is based on agreements reached by vendors and users of computer networks participating in the National Bureau of Standards (NBS) Workshop for Implementors of Open Systems Interconnection.

GOSIP shall be used by Federal Government agencies when acquiring computer network products and services and communications systems or services that provide equivalent functionality to the protocols defined in the GOSIP documents. Currently, GOSIP supports the Message Handling Systems and File Transfer, Access, and Management applications. GOSIP also supports interconnection of these network technologies: CCITT Recommendation X.25, Carrier Sense Multiple Access with Collision Detection (IEEE 802.3), Token Bus (IEEE 802.4), and Token Ring (IEEE 802.5). Additional applications and network technologies will be added to later versions of the GOSIP document.

This standard became effective February 15, 1989. For a period of 18 months after the effective date, agencies are permitted to acquire alternative protocols that provide equivalent functionality of the GOSIP protocols.

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Claris Resolve: Confusion About Negative Text Color

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The manual's explanation of the Negative Text Color option in the Set Formats dialog is incorrect and misleading.

Negative text color cannot be "Turned off." A value is always stored for negative text color. You can set the Negative Text color to the same color as your normal text but this is not the same turning it off. If the normal text color is changed, the negative color will remain the same.

The check box next to the Negative option in the Set Formats dialog box does not turn the Negative Text Color off as stated in the manual. This check box tells Claris Resolve whether or not to apply the currently chosen color (in the pallet) to ALL the cells in the selected range.

For example:
If you select a range that has different Negative Text Colors specified, checking the box would apply whatever color is selected in the pallet to ALL the cells in the selected range. Unchecking the box would leave the the text color(s) the same (i.e. different cells would remain different).
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MacDraw Pro: Faster ImageWriter Printing MacPalette II

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There is an option for the customer to get MUCH faster printing from MacDraw Pro (and other applications) to an ImageWriter II. Purchase MacPalette II by Microspot. This is a third-party replacement print driver for the ImageWriter II. It requires a Mac with color ROMS (Mac SE/30, LC or any Mac II).

MacPalette not only prints faster, but dithers gradients and other colors for better print quality. The speed difference is especially pronounced when printing from System 7, which is slower printing to an ImageWriter than System 6.

Speed comparison: In the test print using MacDraw Pro 1.0v1 (which included one large 4-color gradient and a text block, printing from a IIci using System 7), the Apple ImageWriter driver took just over 30 minutes to print. The MacPalette II driver took 4:58 to print the same document.

This product has not been fully tested with MacDraw Pro by Claris SQA. However, initial tests show no noticeable issues.
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Claris CAD: GDT Font vs. GD&T Font

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The GDT font was changed to GD&T for Claris CAD 2.0v3, which was also the first System 7 compatible version. The name was changed due to the fact that there is a company named GDT that produces postscript fonts and drivers

GD&T, which is a collection of frequently used drafting symbols designed to look good when plotted (stroked rather than bitmapped), is not automatically installed with the Claris CAD installer.

To install the font under System 7, simply drop the font onto the System folder an click OK when it asks if you want to put it in the System file. You could also drag it directly onto the System file.

Files that were created with earlier versions of Claris CAD will not have the GD&T font immediately available, and may show the GDT font, which will not be available. To remedy this, go under the Font menu to Fonts... Select Change menu, show the GD&T font and remove the GDT font.
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Claris CAD: How To Set The Paste Point of an Object

his information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To set the paste point of an object in Claris CAD:

1) Select the object..
2) Hold down the command key and click the point.

You can use modifiers to select the point, and the point does not have to be on the object itself. In other words, you could draw a circle, select it, hold down shft-cmd and click on a point 1/2" to the right of the circle. When you copy and paste the circle, the circle will paste 1/2" to the left of the last point clicked. There is no way to tell where the paste point is on an object other than clicking a given point then pasting the object and seeing what point on the object pasted at the point that you clicked.

Here's an example: Let's say that you have a square and you want to paste a copy of a circle with their top most points pasted right on the corners of the square:

1) Draw the square and the circle.
2) Select the circle. Use the endpoint modifier (which will find the left, right, bottom or topof a circle), hold down the command key and click the top of the circle. Hit Copy.
3) Use the corner modifier to select the a corner of the square and hit Paste. The circle will paste with its topmost point on the corner. Repeat for the other corners.

Paste points paste at the last point clicked as long as that point is showing in the active window (or is behind a floating window). If the last point clicked is not in the window the object being pasted will appear with the paste point in the center of the current window.

Paste points are retained when objects are pasted into a library objects. You can apply a paste point to a group.
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Claris Resolve: Printing Charts Copied in Landscape Mode

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If an operator creates a 3-dimensional chart in Claris Resolve1.0v1, copies and pastes it into another application (e.g. Microsoft Word, MacWrite II, etc.), the text along the axis (axes) will not print correctly if printed in the Landscape (sideways) mode. The text along the axes will be garbled, run together and be unreadable.

This will not occur if the graph is printed in the portrait (upright) mode with the exception of Aldus PageMaker.

One reported work-around is to paste the graphic into MacDraw Pro and save as a PICT2 document.

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Claris Resolve: Error Message "Invalid Command"

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are times when the "Invalid Command" error occurs while using the "Pasting Function" feature.

In virtually all these cases, the issue can be traced back to a Software FPU INIT located in the system file. This INIT simulates the floating point co-processor (68881 & 68882) built into higher-end Macintosh models.

Removing this INIT eliminates the issue.
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StyleWriter: Prints Incorrectly with Print Monitor Turned Off

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed with the StyleWriter driver version 7.2.2, which is included with the System 7 Tuneup 1.1.1.

The StyleWriter driver version 1.1 prints incorrectly when BackGround Printing is TURNED OFF. This is a issue with the print driver and Print Monitor, not with a Claris product.

To Reproduce
1) Open Claris CAD, MacDraw II or MacDraw Pro.
2) Show Rulers.
3) Open the Drawing or Drawing size dialog and add 2 pages horizontally for a total of 3 pages.
4) Draw a rectangle approximatley 1" wide that straddles the 18 1/4" ruler mark and fill it with a pattern.
5) Print the third page in "Best" mode with Background Printing "Off".
The rectangle will print the entire width of the page.
Note: If the Rectangle is located entirely before or after the 18 1/4" mark it will either print correctly or not at all.

Workarounds
1) Print in Fast Mode
2) Turn Background Printing "On"
3) Use Stylewriter printer driver 7.2.2 or later, or version 1.0 (7.0).
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MacDraw II: System Error when Saving on Quadra

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in the MacDraw II XTND translator (1.0v4) that ships with MacDraw Pro 1.5

Saving As a MacDraw II file from a Quadra with the 040 cache enabled will result in a system error. This system error happens when saving from both Claris CAD 2.0 and MacDraw Pro 1.0

The workaround is to turn off the 040 cache before saving as a MacDraw II file, or upgrade to the MacDraw II XTND translator 1.0v4.
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Claris CAD: TIFF File Does Not Appear in Open or Place File Dialog

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you have a TIFF file that Claris CAD will not display as openable in the Open File or Place File dialogs, the file may have an internal format that Claris CAD does not recognize. This is especially likely if the TIFF file came from a non-Mac platform. Claris CAD determines whether it can read the file by the files internal structure rather than by type or creator.

You may be able to open the file in Photoshop and save it out using the LZW compression routine. To do this, select Save As... from the File menu, then select TIFF as the file format. When you hit Save, a dialog comes up with the TIFF options, Click the LZW compression check box and hit OK. Claris CAD should be able to read the file.

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MacDraw II: Printing Documents with System 6.0.x

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Customers have reported issues when printing MacDraw II 1.1 under System 6.0.x (e.g. 6.0.5) with background printing and LaserWriter 7.0. These users have reported that the graphics in a document will not print, parts of the drawing was missing. If they take the illustration to another application, (e.g. MacWrite II) the objects will only print on some pages, while only text will print on other pages.

To see if this is the issue, have user create a new folder and move System, Finder and LaserWriter from the System Folder into this new folder. Restart. The issue will go away.

I believe matching the system to the LaserWriter version (System 6.0.x with LaserWriter 6.0.x or 6.1) with associated files (e.g. Print Monitor and Backgrounder 6.1) will correct the issue on a permanent basis.
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Claris CAD: LimitCheck Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: When printing a document with a polygon, a LimitCheck error is generated.

Solution: Divide the polygon in half, and have it display and print the same way as the original:

1) Select the polygon. You might want to copy it to a new document so that it is easier to work on.
2) Duplicate the polygon.
3) Hit Reshape (command-R) from the Edit menu and click on one of the copies of the polygon.
4) Mentally choose a point (vertex) near the middle of the polygon; that is, so that there are approximately the same number of points on either side. Draw an arrow to the point if you wish.
5) Drag the Reshape cursor around all of the points on the left (or top) of the point you have mentally chosen, NOT including that point itself. Hit the delete key.
6) Click on the other copy of the polygon to select it. Drag the Reshape cursor around all of the points on the right (or bottom) of the point you have mentally chosen, NOT including that point itself. Hit the delete key.
7) You now have two polygons, one with the all of the points on the left (or top) and one with all of the points on the right (or bottom). They both have the point that you have chosen as one of the endpoints, so just move one of the polygons so that that point overlaps.
8) The polygon appears as it did originally , but it is now two separate polygons. It will be OK to group them. Since each polygon has about half of the number of vertices of the original, it should print without generating the LimitCheck error.
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Claris CAD: Broken Document

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue occurs under version 2.0v1 through 2.0v3

Issue: You will have a broken document if you have used Undo on a Hatch pattern that has one single line segment.

Issue: You will have a broken document if "Show Layers above" is Unchecked while you are viewing some of the layers.

Answer: It is suggested at this time that you do a select all and copy and paste it into a new document. If you need to retain layer information it is suggested that you copy the information over in the following manner.

1. Turn off multi-layer selection.
2. Go to each layer and do a "Select All" and "Group."
3. When completed with #2 above then Select the objects across all layers.
4. Copy everything from the old document to the new document.
5. Close the old document.

Each layer will now be grouped separately in the new document. If you select each group and cut and paste it to the correct layer you will have a new document that is ready for you to work in.

If you think that there will be a issue placing each layer directly over each other, you can paste a point in a given location (for example, X = 2, Y = -2) on each layer. Then when you paste each layer (making sure that everything on the layer is selected, drag by the point to the correct location.
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Claris CAD: Crashes When Guidelines are Left Behind.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue has been fixed in 2.0v2

Issue: When using the Click-Click method and using the location bar to draw an object, Claris CAD will sometimes bomb. A good indication is when the graphics guidelines are left behind on the screen.

Solution: If you are having issues with this we suggest using click-drag or the click-lock methods.
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Claris CAD: Prints Rotated and Non-Rotated Versions of Object

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is fixed in 2.0v2

Issue: When plotting a rotated object (I.E. Ellipse, Rounded Rectangle or Arc) that is filled with a non-solid colored pattern Claris CAD 2.0 prints the rotated and the non-rotated version of the object.

Solution: Instead of using the bitmap fill pattern you could create the desired results by filling your object with hatches. When plotting with hatches you will notice that your plots will print faster because the plotter is not bitmaping your fill pattern.
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Claris Resolve: Comp and Date Converter Scripts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Comp and Date Converter script shipped with 1.0v1 and 1.0v2 of Claris Resolve do not work correctly.

This issue was corrected in 1.0v3.
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Claris CADL: Document Printing "Clipped" to Color QMS Printer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: When I print my document on a QMS Colorscript color Postscript printer, the objects at the edge of the page are clipped off.

Solution: The printable area for the QMS color printers is smaller than the default printable area encoded into the LaserWriter print driver. For example, the top margin of the Colorscript printer is almost 1 inch, whereas the top margin of the LaserWriter driver is about 1/4". When MacDraw and Claris CAD calculate the page breaks for a drawing, they use the printable area as defined in the LaserWriter driver. Thus, documents printed to the QMS Colorscript printers may be clipped unless you take certain precautions.

First, the drawing size should be limited to one page vertically. This is because there is no way to increase the top margin to match the printer.

Second, do not place any objects in the top 3/4" or so of the page. This area will be clipped when printed.
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Claris Resolve: Formula References are Not Copied

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: When I cut and paste my formula, sometimes the formula copies, and sometimes the cell shows as zeros. What's wrong?

Solution: Like most spreadsheets, when a formula or range of formulae are Pasted after performing a Cut, the cell references will not be changed (i.e. they will act like absolute references even if they are defined as relative). This is referred to as Moving your formula.

There is a bug, however, that may cause this feature to work incorrectly. If the cells directly to the right and left of the range being Cut are formatted in something other than General, the formula references will change (this is normal when performing a Copy).

This issue was corrected in Claris Resolve 1.0v3.
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Claris CAD: GD&T Font Floater Does Not Appear

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: When I select the GD&T Font (formerly known as GDT Font), the floater will not appear. Why?

Background and Solution: If you install Claris CAD 2.0v3 and don't install the GD&T font, when you go to use the font the floater will not appear. In most cases this will happen when a user has had a previous version, which had the font named GDT. In Claris CAD 2.0v3 and later, the program is looking for the font by the name GD&T.

To correct the issue, use the Font/DA mover to de-install the GDT font, and install the GD&T font.
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Claris CAD: LaserMax Printers Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
LaserMax produces drivers and laser printers that print at fairly high resolution (up to 1000 DPI). There has been a report that these printers will not print dashed lines from Claris CAD. We have not been able to test this printer to confirm or deny that this issue exists.

This printer and driver were not certified with Claris CAD 2.0v3.
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Claris Resolve: ON ACTIVATE Limitations

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ON ACTIVATE handler in Claris Resolve has some limitations. Basically, any command that will cause the worksheet that contains the handler to move to the background (i.e. open another window or dialog) will not be executed.

This is not a bug, it was designed this way to prevent operators from getting themselves into endless loops. WingZ did allow some of these commands to be placed in this handler.

Examples of commands you cannot use include:
* OPEN filename
* OPEN SCRIPT filename
* OPEN DIALOG
* OPEN SCRIPT DIALOG
* GO TO WINDOW string
* USE DIALOG BOX
* MESSAGE text
* HELP number
* SAVE DIALOG
* NEW SCRIPT string
* NEW WINDOW [LOCATION (X,Y) (X,Y)]
* NEW WORKSHEET filename [LOCATION (X,Y) (X,Y)]

NOTE: This is not a complete list.
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LaserWriter Family: How To Print Test Page w/o Resetting Printer

What is the PostScript code for resetting the LaserWriter test page?

The code below does perform a reset on all PostScript LaserWriter models produced as of this writing. This includes the LaserWriter, LaserWriter Plus, LaserWriter IINT, IINTX (both ROM versions), IIf, IIg, and Personal LaserWriter NT.

This article has been archived and is no longer updated by Apple.
The following code completely resets the LaserWriter to power-on condition, which is the same as turning the power off and on. This is the only way to get a startup page without turning the printer off and on.

```
serverdict begin 0 exitserver
systemdict begin quit end
```

Note that this behavior of the quit operator outside of the server loop isn't specifically defined by Adobe. It may change in later revisions of PostScript, so it shouldn't be relied on to restart future LaserWriter models.

The following PostScript program prints a page that gives you the current page count (including the page itself) without resetting the LaserWriter (the comments aren't necessary):

```
/Times-Roman findfont %Lookup font in fontdict and push it on stack
15 scalefont setfont %Push size, scale it, and make it the current font.
72 700 moveto %One inch over, and 700 72nds up.
statusdict begin %We'll be using two operators from statusdict.
32 string %Push an empty string of 32 length on stack.
printername %Puts the LaserWriter name in the string on the stack.
show %Show the topmost string from the stack at 72 700.
( has printed ) show %Push another string and show it.
pagecount 12 string %Push the pagecount and a 12 length string onto stack.
cvs show %Convert the pagecount into the string and show it.
( pages.) show %Push the final string and show it.
showpage %Draw the image and spit out the page.
```

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ClarisWorks: AppleWorks File Conversion

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following AppleWorks files can be opened from within ClarisWorks:

* AppleWorks 2.0 and later Word Processing, Data Base and Spreadsheet files
* AppleWorks GS Word Processing files (for DataBase files save to DIF or ASCII format and for SpreadSheet documents save to SYLK or ASCII format before following the steps below)

The easiest way to convert AppleWorks files is to use a 3.5-inch floppy disk and Apple File Exchange. Apple File Exchange is a file transfer utility which is included in the Macintosh system software. 3.5-inch floppy disk drives are standard equipment with the Apple II GS and the IIc+ and are also available for the IIe and IIc from your Apple dealer.

Once your AppleWorks files are saved on an 800K, 3.5-inch disk, any Macintosh with a high density 3.5" drive, also called a SuperDrive or FDHD, can transfer them to Macintosh format.

To use Apple File Exchange:

1. On the Macintosh, launch the Apple File Exchange application by double-clicking on its icon.

2. Insert your AppleWorks data disk in the disk drive.

Directories of the destination disk (left side) and source disk (right side) appear in the Apple File Exchange window.

3. Under the ProDOS to Mac menu at the top of the window choose Default Translation. Make sure that no other items in this window are checked.

4. Select the AppleWorks files to be transferred from their directory.

5. Either choose an existing folder on the destination disk for the files or create a new one by clicking the New Folder button. At the prompt, name the new folder.

6. Click Translate.

The AppleWorks files you selected will be translated to Macintosh files. You may either translate more files, or choose Quit from the File menu. Your disk will be ejected when you quit.

Opening the files with ClarisWorks:

When you wish to open your AppleWorks files in ClarisWorks, launch ClarisWorks, choose Open from the File menu, and navigate to the folder which contains your translated files and select it by clicking on its name.

When the Open dialog box appears, click on the Import Options flag. This will reveal a sub-menu of file types which can be imported by ClarisWorks 1.0. When you select the type of document you wish to open, a list of available files of that type will appear. NOTE: If you are using ClarisWorks 2.0 then the Open Dialog box will not have an Import Options flag but instead there will be a pop-up menu that allows you to choose the file type you wish to import.

Choose the desired converted file(s) by clicking on its name and then click the Open button.

When converted files are saved, they are saved as ClarisWorks files and have a ClarisWorks Icon.

Apple File Exchange can also be used to convert ASCII (text) files in ProDOS format, as well as MS-DOS ASCII (text) files and some MS-DOS word processing files. Once converted, these files can be imported into ClarisWorks.

For more information about Apple File Exchange, consult the reference materials which came with your Macintosh.
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ClarisWorks: Copying Summary Field Data from Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In a ClarisWorks database you can copy the results of summary field calculations. After coping this information you might paste it into a spreadsheet (or database) for further manipulation and charting.

For example, using a database of invoices you would produce a layout that gives a breakdown of the sales by salesperson.

1. Choose Insert Part... from the Layout menu and select Sub-Summary when sorted by: Salesperson.
2. Define the following field: TotalSales (summary, number result) = SUM ('Invoice Total').
3. Then use the Insert Field... command to place the field TotalSales on your layout and move it into the area above the Sub-Summary label.
4. Sort by Salesperson.

This database would then display your breakdown in Page View. In order to copy the total sales for each Salesperson:

5. Press the Enter key to ensure that no records are selected.
6. Choose Copy Summaries from the Edit menu or press Command-C (Mac)/Ctrl-C (Windows).

Once pasted into a spreadsheet, the summary field data from each occurrence of a Sub or Grand-Summary part will be displayed in a different row. Each field will appear in a separate column, displaying the summary information from left to right in the order that the fields were defined.

If you want their names, as well as the data, you'll need to create a Summary field as follows, and place it in the Sub-Summary part as well:
SalespersonName (summary, text result) = 'Salesperson'

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ClarisWorks: DB Field Labels & Graphic Text Objects Appear Cut Off

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Field labels and graphic text objects will be cropped if they exceed the default size for text frames. The Text Frame can be resized using the size handles.

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ClarisWorks: Deleting Records in the Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks does not provide a menu command for deleting records. Records are deleted by using the Cut or Clear command in the Edit menu.
To delete a record:

1. While in Browse mode, click anywhere in the record except inside a field. The record will highlight on screen.

2. Choose Cut or Clear from the Edit menu.

In ClarisWorks 3.0 and 4.0, a Delete Record command has been added to the Edit menu.
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ClarisWorks: File Not Found Message when Converting Documents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks and ClarisImpact use translators to open files created by other software programs. When these translators are not installed properly, you may get a message saying "File not found." All three items below should be found in the folder called "Claris" located in the "System Folder" on a Macintosh and in the Claris directory on a PC.

ClarisWorks Translators (translates spreadsheet & database formats)
- Files ending in .XTD on PC's

Claris XTND System (manages entire conversion process)
- XTND.DLL for the Windows version

Claris Translators folder (contains translator files for word processing & graphics formats)
- This is not used for the Windows version

If one or more of these is missing, re-install the translators using the ClarisWorks Installer disk (Reinstall the entire application for Windows users). If this does not solve the issue then find the file called XTND Translator List (XTNDTRAN.LST for Windows) either in the Claris folder/directory or the Preferences folder and delete it. The XTND Translator List is rebuilt at launch of ClarisWorks or ClarisImpact so make sure the program has had a chance to rebuild this file before trying your conversion again.
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ClarisWorks: AppleWorks Evaluate Formulas Differently

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in 1.0v3.

AppleWorks and ClarisWorks evaluate formulas differently. Appleworks evaluates a formula from left to right. Clarisworks evaluates an * or / operator before + or -, even if that operator is to the right in the formula. For Example, 1+2*6 results as 18 in AppleWorks. However, since ClarisWorks evaluates multiplication and division before subtraction, ClarisWorks would return 13. To resolve this issue ClarisWorks should translate 1+2*6 to ((1+2)*6).
Published Date: Feb 18, 2012

ClarisDraw: ImageWriter Roll-Back when Printing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: The ImageWriter rolls back when printing in the draft mode.

Background & Solution:
When printing in Draft mode to the ImageWriter, objects are printed in their stacking order. To avoid the roll back, adjust the stacking order of the objects by starting in the upper-left of your document or layout, select each object, and under the Arrange Menu, select Move to Front. Continue this for each object, working from the upper-left to the lower-right object on the layout.
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ClarisWorks: Objects Shift When Copied or Saved as PICT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Images Shift When Copied to Another Application or Saved as PICT

Objects that are copied and pasted from ClarisWorks into another application may shift slightly because the clipboard may be unable to record highly precise alignments you achieve in a ClarisWorks document.

To avoid shifting, create your ClarisWorks document with the ruler set to 72, 36 or 18 divisions per inch and turn the Autogrid on. Objects created under this ruler setting can be copied and pasted or saved in a PICT file with significantly less shifting.

In ClarisWorks for Windows, this shift can be caused by minor precision errors when ungrouping Windows Meta-Files.

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ClarisWorks: Opening Text Files in Spreadsheet or Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Import Options in the Open dialog in the Spreadsheet and Database include the following standard file formats:

* DIF
* SYLK
* ASCII Text (Tab-Delimited)

DIF - used mostly for databases because it retains field names.
SYLK- used mostly for spreadsheets because it retains the formatting information and calculation formulas.
ASCII text - ClarisWorks supports Tab-delimited text. To open other text formats (such as Comma-Separated) you have to convert it to tab-delimited, using the Word Processor.

1. Choose Find/Change from the Edit menu.
2. Click in the Find text field and type a comma.
3. Click in Change text field and type Command-Tab or \\t.
4. Press Change All and then OK to confirm (this changes all commas to tabs).
5. Choose Find/Change from the Edit menu.
6. Click in the Find text field and type a double-quote.
7. Select and delete the text in the Change text field.
8. Press Change All and then OK to confirm (this changes the Quote marks to blanks).

NOTE: This method strips out commas indiscriminately.
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ClarisWorks: Out Of Memory Message with the HyperTour

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisWorks HyperTour has been tested with all versions of HyperCard from 1.2.5 through 2.1. The minimum memory requirement for HyperCard is 750K, and if the user has manually decreased this, they will receive a message that more memory is needed.

Solution: Increase HyperCard's memory allocation in the Get Info window or under System 6, make more memory available to HyperCard by turning off extensions or turning off MultiFinder.
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ClarisWorks: Pasted Text Displays Question Marks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Due to limitations of the Macintosh Clipboard, copying a combination of text and graphics from a text frame or word processing document in ClarisWorks, will result in only the text being pasted. A question mark will replace the inline graphic image.
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ClarisWorks: Pasting/Inserting an Object at a Specific Point

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

You may control where an object is pasted or inserted in a drawing document by establishing a paste point. To set a paste point, click on the selection (arrow) tool, then click once on the document where you wnat to paste an object. Then choose the Paste or Insert... command. The object will paste centered at that point.

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ClarisWorks: Certified Hardware and System Software

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 1.0v1 - 1.0v3 are certified or verified as fully functional with the following Systems and Equipment:

Operating Systems
System software version 6.0.5
System software version 6.0.7
System software version 6.0.8
System software version 7.0
System software version 7.0.1

Performs reasonably under A/UX 2.01, but is not certified under A/UX

CPUs
Macintosh Plus
Macintosh Portable
Macintosh SE, SE/30
Macintosh Classic, Classic II
Macintosh II family (II, IIx, IIcx, IIci, IIfx, IIsi)
Macintosh PowerBook family (100, 140, 170)
Macintosh Quadra family (700,900)

Printer Drivers
LaserWriter 6.0.1, 6.0.2, 7.0
Personal LaserWriter 1.0, 7.0
StyleWriter 1.0, 7.0
ImageWriter 2.7, 7.0
ImageWriter LQ 2.0, 7.0

Printers
Apple LaserWriter/LaserWriter Plus
Apple LaserWriter II NT/ NTX
Apple LaserWriter II SC
Apple Personal LaserWriter NT
Apple Personal LaserWriter SC
Apple Personal LaserWriter LS
Apple ImageWriter I/ II
Apple ImageWriter LQ
Apple StyleWriter
HP PaintJet IIID
HP DeskWriter
QMS ColorScript 100
Tektronix 4693D
Varityper VT600
GCC Personal LaserPrinter

Monitors
Apple 9" display (Plus, SE, SE/30, Classic and Classic II)
Apple 12" color monitor
Apple 13" RGB monitor
Apple Portrait monochrome monitor
Apple Two Page Display monitor
Radius Two Page Display monitor
Radius Radius Pivot Display monitor
SuperMac 19" color monitor

Video Display Cards
Radius 24-bit card
Radius Color Pivot
RasterOps 264/30 24-bit card (for use in SE/30)
RasterOps 264 24-bit card
Apple 4*8 card

Apple 8*24 card
Apple 8*24GC card with accelerator
Apple on-board video (IIci, IIsi, LC, Quadra)

Disk Drives
800K internal disk drive
800K external disk drive
FDHD internal disk drive
HD20SC external hard drive
20 Mb internal hard drive
40 Mb internal hard drive
80 Mb internal hard drive
44 Mb PLI removable drive
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MacDraw Pro: Colored Patterns Printing Incorrectly to LaserWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

To print color patterns directly to a Postscript printer, you need a Postscript Level 2 print driver (e.g., LaserWriter 8 driver) and a Level 2 printer (e.g., IIf, IIg, LaserWriter Pro). To print color patterns with an older printer driver or printer, save to an EPSF file, open or import the EPSF file, then print. If saving to an EPSF file, you must use the EPSF XTND translator included with MacDraw Pro 1.5v2.

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ClarisWorks: Disk Configuration for 1.0v3

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 1.0v3 ships with 2 additional items in comparison to previous versions:

Microsoft Excel 3.0 translator
Apple Modem Tool 1.1 (an update)

ClarisWorks 1.0v1 and 1.0v2 ship with:

Documentation
ClarisWorks Getting Started
ClarisWorks Handbook
ClarisWorks Communications Handbook
ClarisWorks Quick Reference Guide

Disks (6 Total)
Installer
Installer 3.2 Program
Installer Script 1.0
ClarisWorks Translators (ASCII Text,DIF,SYLK,AppleWorks SS/DB and MS-Works SS/DB)
Claris Translators Folder
Acta 3.0
AppleWorks
AppleWorks GS
EPSF PFLT 1.0v2
MacPaint 2.0
MacWrite 5.0
MacWrite II
Microsoft Word 3.0
Microsoft Word 4.0
Microsoft Word PC
Microsoft Works 1.1
Microsoft Works 2.0
PICT
RTF
Plain Text
TIFF 1.0v2
WordPerfect
WordPerfect PC 4.2
WordPerfect PC 5.0
WriteNow
WriteNow NeXT
Claris XTND System 1.3

Program
ClarisWorks
Read Me
Tutorial Folder
Newsletter (ClarisWorks)
Quarterly Report (ClarisWorks)
Sales Performance (ClarisWorks)
Sample Objects (ClarisWorks)
Employee of the Month (MacWrite II)
Artwork for Letterhead (MacPaint 2.0)
Pegasus Art (MacPaint 2.0)
Pegasus Logo (MacPaint 2.0)

References
Dictionaries
Main Dictionary 1.03
US Thesaurus 3.7
User Dictionary

Sample Documents
Book of the Month Club (ClarisWorks)
Flyer & Order Form (ClarisWorks)
Quarterly Earnings (ClarisWorks)
Sales Commission Letter (ClarisWorks)
Sales Report (ClarisWorks)

Help
Claris Help System 3.0v5
ClarisWorks Help

Communication
CTB Resources
Communication Tools
Apple Modem Tool 1.1
Serial Tool 1.0.1
Text Tool 1.0.1
TTY Tool 1.0.1
TTY Font
VT102 Tool
VT102 Font
XModem Tool 1.0.2

HyperTour
ClarisWorks HyperTour
Published Date: Feb 18, 2012

ClarisWorks: Border Doesn‘t Print

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks versions through 3.0 will not print borders for the top most or left most cells of a Spreadsheet document when both column and row headers are hidden (this has been reported to occur also with the right and bottom most boarders). This issue has been corrected in ClarisWorks 4.0. If you are unable to upgrade to 4.0, there are two other ways to get around this limitation:

1. Put data in the second row or columns only
2. Copy the data from your Spreadsheet document into a Spreadsheet frame.

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ClarisWorks: Can‘t Move or Remove a Layout Part in Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks will not allow you to move a layout part when any objects touch it. This means that in order to remove a part from your layout, you have to first move all objects out of the part area.

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ClarisWorks: Checkboxes in Cell Border Dialog

his information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 1.0 Spreadsheet
The Borders... command does not indicate the formatting of the currently selected cell(s). The check boxes in the Borders dialog are always unchecked when this command is chosen. Therefore, clicking OK in this dialog without selecting a border check box will remove all borders for the selected cells.

Also, choosing Outline borders for a series of selected cells will not automatically turn off other border styles for those cells. To remove the current borders for a series of cells and outline all of them:

1. Select the cells.
2. Choose Borders...
3. Leave the check boxes unchecked and click OK to remove the current borders.
4. Choose Borders...
5. Click on Outline and then OK to outline the selected cells.

ClarisWorks 2.0 Spreadsheet and ClarisImpact Table Model
I f a checkbox has an X in it, all selected cells have that border checked. If a checkbox has a dash in it, one or more, but not all, of the selected cells have that border checked. If a checkbox is empty, none of the selected cells have that border checked.
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TA41776_DOS_Tool_Kit_Animatrix_grid_cursor_(TIL00547).pdf

DOS Tool Kit: Animatrix grid cursor

This article has been archived and is no longer updated by Apple.

Animatrix has no provision for controlling the grid cursor from the keyboard; you have to use paddles.

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TA41777_Apple_IItoIBM_Host_File_Transfer_(TIL05470).pdf

Apple II-to-IBM Host File Transfer

How can I transfer an ASCII file from an Apple IIe to an IBM mainframe?

I haven't been able to find any 3270 Apple II solutions. Assuming there isn't a Macintosh available, we could send the ASCII file from the Apple IIe over CompuServe or some other network to a Macintosh (or even an MS-DOS PC) connected to a mainframe. Then, we could make the ASCII-to-EBCDIC conversion and store it on the mainframe.

Are there any other solutions?

This article has been archived and is no longer updated by Apple.
There are two other options. All options, including the one you mentioned, are based on file transfer from the ASCII environment to the EBCDIC environment (microcomputer to mainframe host). This file transfer is where the conversion will take place.

The first option depends on the services available from the mainframe. This method requires a mainframe-attached protocol converter that uses the XModem protocol, plus a communications package on the Apple IIe that also supports XModem. This setup should allow the Apple IIe to dial directly into the protocol converter and upload the file to the mainframe.

The second option is to dial the Macintosh or MS-DOS PC directly instead of paying for a commercial communications service. Since both computers require modems to access the commercial service, and most likely use XModem for the transfer, there should be no difficulties connecting directly to one another with their communications software and using XModem for the transfer. Once transferred from the Apple IIe to the Macintosh or PC attached to the mainframe, the file can be uploaded from the Macintosh or PC using the host's file transfer method.

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Claris Resolve: ClarisWorks Feature Comparison

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve adds these features in comparison to ClarisWorks 2.0:

Resolve Script Language
doScript Apple Event
3D Charting
149 functions (vs. 100)
Customizable menus, dialog, and buttons
Intelligent Fill
32K columns x 32K rows (vs. 256 x 16K)
Matrix mathematics
Range Names
Customizable number formats

In addition to the list above, Claris Resolve adds these features in comparison to Clarisworks 1.0:

Publish & Subscribe
Apple events support
More powerful charting
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ClarisWorks 1.0: Technical Specifications

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following are the technical specifications of ClarisWorks:

Word Processing, Graphics, Spreadsheet, and Database Documents
* Max. Number of Open Documents - Limited by available memory
* Max. Number of Open Views per Document - Limited by available memory
* Max. Number of Objects (Frames and Graphic Objects) per Document - 65,536
* Max. Object Size for Frames and Graphic Objects - Limited by document size
* Min. and Max Header and Footer Size- 4pt. to 1/3 of chosen paper size.
* Min. and Max Margin Settings - Specific to the chosen printer.
* Min. and Max Printer Reduction - Specific to the chosen printer.
* Min. and Max. for Starting Page Number - 1 to 9000
* Number of Split Bars - 2 Horizontal and 2 Vertical (9 panes)
* Min. and Max. View Scale - 3.125% to 3200%
* Types of Rulers - 2 (Text and Graphics)
* Types of Ruler Units - 5 (Inches, Picas, Points, Millimeters, and Centimeters)
* Number of Divisions per Ruler Unit - 1 to 512
* Min. and Max. Object Scaling - 25% to 400% both horizontally and vertically.
* Number Formats - 5 (General, Currency, Percent, Scientific, and Fixed)
* Number of Text Styles - 10 (Plain, Bold, Italic, Underline, Outline, Shadow, Condense, Extend, Superscript, Subscript)
* Min. and Max. Font Size - 4 pt. to 255 pt.
* Number of Text Colors - 81
* Max. Number of Style Changes in a Text Frame or Set of Linked Text Frames - 65,536
* Number Precision - 0 to 15 places
* Date Formats - 5
* Time Formats - 4
* Dictionary - 110,000 words
* Thesaurus - 660,000 synonyms
* Max. Number of Macros - 65,536
* Graphics Formats Supported - 4 XTND Filters (EPSF, MacPaint, PICT, and TIFF)

Word Processor
* Max. Number of Pages Across - 9
* Max. Number of Pages Down - (65,534 / Number of Column per page) / Number of Pages Across
* Max. Number of Columns - 9
* Min. Space Between Columns - .01 inches
* Max. Number of Footnotes - 65,534
* Min. and Max. for Starting Footnote Number - 0 to 9999
* Number of Alignment Options - 4 (Left, Center, Right, and Full Justification)
* Number of Tab Marker Types - 4 (Left, Center, Right, and Decimal)
* Number of Tab Stops per Paragraph - 20
* Min. and Max. Line Spacing - 4 pt. to 255 pt.
* Formats Supported - 20 XTND Translators (Acta 3.0, AppleWorks 2.0-3.0, AppleWorks GS, EPSF, MacPaint 2.0, MacWrite 5.0, MacWrite II, MS-Word 3.0-4.0, MS-Word 4.0-5.0 PC, MS-Works 1.1, MS-Works 2.0, PICT, RTF, Text, TIFF, WordPerfect, WordPerfect 4.2-5.0 PC, WriteNow, and WriteNow NeXT.)

Graphics Document
* Maximum Number of Pages - 9999 across or 9999 down with a total of 32,767.
* Number of Tools - 7 (Line, Rectangle, Rounded Rectangle, Oval, Arc, Polygon, Freehand)
* Max. Number of Points per Polygon - 8,192
* Max. Number of Points per Freehand Object - 8,192
* Number of Fill/Line Colors - 81
* Number of Fill/Line Patterns - 64
* Min. and Max. Line Width - .01 pt. to 255 pt.
* Number of Arrow Line Types - 3 (Start, End, and Both Ends)

Spreadsheet
* Max. Number of Cells - 256 Columns by 16,384 Rows = 4,194,304 cells
* Max. Number of Characters in a cell - 255
* Min. and Max. Column Width - 0 to 510 pts.
* Min. and Max. Row Height - 0 to 256 pts.

* Number of Page Breaks per Document - 65,536
* Number of Functions Available - 100
* Chart Types - 7 (Pie, Bar, Stacked Bar, Line, Scatter, X-Y, Scattered X-Y)
* File Formats Supported - 5 Internal Translators (Text, DIF, SYLK, AppleWorks 2.0 and MS-Works 2.0)

Database
* Max. Number of Records per Document - 32,767
* Max. Number of Fields per Document - 255
* Min. and Max. Number of Chars. in a Field Name - 1 to 63
* Number of Field Types - 6 (Text, Number, Date, Time, Calculation, and Summary)
* Max. Number of Chars. in a Text or Number Field - 510 chars. minus 20 for each style change in the field.
* Max. Number of Chars. in Calculation or Summary Field Formula - 254
* Number of Available Functions - 91
* Max. Number of Layouts in a File - 32,767
* Min. and Max. Number of Chars. in a Layout Name - 1 to 31
* Types of Layouts- 5 (Standard, Columnar, Labels, Blank, and Duplicate)
* Max. Length and Width of Layout - 1 printed page (currently uses objects that extend below)
* Number of Layout Parts - 5 (Header/Footer, Sub-Summary, and Leading/Trailing Grand Summary)
* Max. Number of Columns in a Layout - 12
* Max. Length of a Match Records Formula - 255 characters
* File Formats Supported - 5 Internal Translators (Text, DIF, SYLK, AppleWorks 2.0 and MS-Works 2.0)

Communications Documents
* Max. Number of Open Documents - 1
* Max. Memory of Log Window - 2,978 lines of 9 point or 2,184 lines of 12 point text.
* Number of Included Tools - 6 (Apple Modem, Serial, Text, XMODEM, TTY and VT102)

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ClarisWorks: Fields are not Placed on the Grid

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Fields are not automatically placed on the same grid when creating a new layout or inserting a field. This can make manual field placement difficult when the Autogrid is on. Here are a few alternatives that will make it easier to manipulate your fields:

Select all of the fields and Choose Align to Grid. Continue to work with the Autogrid on.
- or -
Choose Autogrid Off if it is currently on and use the Align Objects... command to make sure that objects are perfectly aligned.

Locking a field will allow you to align objects more percisely for placement purposes.

Perfect alignment is crucial for Slide Objects to work.
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FileMaker Pro: ClarisWorks Feature Comparison

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
FileMaker Pro 2.0 adds the following features in comparison with ClarisWorks 2.0:

Multi-user/Networking
Larger Disk-Based Files (up to 32 mb)
Larger Text Fields (up to 64,000 characters)
Repeating Fields
Picture, Sound and QuickTime Movie Fields
Multi-Line Calculation Fields
Change Ordering of Fields in Define Dialog
Print Field Definitions
User definable buttons
Powerful Scripting Capabilities
File Lookups
Pop-Up Menus, Check Boxes, and Radio Buttons
Number, Auto-entered Data, Value Verification.
Larger Layouts
Edit Paper Sizes
Passwords
Sliding Part Up ("Also reduce the size of the enclosing part")

In addition to the list above, FileMaker Pro 2.0 adds the following features to ClarisWorks 1.0:

Pop-Up Lists
File Import Mapping
Precise Object Sizing with Size Box
Entry Options: Creation Date/Time, Modification Date/Time, Creator Name, Modifier Name, Serial
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ClarisWorks: How the Field Format Command Works

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In versions of ClarisWorks through 3.0, the Field Format command was not implemented for text fields or calculations that are formatted to return a text result. Because of this, the Field Format command is not available when a text field is selected.

Text fields are formatted by selecting one or more fields and choosing the desired Font, Size, Style, Text Color, Alignment, and Spacing attributes from the Format menu.

In ClarisWorks 4.0, the Field Format command is available regardless of the field type selected. The options in the dialog box will change, depending on the field type, to show text, number,date, or time formatting options. As in all previous versions of ClarisWorks, to change the text formatting attributes (font, size, etc.) of non-text fields, you must choose the desired options from the Format menu. In all cases, line spacing and text alignment can only be changed using the Format menu.
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MacDraw II, MacDraw Pro and ClarisWorks: Feature Comparison

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw II adds the following features to ClarisWorks 2.0:

Multiple Object Based Rulers
Posted Notes
Unlimited Layers
Object Libraries
Adds Lower, Upper, and Title Styles
Set Named Views of the Drawing
Put Custom Pen Sizes in Menu
Free Rotation to any Angle
Edit Rotated Text
Customizable Dashed Lines
Customizable Arrow Heads
Autosize Lines that Display their Length
Document Size Grows to Show Entire Drawing
Fit to Window Command
Corner to Corner or Center to Corner Drawing Methods
Spell as you Type
Ability to Print with either Color or Black and White Patterns

In addition to the list above, MacDraw II adds the following features to ClarisWorks 1.0:

Rescaling Feature
Presentation Support
Custom Font Styles in Menu
Pattern Editing
Show Size of Objects
Spell Check Selection

MacDraw Pro 1.5 adds the following features to ClarisWorks 2.0:

MacDraw II Features
More Color Support
Precise rotation
Scale rulers
EPSF write (as well as read)
Letter Spacing Control (kerning)

In addition to the list above, MacDraw Pro adds the following features to ClarisWorks 1.0:

Gradients
Bezier Curves
Publish and Subscribe
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MacWrite II/Pro: Feature Comparison

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Compared with ClarisWorks 2.0:

MacWrite II adds:
Endnotes
Hide Pictures Command for speed
Merge Commands (conditional mail merge)
Ability to merge to a new document
Ability to Left/Right Headers and Footers
Word Underline, Double Underline, Lowercase, Uppercase, and Small Caps styles
Larger Type (up to 500 pts vs. 255)
Find/Change character styles
Hyphenation Control
Spell as you type
Allows you to Save Selection only
Allows Page # of Total format
Option to turn off time/date updating
Page Breaks command when using Multi-Column Document

MacWrite Pro adds:
MacWrite II features, plus:
ADDit Modules
Text wrap-around irregular bitmap images
Fixed Frame Locations
Text and Sound Notes
Paragraph Style Sheets
32K Headers and Footers
Auto Save
Auto Backup
Graphic Cropping
Manual Tracking Control
Text Palette
Mouse controllable Page margins/ guides
Document Statistics
Sections
Multiple Headers and Footers
Custom character spacing
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ClarisWorks: Resizing or Scaling Multiple Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are two ways to resize multiple objects at a time in ClarisWorks 1.0:

1. You can select the objects and choose Scale Selection to scale them by a specific percentage.
2. You can select the objects, choose Group, and then resize them using one of handles of the new grouped object. Then choose Ungroup once they've been resized. This method cannot be used with database fields because you can't group fields with other objects.

ClarisWorks 2.0 allows multiple object resizing. In addition, choosing Object Size from the Options menu will show a pallette which allows you to resize objects by selecting them and specifying a dimension.
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Claris Cad: Crashing when Opening Arrows or Line Styles Dialogs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Certain files converted from DXF crash when the "arrows..." or "line styles..." dialogs are accessed. This is caused by information regarding arrows not being converted exactly correctly. The issue does not cause a distortion of the existing arrows in the file, but prevents arrows from being modified because the application unexpectedly quits when accessing arrows.

The way around this issue is:
1. Copy and paste the information to a new Claris CAD file. This can be cumbersome if the document has several layers.
2. Save the document as a MacDraw II 1.1 file. Then re-open the file and save it back into Claris CAD format. This is less cumbersome than option 1, but can cause issues for users with arcs.

The arcs may come back into Claris CAD slightly smaller than they were before. Please have users check for this issue if they choose to use option 2.
Published Date: Feb 18, 2012

Partitioning a Hard Disk with the Apple IIe Card 2.0 in the Macintosh LC

The IIe Startup Disk mentioned in this article can be downloaded from the Apple Support web site, Apple Software Updates collection.
This article has been archived and is no longer updated by Apple.
The Macintosh LC's Apple IIe Card software is only supported by Apple with version 6.0.8 of system software. (However there are no known problems with system 7.0 or 7.01) . If you have a different version of Macintosh system software installed on your hard disk or if you don't use a hard disk at all, you can use the disk labeled "IIe Startup Disk" to run Apple IIe programs. In addition, the ProDOS file system, requires version 6.0.8 of the system software.

The process of creating space for your Apple IIe files is time-consuming, and requires you to erase your hard disk. Also, you cannot store both Apple IIe files and Macintosh files on the same hard disk unless you reserve part of the hard disk for IIe files, i.e. partitioning. Once again, this procedure requires that you erase all information stored on the hard disk. So be sure and back up your hard disk before beginning the partitioning process.

The following procedure describes how to set aside 10 MB for Apple IIe files:

1. Shut down the Macintosh.

2. Insert the IIe Installer Disk into the built-in disk drive.
3. Start up the Macintosh.
4. Open the IIe Installer Disk by double-clicking.
5. Double-click the Apple HD SC Setup icon.
6. Click the Partition button. (A screen appears with all your partitioning options.
7. Click "10 MB ProDOS, Maximum Macintosh," the click OK.
8. A dialog box appears to confirm that you want to erase your hard disk.
9. Click OK.
10. The program takes a few minutes to partition the drive and then asks you to name the new Apple IIe partition. (Remember no more than any combination of 15 numbers and letters.)
11. Type a name and then click OK.
12. Then QUIT.

You now have two icons representing the same hard disk. The new icon, with the symbol for the Apple IIe on it, represents the space reserved for your Apple IIe files. The original icon represents
the rest of the hard disk, which is reserved for Macintosh files.

IMPORTANT:

Drag the BASIC.SYSTEM icon and the PRODOS icon to the new Apple IIe partition.

You can now restore the contents of your hard disk by:

1. Ejecting the IIe Installer disk.
2. Insert one of your backup disks into the disk drive.
3. Copy all the Macintosh files and folders back to the Macintosh partition of the hard disk.

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MacDraw Pro: Character Spacing is Poor

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is Fixed in MacDraw Pro 1.5

Character spacing of TrueType fonts can be poor in MacDraw Pro 1.0v1, especially Helvetica TrueType. The best solution is to remove the TrueType font, using only the bitmap (or ATM).
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Claris Resolve: Conflict with RadiusWare under System 6.0.x

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Under System 6.0.x, the RadiusWare init provided with Radius monitors (both versions 1.6.1 and 2.0) will cause Claris Resolve 1.0v2 to crash when choosing a menu item. This does not occur under System 7.

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Claris Resovle: Entering Script Commands into the Entry Bar

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Publications Issue:

You may enter a script into the Entry Bar of the Worksheet. Multiple script commands may be entered, separated with a space between them, not with a semi-colon as is shown on page 8-4 in the User's Guide. The Figure 8-1 shows an incorrect sample. It should read as follows:

SELECT RANGE A3..D6 MAKE CHART
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Claris Resolve: Excel File Conversion Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue has been corrected in Claris Resolve 1.1

Trying to convert Excel files which contain formulae using either the ISBLANK or ISNUMBER functions will result in a crash. Cells containing formulae using these functions will need to be changed to values in Excel before attempting the conversion to Claris Resolve. The other "IS___" functions appear to convert properly.
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MacDraw Pro: Documentation / Publication Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Documentation / Publication Issue

The initial shipment of MacDraw Pro was shipped with an incorrect version of the Dandie Candie tutorial file. Specifically, several items that were supposed to be grouped were left ungrouped. If a user attempts to step through the tutorial instructions in the MacDraw Pro Getting Started manual using the Dandie Candie file, the results will not be what the manual states. Listed below are the errors a user will encounter using this version of the Dandie Candie file.

* Page 2-19 #2: The manual states the "You can also click the right and left arrows on the Style bars to scroll the bar one cell at a time." This is not true.

* Page 2-38 #1: The tutorial tells you to choose Move Backward only once when, in fact, you have to choose Move Backward 6 times to achieve the effect illustrated in the examples.

* Page 2-39 #4: Same issues as pervious. Must choose Move Backward 6 times.

* Page 3-23 #1: It tells you to choose Show Size here but this option is not available under the View menu because the Size bar is already shown when the document is first opened (Hide Size is shown).

* Page 3-24 #4: This step tells the user to click on a graphic and move it up 1/4 inch. The issue here is that the object in question is not grouped! The example clearly shows this object grouped but it'is not in the provided sample file. This could be very confusing to a new user. You need to drag around the object and group it before performing this step.

* Page 4-17 #1: It mentions 2 additional gradients added to the palette but the sample file actually contains 10 additional gradients.

* Page 4-18 #3: It says to click the first gradient cell in the bottom row. Due to the additional gradients, however, it should be the first gradient in the 3rd row (there are 4 rows).

* Page 4-19 #6: Second gradient in the bottom row should be the second gradient in the 3rd row (same issue as above).

* Page 4-25 #13: It says to open the stationary document just saved but you cannot see it because the Show popup menu in the Open dialog box is still set to show only Library files (from step #1 on page 4-7).
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ClarisWorks: Installing from an AppleShare File Server

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To install ClarisWorks or MacDraw Pro (or any other software that installs using the Apple Installer program) from an AppleShare file server, do the following:

1. Copy all the disks to the server, creating folders on the server. Do not rename these folders.
2. Move the resulting folders into a common folder.
3. Open the Installer folder. Option-drag the Installer Scripts file to the common folder, which copies this file.
4. Also option-drag the Installer file to the common folder.
5. To install, double-click the Installer Scripts file in the common folder.

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Claris Resolve: Open Window Limitation

How to get around the 32 open window limitation in Claris Resolve. Not recommended for the faint of heart (or for those not experienced with ResEdit.)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve 1.0vX is limited to opening 32 windows at a time. This would be a reasonable limitation if weren't for the fact that when Claris Resolve opens a WingZ file with scripts, it will create a new window for each script it encounters that is _attached_ to the WingZ file. If there are more than 32 such scripts, Claris Resolve will stop opening the file with a "Too many windows" dialog box.

Claris Resolve 1.1 has a resource (MxWn) which can be edited to allow more than 32 windows to open. Increasing this setting, however, will require that more memory to be allocated to the program. This is because more window handles must be allocated at startup to reduce the danger of memory fragmentation. The resource can be edited with a utility such as ResEdit and consists of a single hexadecimal number (20 Hex = 32 Decimal) representing the maximum number of windows allowed.

Extensive testing beyond 32 windows was not performed on this product so we do not guarantee this procedure, however, no issues were encountered in the limited testing that was performed. This procedure should be used AYOR (At Your Own Risk).
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ClarisWorks: Opening or Inserting Non-ClarisWorks Graphics

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
When double-clicking on one of the art files, the file does not open. Instead, an alert appears on screen that says something like "The application that created this file could not be found, is busy or is missing".

Solution:
Double-clicking on a file in the Finder can only open the file in the application that created it. The art files were created in other programs (MacPaint, etc.), so double-clicking on them won't open them into ClarisWorks.
To open these files into a new document, either:
1- Drop-launch the file (drag the file icon onto the ClarisWorks applictication icon), or
2- Launch ClarisWorks, then use the Open command in the file menu to open the file
To open these files into an existing document, use the Insert Command

Issue:
When using the Open command, the Pegasus Art file is not listed in the Open dialog box.

Solution:
(ClarisWorks 1.0): In the Open dialog box, click the Import Options flag so that it points down. Then Click the Drawing button.
(ClarisWorks 2.0): In the Open dialog box, click the Document Type popup menu and select Drawing for the file type.

The Pegasus Art file, and other non-Clarisworks graphics files (MacPaint, TIFF, etc.) should now list in the scroll bar. If not, be sure that you are viewing the correct folder. The folder name is listed in the popup menu above the scroll bar. If you are viewing the proper folder and the graphic files are still not listed in the Open dialog box, try the solutions listed next.

Issue:
When Inserting the Pegasus Art for the tutorial (ClarisWorks Getting Started, Page 6-26), the inserted art takes up the entire screen, covering the fields behind it. The selection handles are not visible on screen, what is happening?

Solution: ClarisWorks is using an old MacPaint filter in your Claris Translators folder. Remove the filter called "MacPaint" and keep the one called "MacPaint 2.0". The Installer does not remove this older filter during the installation process.

FYI: When the inserted art takes up the entire screen, choose "Scale Selection" and reduce the inserted object by 50% - the logo itself is in the upper left corner of a solid large white object, which covers up all the fields in the layout and therefore also in browse. Select the object and choose "Send to Back" under the arrange menu.

Manual Correction: In addition, on page 4-13 of the ClarisWorks Getting Started manual, the Open Document dialog box lists the file "Pegasus Art" and instructs the user to open the file. After step 1, the instructions should tell the user to click on the Import Options flag, then click on the Graphics radio button. "Pegasus Art" will then be listed as an importable file.

Issue:
When Inserting (using the Insert command) the Pegasus Art for the tutorial, the Pegasus Logo file does not show up in the Tutorial folder.

Solution: First make sure the Pegasus Logo file is in the Tutorial folder by opening the folder in the Finder. If the file icon is there, try the following:
1. Locate the file called XTND Translator List and delete it (System 7: it's in the Preferences folder inside the System Folder; System 6: it's in the Claris folder inside the System Folder).
2. Reinstall the translators from the original ClarisWorks disks: Insert the Installer disk; double-click the Installer icon; click the Customize button, choose the translators option, then click Install).
3. An INIT or extension file may be conflicting with ClarisWorks. If your computer is running System 7, hold down the shift key while restarting the computer. This will turn extensions off. Try opening or inserting the file into the ClarisWorks document again. You can use your extensions again by restarting the computer without holding down the shift key.
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Hard Drive SCSI Termination Power

I'm experiencing a startup problem with Mass Microsystem's DataPak attached to my Macintosh. Sometimes I could start up fine with or without the DataPak turned on. Other times, the system hung until the DataPak was turned on.

What's going on?

This article has been archived and is no longer updated by Apple.
The SCSI bus requires termination power on the bus to provide clean, quality SCSI signals. Mass Microsystems' DataPak supplies its own termination power to the SCSI bus. (This characteristic is also common to early SuperMac DataFrames.) Other SCSI devices that we checked use the termination power provided by the Macintosh.

When a SCSI device provides its own termination power, the SCSI bus signals may be corrupted when that device is powered down because it leaves the SCSI bus unterminated. An unterminated SCSI bus can cause startup problems because of noise on the bus.

Sometimes when a SCSI device that supplies its own termination power is powered down, the Macintosh will still start up because the SCSI bus signal is clean enough for the startup process to take place. However, there is no assurance that the bus signals will stay clean and uncorrupted since the SCSI bus is not properly terminated in this situation.

SCSI devices that use the termination power provided by the Macintosh do not have to be powered on for the SCSI bus to be properly terminated. The termination power from the Macintosh provides the correct termination to the SCSI bus.

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Claris Resolve: Insert and the Sum Function

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This problem has been corrected in 1.0v3.

Inserting a column on a worksheet that uses the Sum() function will sometimes cause the range used in the function to be incorrectly adjusted.

Example:
* Put some values into B2..B4.
* Put the formula '=Sum(B2..B4) into C5.
* Put some values into D2..D4.
* Put the formula '=Sum(D2..D4) into E5.
* Select column E and choose Insert from the Edit menu (or Command-I).
* The formula in column C now references A1..A4.

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ClarisWorks: Printing in Best or Faster on the ImageWriter and Other Options

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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This is corrected in 1.0v3.

In ClarisWorks 1.0v1, you cannot take advantage of "Best" mode quality on ImageWriter printers.

Even if "Best" quality is selected, the ImageWriter or ImageWriter LQ will print at the lower resolution "Faster" quality. Also, other applications you use after printing from ClarisWorks may behave in the same way until you restart the computer, or change printers in the Chooser.

ClarisWorks 1.0v2 only enables the use of best and draft modes. This is because ClarisWorks 1.0v2 prints to the ImageWriter at the highest resolution possible. This precludes ClarisWorks from using options available to the ImageWriter. So in ClarisWorks 1.0v2 faster printing, tall adjusted and 50% reduction will not be available when printing to the ImageWriter I/II.
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Claris Resolve: Script Command for Removing a Menu Separator

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The usual procedure for deleting a menu item is the use the three commands SELECT MENU, SELECT MENUITEM and REMOVE MENUITEM as follows:

SELECT MENU "MyMenu"
SELECT MENUITEM "MyMenuitem"
REMOVE MENUITEM

Menu separators, since they do not have a name, are added and deleted differently. You need to explicitly select the menu separator by using its number in order to delete it properly. The menu item number is determined by its position on the menu. In a standard Edit menu, for example, Undo would be 1, the menu separator 2, Cut 3 and so forth. To delete a menu separator, you need to use the SELECT MENU, SELECT MENUITEM NUMBER and REMOVE MENUITEM commands:

SELECT MENU "MyMenu"
SELECT MENUITEM NUMBER 2 {Here we are referencing the menu by its number which corresponds to its position on the menu (first item is 1 second item is 2, etc...)}
REMOVE MENUITEM
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MacDraw Pro: EPSF in PageMaker Missing Right Side

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in MacDraw Pro 1.5

PageMaker 4.0 has a issue with some EPSF files from MacDraw Pro 1.0. If an EPSF from MacDrawÊPro is placed in PageMaker 4.0, and the image has a rectangular border with a thin pen weight, the right side of the border will be missing in PageMaker. The top may be missing also. To recreate this, draw a box and give it a very thin pen weight, say .01 pt. Save as EPSF. Place into PageMaker. The EPSF will display and print incorrectly. The same image will display and print correctly from MacDraw Pro, PowerPoint, Persuasion and Freehand. One workaround seems to be to make the pen weight for the border thicker, say 1 point.
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ClarisWorks: Error -50 Opening Files While Using Empower or FileGuard

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in ClarisWorks 1.0v3.

A conflict with Empower II 4.0 and FileGuard 2.7 and above prevents ClarisWorks 1.0v2 and earlier from opening saved files.

When opening a document, you may receive an error -50, "Error in user parameter list".
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Claris Resolve: Highlight Color Does Not Change

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve always uses black as the highlight color, and does not use the system highlight color.

This was a purposeful design decision due to the fact that custom highlights can produce bizarre affects if a custom color is applied to the background or the text.

There is currently no workaround.
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Claris Resolve: How to Convert Fractions into Numbers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Often, stock data you obtain from information services, or data entered into a spreadsheet will be in fractional format. For example, "38 3/8" to mean 38.375.

Here is a formula that will take any fractional expression of a number in cell A1 and convert it to decimal format that Claris Resolve can use:

= Value(Left(A1,Find(" ",A1,1)))+(Value(Left(Right(A1,Len(A1)-Find(" ",A1,1)), Find("/",Right(A1,Len(A1)-Find(" ",A1,1)),1)-1))/Value(Right(Right(A1,Len(A1)-Find(" ",A1,1)), Len(Right(A1,Len(A1)-Find(" ",A1,1)))-Find("/",Right(A1,Len(A1)-Find(" ",A1,1)),1))))

Here's how we built the formula:

raw text expression of number (a) = "38 3/8"
whole part of the number (w) = Left(a,Find(" ",a,1))
fractional part of the number (f) = Right(a,Len(a)-Find(" ",a,1))
numerator in the fraction (n) = Left(f,Find("/",f,1)-1)
denominator of the fraction (d) = Right(f,Len(f)-Find("/",f,1))
decimal version = Value(w)+(Value(n)/Value(d))

To find "w" we use two Claris Resolve text slicing functions to take the portion of the text string that appears before the first space in the number. "f" takes everything after the first space. "n" takes everything before the slash ("/") in "f" and considers it the numerator. "d" takes everything after the slash in "f." We put it together in "d," which has to convert the text values returned by the components and convert them to arithmetic values.

The first formula above is just everything put together.
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Claris Resolve: GCC WriteNow Printer/FaxPro Incompatibility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve (all versions) seems to always want to enlarge the worksheet by 300% when printing or previewing when the GCC WriteNow print driver is chosen. This is not a supported printer and was not tested for compatibility. This same issue also seems to occur with the FaxPro driver which was written by Palomar.

The only workaround at the present time is set the print reduction in Page Setup for the GCC driver to 33% and leave the screen view at 100%.

GCC Sales and Information can be reached at 617/275-5800
GCC Technical Support can be reached at 617/276-8620
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ClarisWorks: PowerBook 140 & 170 Installation Issues

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The PowerBook 140 & 170 cannot read part of the ClarisWorks HyperTour Disk that ships with 1.0v1. As a result, an Easy Install on these machines will result in a "failed" installation and clicking on "Quit" may cause the Installer to crash.

Since the HyperTour is the disk with the largerst single file, it failed more often due to size and how it was duplicated. When the issue was found, the duplication process was altered to avoid disk fragmentation and the Easy Install process does not include the HyperTour by default.

Separately, several vendors have reported that the PowerBook can't read certain floppy disks and this is caused by emissons from the screen. However, you should be able to install ClarisWorks by:

1. Turning the brightness control down or off and repeating installation.
2. Using a non-PowerBook Macintosh to copy the HyperTour disk onto another disk and installing from the copy.
3. Using Custom Install, install the HyperTour.

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HyperCard 1.2.2: Can‘t Print More Than 127 Pages

I am having a problem printing from HyperCard v1.2.2. Specifically, it seems to be the "printing more than 127 pages" problem that others have noticed in earlier versions of HyperCard.

The "Now preparing page x..." counts up to 167 and down, printing pages 167 through 39, and then it terminates as if completed (167 - 39 = 128). I compacted the stack before printing, and I tried MultiFinder as well as Finder.
This article has been archived and is no longer updated by Apple.
This is caused by a problem in HyperCard 1.2.2. As of May, 1990, there is no solution to this problem.
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Claris Resolve: Function Name Translation Utility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following describes a Claris Resolve utility that will simplify the modification of Claris Resolve scripts for compatibility between various language versions.

ISSUE: Function names in localized versions of Claris Resolve are partially translated. Scripts created in different language versions may not work error free in another language version of Claris Resolve. For example, a script created with French version that calls French functions, will not work error free when opened in German or English versions.

SOLUTION: Resolve Function Name Translation Utility (RFNTU). The RFNTU will simplify the conversion of scripts from one language version to another by automatically translating function names.

AVAILABILITY: We expect the RFNTU to be available by early '92 or sooner. Countries with localized versions of Claris Resolve will be supplied.

Most customers will not be concerned by this issue. This issue only affects customers who are creating scripts AND are involved in a multilingual environment (e.g. Canada & Switzerland).
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ClarisWorks: "This file has been corrupted" Alert

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in ClarisWorks 1.0v2.

Double clicking a Communication Stationery document in ClarisWorks 1.0v1 will result in the message: "This file has been corrupted."

Opening the document using the Open command in the ClarisWorks File menu bypasses the message.
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MacDraw Pro: Crashing with Text Pasted from PageMaker

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Text copied from PageMaker 4.0 with the text tool, then pasted into a text block in MacDraw Pro 1.0 will crash the computer. The following steps recreate the issue:

1) Type a text block with 2 or more hard returns in PageMaker 4.0
2) Copy the text with the text tool (you must select the text with the text tool, not with the selection arrow)
3) Copy to the clipboard
4) Open MacDraw Pro
5) Click the text tool and click in the document (to create either a caption or paragraph text block.
6) Paste, then crash.

The issue can be avoided by pasting into MacDraw Pro without pasting into a text block.

When text is pasted from PageMaker, it pastes as multiple text objects.
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Claris Resolve: Auto Save Not Remembering Set Interval

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue has been corrected in 1.0v3.

In version 1.0v2 or lower, Claris Resolve does not remember the time interval set in the "Auto Save..." dialog box. It will always reverts to 1 minute regardless of the interval specified previously.
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Claris Resolve: Crashes When Saving As Excel 2.2

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue has been corrected in Claris Resolve 1.1

Claris Resolve will crash or lock up when saving a file as Excel 2.2 if the worksheet contains a function that includes more than 32 parameters. For example, the formula:

=Sum(A1,A2,A3,A4,A5,A6,A7,A8,A9,A10,A11,A12,A13,A14,A15,A16,A17,A18,A19,A20,A21,A22,A23,A24,A25,A26,A27,A28,A29,A30,A31,A32,A33,A34,A35)
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Claris Resolve: Default Font has Changed from Geneva

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve uses the default application font (Geneva) as the default font for new worksheets. Sometimes, however, the system parameter that defines this font gets lost. When this occurs, Claris Resolve will generally use Chicago in the default point sizes.

To correct this situation, you need to Zap the PRam. This is performed several different ways depending on the version of the operating system and machine.

* Under System 7 - Hold down the Option-Command-P-R key sequence while the machine is booting. You must be very quick since this process occurs very early in the boot process. If performed successfully, the machine will sound a restart chime just as the Happy Mac icon appears then restart.

* Under System 6 - Highlight the Control Panel option under the Apple menu but don't release the mouse. Hold down the Shift-Option-Command sequence while releasing the mouse. You will get a dialog asking if you want to zap the PRam, click yes. The reason this procedure is so awkward is due to the fact that the option key will hide all the DA's (including the Control Panel) if it is held down when displaying the Apple menu. For this reason, you must wait until the Apple menu is already displayed before pressing this key.

* On a Macintosh Plus - The above two procedures work for all machines introduced since the Macintosh Plus. For the Macintosh Plus and older machines, zapping the PRam is simply a matter of removing the battery located above the power switch on the back of the case. You should properly shut down and unplug the machine before attempting this operation. Make note of the battery orientation prior to removal to ensure proper reinstallation.
Published Date: Feb 18, 2012

MacDraw Pro: Gradients not Printing to Personal LaserWriter LS

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Gradients inside ovals or circles don't print to the Personal LaserWriter LS when the focal point of the gradient is perfectly horizontal or vertical. Instead, the ovals will print with no fill. The issue happens using versions 1.0 and 1.1 of the Personal LW LS driver (aka 7.0 &b 7.1) and occurs due to a known issue in the printer driver. The current workaround is to edit the gradient so that the direction of the ending color is neither perfectly horizontal or vertical. Then reapply that gradient to the object.

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Claris Resolve: Invalid Results from the Count Function

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The count function will not always return valid results if the range supplies as its argument contains other formulas. For example, if the range B1..B5 has a formula such as:

=If(A1 < 10,"",A1)

And cell B6 contains the function:

=Count(B1..B5)

Claris Resolve will always return the value 5, even if some of the cell function's return nothing. Even if a formula returns nothing, the flag used by the count function still indicates that a value was returned (in fact, a value is returned - a null string).

One work-around is to use the database function DCount.

NOTE: Some users have complained that the count function in Excel does not behave this way. The Count function in Claris Resolve is distinctly different from Excel's in that is will correctly count text as well as number cells. Excel only counts numbers and ignores text cells.

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Claris CAD & MacDraw: Printing Dithered Colors to HP PaintWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

To print dithered colors to an HP PaintWriter, select Page Setup, choose Color and click the 8 color button.

Otherwise, dithered colors will print black.

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Claris Resolve: Using Custom Functions

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Custom functions can be placed in a stand-alone script or in the Worksheet script of the document using the formula.

In both cases, the you must reference the name of the document along with the function. For example, if you create a script called "myScript" into which you include your "myAdd" function, you would reference it in the cell as follows:

=myScript:myAdd(2,2)

If the script name has spaces in it, you must surround the reference (not including the arguments) with single quote marks:

='My Script:myAdd'(2,2)

If the function is in the worksheet script, you need to use the second method, replacing the script name with the worksheet name (this tells Claris Resolve to look for the function in a script instead of its built in functions). For example, if the worksheet name is INTERNAL SURVEY, the reference would read:

='INTERNAL SURVEY:myAdd' (2,2)

Lastly, if your function is in an external script file, that script file needs to be open when using the function. Use the GET SCRIPT command to load, but not run, the script into memory. This command will leave the script in memory until it is removed with the REMOVE SCRIPT command or the program is quit.

If you want to automatically load this script, place your GET SCRIPT command(s) in a script called "Startup" and place it into your Resolve Scripts folder. This script will automatically run when Claris Resolve is launched (if you are using the sample scripts provided with the program, follow the directions in the Read Me file to modify the included Startup script).
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MacDraw Pro: Color Patterns & Bitmaps Print B&W to ImageWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Color patterns and color bitmaps, such as scanned images, print black and white to the ImageWriter II and ImageWriter LQ from MacDraw Pro 1.0/1.5. These images will print, correctly to the HP PaintJet or DeskWriter, however. There is no workaround to this issue, other than printing to a different printer.

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Claris CAD: Conflict with Abaton InterFax

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

We have had a report that Abaton's InterFax Control (1.2.5) cDev can conflict with Claris CAD 2.0vX. The issues reported include incorrect drawing of objects, objects seeming to "draw themselves" and moving objects.

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Claris Resolve: Converting Excel Documents with External References

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve support external cell references and will convert them when opening an Excel (2.2) document. In order for this to work properly, however, you need to convert the worksheets in the correct order.

* First, convert the worksheet that is being referenced (not the worksheet that has the external references but the one from which the data is being looked up).
* Save this document with its original name. Do not change the name or leave the "(Converted)" appendage in the name.
* With the first worksheet(s) still open, convert the worksheet that contains the external references.

It is neccessary to open the worksheets in this order because Claris Resolve will assume the external references are script names if the referenced worksheet is not open at the time of conversion. Script references and external references look essentially the same but are stored and treated differently.

If you have a worksheet that was not converted properly, the easiest way to fix the issue is to reconvert the document using the above procedure. If the original documents are no longer available, open all the worksheets involved (referencer and referencee) and make some small change to each of the cell formulas that display an error message (adding then deleting a space after formula will usually suffice). This will cause the formula to be re-parsed. If the referenced worksheet is open, therefore, it will correctly identify it as an external reference.
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MacDraw Pro 1.0v1: 4-Disk Configuration

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro is now shipping as a 4-disk set instead of the original 6 disk set. Programs with serial numbers after 0001086200 are the four-disk set.

Pertinent Details:

1. The version number is still 1.0v1.
2. The four disks are named Help, Reference, Installer and Program. The files are compressed with Stuffit. The Installer installs the compressed files, then decompresses them on the hard disk. Thus, the customer will need a little more free hard disk space to install everything, as there has to be enough room to hold both the compressed and decompressed files on the hard disk.
3. To help with the hard disk space issue, the Easy Install button no longer installs everything. It does not install the HyperTour, Color Palettes, Help files or Printing support. To install the these files, you must use the Custom Install feature in the Installer.
4. The disks from the 6-disk set are not installable or usable in any way with the 4-disk set (and vice versa).

4-Disk Set Disk Contents:
Installer
* Installer
* Read Me (and Teach Text)
* Tutorial Files
* Sample Files
* 32-bit QuickDraw

Program
* MacDraw Pro (application)

Help
* Claris Help System
* MacDraw Pro Help
* MacDraw Pro HyperTour

Reference
* Claris XTND System and Claris Translators
* LaserWriter Driver files
* Spelling Dictionaries
* Color and Gradient palettes

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ClarisWorks: Reported INIT and Extension Conflicts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Virex 3.5 can cause ClarisWorks to crash with error ID -27 while saving a file. However, it doesn't happen on all Macintosh systems. This issue is resolved in Virex 3.5.1.

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Claris Resolve: Using Named Ranges in Scripts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You can use a named range to reference a location on your worksheet. The worksheet has to be open when you compile the script, however, or the Claris Resolve compiler will assume it's a script. If this occurs, you will get a "Missing Script" message when the script is executed.

Example:

* Create a worksheet named "MyWorksheet".
* Save it to the root directory of your hard disk.
* Select the cell or your choice.
* Choose "Name Ranges..." from the Format menu.
* Type "myrange" into the name field.
* Click OK.
* Save it to the root directory of your hard disk.
* Close the worksheet.
* Choose "New Script" from the Script menu to create a new script.
* Enter the following commands (replace <HD> with the name of your hard disk:

Open "<HD>:MyWorksheet"
Put 999 into MyWorksheet:myrange

* Save the script to the root directory of your hard disk.
* Choose "Run" from the Script menu.

You should get an error saying "Missing Script". This is because the script was compiled with the worksheet that contained the named range closed. Remember that scripts are compiled when you save, compile or run them.

To correct the problem:

* Open the worksheet named "MyWorksheet".
* Bring the script window to the front by choosing its name ("Script1") from the View menu.
* Choose "Compile" from the Script menu.
* Close "MyWorksheet" leaving the script open.
* Choose Run from the Script menu.

The script should now run correctly with no errors since we re-compiled it with the worksheet open.
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MacDraw Pro: Graphics Pasted Into WriteNow

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Objects from MacDraw Pro 1.0v1 with gray fills may paste into WriteNow 2.2 incorrectly. They may appear on screen with no fill and print with solid black fill. The solution is to turn OFF the Color Clipboard option in the Preferences dialog box of MacDraw Pro.

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MacDraw Pro: Toggling Fast Gradients System Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacDraw Pro 1.0v1: Toggling fast gradients (command-option-G) while the clipboard is the active window, and a gradient is on the clipboard, results in a System (Bus) Error.

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MacDraw Pro: Crash When Printing Multiple Copies From Finder

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Printing multiple MacDraw Pro 1.0v1 files containing text from the Finder will cause the System to hang.

1- Running System 7, select the ImageWriter driver (or AppleTalk ImageWriter)
2- In the Finder, select several MacDraw Pro files that contain text.
3- Select the Print command.

MacDraw Pro will hang a few seconds after starting to image the first file.
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MacDraw Pro: White Fill from Freehand EPS Previews Transparent

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

An EPSF image from Freehand with a white solid filled object, placed into MacDraw Pro 1.0v1, may preview the white fill as transparent. The EPSF object will print correctly, however. There is no current workaround for this issue.

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ClarisWork: About Version 1.0v2 Macintosh, Release Notes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The update consists of a single disk containing: ClarisWorks, a new ClarisWorks Translators file and a Read Me file.

Changes in 1.0v2 include:

1. Removed low memory crashing when switching to Page View.
2. No longer crashes while opening MS-Works 2.00e Spreadsheet files.
3. Prints in Best mode (144dpi) to the ImageWriter.
4. Allows opening Communications Stationery files from Finder.
5. Now recognizes AppleWorks DB and SS files when copied over AppleShare, or Finder-copied using the software that comes with the Mac LC //e emulator card.
6. No longer reads empty cells as zero from AppleWorks spreadsheet files.
7. No longer installs HyperTour during Easy Install, must use Custom Install.

Here is the beginning of the Read Me file:

Thank you for choosing ClarisWorks. On this disk you will find the latest versions of this Read Me file, the ClarisWorks 1.0v2 application, and the ClarisWorks Translators file.

To install ClarisWorks 1.0v2 simply drag the ClarisWorks icon from this floppy into your ClarisWorks folder thereby replacing the existing application. If you originally installed manually, i.e. without using the Installer Script, you should replace the older version wherever you installed it. Similarly, to install the new ClarisWorks Translators file drag the ClarisWorks Translators icon into the Claris folder in your System Folder. It does not go in the "Claris Translators" folder.

We're excited about this new approach to integrated software, and we hope you enjoy using it. Some late-breaking information couldn't be included in the printed manual, so we're providing it here.

Please read this file carefully. It contains several important tips that will make it easier for you to use ClarisWorks. You may even wish to print this document for future reference.
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ClarisWorks: Unindented Paragraphs Printing Indented

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in version 1.0v3.

The first line of a paragraph will print indented when the paragraph follows a blank line. The indentation is a space or so for each blank line preceding the paragraph. This issue happens under the following conditions:

* StyleWriter, ImageWriter or Personal LaserWriter LS, regardless of driver version, using TrueType fonts
* Version 1.0v1 or 1.0v2 of ClarisWorks
* Worst with System 6.x and the TrueType Init.

Workarounds for 1.0v2 and earlier:
Type a space on each blank line. The space character can be typed manually on each blank line, or can be inserted by using the Find/Change command. To do this, find \\p\\p, replace with \\p{space}\\p. (In other words, find two returns, replace them with a return-space-return).

Another workaround is to use ATM with Postscript fonts or plain bitmaps instead of TrueType fonts.

Some customers have reported that using System 7 and turning on Fractional Character Widths has lessened the issue. However, this does not solve the issue for most people.
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Claris Resolve: About Version 1.0v3, Release Notes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Resolve 1.0v3 Release Notes, December 1991

Improved file handling
¥ Claris Resolve 1.0v3 correctly saves worksheets with text fields containing more than 32K of data.
¥ Lotus 1-2-3 files with the maximum amount of text entered in a cell (240 characters) import correctly.
¥ The Auto Save feature now correctly remembers the time interval specified in the "Auto Save..." dialog box.
¥ SYLK files with row and column formatting now import correctly.
¥ SYLK and Excel 2.2 files created by non-U.S. versions of Excel now import correctly.
¥ Worksheets saved in Excel 2.2 format import correctly into non-U.S. versions of Excel.

Improved worksheet editing
¥ Formulas adjust correctly when a range is cut from one area of the worksheet and pasted to another area that already contains data.
¥ Formulas adjust correctly when rows and columns are inserted or deleted from the worksheet.
¥ Setting the width of columns containing right-aligned text to 1 pixel no longer causes Claris Resolve to freeze.
¥ Claris Resolve 1.0v3 correctly interprets time and date entries when used with non-U.S. versions of the Macintosh Operating System.
¥ Formula references are now correctly adjusted when you use the "Transpose..." operation in the Matrix dialog box.
¥ The Cell Size, Text Field Info, and Other (Text Size) dialog boxes now accept units other than inches (for example, millimeters).

Miscellaneous
¥ A PVAL Apple Event specifying a range beyond the bounds of the worksheet will no longer cause a crash.
¥ Old script buttons are now restored when compiling a converted worksheet.
¥ Claris Resolve can correctly determine the number of colors available in a hidden (off-screen) window.
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ClarisWorks: WYSIWYG Menus from Now Utilities

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There is some confusion between ClarisWorks 1.0 & 2.0 and WYSIWYG Menus 3.0.2 from Now Utilities. The 4.0.1 update of WYSIWYG Menus remedies the confusion.

To illustrate the issue:

1) Create a new ClarisWorks word processing document. Note the current font.
2) Create a second word processing document.
3) Change the font.
4) Close the document.

When the Font menu of the first document is selected, it says Times and displays in Times as it should, however, now when you select the Size or Style menus, the menus are displayed in the font of the second (closed) document.

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ClarisWorks, Draw, Impact: Translators or Comm Tools are Not Available

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Translators and Communications Tools may not be accessible immediately after installing ClarisWorks, ClarisDraw or ClarisImpact under System 7. These files are sometimes left in the Installer Temp folder and will not be moved into their proper locations until you restart the machine. When the Macintosh starts up again, the installation will be completed by the Installer Cleanup Init which puts them where they need to be.

In addition, if you have restarted your machine, and the translators are still not available, check the following:

1. The Claris folder is in the System Folder, and is named Claris.
2. The Claris XTND System is in the Claris folder.
3. The Claris Translators folder is in the Claris folder.
4. The translator files are in the Claris Translators folder, and are not compressed by any compression utility software.

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ClarisWorks: Searching for a Range of Dates with Match Records

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The following formulas for Match Records will find records that fall between two dates, in this example, between the date range 1/1/92 and 12/1/92.

AND ('DateField' >= TextToDate("1/1/92"), 'DateField' <= TextToDate ("12/31/92"))

or you can use the Date function:

AND('DateField'<=Date(1993,1,1),'DateField'>=Date(1991,6,1))

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ClarisWorks Users Group (CWUG)

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For more information, visit the ClarisWorks Users Group Web site at http://www.cwug.org or the CWUG forum on America Online (keyword: CWUG).

CWUG Information

Formed in 1991, CWUG is an independent support group with more than 14,000 members in the United States and 47 other countries all dedicated to helping ClarisWorks users.

ClarisWorks Journal

CWUG members receive the ClarisWorks Journal, a 24-page monthly newsletter that describes tips, techniques, and hints that help users get more from ClarisWorks. The ClarisWorks Journal includes other articles of interest to ClarisWorks users, including news of product releases and reviews of ClarisWorks enhancements and ClarisWorks-compatible software. CWUG works closely with Claris Corporation and Apple Computer to ensure that members get the latest information about ClarisWorks and easy access to help with their ClarisWorks issues.

Members Helping Members

CWUG members can get free, one-on-one technical support from their colleagues who volunteer for CWUG's Members Helping Members program.

CWUG publishes the names, telephone numbers, and e-mail addresses of 65 volunteers in the United States, Canada, and 18 other countries. Members call these volunteers to get answers to their ClarisWorks questions and ideas for their ClarisWorks projects.

This is a members-only service. If you are a CWUG member, the Members Helping Members (25k) database is available here in encrypted form. To obtain the key to extract the database send your CWUG ID number to CWUGbruce@aol.com with your request. We also publish updated lists in each June/July issue of the ClarisWorks Journal.

Public Domain Library

CWUG's comprehensive Public Domain Library offers more than 500 megabytes of ClarisWorks-compatible templates, fonts, graphics, utilities, and system software. We add to the library monthly and distribute the software on disks and through our on-line services. (Our license with Apple Computer prohibits us from distributing Apple software on-line. We distribute Apple products on disks only.)

Sales of public domain disks helps support CWUG; we immediately release all new software on disks. New software is posted on our electronic services approximately 90 days after it is announced in the ClarisWorks Journal.
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Macintosh Display Card 8/24GC and Raster Ops Monitors

I have a RasterOps Colorboard 108 plus video card and a RasterOps 19-inch Trinitron monitor. I also have two 1) Does the Macintosh Display Card 8/24GC support the RasterOps 19-inch Trinitron monitor?

2) If I install the Macintosh Display Card 8/24GC but don't connect a monitor to it, will it accelerate the display on the RasterOps monitor?

This article has been archived and is no longer updated by Apple.
1) The Macintosh Display Card 8/24GC supports any display that meets one of the following specifications:

Sense pins 10 7 4	Display	Hor x Vert Pixels	Dot Clock	Vert Refrsh	Horiz Refrsh
0 0 1	Apple Portrait Display	640 x 870	57.2832	75	68.9
0 1 1	Apple Two-Page Monochrome Monitor	1152 x 870	100	75	68.7
1 1 0	12-Inch Apple Monochrome Monitor	640 x 480	30.24	66.7	35.0
1 1 0	13-Inch AppleColor RGB Monitor	640 x 480	30.24	66.7	35.0

0 - Grounded 1 - Not Connected

Note that sense pins 4, 7, and 10 are referred to as SENSE0, SENSE1, and SENSE2 in pinout tables for the video connectors.

None of the RasterOps 19-inch Trinitron displays meets the above specifications. One of their 19-inch Trinitron displays has a vertical refresh of 75Hz and a horizontal refresh of 60.241KHz. We do not think that this will work properly, but you can try it in the "Apple Two-Page Monochrome Monitor" mode.

Here are the pinouts for the Macintosh Display Card 8/24GC:

Pin	Description
1	Red Video Ground
2	Red Video
3	Composite Sync
4	SENSE0
5	Green Video
6	Green Video Ground
7	SENSE1
8	Not Connected
9	Blue Video
10	SENSE2
11	Composite Sync and Vertical Sync Ground
12	Vertical Sync
13	Blue Video Ground
14	Horizontal Sync Ground
15	Horizontal Sync
Shell	Chassis Ground

2) If no monitor is connected to the Macintosh Display Card 8/24GC, the card will, in effect, turn itself off and not accelerate the RasterOps display system. You can trick the card into thinking that a monitor is attached by grounding pin 4. This will cause the card to accelerate other displays in the system.

TA41836_Macintosh_Display_Card_GC_and_Raster_Ops_Monitors_(TIL05477).pdf

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Claris Resolve: Column Width Set to One Point Crashes Program

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue has been corrected in Claris Resolve 1.0v3.

In Claris Resolve 1.0v2, if you select a column and set it for right justified text, then set the size using the CELL SIZE menu and set it to 1 point the machine will lock up.

Under System 7.0, you can do a command-option-escape to do a forced quit.
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ClarisWorks: Communications Tools INIT Appears on Startup

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue: Under System 6.0.x, the ClarisWorks Comm. Resource INIT appears at system start up even though I have removed all the files from the system folder. How do I remove it?

Solution: Launch the Installer for ClarisWorks and click on OK. Click on the Customize button. Select the "Comm. tools for System 6" item and hold the option key to toggle INSTALL to REMOVE and click it. The resources will be removed from the system. You will no longer be able to use the ClarisWorks communications environment, but everything else will be fine.

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Claris Resolve: Issue with N-Solve Function

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In Claris Resolve 1.0v2 & v3, there is a issue in the N-Solve function when formatting a cell or row of numbers.

* Go to the Calculate menu and choose Matrix- N Solve
* Go to the Format menu and select Set Format to display specified number of decimals for the row (other than default)
* When you reactivate the calc or add new entries , the formatting reverts back to the default 2 decimals.

Formatting numbers using the N-Solve function reverts back to default setting.
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Claris Resolve: Cell Fill Color Changing when Clicking in the Cell

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue has been corrected in Claris Resolve 1.1

There is a new bug introduced in Claris Resolve 1.0v3 that causes repaint issues under the following conditions:

* A cell the the left of the affected cell is filled with a color, and
* It contains right-aligned text.

If these conditions exist, clicking in any blank cell to the right (in the same row) will cause that cell to be painted the color of the cell to the left. This only occurs with blank cells.

This condition did not exist in 1.0v2.

To Duplicate:
Fill A1..A10 with text, right-aligned, and fill the cells with a color.
Click in any cell to the right on A1..A10.
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Claris CAD & MacDraw II: Pasting Spreadsheets Into

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Excel:
Copying an Excel spreadsheet, then pasting into Claris CAD or MacDraw II results in misaligned columns. This is because Excel copies all the cells to the clipboard as tab-separated text. Claris CAD and MacDraw II read the tab column separators as spaces. The best workaround is to copy and paste each spreadsheet column separately. Then align the text objects in Claris CAD and MacDraw II.

Claris Resolve:
When copying/pasting from Claris Resolve to Claris CAD and MacDraw II, each spreadsheet cell pastes as a separate text object. Gridlines, if displayed in Claris Resolve, also paste into Claris CAD and MacDraw II. All the cells and gridlines paste as a group, which can be ungrouped. Thus, when pasted, the columns align correctly.
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ClarisWorks, Impact: Calculated Cells Showing Round-Off Errors

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
A calculated cell (e.g. =300-299.73) that has a Number format of General may display as 2.6999999e-1 or 0.26999999999999999 when 0.27 is expected.

Solution:
Use Number... from the Format menu to format the cell as Fixed if you are using ClarisWorks. In ClarisImpact the Number Format... will be found under the Table menu.

Explanation:
Calculating the difference between two large numbers that is in the range of -1 to 1 may produce results that are slightly off. This is due to the fact that ClarisWorks relies on the Standard Apple Numerics Environment (SANE) for it's computations and there are some precision related issues in SANE that ClarisWorks does not correct for.

Another way to illustrate the issue above is:
A calculated cell (e.g. = 409.39 * .5) (the calculation result is 204.695) that has a Number format of General may display as 204.69 when 204.70 is expected. Following the above procedure will work but causes some issues.

The cell will display the desired figure, but when the contents of the formatted cell (formatted as 204.70) are included in another calculation, the real calculated number will be used (204.695). To avoid the possibility of a discrepancy between what is displayed and what is calculated, use the round function in calculated cells where rounding is desired. In the above example you would want to use the following formula - Round(409.39 * .5 ; the result is 207.70).
Published Date: Feb 18, 2012

ClarisWorks: Can‘t Open Microsoft Works Stationery Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is corrected in 1.0v3.

ClarisWorks 1.0v2 and earlier are unable to open files that are saved from Microsoft Works in Stationery format. To open these files, open them in Works and then save them in normal format which ClarisWorks will read.
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MacDraw/ClarisWorks: Exchanging Files w/other Mac Draw Programs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The PICT format should be used to import and export files to and from ClarisWorks, MacDraw II, MacDraw Pro and other Macintosh applications. Use the Save As command in the file menu, choose PICT for the file type, type a unique file name, then click Save. It is also possible to transfer graphics using copy and paste.

To open a PICT file, first open MacDraw II or Pro. Choose the Open command in the File menu, select the PICT file, then click Open.

Published Date: Feb 18, 2012

Claris Resolve/Works: Exchanging Files w/other Spreadsheet Programs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The SYLK format should be used to import and export files to and from ClarisWorks, Claris Resolve or other spreadsheet applications. This format preserves most cell formatting as well as calculation formulas.

With ClarisWorks 1.0v3 and above, you can open and save Excel files directly.

Published Date: Feb 18, 2012

Macintosh IIfx: DMA Access Support

Is DMA access supported to or from NuBus memory space on the Macintosh IIfx?

Which drives will benefit from DMA on the Macintosh IIfx? Is it only internal drives? Also, is it the same for both the A/UX and Macintosh OS?

This article has been archived and is no longer updated by Apple.
DMA access is supported to and from main memory -- but not to or from NuBus memory space. (The only way to access NuBus memory is through the NuBus controller chip, which is controlled by the 68030 CPU. This makes it impossible to do SCSI DMA involving NuBus memory on the Macintosh IIfx.)

Currently, only A/UX 2.0 supports the SCSI DMA capabilities of the Macintosh IIfx. SCSI DMA is possible on all SCSI devices, not just the internal SCSI device. The internal and external SCSI connectors support the same signals.

When running A/UX 2.0 on a Macintosh IIfx, any SCSI device (internal and external) will benefit from the SCSI DMA capabilities of the Macintosh IIfx.

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ClarisWorks: File is not Recognized as SYLK

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If a SYLK file opens as ASCII Text, it probably lacks a proper header. This happens with files from Accountant, Inc. from SoftSync.

For ClarisWorks to recognize a file as SYLK, the first line of the file must start with:

ID;POriginatingProgram

Just open the SYLK file as a Word Processing file, insert "ID;POriginatingProgram" into the first line, replace OriginatingProgram with the name of the program that created the file, and save as Text.
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ClarisWorks 1.0: Hard Disk Space Required

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Hard disk space used by ClarisWorks 1.0v2:

Easy Install (System 7)	2609K
HyperTour	731K
	3374K Total
Added resources for	80K
Comm. Toolbox (System 6)	_____
	3454K Total

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ClarisWorks: Leading Underline on Blank Lines when using QuickDraw Printers (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in 1.0v3.

Blank lines following a paragraph of underlined text will print with a small dash (underline) in the left margin with any QuickDraw printer using ClarisWorks 1.0v2 or earlier.

Here is a an example of what the text looks like on screen:

Now is the time for all good men to come to the aid of their party.
Now is the time for all good men to come to the aid of their party.

When printed out on either printer it looks like this:
Now is the time for all good men to come to the aid of their party.

Now is the time for all good men to come to the aid of their party.

Workaround
Put a space at the end of the underlined paragraph, select the space and format it as Plain Text (not underlined). The underlining continues to blank lines only when the last character of the previous paragraph is underlined.
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ClarisWorks: Printing a Database with a Title Page can Crash

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in 1.0v3.

Printing a database in ClarisWorks 1.0v2 or earlier will cause issues if the Title Page option has been checked in the Document dialog box. During printing, part of the current window will be redrawn incorrectly and trying to manipulate this window after printing can result in a crash.
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ClarisWorks: Printing A Single Envelope (WP,DR,DB)

Basic tips on how to set up a document to print an envelope.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Note: ClarisWorks 4.0 includes an envelope assistant to automate printing a single envelope. You can access it by selecting the New command in the file menu, then check to view assistant and stationary files.

Earlier versions of ClarisWorks do not have an automatic Envelope printing utility in the sense that you can launch a ClarisWorks document and just print an envelope.

However, with some formatting, you can easily create Database or Drawing documents (Graphics documents in ClarisWorks 1.0) which will print efficiently on envelopes.

The easiest way to do this:

1. Create a Drawing (Graphics) document.
2. Choose Page Setup from the File Menu and choose an Envelope paper format. (If you do not have an Envelope format that you can choose, this technique will not work.)
3. Choose the landscape orientation.
4. Click Ok.
5. When you get back to your document, you will see that the page looks like an envelope. Click on the Text tool at the top of the toolbar, click in the top left corner of the page, and type your return address.
6. Click on the drawing tool (the pointer) at the top left corner of the toolbar, then click on the Text tool again. Click in the center of the page and type the mailing address.

Try a printout and see how the results look. You might want to print on plain paper to check the placement of your text (hold an envelope over the printout to see where the text would appear on the envelope), and make any necessary adjustments in your document before printing onto real envelopes.

Remember that you will need to switch your document back to a normal page setup before printing on plain paper again. Be sure to go back to Page Setup and change your paper size back to US Letter and your paper orientation back to vertical.
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ClarisWorks Publication Correction: Installer will NOT Overwrite Existing Dictionaries

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Page 1-4 of the ClarisWorks Getting Started Manual incorrectly states that the Installer will replace an existing user dictionary in the Claris folder if it is named User Dictionary. In actuality, the ClarisWorks installer will not replace existing User Dictionaries.

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ClarisWorks: Publications Correction: Automatic Stationery

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
New versions of the documentation fix this error as of 5/92.

Page 2-25 of the ClarisWorks Handbook incorrectly states that you should name a stationery file "ClarisWorks <document type> Prefs" for it to open automatically when new documents are created. "Prefs" is incorrect. It should be "Options".

The correct names for Automatic Stationery files are:

ClarisWorks WP Options
ClarisWorks GR Options
ClarisWorks DB Options
ClarisWorks SS Options
ClarisWorks CM Options

Note: Saving a Macro file with the name ClarisWorks Macros will force ClarisWorks to automatically load these macros when it's first opened.
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ClarisWorks: Rotated Text: Printing and Saving as PICT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Printing

Rotated text will print as a 72 dpi bitmap on QuickDraw printers such as the ImageWriter, StyleWriter and HP DeskWriter. This results in lower quality text. Color information may also be lost.

Saving as PICT

When saving a file as PICT which contains rotated objects, the rotated objects will be saved as a PICT bitmap. This results in jagged printout to all printers, including Postscript LaserWriters. Also, the rotated objects will not be editable in other object-oriented drawing programs since it becomes a bit-map.

Workaround for Printing from ClarisWorks 2.0 or higher

Rotated text retains it's resolution in a Paint document. The ClarisWorks Paint environment is capable of creating documents and frames at several resolutions, including 300 and 360 dpi. The StyleWriter is a 360 dpi printer and the DeskWriter is 300dpi.

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ClarisWorks: Sorting on Calculated Cells may Produce Unexpected Results

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in 1.0v3.

ClarisWorks 1.0v2 spreadsheet is unable to properly sort calculated cells (cells containing formulas). For example, sorting on 0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4 in ascending order will produce 0.5, 1.5, 1, 2, 3, 4, 2.5, 3.5 when the values are the results of calculations (numbers or dates).

The workaround is to select the range of cells to be sorted and copy them. Click in another area of the worksheet and select Paste Special from the Edit menu, pasting Values Only. The pasted cells will then sort properly since they are data and not calculations.
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Macintosh: How To Get Serial Driver GPi Signal Access

As far as I know, the Macintosh serial driver supports checking the status of the HSKi (CTS) input line but does not support the GPi (DCD) input. With the Macintosh IIfx, developers are encouraged not to deal directly with the serial port hardware, since the IOP is in the way. In the past, this was the only way to use the GPi signal. Has the serial driver been extended to support the GPi signal? Support for it is necessary to properly handle high-speed modems.
This article has been archived and is no longer updated by Apple.
The GPi signal is still not supported by the Macintosh serial driver.

To access the GPi line on a Macintosh IIfx, it is necessary to turn off the IOP, as developers have done in the past on other Macintosh systems. This can be done using a control panel, called the "Macintosh IIfx Serial Switch" cdev, available from Software Licensing. Please contact Software Licensing at (408) 974-4667 for licensing information.

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ClarisWorks, Impact: SuperPaint PICT Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

SuperPaint saves paint objects as a full page. A PICT file from SuperPaint will import as a Grouped Picture. After ungrouping it, draw objects will have handles that surround the object itself but paint objects will include an extra white area of white pixels that cover the screen.

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ClarisWorks 1.0: Thunder 7 Incompatibility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in 1.0v3.

ClarisWorks is not compatible with Thunder 7, an interactive spelling checker from Baseline Publishing. In order to improve performance, ClarisWorks takes key entry at a lower level than Thunder. The result is that ClarisWorks is faster than Thunder and not all of the characters typed into ClarisWorks are read by it. Since Thunder receives incomplete words, it beeps as if you had entered an incorrect spelling.

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ClarisWorks 1.0: Var() Returning Negative Number or StDev() Returning #NUM! Error (SS,DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in 1.0v3.

ClarisWorks cannot compute the Standard Deviation or Variance for a certain number of cells (population size). For example, a cell with the formula =Var(A1..A500) may return a negative number while the definition of variance prohibits negative numbers. Since Standard Deviation is defined as the square root of Variance and it's impossible to have a square root of a negative number, ClarisWorks will return #NUM! for a cell with the formula =StDev(A1..A500).

In this example, you can get around the issue by putting =A1^2 into cell B1, then selecting B1 to B500 and choosing Fill Down from the Calculate menu. This creates a range of numbers that are the square of your current data which can be used with the following formulas to derive the Variance or Standard Deviation.

Instead of Var(A1..A500) use:
=(1/(COUNT(A1..A500)-1))*(SUM(B1..B500)-((SUM(A1..A500)^2)/COUNT(A1..A500)))

Instead of StDev(A1..A500) use:
=SQRT((1/(COUNT(A1..A500)-1))*(SUM(B1..B500)-((SUM(A1..A500)^2)/COUNT(A1..A500))))
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ClarisWorks: Y-Axis Labels are Clipped or Disappear

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There is a fixed distance between the Y-Axis and the left edge of a chart frame which may cause chart labels to be clipped on their left side. Since ClarisWorks displays all chart labels in the same Font, Size, and Style as they appear in your Spreadsheet, change the attributes of those cells so their contents may fit in the allotted space. If this is not desirable then you should find a way to reduce the size of the data itself.

You may choose to customize an ungrouped duplicate of your chart in the graphics environment in order to get wider labels. However, don't duplicate the chart until you've modified your spreadsheet so that all of the labels fit within the frame. Otherwise you'll find that ungrouping the duplicate of your chart will cause those labels that do not fit to disappear. Once ungrouped you can use the graphics tools to create a customized chart but only the original chart will reflect any changes that are made to the spreadsheet in the future.

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ClarisWorks: "Port is Not Available" Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you choose Open Connection in a Communications document, you may see a "Port is not available" alert. This can happen if AppleTalk Remote or another Chooser device is keeping the serial port in use. To fix this, while this alert is visible, hold down the option key. The "Cancel" button will change to "Override". Click the Override button to disconnect the serial port from the other Chooser device and allow ClarisWorks to use it.

Another reason the serial port might be busy is that your modem is hooked up to the printer port and AppleTalk is active. With AppleTalk active, the printer port is an AppleTalk port not a serial port. Either switch your modem connection to the modem port (turn off your Macintosh first) or turn off AppleTalk in the chooser.
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ClarisWorks: Error Message "...outside the document boundaries..."

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When attempting to translate a file into ClarisWorks, you may receive the error message "...outside the document boundaries...". This error message may result if the ClarisWorks Translators are either not installed or are not in the Claris Translators folder in the Claris folder. Install the translators from 1.0v2. (See article on matching translators file versions to the program version.)

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ClarisWorks: Freehand Objects, Borders, & the DeskWriter C

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in ClarisWorks 1.0v3.

There is a issue with printing freehand objects to the DeskWriter C and ClarisWorks 1.0 v1 and v2. If you unsmooth them, making them polygons, they print fine. If you fill them, however, the fill will print fine but the border will not without the following workaround.

How to print the border of a freehand object on the DeskWriter C:

1. Select a freehand object.
2. Choose Flip Horizontal.
3. Choose Flip Vertical.
4. Cut and paste it to the scrapbook.
5. Cut and paste it back from the scrapbook.
6. Choose Rotate twice.
7. Choose Print...

If an object is copied to the scrapbook and back again, then it is treated as a Grouped Picture. For some reason (probably because it's being treated as a bitmap), freehand objects will print when rotated as a Grouped Picture. The reason you flip the object first is so that it will be in its original orientation after rotation.
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MacDraw Pro: Custom Presentation / Slide Templates - Publications Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

PUBLICATIONS ISSUE:

MacDraw Pro ships with several Presentation / Slide Templates. The documentation (Page 7-14) mentions a document "Read Me-Template Information". It is refering to a Read Me file that is in the Presentations Folder, inside the Colors and Gradients folder.

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DOS Tool Kit: Switching HRCG on and off

The High-Res Character Generator can be turned on and off under software control.
This article has been archived and is no longer updated by Apple.
The following two subroutines will switch back and forth. The software was written assuming the variable "ADRS" is assigned as it is in the subroutine starting at line 2000 of MAXWELL on the Tool Kit diskette.

```
3000 REM TURN OFF HRCG
3010 PRINT CHR$(4);"PR#0"
3020 PRINT CHR$(4);"IN#0"
3030 HOME
3040 TEXT
3050 RETURN
4000 REM TURN ON HRCG
4010 CALL ADRS + 3
4020 RETURN
```

Beware: HRCG overwrites the text screen when outputting to the High-Res screen. It will destroy any information there. You will have to rewrite the text screen after using HRCG.
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AppleTalk: Zones and Multicast Addressing Questions & Answers

Here are some questions and answers about AppleTalk zones and multicast addressing.

This article has been archived and is no longer updated by Apple.

Q) How do machines that reside in the same zone know how to communicate with other machines?

A) Macintosh-to-Macintosh communication, such as transferring a file from a workstation to a file server, does not have anything to do with zones. The workstation knows the network number and node address of the file server and can send packets directly or through a router to the file server and vice versa.

Q) I've heard about a name table that is used with zone multicasting. Where does that table reside, and who maintains it? Does the router or the workstation maintain it?

A) Extended AppleTalk Phase 2 networks (EtherTalk 2.0 and TokenTalk 2.0) can have several zones defined for a single physical cable. When a user selects the zone that he wants his machine associated with, a multicast address for that zone is added to the hash table of multicast addresses that the Macintosh accepts. The hash table is maintained on the network adapter NuBus card.

Q) Who assigns the zone multicast address, and where is it done?

A) The multicast address for a particular zone is extrapolated from the zone name itself and is done by an AppleTalk Phase 2-compatible router on the extended AppleTalk Phase 2 network. A checksum algorithm is used by ZIP (Zone Information Protocol) to convert the zone name into a multicast address and is returned to nodes, with the multicast address for the zone that the node has selected, on the Internet through a GetNetInfo reply packet by the router.

Q) If I have two machines on Ethernet that are in the same logical zone and one is near the router and one is 300 meters away from the router, how do these nodes interact and not cause excessive traffic on the network? What happens if the two machines are on different networks (for example, Token Ring and Ethernet)?

A) See the first answer above. No extra packet traffic is generated.

Additional Information

A zone on an extended AppleTalk Phase 2 Internet is an arbitrary subset of the AppleTalk nodes on the Internet. A particular network can contain nodes belonging to any number Of zones. The zone list and network number range for a particular extended AppleTalk Phase 2 network (physical cable) is maintained by routers. Nodes choose their zone from a list of zones available for their network.

The only time zone multicasting comes into play is when an NBP call is made.

For example, your Macintosh is on network 1, an EtherTalk 2.0 network, and has selected zone "Campbell 2" as the zone to which it belongs. There are five other Macintosh systems on network 1; one is an AppleShare File Server and has selected the zone "Campbell 2" to belong to. The other four have all chosen "Soup 1" as their zone. Now, you open the Chooser and select the AppleShare icon. Your Macintosh sends out an NBP lookup for all AppleShare File Servers in the "Campbell 2" zone. This NBP lookup is encapsulated in an Ethernet packet with a multicast address that matches only two nodes on network 1: your node and the AppleShare File Server.

Only the AppleShare File Server node will process the packet. The others will ignore the packet because the multicast address does not match any address in their multicast address hash table. On an EtherTalk 1.0 network, every node on the network or same physical cable would have processed the packet.

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ClarisWorks: Unknown File Version Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When importing files of another format (e.g. Microsoft Works) users may get the message "Unable to import file. Unknown file version".

This message is an indication that ClarisWorks is recognizing the creator type of the file. It is identifying it as a AppleWorks or Microsoft Works file, for example, but is unable to read the version of the file. This will occur, for example, if the user attempts to open a MS Works 1.0 database file.

Two possible solutions
* Open and save the file in the version supported by ClarisWorks. (e.g. open the MicroSoft Works file in MSWorks 2.0)
* Export or save the file in a format supported by ClarisWorks. (e.g. Text, Export formats)

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Claris CAD: Cleaning Up the Junction of Three Walls

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Information on cleaning up the junction of three walls with the cleanup tool is explained in the Claris CAD help stack that ships with Claris CAD 2.0. The card that explains this is in the picture field for this record.

To get to this card:
1- Open the CAD help stack
2- Click the Index
3- Click the letter C in the index
4- Select the Cleanup Window
5- You're now in the first of three cards explaining the cleanup tool. Click the right triangle twice to get to the third card. This is the card that explains cleaning up a three wall junction.

Figure 1: Online help describes how to draw a three-wall junction
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Claris: General Instructions for the Set Up and Use of MacPlot

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Below are general instructions for using MacPlot. There are important details listed at the bottom of this record and on other records.

In general: Using MacPlot is like using any other printer driver; you must select it in the chooser, make sure that the cable is plugged in to the correct port (modem or printer) shown in the chooser and you should go to Page Setup and hit OK.

The most common issue by far is using the wrong cable! We do not support custom made cables or cables that are not listed on the record entitled, 'Cables Recommended for use with MacPlot.' Even if you can plot from other programs, that doesn't mean that the cable you are using will work correctly with MacPlot.

Once the MacPlot driver is selected, you use the MacPlot Configure program to configure the driver for the particular plotter you are using. To configure the driver:

1) Double click on the MacPlot Configure program. Under system 6.x, if the MacPlot driver is not selected in the Chooser, MacPlot Configure brings up the Chooser for you. In System 7, You must choose the MacPlot driver in the Chooser before launching MacPlot Configure.

2) Go under the Windows menu to Settings. This brings up the window where you select the particular plotter that you are going to plot to. Generally you will not have to change any of the other settings.

3) Go under the Window menu to Pen Info. If the plotter can handle more than one pen, you must add a pen for each color that you want to plot, and you must enter the position number for each color of pen that you wish to use. This is a common error! You must enter a position number.

4) Quit MacPlot Configure, go to your program and use the Print command to get the plot started. You may be prompted to make sure that the carousel and paper are in place.

If you are using System 7.0 or later, the MacPlot driver must be in the System folder and not in the extensions folder. If you drag the driver onto the System folder icon, System 7 will want to put it in the extensions folder. To avoid this, double click on the System folder to open its window and drag the MacPlot driver into the System folder window. The MacPlot Configure program may be anywhere on the drive.

There is a serious issue if you use a MacPlot driver previous to version 1.2 and PrintMonitor. It may corrupt the system. If you have a customer who has used an early version and PrintMonitor and has also printed to a LaserWriter you should assume that there is corruption in their system and it should be replaced!

Slowing down the pen speed may increase the quality of the final output. If you plot in draft mode, you will get a rough equivalent of the final mode plot. Hidden lines may plot, and objects that show on the screen may not plot accurately.
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Claris Resolve: Issues with Non-U.S. Scripts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are a few issues concerning the compatibility of the U.S. version with the German version of Claris Resolve. All Claris Resolve functions have been translated in the German version. For this reason, scripts written in U.S. version are not going to work in certain instances with the German version. This and what follow is also the case with the French version.

EXPLANATION:

Scripts written in the U.S. version of Claris Resolve containing functions (e.g. Sum(), Left(), Contains(), Round()) will not work with the German version which expects: SUMME(), LINKS(), ENTH□LT() and RUNDEN(). This ONLY applies to scripts that have been uncompiled, or scripts that have been saved as text. This is not an unreasonable limitation, as scripts are only text files, and to give Claris Resolve the ability to compile a (text) script that has been written in any language would be a major demand.

SOLUTION:

When you compile a script with no text,

COMPILE SCRIPT scriptname TO newscriptname NO TEXT

the function names within the script get stripped out and replaced with token numbers. The token numbers for the various functions are the same no matter what language they have been written in. This means that a US script will correctly run in the German version - with one limitation.

If a function is embedded in literal text, then it will not be tokenised when compiled. For example, if you have the following 1-line script in the US version

PUT Sum(1,2,3) INTO A1

and you compile it with no text, everything will be fine when you run it in the German version.

However =, if you compile the following in US version with no text,

PUT "=Sum(1,2,3)" INTO A1

you will get an error when you run it in the German version. The function Sum() will not be tokenised in this case because it is contained in a string.
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Claris Resolve: Copy as Picture

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you copy a range of cells in Claris Resolve, three layers of information are put on the clipboard:

"rslv" for Claris Resolve specific data
"pict" for picture-oriented data (fills and pen width, etc.)
"text" for plain-text use.

If you switch to a word processor and paste, most word processors will choose to use the "text" layer of the Claris Resolve clipboard. This lets you easily format the columns, fonts, etc. But sometimes you want the chart to show up just as it did in Claris Resolve.

The answer is to paste the items into a drawing program like MacDraw Pro. MacDraw Pro prefers to use the pict portion of the image, and discards the other two layers. After you paste, you can copy this item from the drawing program and and paste it back into your word processor.

The Copy As Picture utility added to Claris Resolve 1.1 has corrected this issue.

However, an Easy Install does not install the utility. To access it, do a Custom Install of the "Resolve Utilities Menu". Once this Custom Install has been completed, a Utilities menu will appear in Claris Resolve with "Copy as Picture" and a plethora of other options.
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Claris CAD: Inaccuracies and Drawing Issues with Arcs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In Claris CAD 2.0v3 and earlier, some arcs can contain errors, or inaccuracies. The issue can occur whenever the arc has a fractional starting angle, ending angle, or included angle. (If the start and end angles are integers, the included angle will also be an integer.) Midrange arcs usually are correct; the issue is mostly associated with exceptionally large, or exceptionally small arcs.

Apparently, QuickDraw can handle the arcs with integral included angles, and cannot deal with the fractional ones. When a fractional one must be used, we employ different routines, which can behave differently than the QuickDraw routines. (We in fact attach a small line to the end of the arc to attain the fractional adjustment.)

To eliminate the issue, set the starting angle, ending angle, and included angle to integral values. To do this you would:

1. Select the arc then select '"Show Info"' from the Layout.
2. Round the start angle in Show Info to the nearest whole number.
3. Round the end angle to the nearest whole number.

Note: The issue is also solved by exporting the file as EPSF format.
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Claris CAD: Arrows Dialog Locks up my Machine

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Q. When I bring up the "Arrows..." or "Line Styles..."dialog box my machine locks up. Sometimes the dialog doesn't appear fully on the screen. Sometimes I even see an error dialog. What is happening?

A. This should only happen when you have translated a file from Claris Graphics Translator. This happens because the arrow head size is scaled smaller then what Claris CAD can handle. The smallest arrowhead is .03 of an inch. A couple of work arounds are listed below.

1. Try to scale the drawing before coming into Claris Graphics Translator so the arrow heads are not scaled as dramatically. Note: Be sure to turn off the "Calculate object bounds" preference. You can find preferences under the "Layout" menu in Claris Graphics Translator.

2. Remove all arrow heads before translation by Claris Graphics Translator.

3. Copy and paste the information to a new Claris CAD file. This can be cumbersome if the document has several layers.

4. Save the document as a MacDraw II 1.1 file. Then re-open the file and save it back into Claris CAD format. This is less cumbersome than option 1, but can cause issues for users with arcs. The arcs may come back into Claris CAD slightly smaller than they were before. Please have users check for this issue if they choose to use this option.
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Claris CAD, MacDraw: Pen Weights do not Print Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: When printing to a Postscript LaserWriter, lines and polygons do not print with the correct pen weights. Some lines print thicker than others. What is the issue?

Solution:
Claris CAD: If you have Claris CAD 2.0v3 and the EPSF translator that comes with MacDraw Pro, save the document as an EPSF file, open this file in another program, then print.

Explanation:
Lines: Claris CAD (any version), MacDraw II and MacDraw Pro print lines as QuickDraw objects. Thus, horizontal and vertical lines print at the correct pen width. Other lines, however, print slightly thicker than the line's defined pen weight.

Polygons: Claris CAD (any version) and MacDraw II 1.0 print polygons as QuickDraw objects. Thus, horizontal and vertical sides within a polygon print at the correct pen width. Other sides, however, print slightly thicker than the polygon's defined pen width. MacDraw II 1.1, although it prints polygons as QuickDraw objects, prints polygons with the correct pen width. However, the maximum number of printable vertices in a polygon is reduced. MacDraw Pro prints polygons as Postscript objects to a Postscript printer. Thus, all sides of a polygon print at a contstant width.
Printing an EPSF version of such objects bypasses these limitations.
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ClarisWorks: Date and Time Fields

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ClarisWorks stores dates (and times) as the number of days since January 1, 1904. Cells or fields displaying large numbers rather than the dates or times that were entered should be formatted as date or time.

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ClarisWorks: 3-D Bar Chart with Log Axes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is corrected in 1.0v3.

In the Spreadsheet environment, creating a 3-D bar chart with data that includes a zero will cause the application to crash when LOG is selected. (1.0v2)

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Claris Resolve: Documentation Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Documentation / Publications Error

At the bottom of page 6-3 in the Claris Resolve User's Guide, the following paragraph gives an example of what you might want to use this feature for:

"You can also publish and subscribe between Claris applications. For example, you could publish a table of data from MacWrite II to Claris Resolve, create a chart of the data in Claris Resolve, and then publish the chart back to MacWrite II."

Well, this is incorrect. MacWrite II does not support Publish and Subscribe. MacWrite Pro, however, will support this feature. The paragraph should read:

"You can also publish and subscribe between Claris applications. For example, you could publish a table of data from MacWritePro to Claris Resolve, create a chart of the data in Claris Resolve, and then publish the chart back to MacWrite Pro."
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ClarisWorks: Conflicts with Moire Screensaver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a conflict with SmartForm Assistant, System 7 File Sharing and Moire (a screen saver). An error message -5000 occurs. If you remove Moire, everything works fine.

Also, crashes have been reported when opening ClarisWorks with Moire 3.02 while running System 6.07.
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Claris Resolve: Enter Key Does Not Change Cells on Discontiguous Selections

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you have two discontiguous selections and one or both of them contains a single cell, hitting the enter key will not change the current cell from the singe selected cell(s).

To reproduce:

1) Select cell A1. Hold down the command key and select cell A3.
2) Hitting the enter key should switch between the two selections, but it will not.

If either of the selections contains more than one cell, the enter key will move through that selection to the last cell, then to the single cell. It will then not move out of the single cell.
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Claris Resolve: ALERT Command

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve has an undocumented command call ALERT which brings up an alert dialog box. The syntax for this command is as follows:

ALERT number "text"

Where number = type of alert

Number	Type	Icon	Beep?
0	Warning	Hand/Stop	Yes
1	Comment	Talking Head	No
2	Error	! / Triangle	Yes

The number argument will accept virtually any number, however, numbers other than 0, 1 or 2 will bring up the standard MESSAGE dialog box with no icon or beep.

Additional index search words: missing
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Claris Resolve: KILL RANGE Command

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The KILL RANGE command used many of the Claris Resolve dialog and menu scripts is not explained in the documentation. This command is defined as follows:

KILL RANGE rangevalue

Recovers memory used while pre-defining a range used by a command or function.

If you don't use the KILL RANGE command, you won't have as much available memory for use with other commands.

Rangevalue must be an integer between 1 and 13, inclusive, representing a range pre-defined by one of the following commands:

1 REPORT HEADER RANGE [USING range]
2 REPORT FOOTER RANGE [USING range]
3 REPORT PRINT RANGE [USING range]
4 SORT RANGE [USING range]
5 TABLE RANGE [USING range]
6 INPUT CELL 1 [RANGE range]
7 INPUT CELL 2 [RANGE range]
8 VALUES RANGE [USING range]
9 BIN RANGE [USING range]
10 DATA RANGE [USING range]
11 CRITERIA RANGE [USING range]
12 CHART RANGE [USING range]
13 SERIES LABEL RANGE [USING range]
14 DIVISION LABEL RANGE [USING range]
15 TITLE RANGE [USING range]
16 FOOTNOTE RANGE [USING range]
17 AXIS TITLE RANGE [USING range of Axis 1]
18 AXIS TITLE RANGE [USING range of Axis 2]
19 AXIS TITLE RANGE [USING range of Axis 3]
20 AXIS TITLE RANGE [USING range of Auxiliary Axis]
21 SERIES DATA RANGE [USING range 1]
22 SERIES DATA RANGE [USING range 2]
23 SERIES DATA RANGE [USING range 3]

NOTE: This command is missing from the documentation provided with Claris Resolve 1.0. The rangevalue arguments, however, are the same as those used by the GetRange function listed in the online Scripting Reference Guide.
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Claris Resolve: Rotate text in your worksheets

The ResolveScript commands "add text" and "rotate on" let you place rotated titles into your worksheet.

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This article has been archived and is no longer updated by Apple.
Q .Is there a way I can rotate text in Claris Resolve? I want to place a horizontal heading along one of my columns of figures.

A. Although you won't find a rotate command in the menus, you can easily apply a short ResolveScript command to get the rotated heading you need.

Suppose you've got your series of figures in the range D2..D18. You want the heading "Before Discounts" to appear to the left of these values, in range C2..C18. Just type the following line into the Entry bar, and--this step is especially important--press Command-return at the end.

add text "Before Discounts" range C2..C18 text rotate on

You'll see the text "Before Discounts" appear, rotated 90 degrees. You can change the font, size, shape, color, location, etc., of this text to suit your needs. But you can't edit the text inside the object after it's placed.

Here's how it worked: When you pressed command-return, instead of the usual plain return, Resolve treated your entry as a script command, not a cell entry. (Any script command can be issued in this "interactive" fashion, similar to the way the HyperCard message box works.) The "add text" command creates a special kind of object called a "control." Controls are normally used only when you're writing a script, to create custom dialog boxes. Text you add with the usual method, the text tool, can be edited at any time, but not rotated. Text in controls can be rotated, but not edited.
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Claris Resolve: Scripting the Find Dialog Box

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There is no Claris Resolve Script command to display the Find dialog box. As with most of the dialog boxes used in Resolve, the Find dialog is created via a Resolve Script function.

Call the following function to bring up the Find dialog box:

CALL Dialogs:DGFind()

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Claris Resolve: ATIME Documentation Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Documentation / Publications Error

There is an error in the online Scripting Reference stack related to the ATIME function. The picture command for seconds is listed as" ss" when it should really be "sc".

This is inconsistent with the NCustFormat function which uses "ss" for seconds. This inconsistency will be remedied in a future version of the product when "sc" will be replaced by "ss". Currently, the manual correctly lists seconds as "sc" so it will be in error when this parameter is changed.

The NCustFormat function does not support hundredths of a second so the "hn" picture command does not work (it returns a composite of the hour and minute).

NOTE: The NOW() function does not return hundredths of a second so the "hn" picture command will always return zeros when used in the ATIME function where NOW() is the serial number argument.

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DOS Commands While Running Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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There are a few DOS commands that should never be entered while Windows is running. Entering these DOS commands while Windows is running may cause data loss or corruption:

CHKDSK, SUBST, JOIN, FASTOPEN, or ASSIGN.

In addition to these commands, there are applications which may cause file loss or corruption, and should not be used when Windows is running:

Norton Utilities, Disk Doctor, or any other application that modifies the hard disk's File Allocation Table (FAT).
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ClarisWorks: Split Window Feature

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The Split Window feature allows you to split the window into several panes and view different parts of your document at the same time. You split windows into panes using pane tool.

To split a window:
Click on the panel tool and drag it to the desired split position. When you release the mouse button, the document will show a pane divider. The pane has its own scroll bars. You can split a window into a maximum of three horizontal and three vertical panes (a total of nine panes). To remove a split, click and drag the pane tool back to its original position, until the pane divider disappears.
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MacWrite, MacPaint or MacDraw: Obtaining Early Versions

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Currently (February, 1992), Claris cannot provide replacement disks for the following early versions of MacWrite, MacPaint, or MacDraw:

MacWrite: Any version prior to 5.0.1
MacPaint: Any version prior to 2.0
MacDraw: Any version prior to 1.9.8

People who have older Macintosh computers and/or prefer not to upgrade their software can contact a local users group for replacement disks for some of these versions. To find a local user group, call Apple's User Group Connection at 800-538-9696.

Another source for older software versions is B&R Computer Services. They also buy, sell, support, and repair older Apple and Macintosh computers and software.
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Claris Resolve: Global Variables and the Now() Function

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In order to access a variable defined in the Worksheet script from a button script, you must specify the name of the worksheet along with the variable name as follows:

'Worksheet Name:Variable Name'

This can cause serious issues if the name of the worksheet is changed. Below is a sample script which sets a Worksheet script variable without having to hard code the name of the worksheet:

```
ON MOUSEUP
SELECT RANGE A1
RUN "" & Name() & ":theVariable' = True()"
END MOUSEUP
```

There is one issue with this method. The Name() function returns the name of the currently selected object or the worksheet if no object is selected. If the current selection is not a cell when this script is run, therefore, it will not produce the desired result. This is why the first line of the above example selects the range A1. We could select any range here or, to be more sophisticated, check the type of the current selection (using the Selection() and IsRef() functions) and only select a cell if the current selection is not a range reference. The point is that we need to make sure that a range is selected so the Name() function returns the worksheet name and not some random object name.

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ClarisWorks: 50 Rows or 10 Columns Limits?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When you create a spreadsheet frame in a word processor document, you get 50 rows and 10 columns as a default size. If you try to resize the frame larger than that or if you try to paste more data than that, it will not work.

To enlarge the size of the frame, select the frame and go under the View menu to Open Frame. Then go under the Format menu to Document and increase the number of rows and columns to fit your needs.

This situation will sometimes occur when trying to resize across a page boundary. The issue is not the boundary; it is the default size of the frame.

There is an alternate method which allows the user to add 5 rows at a time to a spreadsheet frame of a word processing document without opening the frame.

Create the frame and expand it to 50 rows. Go under the Options menu to Frame Links. An arrow will appear at the bottom of the spreadsheet frame. Click the arrow and create a new spreadsheet frame with as many new rows (up to 5 additional) as you want. The first row will be row 51. Now go back and resize the first frame and then you can delete the second frame.
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ClarisWorks: Cell Formatting Removed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In a Spreadsheet, when you delete data from a cell using either the delete key or command-X, all the formatting for that cell is lost (bold, borders, etc).

If you update data (replace data within a cell with different data), then type either return, enter, or go to another cell via the direction arrows on your keyboard, the cell retains its' formatting. Only deleting all the data in a cell results in lost formatting.

Note: This is not the case in ClarisWorks 2.x. In ClarisWorks 2.x, when you delete data from a cell using either the delete key or command-X, only the value within the cell is deleted. You have to use the Clear key (from your keyboard), or the Clear command from the Edit menu, in order to delete both the formatting as well as the cell's value.
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ClarisWorks: Date Formats

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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This is to clarify the issue with date formatting in ClarisWorks running under non-US system software.

Issue: Dates in ClarisWorks which are formatted, don't retain the chosen format.

Solution: ClarisWorks looks to the System resources for its date formats. In the French Canadian System, dates are only recognized if they contain the leading zero in the day AND month portion of the date string. Example (using dd/mm/yy format):

"7/2/92" is not accepted by the system as a date string. The correct entry is "07/02/92".

NOTE: Users of French System software must NOT include the leading zero with the day entry but must include it with the month entry only. Example (using dd/mm/yy format):

"7/2/92" and "07/02/92" are incorrect. The correct entry in this case is "7/02/92".

In general, the date string entered by a user must match the date format in the itl0 resource in the system exactly.
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ClarisWorks: Fields Do Not Fit on Standard Layout Message

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When you choose "Insert Field..." from the Layout menu, ClarisWorks puts the field at the bottom of the body, below any other object, in the current layout. If the body line is down near the extent of the maximum layout size and there is any object (field or text or graphic) near the body line, then there will not be enough room to insert the field and you will get the message 'Some fields do not fit on the standard layout. Move existing fields to create space and then insert remaining fields in layout mode.'

The solution is to free up space at the bottom of the layout and then insert the fields.

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ClarisWorks: File Translation from AppleWorks & Demo

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The ClarisWorks Translators file from the ClarisWorks demo or 1.0v1 does not translate AppleWorks database and spreadsheet files. In fact, it presents a strangely empty dialog box and then a named but otherwise untranslated file window. Since the installer will not overwrite the existing ClarisWorks Translator file (from the demo or 1.0v1) , you must trash it and drag on a new copy from the update disk. The version of ClarisWorks Translators must match the version of the Program. (i.e. 1.0v3 of the Program with 1.0v3 of the Translators file.)

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ClarisWorks: Frame Will Not Expand Across Page Break

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you are trying to resize a ClarisWorks Spreadsheet Frame in a Word Processing document or a ClarisImpact Model in a Report document and you try to go across a page boundary, it will only work if you have already created the next page.

In other words, let's say that you have a one page Word Processing document or a Report document and you want to resize your Frame or Model to the second page. You have to create the second page first, or you just won't get the frame across the boundary.

To create the second page you must create type that extends past the first page. Hitting return a bunch of times works. If you delete what you have typed on the second page, the page will disappear.
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ClarisWorks: How to Find Records in ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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There are three methods for selecting records in ClarisWorks:

1. Find/Change command (Edit menu; Cmd-F/Ctrl-F). This searches all fields for the next occurrence of the word you specify.

2. Find command (Layout menu; Shift-Cmd-F/Shift-Ctrl-F) which functions somewhat like the Find command in FileMaker, with these differences:
-a- These operations are not available in the ClarisWorks Find mode:
Ranges(...) within a field
Blanks(=)
Duplicates(!)
-b- Finding on text finds embedded characters as well as words that start with those text characters. For example, finding "sm" in the Last Name field finds all records that contain "sm" anywhere in any word in the Last Name field (Smith, Blacksmith, etc.)
-c- Math operators do not work in text fields. For example, entering ">=S" will not find any records. To search text using math operators, see the info on Match Records.

3. Match records (Organize menu; Command-M). This lets you enter a search formula, like:

AND(('FirstName'="Bob"),('State'="MI"))

After using Match Records, the found records are selected, but all records, selected and unselected, are still browsed. Usually, you'll want to use the Hide Unselected or Hide Selected command immediately after using Match Records.

TIP: If you are using ClarisWorks 1.0, while the Match Records dialog is open, select the formula, then Copy (Cmd-C/Ctrl-C). You can then reselect Match Records and Paste the formula back into this dialog box, so you won't have to enter the formula from scratch. ClarisWorks 2.0 retains the last formula when you enter "Match Records" again.

TIP: Finding a range of Records
You can find ranges using the Match Records method with the AND function.
For example, this formula:
AND('LastName' >= "D", 'LastName' <= "F")
finds the records where the first character in the last name field is D, E or F.

TIP: Finding blank records
The ISBLANK function detects records where a field is blank. In Match Records, the formula:
ISBLANK ('LastName')
will select all records where the LastName field is blank.

TIP: Finding duplicate records
To identify duplicate records, you could create a sub-summary report by the field you want to find duplicates on and include a summary field which counts. Anything with a count of 2 or more would be a duplicate, which you could manually delete.
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MacDraw II: Printing to LaserWriter

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Printing a MacDraw II document (any version) to the LaserWriter, a large area of the page may be covered by a large, solid-black, triangle - shaped polygon. This is caused by a corrupted arrowhead on the drawing. The arrowhead is located at the point of the triangle. Delete the arrow line, then redraw it. If the large polygon still prints, another arrowhead may be corrupted. Continue deleting and redrawing the arrow lines until the issue is solved.

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ClarisWorks: Separating City, State and ZIP into Separate Fields

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In many databases it is common to enter city, state and zip information into one category (field). However, if you separate this information into separate fields, you'll have more flexibility in formatting this information on a layout, and in finding and sorting records. When you convert a database file from your old database program to ClarisWorks, the city, state and zip information may still be in a single field. Here is a suggested way to separate this information into three fields:

Note 1: This example assumes that you have entered the city, state and zip information with a coma after the city, and the two letter designation for the state. This example also assumes that the field containing the city, state and zip information is named "CSZ".

City (calculation,text) = IF(FIND(",",'CSZ',1),LEFT('CSZ',FIND(",",'CSZ',1)-1),LEFT('CSZ',FIND(" ",'CSZ',1)-1))

State (calculation,text) = MID('CSZ', FIND(",", 'CSZ',1) +2 , 2)

Zip 9 (calculation,text) = IF (FIND ("-",'CSZ',1),RIGHT 'CSZ',10),RIGHT ('CSZ',5))

Note 2: Make sure your "format results as" selection is set to Text. If not, click and drag to change it. Check the three fields in Browse mode to verify that they correctly separated the information. If so, return to Define Fields and change each field from a Calculation field to a Text field. Finally delete the original Text field.

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MacDraw Pro: Adobe TypeAlign Issues

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Issue #1:
The following issue has been observed using Adobe TypeAlign 1.0.4 with MacDraw Pro 1.0v1: When text objects from TypeAlign are placed into MacDraw Pro (either through the clipboard or by an imported PICT), other text objects created in MacDraw Pro may print in the wrong font or size.

Solution: Select all the TypeAlign objects (which must be ungrouped). Choose Move to Front.

Explanation: TypeAlign objects seem to effect other text objects that are higher in the stacking order, making them take on font and style attributes of the TypeAlign objects. Thus, by moving the Type Align objects to the top of the stacking order with Move to Front, all MacDraw-originated text objects will be lower in the stacking order and unaffected.
At this point, the issue appears to be a TypeAlign issue.

Issue #2:
TypeAlign objects copied and pasted into MacDraw Pro appear correctly on screen, but print incorrectly, looking like a barcode.

Solution: Save As an EPSF file from TypeAlign, then Place into MacDraw Pro, instead of using the clipboard. The EPSF will print correctly.
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ClarisWorks: AutoDoubler Issues

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AutoDoubler version 1.0 has been reported to sometimes unbundle FileMaker Pro files. This results in files losing their icon and giving the "Application busy or missing" message when double-clicked.

The bundle bit is stored in the header of each file, and acts as a pointer to the file's creator, where icon resources are stored, among other things. AutoDoubler compresses and decompresses files in the background, and is known to unbundle PageMaker files. A utility for re-bundling PageMaker files ships with the product, but does not work for FileMaker Pro files. AutoDoubler is a cousin of DiskDoubler.

The developer, Salient Software, has been notified of this report and will investigate the issue.

AutoDoubler, versions prior to 1.0.5, will conflict with opening files created by ClarisWorks or FileMaker Pro.
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Claris ReSolve: Wingz Verses Resolve Functions

Claris Resolve & Wingz have functions with the same names but their parameter lists may have a different order.
This article has been archived and is no longer updated by Apple.
This can cause confusion if you have used Wingz and are now using Claris Resolve and are getting different answers on your spreadsheets. The PV and PVL functions are examples of two such functions.

There is a Technical Note available discussing the differences between Resolve Script and HyperScript. This tech note is available from Claris Technical Support.
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Macintosh Portable: How the Sleep State Works

Is there any way to make the Macintosh Portable wake up from sleep just by presenting information on the serial ports? Also, can you put the screen and the disk to sleep and still have full access to the logic card?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable will wake up for various reasons but not by sensing information on the serial ports.

In sleep mode, the Macintosh Portable has all system power turned down except for the keyboard processor and the modem card ring-detector circuitry, if one is installed.

Three possible conditions will end the sleep state:

- If a key is pressed on the keyboard.

- If the wake-up timer is enabled and matches the real-time clock.

- If the Macintosh Portable internal modem is installed and set up to watch for "ring detection".

You cannot selectively put some Macintosh Portable components to sleep, except for the hard disk drive via the Portable CDEV.

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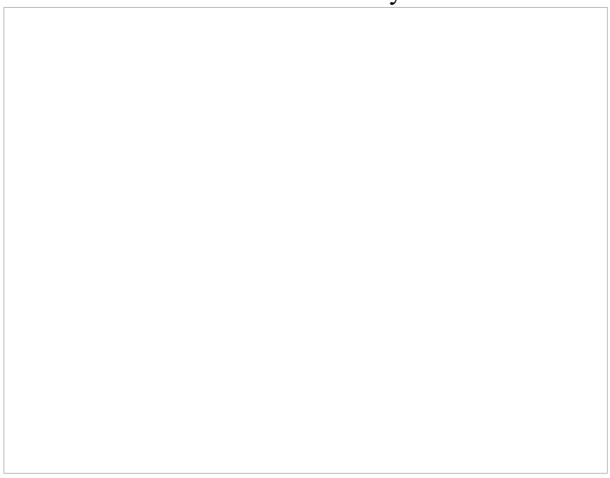
MacDraw II or MacDraw Pro: Translated DXF File Error Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

A DXF file translated to MacDraw II using CGT may result in an error message when opened into MacDraw II or MacDraw Pro.
MacDraw II error message:
"This document contains some objects not recognized by this verison of MacDraw II...".
The file will open if the OK button is clicked.

MacDraw Pro error message:
"Sorry, there are issues communicating with the translator 'MacDraw II 1.1'."
The file will not translate into MacDraw II at all.

These error messages occur because there are points (point objects) in the DXF file that CGT is translating into the MacDraw II file. There are two workarounds to this issue.
Solution #1:
Use CGT to translate the DXF file to a Claris CAD file. Open the Claris CAD file in Claris CAD 2.0. Save the file as a MacDraw II file. This file will read correctly into MacDraw Pro.
Solution #2:
Turn off the points in Autocad, then do a DXF out. This may cause the points not to be exported to DXF. CGT can convert this DXF to a MacDraw II file that can be translated by MacDraw Pro.



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ClarisWorks: Clipped Columns in Word Processing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing a ClarisWorks word processing document containing columns with LaserWriter driver 5.2, only the first column and the leftmost part of the second column may print. Updating to LaserWriter 6.02 or later eliminates the problem.

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ClarisWorks: How To Display Leading Zeros In A Cell

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In some cases you may want to display a number with leading zeros (i.e. 007). ClarisWorks Spreadsheet and ClarisImpact Table Model will normally identify 007 as a number and trim the leading zeros. To override this, type an equal sign and enclose the number in double quotes.

Example: ="007"

In the above example, 007 will be displayed WITH the leading zeros and will default to left justification as all text fields do.

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ClarisWorks: NOW Function Does Not Update Automatically

The NOW function does not update automatically but can be forced to update using commands.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The NOW function does not update automatically when you open a spreadsheet or database document. You must force the NOW function to update using the Calculate Now command in spreadsheets or for databases, by choosing Define Fields from the Layout menu and pressing the Done button.

This is the way the NOW function was designed to work.
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ClarisWorks: Single Column Print Ranges in Spreadsheets

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Printing with a single column print range will result in a corresponding second page being produced. This spurious page will display a series of row headers, or a vertical line if row headers have been deselected with the display command.

The workaround is to select two columns for the print range, then collapse the second column so it is hidden from view.

This issue occurs in every version of ClarisWorks 1.0 and is still under investigation. It may be related to the print driver selected.
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ClarisWorks: Using Correct Grammar Bundled w/MacWrite II

You must first save your ClarisWorks documents in MacWrite II format to check them with the version of Correct Grammar included with MacWrite II.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
For all versions of ClarisWorks, the special version of Correct Grammar that was shipped with MacWrite II 1.1v2 will not recognize native ClarisWorks word processing files. In order to use Correct Grammar, save the ClarisWorks file in MacWrite II format.

WordStar has plans for Correct Grammar to support grammar checking for ClarisWorks 1.0 and 2.0 files. However, this will require purchasing the full version of Correct Grammar.

Correct Grammar
WordStar
800-227-5609
404-428-0008
Published Date: Feb 18, 2012

Claris Resolve: Publish & Subscribe with Microsoft Word 5.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When publishing a Claris Resolve 1.0v2 spreadsheet and subscribing to it in Microsoft Word 5.0, the data comes into Word as tab separated data with a return after each row. One can then use the Text to Table menu item under the Format menu to change it to a table.

When publishing/subscribing over a network, the volume that the publisher resides on must be mounted on the desktop before subscribing for the first time. When reopening the subscriber, the volume that the publisher resides on will automatically be mounted.

REMINDER: a published edition will only be updated when the publishing document is saved. Therefore, after making changes to data in Claris Resolve, select save and watch the information update in Word .
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ClarisWorks: Setting up Mailing Labels

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This article describes in detail the steps needed to create custom mailing labels for all versions of ClarisWorks software. The ClarisWorks User's Guide/ Handbook and Help also contain instructions for creating label layouts. In addition, newer versions of ClarisWorks software include Assistants that greatly simplify the label-making process.

Before you can create mailing labels, your information must be entered into a database. If you don't yet have a database with your names and addresses in it and you are using ClarisWorks 5.0 or ClarisWorks 4.0, you can use an assistant to create your database:

ClarisWorks 5.0:
Select New from the File menu. Click the "Use Assistant or Stationery" radio button, then select "All Assistants" for the Category. Choose Address List, then click OK and follow the instructions in the assistant. Once done, delete the example people in the Address List and add your own contacts.

ClarisWorks 4.0:
Select New from the File menu. Click the Use Assistants checkbox, then select the All Assistants category. Select "Name and Address List" and open it. Follow the instructions; when done, delete the examples and add your own contacts.

If you are using ClarisWorks 5.0 or ClarisWorks 4.0, you can use an assistant to create your labels and skip the rest of the steps in this article:

ClarisWorks 5.0:
In your Address List database, go to the Help menu and choose ClarisWorks Assistants. Click on Create Labels Assistant, click OK, and follow the instructions.

ClarisWorks 4.0:
Open your database. While in Browse mode, select ClarisWorks Assistants from the Help (?) menu and choose Create Labels. Follow the instructions as they appear.

If you are using ClarisWorks 3.0 or earlier or would like to create a label layout without using an assistant:
Step #1: Setting Document Margins
Select the Document command from the Format menu. Set the document margins to match the labels:
Label Sheets: Set the top margin to match the distance from the top of the label sheet to the top of the first label. For 1-inch labels, this is usually 0.5 inches. Likewise, set the left, right, and bottom margins to match the label sheet. If the labels extend all the way to the edge of the sheet, set the margins to the smallest allowed by your printer, usually between .25 and .5 inches. Click OK to exit the Document Dialog. If printing to a LaserWriter or other Postscript printer, select Page Setup; click Options, then set the "Larger Print Area" so it's checked. Click OK twice to exit Page Setup.
Note: This Larger Print Area is needed for many, but not all labels. However, it's OK to turn this option on whether it's needed or not.

These example settings for the following Avery labels should work with most LaserWriters:

Label No. Top/Bottom Margin
5160 0.5/0.5
5196 1.75/0.25
5197 1.0/1.0

Tractor Feed Labels: Set the top and bottom margin to zero. Set the left and right margins to the minimum supported by your printer (usually 1/4"). Click OK to exit the Document Dialog. Then select Page Setup. Set the "No Gaps Between Pages" option so that it's checked.
- To print labels that are 1" high, choose US Letter for the Paper Size.
- To print labels that are 2", 3", or 4" high, choose International Fanfold Paper Size (it's a 12" paper height, so it's an even multiple of 2", 3" and 4").
- To print labels that are 3.5" high, choose US Legal Paper Size.

Step #2: Creating a Label Layout
Choose New Layout... from the Layout menu
ClarisWorks 1.0 / ClarisWorks for Performa: Click on "Label" for the layout type. Click OK. Go to Step #3 below.
Other versions: Click on "Label" for the layout type. Click the "Custom" pop up menu, then select your label model number (e.g., Avery 5160). Click OK and skip to Step #4 below. Or, to set your own label size, choose Custom, click OK, and go to Step #3.

Step #3: Setting Label Size
In the Label Layout dialog, set the correct dimensions according to the following guidelines. Click OK.

- -Label size means the distance from edge to edge of two adjacent labels. For instance, a label's height is 1.0 inches if the distance between its top

edge and the top edge of the next label is 1.0 inches, even if the label's specifications say that they're 15/16" labels.

These settings for the following Avery labels should work with most LaserWriters:

Label No.	Label Width	Label Height
5160	2.75	1.0
5196	2.75	3.0
5197	4.19	1.5

Note: you cannot get back into this screen after the layout is created. If you set this information incorrectly, make a new layout starting with step #1 above.

Step #4: Choosing the Fields
Double-click on each field you want on the label. When done, click OK. You will now be looking at the label layout. All the fields will be in a single column and will be the full width of the label.

Step #5: Positioning the fields
You'll need to adjust the width and position of the fields. For example, to get FirstName and LastName fields on the same line, first make the field boxes shorter. To do this:
- You must be in the Layout mode (select Layout from the Layout menu).
- Click once on a field box to select it.
- Click the selection handle at the bottom right corner and continue to hold down the mouse button, then drag left to resize it so it's shorter. Release the mouse button when the field is the desired size.
-When the fields are resized, click inside the field box (not on the handles) and drag it into position.
- You'll need to place all the fields ABOVE the Body line and to the left of the vertical column line so that they'll print correctly.

Step #6: Positioning fields for sliding objects
The sliding objects feature is automatically turned on when you create a label layout. Sliding objects will, for example, close up extra space between the FirstName and LastName fields when you print. In order for sliding objects to work correctly:
- To slide up or left, fields cannot touch or overlap. You can verify this by increasing the window zoom level to 200% (lower left corner of the screen) , then moving fields apart if necessary.

- To slide left, all the fields in a row need to have their tops perfectly aligned. The easiest way to do this is to select all the fields in a row (hold the shift key, then click on each field), then choose Align Objects from the Arrange menu. Choose Align top edges; Left-to-Right: none.

- To slide left, objects must be of equal height or shorter than the object to their left. In other words, now that you've got the tops of the fields in a row aligned, the fields need to be sized so that the bottoms of the fields are aligned. If you have a row of fields such as "City", "State", "ZIP", then "State" can't be taller than "City" and "ZIP" can't be taller than "State". You can verify the size of the fields by increasing the window zoom level to 200%. Sliding up is not affected by field width.

Note: Objects slide only for printing, not on screen. To see if sliding is working, either print the document, or use the Preview option if your printer driver offers it (DeskWriter does, for example).

If a label layout does not print correctly on your labels, it's usually easier to start over and make a new layout than it is to fix an existing layout.
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ClarisWorks: #VALUE! Cell Entry in Spreadsheet

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This article has been archived and is no longer updated by Apple.

A calculation formula that refers to cells containing text and cells containing numbers will display the #VALUE! error message. This message indicates that the formula is unable to return a number based on text values.

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ClarisWorks: Age Calculation Based on Birth Date Field or Cell

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Use the following formula to calculate an age given a birth date. This formula will work in a ClarisWorks Database document given a field named Birthdate, or in a ClarisWorks Spreadsheet document or ClarisImpact Table Model using a cell reference rather than a field name.

Age (Calculation, Number result)
=YEAR (NOW()) - YEAR ('Birthdate') - (IF (NOW ()<DATE (YEAR (NOW ()), MONTH ('Birthdate'), DAY ('Birthdate')),1,0))

This formula subtracts the year of birth from the current year and subtracts an additional year when the month and day of birth fall between Jan 1 and the current month and day (since the person hasn't had their birthday yet).

To calculate the age in years and months:

Some teachers need to be able to calculate a student's age for placement reasons. This series of calculations will allow you to enter a birth date and calculate the age in years and months.

Birthdate (Date)
Interim (Calculation, Number result) = NOW()-'birth date'
Month (Calculation, Number result) = ROUND(MOD('interim',365.25)/30,0)
Year (Calculation, Number result) = INT('interim'/365.25)
Output (Calculation, Text result) = CONCAT('Year'," Years ",'Month'," Months")

One caveat: This calculation will fix the age to the date that the birth date was entered. To update, go to define fields, double click the field description and press OK and Done to recalculate.
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Claris Resolve: Checking for Open Worksheets

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When writing a Claris Resolve script, it is sometimes necessary to determine if a particular worksheet is open. The NAME function will return the name of the current worksheet (if the current selection is a cell). When several worksheets are open, however, there is no built-in command to determine the names of all the open documents.

One technique you can use to determine whether a worksheet is currently open requires that a dummy function be placed into the Worksheet Script of each file you what to check for:

```
FUNCTION isOpen()
RETURN 1 {this line is not really necessary}
END FUNCTION
```

You can then call this function from a script and check for the existence of an error. If an error is returned, the worksheet is not open.

```
IF ISERR(Worksheet1:isOpen()) {replace Worksheet1 with the name of the worksheet}
MESSAGE "The worksheet is not open"
ELSE
MESSAGE "The worksheet is open"
END IF
```

In this example, we are simply displaying a message. Replace the message commands with code to perform the necessary operations for each case.
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Crashing/Hanging when Launching Application

Some troubleshooting tips if your application crashes whenever you try to launch it

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Issue: Claris application crashes or freezes with a system error when launched or opened.

Solution: The issue may have one of several causes. The following are steps to correct this issue:

- Turn off Extensions (hold down the Shift key while restarting the computer). Launch the program to see if the issue is resolved. To determine which extension is causing the system error, you can use the Extensions Manager Control Panel to turn specific extensions on/off. When you determine which extension is the issue, you can replace or update it.

- If the issue persists, open the Preferences folder, inside the System Folder. Locate the file XTND Translator List. Delete it. Restart the Claris application. The file will be recreated.

- If the issue persists, the Claris Fonts file for the Claris application may be corrupted. First, delete the Claris Fonts file. This file is located in the Claris folder, which is inside the System Folder:
- for FileMaker Pro 4.0 or 3.0 - this file is called FM Pro Fonts
- for ClarisWorks 4.0 or higher - this file is called ClarisWorks Fonts
- for all other Claris Applications - this file is called Claris Fonts

Your Claris folder may contain one or more of these files. Delete the file that corresponds with the Claris application that won't launch. Restart the Claris application. The file will be recreated.

- If the issue persists, a font may be corrupted. To test this, create a new folder on the Desktop. Then, open the Fonts folder, which is inside the System Folder. Drag all the font suitcase files into the folder on the desktop. Restart the Claris application. If the application still will not launch, put all the font files back into the System folder and proceed to the next step. If the application launches successfully, one or more font files are damaged. To determine which font is corrupt, try putting half the font files back into the Fonts folder and relaunching the Claris application. Continue narrowing down the possible bad fonts in this manner. Throw out and/or reinstall any fonts that are corrupt. See also the article "System Freezing at the Splash Screen Spells Font Trouble."

- If the issue persists, rebuild the desktop (hold down the command and option keys while restarting the computer), then run Disk First Aid or Norton Disk Doctor. Disk First Aid is included on your System disks. Instructions are included in your computer's owners manual.

- If the issue persists, reinstall the Claris application. Turn off Extensions before reinstalling.

- If the issue persists, reinstall the system software.

- If the issue persists, update the hard disk driver. This is an invisible file on your hard drive. Updating the system software does not update the driver file. If your hard drive is an Apple drive that came with the computer, use the Drive Setup or HDSC Setup application. Be sure to use the latest version that comes with the latest system software. For non-Apple brand drives, contact your dealer or hard drive vendor for the latest version of their formatting software. You do NOT need to reformat the hard disk. Instead, run the formatting software and select the option Update, Install Driver, or Update SCSI driver. (The exact wording will vary depending on the software).
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ClarisWorks: Document Margin Formatting

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In the database environment, any changes to the Document Format will be reflected in all layouts for that database.
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Claris Resolve: Title Borders

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Borders around the spreadsheet title in Claris Resolve can be added or removed fairly easily by typing commands into the entry bar:

To Add a Title Border:
1. Type Select Report Header in the entry bar & then hit Command-Return which executes this script command immediately
2. Then type Single Line Border & again hit Command-Return

Some other options that are available are Double Line Border and No Line Border (to remove a border).

More information can be found in the on-line Claris Resolve Script Reference under the heading Select [More] Report Header.
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ClarisWorks: Viewing Layout and Browse Simultaneously

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks, it is possible to view a database document from layout and browse modes simultaneously. This can make layout design a more WYSIWYG process. In order to produce this effect:

1. Go to the View menu, select New View
2. Use the Layout menu to select Layout or Browse
3. Go to the View menu and select Tile Windows

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TA41921_ClarisWorks_Superscripts_and_Subscripts.pdf

ClarisWorks: Superscripts and Subscripts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Superscript or subscript formatting will affect the spacing between lines on a one or one-and-a-half line spaced document. This also occurs in MacWrite II (all versions). Both programs are shifting to accomodate the height of the character being formatted. If the formatted character is in 9 point size, the only workaround is to use double-spacing between lines.

In ClarisWorks 2.0 and higher, a better workaround is to switch the paragraph formatting from lines to points, and then adjuct the point size as desired.
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Apple System 7/ LaserWriter IIg/IIf & Font Printing Issues

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Note: this is fixed with System 7 Tuneup 1.1.1

When I print the same document twice in a row, using either the IIg or IIf and TrueType fonts, the document doesn't print the second time.

This is a known bug in the ROM of both these printers. The work arounds are as follows:

Send a different print job down in between printing the issue document twice in a row.
OR
Use only ATM and Adobe fonts.
OR
Restart the printer in between.
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MacDraw Pro: Conductor Compatibility Issues

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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This is fixed with Conductor version 2.7

Conductor is software used to image to film recorders by Agfa/Matrix, such as the SlideWriter. It accepts PICT images. When PICT images from MacDraw Pro 1.0v1 are imaged using the Conductor software (versions prior to 2.7), rotated text is not imaged (does not appear on screen or print to the film recorder).

This issue does not occur with PICT files from MacDraw II, so a temporary workaround would be to export or copy/paste to MacDraw II, then Save As a PICT file from MacDraw II.

Conductor owners can upgrade by calling the Agfa/Matrix parts department.
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ClarisWorks: Transfer Data from FileMaker Pro for Mail Merge

A step-by-step guide to exporting your FileMaker Pro data to a ClarisWorks database for a mail merge

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here are instructions for moving your data from a FileMaker Pro database to a ClarisWorks database. Once moved, the data, such as names and addresses, can be used in a Mail Merge to print form letters.

Note: ClarisWorks 4.0 includes an AppleScript application, called Mail Merge, to automate this with FileMaker Pro 2.x. It is in the ClarisWorks Scripts folder inside the ClarisWorks folder, along with a read me file with instructions. A modified version of this application, called Mail_Merge.FMP3, is available for merging from FIleMaker Pro 3.0. It is available on the Claris ftp server at: ftp://ftp.claris.com/pub/USA-Macintosh/Templates/ClarisWorks/Mail_Merge.FMP3.bin. It is also available on America Online in the Software Libraries:ClarisWorks folder

Part One - Exporting the data out of your FileMaker Pro database
To begin we must export your data from FileMaker Pro. Following are the steps:

1. With your FileMaker Pro database on the screen, choose Export Records... from the Import/Export item of the File menu. If you are using FileMaker Pro 1.0 you will choose export from the file menu. Select "DIF" as the file type from the pop-up menu.

2. Enter a file name. It may be helpful to place the suffix .DIF after the name. (For example: MyNames.DIF)

3. If you are using System 7 (or later), click the Desktop button. Click on "OK".
In FileMaker Pro 4.0 or 3.0: In the Export Field Order dialog box, indicate how you want FileMaker Pro to export the data (check your onscreen help for more details. Search for: "exporting, data- Exporting data from FileMaker Pro".)

In FileMaker Pro 2.x or FileMaker Pro 1.0: In the Specify field order for export dialog box verify that each field you want to use in your mail merge has a checkmark to the left of it. Click to remove checkmarks from fields you don't want to export. Choose a format option for the fields. Click OK. You have now created and saved a data file.

Part Two - Bringing the data into ClarisWorks
Once you have the data file created from your FileMaker Pro database you must now bring that data into ClarisWorks. Follow these steps:

1. Launch ClarisWorks. Since you do not need a new document, click Cancel.

2. Choose Open from the File menu.

If you are using ClarisWorks 1.0, click on the Import Options flag and select database. With all other versions of ClarisWorks, select Database in the Document Type drop-down menu.

If using System 7, click the Desktop button. If not, navigate through your hard disk until you find the DIF data file you created in Part One.

Double-click on the file or select Open. The DIF file will be converted to a ClarisWorks database in a standard list style format. The layout structures from your previous FileMaker Pro file are not retained.

Part Three - Setting up the Mail Merge
With the data now in a ClarisWorks Database you are ready to complete the process by setting up and using the mail merge. Complete instructions for mail merge can be found in the onscreen help. Following is a summary of the steps.

1. Open your ClarisWorks word processing (or other) document.

2. Click within your document where you want the merged data to begin and choose Mail Merge... from the File menu.

3. After selecting the name of the open database, you are presented with the Mail Merge window. You can alternate between using the Insert Fields button to add merge fields to your document and typing into your document. Figure 1 shows a sample form letter with the Mail Merge palette window.

4. When you're done, press the Print Merge... button to print a copy of each record currently visible in the database merged into your current document.

When printing, ClarisWorks will remove lines that are completely blank and slide the rest of your data upwards. Although merged data will be visible only on the printout, use of a third party utility such as ClickBook or Print Previewer or printing to a Hewlett-Packard Printer with a print

preview option will allow you to preview the print image on the screen.

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Claris CAD: Changing the Size without Changing the Dimensions

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Sometimes you might want to change the physical size of a drawing without changing the numbers shown in the dimensions on the drawing. This is easily accomplished in two steps.

In this example we want to scale the drawing by 50%.

1) Group the drawing and use the Scale command (under the Arrange menu) to scale the drawing by 50%.

2) Go to the Rulers dialog and reduce the actual (top) ruler's dimension by 50%.

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Claris CAD: Computer Numeric Controlled Machines

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CNC machines, or Computer Numeric Controlled machines, include turret lathes, milling machines, thread rollers, etc. Some major manufactures include Leblond and Cincinnati Millicron.

We have no information regarding CNC machines or applications that run directly from the Claris CAD file format. Users can use CGT to translate Claris CAD files for machines that will accept that format.

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MacDraw Pro: Font Issues Exporting to PICT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When saving to PICT (not PICT2) or copying to the clipboard with the color clipboard turned off, then importing into another program, text may have issues. The exact issues are unknown, but may include printing issues, or incorrect font/style/size information.

The issue is due to the system including a PICT2 comment into a PICT file. (When saving as PICT, the PICT file is generated by the system, not by the application). This PICT2 comment should not be in a regular PICT file, and is data regarding the text style. The best workaround is to use PICT2 instead.
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Claris CAD: Setting Up More Than Six Dash Patterns

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The Dashes.. dialog in Claris CAD can only display 6 dash patterns at once. However, you can have more than 6 patterns in your documents:

1) You can draw using the 6 dash patterns in the dialog, then change the patterns in thedialog and create new lines. (The dash patterns of the lines that you have already drawn will not change.)

or

2) You can use the Line Style floater (choose Show Line Styles under the Pen menu) to create many line styles with a different dash pattern for each style if you wish.
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MacDraw Pro: Special Text Characters Not Exported to EPSF

Several text characters will not print (including ² ³ and) if included in an EPSF file exported from MacDraw Pro 1.0 or 1.5.
This article has been archived and is no longer updated by Apple.
These special characters may appear in the PICT Preview, but won't print. The workaround is to use Symbol font for these special characters. They will then print correctly when in an EPSF file.

The characters that require Symbol font to print in an EPSF are the following:
°, ², ³, ¶, ·, ,, ¹, º, ½, , Å, Æ, ×, ð
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MacDraw: Text Word Wrapping onto Additional Lines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: A document containing text may wordwrap some of the text onto an additional line(s). This may happen when a MacDraw II or MacDraw Pro document is created on one computer, then opened on another computer. Or it may happen when a MacDraw II document is opened in MacDraw Pro on the same computer.

Explanation: When a text block is created in MacDraw II/Pro, it has a defined width. However, differing font technologies (bitmap vs. TrueType vs. ATM) may produce characters of different widths. If a text block is created using one font type with narrower characters, then opened on another computer with a font type that has comparatively wider characters, MacDraw can't place as many characters on a line. It will then have to wordwrap the last word on a line to a new line below. The issue is most noticeable with stylized text (bold and italic).

The solution is to resize the text block so that the text block matches the original.
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Claris Resolve: Version 1.1v1 Release Notes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
About 1.1 Enhancements (released 4/92)

Excel 3.0 Import/Export.
Claris Resolve 1.1 can now import and export Excel 3.0 files. (Import/export of graphic objects and publish/subscribe links is not included. Macro conversions is also not supported.)

Host Access Support.
1.1 can execute DAL query documents created by third party access tools such as Brio Technology's DataPrism and Fairfield's Clear Access. In addition, Claris Resolve can also execute DataPrism "AutoRun" documents, providing access to host databases through not only DAL, but Pathworks, SQL-Net and Sequel Link as well.

Improved Printing Performance
Printing on postscript printers is up to 50% faster.

Copy as Pict
New item added to the Utilities menu.

Default Separator Change
Claris Resolve will now enter plus (+) signs instead of commas when selecting discontiguous cells in a formula. You can still get commas by holding down the command key while clicking on your second cell.

Installer Changes
There is now an option to install the Utilities scripts via the Installer's Custom Install section. They will not be installed when performing an Easy Install. Additionally, the utilities scripts will now be in their own folder instead of having to be placed into the Resolve Scripts Folder.
Published Date: Feb 18, 2012

ClarisWorks: Apple Data Modem 2400

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you get the message "Modem not responding" when using the Apple Data Modem 2400 , you may find that the modem is not responding to standard AT commands when trying to open a connection (in the Session menu). Check to make sure that the computer-to-modem cable is connected to the correct port on the back of the modem, as there are two. If necessary, try swapping with the other port.

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Claris CAD: Floaters do not Appear Where Last Saved

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Question: When I place my floaters on a second document and save it as stationery, a new document comes up OK. When I then 'Save As...', they disappear.

Answer: Floaters were designed to stay as saved in stationery documents only. It was determined that saving the floater positions in actual documents would take up too much disk space.

Published Date: Feb 18, 2012

Claris Apps: Translating / Importing MacWrite Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks, ClarisImpact and most Claris applications cannot directly import / translate old MacWrite (prior to 4.5) files. To bring these files into ClarisWorks, you must first convert them to MacWrite 5.0, and then open the converted files in ClarisWorks.
Published Date: Feb 18, 2012

MacDraw Pro: Changing Text Color Documentation Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
On page 6-11 of the MacDraw Pro User's Guide, you will find instructions on changing the color of a text object. It says to select the object(s), click on the pen icon if necessary and 'select a different color from the Style palette.'

It should say to select a different color from the color palette. If you click on the black pattern in the pattern bar or palette, you will get a message that says 'Sorry, pen patterns cannot be applied to a Text object.'
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MacDraw Pro: Faster Print Option Dimmed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

I f you have Maximum Resolution selected in the Print Options dialog of Preferences and are printing to an ImageWriter, you will only be able to select Draft and Best in the print dialog.

To restore the Faster option, deselect Maximum resolution.

Published Date: Feb 18, 2012

ClarisWorks: Pasting Graphics into Word Processing Environment

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you paste a graphic object into a WP document with the text tool active, the graphic will be treated as if it were a piece of text. You can tab it to a new position, but you can't click on it with the arrow cursor and reposition it.

If you select the arrow cursor before you paste the graphic, it will come in as a graphic, with handles so that it can be resized or moved.

If the graphic is pasted using the arrow cursor, you can position it over text. You can change the stacking order and have the text appear over the graphic by using the Move commands under the Arrange menu.

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ClarisWorks: Bad Range in Cell Formula After Undoing Insert Column

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in ClarisWorks 1.0v3.

Undoing an insert column in ClarisWorks 1.0v2 or earlier does not restore the proper range in formulas.

1. Select a column which is referenced as a range in a cell formula in another column.
2. Insert a column.
3. Then choose Undo.

Result:
The proper range is not restored in the formula. The result is "#REF!" and the word "BADRANGE" replaces the range in the formula.
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ClarisWorks: Calculation & Summary Field Text Truncation

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When the result of a calculation / summary field in the database exceeds the width of the field, the text in that field will be truncated on the first line rather than wrapping to the second line. This will occur regardless of the vertical size of the field (the number of lines as formatted on the layout).

Currently there is no way in ClarisWorks to insert a return character into a calculation, therefore there is no workaround.

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ClarisWorks: Converting MacDraw Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There is a Claris XTND translator for MacDraw II but not for MacDraw. The MacDraw II translator does not convert old MacDraw files. In order to transfer old files, either copy and paste the drawing, or save the MacDraw file in PICT format. The PICT format is supported by the XTND translators provided with ClarisWorks.

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ClarisWorks: Copying/Pasting a Row while Retaining Formatting

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Situation: You want to insert a row into your spreadsheet file and you want it to have the formatting of the row above it. The issue is that if you copy and paste the row above or use Fill Down, you will get not only the formatting, but you will get all of the entries in those rows.

While there is no easy way to get the formats without the entries, you can do this:

1) Insert the new row.
2) Select and copy the row that you wish to copy.
3) Select the new row and paste.
4) Click into column A of the new row.
5) Hit 0 then tab. Hit 0 then tab again until you have cleared out all of the data in the row.

This works well except that in fields that are formatted as dates, you will get January 1, 1904 (date 0).
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ClarisWorks: Match Records not Finding text with Apostrophe

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Match Records may not find a name or other text when an apostrophe is entered in the Find function. The cause is that the apostrophe was entered with Smart Quotes enabled. In this case, the text can be found by entering the Smart Quotes character in the Match Records dialog (option-shift-right square bracket).

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ClarisWorks: Pasting Graphics into Headers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In order to have a graphic in a header print on each page of a document, you must have the text tool selected and the insertion bar in the header before the Paste command is selected. Otherwise, the graphic is pasted onto the document as a graphic frame, and is not recognized as part of the header.

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ClarisWorks: Opening Text Files in Spreadsheet or Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Question: When I try to open an existing text file (Tab separated, DIF, SYLK) as a DATABASE using ClarisWorks import options open dialog box, I get only a Define fields box in a new database with only one field.

Question: When I try to open an existing text file (Tab separated, DIF, SYLK) as a SPREADSHEET using ClarisWorks import options open dialog box, I get an error message "Some data was outside of the document's range and could not be imported". When I click "OK" I get a new blank spreadsheet.

Probable cause of both issues: If you are using ClarisWorks application version 1.0v2, check the version of the ClarisWorks Translators file in the Claris folder within your System folder. If the ClarisWorks Translators version is 1.0v1, update it to 1.0v2. Restarting the Macintosh is not necessary. For ClarisWorks version 1.0v1, v2 and v3, the application version number must match the ClarisWorks Translators file version number for translations to work.

NOTE: ClarisWorks 2.0 does not require a ClarisWorks Translators file.
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ClarisWorks: Installing Educational Version Issues

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
It seems as though the labeling on some of the disks is mixed up. The "References" disk is labeled as the "HyperTour" disk and vice versa.

The issue is that when the installer encounters this issue, it will NOT accept the HyperTour labeled disk as the References disk when the "This is the wrong disk" message comes up. The customer MUST start the installation over and when asked for the References disk, insert the HYPERTOUR disk.
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ClarisWorks: Renumbering a Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
No version of ClarisWorks includes a specific command to renumber existing records in a database, however, you can renumber existing records by using one of the following techniques. Be sure to back up your file before trying these.

For Clarisworks 4.0:
1. The database to be renumbered should already contain a field of type Number or Serial Number. Make sure that Show All Records is selected under the Organize menu. Sort the database in the order you want the records renumbered.

2. Define a new field of type Serial Number. ClarisWorks will automatically serialize your records in the the order in which they have been sorted. These new serial numbers will appear in this newly defined field.

3. Delete the old serial number field from your database, and place the new serial number field on the layouts where you would like it to appear.

For ClarisWorks 1.0 - 3.0:
1. The database to be renumbered should already contain a field of type Number or Serial Number. Make sure that Show All Records is selected under the Organize menu. Sort the database in the order you want the records renumbered.

2. Save the database in ASCII Text format. (Use the Save As command from the File menu.)

3. Open the text file as a new spreadsheet file. (Select Open in the File menu. Set the Document Type to Spreadsheet. Locate the text file and open it.)

4. Locate the column of cells with the serial numbers you want to replace. Click on the top cell in the column. Enter the starting serial number, then press Return. Type an "=" sign; click on the cell above; type "+1"; press the Enter key. Click into the cell with the above formula, and select the rest of the column below the cell as a range. Select Fill Down from the Calculate menu.

5. Use the Edit menu to Select All, then Copy. Use the View menu (Window menu on PCs) to select the database file.

6. In the database, choose Select All, then Clear from the Edit menu. Go into Layout mode and create a New Layout, of Standard type. Return to Browse mode and select Paste from the Edit menu.
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ClarisWorks: Time Addition

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Question: How can I add up elapsed times in a ClarisWorks spreadsheet to get total number of hours? When I do the addition, if the result is over 24 hours, I only get the remainder. For example, I want to add 3 times together: 7 hrs 15 min, 12 hrs 20 min, 8 hrs 15 min. When I add them together I get 3:50! What can I do?

Solution: Format the times so that they are in 24 hour format (7 hrs 15 min =7:15) by selecting the "number" item under the format menu. Use the "sum" function as you normally would but display the result as a serial number by selecting a format of "General" or use a format of "Fixed" with a precision of 6.

The resulting number is in "serial format." The portion of the number that is to the left of the decimal point is the number of 24 hour days that have elapsed. The number to the right of the decimal point is the number of minutes and seconds that have elapsed. You can then use the "Trunc" function to discard the fractional portion of this serial number and multiply by 24 to convert to elapsed hours. So if the resulting serial number was 2.115589, using the "Trunc" function & multiplying by 24 would give me: 2*24= 48 hrs.

Similarly, you can use the "Hour," "Minute," and "Frac" functions to extract number of hours and minutes from the decimal portion of the serial number. For the example of the 3 numbers above, I would get a serial number result of 1.159722. Then I could perform the following calculations:

Hours1= Trunc (1.159722) * 24
Hours2= Hour(1.159722)
Minutes=Minute(1.159722)

Adding Hours1 and Hours2 would give me the total number of hours elapsed. The following formula displays the total number of hours and minutes in 0:00 format.

=(TRUNC(1.159722)*24)+(HOUR(1.159722))&":"&RIGHT("00"&MINUTE(1.159722),2)
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ClarisWorks: Transferring Layouts Between Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Question: Can I copy a layout from one ClarisWorks database to another?

Unfortunately ClarisWorks does not have this capability.

The workaround: Record a macro as you are creating the layout in the first file. Begin recording, then switch to layout mode, add fields and any graphics you may wish to add, resize fields, etc. Once you've finished the layout, stop recording.

Then open the second database and play back the macro. This method works even if the field names are not the same. (For example, if you've chosen to use the first five fields on the layout in the first file, the macro will place the first five fields on the layout of the second file - even if the two files have different field names).
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ClarisWorks: Avatex 1200 Modems

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The Apple Communications Toolbox Modem tool always sends an ATZ (soft reset) to the modem. The Avatex 1200 Modem chokes whenever you send it an ATZ so use the Serial tool to establish your modem type connection. This tool assumes nothing about the modem and allows the user to type their own AT commands thus enabling them to avoid the dreaded ATZ. The Avatex 1200 modem is the only modem in the world that seems to have this behavior.

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MacPlot: Crashing while plotting under System 7.0

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If you have Claris CAD 2.0vX, MacProject 2.5 or MacDraw II 1.1vX, and are experiencing system errors or unexpectedly quits when plotting, the issue may lie with the MacPlot driver.

Claris includes MacPlot 1.2 with Claris CAD and MacProject, and used to include it with MacDraw II. MacPlot 1.2 is not compatible with 32-bit addressing. Two options are available to plot successfully from Claris applications

* Turn off 32-bit addressing. (Double-click "Memory" in Control Panels; set 32-bit addressing off; restart the computer).

* Upgrade MacPlot to the MacPlot Professional, which is available from Microspot, Inc.
Suite 6
12380 Saratoga-Sunnyvale Road
Saratoga, CA 95070

(800) 622-7568 Sales
(408) 253-2000 voice
(408) 253-2055 fax
(408) 257-4000 Technical Support
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Claris Resolve: Opening Microsoft Excel 1.5 Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve can only import / read Microsoft Excel version 2.2 files (version 1.1 can also read 3.0 files). We do not support earlier version of Excel such as 1.1 or 1.5.

They can, however, be saved as SYLK files from Excel and then opened in Claris Resolve.

This applies to all versions of Claris Resolve.
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AppleCD SC: Recognizes Four Formats

I want to use my AppleCD SC while running PC software on a Mac286 card. Is there any way to do this? The CDs I want to read are not available for the Macintosh yet.

This article has been archived and is no longer updated by Apple.
The only CD-ROMs accessible by the AppleCD SC are those that conform to one of its recognized standards. The available AppleCD SC drivers allow the Macintosh to read CD-ROMs in these formats:

HFS
High Sierra
ISO 9660
Audio

Mac286 can read any of these formats, but only as Macintosh files since that is the way the drivers present the files to the Macintosh OS. DOS drivers, which expect a CD-ROM drive attached to a card in a slot, have no way of communicating with the AppleCD SC and cannot read the CD-ROMs.

We recommend that you contact the CD-ROM vendor to see if they have versions available in one of the above formats. This would allow you to access the files directly without using Mac286 as a fix.

NOTE: Prior to being adopted by the ISO Committee, ISO 9660 was known as High Sierra. Although some minor changes were made to High Sierra during the ISO standardizing process, Apple's driver will enable you to read CD-ROM discs pressed in either format. The two format names are often used interchangeably.

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Claris Resolve: Preventing Scripts from Opening

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Developers sometimes want to prevent users of their scripts from opening / seeing them. It is not possible to prevent a script from opening, however, the following script will prevent a user from opening a button script when placed in the worksheet script.

This means that even the creator of the script cannot open it. The only way to open a script with this function installed is to immediately press Command-period after requesting the script to open. This, of course,will not work if BREAK OFF has been executed prior to this function. It is suggested, therefore, not to use BREAK OFF in conjunction with this script!

****

```
on deactivate
call worksheet1:checkwindow()
end deactivate

function checkWindow()
if windowtype() = 7
close now
end if
end function
```

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ClarisWorks: Microcom Networking Protocol

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MNP or Microcom Networking Protocol is a system, present on many of today's more modern modems, that adds error checking and data throughput enhancing compression to a telecommunications session. If your situation is " I called... got a CONNECT message and then nothing happened! " you've experienced the joy of a failed MNP handshake! The approved way to avoid future occurrences of this unseemly behavior, is to disable the MNP features of your modem.

In the wonderful world of standards we find the AT command set. This uniform code of modem jargon specifies a large number of ways to disable MNP. A common method is changing \\N1 to \\N0. You really need to consult the owners manual of the specific modem you are using to find out the correct one. To enter a custom setting, hold the option key while accessing the modem selector popup in the Settings/ Connection dialog. You should see the word 'custom' at the bottom of the list. Select this option and edit the command string to alter the setting of the MNP portion. The 1.0 modem tool that shipped with ClarisWorks will not allow you to save the custom setting but the 1.1 tool available from your dealer or APDA will allow you to save it.

Another approach is to use V.42b standard compression instead of MNP. This will give the same functionality but will have less connection bugs and will be a little faster.
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ClarisWorks: Replacing Data in a Database Field

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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FileMaker Pro has a Replace command to replace the contents of a field with new data for all records being browsed. However, since ClarisWorks 1.0 does not have a Replace command, you need to use a workaround. Here are three different methods to accomplish this.

EXAMPLE #1: Using a Macro
This method is good for auto-entering data into a blank field, or replacing the entire contents of a field with new data. (Note: ClarisWorks 2.0 adds auto-entry options features. See the TIP at the end of this article for more details.)

To define a macro to auto-enter or replace information, you must manually switch to each record, then replace the data in a field. Therefore, it's not practical to record a macro for more than about 5 to 10 records at a time. Nevertheless, if you need to replace the data in 100 records, its easier to record a macro that replaces the data in 10 records, then run the macro 9 times to replace the data in the remaining 90 records. Another disadvantage of this method is that it is not flexible. When a macro is recorded, it only handles replacing the data in a specific field with specific new data. Nevertheless, here is the technique to use:

Defining the Macro:
1. In Browse, go to the first record with the field you want to auto-enter the new data into. Click into this field.
2. Go to Macros in the File menu, then select Record Macro.
3. Give the macro a name and a keystroke, then click Record. (see Working with Macros in the ClarisWorks Handbook for more information)
4. Choose Select All in the Edit menu. DO NOT CLICK IN THE FIELD!
5. Type in the new data.
6. Choose Select All in the Edit menu., then choose Copy from the Edit menu.
7. Click the bottom page of the book in the Status Panel (Goes to the next record, leaving the cursor in the same field). Do NOT click in the next record to get there.
8. Choose Select All in the Edit menu..
9. Choose Paste from the Edit menu.
10. Repeat steps 7, 8 and 9 for as many records as you want to replace the data in (for a single macro).
11. To stop recording the macro, choose Stop Recording from the Macros sub-menu in the File menu.

Using the Macro:
1. In Browse, go to the first record with the field you want to auto-enter the new data into. Click into this field.
2. Run the macro. You can run this macro more than once to auto-enter into more records than are defined in the macro.

EXAMPLE 2: Using the Spreadsheet
This method involves moving the data to the spreadsheet, replacing the data in a column (field), then moving the data back to the database.
1. Be sure you're browsing only the records you want to auto-enter data into a field. You can use the Find command, or a combination of Match Records and Hide Unselected, or Show All Records to do this. Also, be sure you're in a layout that has ALL the text, number, date and time fields in your database.
2. Press the Enter key, or click on the white space of the layout (not in a field)
3. Choose Select All from the Edit menu
4. Choose Cut from the Edit menu
5. Choose New from the File menu. Create a new spreadsheet file
6. In the spreadsheet, choose Paste from the Edit menu. Your data is now Pasted into the spreadsheet
7. Click into the first cell in the column with the field data you want to replace or auto-enter.
8. Enter the new data, then press the Enter key.
9. Click on this cell again with the new data, then drag down to select all the cells in that column for all rows with data.
10. Choose Fill Down from the Calculate menu. The new auto-enter data will be entered into that column for all records (rows).
11. Choose Select All from the Edit menu.
12. Choose Copy from the Edit menu
13. Switch back to the database window (select the database file's name in the View menu). The database file's window will now be active.
14. Select Paste from the Edit. The records will be pasted back into the database.
15. Save.

EXAMPLE 3. Using Find/Change
Unlike the previously described examples, the Find/Change command can search and replace only part of the data in a field (say, a word or two), instead of completely replacing the field contents. This method cannot be used to auto-enter data into a blank field (you can't use Find/Change to search for a blank). See the ClarisWorks handbook for more information on Find/Change.

TIP: Since Find/Change searches and replaces data in ALL fields on your layout, create a layout that has only the field(s) on it that you want to Find/Change the data.

TA41958_ClarisWorks_Replacing_Data_in_a_Database_Field.pdf

TIP: (ClarisWorks 2.0): ClarisWorks 2.0 can auto-enter data into a field when a new record is made. If you think you'll want to auto-enter data into this field later (after the record has been created), consider this: instead of leaving this field blank, auto-enter some unique value into this field when the record is defined (say, an X). Later, you could then use Find/Change to find the X and replace it with updated data.
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Palette XCMD: Closing External Windows Message

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Both the Palette XCMD and the Picture XCMD -- and now the Movie XCMD -- will send a message to the current card signaling that a window is closing. These messages are, respectively, "closePalette","closePicture", and "closeMovie".

The parameters sent with the message identify the window that is closing: The first parameter is the window's name and the second parameter is the window's ID (window IDs are new in HC 2.1). The message is sent when the window closes, either via a click in a closebox, or by executing a "close window" statement.

Stack designers can define a "closePalette", "closePicture", or "closeMovie" handler to take care of any cleaning up or updating when a window is closed.

HERE IS ONE RESTRICTION- Don't try to close the window again within a closePalette, closePicture, or closeMovie handler. The script can STILL refer to the window, for example, getting (or even setting) the window's location. The script can also close other windows -- but HyperCard will crash if the script tries to close the window (e.g., close window id (the param of 2)).
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Claris Applications: USA vs. British Installation Issues

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For Claris programs which use an installer, the USA installer will NOT WORK with British version software; a special "Brit. Installer" needs to be present. Also the program will have additional British disks (possibly program & reference - if that is where the spell checker resides). For Canadian customers with British versions, this may particularly be a problem.

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Claris Info Window: Does not Display System 6.0.8 Information

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With System 6.0.8, when calling up the About Box and clicking in the Info button, the Info Screen will indicate that System 6.0.7 is active.

The info screen reports what it receives from ABC->gSysEnv.SystemVersion. System 6.0.8 reports the same value as 6.0.7.

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Claris Resolve: Formatting a Number to Have Leading Zeros

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Q: How can I add leading zeros to a number?

A: Select the cells and choose Custom Format from the Format menu. Type zero ("0") as many times as you want digits in your number. A custom format of "0000" will yield a result of "0010" when "10" is entered in the cell.

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Claris Resolve: Installing and using Host Access

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This article has been archived and is no longer updated by Apple.
DAL support for in Claris Resolve 1.1 requires the installation of the utility scripts. The easiest way to install these scripts is to use the installer and choose Utility Scripts in the custom section.

Once the scripts are installed, you simply need to launch Claris Resolve and choose "Run Autorun..." or "Run Query Document..." from the Utilities menu. A dialog box will be presented with a button for selecting your Autorun or Query document and whether you want to bring the data into a new worksheet or a specified range on the current worksheet.

The actual code for the host access support is handled by a Claris Resolve External located in the HostAccess script located in the Utility Scripts folder in the Resolve Samples folder. If you wish to use this external in a custom script, you may copy all the resources from this script using a utility such as ResEdit and paste them into your script or worksheet. You can study the HostAccess script for information on how to use this external.
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Using Dow Jones Portfolio Evaluator 1.0 with a Super Serial card

This article has been archived and is no longer updated by Apple.
Dow Jones Portfolio Evaluator was designed to work with the Communications card; however, it also works fine with the Super Serial card after you make the change listed below in the DJPE program. The Communications and Super Serial card differ in these three ways:

* The location of the status and data registers are different.
* The status register bit arrangement is different
* The Super Serial card is switch dependent, while the Communications Card must be programmed entirely in software.

Place your Super Serial in slot 2, and then set its switches to:

switch: SW1 switch SW2
1 2 3 4 5 6 7 1 2 3 4 5 6 7
1 0 0 1 0 1 1 1 0 1 1 0 0 0
Note: These settings are not the same as for Dow Jones News and Quotes.

Next, modify the software as shown below:

1. Load Login
2. Unlock Login, then make these changes.

```
5710 ST=49321: rem addr of SS status
5720 DA = ST - 1: rem addr of SS data
5730 print : print chr$(4)"pr#2": print chr$(24)
5740 print chr$(4)"pr#0
5780 for I = 1 to len (I$):wait ST, 16: poke DA,
asc(mid$(I$, I, 1)): next I
5840 I = peek (772): if I = 8 then I = 1 : rem err flag
```

3. Save Login

4. Load Fetch
5. Unlock Fetch, then make these changes:

```
6910 wait ST, 16: poke DA, 17: rem Xon
7120 if IN = 1 then wait ST,16 : poke DA,19 : run
7200 if 5 * int (S / 5) <> S then wait ST, 16:
poke DA, 17: goto 7360
7300 wait ST,16: poke DA,17: rem Xon
7900 ST=49321: rem addr of SS status
7910 DA = ST - 1: rem addr of SS data
7920 print : print chr$(4)"pr#2": print chr$(24)
7930 print chr$(4)"pr#0
7970 for I = 1 to len (I$): wait ST, 16: poke DA,
asc ( mid$ (I$,I,1)): next I
8030 I = peek (772): if I = 8 then I = 1: rem err flag
```

6. Save Fetch

7. Bload Com22.obj
8. Unlock Com22.obj
9. Call -151
10. Enter 341:8 N 343:A9 N 34C:A8
11. Bsave Com22.obj,A$300,L$B1
12. Enter "fp" to enter Applesoft.

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Claris Resolve: Cell Function Documentation Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Cell() function is available in Claris Resolve, however, it is not documented in either the manual or the online Script Reference Guide. Here is the definition of this function:

CELL()

This function returns the contents of the current cell. If the cell contains a formula, it returns the result of the formula, not the formula text. In the first example below, the CELL function could be used in conjunction with the Find command to locate the next cell in the worksheet with a value grater than 35. In the second example, if the current cell contains the value 348, the expression containing the CELL function returns 87.

Examples:

CELL() > 35
CELL()/4 returns 87

Related functions: CELLTEXT, INDIRECT, and INDEX.
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Claris Resolve: Executing Custom Function Documentation Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Documentation / Publications Error

On page 4-36 of the Claris Resolve Functions and Scripts Manual (U91-614-003A), there is an example explaining one of the ways to execute a custom function:

" Min (100,CalculateIndex())

If the custom function has been defined in a script attached to a worksheet other than the current worksheet, you must use the following format to execute the custom function:

Worksheet:FunctionName"

This excerpt implies that you do not need to specify the worksheet name if the custom function is defined in the current worksheet. This is incorrect. A custom function must always use the specified format (Worksheet:FunctionName or ScriptName:FunctionName) even if it is defined in the worksheet script of the worksheet in which it is used.
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Claris Applications: How to Use MS-DOS TIFF Files

Access PC makes cross platform conversion automatic, but you can also use ResEdit or another utility to change the type and creator manually.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Q. I just transferred a TIFF file from my PC running MS- DOS. I want to open the file with MacDraw Pro, but it doesn't show up in the Open dialog box. Can MacDraw Pro read PC TIFF files?

A. MacDraw Pro can open most PC TIFF files. Because you can't see the TIFF file when using the Open command, the problem is the Macintosh doesn't realize the file is a TIFF-format document. MacDraw Pro and other Macintosh programs use the file's 'type' tag to determine whether it can open the file. Normally, Macintosh programs set this tag automatically when saving a file to disk. But because this file came from a PC, it doesn't have any type tag.

There are two ways you can open the PC file to be read by MacDraw Pro.

Use Insignia's Access PC
Access PC lets you tell your Macintosh that all files ending in .TIF should be treated as TIFF files and opened by MacDraw Pro when you double-click them. The program also lets you read PC-formatted floppies. For pricing and availability, contact

Insignia Solutions
526 Clyde Ave
Mountain View, CA 94043
(415) 694-7600.

Use a File Type Utility
This is more difficult. You open the file in any program that allows you to edit the file type attribute. These programs include Symantec's Norton Utilities, Central Point Software's Mac Tools, CE Software's DiskTop, Apple's ResEdit, and many shareware programs. Set the .TIF file's type to 'TIFF' (no quotes, all caps). How you do this varies with each program. If you make the change successfully, you can then open the file as a TIFF document in MacDraw Pro and many other Macintosh graphics programs.
Published Date: Feb 18, 2012

MacPrint 1.2.3: Read Me File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Insight Development Corp.
MacPrint, Version 1.2.3
October 29, 1990

Insight Development Corp. is pleased to release version 1.2.3 of our MacPrint software.

LASERJET III and IIID SUPPORT

The LaserJet III and IIID drivers allow you to access the printer's internal fixed size and internal scalable fonts. This gives you greater selection when you need the speed and quality of printing with printer fonts, as well as greater flexibility in the point sizes you wish to use. The scalable fonts can be scaled to any point size from 6 to 999.75 in .25 point increments.

Note: Not all applications will support the use of all of the LaserJet III and IIID's internal font effects (rotation and large point sizes, etc.). Please see the application's user's manual for more information.

Internal fixed size
(plain, bold, italic)

LJ Courier, 10 &12 pt.
LJ Line Printer, 8.5

Internal scalable
(plain, bold, italic, bold + italic)

LJ CG Times
LJ Univers

You can now enlarge or reduce the size of your image, from approximately 10% up to 800% depending on page size. We have also incorporated data compression techniques in order to speed up transmission to the LaserJet III, reducing the total print time for an average page of bit-mapped text.

The screen fonts for the internal scalable fonts are in point sizes 9, 10, 12, 14, 18 and 24, each in 4 styles. These take up a total of about 200k of disk space. You may wish to remove the 18 and 24 point sizes of the fonts LJ CG Times and LJ Univers with the Font/DA Mover in order to save over 100k of disk space. The only penalty is that the on-screen appearance of these 2 fonts in larger sizes will be jagged. Nonetheless, they will print smoothly at 300 dots per inch.

In order to print with the LaserJet's internal fonts, select the appropriate LJ font from the application's font menu. Remember that selecting a font from an application's font menu will not format the document in that font unless you have selected (= highlighted or blackened) the text to be formatted. If you have not highlighted any text, only text typed from that point on will be in the selected font.

Some applications, such as MacWrite II, allow you to enter any point size of font, such as "8," "17," "99," etc., by selecting "Other" in the "Font" or "Size" menu, or in some other way. With such applications, you can use the scalable fonts at virtually any point size. Some applications, however, only allow you to choose point sizes from a menu. In applications like these, you will find your choices limited.

FONT MAPPER AND ADOBE TYPE MANAGER

1. A problem sometimes occurs when the Font Mapper is run with Adobe Type Manager. It is recommended that Adobe Type Manager be turned off (either through the control panel or by removing it from the System Folder) when running Font Mapper to create your screen fonts. MacPrint is fully compatible with Adobe Type Manager for normal printing operations, and may be turned on after the screen fonts have been created.

OTHER LASERJET NOTES:

1. LIMIT ON FONTS PER PAGE: Due to hardware limitations, the LaserJet series II and LaserJet+ printers can only print 16 distinct cartridge and/or internal fonts (LJ fonts) per page. Distinct fonts are those that vary by typeface, style, or size. This limitation does not apply if you're printing QuickDraw Graphics fonts.

2. INTERFONT FONT CARTRIDGES BY INTERCON ASSOCIATES: Four Interfont font cartridges by Intercon Associates are documented in Appendix B, MacPrint Font Cartridges. In Appendix B these font cartridges are identified by their Intercon Associates' part number. In MacPrint's FONT MAPPER and in the CHOOSER, these same font cartridges are identified by the font cartridge name. Intercon

WPC-PL1-HE is Interfont Humanist 601. Intercon WPC-PL1-DE is Interfont Dutch 801. Intercon WPC-PL1-SE is Interfont Century 701. Intercon WPC-PL1-CE is Interfont Swiss 721 I8. In addition, MacPrint supports another font cartridge from Intercon Associates. This new cartridge is Interfont Swiss 721 E8. This cartridge contains the same fonts as Interfont Swiss 721 I8, but uses the Roman-8 symbol set, rather than USASCII. Currently the Swiss 721 E8 cartridge is only available in Europe.

3. "FASTER, BUT MAY PRINT HIDDEN OBJECTS": A new check box has been added to the print dialog box for the LaserJet series printers, which has the title "Faster, But May Print Hidden Objects." When selected, pages containing lines and rectangles will be printed much more quickly, as the internal drawing capabilities of the printer are used. This approach does not support the recognition of "hidden lines" though, so the resulting page may not look correct under all circumstances. Problems are most likely to arise when using object oriented drawing programs such as MacDraw or Canvas, where overlaying of objects is a common method of creating the final image. This feature is most useful when used with images such as spreadsheets or pages with borders. Those lines are converted to graphic elements that can be transmitted very quickly to the printer, bypassing the much slower (though more precise) bitmap imaging that is done when this feature is not activated.

4. PDP 25-IN-1 FONT CARTRIDGE: The PDP 25-in-1 font cartridge uses different character widths for the portrait and landscape versions of some fonts. There is no satisfactory way for the Macintosh to change font characteristics when a document shifts orientation, so this causes problems with MacPrint. It is recommended that the following fonts not be used from this cartridge in landscape mode: Times 10 pt, Helvetica 8 pt, and Helvetica 10 pt bold. If these fonts are used, the output will not have proper character spacing.

5. PDP 25-IN-1 FONT CARTRIDGE: There are two font cartridges sold by PDP under the same name, both of which are now supported in MacPrint. The original cartridge came with black diskettes in the box and claimed support for "103 fonts and symbol sets." This cartridge does not have many of the characters needed for non-English text, and is supported in the Font Mapper and Chooser lists as "PDP 25-in-1 -- 103 Fonts." PDP now ships this cartridge with blue disks, and boasts "173 fonts and symbol sets." This new version adds a couple of fonts, but perhaps more important, adds support for non-English language text characters. This version of the cartridge may be accessed in the Font Mapper and Chooser as "PDP 25-in-1 -- 172 Fonts."

DESKJET NOTES:

1. LANDSCAPE PRINTING: A late addition to MacPrint 1.1 now allows you to print in landscape orientation on the DeskJet and DeskJet PLUS printers using the Printer Font method of printing. However, due to hardware limitations of these printers, you cannot combine landscape Printer Fonts (DJ fonts) and graphics in the same document. Since QuickDraw Graphics fonts are printed using the printer's graphics mode, this means that you cannot combine landscape Printer Fonts and QuickDraw Graphics fonts in the same document. Therefore, the Page Setup dialog for the DeskJet and DeskJet PLUS printers has changed. If you select landscape printing in Page Setup, you must select either QuickDraw Graphics only or Printer Fonts only. If you select QuickDraw Graphics only, all fonts, including DJ fonts, are printed as bitmapped fonts. Since the DJ fonts do not include the four times font size required for High Quality printing, any DJ fonts you print using the QuickDraw Graphics method will appear in Low Quality. If you select QuickDraw Graphics only and you want High Quality output, you must use a font for which you have the four times size available. The CS fonts supplied with MacPrint are excellent choices, since we have supplied you with large sizes of these fonts. If you select Printer Fonts only, you cannot include graphics in your document; this includes QuickDraw Graphics fonts. You can only use DJ fonts that are available in landscape orientation. Please see Appendix B, page 139, for a list of the landscape fonts available on these printers.

2. LANDSCAPE PRINTING - WHEN THE RECTANGLE RULE FAILS: Normally, if you're using the Printer Font method and you try to print a Macintosh symbol which is not found on the cartridge or internal font you've selected, the character will be printed as a rectangle. However, this rule fails if you're printing in landscape orientation on the DeskJet or DeskJet PLUS because the rectangle is a bitmapped character. Bitmapped characters cannot be printed if you've selected Printer Fonts only. Therefore, if you try to print a character not found on the cartridge or internal font, nothing will be printed for that character.

3. DESKJET PLUS FONT CARTRIDGES: Four new font cartridges have been added to the DeskJet PLUS driver. These new font cartridges (R, T, U, V) will work only in the DeskJet PLUS printer, and are therefore not selectable under any other MacPrint printer driver.
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ClarisWorks v1.0v3: Release Notes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following issues were fixed in version 1.0v3 of ClarisWorks:

General

1. In 32-bit mode with 18 or more MB of memory, closing the Help menu corrupts the heap.
2. If a stationery document is anywhere on the hard disk but at the root level, the ClarisWorks Stationery filter in the Open dialog will not see it.
3. Empower II 4.0 prevents ClarisWorks from opening saved files.
4. ClarisWorks could not handle upper ASCII characters as command shortcuts.
5. On the Macintosh SE/Classic , ClarisWorks will not use the LCAL setting for eight color palette width the first time you click on it.
6. When ClarisWorks is used with FileGuard installed, it is impossible to open documents.

Word Processor

1. If space between columns is increased and you change the size of text in the footer, it thrashes the columns created.
2. If a Change All for a Footnote is done in the Footnote panel, the application will crash with a Bus error.
3. Enter a underlined text into first and third line of a document. Printing this document to a StyleWriter or Personal LaserWriter LS prints a dot at the start of the second line.
4. Printing TrueType Fonts to StyleWriter or Personal LaserWriter LS puts an extra space at the start of a new paragraph.
5. When a MacWrite II document that used Auto Hyphenate is imported into ClarisWorks, formatting becomes corrupted.
6. There are compatibility issues running Thunder 7.
7. There are various repagination issues including very slow pagination on large documents.

Database

1. Create some and hide some records. Go to the Find mode, type text, check the Omit Check box, click All. It will only find the records from the visible (not ALL) records.
2. Create a spreadsheet frame with data and select Open Frame. The Make Chart menu is dimmed.
3. Create a summary field, go to Layout and create a new layout. The Body parts shifts down .5" in.
4. Omitting multiple records causes all data in the database to be found.
5. Sliding does not always work when printing to an ImageWriter.

Graphics

1. Freehand or smoothed polygons do not print on a DeskWriter C.
2. Line widths all print the same width on a DeskWriter C.
3. There are issues printing filled smooth polygons when you are NOT using Print Monitor.
4. There are some issues printing objects with fill patterns. They are not WYSIWYG.

Spreadsheet

1. Creating a 3-D bar chart with data that includes a zero. If you select LOG, system will crash.
2. Formulas on an AppleWorks 3.0 spreadsheet do not import correctly and/or sometimes missing.
3. Under certain circumstances, you will receive BADRANGE in cell A1.
4. Sorting does not work correctly in a column with formulas that contain Division or Multiplication operators.
5. StDev function cannot reference more than 181 cells.
6. Cannot use underscore or dash characters.
7. Some gradualness print more heavily than others when printing to a LaserWriter.
8. Mr. Bus Error will cause a spreadsheet to crash when opening a SYLK file.
9. There are issues saving files out as Excel 3.0 and then opening them back up.

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ClarisWorks: Joint Editing Across a Communications Link

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the communication environment, if you wish to type to another computer's screen, establish a normal connection making sure that Local Echo, New Line on Return and Auto-Wrap to Next Line are all turned on. You can then Save this stream of text via the Capture Data command. This is not document collaboration but it is close.

You cannot work on word processing documents or other documents across the phone line simultaneously.

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ClarisWorks: Changing Font Styles of a Chart‘s Number Series

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you want to make style changes to elements of a chart created in the spreadsheet environment you might refer the section "To create a chart" of the ClarisWorks Handbook which states, "Any changes you make to the font, size, or style in the spreadsheet appear automatically in the chart." This feature is quite apparent when changing the style of the category series or the legend.

However, if you want to change the font, size, style, etc. of the number series, you need to make the desired changes to the top left cell (anchor cell) of the range of numbers used to create the chart.

For example, you might have a range of data from cell A1 to D4, where row 1 is used for the chart categories and the numerical data for the chart is in the range B2...D4. The cell B2 represents the anchor cell for the data used in number series of the chart and any style changes made to this cell will automatically be reflected in the chart. Changing the style of any other cell in the range B2...D4, even if every cell in that range except B2 is changed, will not be reflected in the number series of the chart.

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ClarisWorks: Database Not Printing Page One

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problem:
The customer prints out of the database and the first page is missing.

Solution:
Title Page is selected in the Document window under the FORMAT menu.

In versions previous to 1.0v2, this caused a crash but now it just causes this symptom.
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ClarisWorks: Extracting Names From a Field

How to extract the first, middle and last names from a full name field when these items are separated by spaces.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Given that FULLNAME is a text field in a ClarisWorks database and that data is consistently entered with first, middle and last names all separated by a space, here are calculations to extract the first, middle and last names:

FIRST (CALCULATION, TEXT RESULT)=
LEFT('FULLNAME',FIND (" ",'FULLNAME',1)-1)

MIDDLELAST (CALCULATION, TEXT RESULT)=
RIGHT('FULLNAME',LEN('FULLNAME')- FIND(" ",'FULLNAME', 1))

MIDDLE (CALCULATION, TEXT RESULT)=
LEFT('MIDDLELAST',FIND(" ",'MIDDLELAST',1)-1)

LAST (CALCULATION, TEXT RESULT)=
RIGHT('MIDDLELAST',LEN('MIDDLELAST')-FIND(" ", 'MIDDLELAST', 1))

Notes for calculations:
1. Each of the fields is a calculation field with the result formatted as text.
2. Double quotes in the calculations have a space between them.
3. The MIDDLELAST is an interim field that need not show on your layout.
4. When a new record is added and there is no entry in the FULLNAME field, any calculation fields showing on the layout will show #ERROR! until data is entered into FULLNAME.split
Published Date: Feb 18, 2012

EtherTalk NB Card: Can Run Both EtherTalk & TCP/IP

Can you run EtherTalk and TCP/IP on our EtherTalk NB Card at the same time?

I need a workstation that runs MarketMax (an EtherTalk-based, client/server data feed service), has four 3270 sessions running (I'm thinking of the Netway 2000 with EtherTalk option), and has MacX for X Window System to their Sun servers (that's where TCP/IP comes in).

Will this work, and what do you think traffic will look like (MarketMax puts very little traffic on the Ethernet)? Alternative solutions might be to use a Coax/Twinax Card and MacDFT for the 3270 sessions, or use a GatorBox for the Sun sessions.

This article has been archived and is no longer updated by Apple.
There should be no problem sharing the EtherTalk NB Card between EtherTalk and TCP/IP.

It is not clear whether you need many workstations or just one, and if many workstations are required, whether you need distributed sessions on those stations.

Depending on the number of workstations to be connected to the mainframe, Tri-Data Netway 2000 from Tri-Data Systems is certainly a solution; however, it might be overkill for one workstation.

Running MacDFT using the Coax/Twinax Card will work, but you will need to connect to an IBM 3X74 controller. Running MacDFT 1.1 using the Serial NB Card, you can have SNA connectivity to the host via a Front End Processor.

You can also run Avatar MacMainFrame 3.5 (from Avatar, Inc.) using Avatar SNA/SDLC card and distribute the sessions to LocalTalk, EtherTalk, or TokenTalk.

It is difficult to predict the traffic without knowing about the network topology, the number of workstations, and the applications. Of the applications you mentioned, MacX might be the one with the most traffic, but this should be fine with one workstation.

For more information, search under: "DCA (formerly Avatar)" and "Tri-Data Systems"

Article Change History:
26 July 1993 - Company title changed from Avatar to DCA (Digital Communication Associates).
3 May 1990 - Updated for technical accuracy
Published Date: Feb 18, 2012

ClarisWorks: Field Format of a Text Field

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This has been fixed in version 2.0.

The database environment's "Field format" command (under the OPTIONS menu when you are in Layout mode) only works for number, date, time and summary fields, as well as calculation fields that return a number, date or time result.

If you are in layout mode and have no fields selected, the "Field format" menu choice will be gray. However, even though there are no field format options available for text fields, if you select a text field, the "Field format" menu item will become available (instead of being grayed-out, as you would expect). If you select it, nothing will happen. This makes it appear that ClarisWorks isn't performing properly.
Published Date: Feb 18, 2012

ClarisWorks: Losing Contents of Clipboard

If you copy an item to the clipboard, paste it into ClarisWorks, switch to another application, and then go back to ClarisWorks, the clipboard contents may disappear.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This does not happen in ClarisWorks version 2.0.

Sometimes it seems as if ClarisWorks 1.0 can lose the contents of the clipboard. To demonstrate this:

1) Make sure another application is running while in System 7 or 6.x with MultiFinder
2) Launch ClarisWorks and open a document (preferably in the Graphics environment)
3) Open the Scrapbook and copy something to the Clipboard
4) Paste picture into ClarisWorks document-no problem.
5) Switch to the other application and then back to ClarisWorks
6) Try pasting picture. Nothing happens. It seems as though the contents of the clipboard have been erased although you will be able to paste the picture into your other open application

This issue will not happen if you copy a picture from ClarisWorks to the Clipboard and move between applications. Additionally, after you perform step 4, open the clipboard from ClarisWorks. When you switch applications in Step 5 and return to ClarisWorks, the clipboard window will still show the picture you copied even though you can't paste it. Close the window and open it again and you will have an empty Clipboard window.

Likely Explanation & Workaround:
In both System 7 and System 6 with MultiFinder, applications have the opportunity to check to see whether the contents of the clipboard have changed when responding to suspend and resume events (sent when you move between applications) so that the state of the Clipboard is properly handled.

In all likelihood, ClarisWorks is misinterpreting some of these events (probably the resume event) so returning to the application replaces the contents of the scrapbook with ClarisWorks empty private scrap. That's why copying a picture from ClarisWorks will not duplicate the problem-it's private scrap is not empty. On the positive side, it still manages it's responsibilities when you go to another application properly-that's why the contents of the Clipboard are OK when you go back to another application.

Additionally, according to Inside Macintosh, the clipboard window should be hidden when switching applications.
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ClarisWorks: Non-Standard Results Printing from Finder

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Unlike most applications, and contrary to Apple's Interface Guidelines, ClarisWorks and ClarisImpact present the Print dialog box for each document when printing multiple documents from the Finder. All other Claris applications present the Print dialog box once, and then print all documents based on the specified settings. You do not have to confirm for each document.

There is no workaround at this time.

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ClarisWorks: Printing with the HP DeskWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problem:
When printing a database (and maybe other document types as well) to a Hewlett-Packard DeskWriter you may get an "Insufficient Memory" message.

Solution:
Increase the application memory for ClarisWorks to about 1500K. This should alleviate the situation.

Other things to check are the version of the DeskWriter driver. Do this by going to Print under the FILE menu. Just to the left of the "Ok" button you will find the version number (other printers use a "Print" button). The latest DeskWriter driver version is 6.0.

If the driver is not at least version 6.0, contact Hewlett-Packard to get a new driver. Some older drivers start with "A" or "0A". These drivers are outdated and must be replaced.

Hewlett-Packard's Technical Support number is (208) 323-2551.
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ClarisWorks: Auto-entering Today‘s Date

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 2.0 supports auto-entered date fields as well as many other automatic entry options.

ClarisWorks 1.0 does not support auto-entered date fields, but you can auto-enter today's date into a calculation field. The formula for the calculation field is just the NOW( ) function. The calculation field should be set to result in a date. The NOW ( ) function is not updated when the file is opened on a later date, so the date entered will not change.

Alternatively, you can auto-enter today's date and display it as a formatted date. Define a calculation field (to result in Text) with this formula:

TodayDate (Calculation, Text result) = DATETOTEXT(NOW(),x)

where x= 0,1, 2, 3 or 4 (date format choice) format the date as per the following:

0= 2/23/91
1= Feb 23, 1991
2= February 23,1991
3= Sat, Feb 23,1991
4= Saturday, February 23, 1991

However, there are a few considerations...
1. This field will contain a text value that cannot be sorted like a normal date field.
2. This text value cannot be used in other date calculations because it really is text.
3. You cannot match records using this in a date calculation.
4. These values will not have any particular range, so there is no less or more than this field.
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ClarisWorks: Extra Quotes in Imported Excel SYLK File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Excel files saved out as SYLK will have quotation marks around the contents of any cell that contains a comma. This can be a problem when importing data into ClarisWorks, MacProject II, and Filemaker Pro.

If your Excel file has the data under the columns First, Last, Party, Motto like this:

First Last Party Motto
George Bush Republican If you can't join em, beat em.

then it will export as: George,Bush, Republican," If you can't join em, beat em."

1. To remove the quotation marks, open the SYLK file in a word processor, search for the quotations and replace them with nothing. You will also need to remove the comma from that field, or else it will be imported as two fields because the comma will be seen as a delimiter. Or, instead of removing the comma from the field, you could replace it with an unusual constant such as "XXX" and then replace the constant later once you have imported the file into its destination application.

2. Then export the file as text. The XTND filter for SYLK looks into the file itself to see if it is a SYLK file so you don't have to worry about the file being saved as text rather than SYLK.
Published Date: Feb 18, 2012

MacDraw Pro: Opening MacDraw 1.9.x Files using HyperCard

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in MacDraw Pro 1.5

Using HyperCard to open MacDraw 1.9.x documents in MacDraw Pro 1.0v1 does not work.

This command should launch MacDraw Pro and open a MacDraw 1.9.x file named MDdoc:

"Open MDdoc with MacDraw Pro"
Instead, it opens a blank, untitled document.

This command works correctly for all other openable file types. For example:
"Open MW2doc with MacDrawPro"
will open a file named MW2doc into MacDraw Pro, even if this file is an EPSF, TIFF, PICT, MacWrite II or any other openable file.
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Claris Resolve: Creating High-Low, XY and Scatter Charts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When High-Low, XY and Scatter charts, multiple columns or rows of data represent a single series. A High-Low chart with six columns of data, for example, would create 2 series. The first series represents the first three columns of data and the last three columns are plotted in the second series. XY and Scatter charts work in a similar manner but only use 2 columns or rows per series.

Rows and columns of data must be contiguous and odd rows or columns are ignored. If you tried to create an XY chart based on 5 columns of data, for example, the 5th column would remain uncharted because it does not complete a pair. Series labels are taken from the top-left cell of each pair (if it contains text). Defining series labels, therefore, must contain 2 or 3 cells for each series even if the 2nd and 3rd cells are blank.

Sometimes the data may not be laid out on the worksheet in a manner that allows the easy creation of this type of chart. You may have three columns of data, for example, that you want to chart in an XY format with the first column the left series in each pair. To create a chart from such data, use the following procedure:

1. Select the first two columns or rows. Claris Resolve defaults to using columns, however, this can be changed by selecting Rows from the pop-up menu in the Chart Options dialog box.
2. Create your chart.
3. Display the series dialog box by double clicking on the series label in the chart legend or selecting the label and choosing Series from the Chart menu.
3. Click the Duplicate button. This will create an exact duplicate of the first series.
4. Bring up the Series dialog box for the duplicate series and change the range, symbol and symbol color.
5. Click OK.
6. Repeat steps 3 through 5 for each series you want to add to the chart.

NOTE: The Data Range field in the Series dialog box will contain either 2 ranges (XY and Scatter charts) or 3 ranges (High-Low). These ranges will be separated by semi-colons. When changing the range information for your duplicate series, you usually only need to change one or two of these ranges. If the layout of your data conforms to the example cited above, you would leave the first series alone and change just the second.
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MacDraw Pro 1.5v1: Product Fact Sheet

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Product Description:
MacDraw Pro 1.5 is the high-speed upgrade of the best- selling Macintosh graphics software for designing, illustrating, publishing and presenting.

MacDraw Pro 1.5 offers full System 7 support - including QuickTime - and performance improvements making it faster than version 1.0. MacDraw Pro continues to offer superior color support, unparalleled file exchange capabilities and complete content control.

New Features of MacDraw Pro 1.5:

- Text entry and redraw is up to 4 times faster, using improved algorithms which improve speed without accuracy loss.
- Text printing is two to five times faster (especially non- PostScript).
- Improved Fast Gradient display is up to five times faster than Best Quality display, with smoother visual representation.
- Launch time is reduced, and pop-up palettes are pre- drawn on program launch for better program "feel" and responsiveness.
- Other optimized functions including drawing, scrolling, rotating, and selection now 20% to 200% faster.

New RAM-scalable performance
- Open more documents with less memory.
- Use all available colors without memory restrictions (4MB no longer required for millions of colors).
- Speed redraw and scrolling performance by allocating additional RAM.

Full System 7 support ... and more
- Complete Publish & Subscribe support includes the ability to publish objects on a specific layer or across layers.
- QuickTime movies act as other objects and may be incorporated into drawings or presentations.
- Apple events allow MacDraw Pro to be "driven" by other applications. A sample Claris HyperCard stack is included which works as a timed slide-show controller (HyperCard sold separately; version 2.1 required).
- TrueType font support
- Balloon Help now complements Claris HyperHelp.
- Tile and select windows functions easily with the Windows menu.
- Select objects by color (or other fill).

Continuing Strengths of MacDraw Pro 1.5:

Extensive color support
- Takes full advantage of 32-bit color QuickDraw, displaying up to millions of colors.
- Automatic color approximation (dithering) allows users to display more than 2,000 approximated colors on a 256 color (8-bit) card.
- Multiple palettes open simultaneously to enable users to easily create blends or group complementary colors
- Ideally suited for mixed color and monochrome environments with features like "named colors," which allow users to easily elect colors, even on monochrome monitors.

File Exchange Capabilities
- Claris XTND architecture allows users to easily open, work with and save documents in a variety of industry standard file formats such as PICT, Color PICT2, MacDraw II, EPSF and other graphic and text file formats with translators supplied by Claris and third parties.

Complete Content Control
- Standard word processor ruler features in each text block allow users to position text precisely with left, right, center and decimal tabs, line spacing, letter spacing, and paragraph spacing control.
- Superscript and subscript allow users to create scientific notations and add common symbols to text.
- Polygon and new bezigon tool allow users to create and edit curves easily without bezier tangency controls, and access full bezier curvature when needed.
- Three editable gradient types offer professional shading effects to add depth and highlights to graphics. Up to four colors can be chosen for each gradient.

- Text and graphics can be precisely rescaled by percentage to fit an area.
- Full featured palette control with floating or "tear-off" palettes and a Finder-like interface for quick palette creation.
- Options available for more precise positioning of objects while drawing include the ability to zoom while drawing; duplicate while dragging; activate or deactivate grid snap while drawing; and edit points while drawing polygon and bezigon objects.
- Precision zooming from three to 3,200 percent, in 1 percent increments, allows users to maximize screen space.
- Keyboard shortcut support for quicker navigation through dialog boxes.
- Library feature allows addition or removal of named objects directly in library window for simple maintenance.

Built-in Slide Presentation Functionality

- Full on-screen presentation capability provides flexibility in delivering presentations with support for remote control devices and screen blanking.
- Layer/slide support allows users to copy and paste multiple slides or layers from one document to another for easier document and presentation management.
- Reorder slides or layers by dragging to quickly organize drawings and presentations.
- Semi-modal dialog box allows users to view changes before approving them.

Target Customers:

Business Professionals use MacDraw Pro for creating business presentations, free-form business charts, casual scaled designs, simple desktop publishing projects and enhancing graphics created by other applications or clip-art libraries (purchased separately).

Graphic Designers and Illustrators use MacDraw Pro for on-time deadline and informational graphics and illustrative graphics with the ability to work in full color, work with more precise curve tools and directly save Encapsulated PostScript (EPSF) files.

Engineers and Architects use MacDraw Pro for basic drafting, conceptual design, floor plans, architectural renderings and a number of other tasks that require drawing in scale.

In-Package Support Materials:
- Users Guide
- Color Guide
- Getting Started guide with tutorial
- On-line Guided Tour and Sample files
- Context-sensitive, customizable HyperHelp system

Support Services for Registered Owners:

Customer Relations
- Maintains registered customer database
- Handles non-technical questions, i.e., registration status, etc. Phone: (408) 727-8227
- Phone lines staffed from 8 a.m. - 5 p.m. PST, Monday through Thursday and 8 a.m. - 2 p.m. PST, Friday
- Phone: (800) 544-8554 for product upgrade order forms and instructions

Technical Support
- Dedicated team of Technical Support
Specialists.resolve technical software questions and problems
- Phone: (408) 727-9054
- Phone lines staffed from 6 a.m. - 6 p.m. PST, Monday through Thursday and from 6 a.m. - 2 p.m. PST, Friday

System Requirements and Compatibility:
- Macintosh Plus and all later Macintosh models
- Hard disk drive
- 2 MB RAM required (2 MB for System 6; 4 MB for System 7)
- System 6.0.5 or higher, or A/UX 2.0 or higher
- 32-bit QuickDraw required for color
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MacDraw Pro 1.5v1: Upgrade Announcement

Claris upgrades MacDraw Pro with major performance enhancements and complete System 7 support.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
SANTA CLARA, Calif., May 18, 1992 - Claris Corporation today announced MacDraw Pro 1.5 software, the high-speed upgrade to the best-selling graphics program for the Macintosh. The new version offers up to four times the speed of Version 1.0 and exceeds the Macintosh graphics performance standards set by MacDraw II. Major performance enhancements within Version 1.5 include user-controllable memory buffering and display options that improve the speed of on-screen display and printing, allowing for improved interactivity and handling larger-scale design and drawing tasks on a greater range of Macintosh CPUs.

Full System 7 support -- including QuickTime, Publish & Subscribe, and Apple events -- further bolster MacDraw Pro's position as the leading graphics solution for presentations and for workgroup environments.

"Mac users have made MacDraw Pro the best-selling graphics solution," said Steve Pollock, Claris director of product marketing. "We are confident that MacDraw Pro 1.5 meets the expectation of users and is the perfect blend of features, full System 7 support and high performance to best meet the graphics, design, illustration and presentation needs of typical Macintosh users."

Up to 4 times faster than Version 1.0
MacDraw Pro 1.5 speeds graphics creation with several improved performance factors:
- Text entry and redraw is up to four times faster, without any loss of accuracy.
- Text printing is from two to five times faster.
- "Fast Gradient" display is up to five times faster than the "Best Quality" display. Gradient can be tuned to the resolution of the output device.
- Other optimized functions -- which are from 20 percent to 200 percent faster -- include drawing, scrolling, rotating, and object selection.
- Greeking options allow users to display placeholders for complex graphics and text and image objects providing significantly faster redraw performance within detailed documents.

Full System 7 support
MacDraw Pro 1.5 new System 7 features include Publish & Subscribe capabilities, Apple events, QuickTime support, Balloon Help, and TrueType. Complete Publish & Subscribe support includes the ability to publish partial or complete objects from a user-specified combination of layers.

MacDraw Pro 1.5 users may now publish graphics, i.e., logos and charts, that are created in various applications and shared within a workgroup. In addition, users may also subscribe to charts created in applications such as Claris Resolve and other spreadsheet programs for more effective workgroup computing.

With Apple events users can "drive" MacDraw Pro from other applications, such as the HyperCard program. A sample HyperCard stack that works as a timed slide-show controller is included with MacDraw Pro1.5.

With QuickTime, users may enhance on-screen presentations with video, animation and sound.

Continued strengths of MacDraw Pro 1.5
Since its inception, MacDraw has continually set the standard fo0r business graphics on the Macintosh, making it the number-one choice of Macintosh users. Today, MacDraw Pr" 1.5 features extensive color support, state-of-the-art file exchange capabilities and leading edge gradient fill and text handling capabilities. New users will appreciate the familiar Claris family interface, including zoom tools, a favorites tool bar, the text ruler, and tear-off palettes. Professionals can take advantage of 32-bit color QuickDraw, and extensive, customizable gradient options.

In addition to general purpose drawing and graphics tols, MacDraw features on-screen slide presentation capabilities. The layer/slide support allows users to copy and paste multiple slides from one document to another for easier presentation management.
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MacDraw Pro: Expressionist Equations not Pasting Properly

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Equations created in Expressionist will not paste properly into MacDraw Pro 1.0v1. (Greek characters shifted up above the equal sign, etc.). The issue was also evident using MacDraw Pro 1.5.

Expressionist Tech Support confirms the following:
1) The current version of Expressionist as of May, 1992 is 2.07 (though updating probably wouldn't fix this issue).
2) They receive calls from MacDraw users of this issue
3) Suggested workaround (which sometimes helps): After pasting the equation into MacDraw Pro, Ungroup it several times. Then, move the characters into the proper position.
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MacDraw: Printing Phantom Arcs to StyleWriter

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MacDraw II and MacDraw Pro drawings with arcs may print incorrectly to a StyleWriter or LaserWriter LS. The printout may contain "phantom" extra arcs that do not exist in the drawing. These phantom arcs look as if their center points are the same as the drawn arcs. This appears to be an issue with the print drivers, as these same arcs print incorrectly from Canvas and SuperPaint as well. To reproduce the issue:

1- draw one or more circular arcs, with a 4¡ arc, from 268¡ to 272¡
2- print to a StyleWriter or LaserWriter LS

However, a 4¡ arc from 266¡ to 270¡ prints correctly.

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MacDraw Pro & Claris Resolve: Printing Two-color Patterns

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Printing two-color patterns from MacDraw Pro or Claris Resolve to a Postscript printer will result in incorrect printing of the patterns. (A two-color pattern has a background color that is non-white).

To print color patterns directly to a Postscript printer, you need a Postscript Level 2 print driver (e.g., LaserWriter 8 driver) and a Level 2 printer (e.g., IIf, IIg, LaserWriter Pro).

To print color patterns with an older printer driver or printer, save to an EPSF file from MacDraw Pro, open or import the EPSF file, then print.

If saving to an EPSF file, you must use the EPSF XTND translator included with MacDraw Pro 1.5v2.
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Claris Resolve: Charting Discontiguous Ranges

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Claris Resolve does not allow you to select discontiguous ranges when charting, however, you can create charts based on discontiguous ranges by using one of the following techniques. The technique you use depends on the physical distance between the ranges being charted. These techniques apply for all chart types.

If your ranges are located close together:

1. Select the entire range including the area you don't want included and chart it.
2. Double click on the series item in the legend of the chart you do not want (or select it and choose Series from the chart menu). This will present the Series dialog box.
3. Click on the Delete button to delete the series from the chart (this will not affect the data on the worksheet).
4. Repeat steps 2 and 3 for each unwanted series.

If your ranges are widely separated on the worksheet:

1. Select the first contiguous group of data and chart it.
2. Double click on the series item in the legend of the chart just above where you want the next series placed.
3. Click the Duplicate button. This will create an exact duplicate of the selected series.
4. Double click on the duplicate series item to bring up the Series dialog box.
5. Change the data range to the next range of data you want charted.
6. Since this is a duplicate, you may want to change the symbol and symbol color (this only applies if the chart contains symbols).
7. Click the OK button.
8. With the duplicate series still selected, choose a new color from the fill color pallet in the tool bar (identified by the paint bucket icon).
9. Repeat steps 2 through 8 for each new series you want to add to the chart.

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Claris Resolve: Creating Query Documents

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Claris Resolve 1.1 has the capability to read System 7 Query documents via the HostAccess utility script provided with the package (installation optional). It does not, however, create Query documents.

You can create System 7 query documents in several application including Clear Access and DataPrizm. Autorun files created in DataPrizm are also supported and add the ability to access other protocols such as SQLNET.

DataPrism is distributed by Brio @ (415) 961-4110

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Claris CAD: Feet and Inches Displayed in Location Bar

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You can get the Location bar in Claris CAD to display in feet and inches. Several conditions must be met, but these are common among architectural users, who are most likely to want feet and inches. All of the following commands are in the Rulers... dialog.

1) You must have an actual ruler set in feet. (The actual ruler is the bottom ruler in the Rulers dialog. It represents the 'real life' dimensions of the objects you are drawing. The top ruler represents the dimensionson the screen. For more info see the article "The Rulers... Dialog.")
2) You must have Fractional Readout selected.
3) You will get feet and inches more often if you have Round off values.

Round off values rounds off the dimensions in the location bar to display in feet an inches. 3.01 feet will display as 3' with Round off values active.

The denominator in the fractional readout will depend on the number of divisions per inch set in the dialog. If you have 12 divisions per foot, you will get whole inches in the readout; if you have 24 divisions per foot you will get half inches.

It is not possible to have feet and inches to display in the Info window.
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Finding and Resolving Init Conflicts

Methods for troubleshooting Extension and other Conflicts with System 6 or 7

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Many software problems are caused by conflicts between programs and system software. Conflicts can cause crashing, unexpected or unexplainable behavior or corrupt documents.

There are many types of files that can cause these problems. Extensions (called inits before System 7), Control Panel documents, start up files and scripts are just some of the types. To determine if a problem you are having is being caused by a conflict, follow the directions below.

Step 1) Be sure that the behavior you are encountering is a system problem. Are you sure the program is misbehaving, and that you haven't misunderstood one of it's features? For example, if something is printing incorrectly, check your printouts against what you actually see on the screen. You might have inadvertently changed the something and if the first time you see the change is on a printout, you might assume it's a system problem.

Step 2) Define the problem. Some problems are easy to identify (If I go under the File menu to "Open" it crashes) and some are a little more difficult (If I draw a rectangle and then scroll to the bottom right of the screen, I get a little weird cursor). You need to have something to test to see if you have found the solution to the problem.

The trick for testing for a conflict is to separate the System file from anything that might affect it, then restart. If the problem goes away, then you can be sure it is being caused by something in the system folder, and you can begin the process of searching for it. If it does not solve the problem, then it either is something in the program, or just unexpected behavior.

While there is software that allows you to turn inits off from the Control Panel, they are not as reliable for testing as the methods outlined below. In some cases, the software that turns off the inits has caused the conflict!

METHOD FOR COMPUTERS RUNNING SYSTEM 6 OR EARLIER
In order to separate the system from the inits, you have to place them in separate folders and restart the computer. Here is a step buy step method for testing:

1) Open your system folder. Click on the File menu and select "New Folder." Drag the resultant new folder to the Desktop. You will not need to rename the folder. A handy place to put it is right above the Trash.

2) Move your System file and your Finder file out from the System folder to the new folder. It's important to move them, not copy them.
3) Restart the computer.
4) Try to recreate the problem you were having.

IF YOU FIND AN INIT CONFLICT (System 6)
Let's say you have 10 inits, and you've found that one of them is causing a problem, but you don't know which one. You could put them into your temporary system folder one at a time and restart and then check for the problem, but that would take a long time.

The trick is to put 5 of your inits into the temporary system folder, restart, then check for the conflict. If it is still gone, then you have eliminated those inits as the culprit. You can then put 3 more inits in your temporary system folder and restart and narrow down the possibilities that way. This is what is known as a binary search, and it can dramatically cut down the time it takes to find a problem. Instead of testing 100 files one by one, you could test all 100 files using only 7 searches (50 files, then 25, 12, 6, 3, 2,1).

METHOD FOR COMPUTERS RUNNING SYSTEM 7
System 7 has a very handy method built right in for checking init conflicts. If you restart the computer while holding down the shift key, none of the files that affect the system on startup are enabled. You should hold down the shift key until you see the message that says, "Welcome to Macintosh. Extensions off."

After that, check to see if the conflict has been resolved. If so, do a binary search as described above, if not, do a variation on the method for System 6:

1) Open your system folder. Click on the File menu and select "New Folder." Drag the resultant new folder to the Desktop. You will not need to rename the folder. A handy place to put it is right above the Trash.
2) Move your System file, Finder file and your Enabler out from the System folder to the new folder. It's important to move them, not copy them.

Different computers require different enablers. If you are not sure which one your computer needs, copy all of the enablers to the new folder. The incorrect ones will be ignored.

3) Restart the computer.
4) Try to recreate the problem you were having.

When you are done troubleshooting:
1) Put the System, Finder and Enablers back into the System Folder.
2) Restart the computer.
3) Put the new system folder and its contents in the trash.

IMPORTANT NOTE: Under System 7, if the System file doesn't find all of the folders it expects to in the system folder (Apple Menu Items folder, Control Panels folder, etc.) it creates the folders. It is imperative that when you put your System, Finder and Enabler files back into the original folders that you do not move these new folders. They are empty, and if you drag them to the original system folder and it asks you to replace items with the same names, hit Cancel! If you do copy them, the empty folders will replace the folders with items in them, and you could lose all of your extensions, control panels, etc.

To make it easy to remember, only move back the items you removed from the original system folder.

IF YOU FIND AN INIT CONFLICT (System 7)

If you find an init conflict under System 7, you could use the method given above for finding conflicts under System 6. This is especially useful since there are instances when holding down the shift key does not always keep the problem file from affecting the system.

SOLUTIONS
Unfortunately, you do not have many options if you do find a conflict. You should contact the publishers of the software and make certain that you have the latest versions, and to see if those companies have any suggestions. Using the Extensions Manager or Control Panels to turn problem software on and off temporarily may allow you to use conflict software packages one at a time.

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Microsoft Word 5.0: EPSF Printing Problem

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The following customer-reported issue was duplicated by Claris Technical Support: A Microsoft Word 5.0 document containing an EPSF image from MacDraw Pro would not print. Instead, the following error message results: "limitcheck error: offending command exec." Similar EPSF files from other applications also would not print.

The solution was to restart the laser printer. The documents would then print correctly.
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Macintosh IIcx: Power Supply Connector Pinouts

What are the pinouts for the Macintosh IIcx power supply connector?

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Power Supply Connector Pinouts:

Pin	Signal	Signal Description
1	+12V	+12 volts
2	+5V	+5 volts
3	+5V	+5 volts
4	+5V	+5 volts
5	GND	Ground
6	GND	Ground
7	GND	Ground
8	-12V	-12 volts
9	/PFW	Power Fail Warning
10	+5V.TRKL	Supply voltage for power-on circuit

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ClaisWorks: Out of Memory or Disk Space Message

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When downloading files from an online service, an "Out of Memory" or "Not Enough Disk Space" message may appear. If you have enough memory and disk space, the issue is most likely that the file header, which contains information about the file size, is being read incorrectly by the File Transfer Tool.

This issue is particularly prevelant among GIF (Graphic Interchange Format) files, which were probably uploaded originally by CompuServe Navigator version 3, and have a corrupt MacBinary header.

The solution is to use a method other than MacBinary. If you are using the XModem Tool, try MacTerminal. If the file is a text file or you know that it contains only a data fork (this is true of ClarisWorks documents, not true of applications or extensions), Straight XModem will also work. Use XModem Text if you are downloading a text file that was created on a computer other than the Macintosh (with the exception of Claris Windows products). The Kermit Tool which comes with ClarisWorks 2.0 is another recourse.

The XModem 1.1 tool which ships with ClarisWorks 2.0 is more robust in its error checking of MacBinary headers and will greatly reduce this issue.
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Claris CAD: Radius Pivot Monitor Issue

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When running Claris CAD or MacDraw II (any version) on a computer with a Radius Pivot monitor, pivoting the monitor while the application is running can cause garbage to appear on the monitor. If you change the orientation before launching MacDraw II or Claris-CAD, the screen will appear correctly. This is because the off-screen buffer is set up based on the screen size upon launch.

This does not affect MacDraw Pro, because the off-screen buffer is set to the window size, not the screen.

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ClarisWorks: Reference Limit for Spreadsheet Entry

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There is a 32-cell reference limit on theSpreadsheet or Table entry bar. It will still hold 255 characters but only 32 cell references. Ranges are acceptable and count as 1 reference.

This is true of Claris Impact Tables as well as ClarisWorks Spreadsheets version 1.0 & 2.0.

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Claris CAD: 7 Document Limit when Printing from Finder

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Claris CAD has a 7 document limit when printing from the Finder. Normally, you can select the documents you want and choose "Print" from the Finder's File menu. Claris CAD, however, presents the message that the Finder can only print 7 documents at a time.

This is not a limitation in the current version of the Finder and most applications do not limit you to 7 documents including MacWrite II and ClarisWorks. This appears to be a remnant from an earlier version of the operating system.

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Claris CAD: The Rulers... Dialog

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The object of the Rulers... dialog is to allow you to draw objects in a scale on the screen that represents the size of the drawn objects in real life. If you have a machine part that is one foot high in real life and you wish to draw it one inch tall on the screen, you would set your scale in the Rulers... dialog to 1" = 1'.

The top ruler in the Ruler... dialog represents the size of the object on the screen. The bottom ruler represents the size of the object in real life. This is the 'actual' ruler.

Notice that you can set a scale in miles on the actual ruler. It would take a pretty darn big monitor to show that on screen!

The divisions per (actual ruler unit) has two purposes. First, it regulates the number of grid points per (drawing ruler unit) on the screen. The other is influencing the read out of the Location bar.

If you wish to have feet and inches, you need to check Fractional Read out and Roundoff values (see the record "Feet and inches displayed in Location bar).

If you check Zero point locked then you will not be able to move the zero point of the drawing while that ruler is active.

If you deselect Show unit name then the unit name or symbol will not display in the Location bar.
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MacWrite II: Microsoft Word PC Cannot Read Files

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ISSUE: When trying to open a document saved out of MacWrite II as a Microsoft Word PC file, the Microsoft Word PC application on the PC cannot read the file.

SOLUTION: Give the file name a ".DOC" suffix when you save the file or change it on the desktop.

EXAMPLE: XXXXXXXX. DOC

The text before the suffix is limited to 8 characters in length.

EXPLANATION: Microsoft Word PC only recognizes files that end in .DOC

NOTE: WordPerfect PC files do not require this type of suffix.
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Claris CAD: Window and Floater Preferences Change

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All of the options under the Window menu are 'session specific', that is, when you quit out of the program the settings are not retained.

There is no way to have floaters to open up in the same place when you close a file and reopen it.

The settings will be retained if you set them up in a stationery or options file.
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Claris Resolve: How to "Clean Up" Imported Data

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Sometimes you import data into Claris Resolve that contains currency symbols within numbers. When a number contains a dollar sign, comma, parenthesis, or (in some cases) the percentage symbol, Claris Resolve will interpret it as a text label, and not a value. Examples of such values include:

$100
1,000
(50)

The Value() function will not be of much help converting these expressions into numbers. It will either return a 0, or only the part of the number that falls before the comma (or other non-numeric character).

If you import these kinds of values often, the script below will make the task much easier. Once you attach it to a button, you help Claris Resolve interpret the imported data. Just select the data and click the button. Claris Resolve will process the selected fields and distill numeric values. This particular script will process discontiguous selections, and will preserve labels and blank cells. But be careful not to "select all" and activate the script; it will process blank cells in your document, and that would take a very long time.

```
{-------------------------------------------------------}
{ declare variables }
DEFINE X,RR,THEROW,THECOL,CV
{ we're going to allow for discontiginous selections.}
X = 1
{ stop redrawing the screen }
INVALIDATE ON
{ make sure we're working on a valid range }
WHILE ISREF(RANGE(REFERENCE(SELECTION(X))))
{ what's the currently selected cell range? }
RR = REFERENCE(SELECTION(X))
{ cycle through cells in the selected range }
FOR THEROW = ROWOF(RANGE(RR)) TO ROWOF(RANGE(RR)) + ROWS(RANGE(RR)) - 1
FOR THECOL = COLOF(RANGE(RR)) TO COLOF(RANGE(RR)) + COLUMNS(RANGE(RR)) - 1
CV = INDIRECT(MAKECELL(THECOL,THEROW))
{ if it's already a number, we don't need to work on it }
IF ISTEXT(CV)
{ replace common elements of formatted numbers }
CV = IF(FIND("$",CV,1),REPLACE(CV,FIND("$",CV,1),1,""),CV)
WHILE FIND(",",CV,1)
CV = IF(FIND(",",CV,1),REPLACE(CV,FIND(",",CV,1),1,""),CV)
END WHILE
CV = IF(FIND("(",CV,1),REPLACE(CV,FIND("(",CV,1),1,"-"),CV)
CV = IF(FIND(")",CV,1),REPLACE(CV,FIND(")",CV,1),1,""),CV)
{ tricky way of discerning between text and numbers. }
CV = IF(VALUE("2"&(IF(LEFT(CV,1)="-",RIGHT(CV,LEN(CV)-1),CV))&"1")=2,CV,VALUE(CV))
PUT CV INTO MAKECELL(THECOL,THEROW)
END IF
END FOR
END FOR
X = X + 1
END WHILE
INVALIDATE OFF
```

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ClarisWorks: Letter Grades from Test Scores

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

With the advent of many teachers using the ClarisWorks spreadsheet environment to calculate letter grades, there's a need for a calculation to handle this situation. The basic problem is that I have a number in a cell less than or equal to 100 and I'd like to calculate a letter grade in another cell based on this number. The ranges are easy to change and the ones used in this formula are:

90 to 100 is an "A"
80 to 89 is a "B"
70 to 79 is a "C"
60 to 69 is a "D"
0 to 59 is an "F"

Here is the actual calculation which is indented & put on separate lines only for ease of reading:

```
= IF(A6>=90,"A" ,
IF(AND(A6>=80,A6<90),"B" ,
IF(AND(A6>=70,A6<80),"C" ,
IF(AND(A6>=60,A6<70),"D","F" ))))
```

So if there are numbers in column A, for example, type the formula above into cell B1 & copy & paste it into the remaining cells in column B.

Another solution is to use the Lookup or VLookup function. These functions are explained in the ClarisWorks Handbook.

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Claris Resolve: Incompatibility with NoFontScaling INIT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There may be an incompatibility between Claris Resolve 1.1 and the NoFontScaling INIT (shareware).

Setup: System 7.0, Geneva bitmaps installed, Geneva TrueType not installed

Problem: When printing or previewing a spreadsheet, the numbers in cells would display in scientific notation or as "#######", even for numbers entered to only one decimal place. Switching to another font, or removing the INIT solves the problem.
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MacDraw Pro: Bold Text Appears Plain on Screen

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When using TrueType fonts, bold text may appear non-bold at 10 pt. size or below. Similar text may appear bold in other programs.

Unlike most other applications, MacDraw Pro gives priority to using the TrueType font over the bitmap font for screen display. TrueType does not render bold text on screen at 10 pt. or less with current system software (7.1/Tuneup 1.1.1).

If you magnify the document view to, say, 200%, so that 10 pt. bold text is displayed at 20 pts.., it will, of course, appear bold on screen.
Currently, the only way to make MacDraw Pro display bold text correctly below 11 pt. is to remove that TrueType font from the system.

Other programs will display TrueType fonts similar to MacDraw if the bitmap is removed from the System. This will force the program to use the TrueType bold font, rather than rendering a bold font from the plain bitmap.
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MacDraw/MacWrite: Bottom of Text Characters Cropped

Non-Postscript Printers: Solution to Printing Large Characters

I'm having difficulty writing large characters on a Personal LaserWriter SC. Printed characters larger than 18 point are being cut off near the bottom. For example, if an "f" is printed, most of the part below the crossbar is missing.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Personal LaserWriter SC exhibits the same symptom as the LaserWriter IISC and the ImageWriter LQ: when printing outline, bold and shadow text in 18 point or larger type sizes, some parts of the characters may be omitted and/or garbled. This issue usually occurs when 4X fonts are used. Installing more system RAM and/or allocating more memory to the application will have no effect.

In March of 1991, this issue is fixed by using TrueType-compatible printer drivers. Apple introduced the TrueType font scaling software which is bundled with both the StyleWriter and the Personal LaserWriter LS printers. The TrueType compatible drivers are available on a Macintosh Printing Tools disk which contains the drivers for the following printers:

Printer	Version
LaserWriter	6.1
ImageWriter	6.1
AppleTalk ImageWriter	6.1
Personal LaserWriter SC	6.1
Personal LaserWriter LS	1.0
ImageWriter LQ ImageWriter	6.1
ImageWriter LQ AppleTalk ImageWriter	6.1
StyleWriter	1.0

In May of 1991 another solution was made avaliable with the release of System 7. System 7 includes a new Printing disk and Tidbit disk which contain printer drivers for the following:

Printer	Version
LaserWriter	7.0
Personal LaserWriter SC	7.0
ImageWriter	7.0
AppleTalk ImageWriter	7.0
LQ ImageWriter	7.0
LQ AppleTalk ImageWriter	7.0

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MacDraw Pro: QuickDraw Printers Faster with System 7 Tuneup

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing Truetype fonts from MacDraw Pro 1.5 with System 7, the System 7 Tuneup will significantly increase printing speed. This is especially true with QuickDraw printers (ImageWriter, Personal LaserWriter LS, LaserWriter SC, Deskwriter, etc.).

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MacDraw: Rotated Objects use More RAM

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Rotated objects in an open document use more RAM than non-rotated objects. This is especially noticeable when bitmaps or pixmaps are rotated, as these objects use much more RAM than native MacDraw II/Pro objects.

MacDraw stores two images of rotated objects in RAM: a rotated and non-rotated copy of the object. This is done to improve the print quality of rotated objects when printing to print drivers that have their own rotation commands.

When printing to a print driver with built-in rotation, such as the LaserWriter, MacDraw sends a non-rotated version of the rotated object and lets the print driver rotate the object at its maximum resolution. When printing to a print driver without built-in rotation (i.e., ImageWriter), MacDraw sends the rotated bitmap based on 72dpi.
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MacDraw: Can‘t Image Colors on a Subscriber

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacDraw Pro 1.5 does not support using Image Colors on a Subscriber. To Image Colors, the Subscriber must be canceled.

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MacDraw Pro 1.5: Read Me File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Welcome. This addendum is provided to communicate information and work-arounds not available in printed documentation. You can also find important tips in the MacDraw Pro User's Guide Troubleshooting section (Appendix A).

INSTALLATION NOTES
Please remember to remove all virus checking software from your system before installing MacDraw Pro software, and then to re-install your virus checking software afterward.

The installation process will leave some temporary files on your hard disk. These files are automatically removed by your Macintosh when you restart (if you need to recover disk space after installation, Restart your Macintosh).

QuickTime EXTENSION
Apple's QuickTime extension is needed if you wish to use QuickTime movies with MacDraw Pro. Contact Apple at 800-947-5176 for information on how to get a copy of the "QuickTime System Extension ". Apple also has available a "QuickTime Starter Kit" which contains more than just the system extension. For information on the starter kit contact Apple Customer Relations at 800-766-2333.

SLIDE SHOW STATIONERY FILES
Included in the Slide Show Stationery folder, located within the Sample Files folder, are four stationery files. These files have drawing sizes that correspond to standard monitor sizes. If desired, these files may be used so that the content of a slide presentation is not scaled when Slide Show is turned on. Objects will appear as they do at a 100% zoom level and QuickTime movies will play with optimum performance.

If you need to generate a drawing size for a monitor size that was not provided or you are experiencing some scaling effects for your particular monitor, look up the picture dimensions in the reference manual that came with your monitor. Use these dimensions to set the width and height items in MacDraw Pro Drawing size dialog box.

A/UX 3.0 PUBLISHING
Due to certain anomalies, MacDraw Pro requires that an unsaved document must be saved before Publishing any information when running under A/UX 3.0. The Create Publisher menu item in the Publishing menu will be gray until the document is saved.

PRINTING TWO COLOR PATTERNS
MacDraw Pro 1.5 has included the ability to define and use patterns that have foreground and background colors. These patterns print correctly to full color QuickDraw printers. Due to current postscript driver limitations, these patterns will not print correctly when directly printing using the current Apple LaserWriter drivers. However, the EPSF file filter, included with MacDraw Pro, generates the necessary information to print these two-color patterns. If you need to print two-color patterns to a postscript printer, first save the file as an EPSF file. Place the saved file in a new document and print. The two-color patterns will print correctly.

FONT SUBSTITUTION
MacDraw Pro uses processes to place text as accurately as possible when printing. These processes are not compatible with Font Substitution in the LaserWriter Driver.

To ensure proper printing of high-resolution fonts, please use Helvetica, Times, and Courier instead of Geneva, New York, and Monaco.

MACDRAW II IMPORT
Improved text placement in MacDraw Pro may cause line breaks to change slightly within text blocks in imported MacDraw II files. This is due to letter spacing contracting (or in some cases expanding) slightly. Manually adjusting the letter spacing of words on a line above a new line break will return the line break to its original position.

To increase (decrease) character spacing for a word:
1. Select the text tool, and click on the text block.
2. Double-click the word to select it.
3. Hold down the option key and press the right (left) arrow key.

StyleWriter INFORMATION
The Apple StyleWriter printer uses the memory in your Macintosh to rotate blocks of text. Depending on available memory, large blocks of rotated text may not print. Try the following steps:
1. Break the text block into smaller parts, and delete extra carriage returns. The total amount of memory required to print rotated text varies in direct proportion to the total size of the text block, so smaller blocks need less memory.
2. Increase available memory. Instructions on increasing available memory may be found in Appendix A of the MacDraw Pro User's Guide.

ADOBE TYPE REUNION INFORMATION
Adobe Type Reunion substantially reduces the performance of MacDraw Pro for many interactive operations (such as selecting objects). You may

experience significant performance gains by removing Type Reunion from your system folder and restarting your system before using MacDraw Pro. Additionally, an incompatibility exists with Type Reunion when saving files in MacDraw II format which can result in system instability. Please do not Save As MacDraw II with Type Reunion installed.

COMPLEX POLYGON OBJECTS

Complex polygon, bezigon, and freehand objects may not print in some cases. Please see the User's Guide Troubleshooting section for information on approximate point guidelines, and tips on printing. Additionally, gradient fills may not appear in complex polygon objects.

Simplifying complex polygons will result in faster printing and faster screen display. To simplify these objects, use the Reshape command, select the object, and remove some points. Also, try to reduce points of overlap on an object (where lines on the object cross).

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MacDraw II: Screen Redrawing Very Slowly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If screen redraw is very slow (zooming, scrolling, changing views), check the Monitor cDev settings to see if it's set for "Colors/Black&White". To fix the problem, click on the "Grays" radio button.

Some video boards can be very slow when set to "Colors/Black&White", which can cause MacDraw II and MacDraw Pro to redraw on the screen very slowly.

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MacDraw Pro v1.5: Slow Screen Redraw when Spell Checking

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Under certain conditions, screen redraw may be very slow when spell checking in MacDraw Pro 1.5. This can happen when the offscreen buffer is disabled ("Draw directly to screen" option in Preferences is ON). The solution is to turn this option off.

Note: MacDraw Pro 1.5 may disable the offscreen buffer automatically if it needs the RAM to function. This is noted in "About MacDraw Pro": Info.

In this case, making more RAM available to the document will automatically turn the offscreen buffer back on.
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MacDraw Pro: Small Caps Text Displays & Prints Incorrectly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Under certain conditions, text with Small Caps style will display and print incorrectly. The text will appear slid about one inch to the right within the text block. Thus, the left side of the text block will appear blank, while the text will appear truncated on the right. Changing any of these conditions will work around the issue:

MacDraw Pro 1.5:
1 -32-bit addressing must be turned OFF to fix this issue

MacDraw Pro 1.0:
1 - The font must be a non-TrueType font
2 - The first character of the text block must be Small Caps style, and must not be a space character
3 - The text must be left-aligned
4 - The text block must be caption text (no right margin), not paragraph text
5 - 32-bit addressing must be on.

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MacDraw Pro: Tops 3.1 not Compatible

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Tops 3.1 from Sitka is incompatible with MacDraw Pro.

When launching MacDraw Pro from the network, MacDraw Pro crashes on older machines such as SE's or Plus's running System 7.0. MacDraw Pro works fine on the more powerful machines such as the Mac IIci etc.

There is a new version, 3.1.1, which will correct this issue.
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ClarisWorks: Using Macros to Simulate Custom Text Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you use MacWrite II, you know how handy it is to set a custom style for the text formats you apply to headings and other sections of your document. Although ClarisWorks doesn't have a "Custom Styles" option per se, you can set up those styles easily with a macro. Here's what you do:

1. Highlight text that you want to format.
2. Choose "Record Macro" from the Macro item in the File menu. (Or press Command-Shift-J).
3. Pick a key equivalent for the custom style and click Record.
4. Apply the font, size, style, and color options you want.
5. Choose Stop Recording from the Macro item in the File menu. (Or just press Command-Shift-J again.)

From then on, whenever you want to apply that style in your document you just highlight the text and press the key equivalent you selected.
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Claris CAD: X‘s Show Up in AutoCAD Document When Opening a DXF File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When a Claris CAD file containing dimensions is translated to DXF, then opened in AutoCAD, small X's show up in unexpected places. The X's are points that are associated with the dimensions in Claris CAD. These points are not displayed in Claris CAD but do exist and therefore they are translated through DXF.

We need to translate these points because we do not know if they are from a dimension or if they were created by the user. We set AutoCAD's points display mode to "ON" in our attempt to display everything that is translated. The AutoCAD user can turn off points display by changing "PDMODE" to 0. Use the following commands to do this:

SETVAR<return>
PDMODE<return> (PDMODE should be set to 3)
0 <return>

You must then force a redraw for the file to update with the X's hidden. The redraw command will not accomplish this task. The easiest way to do this is to Zoom In then back out again.
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Claris CAD: Making an Arc or Circle Tangent to 2 Lines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

To make an arc which is tangent to 2 existing lines:

1. Select the Chamfer tool
2. Select 2-point drawing method (Use the 3-point tool if there are many lines near the two intended tangents)
3. Uncheck TRIM in the Location Bar
4. Type a Radius measurement into the Location Bar.

If you do not know the appropriate Radius -

a) Draw a line connecting the two original lines starting at about the location where you want the arc or circle to be tangent
b) SHOW INFO for the connecting line, then Select and copy the length dimension
c) Delete the measuring line
d) Paste the dimension into the RADIUS box in the Location Bar
e) Divide the length by 2 to get a radius. (Type "/2" after the dimension pasted into the RADIUS)

5. Click on the first line, drag to the second line and release

To make a circle which is tangent to 2 lines: Do steps 1 to 5 above

6. Select the circle tool
7. Select the center point modifier
8. Move the cursor over the tangent arc until the circle center point appears
9. Click and drag until the circle appears, then drag back to the arc until the tangent indicator appears
10. Release the mouse
11. Click on the circle and choose MOVE TO BACK from the ARRANGE menu
12. Click on the arc and hit DELETE

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MacDraw Pro: Compatibility with ATM 3.0 & MultiMaster Fonts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is an issue that has been confirmed by Claris SQA:

Adobe (ATM) MultiMaster fonts do not print to the Seiko ColorPoint printer. (The ColorPoint printer uses a Postscript clone, not real Postscript. Therefore, other printers that use Postscript clones may experience the same issue).

However, since Claris applications may be used by the user while trying to print these fonts, the user may conclude that this is a Claris application-related issue.
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MacDraw Pro v1.5: Compatible with Quadra 950 and LCII

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacDraw Pro 1.5 is compatible with the Quadra 950 and LCII computers.

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MacDraw Pro v1.5: SlideShow Stack Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In the SlideShow HyperCard stack included with MacDraw Pro 1.5, clicking on the Start Slide Show button may result in an error message and/or crash if there is no document open on the target computer (the computer that is to run the slide show).

The correct procedure is to make sure that there is a slide show document open before attempting to start a slide show.
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ClarisWorks: Communication Pop-Up Menus Appear in 10 pt. Geneva

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
With MacWrite II running in the background, any subsequently opened ClarisWorks communications documents will display 10 pt. Geneva in pop-up menus which should display in 9 pt. Geneva. This issue has been passed to the developers.

Other communications programs that rely on the Apple Communications Toolbox may be similarly affected.
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MacDraw II: Missing Arrows when Pasted into Another Program

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In MacDraw II 1.1v2, showing the clipboard while lines with arrows have been cut or copied shows the lines without arrows. Subsequent pasting into MS Word pastes them without arrows, yet if MacDraw's clipboard is not shown after cutting or copying, the arrows paste okay. While the arrows do not show in the MacDraw clipboard, they do show in the Finder's clipboard.

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MacDraw Pro: Freezes when Opening Translated Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If MacDraw Pro locks up / freezes when opening / converting files using the XTND translators (MacDraw II, MacWrite II, TIFF, EPSF, etc.), try the following:

1 - Select the Translators icon in Preferences, then click on the Update XTND List button.

2- Quit the application, then delete the XTND Translator List file (System 6: in the Claris folder; System 7: in the Preferences folder).

3 - If the problem persists, rebuild the desktop (hold down the command and option keys while restarting the computer), then run Disk First Aid or Norton Disk Doctor. Disk First Aid is included on your System disks. Instructions are included in your computer's owners manual.
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Display Cards 4■8, 8■24, 8■24 GC: Monitor Video Cables (2/94)

What are the part numbers of the cables used to connect the new Display Cards 4*8, 8*24, and 8*24 GC to these monitors:

- High-Resolution Monochrome Monitor

- AppleColor High-Resolution RGB Monitor

- Portrait Display

- Two-Page Monochrome Monitor

This article has been archived and is no longer updated by Apple.
The proper cable to use with the High-Resolution Monochrome Monitor and the AppleColor High-Resolution RGB Monitor is Apple Part #590-0161 (DB-15 to DB-15).

To connect the Portrait Display or Two-Page Monochrome Monitor to any of the new Display Cards or to the Macintosh IIci built-in video connector, use cable Apple Part #590-0615 (DB-15 to 13-pin mixed-contact D-connector).

Article Change History:
23 Feburary 1994 - Corrected video cable part number

Support Information Services
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ClarisWorks: Searching for a Range of Names with Match Records

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you would like to find a range of names, based on the first letter of the last name, here are some methods.

Given that your database has a text field named "Last Name", the following Match Records formulas will find the last names from A thru C. The Match records command is in the Organize menu.

OR(LEFT('Last name',1)="A",LEFT('Last name',1)="B",LEFT('Last name',1)="C")

or you can use:

AND(LEFT('Last name',1)>="A",LEFT('Last name',1)<="C")

The LEFT function is taking the first character of the 'Last name' field for comparison purposes.

Hints:
Notice that fields are surrounded by a single quote (ie 'Last name') and that text for comparison is surrounded by double quotes (ie "A").

If you are using ClarisWorks 1.0, once you click OK in Match Records dialog box, you lose the formula. (Version 2.0 of ClarisWorks will retain the formula when you reenter Match Records). You may want to select the formula first and copy it to the clipboard. Searches you do on a routine basis could be pasted into your scrapbook.

If you are doing the search for mail merge purposes, note the following:
- After you've clicked OK and selected the appropriate records, be sure to choose Hide Unselected from the Organize menu or your mail merge document will print a letter for the unselected records as well.

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ClarisWorks: Blank Fields or Cells and Average/Count Functions

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are several situations where the AVERAGE and COUNT functions will count blank values as 0, thus returning an incorrect value.

In ClarisWorks Spreadsheet or ClarisImpact Table:
1. Individual cell references are used instead of cell ranges.
2. If the cell values are the result of an IF function which returns a blank value. The only known solution is to use the Find or Match Records feature of the database to meet the criteria you were trying to meet with the IF function.

In the database:
3. In calculation and summary fields.

For example, given:

Cell or Field Value
A1 2
A2 blank
A3 4

Spreadsheet or Table formula = AVERAGE(A1ÉA3) = 3 Correct: (2+4)/2=3
Spreadsheet or Table formula or Database Calculation = AVERAGE(A1,A2,A3) = 2 Incorrect: (2+4)/3=2

Solution one:
In a database, the Summary field returns values for the records you are currently viewing. So you can use the following method to discount blank values:

1. Choose Match Records from the Organize menu.
2. Type this formula: ISBLANK ('Field you're averaging').
3. Click the OK button.
4. Choose Hide Selected from the Organize menu.

Now the only records in the found set are ones that have data in the field you need to average. Since Summary fields only total records that are in the found set, all blank fields will be excluded from the average.

Solution two:

When it is not possible to AVERAGE a cell range (which returns the correct AVERAGE), the following formulas will create the correct divisor using the COUNT function, even without isolating the records with blank values:

Spreadsheet or Table = SUM(A1,A2,A3)/COUNT(A1,A2,A3)

Database Calculation field (which should be used to calculate the average of two or more number fields on a per record basis):
Average (Calculation, Number result) =SUM('num1','num2','num3')/COUNT('num1','num2','num3')

Database Summary field (which should be used to calculate the average of a single number field across a range of records):
Average (Summary, Number result) = SUM('num1')/COUNT('num1')

Note: A Summary field must be placed in a Leading or Trailing Grand Summary Part, or in a Sub-Summary when Sorted by (Some Field) Part on the Layout. Additionally, you must sort (if the field is in a Sub-Summary Part) and select View menu, Page View (or print) to see the results of a Summary field.
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Claris Resolve: Database Won‘t Find Numbers with Alpha Characters

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Figure 6-14 on page 6-19 of the Claris Resolve User's Guide shows a database that will find on numeric entries. The example shows entries of 18 mm, 30 mm, etc.

The database find command will not find the examples as shown in the book unless you delete "mm" from the entries.

However, for other files this might not always be the case. The numbers in column "C" could have a Custom Format.

To illustrate, select a small range of cells and fill with numbers (Cmd-L). Choose Format > Numeric > Custom Format, type #" mm" into the dialog box and click OK. The numbers will be formatted like you see on page 6-19, and you will be able to find them as shown in the example.

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MacDraw Pro: Duplicate Translator Names in Preferences

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The popup menu in the Translator Preferences dialog box will display duplicate names if a MacDraw Pro Options file has been created. For example, EPSF export may be listed twice. The only workaround is to delete the MacDraw Pro Options file, then restart MacDraw Pro.

This duplicate listing does not effect the operation of the Translator Preferences, although it may be confusing. Thus, this workaround is not required.
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Claris Resolve: External Cell and Range References

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Resolve has the ability to reference cells and ranges in another open worksheet. These references are not hot linked (They do not update automatically. See Below for updating info.).

To enter a reference, start the reference with the name of the worksheet and a colon.

Examples:

= B3 + Worksheet2:B9

This will add the contents of cells B3 through B9 from the worksheet "Worksheet2"
If the worksheet has a name with a space in it, you must enclose the ENTIRE reference with single quotations.

='Home Budget:C6'

To use a range reference, you must be using a formula that requires a range. All other external references reference a single cell. If you need to refer to a range without using a function, enter the range's first cell as the reference, select a range in your worksheet the same size as the external range and choose Fill Down and Fill Right. Claris Resolve will paste the values of the external range into the worksheet.

One note: If external data changes, you MUST choose Calculate Now to update your worksheet.
Published Date: Feb 18, 2012

ClarisWorks: Freehand Tool Smoothing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Objects created using the freehand graphic tool in ClarisWorks 1.0 are automatically smoothed. There is no way to bypass the smoothing when creating the object. When Unsmooth is selected, the object will not return exactly to its original unsmoothed shape. If you need more control over a freehand object's shape, try using the Reshape command.

ClarisWorks 2.0 allows you to toggle smoothing on and off through a checkbox in the Preferences dialog box.

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ClarisWorks: Importing DOS spreadsheets

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Lotus 1-2-3

Lotus 1-2-3 for DOS only supports the formats WKS (release 1a), WK1 (release 2.0), and WK3, none of which ClarisWorks for Macintosh supports (the Windows version does support them). In addition, 1-2-3's "Translate" utility doesn't support any formats that ClarisWorks supports, except for DIF, which doesn't preserve formulas. Furthermore, Lotus 1-2-3's idea of creating a text file is printing to a file that uses spaces between cells to simulate columns -- not too useful as far as ClarisWorks is concerned. The best situation is either:

- Use Claris Resolve, which can open WKS or WK1 files, and export as SYLK.
- Use Lotus 1-2-3 for the Mac.
- Use any other Mac spreadsheet which can open Lotus 1-2-3 files

Another solution is to use Excel for DOS or Windows. Both can read WK1 files. So if a customer wants to convert a PC Lotus 1-2-3 file to ClarisWorks, and they have Excel on the PC, they should:

- Convert their file to a WK1 file using Lotus' "Translate" utility or by changing the file name to *.WK1 on the command line when they save the file
- Open the file in Excel
- Save it as SYLK
- Take the file over to the Mac using Apple File Exchange (specifying text translation!)
- Open it in ClarisWorks

ClarisWorks is more particular about SYLK files than is Claris Resolve. While you can export a SYLK file from Excel for DOS or Windows, take it through Apple File Exchange, and open it directly in Resolve, the ClarisWorks SYLK translator isn't as robust. You must remember to select "Text Translation" in Apple File Exchange. Then ClarisWorks will be able to open the SYLK file. Otherwise you'll get a dialog box saying there were "errors" translating the file, and you will probably end up with an empty spreadsheet.

Published Date: Feb 18, 2012

ClarisWorks: Open/Save Dialog Does Not Update

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is an incompatibility between Directory Assistance II 2.0, included with Symantec's Norton Utilities for the Macintosh, and ClarisWorks.

If you choose Open and click Import, when you change the radio buttons from ClarisWorks to another choice (such as Word Processor, Spreadsheet, Graphics, etc.) the window will not update to show the appropriate files available for opening.

You can force ClarisWorks to redraw the list by backing out of the folder you are in and then reentering it.

Another solution is to disable Directory Assistance. To do this, select "Directory Assistance Settings..." from the "diamond" menu in the upper left hand corner of the Open/Save dialog. Click on the turned up page corner to go to the second page of preferences and check "Bypass Directory Assistance." Directory Assistance will be disabled whenever you use ClarisWorks.
Published Date: Feb 18, 2012

Think C: Troubleshooting Bus Errors

I'm programming with Think C on a Macintosh IIci. When I try to run a Menu Management program, I get a bus error.

The source debugger that comes with Think C says that it's running into a bus error at address 0x81BBAE. A bus error implies a hardware problem, since it's trying to access memory that it doesn't have, and it is not wrapping around to pick up the unused memory. The program seems to be initializing the windows OK but crashes just before it creates the menu bar.

Can you help?

This article has been archived and is no longer updated by Apple.
Actually, a bus error does not mean that you are having a hardware problem.

One of the most common causes of a bus error is a word or long word instruction being executed on an odd address. Another common cause is a program accessing an address in the range of addresses belonging to NuBus. Usually, the slot owning this address will not have a card in it.

Check the calls being made to the Menu Manager -- if you suspect these calls. Specifically, passing an invalid handle to one of the calls could definitely cause this error.

Try stepping through the code using the debugger and the variable watcher. Find the exact point where the error occurs and work your way back until you find the culprit.

Published Date: Feb 18, 2012

ClarisWorks: Printing Color Bit-maps to the ImageWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks prints color bitmaps to an ImageWriter in black and white when using Apple's ImageWriter driver. This could happen when inserting a color bitmap into the graphics environment of ClarisWorks 1.0 or when creating bit-map art from scratch with the ClarisWorks 2.0 (or 3.0) painting tools.

NOTE: Color bit-maps print out fine to other color printers, including color DeskWriters.

Solution for ImageWriter Owners:
Printing to an ImageWriter using the MacPalette II driver by MicroSpot will allow ClarisWorks to print color bitmaps in color. The driver supports dithering, so the print quality is pretty good for an ImageWriter.

MacPalette II requires a Mac with color ROMs (not the Mac Classic), and is much cheaper than buying a better color printer.

This product is not officially tested by Claris, but initial printouts indicate no problems.

MicroSpot
Suite 6
12380 Saratoga-Sunnyvale Road
Saratoga, CA 95070

(800) 622-7568 Sales
(408) 253-2000 voice
(408) 253-2055 fax
(408) 257-4000 Technical Support

NOTE: The drawing module in ClarisWorks can print up to 8 colors with the ImageWriter driver but will be enhanced by adding MacPalette. Mac Palette can approximate up to 250,000 colors using dithering.
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Claris Resolve: Printing in Color

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you are having problems printing or previewing in color with Claris Resolve, choose Page Layout from the File menu. There is a checkbox for color that can be turned on or off.

Published Date: Feb 18, 2012

ClarisWorks: Printing Text and Graphics Separately

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is no specific feature which will allow you to print text and graphics separately from ClarisWorks.

However, this can be done for a word processing document which has graphics only on the graphic layer (not pasted in-line with text). You can cut the graphics, print the text, and then paste the graphics, cut the text, and print the graphics. To do this:

First, save your document!

1) Click the arrow tool.
2) Choose Select All from the Edit menu (this selects all graphic objects).
3) Cut
4) Print the text.
5) With the arrow tool still selected, Paste.
6) Click in your word processing text and then choose Select All and Cut.
7) Print the graphics.

Close the file and don't save changes.
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ClarisWorks: Saving Records Entered in Find Mode by Mistake

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Multiple requests can be created in Find mode. Sometimes, records may be entered in Find mode by mistake. ClarisWorks supports record selection, enabling you to copy the requests and then paste them into browse mode, thus saving your data entry effort. Simply click outside of a field to select an entire request, choose Select All from the Edit menu, Copy, switch to Browse mode and Paste.

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ClarisWorks: Sorting a Pasted Range Doesn‘t Appear to Work

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

1) Create a range of values and sort them
2) Copy the range and paste it elsewhere
3) Go to sort and sort.

If it doesn't sort as you would expect, check the Sort Key in the Sort dialog. When you go back to sort it does not replace the sort key that you have used with a previous sort.

In other words, if you sort range A1..D5 with the sort key A1, then copy and paste the range and try to sort, A1 will still be the sort key.

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ClarisWorks: Unable to Print Page Ranges of a Mail Merge

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks does not have the ability to print page ranges while doing mail merge, even though page range options are available in the print dialog. You can specify a page range, but all pages will be printed.

The workaround is to do a search in the database document for the data that you want to merge of select a range of records by shift-clicking, and then hide the unselected records. When you merge, only the subset will be printed.

Published Date: Feb 18, 2012

ClarisWorks: Viewing Databases in "Spreadsheet" mode

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Microsoft Works database module has a "Spreadsheet View" which allows the user to view all data in columns and rows with grid lines.

ClarisWorks database offers similar functionality with its columnar layout. However, if the user has more fields than can reasonably fit across one page (usually greater than 12 on a letter size page), not all fields can be viewed.

If a spreadsheet view is important for viewing and manipulating data, the ClarisWorks user can create a new standard layout (to include all fields), select all the records (using Select All from the Edit menu), and then copy them to the clipboard (choose Copy from the Edit menu). Then open a new spreadsheet document and paste in the data from the clipboard.

If any changes are made to the data, be sure to copy all the spreadsheet cells, delete all records in the database, and paste the new data back into the database.
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ClarisWorks: Split Window Pane Anomaly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is a known bug with the split window pane feature in the spreadsheet environment.

1. Open a ClarisWorks Spreadsheet.
2. Use the horizontal split pane tool to divide the window.
3. Scroll the second half down to a lower part of the spreadsheet.
4. Type a value in a cell in the lower half, column A and hit the ENTER key
5. Close the spreadsheet, leaving the cell selected.
6. Open the spreadsheet (the cell in the lower half should still be selected)
7. Tab to the next cell in the column

The top half of the spreadsheet will unexpectedly scroll to the area of the lower half.

This seems to happen on any machine and has been reproduced with versions of ClarisWorks up to and including 2.0v1.
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MacDraw Pro: Scaled Text Reverts in Updated Subscriber

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Text in a scaled / resized subscriber will not retain its scaled size when the subscriber is updated. The text will revert to the size of the text in the publisher.

To reproduce the problem:
1- In MacDraw Pro 1.5, type "This is a test" in 36 point Helvetica
2- Draw a rectangle around the text and choose Send to Back from the Arrange menu.
3- Publish the two objects
4- Within the same file, Subscribe to the Edition file. Verify that Keep Size Changes is checked for this Subscriber.
5- Scale the Subscriber 50%, or resize it manually
6- Save

When the Subscriber is updated, the rectangle will stay the correct size, but the text will revert to 36 point.
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ClarisWorks: Rounding Issues

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisWorks relies on Apple's SANE code for rounding and other math functions. SANE uses banker's rounding which rounds to the even integer. In a ClarisWorks spreadsheet, if you format column B as a fixed number with 0 decimal places and type in the values in column A below, the values in column B will be displayed.

A	B
.5	0
1.5	2
2.5	2
3.5	4

As you can see, Banker's rounding results in alternating between rounding down, then up, then down, then up. This actually results in more even rounding accuracy. However, it is not what most people expect. To always round up from .5, use the ROUND function in ClarisWorks.

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MacDraw Pro: Command Option Spacebar doesn‘t Show / Hide the Tool Bar

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the US version of MacDraw Pro 1.0/1.5, command-option-space shows / hides the tool bar. This works correctly with System 6. However, with System 7, command-option-spacec is used to switch keyboard layouts. Thus, when running MacDraw Pro on a computer with System 7 and multiple key layouts, command-option-space activates the Keyboard cDev instead of showing/hiding the tool bar.

In MacDraw Pro 1.5v2, a second keyboard command (command-option-tab) has been added to show / hide the toolbar. Use this keyboard command with System 7.

Non-US versions of MacDraw Pro do NOT use command-option spacebar to show/hide the tool bar, in order to avoid this conflict. Non-British international versions use various keyboard shortcuts other than command-option-spacebar. The British version has no shortcut at all to show/hide the tool bar.

This is fixed in MacDraw Pro 1.5v2
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MacDraw Pro 1.5v1: EPSF Images Print Reduced or Flipped

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

EPSF objects that have been created by saving as EPSF from MacDraw Pro 1.0 may print reduced and/or flipped from MacDraw Pro 1.5. To correct the problem, update to 1.5v2, or:

1- Delete the EPSF image from the MacDraw Pro document, then Place it again from the original EPSF file, OR
2- Move the EPSF image to a new document, resave as EPSF from MacDraw Pro 1.5, then replace the original EPSF image with the new one, OR
3- Open the file in MacDraw Pro 1.0 and print.

This is fixed in MacDraw Pro 1.5v2
Published Date: Feb 18, 2012

MacDraw Pro: Gradients Printing Lower Quality on Legal Size

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Gradients may print lower quality from MacDraw Pro (any version) to a LaserWriter IIf or IIg printer when printing to legal size (or any paper size larger than letter size).

The reason is that the printer may not have enough RAM available to print the larger paper size with PhotoGrade enabled. When this happens, the printer will automatically disable PhotoGrade in order to print the document. Since PhotoGrade is used to print gradients from MacDraw Pro, the gradients will look poorer when PhotoGrade is disabled (about the quality of a gradient printed from an NT or NTX).

A IIf or IIg needs at least 8MB of RAM to print to legal size using PhotoGrade. Even more RAM may be needed if downloadable fonts are stored in RAM. The LaserWriter IIg only ships with 5MB RAM, which is not enough to print to legal size using PhotoGrade.
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LaserWriter IIf and IIg: Frequencies and Screen Angles

What is the line screen number (lines per inch) for the LaserWriter IIf and LaserWriter IIg? It was 53 on an LaserWriter IINTX

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
With PhotoGrade off, the LaserWriter IIf and LaserWriter IIg are just like the LaserWriter IINTX:
Frequency: 53 lpi
Screen Angle: 45 degrees

With PhotoGrade on, there are five settings available via the LaserWriter Utility. Here are the numbers:

```
Far right:      Frequency: 150 lpi; Screen Angle:  0 degrees
Middle right:   Frequency: 106 lpi; Screen Angle: 45 degrees
Center:         Frequency:  83 lpi; Screen Angle: 56 degrees
Middle left:    Frequency:  75 lpi; Screen Angle:  0 degrees
Far Left:       Frequency:  53 lpi; Screen Angle: 45 degrees
```

Note: The "Middle right" setting is the default PhotoGrade setting.
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LaserWriter IIf & IIg: Adobe Changed How Helvetica Fonts Print

We recently purchased some Apple LaserWriter IIf and IIg printers. We also have several LaserWriter IINTX printers. Our designers have reported that the type style of documents printed with the Helvetica font to a LaserWriter IIf or IIg are different from those printed to a LaserWriter IINTX. The difference is most noticeable with characters like "g" and "o" -- one printer prints circular characters, and the other prints oval characters.

We examined the fonts in both printers with several utilities and can't find any differences. We aren't using any TrueType fonts, and we turned off both FinePrint and PhotoGrade, but the results are still the same.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
There are slight differences in the way Helvetica fonts are printed on the LaserWriter IIf and IIg when compared to other LaserWriter printers, like the LaserWriter IINTX. Adobe changed the way Helvetica PostScript fonts print. The LaserWriter IINTX has version 001.002 of the Helvetica PostScript font, while the LaserWriter IIf and IIg have version 001.006S.

Adobe controls these PostScript font changes. They make these changes to bring their fonts more in line with the actual fonts they license from various font foundries. In the future, more and more PostScript printers will have this version of the Helvetica font. Apple is neither responsible for nor has any control over this.

Here are two things you can try:
1) Download the Helvetica font (version 001.006) from the Adobe Type Library CD to a LaserWriter IINTX. Then compare the printouts with those from the LaserWriter IIf or IIg.
2) Contact Adobe and find out if version 001.002 of the Helvetica font is still available. Download this older version to the LaserWriter IIf or IIg and compare the printouts to the LaserWriter IINTX printouts.

Published Date: Feb 18, 2012

LaserWriter IIf & IIg: PhotoGrade, RAM, and Image Size

When we print to the LaserWriter IIg, there is a half-inch margin around the outside of each page. We've been printing closer to the edge of the page with the LaserWriter IINT and IINTX. How can we adjust this on the LaserWriter IIg?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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These margin differences are caused by the memory requirements of PhotoGrade. The LaserWriter IIg defaults to using PhotoGrade enhancement unless told otherwise. Because a letter-size image -- with PhotoGrade enabled -- needs a frame buffer four times larger than an unenhanced image, the LaserWriter reduces the image size as required. It reduces a letter-size buffer, which would use 3935376 bytes, to a lettersmall buffer that uses 3511296 bytes.

As shipped, the LaserWriter IIg has only enough memory for an a4small frame buffer with PhotoGrade enhancement. Without PhotoGrade enabled, it can easily handle a full legal-sized image, but must be expli explicitly instructed to do so. You can do this in a couple of ways:

- Disable Photograde If the PostScript operator for the required page size is included in the print job, the LaserWriter will disable PhotoGrade to maintain compatibility.

- Modify the Default Parameter You can modify the persistent parameter that forces the PhotoGrade default. This is probably not a good idea unless you find it easier than modifying the printing code. It is inconvenient, and modifies the persistent memory. You can modify the persistent memory a limited number of times before it wears out.

To request a specific page size and override PhotoGrade, include a reference to the required page size in the beginning of the print job. The different page size operators are listed below, along with their memory requirements with and without PhotoGrade enhancement.

PhotoGrade

Page Size	Off	On
b5	741888	2967552
lettersmall	877824	3511296
a4small	924420	3697680
letter	983844	3935376
a4	1015872	4063488
legal	1257344	5029376

If you print a job with no requested page size, the LaserWriter IIf and IIg use the default size of lettersmall. If the job specifies a size, the LaserWriter will try to honor it as closely as possible within its memory limitations. The following table depicts the page size substitution order.

Frame Buffer Substitution Order

```
lettergray -> lettersmallgray -> letter -> lettersmall
legalgray -> legal -> lettersmall
a4gray -> a4smallgray -> a4 -> a4small
b5gray -> b5
```

With the Apple LaserWriter IIf as shipped with 2MB, a request for a letter-size frame buffer results in a lettersmall buffer, the default. Requesting an a4 page results in an a4small buffer. The next table shows the maximum page size available for each memory configuration.

MB	Largest Page Size
2	a4small, PhotoGrade disabled
4	legal, PhotoGrade disabled
5	a4small, PhotoGrade enabled
8	legal, PhotoGrade enabled

In summary, prepending the letter operator to the documents would be adequate. Or you can disable PhotoGrade one time, and leave it alone until you need it again later. Note that the non-volatile RAM used in both the LaserWriter IIf and IIg has a limit to the number of times it can be modified: approximately 50000 writes. While this is a large number, you could rapidly exceed it if the modification were sent with each page or job. Once this part wears out, the factory defaults will be used each time the LaserWriter is powered on.

The following three code segments show, respectively:

- The letter operator at the start of a job
- Code to disable PhotoGrade
- Code to enable PhotoGrade

code segment 1

```
%some sample PostScript with the letter operator prepended
letter
/Helvetica findfont 12 scalefont setfont
72 720 moveto
(This is a test) show
```

code segment 2

```
%Disable PhotoGrade.ps D.W. 11/91
%This code disables PhotoGrade enhancement after a couple of checks:
% Verifies that it's running on a LaserWriter IIg or IIf.

% Checks if PhotoGrade is already disabled - prevents NVRAM fatigue.
% (The memory device is limited to approximately 50000 writes.)

statusdict /product get dup
(LaserWriter IIf) ne exch (LaserWriter IIg) ne and
{ (Not a IIf or IIg and may not support PhotoGrade. Canceling.) =
stop
} if
currentpagedevice /PreRenderingEnhance get not
{ (PhotoGrade is already disabled on this LaserWriter) = }
{ serverdict begin 0 exitserver }
ifelse
vmstatus pop pop 0 eq
{ (Disabling PhotoGrade.) =
<</PreRenderingEnhance false>> setpagedevice
} if
```

code segment 3

```
%Enable PhotoGrade.ps D.W. 11/91
%This code enables PhotoGrade enhancement after a couple of checks:
% Verifies that it's running on a LaserWriter IIg or IIf.
% Checks if PhotoGrade is already enabled - prevents NVRAM fatigue.
% (The memory device is limited to approximately 50000 writes.)
% Also, let the user know if there isn't enough RAM for PhotoGrade.

statusdict /product get dup
(LaserWriter IIf) ne exch (LaserWriter IIg) ne and

{ (Not a IIf or IIg and may not support PhotoGrade. Canceling.) =
stop
} if
currentpagedevice /PreRenderingEnhance get
{ (PhotoGrade is already enabled on this LaserWriter.) = }
{ serverdict begin 0 exitserver }
ifelse
vmstatus pop pop 0 eq
{ statusdict /ramsize get exec 5242880 lt
{ (Enabling PhotoGrade, but it won't be used - 5MB required.) = }
{ (Enabling PhotoGrade.) = }
ifelse
<</PreRenderingEnhance true>> setpagedevice
} if
```

Published Date: Feb 18, 2012

LaserWriter IIf/g & Non-Apple Driver: Default Crops Top Line

When printing from a Sun workstation, the Apple LaserWriter IIf printer cuts off the top line of the image. Claris Tech Support has several other LaserWriter IINTs that work fine. We tried a new LaserWriter llf logic board and got the same results. We then installed a LaserWriter IINT logic board and the issue went away.

We are printing with transcript, system 4.0.3. The printer is connected serially (RS-232) at 19200 baud. The same thing happens at 9600 baud.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This cropping action is caused by the LaserWriter IIf and IIg defaulting to a standard paper size of lettersmall. Normally, printing from an Apple Macintosh Computer to a LaserWriter will also generate a lettersmall size image unless a user specifically checks the "Larger Print Area" option in the LaserWriter driver's Page Setup dialog. If this is done, the size will enlarge to letter, otherwise the driver requests a lettersmall size image. Because you are printing from a Sun workstation, you aren't using the LaserWriter driver and will see whatever defaults the different LaserWriter models use. This is the basic cause of the issue.

Unfortunately, there is another issue with the LaserWriter IIf as it ships with only 2MB of memory. Simply prepending the PostScript "letter" operator would otherwise force a full-size letter image. But because the LaserWriter IIf uses much of its memory for the basic implementation of Level 2 PostScript, it can't expand the frame buffer beyond an A4 small sized image without PhotoGrade enhancement. This means you will need to upgrade the RAM in the LaserWriter IIf to at least 5MB, and even then you'll need to disable PhotoGrade or explicitly request a letter size image.

The process to decide what frame buffer to use depends on these factors:
- How much RAM is installed?
- Is PhotoGrade enabled? (defaults to yes)
- Has the print job requested a specific page size?
- Does the requested size exceed the MaxRasterMemory setting? (Doesn't affect this situation, and requires an in-depth discussion by itself.)

The following table details the frame buffer requirements (in bytes) for the different page sizes, with and without PhotoGrade pre-rendering enhancement.

PhotoGrade

Page Size	Off	On
b5	741888	2967552
lettersmall	877824	3511296
a4small	924420	3697680
letter	983844	3935376
a4	1015872	4063488
legal	1257344	5029376

If a user prints a job with no requested page size, the LaserWriter IIf or IIg will use the default size of lettersmall. If the job specifies a size, the LaserWriter will try to honor it as closely as possible within its memory limitations. The following table depicts the page size substitution order.

Frame Buffer Substitution Order
---
lettergray -> lettersmallgray -> letter -> lettersmall
legalgray -> legal -> lettersmall
a4gray -> a4smallgray -> a4 -> a4small
b5gray -> b5

With the LaserWriter IIf as shipped with 2MB, a request for a letter-size frame buffer would result in a lettersmall (the default). Requesting a4 would result in an a4small frame buffer. The next table shows the maximum page size available for each memory configuration.

MB Largest Page Size
-- ---
2 a4small, PhotoGrade disabled
4 legal, PhotoGrade disabled
5 a4small, PhotoGrade enabled
8 legal, PhotoGrade enabled

If you upgrade the memory to 4 or 5MB, you'll still need to disable PhotoGrade or specifically request letter if they don't want the interpreter to

substitute sizes for them. Prepending the letter operator to the documents would be adequate, or you can disable PhotoGrade one time and leave it alone until you need it later. The following three code segments show, respectively, the letter operator at the start of a job; code to disable PhotoGrade, and code to enable PhotoGrade.

code segment 1

```
%some sample PostScript with the letter operator prepended
letter
/Helvetica findfont 12 scalefont setfont
72 720 moveto
(This is a test) show
```

code segment 2

```
%This code checks to make sure it's running on a IIg or IIf, and then
%disables PhotoGrade in nonvolatile RAM - persisting across power cycles.
statusdict /product get dup

(LaserWriter IIf) ne exch (Apple LaserWriter IIg) ne and
{(This printer likely doesn't support PhotoGrade. Aborting.) =} if
serverdict begin 0 exitserver
<</PreRenderingEnhance false>> setpagedevice
```

code segment 3

```
%This code checks to make sure it's running on a IIg or IIf, and then
%enables PhotoGrade in nonvolatile RAM - persisting across power cycles.
statusdict /product get dup
(LaserWriter IIf) ne exch (Apple LaserWriter IIg) ne and
{(This printer likely doesn't support PhotoGrade. Aborting.) =} if
serverdict begin 0 exitserver
<</PreRenderingEnhance true>> setpagedevice
```

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Claris Resolve: FolderBolt Conflict

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
It appears that FolderBolt 1.0v2, by Kent Marsh, and Claris Resolve 1.0v2 conflict with each other. With FolderBolt installed, each time a Claris Resolve worksheet is saved, a system bomb occurs. As soon as FolderBolt is removed, the worksheet is saved properly.

Kent Marsh
713/522-5625
800/325-3587
Published Date: Feb 18, 2012

MacDraw Pro: Use "Precise Placement" for Text Formatting

Does it seem full justification, kerning, or tracking isn't working? You need to change the text placement preference.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Q. I set the text in my MacDraw Pro 1.5 document to print fully justified, but the right edge of the text prints ragged. What's happening?

A. You've got MacDraw Pro set to use "standard character placement," which is faster because it skips the routines for fully justifying text, etc. Your printout will also be incorrect if you use the standard setting with kerned or tracked text. Set the preference for "precise character placement," which is slower but supports these extended formatting options. To use this option, choose Preferences from the layout menu, and then select Print options. Then check the Precise Character Placement radio button.
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Macintosh Family: Clocks Accurate to 1 Minute Per Month

Can you explain why the clocks on our Macintosh systems are not keeping accurate time? (I've observed this on Macintosh II and Macintosh IIx systems.) The clocks gain as much as 2 minutes a week.

This article has been archived and is no longer updated by Apple.

The real-time clock in the Macintosh family of computers is specified to be accurate to within 1 minute per month.

If the clock is gaining 8 minutes or so a month, we suspect that the clock chip may be bad. Have the computer checked by a service provider. If the problem continues, the logic board may have to be replaced.

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MacDraw Pro: Gridlines Display as Solid Lines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro 1.5 displays gridlines as solid lines when:

1- the screen buffer is turned off,
2- running System 6.0.x, and
3- millions of colors monitor setting.

Changing any of these settings will revert the gridlines to display as non-solid.
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MacDraw Pro: Shaded Cells Pasted from Excel Shifted

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In MacDraw Pro 1.5 and earlier, shaded cells pasted from Microsoft Excel are shifted (using Copy Picture).

The following steps demonstrate the issue.

1- In Excel 3.0 or 4.0, fill some cells with a pattern
2- Select the cells, then Copy As Picture (hold Shift key, select Copy As Picture from Edit menu).
3- Paste into MacDraw Pro 1.5. Zoom to 400%

You'll notice that the fill patterns don't align in the cell grid properly. They appear to extend too low. The same cells pasted into ClarisWorks appear correct.

Currently, the only known workaround is to paste into another drawing program, such as ClarisWorks, then copy and paste into MacDraw Pro.
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Claris Resolve: Files Not Saved to Correct Volume

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Saving a MacProject II or Claris Resolve file to a floppy disk with the same name as any mounted hard drive, including hard drives on shared systems, saves to the hard drive instead of the disk.

To Reproduce:

1. Name a disk the same name as a hard drive on your system.
2. Run MacProject II or Claris Resolve and save a file to the disk.
3. Result: The file is not saved to disk, it is saved to the hard drive of the same name.

Claris Resolve Response:

This is a known issue which occurs due to the use of file name strings for accessing files. Given a file name like "HD:foo", it's impossible for Claris Resolve to tell whether to save the file on a hard disk named "HD", or a floppy named "HD" if both are present. This issue occurs under System 6 or 7, and is not an incompatibility with System 7.1.

MacProject Response:

This is a known issue with MacProject II 2.5v1 and earlier. It has been fixed in MacProject Pro.
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Claris CAD: Crashing with More Than 10 Layers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
On a non-accelerated 68000 - based Macintosh (Plus, SE, Classic, PowerBook), the system will crash when showing the Info window for a selected object in a document that has more than 10 layers.

The workaround is to disable the Layer info checkbox in the Object data item in the preferences dialog.

The system will also crash under the same circumstances if you try to export (save) the object data. There is no workaround for this.

This affects all 2.0 versions of Claris CAD
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Fifth Generation: SuperLaserSpool Information

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here is some information from Fifth Generation Tech Support (800) 766-7283

SuperLaserSpool-
Current ver.- 3.1 rel. May 93. System 7.1 compatible.
Previous version - 3.0, Feb 92. ONLY version compatible with Sys. 7.0
Previous versions are NOT compatible with Sys 7 and are NOT 32 bit clean.

General Requirements: (all versions)
Must have Postscript printer that is compatible w/Apple LaserWriter driver.

Operation:
SLS creates copy of driver called "SLS copy LaserWriter" which it uses, old driver is still kept. Ver. 3.0 dynamically takes needed memory from system heap then releases it when job is finished. Prior versions take amount as specified in "Set Up' from "LaserQue DA". Maximum allowed user set buffer is 1mg (probably desired setting when using MD).

Known Conflicts are: Backgrounder, Easy Access, Gate Keeper and MacroMaker

Fifth Generation business number is (504) 291-7221
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Claris Resolve: Retail Rounding Tip

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Many retailers want to round to the nearest $9.99 for pricing on items. Here is a way to always round to the nearest $9.99.

=Int(<price calculation>/10)*10+9.99

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Claris CAD: Arrow / Cursor Keys Don‘t Move in Grid Increments

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In Claris CAD, the arrow (cursor) keys will move an object one grid division (or multiple of) or one screen pixel depending on resolution. With a ruler setting of .125" = 1' and 8 divisions/foot, it is not possible on a 72 dpi monitor at 100% to move in .125' divisions. It moves the object a multiple of the division; in this case twice the division - .25'. At 200% the resolution is doubled and therefore it is possible to move at .125' division increments. The same results will occur with a 1" = 1" ruler. If you change the zoom from 25% to 12.5% the increments will change from .125" to .25" because an .125" increment cannot be displayed.

The best way to move objects is with the location bar or the info window.

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ClarisWorks: Updated Handbook Index

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The second edition of the ClarisWorks Handbook (Users Guide for ClarisWorks version 1.0) features an expanded index, covering more topics and cross references. Customers can purchase the new handbook for only $10. Alternately, you can use the updated index, provided below.
Thanks to the ClarisWorks Users Group for their assistance in preparing this for electronic distribution and adding several references.

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Published Date: Feb 18, 2012

Claris Resolve: Regression Analysis Documentation Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Claris Resolve User's Guide U91-600-001A pages 6-36 contains a Documentation / Publication error:

The outlined portion of Figure 6-33, representing the Regression Block, includes the row titles in column A. This implies that the range should be A2..E14. Entering this as the range when performing the regression outlined in the example, however, will result in the message "Insufficient number of observations."

The first column in your Regression Range must contain your Dependent variables so the actual range in this example should be B2..E14. The row headings in column A should not be included in the Regression Range.
Published Date: Feb 18, 2012

TA42068_Applesoft_Documentation_Aids_(TIL00055).pdf

Applesoft: Documentation Aids

Finding subroutines easily helps you to modify and debug your programs. The following tricks may help you to see what's going on in your software.

This article has been archived and is no longer updated by Apple.

The use of linefeeds (CTRL-J) as the first and last character in the text of your REMs (see example below) makes the text of the remark stand out. Some printers even place the remark at the left margin with the line numbers.

Using colons to indent FOR-NEXT loops makes them stand out, making it easier to identify those needing closing.

```
10 REM THIS STANDS OUT
20 FOR J = 1 TO 10
30 : FOR K = 1 TO 10
40 :: PRINT J * K
50 : NEXT K
60 NEXT J
```

Published Date: Feb 18, 2012

LaserWriter IISC: Engine‘s Page Count Can‘t Be Determined

Is there any way to determine the number of pages that have been printed on a LaserWriter IISC? As far as I know, the LaserWriter IISC has no counter.

This article has been archived and is no longer updated by Apple.
There is no way to determine the actual number of pages that have been printed on a LaserWriter II engine, PostScript or QuickDraw.

The LaserWriter IINT and LaserWriter IINTX controller boards store the number of pages that the controller board has printed, but not the number of pages the engine has printed.

Published Date: Feb 18, 2012

Claris CAD: Custom Line Spacing Saved as EPSF Too Large

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Text from the Claris CAD application with custom line spacing, saved as EPSF and printed, will print with the lines too far apart. The line height when printed seems to be about 10% - 20% to high. At this time, the only workarounds are:

1- to use standard line spacing, or
2 - use standard line spacing; select a character on each line, such as a space, and change the size to a larger size, thus simulating a custom line spacing.
Published Date: Feb 18, 2012

MacDraw Pro: Easy Install Issue with System 7.1

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in MacDraw Pro 1.5v2

When installing MacDraw Pro 1.5v1 with System 7.1, the Easy Install feature will not work. To install, you must click the Customize button and complete a custom install.
Published Date: Feb 18, 2012

Apple IIe Card Software v2.1 for Macintosh LC

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Apple IIe Card Software v2.1 for Macintosh LC

A new version of the Apple Ike Card Software (version 2.1) for the Macintosh LC is now available. This new software works when using System Software 6.0.8 or System 7.0.1, a feature not available in the previous Apple Ike Card software (v 2.0). The new Macintosh LC II requires this version of the software when using the Apple Ike Card. The application may be used, but is not required, with the original Macintosh LC.

This new software should be installed by AESCs for Ike cards in K-12 institutions. However, manuals are not included in this update and can be purchased as noted below.

How to Purchase Apple Ike Card Software, version 2.1:

The Apple Ike Card Upgrade package, version 2.1, is available now (Part number M1222LL/B) and includes software and a new manual. The Upgrade comes with a start-up disk with System Software 6.0.8 that can be used to boot your Macintosh and to run the Apple IIe , version 2.1 software.

We recommend customers upgrade to version 2.1 only if they need the new features provided. Customers who need the new software may obtain the upgrade package from an Authorized Apple Reseller.

Published Date: Feb 18, 2012

Macintosh PC Exchange

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Macintosh PC Exchange

Now you can move files back and forth between your Apple Macintosh personal computer and a PC-compatible computer as easily as you can between two Macintosh computers. YouÕll find Macintosh PC Exchange an especially valuable and time-saving software utility if you work in a mixed platform environment, exchange files with clients or colleagues who use DOS or Windows, or use a DOS or Windows system at work and a Macintosh at home.

To move files from a DOS-compatible computer to your Macintosh, simply insert the disk in any Macintosh that uses System 7 or later and has an Apple SuperDrive or a compatible 3.5-inch or 5.25-inch floppy disk drive. Macintosh PC Exchange does the rest automatically. The contents of the DOS-format disk appear on your screen as standard Macintosh documents and folders. You can open, save, rename, move, copy, and delete them just as you would files stored on standard Macintosh floppy disks. Or you can import them into Macintosh-compatible applications.

Just as easily, you can move files from your Macintosh to a DOS computer. Simply insert a DOS-formatted floppy disk--or let the Macintosh format a DOS disk for you--into the Macintosh and drag the document from your Macintosh disk to the DOS floppy. Then insert the floppy disk into the DOS computer and begin working. ItÕs that simple.

No other software utility gives you such instant access to files. You can even customize Macintosh PC Exchange to automatically launch your favorite Macintosh applications when you double-click on DOS or Windows files. For example, you can set up Macintosh PC Exchange to launch Lotus 1-2-3 when you click on a file created using Lotus 1-2-3 for Windows.

Macintosh PC Exchange Features

Ease of use
- The easiest way to move documents between a PC-compatible and a Macintosh computer
- Fast, simple click-and-drag installation

Compatibility
- Works with leading Macintosh, DOS and Windows applications
- Works with 3.5-inch and 5.25-inch floppy disks formatted using DOS or Windows
- Formats 720K or 1.44-megabyte DOS disks on any Macintosh with an Apple SuperDrive or compatible 3.5-inch floppy disk drive
- Formats 360K or 1.2-megabyte DOS disks on any Macintosh with a compatible, external 5.25-inch floppy disk drive
- Full System 7 compatibility

Flexibility
- Handles DOS and Windows files like Macintosh files, allowing you to copy, rename, delete, and save documents and folders

- Allows you to access DOS and Windows files from compatible Macintosh applications
- Lets you custom configure your Macintosh to launch favorite Macintosh applications when double-clicking on different DOS-formatted files

Technical Specifications

Applications
Macintosh PC Exchange is compatible with all Macintosh applications and many leading DOS and Windows programs, including:
DOS and Windows programs <-> Macintosh applications
Lotus 1-2-3 for DOS/Windows<-> Lotus 1-2-3 1.0 for Macintosh
WordPerfect for DOS/Windows<-> WordPerfect 2.1 for Macintosh
Microsoft Word for DOS/Windows <-> Microsoft Word 5.0 for Macintosh
Aldus PageMaker for DOS/Windows<-> Aldus PageMaker 4.2 for Macintosh
Microsoft Excel for DOS/Windows<-> Microsoft Excel 3.0 for Macintosh
Aldus Persuasion for DOS/Windows <-> Aldus Persuasion 2.1 for Macintosh
Ventura Publisher for DOS/Windows <-> Ventura Publisher 3.2 for Macintosh
Adobe Illustrator for DOS/Windows <-> Adobe Illustrator 3.2 for Macintosh

System requirements
- A Macintosh computer with at least 3 megabytes of RAM, a hard disk drive, an Apple SuperDrive or compatible floppy disk drive

- System 7 or later

Ordering Information

TA42073_Macintosh_PC_Exchange.pdf

Macintosh PC Exchange Order No. M1252LL/A
- Macintosh PC Exchange software disk
- Macintosh PC Exchange user's guide
- Coupon offering one-year of toll-free customer support

Published Date: Feb 18, 2012

MacDraw Pro: Incompatible with Radius Pivot v1.1

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro 1.5 is incompatible with the Radius Pivot software (version 1.1) under System 6.0.7 (gray scale or color Pivot monitor). When the text tool is selected and text is typed into any document, it may not appear on screen, and the system may lock up.

MacDraw Pro 1.5 seems to run fine with the Pivot monitors under System 7. Claris tested MacDraw Pro with Radius software 1.1. Radius tested MacDraw Pro with version 2 of the Radius software (Soft Pivot 2.0, Radiusware 2.2). (This version requires System 7).

If you're experiencing computer lockup or crash while running MacDraw Pro with the Radius software, try disabling as many startup documents / extensions as possible (other than the Radius software). If this does not fix the issue, try a complete reinstallation of the system software (trash the System and Finder from the hard disk, then reinstall the system software).
Published Date: Feb 18, 2012

ZUC.Virus: Causes "Crazy" Cursor Movement

This article contains information on what is known as of May, 1990, about the ZUC.Virus.

This article has been archived and is no longer updated by Apple.

A new virus called the ZUC.Virus has been discovered in Italy. It causes the cursor to "go crazy" within a few minutes after an infected application is run.

Preliminary information shows that it infects applications only by adding a 1256-byte piece of code at the end of the first executed CODE resource (much the same way the ANTI virus works).

Ninety seconds after an infected application is launched, ZUC.Virus takes over the cursor and moves it diagonally until you restart. After looking at the code, it seems harmless (though it can restart your machine if it can't get the memory it needs) but VERY infectious.

An infected application can be detected using VirusDetective 3.1.1 (or later), by adding the search string:

Resource Start & Pos -1256 & Data 082A#F1655#30832 ; For finding ZUC.Virus

Published Date: Feb 18, 2012

MacDraw Pro: Command Keys Don‘t Increase or Decrease Font Size

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The "increase / decrease font size" command keys do not increase the font size of autosize line text.
Published Date: Feb 18, 2012

MacDraw Pro: Rotated Bitmaps Poor on B&W Mac Screen

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Rotated pixmaps (color/grayscale bitmaps) saved from a color Macintosh and then opened on a black and white Macintosh, are not properly dithering on screen. There is no workaround. (MacDraw Pro 1.5 only)
Published Date: Feb 18, 2012

ClarisWorks: Cell Number Format Reverts to Column Default

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The number format of a spreadsheet cell will change back to the format applied to an entire column when the cell is formatted as General and data in the cell is changed.

To replicate this issue:

1. Select an entire column by clicking in the column header.
2. Apply the currency number format or another format other than General.
3. Type some numbers into two of the cells.
4. Select one of the cells and change the number format to General.
5. Tab out of the cell to see that the number displayed returns to just the data you entered.
6. Select the cell again, click in the entry bar, and add another digit or otherwise change the value.
7. Tab out of the cell and you will see that the number format returns to the column format.

Published Date: Feb 18, 2012

ClarisWorks: Charts Not Printing in Correct Position

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In low memory situations, Print Monitor will lose the position attributes of ClarisWorks charts causing them to slide up and/or left. Sometimes, the chart will be omitted entirely.

This seems to happen most often with the StyleWriter printer.

Increasing the memory allocation to Print Monitor via the Get Info window, or turning off background printing in the Chooser solves the problem.
Published Date: Feb 18, 2012

ClarisWorks: Financial/Business Templates

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ActaSoft

AlphaCheck Mac

Financial management for home & small business

AlphaCheck Mac software helps you write checks, balance your checkbook, track credit card expenses, monitor your budget, and prepare reports. A HyperCard stack provides a daily register which you export from for making reports with ClarisWorks templates which reconcile your checkbook and generate tax, expense, and income reports. AlphaCheck lists for $59.95.

Payroll Master

Payroll Master uses ClarisWorks to automate the payroll for a small or medium-size business. It automatically produces gross and net weekly, biweekly, or monthly payrolls for any number of employees, and calculates Federal Withholding, Medicare, state taxes, and up to two user-defined deductions. The templates print forms W2 and W3 and post all totals to a report generator that prints payroll stubs and daily, weekly, quarterly, and annual reports. Compatible with AlphaCheck Mac. Payroll Master lists for $95.00.

ActaSoft, 19700 Wells Drive, Woodland Hills, California 91364; (818) 996-6731.

Rosen's Financial Templates

Larry Rosen is author of eight financial books including "The Dow Jones-Irwin Guide to Interest" and "The McGraw-Hill Handbook of Interest, Yields and Returns." He has created 3 ClarisWorks templates:

1) Investment Analysis: Stocks, Bonds, and Real Estate determines the Internal Rate of Return (IRR) for your stock, bond, and real estate investments. This template produces a yearly pretax and after-tax cash flow analysis, the pre- and post-tax IRR for existing or proposed investments, and the revised IRR, including the impact of investing your after-tax cash flows. "Computerized Investing" magazine rated this template a "best buy".

2) Bond Portfolio Manager: computes (1) the market value of your bonds at the lessor of call or maturity value, (2) duration, convexity, and reward-risk indicators for changes in yield, (3) interest received from each bond, and (4) unrealized gain or loss for each bond using taxable basis adjusted for "constant yield" amortization. Reports include: interest, market values, unrealized gain, quality, cash flows, duration, convexity, and portfolio summary.

3) Is It Time to Refinance?: determines whether or not to refinance a mortgage based on: (1) the difference between the old and new interest rates, (2) the costs of obtaining a new loan, (3) the life of the old and new loan, (4) the length of time you plan to keep the property, (5) tax bracket, and other factors.

Each template costs $89 and includes complete electronic documentation. Larry Rosen Company, 7008 Springdale Road, Louisville, Kentucky 40241

Published Date: Feb 18, 2012

ClarisWorks: Templates for Educators

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks for Teachers

ClarisWorks for Teachers is a 150-page tutorial and disk published by Claris which takes you step-by-step through the process of preparing a memo for parents, producing a science laboratory report, creating a two-page newsletter, creating a room layout, creating a gradebook, and building a student data base. The tutorials in this book help you develop skills with ClarisWorks. Claris designed the book to supplement the ClarisWorks documentation.

ClarisWorks for Teachers is available from Claris for $29. Claris Corporation, Box 526, Santa Clara, CA 95052; (800) 544-8554; Fax: (408) 655-6099.

ClarisWorks in the Classroom

Prepared by the North York (Ontario, Canada) Board of Education, ClarisWorks in the Classroom contains comprehensive lesson plans for twenty language arts, social studies, mathematics, and science lessons that use ClarisWorks. Published by Claris, this 160-page guide is filled with ideas that can help teachers integrate computers into the elementary and secondary school curriculum. The package includes sample files on a disk and pages you can photocopy for use as handouts or overhead transparencies for your lessons.

ClarisWorks in the Classroom lists for $29. Available after January 15, 1993.

Essentials of ClarisWorks

Jan Harrington

This 270-page student textbook and associated ClarisWorks data disk is the newest in the series of popular "Essentials of..." books published by Course Technology. "Essentials of ClarisWorks" includes an introduction to Macintosh computing and step-by-step instructions that describe how to use the ClarisWorks environments. Each chapter concludes with a series of exercises where you practice the skills you just learned. Cost is $29. Amy Oliver, Course Technology, Inc., 1 Main Street, Cambridge, MA 02142; (800) 648-7450; Fax: (617) 225-7976.

Hands-On ClarisWorks

Arthur Leuhrmann and Herb Peckham

This 496-page textbook is designed for a half-year course in grades seven and above on word processing, databases, spreadsheets, graphics, and communications using ClarisWorks. The Hands-On ClarisWorks package includes the textbook, a copyable data disk with dozens of sample files referenced in the book, a 96-page teacher's guide, and a set of reproduction masters. Cost is $32.95. A sub-set of Hands-On ClarisWorks entitled "ClarisWorks Word Processing" is also available for $24.95. Teachers can examine either set for 30 days without obligation. Then you either pay for or return the sample materials. Computer Literacy Press, 5750H Obata Way, Gilroy, CA 95020; (800) 225-5413; Fax: (408) 848-1483.

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ClarisWorks: Templates Providers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are several sources for ClarisWorks templates:

ClarisWorks Users Group (CWUG)
CWUG publishes an 80-page public domain catalog of ClarisWorks templates and ClarisWorks-related products. Among the offerings are 6 user dictionaries: medical, biochemistry and biological, nautical, speech pathology and two others; and 14 disks of ClarisWorks templates for home and small business. Cost is $6.00 per disk. Call for a free catalog. CWUG, Box 701010, Plymouth, MI 48170; (313) 454-1969; Fax: (313) 454-1965.

Heizer Software WorksXchange
Heizer is a longtime provider of templates for Microsoft Works users. Due to the popularity of ClarisWorks, they now offer templates for ClarisWorks. The WorksXchange library consists of hundreds of templates. A special offer of 20 templates to get you up and running is available for $49. Call for a free catalog. Heizer Software, 1941 Oak Park Blvd., Suite 30, Pleasant Hill, CA 94523; (510) 943-7667; Fax: (510) 943-6882.

Claris Forum on America Online
Claris maintains an active forum on America Online which includes software libraries where Claris and America Online members share templates. To find out how to become an America Online member, call (800) 827-6364 between 3 pm and 11 pm Eastern.
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ClarisWorks: PBX Dialing w/ Global Village PowerPort Modem

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Global Village PowerPort modem (internal PowerBook modem) has problems with PBX dial tones (the dial tone you get before you dial 9 to get an outside line). If you encounter this problem using ClarisWorks communications module with your PowerPort modem, you will need to follow these steps:

1. Create a new ClarisWorks communications document.
2. Choose Connections from the Settings menu.
3. Change the method tool from Apple Modem Tool to the Serial Tool. This is necessary because the Apple Modem Tool automatically begins a session by sending the ATDT command and the number you provide, so you cannot modify the ATDT command.
4. Make sure all other communications settings are correct for the host you will be calling.
5. Choose Open Connection from the Session menu.
6. Type ATX1DT 9, and the phone number you want to dial. X1 modifies the ATDT command to ignore the dial tone. You will not see what you type unless Local Echo is turned on in terminal settings.

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ClarisWorks: StyleWriter Print Error Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following conditions will cause Print Monitor to generate an error message when printing from virtually any application. The error seems to be an issue with the StyleWriter driver, and occurs with all current versions of the StyleWriter driver that support background printing (7.1 - 7.2.2). The best workaround seems to be to turn Background Printing off.

This issue appears to occur under the following conditions
- Running System 6
- Printing to the StyleWriter
- Background printing (Print Monitor) is ON
- The printed document contains text

Published Date: Feb 18, 2012

Macintosh Portable & PowerBook: Using Abroad (3/95)

Can the Macintosh Portable and PowerBook computers operate on voltages used internationally?

Also, will there be any damage to my data by passing my PowerBook through an airport security scanner?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable Power Adapter has the following specifications:

Input voltage

85-270 Volts AC, 120/240 nominal (The Portable itself is rated at 70-270 Volts AC)

Frequency

48Hz to 62Hz, 50/60 nominal (because it converts to DC, the frequency is almost insignificant)

The Macintosh PowerBook 100 series Power Adapter has the following specifications:

Input voltage

100-240 Volts AC

Frequency

50Hz to 60Hz (because it converts to DC, the frequency is almost insignificant)

The PowerBook 200 series power adapter has the following specifications:

Input voltage

100-240 Volts AC

Frequency

50Hz to 60Hz (because it converts to DC, the frequency is almost insignificant)

The PowerBook 500 series power adapter has the following specifications:

Input voltage

100-240 Volts AC

Frequency

50Hz to 60Hz (because it converts to DC, the frequency is almost insignificant)

The Macintosh Portable and PowerBook computers should work fine in any country which falls within the range of specifications above. However, you may need to use an adapter for the wall outlet itself.

The Macintosh Portable and PowerBook computers are powered by the battery at all times, even when the battery is charging. If there is a power outage, you would not lose data unless the battery had insufficient charge to power the computer.

The amount of electromagnetic interference generated by airport security systems varies widely across the world. Security systems in Europe, the Middle East, and Africa have the potential to cause more problems with internal hard disks than systems in the United States. Still, there are very few reports of X-rays or other magnetic radiation damaging computer media. The hard disk in the Macintosh is no more susceptible to problems than other hard disk systems. We suggest you have the system hand-checked whenever possible to reduce the possibility of data loss.

Article Change History
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23 Mar 1995 - Listed power adapter ratings for all PowerBook models.
30 Apr 1993 - Rewrote and clarified, generalized for all portable Macintosh models.

Support Information Services
Published Date: Feb 18, 2012

Claris Application: File is Locked or Disk is Full Error Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you use AutoDoubler by Salient Software, and install a Claris product, but do not launch that product immediately, you can receive the error "File is locked or Not Enough Room on the Disk or Disk is Full".

This is because AutoDoubler has compressed the file since it was installed. The application cannot store the personalization information that is requested the first time the application is launched if the file has been compressed. Essentially, the file is locked.

To resolve this, you should use the DDExpand utility that is included with AutoDoubler to temporarily expand the Claris application. You will be allowed to launch the application and personalize it normally. It's okay to compress it in the future.
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ClarisWorks: Can‘t Add Split Pane Tool

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Problem: Can't add a split pane to split the window. When you drag the split pane tool into position, then release the mouse button, nothing happens.

Solution:
Are you trying to add a third split pane in that direction?
The maximum number of split panes in each direction is two (i.e., two horizontal and two vertical split panes).

Are you trying to add a second split pane in that direction?
When adding a second vertical split pane, the second one must be added to the left of the first. When adding a second horizontal split pane, the second one must be added above the first.

Are you trying to add the first split pane in in that direction?
The spreadsheet may already have a split pane at the extreme left or top of the spreadsheet that may not be readily visible. To test for this, first scroll the window to the home position (cell A1 at the upper left corner of the window).

For a horizontal split pane: Place the mouse pointer over one of the row numbers. Slowly move the mouse into column A. If the mouse pointer changes shape to the double-arrow, you've located the existing vertical pane tool. Using the mouse, drag the split pane to the desired window location.

For a vertical split pane: Place the mouse pointer over one of the column letters. Slowly move the mouse down into row 1.
If the mouse pointer changes shape to the double-arrow, you've located the existing horizontal pane tool. Using the mouse, drag the split pane to the desired window location.
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ClarisWorks: Memory Management and Spell Checker

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Question:

I'm working in a Claris application and I perform some actions, open a number of documents, copy some information into the Clipboard, and try to spell check my document. The program tells me that there is not enough memory to perform the operation. Why? If I quit the program and restart it, the spell check works fine.

Answer:

The Claris spell checker requires 150k of contiguous memory to check spelling. If there is not enough room within the application memory space, you'll get the "not enough memory" message.

If you close some windows and empty the Clipboard, enough application space memory will be released for the spell checker to operate.

A more permanent solution is to allocate more memory to the application.

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ClarisWorks: Filling a Column of Dates Incremented by One Month

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Question:
I have a ClarisWorks spreadsheet with a date cell (A2 for this example). I want to fill in a column of payment dates beginning with the 15th day of the month after the date in cell A2 and continuing with the 15th of each subsequent month. How can I do this?

Answer:
There are several formulas that will generate the first payment date. Here are some examples:

Formula 1
= DATE(YEAR(A2+32), MONTH(A2+31),15)

Formula 2
= IF(MONTH(A2)=12,DATE(YEAR(A2)+1,1,15),DATE(YEAR(A2),MONTH(A2)+1,15))

Formula 3
=DATE(IF(MONTH(A2)+1>12,YEAR(A2)+1,YEAR(A2)),IF(MONTH(A2)+1>12,
MONTH(A2)+1-12,MONTH(A2)+1),15)

Formula 4
=DATE(IF(MONTH(A2)=12,YEAR(A2)+1,YEAR(A2)),IF(MONTH(A2)=12,1,MONTH(A2)+1),15)

Let's assume you want to begin the column of payment dates in cell C3. Choose one of the above formulas and enter it for cell C3.

Here's the tricky part. The temptation at this point is to then select Cell C3 and several cells below it and choose "Fill Down" from the Calculate menu. However, you will not get the correct result by doing so.

Instead, click into Cell C4 and retype the formula, changing the cell references from "A2" to Ò"C3".

For example, if you chose to use Formula 1 above, the formula for the second payment date cell should be
= DATE(YEAR(C3+32), MONTH(C3+31),15).

Then select Cell C4 and the number of cells below it that you want filled in with dates and choose "Fill Down" from the Calculate menu.
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ClarisWorks: Redraw Problem with Multiple Views

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks 1.0v3, there seems to be a redraw issue when viewing the layout and browse screens simultaneously in the same database.

Adjustments to the header in the Layout View can cause duplicate images to appear in the Browse View. This is a minor redraw issue-upon scrolling, the duplicate images disappear.

To duplicate this issue, open any ClarisWorks database. Create a Columnar Report Layout (the field titles will appear in the header). Open two views, one in Browse, one in Layout and make sure that you can see both on screen at the same time.

Go to Page Setup and set Legal paper size and Landscape orientation. Drag a title from left to right in the header, so that it is moved beyond the original page margins (about 8 1/4"). Look at it in the Browse view that you've created (you'll probably have to move to that view and scroll to the right). Now drag that title from right to left, so that it is within the original page margins.
Published Date: Feb 18, 2012

Claris Resolve: File is Clipped or Shows Asterisks When Printed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you have a file that appears fine on the screen but prints with clipped text, or with asterisks instead of your entries, take a look at the entries in those cells at 400% zoom. Due to the differences between the way that fonts are imaged at the different zoom levels, it may appear perfectly fine at 100%, but you will see the errors at 400%.

Fixing the file at 400% zoom should make it print correctly.

Published Date: Feb 18, 2012

ClarisWorks: Regression Analysis

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Regression Range (or Matrix Range) defined when using the Regression option in the Matrix dialog box must include at least one row more that the number of columns specified. For example:

If your Regression Range includes one Dependant variable and 2 Independant variables (3 columns) then at least 4 rows (observations) must be defined (5 if column titles are included).

If fewer rows than columns are defined, the message "Insufficient number of observations" will be returned. If the same number of rows and columns are specified, the message "No observations" will be displayed. Valid results are obtained only when there are more rows (observations) than columns (variables).
Published Date: Feb 18, 2012

32-Bit QuickDraw: Latest Documentation Available From APDA

I'm preparing a report on imaging model characteristics. Where can I get the latest technical documentation available for 32-Bit QuickDraw. I've seen the chapters in "Inside Macintosh, Vol. 5", but I think there must be more recent information.

This article has been archived and is no longer updated by Apple.
As of May, 1990, the most comprehensive 32-Bit QuickDraw documentation is distributed by APDA: "Macintosh System Software 32-Bit QuickDraw" -- Apple Part #M0572LL/A. It contains an updated and expanded version of the materials distributed at the May 1989 Developers' Conference.

(Note that numerous other Technical Notes discuss 32-Bit QuickDraw programming issues, but they are usually more specific to writing code.)

In general, APDA is an excellent source for such information. If you are an Apple Partner or Associate developer, you will have access to information via their monthly mailings, including such resources as Phil and Dave's Excellent CD.

For more information, search under: "APDA"

Published Date: Feb 18, 2012

ClarisWorks: Saving in Merge Format

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks DB does not save files in Merge format (which includes field names) since ClarisWorks has a built-in merge capability. However, you may need to export a file with the field names for someone else to use as a merge document with an application other than ClarisWorks.

To do this, create a record which has field names in the fields themselves. Once you do this, put a space before one of the field values and sort by that field. It will fall first in the sort order because of the space. Then remove the space and save as ASCII text. The first record will be the field names.

If you copy the field names record, and paste it into the Scrapbook, in the future you can just paste in the record, sort, save as ASCII text and delete the record when you're done.
Published Date: Feb 18, 2012

ClarisWorks: Accuracy Limitation of Minimum/Maximum Chart Range

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Minimum and maximum chart range settings in ClarisWorks are only accurate to the first digit.

For example, for values under 100, ClarisWorks rounds the min/max settings in the chart dialog to the nearest 10. Thus, a specified range of 25-75 would result in a displayed range of 20-80.

This problem is compounded as numbers go higher. The range 115-150 would result in a chart from 100-200. A range of 115,000-150,000 would yield a chart from 100,000 to 200,000. An excess of 50,000 is certainly not ideal.

A workaround is to ungroup the chart and modify its graphic elements to show only the range you want. However, the link back to the data will be lost so the chart will not update.
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ClarisWorks: B.D.T. MultiFeeder for LaserWriters

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library. This article has been archived and is no longer updated by Apple.

The 7.1 LaserWriter driver customized by B.D.T. to make their multi-paper feeder work causes postscript errors when printing from ClarisWorks.

Published Date: Feb 18, 2012

ClarisWorks: Calculating Timed Event Sequences

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Question

I want to enter 1 start time for the first of a series of sequential events, and the duration of each event in the series. How can I get the program to automatically figure the end time for the first event, and the start and end times for each of the subsequent events?

Answer

Assume that Event Durations are in column A, Start Times in column B, and End Times in Column C. Entries begin with cell A1. Also, each event begins when the previous event ends)

1) Select the first duration cell (A1) and enter the duration for the first event in minutes entered as an integer. (1.5 hours duration would be entered as 90.)
2) Select the first start time cell (B1) and enter the start time (format the cell as TIME using "Number..." from the FORMAT menu)
3) Select the first End Time cell (C1) and enter the following formula in the Entry Bar=TIME(HOUR(C1)+INT((MINUTE(C1)+B1)/60),MOD((MINUTE(C1)+B1),60),SECOND(C1))
4) Hit the enter key to save the formula .
5) Click on cell C1 and drag down as many rows as there are events.
6) Choose FILL DOWN from the CALCULATE menu.
7) Select cell B2 and enter the formula = C1 in the Entry Bar and hit the enter key.
8) Click on cell B2 and drag down to the row for the last event.
9) Choose FILL DOWN from the CALCULATE menu

Now as you add durations for each of your events, start and end times will automatically be calculated for all events.

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ClarisWorks: Can‘t Align to Locked Fields or Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Locking a field or graphic object in ClarisWorks keeps the object from moving as you work with other objects around it. It can also be useful for keeping other users from moving objects you want to stay in one place. A locked object appears with gray instead of black handles when selected.

If you have a locked field or object and try to use the Align Objects command to align it with another object, ClarisWorks will beep and do nothing. Since a locked object cannot move, the Align Objects command can't be performed. Simply unlock the object by choosing Unlock from the Arrange menu.

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ClarisWorks: Documents Not Listed Using the Insert Command

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Question: When I select "Insert" in the File Menu, I don't see my existing ClarisWorks documents (Except for Word Processing documents)*, even though I'm in the right folder in the directory. Will rebuilding my desktop make a difference?

Answer: No. The "Insert" command is only in effect for NON-ClarisWorks documents (MacWrite II, MacPaint, PICT, Text, etc.) If you want to insert a previously created CW document into the one you're currently working on, you must open the previously created document , copy the information and paste it into the current document through the clipboard. In other words, the Insert command does not support inserting ClarisWorks documents.

*Word Processing documents do show up, but you will get varying results depending on the version.

ClarisWorks 1.0 for Macintosh:
The file will successfully insert into your new WP file.

ClarisWorks 1.0 for Windows:
You will see the WP file in the Insert dialog, but after selecting it, you will get a message "The file you created cannot be inserted".

ClarisWorks 2.0 for Macintosh:
You will see the WP file in the Insert dialog. After selecting it, your screen will flash, return you to the document you're attempting to insert into, but the text will not be inserted.

A suggested workaround for the Windows and Macintosh 2.0 versions is to save the document you will be inserting later as a file type other than ClarisWorks.

Published Date: Feb 18, 2012

ClarisWorks: Locks Up on Launch or Open File

There has been a report of conflicts between ClarisWorks 1.0 and 2 different chooser documents.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There has been a report of conflicts between ClarisWorks 1.0 and 2 different chooser documents. They are the drivers for the LabelWriter Plus 1.3 and earlier, and the QuickLink Fax driver (QL Fax Print 2.1) which comes with Zoom fax modems.

When you launch ClarisWorks with either of these printer drivers chosen, ClarisWorks will display a spinning beachball and then lock up or hang. With the LabelWriter Plus selected, the system crash can also occur when opening a file or creating a new document. However, some customers have reported using the LabelWriter Plus driver without difficulty. (One customer reported that the regular LabelWriter driver worked fine, but the Net LabelWriter driver, the AppleTalk version, would cause ClarisWorks to hang). You may want to contact the manufacturers to get information about latest versions and possible fixes to the problem.

If you have System 7, you can force ClarisWorks to quit by pressing the Command-option-escape keys simultaneously. With System 6, manually restart using either the Programmer's restart switch or turning the computer off and on again.

With the QuickLink Fax software, the lockup can be avoided by turning off 32-bit addressing in the Memory control panel or by selecting another printer in the Chooser before launching ClarisWorks.
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ClarisWorks: Ruler Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you shift the left margin marker to the right a few inches on the ruler in a ClarisWorks word processing document and turn off Show Margins, you will notice a shift of the left margin marker about a millimeter to the right.

If you print the document, you'll find that text prints about a millimeter to the right of the margin setting. This happens whether "Show Margin" is on or off.

The problem seems to be that the margin settings are not accurate when the margins are showing.
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ClarisWorks: Could Not Configure Terminal Emulation Tool

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This was fixed in ClarisWorks 2.0.

Claris ships several communications tools with ClarisWorks. Other tools, such as the VT320 tool, are available from Apple and third-party developers.

If you save a Communications document from ClarisWorks 1.0 with the VT320 terminal tool selected, upon reopening the file you will get the message: "Could not configure terminal emulation tool." In addition, terminal settings such as cursor and host writable settings are not saved.
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ClarisWorks: Creating Spreadsheet-like Reports

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Note: ClarisWorks 4.0 includes a list view layout type. The following information explains how to create a columnar report to simulate the list view in earlier versions of ClarisWorks.

You may be familiar with other programs like Microsoft Works and AppleWorks. These programs have their own ways of creating database reports with columns and rows. In AppleWorks these reports are called tables reports. In Microsoft Works they are called spreadsheet reports. ClarisWorks calls them columnar reports. Here is a technique to create them.

1. Select Layout from the Layout menu.
2. Choose Page Setup from the File Menu and select landscape orientation (the rightmost one). This will make the next steps easier.
3. Select New Layout from the Layout menu, choose columnar.
4. Move the fields over to the right in the order you want them to appear (e.g. Firstname, Lastname, Street, City, State, ZIP, etc..)
5. Shrink the fields that do not need as much space and move all the fields so they fit nicely across the screen. You might want to zoom out to 50% to make it easier to see the whole page on the screen.
6. Select Page Setup from the File Menu and select portrait orientation (the leftmost one).
7. You need to move body part up to squeeze the size of the body. This will make each record as slim as possible to fit the maximum number of records possible on a page.

To switch between this view of the record and the old view, you would use the layout menu and switch between the two layouts listed at the end of the menu.

To make even more room for fields going across the page, change the paper size to Legal or an even larger size such as Tabloid in Page Setup. This technique works for viewing purposes only unless your printer actually supports the larger page size you select.
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TA42104_MacintoshtoNEC_VS_Connectivity_(TIL05504).pdf

Macintosh-to-NEC 370 VS Connectivity

I want to connect a Macintosh to a NEC 370 VS computer. The data stream is in EBCDIC.

- Does the NEC require a proprietary communication package?

- Will a terminal emulator work?

This article has been archived and is no longer updated by Apple.
The NEC 370 VS is based on a proprietary system that NEC describes as having four IBM emulation options: 3470, 3780, 3278 SNA, and 3270 BSC. Contact NEC's Information System Division for more specific information.

Possible Macintosh solutions include MacDFT with the Serial NB Card, or MacNetway from Tri-Data.

For more information, search under: "NEC" and "Tri-Data"

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ClarisWorks: CWUG Public Domain Library Catalog

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisWorks Users Group (CWUG) offers a catalog which describes more than 350 Macintosh disks in their Public Domain Library which contain files from professional developers, other user groups and other CWUG members. In addition to ClarisWorks templates, there are utilities, fonts and other goodies helpful to the ClarisWorks user.

Each 3.5" disk costs $6.00, plus $2.00 shipping and handling per order. Some of the more popular disks are:

Masters. 01. Financial Templates
Area.Codes
Best of AOL
Educ.01 - 15 CW templates for school
Educ.02 - 17 CW templates for schools
Finance.01
Home.01,02,03,04
Forms.01,02 - 95 professionally developed forms
Inventory forms
Art Disks - 26 disks
Desk Accessories - 24 disks
There are 4 dictionaries - biological, speech,computers,microbiology,nautical

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ClarisWorks: Default Stationery Documents for Spanish

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris has been shipping a ClarisWorks Bundle program, including both the English and Spanish versions of the applications, to schools in the U.S.

If someone is trying to create stationery documents to be used as default settings for the different document types, the naming conventions used on page 2-25 of the "ClarisWorks Handbook" will not be correct. Instead, use the following naming conventions:

Prefs del PT de ClarisWorks (for Word Processing)
Prefs de los GR de ClarisWorks (for Graphics)
Prefs de la BD de ClarisWorks (for Database)
Prefs de la HC de ClarisWorks (for Spreadsheet)
Prefs de las CM de ClarisWorks (for Communications)
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Claris Resolve: Developer Technical Notes Available

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are four technical notes available for Developers:

Using Dialogs with Claris Resolve (last modified 9/25/91)
Apple Events in Claris Resolve (last modified 9/13/91)
How to Write a Resolve External Function (last modified 3/9/92)
Differences between ResolveScript and HyperScript (last modified 9/25/91)

These Tech Notes are available from Claris Technical Support or Claris Customer Relations.
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ClarisWorks: Field is Blank/Empty but Sliding Objects not working

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Sometimes , even after following the instructions in the article "Getting Slide Objects to Work," objects still will not slide correctly through a blank field.

or

Using Match Records or a calculation with the function ISBLANK does work properly evaluate empty fields.

We have found that data imported from other applications (e.g. DIF format from Symantec Q&A on DOS) sometimes includes invisible characters. This causes a field to look blank when really, it contains a value. Thus, the field does not slide.

If this is just happening with 1 or 2 fields and relatively few records, there is an easy solution:

1. Sort the database by the field that 'appears' empty. This will put the fields that appear empty together at the start of your database, or at the end, or both.
2. In Browse mode, click in the field in question that appears (and needs to be) blank.
3. Keeping the Command key held down, type A, then Delete, then Return. This selects all of the contents of the field, deletes it, then takes you to the same field in the next record.
4. Do this (A,Delete,Return) through all 'blank' fields at start and/or end of your database. solution is to perform calculations on all the fields that need to slide.

Another solution is to use calculation fields to strip the invisible characters. For example, if you are printing labels and City, State and Zip are not sliding up through 'Address2' when it contains a blank value, define a calculation with this formula:

Line 2 (Calculation, Text result) = If (ISBLANK ('Address2'),"",'Address2')

Use the calculation field on the label layout in place of the original 'Address2' field. The calculation field filters out the invisible characters.

NOTE: Calculation fields can be changed back into Text fields once they are calculated, and will retain their values. Since this successfully strips the hidden characters, it is a viable procedure for eliminating the corruption, and then returning to a normal file size.
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ClarisWorks: Full Justified Text Gets Clipped

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you use the Insert Date or Insert Time commands in the Edit menu to add an item to a full-justified paragraph, the last character on the right side may get clipped by the right margin. This is particularly pronounced when the date is in long format (e.g. January 21, 1991).

The explanation is that the Insert command adds a symbol which ClarisWorks fills in with the date or time, but ClarisWorks does not properly calculate the length of the date or time, resulting in clipped text.

Text on the right side will also get clipped if you create a graphic text object, and format it as italic, full-justification.

If you have ClarisWorks for Windows, you may be able to work around this problem in Windows by turning on Print TrueType as Graphics. Within ClarisWorks, choose Print Setup from the File menu and click the Options button. Select the Print True Type as Graphics check box and click OK. This may slow down printing, but the text should no longer clip.

NOTE: The option for TrueType as graphics is not available as an option in all laser printers, and dot matrix and ink jet printers do not have this capability.

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ClarisWorks: Headers and Footers Print on Title Page in Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In a ClarisWorks database file, you can have a document header or footer in addition to a header or footer part on a layout. If you check the Title page item in the Document dialog, the header and footer PARTS will still appear on every page, but the header and footer items (which you insert with the 'Insert Header' or 'Insert Footer' commands while in Browse mode) will only appear on the first page.

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ClarisWorks: ImageWriter Bold Printing Problem

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is an issue with ClarisWorks when printing to an ImageWriter. If a portion of a line is selected and the style is set to bold the last word of the bold text will run over into the following word. This only happens with ImageWriter fonts (Geneva, Monaco, New York) when printing in Best mode.

This issue occurs in ClarisWorks 1.0v3 and earlier versions. It is not corrected with the latest version of the ImageWriter driver or ATM/TrueType. However, by using either ATM or TrueType you can get acceptable printing using non-ImageWriter fonts.
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ClarisWorks: Installer Conflict with At Ease 1.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
At Ease 1.0, a system extension from Apple Computer, is a finder substitute that allows the user to use passwords to limit access to specific files and folders. This extension is likely to have broad appeal to educational sites, where such limitations may be desirable.

There has been a report of the ClarisWorks Installer not functioning properly when At Ease is being used. The solution was to deinstall At Ease before installing ClarisWorks, using the At Ease Installer in conjunction with the option key. Holding down the option key will toggle the Install button to Remove. Simply moving or deleting the At Ease files causes a System crash.

In our testing, there was no problem installing ClarisWorks with At Ease. At Ease settings such as access limitations and passwords may be factors in the reported installer problem.
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MacDraw Pro: MathType Character Placement Problem

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When equations from Design Science, Inc. Mathtype 3.0 software are copied and pasted into MacDraw Pro 1.5, some characters are shifted down, both on screen and print. If you paste the equation into a program that pastes the equation as a single graphic object, instead of interpreting and pasting each object within the equation, it will view and print correctly.

These programs include most word processors and page layout programs, and ClarisWorks. According to technical support at Design Science, this is due to the limitations of PICT format, where the placement of each object is aligned to a 72 dpi grid. This can cause the position of the individual objects in the equation to be shifted to align to the grid, when pasted into other programs.

The best workaround is to save as an EPSF file from MathType, then place this file into MacDraw Pro. The EPSF will print correctly.
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ClarisWorks: Number Sequencing Records in Spreadsheet Report

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The following solution will work in either a ClarisWorks Spreadsheet or a Claris Impact table.

To number sequence records, create a new Spreadsheet or Table and put the following formula in cell A1:

=IF(ISBLANK(B1),_,1)
In cell A2, put the following formula:
=IF(ISBLANK(B2),_,A1+1)
Where an underscore (_) signifies a space.

NOTE: Claris Impact tables do not automatically show row or column headings. To show headings, select TABLE OPTIONS from the TABLE Menu and check "Column Headings" and "Row Headings".

Click on cell A2 and drag down the "A" column until you have selected a range of cells large enough to incorporate all of the records you will be numbering. Choose "Fill Down" from the Calculate menu (Table menu in Claris Impact and save the spreadsheet as "Record Numbering".

In the layout you've created to list your records, select all of the records you wish to number and copy. Open "Record Numbering", select cell B1, and paste.

There are some limitations to this procedure. When you paste into the spreadsheet or table, the columns will be in the order the fields were created. You may need to cut and paste columns until the desired order is reached.

Since the data is in a Spreadsheet or Table, you can use frames in either word processing or graphics frames to make the report more attractive.
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ClarisWorks: Objects on Database Layout Disappear

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you set up a layout in one page setup orientation and put objects in a place where they won't show up in a new orientation, then switch to the new orientation, the objects will not appear on screen since they are positioned outside the new viewable area of the page.

To see the issue:
1) Create a database file. Go to the layout and put the body label and a field below 9" on the vertical ruler.
2) Choose Page Setup from the File menu and change the orientation to Landscape (the rightmost option)

You will see that the body part label and the field have disappeared, and you will not be able to get them back by going to Insert Part or Insert Field. The solution is to change back to Portrait orientation, move the items back to where you would see them, then switch to Landscape.

This layout issue is caused by two aspects of ClarisWorks. First, database layouts are limited to one page, so you cannot scroll beyond the bottom of page 1. Second, ClarisWorks allows objects to extend beyond margins and page bounds. This can be quite nice for cropping an object, or splitting it across pages. However, switching to Landscape mode when you have a full-page Portrait database layout simply hides the layout parts and objects which are placed below the new shorter page boundary.
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ClarisWorks: Printing Envelopes to HP DeskWriter/DeskJet

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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One of the paper size options in the DeskWriter Page Setup (or DeskJet Print Setup) dialog is Envelope. When this size is selected, MacWrite II and ClarisWorks set the top and bottom margins to .38". However, the DeskWriter has a minimum bottom margin of .57". If you try to print, you will get the message: "The bottom margin is smaller than the minimum allowed by the printer. The document may be clipped."

The solution is to set the bottom margin for .57" or larger. To avoid having to do this step each time you print an envelope, create a stationery document with the correct settings and open it whenever you want to print an envelope.

Printing using Envelope Assistant (Version 3 and 4)
When using the Envelope Assistant to a Deskwriter 600 series printer, the resulting word processing document has the left margin at 0.31. When you print, the first character or so is not printed. To print correctly, increase the left margin to 0.453 or greater. (This may also happen with other Deskwriters and/or versions of the DeskWriter driver).

To avoid having to do this step each time you print an envelope, save the file (with a blank addressee) as a stationery file. You can later open the stationery file, fill in the addressee, then print.
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ClarisWorks: Printing from Layout Mode

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When printing from Layout mode in the ClarisWorks database environment, the option to print all or only the visible records is unavailable. Pressing OK prints records, not the layout.

It is recommended that you print from Browse mode to avoid confusion and to be able to specify which printing option you want.

If you want to print the layout itself, perhaps as a blank form, create a new record and choose Hide Unselected from the Organize menu. Then print, specifying the visible records option.
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ClarisWorks: Renumbering or Adding Serial Numbers to Database

Methods for adding serial numbers to new and existing databases.

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ClarisWorks 1.0vX does not have a feature for auto-entering serial numbers into database fields. Even in ClarisWorks 2.0 - 3.0, which allows auto entry of serial numbers on creation of new records, imported records will not be serialized. However, there is a procedure you can use to do this.

There are 2 methods for serializing an existing ClarisWorks database. Method 1 is easier. Method 2 is more complete in that it preserves command-tab and carriage return characters within text fields. If you use command-tab to align your data inside a field, the database data would go into the wrong column when pasting into the spreadsheet for serialization. Carriage returns within a field would be seen as a new record(row) symbol by the spreadsheet. Therefore, if you use command-tabs and returns in fields, you need to use Method 2.

Initial Steps

Define a field in the existing database called "SerialNumber." Make sure that the field type is specified as Number.

Use the Save As... command to create a copy of the database in DIF format with a new name. Perhaps "Original.dif". (System 7 Mac Tip: Press Command-D first to save the file to the Desktop where it will be easy to find later.

Choose the Open command, (click the Import Options flag in version 1.0), select Spreadsheet for document type, and open the DIF file you just saved previously.

In the column titled "SerialNumber," type the number 1 in the cell just below SerialNumber. Then click in the cell immediately below the number 1, type the equals key, click on the cell above (with the number 1 in it) and add "+1" (no quotes) to your formula. Hit the enter key.

Select the cell that now reads "2" and drag down to the end of the data in the spreadsheet document. Select Fill Down from the Calculate menu.

Continued (Method 1)

- Click on the Row 1 Header to select the entire row.
- Choose Delete Cells from the Calculate menu (we don't want to create a record of field names).
- Option click the box above the Row 1 Header (this selects all cells with data) and Copy.
- Switch back to the database file and Save As a different name (a backup just in case).
- Select All and Clear to delete all records in the database.
- Paste.

Continued (Method 2)

Select Save As... and save the file as a DIF file with a new name. Perhaps "Serialized.DIF". (System 7 Mac Tip: Command D first.)

Select Open from the File menu, (click the Import Options flag in version 1.0), select Database for document type and open the DIF file you just saved previously. A new database will be created, with the serial number field included.

Change the name of the serial number field to Serial Number in the Define Fields dialog. Be sure it's type is "number".

Select all of the records in the database. Copy. Switch back to the original database. Paste.

To delete the duplicate records created:
Under the Organize menu, select Match Records.... Use the formula:
ISBLANK("Serial Number")
Now with those records selected, choose Clear from the Edit menu.
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ClarisWorks: SpaceSaver Conflicts with Claris Help System

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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SpaceSaver, a file compression utility which is part of the Stuffit Deluxe 3.0 package by Aladdin Systems, seems to conflict with the Claris Help System.

For example, with SpaceSaver installed, clicking on the Script Reference button in Resolve Help, will result in a message that there is not enough memory. Also, trying to access help during a scripting session will bring up a message that the Help System cannot be found.

SpaceSaver is a system extension and can be disabled temporarily by holding down the Shift key while starting up your Macintosh (with System 7.X). To disable it completely, or if you are running System 6, remove the file from the system folder.

Aladdin Systems states in their release notes that Claris plans to fix this incompatibility. No release date has been announced by Claris as of 3/24/93.
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Claris Resolve: Turning Header and Footer Borders Off and On

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In Wingz, it is possible to turn on header and footer borders that are not easily turned off in Claris Resolve. Since there is no interface for this feature in Claris Resolve, you must use scripting.

To turn on header borders:

Select report header
single line border

(Substitute footer for header and double for single if desired.)

To turn off header borders:

Select report header
No line border
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ClarisWorks: Using the LOOKUP Function

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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You can get a lot of use out of the several LookUp functions built into ClarisWorks (any version). Here is a useful example.

You have a list of grades in number format and you'd like to 'look up' each one's corresponding letter grade. We'll use the vertical LookUp function, VLookUp.

The Formula in cell C3 is =VLOOKUP(B3,E6..F11,1). Since the references to the LookUp table itself (E6..F11) are preceded by dollar signs, it makes this an absolute reference to this location. Therefore, you can (under the Calculate menu) Fill this formula Down the column to get the rest of the grades. (Note that in any LookUp table, the numbers must be sorted in ascending order).

If desired, the column with the numeric scores could be collapsed to a 0 width - the formulas in the next column will still function. The lookup table, though it must be on the same spreadsheet, need not be visible or printed. (The 'Count2' function could then be used as well to add up the total number of A's, of B's, etc contained in the range of computed grades.)
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ClarisWorks: What to Do When Dates Don‘t Sort as Expected

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If after sorting a range of dates, their order is incorrect, chances are that some of the dates are not being seen by ClarisWorks in a valid date format. Here's a way for you to easily spot the ones needing changing.

Select the column with your dates by clicking on its column header, the letter at its top. Now under the Calculate menu, select Insert Cells... This will insert a new temporary column to the left of your dates. (Be sure the format of the column is General)

Let's say your dates are now in column C and you have a new blank column, B. In cell B1, write the formula =C1 and press Enter. Click on the B (the column header) and under Calculate, select Fill Down...

Cells with numbers like 32745 are next to valid dates. Any others will need to be re-entered. Tip: do NOT use leading zeros: 05/02/93 is not a valid date.
When the dates have been fixed, select and delete the extra column (Delete Cells... under the Calculate menu) and Sort once again.

Other Considerations:
In ClarisWorks 1.0, dates can be entered into and sorted within the Database and Spreadsheet environments. The Database sorts dates properly. When entering into the Spreadsheet environment, dates are entered in mm/dd/yy format. Dates which fall on or after 1/1/1911 use an assumed '19' before the date. Dates which fall on or before 12/31/1910 use an assumed '20.'.

This means that when dates which fall after the year 2010 are entered into a ClarisWorks spreadsheet, they are not always accurately represented by the software. If you try to sort based upon three date values, 6/2/92, 9/1/27 and 8/1/99, the 9/1/27 (2027) date will sort first because ClarisWorks thinks it's 1927. (If a date format is selected which represents the information as m/d/yyyy, the 27 date will appear as 1927.)

If you try to work around this by entering your date as mm/dd/yyyy (2/4/2027), ClarisWorks treats the entered date as a text value.

There are two workarounds which will sort properly:

Enter the date as mm/dd/yyyy (February 4, 2027).

Use the Date function and enter the date as Date(2027,2,4). Remember to format as a date since the value returned from this calculation will be a number.

NOTE: Once ClarisWorks has recognized that the date is 2027 instead of 1927, it retains it internally. Therefore, if you want to display a date which reads 2/4/27 and sorts properly, you can enter it using one of the workarounds listed above, then select the mm/dd/yy format from the Number Format dialog. Note that two dates may display the same value but store very different internal data.
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MacDraw Pro: Text Disappearing when Entered

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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MacDraw Pro 1.5v1:
Text sized with the Font Size command will disappear when entered, if the font size is changed before the text is entered.

The following steps reproduce the issue:
1- Click the text tool
2- click in the document to create a text object
3- select Font Size command
4- type a number for a font size (for example 14 and 16), then press Enter
5- Type some text in the document. The text will be the correct font size
6- Press Enter. The text disappears.

Using the Font Size command on selected text works correctly.
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Claris Resolve: What is Ingres, DAL?

An explanation of what Ingres and DAL are.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Ingres is a database system that runs on mini/mainframe computers. RDBMS is a generic term for Relational Database Management System. Therefore, you may be running the Ingres database software on an HP host machine that uses UNIX as an operating system.

There is a pretty good possibility that you can access data from HyperCard (or FileMaker for that matter). What you need to do is to look into the possibility of using DAL (Data Access Language), Apple's host access technology. DAL requires a server that is placed on the host machine. The host is a sort of translator that is used since each RDBMS has a specific way it expects to receive commands (or queries) from other applications. From that point, applications that take advantage of DAL, communicate with the host by sending queries to the server which in turn translates the DAL commands to the local SQL (Standard Query Language) used by the approved RDBMS'. When the host RDBMS gathers the data it returns it to the DAL server which repackages the information with the DAL language and sends it back to the Mac application.

Therefore, with a general understanding of how the mechanism works let's look at the ingredients.

1) An application that supports DAL and allows you to create DAL queries. FileMaker supports DAL but will not allow you to create a query. You need another application, like MUSE, to create what is called a query document. HyperCard uses the DAL Toolkit which is available from APDA (800 282-2732)

2) A DAL server that is placed on the host. These hosts can be purchased from APDA or the site can speak with their Apple rep. Presently, servers exists for MVS/TSO (IBM mainframes), VAX/VMS (DEC minicomputers), VM/CMS (another IBM system), MVS/VTAM (yet another IBM alphabet soup), and A/UX (Apple's flavor of UNIX). These servers are not cheap. They range in price from $5000-$30,000.
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A/UX: Acting As An AppleShare Server (9/94)

Can a Macintosh IIfx running A/UX also run AppleShare File Server and Print Server for 10 other Macintosh IIfx stations -- all on Ethernet? Will performance be impacted?

This article has been archived and is no longer updated by Apple.
There is a public domain software package called "CAP" (Columbia AppleTalk Package) available from Columbia University that allows a UNIX host to communicate using ATP (AppleTalk Transport Protocol), ASP (AppleTalk Session Protocol), PAP (Printer Access Protocol), NBP (Name Binding Protocol), and AFP (AppleTalk Filing Protocol--the client side). This package also includes software called "AUFS" (AppleTalk Filing Protocol UNIX File Server), which is the server part of AFP.

With CAP and AUFS installed in a Macintosh IIfx running A/UX, we believe you can turn a it into an AppleShare File/Print server.

A/UX 3.0 supports System 7's File Share utility, enabling the system to
export both UNIX and Macintosh filesystems to AppleShare clients. It does not support Printer spooling.

The Apple Workgroup Server 95 runs AppleShare Pro and AppleShare Print Server software.

Article Change History:
22 Sep 1994 - Reviewed. Added info on AWS 95.
31 Aug 1992 - Reviewed.

Support Information Services
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‘Move and Rename‘ Folder Showing Up in Open Dialog Boxes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q: What is this 'Move and Rename' folder show up in all of my open and new dialogs?

A: This invisible folder is used by System 7 when File Sharing is turned on. It cannot be opened or used and should be ignored.

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ClarisWorks: Multi-launching Claris Applications on a Server

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A Claris product can be installed on a server and legally launched by multiple users as long as the server uses a "software mechanism" that meters usage and locks out those concurrent users in excess of the legal number of licensed copies owned.

Macintosh
On the Macintosh platform, AppleShare 3.0 file server software is available from Apple through authorized dealers. Other concurrent use meter options include KeyServer by Sassafras Software, (603) 643-3351 and Quota from Proteus Technology, (403) 448-1970.

To install a Claris application on a Macintosh server for multi-launching, do an Easy Install. Then move the Claris folder from the System folder of the server to the folder that holds the Claris application. Instruct users to copy the Claris folder to their own System folder so that they can use the help, translation, and spelling features. They will only need to do this once. Ensure that you enable the copy protection and concurrent use limit using whatever software mechanism you chose from the list above.

Note: Launching a server-based application may result in a crash at the point of the splash screen display, if the workstation is running a 68040 microprocessor. Apple Computer is aware of the problem, and is distributing a system extension named Network Launch Fix, version 1.0, that corrects the problem. This problem only applies to 68040 computers.

Windows
Concurrent use software mechanisms on the Windows platform include Site Lock from Brightworks Software, 908-530-9650, and App Meter which is available from Funk Software, 617-497-6339. Ask your computer reseller about other options you may have in this software category.
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ClarisWorks: Text Color Palette Displays X‘s

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Now Menus 4.0 conflicts with the Text Color palette of FileMaker Pro (all versions), ClarisWorks 2.0 and Claris Impact This palette pops up when you select Text Color from the Format menu (Text menu in Claris Impact Now Menus renders the colors incorrectly, and converts some colors to an "X". The conflict is corrected by the Now Utilities 4.01p update.

You can get around the issue by holding down the CONTROL key when selecting the drop down menu (this temporarily turns off Now Menus). Another option is to click the Prefs button in the Now Menus control panel and exclude ClarisWorks and/or FileMaker.

In addition, FileMaker Pro 2.0vX may display the incorrect command key equivalents for the Bring to Front, Send to Back, Alignment, or other menu commands if the Now Menus 4.01 Control Panel is active. Now Menus 3.0 did not provide this "on-the-fly" menu modification. Selecting the commands with the mouse performs the correct actions.

Now Menus 4.01 has the ability to remap keyboard equivalents. You do this by selecting the command keys while you have the menu item selected. You can remove them by hitting the delete key while the menu item is selected. Now Menus traps for the keys before they have reached the application so if you map Command-F to the About box, for example, the keys will not reach FileMaker for execution. Simply hit Delete while the About item is selected and it will clear it.

The key equivalent for the Ungroup menu item (command-shift-G) is rendered inoperable by Disktop.Extras which is part of the Disktop package from CE Software. Disktop.Extras comes preconfigured with a command-shift-G option that summons GOfer. Fortunately, the GOfer command key combination is user-defineable, so changing it resolves the incompatibility with FileMaker.Text Color Palette Display X keyboard.
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Edited QuickTime Movie Files

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This article has been archived and is no longer updated by Apple.

QuickTime movies consist of two parts, the movie file (analogous to the film) and the QuickTime extension (analogous to the projector). An application having QuickTime capability does not actually store the code for the film, what is stored is a pointer to the movie file. When QuickTime detects that a movie file is changed or not in the location specified by the pointer, it goes through an automatic search procedure to attempt to locate the movie file. After a few seconds it will display a message indicating that it is searching (along with a stop button). If it can't find the file, it will display the standard file dialog and ask the user to find it. This search is performed by QuickTime and the alias manager, and is not under the direct control of the application using the movie.

Published Date: Feb 18, 2012

At Ease Version 1.0: Read Me - October Release

Name: At Ease Update (Non-Workgroup) Version: 1.0 Released: June 26, 1996 This update modifies the non-Workgroup versions of At Ease 2.0.x or 3.0, to include Open Transport compatibility. This software is available on the Apple Support Website, Apple Software Updates. It consists of a self-extracting archive of a Disk Copy 1440K disk image. To use, download, double-click the downloaded file (this decompresses it), and use Disk Copy to create a disk. At Ease Update 1.0 consists of 1 disk: Name as Posted Actual Disk Name At Ease Update 1.0.sea At Ease Update (non-wrkgrp)

This article has been archived and is no longer updated by Apple.

From the Read Me included with this software:

At Ease Updater (non-workgroups) Read Me 6/12/96

This application is a utility that will modify the At Ease Startup system extension for At Ease 2.0 and 3.0, non-workgroup versions. Running this utility eliminates a potential startup hang problem with Mac-OS computers running Open Transport.

WARNING: This utility should be used only on a non-workgroup version of At Ease, (called "At Ease" rather than "At Ease for Workgroups"). If it is used on versions 2.0 or 3.0 of At Ease for Workgroups, network access problems may result and you will need to re-install At Ease for Workgroups on the computer. (Running the utility does nothing on versions 3.0.1 or later of At Ease for Workgroups.)

To use this utility, run it on a computer that has an installed version of At Ease 2.0 or 3.0 (non-workgroups).

If the update is successful, you should restart your machine. This utility will append a "+" character to the version string of the At Ease Startup extension file once it has been updated. You can use the Get Info command of the Finder if you want to know if the file has already been updated.

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Apple Font Pack: Macintosh Product Info

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Apple Font Pack for Macintosh

When you really want your documents to look good--to speak more forcefully and more eloquently for you--you need the Apple Font Pack for Macintosh. It opens up the world of type to give you quick, convenient access to 43 exceptional TrueType fonts.

To assemble this distinctive collection of typefaces, Apple worked with the world's leading type foundries. The expertly chosen selection of font families gives you hundreds of ways to increase the impact of your printed work, whether you're preparing a memo, spreadsheet, presentation, newsletter, report, brochure--even a fax.

The Apple Font Pack for Macintosh includes classic text fonts, headline and display fonts, and symbol fonts, all in Apple's TrueType font format. So you're assured great type at any size, both on screen and in print. With the Apple Font Pack for Macintosh you can create tiny footnotes or bold headlines with equal clarity and precision, using your favorite applications and printers.

Use attention-getting Helvetica Compressed, for example, to call out headings in a report classic Delphian or elegant Old English to add a stylish title to your document Nadianne to bring the grace of calligraphy to an invitation or award and Zeal, Apple's new symbol font, to highlight your most important points.

When combined with the fonts that come with Apple's System 7 software, the Apple Font Pack for Macintosh gives you a total of 64 fonts--the entire Apple font library that's included with Apple's LaserWriter IIf, LaserWriter IIg, and Personal LaserWriter NTR printers and that sets the standard for fonts on personal computers.

Features

Excellent selection
- 43 TrueType fonts, ranging from informal to serious, classic to unique
- Ideal for business and personal use, as well as desktop publishing
- Text, display, and symbol fonts for creating a wide variety of documents
- Coordinated type styles that complement one another to ensure great-looking results
- Includes Zeal, a unique new symbol font for graphic accents

TrueType technology
- Outstanding results on screen and in print
- Smooth type that's scalable to any size
- Easy installation and font management

Broad compatibility
- Works with all applications compatible with Macintosh System 7 software
- Supported by all Apple printers and Macintosh-compatible output devices, including Apple StyleWriter, ImageWriter II, Personal LaserWriter LS and NTR, LaserWriter IIf and IIg, and the Hewlett-Packard DeskWriter

Lucida Bright (Regular, Demibold, Italic, Demibold Italic)*
Nadianne (Book, Bold)*
Oxford
Delphian
Old English Text
Onyx
Swing Bold
ITC Lubalin Graph (Book, Demi, Oblique, Demi Oblique)*
ITC Machine

*These exact font style names may not appear in your font menu.
For example, to get Demi you may need to choose Bold in the Style menu.
New Century Schoolbook (Roman, Bold, Italic, Bold Italic)*
Helvetica Narrow (Plain, Bold, Oblique, Bold Oblique)*
Helvetica Compressed (Compressed, Compressed Oblique)*
Helvetica Black (Black, Black Oblique)*
ITC Avant Garde Gothic (Book, Demi, Book Oblique, Demi Oblique)*
ITC Bookman (Light, Demi, Light Italic, Demi Italic)*
ITC Garamond Narrow (Plain, Bold, Italic, Bold Italic)*
ITC Zapf Chancery
ITC Zapf Dingbats
Zeal

Apple Font Pack for Macintosh
Order No. M4040LL/A
- Apple Font Pack for Macintosh with 43 TrueType fonts, Installer, LaserWriter Font Utility, and LaserWriter Driver
- Limited warranty statement
Published Date: Feb 18, 2012

Claris CAD: 2.0v3 Disk Configuration & Installation Procedures

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris CAD 2.0v3 has an installer program. This installer only installs the actual program, and not the supporting files. These additional files must be drag copied to the correct location on the hard disk. In addition, when you make your backup copies of the disks, it is important that the copies are named the exact same name as the originals. Here are the disk configurations, and the location for the supporting files:

Claris CAD Program Disk 1
Claris CAD Installer - double click to launch installer

Claris CAD Program Disk 2
Installer Data 1 - used by the Installer

Claris CAD Utilities
Installer Data 2 - used by the Installer
Standard Formats - place in your Claris CAD application folder
GD&T font - drag to the System Folder icon (System 7) or use Font/DA Mover 3.8 or higher (System 6)
MacPlot Driver - put at the top level of the System Folder (NOT in the Extensions folder)
MacPlot Configure - put at the top level of the System Folder
Claris CAD XTND (a folder)
Claris XTND System - put in the Claris folder (in the System Folder)
MacPaint 2.0 - put in the Claris Translators folder (in the Claris folder)
MacDraw II 1.1 - put in the Claris Translators folder (in the Claris folder)
TIFF - put in the Claris Translators folder (in the Claris folder)

Claris CAD Help
Claris CAD Help - put in the Claris folder (in the System Folder)
Claris Help System - put in the Claris folder (in the System Folder)
ClarisCADFon - put in the Extensions folder (in the System Folder)
ClarisCADFonII - put in the Extension folder (in the System Folder)
BEROL RapiDesign Sampler - put in your Claris CAD application folder
8 Color Stationery - if you have a color monitor, rename this file "Claris CAD Options", and put it in the Claris folder (in the System Folder). If you have a Black and White monitor, you do not need to install this file.

Claris CAD Tutorial
FileMaker Pro Object Database - put in your Claris CAD application folder
Section 1 - put in your Claris CAD application folder
Section 2 - put in your Claris CAD application folder
Section 3 - put in your Claris CAD application folder

Note: In each Tutorial Section, there are two folders - one for Macintosh II (with 13" monitors), and one for the 9" screen monitors.
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Macintosh: System 7.1 Software

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Macintosh System 7.1 Software

Macintosh System Software Version 7.1 brings your Apple Macintosh personal computer more powerful capabilities and greater ease of use. System 7.1 comes with all of the features of the original System 7 release. One of the most significant advances in personal computing since the introduction of the Macintosh, award-winning System 7 makes any Macintosh computer ready for hundreds of applications that take advantage of its power. And since System 7 runs virtually all current applications, you'll enjoy its benefits right away.

Built-in file sharing allows you to share files over an AppleTalk network, simply and easily. Multitasking lets you keep several applications open at once and continue to work while you print, search for, copy, or share files. Publish and Subscribe lets you create links between documents, so when you make a change in one document you see the change made automatically in all related documents--such as spreadsheets, reports, and presentations.

System 7 also includes Apple's TrueType font technology, which displays letters perfectly on the screen with no jagged edges and produces outstanding results from almost any printer. System extensions such as QuickTime allow you to cut, copy, and paste everything from video footage to animation and sound--as easily as you work with text and graphics today. Providing new, more far-reaching tools, System 7.1 comes with Apple's new WorldScript technology. It will support versions of System 7.1 in most languages, and will pave the way for your Macintosh to become a multilanguage personal computer.

Out-of-the-box power
- New Finder simplifies working with folders, documents, and applications
- Built-in file sharing with security features
- Improved multitasking for working with several applications at once
- Publish and Subscribe for automatic document updating across applications or networks
- TrueType advanced font technology
- New Font Folder provides a single location for all fonts, including TrueType, Adobe Type 1, and bitmapped fonts
- Aliases for access to documents and applications from two or more locations
- Virtual memory for running more applications without adding RAM Compatibility
-> Runs on any Macintosh computer with at least 2 MB of RAM (4 MB recommended)
- Runs virtually all Macintosh applications

Ease of use
- Simple, sure, one-step installation
- "Learn as you work" Balloon Help

The Finder
The Finder displays all of the pull-down menus and icons needed to manage files, folders, disks, and applications in the Macintosh and over a network. It includes:
- Apple menu with Control Panels, desk accessories, and other selected items
- File menu
-- Locate files by name, date, size, label, or kind
-- Open applications, documents, and folders
-- Print documents and directories
-- Share folders with other users
-- Make an alias for an application, document, or folder
-- Get file information
- Edit menu, to Cut, Copy, and Paste information
- Views menu
-- View the contents of a Finder window by icon, name, size, kind, date, or label
-- View an outline of a folder's contents
- Labels menu, to assign labels or colors to icons
- Special menu
-- Clean up windows and desktop
-- Sort by icon, name, size, kind, date, or label
-- Erase the contents of disks
-- Restart and shut down the computer
- Balloon Help menu, to display information about items on the screen
- Application menu, to switch among open applications
- Trash container, to discard files and folders

Control Panels
Control Panels let you change many of the settings for the Macintosh, and include:

- General controls for desktop patterns and color, time, and date
- Startup device, to select the disk drive to be used for startup
- Mouse, to set mouse speed and respon-siveness
- Keyboard, to set keyboard repeat rate and layout for international use
- Monitors
-- Choose the number of colors/grays to display
-- Specify positions of multiple monitors
- Color, to select highlight and window color
- Memory, to increase system memory by using hard disk space, set the disk cache, and turn on 32-bit addressing
- Labels, to customize labels in the Finder
- Views, to customize icons and information
- Sharing Setup, to identify the Macintosh to the network, start file sharing, and turn on program linking
- Network, to specify network cabling system (LocalTalk, EtherTalk, or TokenTalk)
- Users & Groups
-- Administer names and passwords of users who will have access to files and folders
- Sound, to specify system alert sounds and volume levels
- Date and Time, to customize formats for displaying dates and times
- Numbers, to customize formats for display of numbers

Desk accessories
- Chooser, to select printers, file servers, and other network resources
- Key Caps, to display characters of different fonts
- Alarm Clock/calendar
- Four-function Calculator
- Eight-page Note Pad for text
- Scrapbook for storage of frequently used graphics and text

Built-in TrueType fonts
- Times (plain, bold, italic, and bold italic), Helvetica (plain and bold), Palatino (plain, bold, italic, and bold italic), Symbol, Courier (plain and bold), Chicago, New York, Monaco, and Geneva

Utilities
- Apple File Exchange, Disk First Aid, LaserWriter Font Utility, Teach Text, Apple HD SC Setup

Software extensions
- Supports QuickTime, Macintosh PC Exchange, AppleTalk Remote Access, At Ease, ColorSync, and other system software extensions

Print drivers
- ImageWriter, LaserWriter, Personal LaserWriter LS, Personal LaserWriter SC, ImageWriter LQ, Apple StyleWriter, AppleTalk ImageWriter, AppleTalk ImageWriter LQ

System requirements
- A Macintosh personal computer with 2 MB of RAM (4 MB recommended for running multiple applications) and a hard disk

System 7 Personal Upgrade Kit Order No. M7200LL/A
- System 7.1 software (six 1.4 MB disks)
- "Before You Install" with Compatibility Checker 2.0 (one disk)
- QuickTime Extension and Scrapbook (one disk)
- Complete setup, learning, and reference documentation
- 1 year of toll-free upgrade assistance
- Limited warranty statement

System 7 MultiPack (up to 10 users) Order No. M7201LL/A
- System 7.1 CD-ROM disk with:
-- System 7.1 software
-- System 7.1 disk images (800K and 1.4 MB)
-- "Before You Install"with Compatibility Checker 2.0 (one disk)
-- Networking Administrator Tools
- Floppy disks of all System 7.1 software (six 1.4 MB disks)
- QuickTime Extension and Scrapbook (one disk)
- Complete setup, learning, and reference documentation
- System 7.1 Administrator's Handbook
- 1 year of toll-free upgrade assistance
- Limited warranty statement

System 7.1 Update Kit* Order No. M7202LL/A
- All software and accessories included with System 7 Personal Upgrade Kit

- System 7.1 Update Guide
- 1 year of toll-free upgrade assistance

*For users of System 7 or System 7.0.1. Available from Apple Computer, Inc.; contact your authorized Apple dealer for details.
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ClarisWorks: Exchanging Files with FileMaker Pro 2.0

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The DIF format should be used to import and export files to and from FileMaker Pro. This format preserves the field names which will make it easier to merge files.

When opening a DIF file that was exported from FileMaker Pro 2.0, ClarisWorks automatically creates the fields necessary to accommodate your data. Each field has the same name as it did in FileMaker and uses Text as it's field type. Since ClarisWorks matches field names while pasting, this makes it easy to exchange information between ClarisWorks and FileMaker databases on a consistent basis.

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ClarisWorks: Disappearing Menu Titles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There have been several reports of menu titles disappearing in the ClarisWorks word processing environment, specifically the Format and Style menus.

There does not seem to be one cause. However a few patterns have emerged:

The issue only occurs if you switch to another application which has a fewer number of menus than the seven that ClarisWorks WP has. When you switch back to ClarisWorks, the Format and Style menus are missing.

Several extensions seem to be related to the problem, all of which modify the menu in some way. MenuMaster, Disk Doubler, Directory Assistance, Now Menus and Caps Lock extensions have all been reported as suspects.

Workaround:
Opening a document in another ClarisWorks environment and then closing it reestablishes the Format menu. You can also close all WP documents and reopen a WP document.
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ClarisWorks: Disk Configuration of Education Version 1.0vX

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The disk configuration for the standard version of ClarisWorks and the Education version are different.

The configurations, as labeled on the disks, are as follows:

Disks for Regular Version of ClarisWorks:
Installer
Program
Reference
Communications
HyperTour
Help

Disks for Education Version of ClarisWorks:
Installer for Education
Program
Reference and Education Files
Communications
HyperTour
Help
Published Date: Feb 18, 2012

Apple IIe: Video Signal "NTSC-Compatible", Not "NTSC-Compliant"

I bought Sharp XA305 video recorders to record the video from my Apple IIe systems: however, I am able to record only black and white pictures.

I tried the same setup with an older Sears model VCR and it worked perfectly. I tried a new camcorder and got only black and white pictures again. Sharp told me that this is because the Apple IIe has a substandard NTSC signal.

Can you help?

This article has been archived and is no longer updated by Apple.
The composite video signal coming from the Apple IIe is not stated to be an NTSC-compliant signal. The signal coming from the video-out port is only considered NTSC-compatible video. "Compatible" means that generally the Apple IIe video will work with an NTSC device, although it may not work in all situations. Specifically, the Apple IIe video signal should work with all NTSC display devices.

When the Apple II was first designed, economy was of great importance. The video circuitry was built with as few parts as possible. In the design process, it was discovered that certain portions of the NTSC broadcast specification could be omitted, yet still display a color image on a standard television set. The one element that affects the described situation is color burst. The Apple IIe does not contain the color burst element of the NTSC video signal. By modulating other portions of the video signal, the Apple IIe simulates this missing information and allows an image to be produced on a television. To provide a consistent color video image for video tape, this color burst needs to be present.

In summary, the Apple IIe composite video signal was designed for display proposes, not for videotaping purposes. The Apple IIe composite signal is close to the NTSC specification and allows the video signal to be displayed on television screens. This, however, does not indicate that the signal can be recorded. Since the signal is similar to the full NTSC specification, video sometimes records properly on videotape with certain VCRs. In other environments, the signal may not record at all. The capability to record a monochrome image falls between these extremes.

To have a true NTSC signal designed for videotaping, the Video Overlay Card is required.

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ClarisWorks: Editing Charts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To edit a chart as individual graphic elements, you must first Copy or Cut it, then Paste and Ungroup. Note: Ungrouping a chart breaks the link to the spreadsheet data so it will not update with changes.

Explanation:
Only a PICT or WMF file can be ungrouped. When a chart is initially created, it is not a PICT/WMF since it is still tied to the spreadsheet that originally created it. This is done to allow for the automatic updating capabilities of a chart.

Therefore, to be able to ungroup a chart to edit its individual elements, it first must be copied and pasted to transform it into a PICT.
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ClarisWorks: Page Number Errors in Getting Started Index

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

A few of the index page references in the ClarisWorks 1.0 Getting Started manual are incorrect. They are outside the page range of the Getting Started manual and do not refer to meaningful pages in the Handbook.

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MacDraw Pro 1.5: Conflict with Suitcase 2.1.1

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When running Suitcase 2.1.1, drawing arcs by dragging in certain directions in MacDraw Pro 1.5 does not work. The arc will not draw. However, this seems to occur only in the first document window after launching MacDraw Pro. Therefore, the workaround seems to be to close the first document window, then reopen it. Or, just open a second document window.

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Claris Resolve: 1.0vX Disk Configuration

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Disk Configuration for 1.0vX:

- Program 1
- Program 2
- Reesolve Help
- Resolve Script Reference
- Resolve Samples
- Resolve HyperTour

The contents of each disk is outlined below (Indented items indicate that the item(s) are in a folder named the same as the previously outdented item).

Program 1
- Read Me
- Installer
- Resolve Utilities
- - Claris Help System
- - Main Dictionary
- - User Dictionary
- Resolve Scripts
- - Dialogs
- - Dialogs1
- - Dialogs2
- - Dialogs3
- - Dialogs4
- - Dialogs5
- - Dialogs6
- - Dialogs7
- - Dialogs8
- - Menus
- Installer Script
- TeachText

Program 2
- Claris Resolve.sit

Resolve Help
- Resolve Help

Resolve Scripting Reference
- Resolve Scripting Reference.sit

Resolve Samples
- Business Planning Templates
- - Read Me (templates)
- - Balance Sheet
- - Break even Analysis
- - Business Planning
- - Cash Flow Statement
- - Income Statement
- - Loan Amortization
- - Sales Sheet
- external examples
- - Read Me (externals)
- - Sound Tool Source
- - - ResolveTools.h
- - - SndTools.c
- - - SndTools.¹
- - - SndTools.¹.rsrc
- - - Sound.h
- - - SoundInput.h
- - - ThinkCGlue.h
- - Open Tool
- - Sound Tool

- Resolve Script Source.sit
- Utility Scripts
- - Read Me (scripts)
- - Audit
- - Comp
- - Date Converter
- - Hide
- - Picture
- - Print
- - Sound
- - Sounds
- - Startup
- - Total
- - Zoom
- Coffee Imports

Resolve HyperTour

- Resolve HyperTour

Published Date: Feb 18, 2012

Claris Resolve: 1.1v1 Disk Configuration

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Disk Configuration for 1.1v1:

- Program 1
- Program 2
- Resolve Help
- Resolve Script Reference
- Resolve Samples
- Resolve HyperTour

The contents of each disk is outlined below (Indented items indicate that the item(s) are in a folder named the same as the previous outdented item).

Program 1 (Changed since 1.0)
Read Me
Installer
Resolve Utilities
Claris Help System
Main Dictionary
User Dictionary
Resolve Scripts
Dialogs
Dialogs1
Dialogs2
Dialogs3
Dialogs4
Dialogs5
Dialogs6
Dialogs7
Dialogs8
Menus
Installer Script
TeachText
Program 2 (Changed since 1.0)
Claris Resolve.sit
Resolve Help (No change since 1.0)
Resolve Help
Resolve Scripting Reference (No change since 1.0)
Resolve Scripting Reference.sit
Resolve Samples (Changed since 1.0)
Business Planning Templates
Read Me (templates)
Balance Sheet
Break Even Analysis
Business Planning
Cash Flow Statement
Income Statement
Loan Amortization
Sales Sheet
External Examples
Read Me (externals)
Sound Tool Source
ResolveTools.h
SndTools.c
SndTools.¹
SndTools.¹.rsrc
Sound.h
SoundInput.h
ThinkCGlue.h
Open Tool
Sound Tool

TA42143_Claris_Resolve_v_Disk_Configuration.pdf

Resolve Script Source.sit
Utility Scripts
Read Me (scripts)
Audit
Comp
Date Converter
Hide
HostAccess
Picture
Print
Sounds
Startup
Total
Zoom
Coffee Imports
Resolve HyperTour (No change since 1.0)
Resolve HyperTour
Published Date: Feb 18, 2012

Windows with Norton Desktop Doesn‘t Exit

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Situation:

Able to move the mouse but the cursor is in the hourglass mode, the machine appears to have frozen, bombed, hung.

Cause:

When this issue occurs, it is one of three corrupted file types:

Binary files (*.bin)
These files contain Norton Desktop's configuration settings and passwords.

Data files (*.dat)
These files contain various parameters that are passed to Norton Desktop icons, windows, and includes the layout of windows on the screen.

QAG files (*.qag)
These files are the files that Norton Desktop uses to contain subgroups and files in an iconized format.

Note: Usually this issue is due to a corrupted group (*.qag) file.

The Solution:

Get to a DOS prompt (usually a cold boot (reset or power off) is necessary).

Rename the files with the above listed extenders to some obscure letter combination (for example, change *.qag to *.q27) because you may need them later. These files are in the main directories for Norton Desktop for Windows and Windows (usually NDW and Windows).

Load Windows with NDW (WIN at the DOS prompt) and then choose File Exit OK.

First, try copying the Quick Access group (QAGmain.xxx) back to QAGMAIN.qag, load Windows, and then try to exit back to DOS. If you are successful, repeat the process with the other groups until you find the defective group, and then you will have to replace it or rebuild it from Program Manager groups. If you are not successful, then at least your Quick Access group is defective.

If your Quick Access group is defective, run Windows, create a new group, and write down the file name of the group. Move all other groups and icons into this group. Reboot the system, delete the *.bin and *.dat files, and run Windows. At this point, your Quick Access group is working fine. Try to exit Windows, if it is successful, the defective group is fixed, if it is not, repeat the above process until the defective group is fixed. The groups most likely to be corrupted are Quick Access, Startup, and any groups opened during the current session before Windows is exited.

Published Date: Feb 18, 2012

MacDraw Pro: Screen Update Slower When Increasing Application RAM

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Increasing the memory allocation for MacDraw Pro can cause screen updating to be slower.
This can happen under the following conditions:
-- The computer's monitor is set to 2-color
-- The document contains a pixmap (a color/grayscale bitmap)

Under these conditions, MacDraw Pro attempts to dither the pixmap on screen so that it isn't displayed as a solid black block. This is actually an intended feature of MacDraw Pro, and is what is happening during this delay.

Any of the following actions cause MacDraw Pro not to dither the pixmap, hence eliminate the delay:
1. Change the monitor setting so it isn't 2-color (not much help when on a PowerBook, but good to know when using a different Mac
2. Turn on Image Greeking in Preferences
3. Reduce the memory partition (as you've already discovered). MacDraw Pro will detect that it doesn't have enough extra memory to calculate the dithering, so it won't try.
4. If the scanned image is 2-color black and white, try resaving from your scanning software in a different format (TIFF or PICT). Many scanning programs, when saving a black and white scan as a PICT or TIFF file, do not save the file out as a true bitmap file (strictly black and white). Or, the application may save it as a bitmap in one format, but a pixmap to the other format. If the file were saved as a true bitmap file (not a pixmap), this would solve the problem, as MacDraw Pro will not attempt to dither a bitmap file.
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MacDraw Pro: Can‘t Set Custom Gradient Steps to 0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a typographical error on page 10-16 of the MacDraw Pro User's Guide that says entering a custom number of steps to 0 will result in the maximum number of steps in gradients when printed.

The correct number is 256.
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MacDraw Pro: 1.5v2 Disk Configuration and Box Contents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacDraw Pro 1.5v2 Disk Configuration and Box Contents

1. MacDraw Pro User's Manual
2. MacDraw Pro Getting Started Guide
3. MacDraw Pro New Features Guide
4. MacDraw Pro Color Guide
5. MacDraw Pro Quick Reference Guide
6. Four (4) Disks:

Installer disk containing:
1) 32-Bit QuickDraw 1.2
2) Installer Script 3.0.3
3) Installer 3.2
4) B&W Options
5) ReadMe
6) TeachText
7) Sample Files.sit containing:
a) Apple Event Files Folder containing:
1) SlideShow
2) Slide Show Apple Events
3) Slide Show Info
b) Sample Files Folder containing:
1) Dance of Spheres
2) Four-Cylinder Engine
3) GeoMosaic
4) Rossini
5) PicturePak Folder containing:
a) Beach
b) Man In Fall
c) Man In Winter
d) Rafters
e) SpyGlass
f) USA Map
c) Slide Stationery Files Folder containing:
1) 13 Slide Stationery
2) 16 Slide Stationery
3) 19 Slide Stationery
4) 21 Slide Stationery
d) Tutorial Files Folder containing:
1) Advertisement
2) Dandie Candie
3) Sales Meeting
4) Slide Library

Program disk containing:
1) MacDraw Pro.sit containing:
a) MacDraw Pro 1.5v2

Reference disk containing:
1) Claris Translators.sit containing:
a) Claris XTND Bridge 1.0
b) EPSF 1.0v4
c) MacDraw II 1.1 1.0v4
d) MacPaint 2.0 1.0v2
e) MacWrite 5.0 1.0v3
f) MacWrite II 1.0
g) Microsoft Word 4.0 1.0v2
h) Plain Text 1.0
i) TIFF 1.0v2
2) Claris XTND System 1.3
3) Colors and Gradients Folder containing:

a) 100 Grays
b) 21 Grays
c) Claris Colors
d) Color Gradients
e) Cyan-Blue
f) Earth Tones
g) FileMaker Pro Colors
h) Grays
i) Pastels
j) Presentation Palette
k) Red?Yellow
l) YellowGreen?GreenBlue
m) Violet-Magenta
n) Apple Colors Folder containing:
1) 16 Colors
2) Apple System Palette I
3) Apple System Palette II
o) Hues and Tones Folder containing:
1) Hues and Tones
2) Read Me
p) Presentation Formats Folder containing:
1) Read Me
2) Format 1 Stationery
3) Format 2 Stationery
4) Format 3 Stationery
5) Format 4 Stationery
6) Format 5 Stationery
7) Format 6 Stationery
8) Format 7 Stationery
9) Format 8 Stationery
10) Format 9 Stationery
11) Format 10 Stationery
3) LaserWriter 7.0.sit containing:
a) LaserWriter 7.0
b) PrintMonitor 7.0
4) PANTONE¨*Palettes.sit containing:
a) PANTONE¨-CMYK150
b) PANTONE¨-HP PaintJet
c) PANTONE¨-Seiko
d) PANTONE¨-QMS Model 1o
5) Main Dictionary 1.03
6) User Dictionary

Help disk containing:
1) Claris Help System 3.0v2
2) MacDraw Pro Help.sit containing:
a) MacDraw Pro Help 1.5
3) MacDraw Pro HyperTour.sit containing:
a) MacDraw Pro HyperTour 1.0

*Pantone, Inc's check-standard trademark for color reproduction and color reproduction materials.
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MacDraw Pro: About Version 1.5v2

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro 1.5v2 is identical to 1.5v1 with the following exceptions:

1. The application and EPSF translator have been updated to fix these problems:
-- Text disappears when clicking out of a text box to which font, size or paragraph attributes were applied via dialog before typing any text.
-- The Installer did not correctly overwrite the existing MacDraw Pro Help and Claris Help System files, resulting in files named MacDraw Pro Help.2 and Claris Help System.2.
-- The Installer did not install the MacDraw Pro Help file in the Claris folder. It is installed in the Application folder.
-- The Easy Install option did not recognize system 7.1 as a valid system and did not allow an easy install.
-- EPSF images print distorted or reduced in size if they are first imported and saved as MacDraw Pro version 1.0 using the its EPSF filter, then the document is opened and printed in MacDraw Pro 1.5v1.
-- Gridlines display as solid black lines when running system 6.0.x in millions color mode with the screen buffer turned off.
-- Command-Option-Space does not hide and show the tool and style palettes when running system 7.1. Command-Option-Tab added as a duplicate keyboard shortcut for use with 7.1.
-- System crashed when sending an oapp Apple event with when the application is running without a document open.
-- Compatibility with QuickTime 1.5.
-- Gray Scale images saved to EPSF, had incorrect information and print B&W or not at all.
-- Certain applications create open polygons such that when they are saved to PICT and opened in MacDraw Pro they are incorrectly closed.

Occurred in MacDraw Pro 1.0 also.
-- PICT rounding error results in clipped objects when imported or pasted in MS-WORD, MacWrite, etc.
2. The installer script on the installer disk has been updated to correctly over-write the MacDraw Pro Help, MacDraw Pro HyperTour files and older Claris Help System files and place the MacDraw Pro Help file in the Claris Folder.
3. The Claris Help System file on the Help disk has is no longer stuffed in a StuffIt Archive.
4. The EPSF filter stuffed on the Reference disk in the translator folder has been updated to version 1.0v4.
5. The Read Me file on the installer disk has been update to include MacDraw Pro 1.5v2 changes.
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ClarisWorks: Techniques for Simulating "Smart Fill" Capabilities

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here are some techniques for creating sequences of data such as a column of serial numbers or successive dates using formulas and the Fill command in the ClarisWorks spreadsheet environment.

Sequence of numbers
1. Enter the starting number in a cell (A1)
2. Enter a formula in the cell below or to the right which adds 1 or some other increment to the starting cell (=A1+1)
3. Select and drag from the cell with the formula to the last cell you want to fill to.
4. Choose Fill Down or Fill Right from the Calculate menu.

Sequence of dates
1. Enter the starting date into a cell.
Follow steps 2-4 above. Then choose Number Format and choose one of the date formats. Otherwise, the dates will be in the form of a serial number.

To create a list of month names starting with January:
1. Enter the following formula into any cell:
=MONTHNAME(MOD(ROW(A1)-1,12)+1)
2. Select and drag from the cell with the formula to the last cell you want to fill to.
3. Choose Fill Down or Fill Right from the Calculate menu. (Substitute the COLUMN function for ROW if using Fill Right.)
4. The bullets in the value indicate that the cell formula refers to itself. To remove them, choose Display from the Options menu and turn off "Mark circular references."

To create a list of day names starting with Monday:
1. Enter the following formula into any cell:
=DAYNAME(MOD(ROW(A1),7)+1)
Follow steps 2-4 in the directions for month names.

To create the alphabet:
1. Enter the following formula into any cell:
=CHAR(64+MOD(ROW(A1)-1,26)+1)
2. Substitute "96"if you want lowercase letters.
Follow steps 2-4 in the directions for month names.

Note: The formulas for month names, day names and the alphabet all work by same method. The MOD function returns the remainder of a number and divisor. The number of occurrences of the unit (12 for months, 7 for days of the week, and 26 for the alphabet) is used as the divisor and ensures that the number which generates the name or character is always within the unit range, even if you fill down for hundreds of cells. The ROW or COLUMN function in conjunction with the way the Fill command increments cell references does the job of creating the sequence of data, regardless of what cell you begin with.
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FileMaker Pro 2.0 for Windows: QuickTime Support Announced

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

SANTA CLARA, Calif., Nov. 10, 1992 -- Claris Corporation today announced that FileMaker Pro 2.0 for Windows database management software will support QuickTime for Windows, introduced today by Apple Computer, Inc. The Macintosh version of FileMaker Pro 2.0, the number-one Macintosh database, already supports QuickTime.

With the QuickTime Player in both versions of the application, FileMaker Pro 2.0 will be able to embed QuickTime images in specific fields in a dababase, and even share those images across Macintosh and Windows networks.

Claris said QuickTime for Windows is an important step forward in cross-platform database management. While storing text and numbers is vital, users' definition of "data" is expanding to include sound, graphics and video.

With its superior graphical user interface and sophisticated database power, FileMaker Pro 2.0 provides the tools, high-quality output and immediate productivity that Windows users most want. Since no programming knowledge is required, even new users can be immediately productive -- yet power is not sacrificed for ease of use.

The QuickTime Player allows FileMaker Pro 2.0 to display or play QuickTime movies in a database field by using "pointers" to the QuickTime images. This means that FileMaker Pro 2.0 can efficiently manage many megabytes of QuickTime images without the overhead of actually incorporating these images into the database. More importantly, FileMaker Pro 2.0 fully maintains top performance levels while handling large multi-media data structures.

Claris said a revision to FileMaker Pro 2.0 for Windows, sometime in 1993, will add QuickTime for Windows capabilities.

A breakthrough in cross-platform computing
For the increasing number of businesses where sharing information among PCs and Macintosh systems is crucial, Claris has defined a new standard for how applications should work cross-platform. The Windows and Macintosh versions share 85 percent common source code and are designed to look and work alike. This has enabled the greatest possible interoperability and makes support and training much easier than for any other cross-platform applications.

FileMaker Pro 2.0 for Windows and FileMaker Pro 2.0 for Macintosh share the same file format so databases created on a PC or a Macintosh can be run on either platform without modification or translation. Windows and Macintosh users can simultaneously share reports, forms, graphics and scripts and update common files and lookup related data across the network painlessly. When multiple users are sharing data, instant file updating automatically reflects changes made by any one of the users.

Pricing and Availability
FileMaker Pro 2.0 for Windows and Macintosh is available now from authorized resellers.
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MacDraw Pro: White Text Prints Black to DeskWriter C

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
White text prints as black to the DeskWriter C when printing a TrueType font. Bitmap and Adobe fonts appear to print correctly. Versions tested included 1.0/2.0 of the DeskWriter C driver, and MacDraw Pro 1.5v1. The DeskWriter 3.1 driver prints white text correctly.
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MacDraw Pro: GCC WideWriter Prints White Rectangles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Printing to a GCC WideWriter printer may produce white rectangles on the output that do not appear on the document on the screen. You can remedy the issue by deselecting the 'Accurate Pattern Fills' option in the Page Setup dialog.

GCC is aware of the issue and is working on a fix.

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ClarisWorks: Bad Alias in Performa Launcher

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Macintosh Performa series computers come pre-installed with an application launching program called "Launcher."

It works by creating aliases of applications and placing them in a special folder. On some machines, the alias for ClarisWorks is bad, causing an error when choosing ClarisWorks from the Launcher application.

To correct this issue:

1. Find the actual ClarisWorks application.

It should be located in the ClarisWorks folder which, on Performas, is located inside the Applications folder on the hard disk (Macintosh HD:Applications:ClarisWorks:ClarisWorks).

2. Make an alias of the file by selecting the ClarisWorks icon (do not double click) and choosing Make Alias from the File menu.

3. Open up your System Folder on the hard disk and locate the "Launcher Items" folder. Open this folder and Trash the ClarisWorks alias located there.

4. Drag the new alias created in step 2 into the Launcher Items folder and restart your machine. The Launcher should now correctly find and launch the ClarisWorks application.
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ClarisWorks: Clip Art Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
NOTE: This is not an issue with ClarisWorks 2.0 since it has a Painting environment.

Q: I bought some MacPaint (bit-map) clip art to use with ClarisWorks 1.0 but when I insert or open the document, I get the whole page with no way to select only the art I want.

A: Clip Art generally comes in one-page documents with several pieces of art per page. ClarisWorks 1.0 imports graphics as one object and does not have the ability to edit bit-maps.

There are 3 alternatives:

1. Purchase the upgrade to ClarisWorks 2.0

2. If you have a Paint program such as BrushStrokes, Canvas, SuperPaint, MacPaint, or PixelPaint use it to open the clip art and lasso only the part you want. Copy it to the clipboard. Then in ClarisWorks, you can Paste it in and treat it as a graphic object, scaling it, duplicating it, etc.

3. If you do NOT have a Painting program, here is how you can use HyperCard (Development version 2.0 or later).

1. Launch the HyperCard program.
2. Under File, choose New Stack. Do NOT "Copy Current Background."
3. Set the size of the new stack to MacPaint in the pop down menu. Name the new stack something like HyperClipArt for later use.
4. You are now in a new, blank stack. Under Go, select Message and type into the message box that appears: set userLevel to 3 and press Return
5. From the Tools menu, select the lasso tool (to the left of the pencil).
6. Choose Import Paint... from the File menu and navigate to your clip art file. Then click Open.

This creates a new card in your stack with the clipart on it. You can move to the bottom of the page by grabbing the page through the little Scroll window that has appeared (or, if it has not, select Scroll from the Go menu) You can now use the lasso to select just the image you want. Copy it, switch to ClarisWorks and Paste.
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ClarisWorks: Converted AppleWorks File Appears Empty

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q: When I import a word processing file from AppleWorks, it appears empty. What's happening?

A: Click anywhere in your document and then under Edit, choose Select All. Now under Style, choose Text Color and select black.

During the conversion process, sometimes the font color will be set to white and thus the data seems to be non-existent.

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ClarisWorks: Heizer Software Templates

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Heizer Software carries a number of ClarisWorks templates.

The subjects are:

Accounting
Architecture
Business - General, Time Management, Travel
Calendars
Education - Speed Math and Elementary School Level
Engineering
Entertainment
Farming
Finance -Personal Finances, Retirement, Investments
Manufacturing
Personal - Health, Family Matters, Automotive, Resume Writing
Publishing and Advertising
Real Estate
Science
Sports
Tutorials- Spreadsheet Tutorials - Contain at least 3 working examples of each of the SS functions built into ClarisWorks.

Heizer Software
800-888-7667
Published Date: Feb 18, 2012

ClarisWorks: How to Get a Page Break when Importing Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q. I want to import a text file into ClarisWorks and include page breaks. I tried using the Form Feed character to get the page break, but it's converted to a simple return. What do you suggest?

A. ASCII 12 (hex $0C) should give you the page breaks you need.

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ClarisWorks: Printing Edge Feed Envelopes to a LaserWriter

Printing Edge Feed Envelopes to a LaserWriter.

Note: This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Knowledge Base. This article has been archived and is no longer updated by Apple.
Both MacWrite II and ClarisWorks WP provide incorrect margins when choosing Envelope - Edge Fed in Page Setup... from the LaserWriter driver. The default margin settings will cause the application to return an incorrect margin message when attempting to print.

Correct (Minimum) margin settings for edge feed envelopes:

Top: 4.42
Bottom: 0.25
Left: 0.43
Right: 1.46

This is not an issue for ClarisWorks Graphics documents which is the recommended environment for creating envelopes.
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DOS 3.3: Dumping Text Files

This program moves text files, including all leading spaces and characters strings greater that 239, to any slot you desire.
This article has been archived and is no longer updated by Apple.
Program:

```
100 KB = -16384: KBS = -16368
110 D$ = chr$(4)
120 home
130 input "text file name? ";file$
140 print
150 input "destination slot? ";SL
160 onerr goto 500
170 print D$;"open ";file$
180 print D$;"read ";file$
190 get A$
200 pr# SL
210 print A$;
220 if peek (KB) <> 155 then 190
230 poke KBS,0
500 pr# 0
510 call 1002
520 print
530 print D$;"close ";file$
540 end
```

To stop the program before the end of the file is reached, press ESCAPE.
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TA42160_EtherTalk_History_and_Users_Guide_(TIL05510).pdf

EtherTalk: History and User‘s Guide

This article discusses the history of the EtherTalk card, EtherTalk software, and their various revisions.
This article has been archived and is no longer updated by Apple.
Apple Computer introduced the EtherTalk Interface Card (later called EtherTalk NB card) and EtherTalk 1.0 software for the Macintosh II in August of 1987. Since that time, the card and software have gone through many revisions. This article describes the revisions and shows which cards and software to use on various Macintosh computers.

HISTORY

1987
EtherTalk card revisions A through D
EtherTalk 1.0 and 1.1 software

March 1988
EtherTalk card revision J

The revision J card fixed a rare data corruption problem that occurred when the EtherTalk Interface card retransmitted a packet that originally had encountered a collision. The data corruption manifested itself as changed characters in documents being printed or filed on an AppleShare server. This problem only occurred in heavily loaded networks, with large numbers of active nodes, intensive use of network resources, and dissimilar types of computer equipment.

The revision J upgrade also included a fix to an incompatibility problem with some co-processor and memory expansion NuBus cards that access memory in the $xxxFxxx range. This problem is very unlikely to occur since most NuBus cards have their declaration ROM in this address range.

A free upgrade program to revision J was offered from May through October 1988. Some service providers extended the upgrade program on a case-by-case basis.

(Note: Some of the pre- revision J cards that were reworked were marked with revision letters G through J in order to differentiate the original version of the card. [Revision A cards became G; revision B cards became H; etc.] Revision G through J are functionally equivalent.)

July 1988
EtherTalk 1.2 software

EtherTalk 1.2 was a software workaround for an obscure hardware problem in the EtherTalk card that caused an AppleShare server on Ethernet to crash. It also fixed an obscure bug in the software that would cause the card to send packets to a non-existant node and eventually crash.

January 1989
EtherTalk card revision K

The revision K card fixed an incompatibility between earlier EtherTalk cards and the Macintosh IIcx. The problems occurred because the capacitance of a six-slot NuBus Macintosh was factored into the timing mechanism of the EtherTalk card, and was inappropriate for a three-slot Macintosh. The problem was most likely to occur when only one card was present. (This would be the case for routers and servers where no video card was necessary because they were monitored remotely, using Timbuktu for example.)

Symptoms of the problem are intermittent and include:
- system fails to boot
- system errors
- exceedingly poor network performance

No upgrade program to revision K was offered.

June 1989
EtherTalk 2.0 software

EtherTalk 2.0 offers support for AppleTalk Phase 2, including reduced broadcast traffic, extended addressing, and better router selection. EtherTalk 2.0 packets are in the 802.3 format, while EtherTalk 1.0 packets were in the Ethernet format. EtherTalk 2.0 nodes don't see EtherTalk 1.0 nodes, unless a router is setup to run both versions of the software. (See LAN Minds training for more information.)

A customer can ask their Apple Systems Engineer for the EtherTalk 2.0 software or they can send in the form located in the Upgrade and Update Programs folder under the Apple Programs icon on AppleLink. (As of this writing, the form says it expires on March 1, 1990, but that will be changed. Note that a customer who sends in the form after March 1990 will receive EtherTalk 2.0.2, described below.)

October 1989

EtherTalk 2.0.1 software

EtherTalk 2.0.1 software offers better performance, especially on the Macintosh IIcx and IIci. The EtherTalk 2.0.1 software includes additional NOPs (no operations) in the .ENET driver in the System File, in order to synchronize the timing of the card with the timing of the faster Macintosh IIcx and IIci. The EtherTalk2.0 file that a user sees in the System Folder was not changed.

(Note: It is difficult for a customer to make sure she is using the correct version of EtherTalk software, since only the .ENET driver changed names and version number.)

December 1989
EtherTalk card Revision L

The Revision L card is a new layout of the original card (with new ROMs), removing the cuts and jumpers that were necessary for the previous upgrades. Because the card is a new layout, no upgrade program has been offered from J and K.

From the A/UX side, Rev L is required because the Macintosh IIfx is so much faster that the larger (64K) buffers are needed to keep up with the machine. Also, there were a number of NuBus interface details fixed in Rev L that the Macintosh IIfx needs. Only the A/UX drivers take advantage of the extra memory.

March 1990
EtherTalk 2.0.2 software

EtherTalk 2.0.2 software offers better performance, especially on the Macintosh IIfx. The only change to the software is that some more NOPs were added to the .ENET driver, which is installed in the System File. The EtherTalk2.0 file that a user sees in the System Folder was not changed. A customer should use the utility (mentioned above) from Technical Communications to make sure they are using the correct .ENET driver.

When a customer uses the System 6.0.5 Network Installer diskette, the new 2.0.2 .ENET driver is automatically installed, regardless of the EtherTalk installer diskette used.

Customers who upgrade to the Macintosh IIfx will be told to be sure to use the System 6.0.5 Network Installer diskette to re-install EtherTalk software.

ETHERTALK COMPATIBILITY

Macintosh II or IIx	Macintosh IIcx or IIci	Macintosh IIfx
hardware Rev J, K, or L	Rev K or L (Rev L on Macintosh IIci)	Rev K, L or M
software EtherTalk 2.0.1 or 2.0.2	EtherTalk 2.0.1 or 2.0.2	EtherTalk 2.0.2

Note: There is a remaining bug that affects Macintosh IIci owners who use EtherTalk 2.0.1 or 2.0.2 software and the EtherTalk revision K card. Ethernet performance is adversely affected when a user starts up the Macintosh IIci in 2 bit [4 colors] or more, using on-board video. To work around this problem, the user can use a revision L card, or not use on-board video [i.e. use a video card], or use only black-and-white video.

Note: EtherTalk 2.0.x should be used in AppleTalk Phase 2 installations only. For customers who have not upgraded to Phase 2 yet, EtherTalk 1.2 is provided in a folder called Previous Version on all EtherTalk 2.x diskettes. Use the installer to install EtherTalk 2.0.x, but then drag the EtherTalk file in the Previous Version folder into the System Folder on your startup disk. This will insure that you have the correct .ENET driver in your System File, but the Phase 1 version of EtherTalk in your System Folder. See the EtherTalk NB User's Guide for details.

Article Change History:
22 Mar 1995- Reviewed for technical accuracy, revised formatting.

Support Information Services
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ClarisWorks: Restoring Database Field Text to Default Font/Size/Style

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Q: When I change text in a field to Bold, it shows up that way in all my layouts, even ones where the field is set to Plain text. If I set the text back to Plain, then it appears Plain in another layout where it is set to Bold. What I want is for all text in all fields to revert back to their default settings.

A: Once you change the font, size or style of text in a field, it will retain those attributes in all layouts. The following procedure will restore all text to the default format defined in each field. Do this on a copy of your database in case you accidentally delete some records.

1) In the database, click anywhere outside of a field to select an entire record.
2) Now under the Edit menu, choose Select All, then Cut.
3) Under File, choose New and click on Spreadsheet, then OK.
4) Paste. (This has stripped out all font attributes.) Now Copy.
5) Return to your database and Paste.
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ClarisWorks: "Not Enough Memory" Opening in Microsoft Works 3.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Microsoft Works 3.0 will give the message "Not enough memory" when attempting to open a file saved from ClarisWorks as MS Works 2.0. This happens even if it is a small file and you allocate extra memory to MS Works.

Saving the file from ClarisWorks as either Microsoft Works 1.1 or Microsoft Word 4.0 allows the file to be opened by Microsoft Works 3.0.

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ClarisWorks: "This File is Corrupted" Message

When a file is corrupted, ClarisWorks gives the generic message: "This File is Corrupted." If you are getting this message repeatedly as you work in ClarisWorks, you may have a corrupt ClarisWorks Macros file in your Claris folder.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
By saving a macro file into the Claris folder/directory in the System folder, and naming it ClarisWorks Macros, it will automatically load when you launch ClarisWorks. If this file becomes corrupted, ClarisWorks opens it but then keeps alerting you that the file is damaged.

Similar problems could occur if you create a ClarisWorks WP Options file and it becomes corrupted. In this case, you would get a file corrupted message when creating a new WP document.
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ClarisWorks: ImageWriter Page Setup Options

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Tall Adjusted and 50% Reduction will always be grayed out in Page Setup when printing from ClarisWorks to an ImageWriter. MacWrite II and FileMaker Pro offer these options, whereas ClarisWorks does not.

In addition, ClarisWorks does not support custom paper sizes. A shareware utility called My Page Setup can modify the Page Setup dialog to enable you to create custom paper sizes within ClarisWorks. This utility has not been fully tested with ClarisWorks, but seems to work well with the Graphics and Database environments. It is unstable in the Word Processing environment.
Published Date: Feb 18, 2012

AppleShare 3.0: Concurrent User Limits

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
AppleShare 3.0 allows you to set a concurrent user limit for applications. As a result, it would appear that you no longer need to use Key Server from Sassafras Software to control the number of launches of a particular application.
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Claris Applications: Installing on a Partitioned Drive

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If your hard drive has been partitioned and if you have chosen to name one of those partitions the same name as one of the disks of the Claris product you are attempting to install, you may run into an error.

For example, FileMaker Pro 2.0 comes with four disks:
1. Install 1
2. Install 2
3. Utilities
4. Examples

During installation, when you insert "Install 2" when prompted, the message "Utilities has the correct name, but is not the correct disk" may appear even if you have not inserted any disk. The installer is finding a partition named "Utilities". Changing the name of this partition allows for a successful installation of FileMaker Pro.
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Claris Applications: International Dictionaries

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris currently provides dictionaries in twelve languages, available separately for US$49 each, and available through Claris Customer Assistance:

U.S. English, British, French, German, Spanish, Danish, Dutch, Finnish, German(Swiss), Italian, Norwegian, and Swedish.

Languages which include a hyphenation file:
U.S. English, British, French, German, Spanish, Italian, Swedish

Languages which include a thesaurus:
Danish, Dutch, Finnish, German(Swiss), Italian, Norwegian, and Swedish.

The British Dictionary provides a total of 100,000 words, the French, German and Spanish provide over 200,000 words.

Claris products allow you to install only one international dictionary at a time, with the exception of MacWrite Pro. You may install as many international dictionaries as you wish with MacWrite Pro. By assigning language "styles" to text, each portion of your document will be spell checked with the correct dictionary. Other Claris applications require you to switch the installed dictionary via the Install Dictionaries command in the Edit menu.

International dictionaries can be used with any version of the following Claris products: ClarisWorks, ClarisImpact, MacWrite II 1.1, MacWrite Pro, FileMaker Pro, MacDraw II 1.1, MacDraw Pro, MacProject II 2.x, and MacProject Pro.

MacWrite Pro 1.5 and ClarisWorks 2.1 require an updated dictionary and thesaurus. A Main Dictionary 2.3 update and an International Hyphenation update which includes French, Spanish, German, Italian, Swedish, and British hyphenation files is available in Claris online forums on CompuServe, America Online, AppleLink and the Claris BBS (408-987-7421, settings 8/N/1). A disk is also available through Claris Customer Assistance.
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MacDraw Pro: Text Grayed Out at Low Zoom Levels

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
With MacDraw Pro 1.5 a new preference was added in order to provide faster text handling at lower zoom levels (25 or 50%). This preference allows text to be replaced by a gray pattern when a font size threshold is achieved. This preference is new to MacDraw Pro 1.5 and does not occur with MacDraw Pro 1.0.

The preset setting for this preference (Greek text) is 6 points. So for example 12 point text when viewed at 50% would normally be displayed as 6 point text. As a result, in MacDraw Pro 1.5 the text would be displayed as a gray rectangle.

Since this is a preference, you can change the point size at which the text display will change. Continuing with our example, setting the Greek Text preference to 5 points or less would allow the 12 point font to display as letters.

To change this preference:

1. Select Preferences from the Layout menu.
2. Click on the Display panel icon
3. Change the point size at which Greek text is set.

Published Date: Feb 18, 2012

Macintosh IIfx: Termination (4/95)

This article contains information about Macintosh IIfx termination and external terminators.

This article has been archived and is no longer updated by Apple.
There have been 4 different external terminators distributed by Apple. Two are identical except for the part number.

Part Number Description
---------- ----------
590-0304 The original terminator.

590-0695-A Replaces 590-0304. This is the new PLATINUM terminator

590-0695-B
& 590-0705 These are BLACK and are identical, except for the part
. number. Apple built approximately 10,000 having the part
. number 590-0695-B; later manufactured black terminators
. are numbered 590-0705. One black terminator ships with
. every revenue Macintosh IIfx, but can be ordered
. separately from Service using part number 590-0705.

. Note:
. Only 1 black terminator is ever needed at a time; more
. details are below. These black terminators are
. officially called the Apple SCSI Cable Terminator II.

The Other Two Macintosh IIfx SCSI Bus Components

Internal SCSI Termination Block

The Internal SCSI Termination Block provides internal termination resistance for Macintosh IIfx systems WITHOUT INTERNAL HARD DRIVES. All Macintosh IIfx computers that shipped without internal hard drives had the Internal SCSI Termination Block installed. This component plugs into the Internal SCSI Filter and it looks like a "T", with a 50-pin female connector on the bottom.

Internal SCSI Filter

The Internal SCSI Filter provides termination capacitance for internal Macintosh IIfx hard drives that shipped prior to March 19, 1990 or any third-party hard drives. After that date, Apple hard disk drives shipping in the Macintosh IIfx contained the proper termination capacitance. The filter has a 50-pin female connector on one end and a 50-pin male connector on the other. When connected to an internal drive the drive cable should be connected directly into the logic board and plug the Internal SCSI Filter block between the drive cable and the 50-pin connector on the hard drive. When there is no hard drive the SCSI Filter is connected to the logic board, and the Internal SCSI Termination Block is connected to the filter.

All Macintosh IIfx computers that shipped without internal hard drives had the Internal SCSI Filter and the Internal SCSI Termination Block installed. When you add a third-party drive remove the Internal SCSI Termination Block, but leave the Internal SCSI Filter connected to the logic board. Termination needs to be provided by the resistors on the internal third-party drive.

Determining What Terminators to Use and When

No External SCSI devices Connected

Termination is provided by either the internal hard disk, or by the Internal SCSI Termination Block.

With a Third-party Internal Drive

The third-party drive should be internally terminated. Plug the drive cable directly into the logic board and plug the Internal SCSI Filter block between the drive cable and the 50-pin connector on the hard drive (Cable and filter order is important for this to terminate correctly). The Internal SCSI Termination Block needs to be removed (it looks like a "T"). Plug the drive cable directly into the logic board and plug the Internal SCSI Filter block between the drive cable and the 50-pin connector on the hard drive.

With Any External SCSI Devices Connected

Use only ONE black terminator at the end of the SCSI chain. Make sure that all built-in terminators are removed from external third-party SCSI devices (Apple's external SCSI devices do not contain internal terminators).

NOTE:
A flyer in the Macintosh IIfx Finished Goods box instructs customers to
return self-terminating SCSI devices to the Service Provider to disable the termination. Removing the termination can be performed by the user in some circumstances--a user should refer to the owners manual or check with the manufacturer if they are uncertain.

WARNING:

Under no circumstances should you use more than one black Apple SCSI Cable Terminator II on any external SCSI chain. This may damage the logic board or whatever device is providing termination power.

With An Internal Disk Drive And External SCSI Device

Both the internal SCSI drive and the last SCSI device in the external SCSI chain need termination, and you need to plug the Internal SCSI Filter block between the drive cable and the 50-pin connector on the hard drive.

Why Is There A New Black Terminator For The Macintosh IIfx?

One of the features of the Macintosh IIfx is a new SCSI chip that provides SCSI data transfer rates up to 3MB per second, faster than any earlier Macintosh systems. To achieve these transfer rates, components on the Macintosh IIfx logic board are smaller and faster, this makes them more susceptible to signal reflections on the cable. The new terminator adds the filter capacitors and changes the resistor values for some of the signals to reduce the reflections.

How Can Third-party Drives Take Advantage Of The Higher Scsi Throughput?

Any SCSI hard drive that can sustain transfer rates above 1.25MBps will operate faster on a Macintosh IIfx. No Apple hard drive, including the HD160 SC, takes advantage of this higher transfer rate.

What To Do With Less Common System Configurations

In some remote cases someone might remove the internal drive from a Macintosh IIfx they will not have the correct internal termination. In this situation, you should order and install a Internal SCSI Termination Block (Apple Service Part #590-4515) and Internal SCSI Filter (Apple Service Part #590-4516), and use the black terminator if you have any external drives; however, if you don't have access to an internal termination block, you can connect use the new platinum terminator (590-0695-A on the terminator) to the beginning of the SCSI chain and, as always, connect the black terminator at the end of the chain. Again, what is preferred is to order the Internal SCSI Filter from service.

Article Change History:
13 Apr 1995 - Added information on having internal and external drives.

Support Information Services
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ClarisWorks: Pasting Number Formatted Data from SS to WP

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When a number is copied from a spreadsheet cell, any number formatting using the Format:Number command is ignored (display in <2> decimal places, currency, commas, display of negative numbers). What is copied is the actual value that is stored in the cell. For example, consider a cell with the formula "=5/23" formatted to display as a fixed number with two decimal places. The number displayed on screen is .22, but the number stored in the cell is 0.21739130434782609. This longer value is what will copy and paste into other programs or ClarisWorks modules, such as the word processor.

There is no way to copy cell values in their formatted result. A suggested workaround is to create a spreadsheet frame in the word processing document and paste the values into it. You can select the frame and choose Display from the Options menu to turn off row and column headings. Also, you can paste a spreadsheet frame in-line with your text so it flows with changes. To do this, Cut the frame, click where you want to insert it in the text and paste.

Another workaround: if you're only using the Format:Number command to format to a fixed number of decimal places, you can edit the formula in the spreadsheet cell to use the Round() function. This will cause the number stored in the cell to be fixed to a specific number of decimal places. In the example above, the formula "=Round(5/23,2)" results in the number .22, which will copy and paste as expected.

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MacDraw Pro: Books & Videos Available

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Books Available for MacDraw Pro

Using MacDraw Pro
Author: Marvin Bryan
Publisher: Que (Carmel, IN)
To Order: 800-428-4331, ext. ORDR
or Fax: 317-573-2583

Macintosh Bible Guide to MacDraw Pro
Author: Deke McClelland
Publisher: Peachpit Press
To Order: 800-283-9444
Price: $22

Videos:
MacDraw Pro Training Videos
2 videos available for MacDraw Pro
Publisher: MacAcademy
To Order: 800-527-1914
Price: $49 each.

Note: Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation.
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Claris Resolve: Date Conversion Formula for Incorrect Dates

I have a column of imported data that I need to convert to a valid date. For example, cell A1 contains 600827 which really represents the date 08/27/60. How do I convert it?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here's a formula that will convert the data to a valid date of 08/27/60.

=Date (1900+Value (Left (Str (A1),2)),Value (Mid (Str (A1),3,2)), Value (Right (Str (A1),2)))

By means of explanation.
The Left (), Right () and Mid () functions are used to strip out values in certain positions.
These functions require a text value, so the Str () function is used to convert the numbers to text.

The Date () function, however, requires numbers as arguments, so the values returned by the Left (), Right () and Mid () functions need to be converted back to numbers by use of the ValueÊ() function.
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ClarisWorks: VT320 and LAT Comm Toolbox Tools Available

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Other comm toolbox tools available for ClarisWorks:

Available from APDA:

Part# M0800LL/B
Title: VT320 Emulation Tool v.1.0.2
Price: $50.00 (US$)
APOS: Yes
Description: Use this tool with a Communications Toolbox-capable application to set general, screen, keyboard and character set attributes so that a Macintosh can emulate a VT320 terminal.

Part# M0801LL/B
Title: LAT: Local Area Transport Connection Tool
Price: $50.00 (US$)
APOS: Yes
Description: Use this Macintosh Communications Toolbox tool to establish LAT (Local Area Transport, a DEC proprietary protocol) connections between a Macintosh computer and VAX computers.
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ClarisWorks: Can‘t Insert Fields on Layout

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisWorks database environment only allows you to insert a field onto a layout once. You cannot have multiple copies of a field on the same layout.

If when Inserting a Field onto a layout, the field does not show up in the list, it is already on the layout. If you cannot find the field on the layout, it may be outside the page boundaries. When you change page orientation, fields may fall out of the page boundary. It is also possible to move fields off the edge of the layout, especially by using "Select All" and dragging something down from the top of the layout.

To find fields which may be outside the page boundary, try switching page orientations or page sizes until they become visible. Another solution is to just create a new layout.
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ClarisWorks: Changing the Line Weight of a Chart

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks 1.0

The ClarisWorks 1.0 Handbook states that you can change the line weight of a chart by clicking on the legend element and choosing a new line weight from the palette. This does not work. You can change color and pattern but not line width.

The work-around is to copy the chart and paste it back in as a graphic object. Each line becomes a selectable object and line weights can be modified. However, the chart no longer maintains its link to the spreadsheet data.

ClarisWorks 2.0

ClarisWorks 2.0 adds the capability to modify chart line weights. However, only line weights of 1 point and larger are supported. Changing a line to Hairline will cause it to switch to None instead.

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ClarisWorks: Translating MS Works PC 2.0 Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The MS Works 2.0 translator included with ClarisWorks only works with files created by the Macintosh version of the Microsoft Works application.

The PC version of the MS Works uses a different file format that is not compatible with the Claris XTND filter. Transferring files from Works on the PC, therefore, will require converting the data into an intermediate ASCII text format.
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MacDraw Pro: Can‘t Import EPSF from Freehand 3.0/3.1

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

MacDraw Pro 1.0 and 1.5 will not import EPSF files from Freehand 3.1 that have a PICT Preview. When attempting to import, a "not enough memory" alert may be displayed (among other symptoms). These EPSF images will import correctly into FileMaker Pro 2.0 and ClarisWorks 1.0 (since neither of these programs attempts to parse out the objects in a PICT on import, these programs may be more 'forgiving' of the format of the PICT Preview). Two workarounds:

1- Export the EPSF from Freehand 3.1 without a PICT Preview, then import into MacDraw Pro.

2- Try option-copying the image from Freehand, then pasting into MacDraw Pro.

According to Claris SQA, Freehand uses fixed point numbers in their EPS boundaries, rather than integers, as specified in the Adobe EPS spec.
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ClarisWorks: Grays Print as Black or White

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing the gray colors in the top row of the color palettes (both pen and fill) to a QuickDraw printer such as the ImageWriter or a Personal LaserWriter LS, the grays print as solid black or solid white.

The darker gray colors (more than 50% black) print as solid black, while the lighter grays print as solid white. They do not print as dithered patterns simulating gray colors. The only workaround is to use the gray patterns in the pattern palettes instead of the gray colors.

This problem exists in all versions of ClarisWorks 1.0 (v1 - v3).

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ClarisWorks: Border Patterns Not Printing on TI MicroLaser Plus

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There has been a report that drawing a square and applying one of the non-grey patterns (the ones below the first two rows) to the pen will cause the document to not print to a TI MicroLaser Plus. The document prints successfully when a gray pattern or no pattern at all is applied to the pen.

According to the Texas Instruments MicroLaser Plus manual: "Some high-resolution halftone images and color graphics require more memory than the printer has as a standard. In such a case, the printer returns to the online idle state without printing anything or gives a 'limitcheck' error message."

Texas Instruments recommends the 1MB memory upgrade.

Claris Technical Support has not verified that the memory upgrade will solve the problem.
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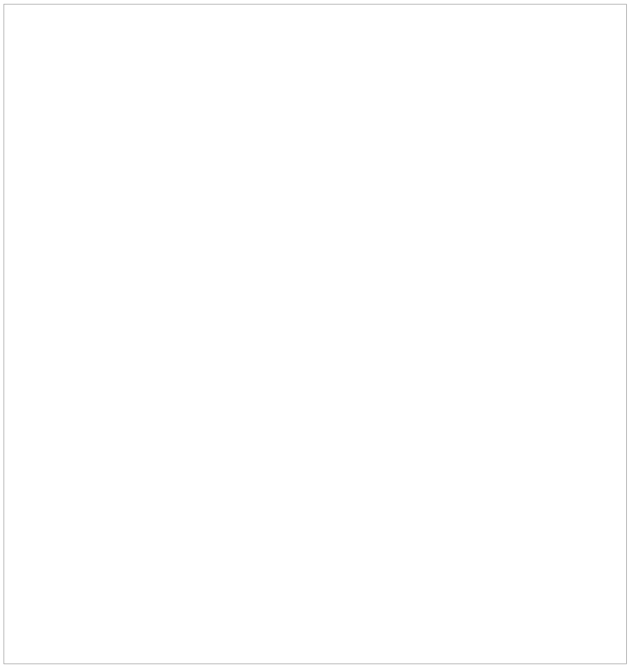
ClarisWorks: Can‘t Make Chart Correctly with Numeric Division Ranges

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If the division labels within chart data are numeric, the Make Chart command does not correctly make a chart. It interprets the division labels as data to be charted. Look at the picture field for a sample set of data to be charted. In this example, the data has a single series of data and three division labels (1990, 1991, 1992). Since these years are interpreted as numeric data, when you choose Make Chart, it charts the years as though they were data (with no label for the series).



In ClarisWorks 2.0, you may choose "Use Numbers as Labels" from the General Chart Options window.

In ClarisWorks 1.0, enter ="1990" into the cell instead of 1990.

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ClarisWorks: Communications and the Mac IIfx Serial Port

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Macintosh IIfx has a special serial port which works in "faster mode" by using a buffer. This can cause connection problems when using the ClarisWorks communication environment. Older modems are particularly problematic in conjunction with the "faster mode."

There is an freeware INIT, available from users groups, AppleLink and BBSes, called Serial Switch. This control panel device will allow the serial port to be switched to its slower, more conventional mode. This may or may not fix the problem, but is a good first step for IIfx owners experiencing connection problems.
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MacDraw: No Absolute Pointing Device Support

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Absolute Pointing Device Standard by Apple is not supported in any current version of MacDraw II (1.1v2) or MacDraw Pro (1.5v2).
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MacDraw: Background Patterns not Converting to MacDraw Pro

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problem: MacDraw 1.9.x files containing text objects with fill patterns. When these files are opened into MacDraw Pro 1.0/1.5, the text objects contain no fill pattern. The fill patterns in the text objects are not converted.

Solution: Open the MacDraw 1.9.x file back in MacDraw 1.9.x. Save As PICT. Then open the PICT file into MacDraw Pro. Fill patterns in text objects will be converted correctly.

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ClarisWorks: Error in Third Party Book "Using ClarisWorks"

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Using ClarisWorks by Laurie Miller Love has an errors on the following pages:

On Page 370, Step 2:

Hold down the Option key and click to create absolute cell reference.
This is incorrect.

CORRECTION:
Hold down Option and Command keys and then click to create absolute cell reference.

The solution from page 288 to 291 involving Hammerhead's Hardware Store:

The picture on page 291 shows a print out of a possible report using the solution described in the previous pages. What it does not tell you is to sort the database by name after finding in order for the header to display the correct customer information in the header.
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ClarisWorks: TrueType Versus Bitmap Character Shape Differences

TrueType versus Bitmap Character Shape Differences.

Note: This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Knowledge Base. This article has been archived and is no longer updated by Apple.

TrueType vs. bitmap differences:
With some characters, like a Geneva "y," the TrueType version is different from the bitmap version. For example, a TrueType Geneva 12 pt. "y" is poorly shaped.

MacDraw Pro info:
Unlike most other applications, MacDraw Pro always uses the TrueType font over the bitmap. So, a Geneva 12 "y" will look poor in MacDraw Pro but look correct in other applications. You can force MacDraw Pro to use the bitmap by removing the TrueType font from your System file.

Note: Geneva 12 is stored as a resource inside the System file in System 7.
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Claris XTND System On Technologies

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
On Technology is one of the developers licensed to use the Claris XTND technology. The XTND file sent to the developers is 1.3.1, while CLARIS uses 1.2 or 1.3. As a result, some system errors (bombs, crashes) may occur when XTND 1.3.1 is installed and the Claris Translators are accessed when converting a Microsoft Word document to a MacWrite document.
Published Date: Feb 18, 2012

FileMaker Pro: Postscript Error when Printing EPSF Graphic

Some imported EPSF graphics may generate a PostScript error when printing. There have been occurrences where the graphic printed correctly from FileMaker Pro 1.0vX files, but are now generating PostScript errors after being converted to FileMaker Pro 2.0vX.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Grouping PostScript objects increases their complexity significantly, and may generate the PostScript error.

Solution:
If updating or replacing the printer driver does not fix the problem, the solution is to go back to your original PostScript graphics application and make sure there are no grouped objects in your graphic. Re-save your graphic as an EPSF document and re-import it into your layout.

This problem is corrected in FileMaker Pro 2.0v3.
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FileMaker Pro: Draft Printer Skips Records or Prints Garbage

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Many draft printers have a dip switch to toggle between Epson and IBM ProPrinter modes. If you get garbage, lose data, or skip records or labels when printing, try switching printer drivers to match the emulation mode. Switching to either the Epson FX-80 or the IBM ProPrinter 24 driver usually solves the problem.

You can also check your printer manual to determine which dip switch sets the emulation mode and set it to match your printer driver.

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MacDraw Pro: Copying and Pasting from Microsoft Graph Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Microsoft Graph 3.0, an application included with Microsoft Word 5.1a, has a problem copying and pasting graphs to several graphics programs. The problem appears to be with Graph, as problems happen pasting to several graphics programs. However, Claris has not conclusively determined the source of the problem as of 1/93.

- MacDraw Pro 1.5: phantom diagonal lines appear in the chart that originate at some of the chart object vertices. You can't select them. Forcing a screen redraw (Page Down, Page Up) may cause the phantom line to elongate, or may cause additional phantom lines to appear.
- Canvas 3.03b, Freehand 3.1: hangs (locks up) when selecting paste, or soon after.
- MacDraw II, ClarisWorks: seem to work fine, even when you Ungroup Picture in ClarisWorks.

Published Date: Feb 18, 2012

NuBus Speed Benchmarks (1/96)

I need NuBus specifications for speed, bandwidth, throughput, and relationship to processor speed.

This article has been archived and is no longer updated by Apple.

The following specifications are not TRUE benchmarks, but can be used as a primer to understand the variables influencing the "relative" throughput of NuBus.

Though the NuBus speed is designed to be processor- and architecture-independent, it varies depending on the NuBus card and Macintosh used. We don't have specific benchmarks, but in general, the NuBus "throughput" ranges from around 7MB to 37MB per second depending on the Macintosh, NuBus card, and application used. Generally, increases in NuBus throughput are influenced more by the NuBus card's design and function than by the use of a "faster" CPU.

NuBus throughput is faster on a Macintosh IIsi, Macintosh IIci, Macintosh IIfx, or the Macintosh Quadra computers, because the processor clock rate is faster than the 16MHz for other Macintosh II computers. These Macintosh computers, therefore, are faster at bus arbitration on the processor side, and the processor responds faster to NuBus accesses. For example, the increase in speed with the Macintosh IIci is approximately 20 to 30 percent when going out to NuBus or coming back.

The typical time required to go from the processor bus to the NuBus card is about 700ns, as is the time in reverse: going from the NuBus card back to the processor. The time remains constant whether moving 1 or 4 bytes of data. (These times are representative of the Macintosh II using the Macintosh II Video Card.)

Other cards, such as the Macintosh 1-Bit Video Card, support what we call "dump and run." A Macintosh II has a transfer rate of about 20MB using

this card because each 4-byte write-only takes only 200ns, and the data goes right into video RAM on each cycle. This card immediately acknowledges each cycle on a write, whereas the Macintosh II Video Card could take more than one cycle for the data to move into RAM.

Cards that support the NuBus burst mode could achieve transfer rates of up to 37.5MB when going from NuBus card to NuBus card, which is the case with some graphics accelerator cards to video cards. With these cards, the first access takes 200ns, and each subsequent access up to 16 takes only 100ns.

Because of the overhead processing video, any performance increase over one of the other Macintosh II computers is negated when using a Macintosh IIci or Macintosh IIsi with the internal video in 8-bit mode. Setting the internal video to 1-bit, or having a NuBus video card, will ensure maximum NuBus performance in these systems.

Note: For information about Macintosh computers based on the 68040 or PowerPC microprocessors, see these related articles in the Tech Info Library:

"Power Macintosh and NuBus Q&A"

"68040 CPU Architecture: NuBus Transfer Modes and Performance"

Article Change History:

10 Jan 1996 - Added reference to related articles.

Support Information Services

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MacDraw Pro: Polyline not Printing to ImageWriter LQ

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Polylines (single sided polygons, a polygon with two vertices) do not always print to an ImageWriter LQ. The full scope of this problem is not known. However, under the following test conditions, a horizontal polyline did not print, while a diagonal polyline did print:

MacDraw Pro 1.5v1/v2
AppleTalk ImageWriter 7.0
System 7.01
Pen Width 0.0001 inch
Pen Color black

This file prints correctly to various other printers.
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Claris Windows: Changing the Default Directory in Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Windows applications by default save data files in the subdirectory where the program resides. For example, FileMaker Pro files are usually saved in C:\\FMPRO and ClarisWorks files are usually saved in C:\\CLWORKS.

You can use Windows' Program Manager to change the default sub-directory for your data files. If you do not yet have a subdirectory set up, use the File Manager to create one. Then, select the application's icon from the Program Manager and choose Properties from the File menu. Change the Working Directory to the name of an existing subdirectory on your hard disk or a network drive.

To change the default directory using Norton Desktop for Windows, select the application's icon from Norton Desktop. Choose Properties from the File menu and click the Options button. Change the Startup Directory to the name of an existing directory on your hard disk or a network drive.

IMPORTANT! If you are using ClarisWorks 3.0 and change the working directory, it becomes necessary to move your Assistant files to that working directory. To do so, go to the File Manager icon Windows and find the Claris directory in the Windows Directory. Click once on the Claris directory with your mouse (to select it), and then select Move from the File menu. Now type in the working directory location for example: D:\\USERS\\MFLYNN. Doing this will move the Claris directory and all it's files to your working directory. After you complete the move of the Claris directory, it is necessary to edit the CLARIS.INI file so that your Claris applications are aware of the Claris directory's new location.

To edit the CLARIS.INI file, select Run from the File menu (still in File Manager). In the command line box type over whatever appears and type in : CLARIS.INI and click on the OK button. Notepad will open and you will see the CLARIS.INI file. Scroll down to the section labeled [CLARIS]. In this section find the line that says: Claris Directory = C:\\WINDOWS\\CLARIS. Highlight with your mouse C:\\WINDOWS\\CLARIS and type in your new working directory, ex: Claris Directory = D:\\USERS\\MFLYNN\\CLARIS. Now your Claris applications will have a pointer to the proper location of the Claris directory, and all you assistants will be found when they are called for.
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Claris Resolve: WYSIWYG Menus Fonts Issue

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

WYSIWYG Menus is part of the Now Utilities 4.0 package. It is a control panel extension which shows fonts in their native typeface in the font menu of applications. The Claris Resolve font menu remains in Chicago 12. There are no problems with system instability.

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FileMaker Pro: Target Application Incorrect in Apple Event Command

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
[NOTE: It is recommended that you have the following versions of software: System 7.1.1 or System 7.5; AppleScript 1.1]

AppleScripting Level: Beginner

Q. I set up a script in FileMaker Pro 2.0 which has a "Send Apple Event" command. After choosing the Target Application, the wrong version of the application shows up as a parameter of the command.

A. FileMaker Pro 2.0 sends an Apple event to the Finder. The Finder chooses the correct application based on:

Type = 'APPL'
Creator = <the four-character code of the application chosen by the user>
Creation Date = <the most recently created application>

The third item in that list is what throws off the selection of the Target Application. Basically, no matter which version of an application you choose, the Finder decides which one to actually send the Apple event to based on which version on your hard drive is the most recent.

Solution: if you absolutely need to have the Apple event sent to an earlier version of a specific application (HyperCard 2.1 versus HyperCard Player is a good example), the only way to get around this is to remove the more recent version(s) from your hard drive before the Apple event is sent. Moving the more recent version to a floppy disk, even if the floppy disk is in the drive, allows the Finder to choose your originally selected version.

Corollary: if you choose an application on a floppy disk to be the Target Application, the application which the Finder will actually select is the most recent version located on your hard drive (even if the version on the floppy disk is more recent).

In practice: it seems unlikely that this situation will present itself often. It will most likely occur for HyperCard stack developers who have the Player on their drives and happen to set up a FM script like this (the HyperCard Player's creation date is more recent than HyperCard 2.1).

Corollary #2: Moving the more recent version of an application to another local hard drive other than the boot volume will not solve the issue.
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Claris CAD: How to print 60% Reduction to LaserWriter Pro

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: Printing reduced from Claris CAD 2.0v3 to a LaserWriter Pro. If you set the reduction in Page Setup to anything less than 60%, when you click OK to exit Page Setup, you'll get an 'out of range' error message. Whatever number you had entered as a reduction percentage will be changed to 60%. (This problem has been reported for MacDraw Pro and MacDraw II also).

Workaround #1: Move or delete the LaserWriter Preferences file from the Preferences folder inside the System Folder. You can then successfully print from Claris CAD reduced at <60%.

Workaround #2: In the Chooser, click the LaserWriter icon, then select any LaserWriter except the LaserWriter Pro printer (a LaserWriter NT or IIf, for example). Click the Setup button. You can then successfully print from Claris CAD reduced at <60%.
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MacDraw Pro: Command-Option-C does not Copy QuickTime Frame

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Command-Option-C is a keyboard shortcut to copy the current frame of a QuickTime movie to the clipboard (MacDraw Pro 1.5v1/v2). This command works with System 7.0x, but does not work with System 7.1.

The workaround: while holding down the Option key, select Copy from the Edit menu. The movie frame will be successfully copied to the clipboard.

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Claris Impact: Scale Selection Does Appear to Scale Arrowheads

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When using the Scale Selection command on arrows, arrowheads may not appear to scale. This is true even if the Scale Pen Widths option is selected.

Arrowheads do scale they just do not scale to the degree you may expect. Try this test:

1. Create an arrow with a large arrowhead.
2. Duplicate the arrow.
3. Resize one of the arrows and compare the size of the two arrowheads.

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Claris Resolve: System Requirements and Compatibility

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

System Requirements and Compatibility

Claris Resolve 1.1 (Released 4/92) - 6.0.5 or greater, 7.0.x, 7.1
Claris Resolve 1.0v3 (10/91) - 6.0.5 or greater, 7.0.x, 7.1
Claris Resolve 1.0v2 (8/91) - 6.0.5 or greater, 7.0.x, 7.1
Claris Resolve 1.0v1 (8/91) - not supported, update to 1.0v3
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Claris CAD: System Requirements and Compatibility

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System Requirements and Compatibility

Claris CAD 2.0v3 (Released 7/91) - 2 MB RAM required, 6.0.3 or greater, 7.0.x, 7.1
Claris CAD 2.0v2 (1/91) - 2 MB RAM required, 6.0.3 to 6.0.8
Claris CAD 2.0v1 (x/xx) - 2 MB RAM required, 6.0.3 to 6.0.8
Claris CAD 1.0v5 (12/89) - 6.0 to 6.0.7
Claris CAD 1.0v4 (x/xx) - 6.0 to 6.0.7
Claris CAD 1.0v3 (x/xx) - 6.0 to 6.0.7
Claris CAD 1.0v1 (x/xx) - 6.0 to 6.0.7
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MacDraw Pro: Use Paint Tools to Enhance your Illustrations

Five ways you can use BrushStrokes to enhance a MacDraw Pro image.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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With BrushStrokes, the color paint program from Claris Clear Choice, you now have some powerful supplements to the illustration tools in MacDraw Pro. As an object drawing program, MacDraw Pro offers more flexibility with some kinds of work than paint programs. For instance, paint programs don't let you edit text once it has been placed. But once you've finished an illustration, you can use BrushStrokes to add effects like translucent paint, perspective effects, and blursÑeffects that aren't possible in object-oriented programs. When you use the two programs together, you benefit from the best of both worlds. HereÕs a few tips that will make it easy.

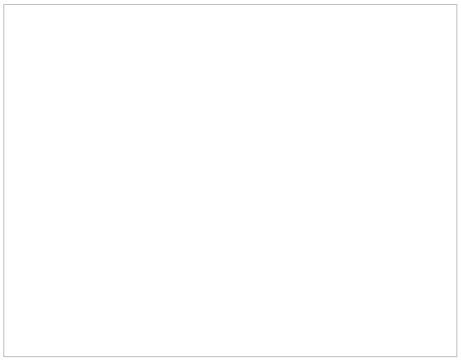
Start your drawing with MacDraw Pro.
When you use MacDraw Pro for the initial design of your work, you can easily reshape and move objects after they've been drawn. They behave as if you had cut pieces from construction paper. You can also edit text after it has been placed. Figure 1 shows an illustration in progress, as you might brainstorm with different concepts.

Use a screen shot to capture gradients and special text effects.
You can exchange drawings between MacDraw Pro and BrushStrokes by saving your work as PICT. But limitations in the PICT format mean that some information, such as richly detailed gradients, kerning and tracking values, and line spacing, wonÕt make it through. Since you won't be working with object information anywayÑpaint programs work on a pixel-by-pixel basis -- it's often better to take a screen shot of your work instead. In System 7, you press Command-Shift-3 any time you want to take a snapshot of the screen. This creates a file named 'Picture 1' that you can open with BrushStrokes. You now will get exactly what you see on the screen in MacDraw Pro.

Add depth.
You can make your drawing look more realistic by adding perspective. To apply the effect, you select part of the drawing, then choose Perspective from the Transform menu. BrushStrokes places handles around the selection that you can move to create the perspective effect, as in Figure 2.

Create an 'out of focus' look.
When you use a camera to take snapshots, objects in the foreground and background sometimes look out of focus. Making part of your drawing blurry can add to the perspective effect you're trying to achieve. Just select a part of your drawing, then choose Smooth from the Selection menu. BrushStrokes makes that part of the drawing look fuzzy.

Shrinkwrap it.
BrushStrokes can apply translucent tints-paint that lets part of the underlying image show through. That's terrific for shadows, lighting effects, and windows. To activate the effect, choose Translucent Images from the Options menu, placing a check mark next to it. Now, part of the background will show through new objects you draw. (You control how much shows through with the Translucency command in the Options menu.) Figure 4 shows how the translucent paint effect was used to make it look like the toy is being viewed through a clear cellophane pane, with some glare from surrounding lighting. With translucent images active, draw a few polygons over the image. Set the fore color to gray if you want the cellophane to be clear. Setting the fore color to pink, green, etc., will make it look like the cellophane is tinted. Figure 3 shows the completed project. Only three BrushStrokes commands were used to create the effect.



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Macintosh Portable: Where To Get Power Adapter

I need an extra power cord (with transformer on one end) for my Macintosh Portable. How? Where?

This article has been archived and is no longer updated by Apple.
Two ways to obtain the Power Adapter/Charger are:

1) Through a reseller or "service"; Apple Part number for the U.S. version is 699-0505.

2) Through finished goods; it is included with the Macintosh Portable Battery Recharger, Apple Part #M0275.(Discontinued)

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ClarisWorks: How to Use your AppleWorks Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisWorks was designed to make it easy for you to use information from other programs, including AppleWorks and AppleWorks GS. Most documents appear on your ClarisWorks screen much as they did in AppleWorks, with all formatting and formulas intact. Once converted, you can use ClarisWorks to make whatever changes you want.

You follow two basic steps to use your AppleWorks files with ClarisWorks:

1. Transfer the file from the Apple II disk to your Macintosh disk.

2. Translate the file into ClarisWorks format.

Transferring the File
There are several methods you can use to copy the data from Apple II diskettes to your Macintosh. Here are three of the most popular:

Apple File Exchange
Apple File Exchange is a utility that came with your Macintosh. It controls your Macintosh floppy drive in a way that lets it read 3.5-inch floppy disks from other computers.

AppleTalk Networks
Many schools have networks set up to share printers, files, and other resources. If you have a network, you just save your work on an AppleShare file server. Any Macintosh can connect to that server and copy the file to its own hard disk.

Macintosh LC with the IIe Emulation Card
The emulation card comes with software that lets your Macintosh read Apple II diskettes directly, as if they were Macintosh disks. You just insert your Apple II disk and drag the AppleWorks files to your hard disk.

Translating the File
Once the Apple II files are stored on the Macintosh hard disk, you can read them with ClarisWorks. But you can't just double-click them. Your Macintosh will try to look for ÒAppleWorksÓ on your computer. It probably won't find it and you'll get a message similar to, The file could not be opened, because the application program that created it could not be found.

Instead you open the files from within ClarisWorks, using the Open command and the Import Options.

After you translate your file, you'll want to take a couple moments 'cleaning up' the document so it makes the best use of your fonts and other formatting capabilities in ClarisWorks.

A Sample Conversion Session
If you open your hard disk and create a folder called 'From Apple II,' your converted files will be easier to find.

Part One: Transfer the Data
1. Open up Apple File Exchange. The contents of your Macintosh hard disk will appear on the left. (You might need to copy Apple File Exchange from one of the System Software disks that came with your computer. System 7 users can find it on the 'Tidbits' disk. If you are using System 7.5 please call Apple Customer Assistance for a copy of Apple File Exchange)

2. Insert your AppleWorks data disk into a drive. You'll see the contents of the disk appear on the right-hand list. New menu options will appear at the top of the screen.

3. Check the 'ProDOS to Mac' menu. If there is a choice for 'AppleWorks to Microsoft Works,' remove the check mark next to that option, or the files will not convert properly.

4. If you made a folder called 'From Apple II' on your hard disk, find it in the list on the left and open it.

5. For each file you want to convert, click on the name of the file, then click 'Translate.' In figure CW-1, the AppleWorks spreadsheet file 'HOME.BUDGET' is about to be copied to the Mac hard disk.

A progress bar will appear to let you know how the transfer is progressing. When you've converted all the files you want, you can quit Apple File Exchange. Your Apple II disk will automatically eject from the computer.

Part Two: Translate the Data
You open up your AppleWorks files from within ClarisWorks (remember, you can't double-click them from the desktop yet).

1. Launch ClarisWorks. Since you don't want to create a new document, click 'Cancel.'

2. Select 'Open' from the File menu.

3. Click on the Import Options lever. You'll see the screen in figure CW-2. ClarisWorks needs to know how you want to use files you import. For instance, if you're opening an AppleWorks spreadsheet file, you should click the 'spreadsheet' button.

4. If you set up the 'From Apple II' folder, find it in the list and open it (System 7 users can click the 'Desktop' button to make it easier to find this folder).

When you open the 'From Apple II' folder, you should see all the AppleWorks spreadsheet files you translated. To see other kinds of files, click the other radio buttons.

5. Select one of the Apple II files you transferred and click 'Open.'

ClarisWorks begins reading the file and making the internal changes needed to use the file with ClarisWorks. When it's done, the file will appear on your screen as 'HOME BUDGET (converted)' and you can work with it just like any other ClarisWorks file after you save it. You can even double-click it from the Mac desktop.

Translating AppleWorks GS Files
ClarisWorks can read AppleWorks word processor, database, and spreadsheet files. It can also read AppleWorks GS (AWGS) word processor files directly. But AWGS spreadsheet and database files must be saved as text before ClarisWorks can read them. Unfortunately, AWGS graphics, communication, and page layout files cannot be easily transferred.

Here are a couple tips for handling files that aren't directly supported by ClarisWorks:

* To preserve formulas in your spreadsheet, turn on the option for 'View Formulas' in AWGS. When you save as text, the formulas, and not the

results, will be saved. ClarisWorks will see the formulas and convert them.

* Your AWGS graphics documents can be translated with help from another program. Save them in APF (Apple Preferred Format). Then use an Apple IIGS utility called 'SuperConvert' to change them into 'TIFF' format. You can transfer TIFF files to the Macintosh and use the Insert command to add them to your document. [SuperConvert!, by Seven Hills software, is available from Quality Computers (800) 443-6697.]

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Claris Applications: Numeric Formatting not Appearing Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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System 7.1 has a new control panel called Numbers that allows you to set up default characters for Currency Symbols ($ or ´ or £), and default locations and separators for the currency that you have chosen.

It is possible to set these symbols to anything, including words or numbers. As a result, some numeric formatting may not appear as you would expect it to.

System 7.1 also has a new Control Panel called Date & Time that controls default settings for dates and times. There is not as much control as with the Numbers Control Panel but you can change the appearance of dates and times. For example, one option allows times to appear with leading zero.
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How to Clean Boot a DOS / Windows Machine

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Often times, network initialization files, memory managers, and other "terminate and stay resident" (TSR) programs conflict with Windows or Windows applications.

If you are getting errors, you should do a clean boot to trouble-shoot a possible conflict. If everything works properly after a clean boot, that indicates that something in your AUTOEXEC.BAT or CONFIG.SYS conflicts with either Windows or your application. You should restore lines from your original AUTOEXEC.BAT and CONFIG.SYS files to the AUTOEXEC.BAT and CONFIG.SYS files on your bootable floppy disk one at a time until you can re-create the original error. When you identify which file causes the conflict, either remove it from your system entirely or find out if there is a new version that is compatible with your Windows software. Note: the following is for Microsoft Windows version 3.1 and later. If you are running Windows previous to 3.1, it is recommended that you update to the newer version. This information also does not take into account other underlying operating systems besides Microsoft DOS, such as IBM OS/2.

1. Format a PREVIOUSLY UNUSED, UNFORMATTED, BLANK disk as a System disk from File Manager or use one of the commands below from the DOS prompt if you're using DOS 5.0. Otherwise, see your DOS manual for instructions.

3.5" high density disk: FORMAT A: /S /F:1.44
3.5" double density disk: FORMAT A: /S /F:720
5.25" high density disk: FORMAT A: /S /F:1.2
5.25" double density disk: FORMAT A: /S /F:360

* You must use the /s option to create a bootable system disk.
* Substitute b: for a: if appropriate.

2. Create a "TEMP" subdirectory on your hard disk if you do not already have one, either by typing "MD TEMP" at the DOS prompt or selecting "Create Directory" from the File menu in the File Manager. Name the subdirectory C:\\TEMP

3. Create an AUTOEXEC.BAT file on this new disk:

Path = C:\\;C:\\DOS;C:\\Windows
Prompt PG
SET TEMP=C:\\TEMP

4. Create a CONFIG.SYS on this new system disk:

Device = C:\\Windows\\HiMem.SYS (Type c:\\dos\\himem.sys if using Windows 3.0)
DOS = High
Files = 50
buffers=30
STACKS=9,256

SHELL=C:\\DOS\\COMMAND.COM C:\\DOS /E:1024 /P

5. Make sure the new system disk is in A:. Press and hold down the CTRL-ALT-DEL keys. When you get the "A:\\>" DOS prompt, you have now done a clean DOS level boot.

Run Windows by typing WIN at the DOS prompt and see if the DOS level clean boot solved your problem. If not, it may be necessary to do a clean start of Windows by creating a minimal configuration of the two text files Windows uses for system configuration. These two files are the WIN.INI and SYSTEM.INI. If you are running Windows for Workgroups there is an additional configuration file called PROTOCOL.INI. All of these text files with the INI extension are in the Windows directory.

1. Before editing the INI files, try starting Windows in Standard mode instead of 386-Enhanced mode by typing WIN /S at the DOS prompt. This disables the XXX.386 drivers from the system.ini file. Note: this is not possible in Windows for Workgroups 3.11, which only runs in 386 enhanced mode.

2. When you start Windows, all applications with an icon in the StartUp group will run automatically. If you want to boot without running any of the applications in your StartUp group, you can hold down the [Shift] key while Windows starts. When you do, Windows will load, but your StartUp applications won't.

Note that the StartUp group is independent of the

LOAD=

and

RUN=

lines in the WIN.INI file.

If you wish, you can disable the StartUp group by placing the line

STARTUP=

in the [Settings] area of the PROGMAN.INI file. When you leave the entry blank, as shown above, items in the StartUp group won't run.

For more information and for help troubleshooting General Protection Faults, please read Microsoft's Application Note, Troubleshooting GP Faults, #WW0524. This note can be obtained by calling Microsoft Product Support Services Fast Tips service at (206) 637-7098; by searching the Software/Data Library on the word WW0524; or from Microsoft's download service, (206) 936-6735.

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ClarisWorks: Can‘t Edit Text Object in Word Processor

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Situation: You have a text object on a Word Processing document that you can select but cannot edit.

Solution: Select the text object and choose Move to Front from the Arrange menu.

Since the typing area of a ClarisWorks word processor is essentially a text frame, if you send a text object backward, you actually are putting it behind the typing area. This makes it selectable by the arrow tool, but not editable with the text tool. Selecting the object and bringing it to the front will make it editable.
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ClarisWorks: Color Graphic in Read Me File Prints in B&W

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The Read Me file included with ClarisWorks has a graphic at the top that looks like the ClarisWorks Application icon (a red box containing several tools representing the different modules in ClarisWorks) as well as several other red graphics used as bullets (they look like splashes of paint).

The graphic at the top of the Read Me file is a bitmap while the bullets are PICT graphics. Since ClarisWorks cannot print bitmaps to an ImageWriter in color, the graphic at the top prints in black and the bullets print in color. On the other hand, a color DeskWriter will print both graphics in color as they appear on the screen.
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ClarisWorks: AppleWorks File Transfer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Question: Can you give me some details about the way ClarisWorks writes AppleWorks format files? I have problems reading them into my Apple IIGS. I examined the file with a ProDOS disk utility and it doesn't look quite like other AppleWorks files, as if the file type is wrong, or there is a resource fork.

Answer: This probably has more to do with the way the file was "transferred" than with the way ClarisWorks "translated" the format. Here's the distinction between these two steps:

When ClarisWorks saves your work in AppleWorks format, it strips out information that can't be used, like fonts and graphics. Then it expresses the text of your file and any remaining style elements in a language AppleWorks can understand. It stamps the files with the Macintosh creator tag pdos and type tag 1A. No resource fork is used. ClarisWorks then hands the actual work of writing the file to disk to standard Macintosh file handling routines.

This is the end of the "format translation" part of getting your ClarisWorks file to AppleWorks. It's also where ClarisWorks leaves the picture. The second stage, "file transfer," is actually handled by other software.

The AppleWorks file which ClarisWorks creates can be moved to a ProDOS volume in a variety of ways:

* It could be transferred over a modem.
* It could be transferred over a network to an AppleShare file server.
* Apple File Exchange (available for downloading from AOL as part of Macintosh System 7.0.1) could copy the file to a ProDOS disk.
* The Macintosh system extension ProDOS File System could mount a ProDOS floppy on the Macintosh desktop.
* The Apple IIGS System 6 HFS FST could mount the Macintosh floppy on the IIGS desktop.

As you can see, some of the file transfer methods are so transparent, you forget how much work they are doing to reconcile two essentially incompatible disk formats.

And in practice, some of these methods are more reliable than others. Apple File Exchange, modem transfer, and AppleShare transfer seem to be virtually trouble-free. For example, AppleShare will convert the Macintosh type tag to an appropriate ProDOS file type tag automatically. The other two methods are more convenient, but they also seem to have hidden surprises.

For example, the ProDOS File System extension for Macintosh will mount ProDOS disks so they appear on the desktop and in Open/Save file dialogs. But customers report that if you try to save directly to the ProDOS disk, the file isn't transferred correctly. Instead, you must save to a Macintosh disk, then use the Finder to copy the file to the ProDOS volume.

Does this sound familiar? If it does, then you have to decide whether to keep the ProDOS file system extension and remember to transfer files at the Finder, or remove it and use another transfer method.

Changing Filetypes
If you already have files you can't read into AppleWorks and you don't have the original ClarisWorks files to try resaving, there are at least two utilities that can change filetypes on the Apple II.

1. TimeOut Filemaster will allow you to change the type from within AppleWorks.
2. Change A File, by Harold Portnoy, is a stand alone shareware program that will change file types, repair damaged AppleWorks files and more. It is available on online services.

If you have an Apple IIgs, Prosel 16, Wings, and Deliverance are 3 products that offer a feature for changing filetypes.
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ClarisWorks: Spreadsheet and Text Frames

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In a ClarisWorks spreadsheet document, you can create spreadsheet frames on top of the spreadsheet. To do this, select the spreadsheet tool, hold down the option key (Alt key for Windows users), and click or drag out a spreadsheet frame.

The same procedure works for creating a graphic text frame in a word processing document. Select the text tool, hold down the option key, and click or drag out a frame.

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HyperCard XCMD To Create Business Charts

I need to make adaptable business charts that run in conjunction with HyperCard. Any suggestions?

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A set of XCMDs called HyperGraph is available that can generate full-page business charts in color or black and white.

HyperGraph supports:

- Full-page display

- Color (256/16 million) with individual control for each object

- All fonts available in the System file

- 10 different types of graphs: pie, bar, horizontal bar, line, and point charts in color or black and white

- Three dimensional graph generation

- Auto-update between HyperCard and the graphics routines with HyperCard (When you modify a field under HyperCard, the graphic is updated automatically.)

- 32-Bit QuickDraw

- Screen generator to import text file and generate a HyperCard Card

For further information, send an AppleLink to "VANNIER.A".

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ClarisWorks: White Text Disappears When Rotated

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

How to reproduce the Issue:

1. Open a new graphics document.
2. Draw a square and fill it with black.
3. Type a text block and change the text color to white.
4. Select the text block with the arrow tool and change the pattern to clear.
5. Move the text block so that it is on top of the square.
6. Group the two objects.
7. Rotate the grouped object.

Objects with other text colors do not disappear. In other words, substitute step 3 with any color besides white and the text block will not disappear.

It should be noted that the white text will print to LaserWriters (PostScript) printers, even though it does not show on the screen. The white text will not print to QuickDraw printers such as the StyleWriter and DeskWriter.

The Work-around:
Substitute step 4 with any pattern other than clear. For example, if you want white text on a black background, use an opaque pattern and fill the text block with the color black.

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ClarisWorks: Macros Do Not Access the Open and Save Dialogs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Macros in ClarisWorks for Windows do not support access to the standard Open and Save dialog boxes. Your macros can open these dialogs but cannot record actions taken within them.

Workaround:
The above is true, however you can use the Windows Recorder accessory to record your macros instead. This does record Open and Save.
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ClarisWorks: Alerts When Opening a File

When double-clicking a file to open it in ClarisWorks, one of three alerts appears on the screen:

1. "The document {filename} could not be opened, because the application program that created it could not be found" - {System 7 alert}
2. "The file {filename} could not be opened/printed (the application is busy or missing). {System 6 alert}
3. "No application is associated with this file. Choose Associate from the File menu to create an association." {Windows alert}

This article has been archived and is no longer updated by Apple.
When trying to open a file by double-clicking the icon from the Finder or File Manager, your computer tries to open the file with the "creation" application. Thus if you double-click on a MacWrite II file, the Macintosh will attempt to launch MacWrite II to open the file. If MacWrite II (or whatever the creation application is for that file) is not present, the computer cannot open a double-clicked file icon. In other words, a non-ClarisWorks file will not open in ClarisWorks by double-clicking it.

How to open a non-ClarisWorks file into ClarisWorks:

Open Method #1- Use the Open dialog box

This method is explained on pg. 2-11 of the ClarisWorks handbook or 2-15 of the Users Guide
- If ClarisWorks is not running, double-click it to run. If the New Document dialog box appears, click Cancel.
- Select Open from the File Menu
- Click the Import Options flag
- Click the correct file type to open into (e.g., Word Processor)
- Locate the file name in the scroll bar, then double-click it to open

Open Method #2 - (System 7 only) Drop-Launch the file

Drop launching is explained in the Macintosh Basics folder included with your computer.
- In the Finder, drag the file icon onto the ClarisWorks application icon (Note: that means the ClarisWorks program icon, NOT a folder icon) (Note 2: if the file and the application are in different folders, you may need to move and/or resize the windows so that the file and program icons are both visible).
The file will open into the application that it's dragged onto (in this example, ClarisWorks).

Open Method #3 - (Windows only) Setting an Association

This method is explained in the MS Windows User's Guide included with your computer.
- Click on the file in the File Manager
- Choose Associate from the File menu.
- Select the application you wish to associate the file with.
- Click the OK button.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

Note: AppleWorks is the new name for ClarisWorks 5.0x

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Microsoft Windows 3.1: Updating Printer Driver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Please review all READ ME and license agreements before installing printer drivers.

Obtaining and Expanding the Drivers

You can obtain updated Windows 3.1 printer drivers in one of two ways: either on floppy disk or by downloading the files from a BBS. If you download the drivers, first create a subdirectory on your hard disk called C:\\DRIVERS and download the files to this subdirectory. If you obtain the drivers on a floppy disk, create a subdirectory on your hard disk called C:\\DRIVERS and copy the files from your floppy to this subdirectory.

Microsoft distributes its drivers as compressed files within a single executable file. To decompress the drivers, run the executable file after you've copied it to the C:\\DRIVERS subdirectory on your hard disk.

For example, Microsoft ships the Universal Printer driver for the HP LaserJet III in an executable file called HPPCL5.EXE. Copy or download this file to the C:\\DRIVERS subdirectory, then change to that subdirectory and double-click on HPPCL5.EXE from Windows' File Manager or type HPPCL5 at the "C:\\DRIVERS\\>" DOS prompt. The executable file expands the drivers and supporting files into the C:\\DRIVERS subdirectory. Do NOT copy these files to the Windows or Windows\\System subdirectories.

Installing the Expanded Printer Driver

1. In the Windows Main group, choose the Control Panel icon.

2. In Control Panel, choose the Printers icon.

The Printers dialog box appears. If you have never installed a printer, the dialog box expands to display a list of printers available in the Windows version 3.1 package, and the Add button is unavailable; skip to step 4. If you are updating an existing printer, select the printer driver you want to replace and click the Remove button.

3. Click the Add button. The dialog box will expand to display the List Of Printers.

4. In the List Of Printers box, select Install Unlisted or Updated Printer.

5. Click the Install button. A dialog box appears, instructing you to insert the disk that has the printer-driver file on it.

6. Insert the disk you made during the downloading procedure, or type the path of the directory where you downloaded the driver, e.g., C:\\DRIVERS. Then click the OK button.

Another dialog box appears, listing several printers.

7. In the List Of Printers box, select the printer you want.

8. Click the OK button. The Printers dialog box appears. Your printer is listed in the Installed Printers list.

9. Click the Close button.

10. For instructions on how to configure your printer, see Chapter 5, "Control Panel," in the "Microsoft Windows User's Guide."

Updating the Microsoft Universal Printer Driver (UNIDRV.DLL)

The Microsoft Windows Driver Library includes the most current version of the Universal Printer Driver. To update UNIDRV.DLL:

1 Change to the disk or directory to which you downloaded, e.g., C:\\DRIVERS.

2 At the MS-DOS prompt, type: copy unidrv.dll <path>

where <path> is the drive and directory containing your existing unidrv.dll file. This overwrites your existing UNIDRV.DLL file.

Updating the Microsoft Postscript Driver (PSCRIPT.DRV)

The Windows Driver Library includes the most current version of the Microsoft Postscript Driver. To update PSCRIPT.DRV:

1 Change to the disk or directory to which you downloaded, e.g., C:\\DRIVERS.

2 At the MS-DOS prompt, type: copy pscript.drv <path>

where <path> is the drive and directory containing your existing pscript.drv file. This overwrites your existing PSCRIPT.DRV file.

Additional Information

Microsoft Windows Product Support Number (206) 637-7098
Microsoft BBS (206) 936-6735 or (206) 637-9009
Claris BBS (408) 987-7421

References:
Microsoft Windows 3.1 User's Guide: Pages 214, 201-205
Microsoft Windows 3.0 User's Guide: Pages 173-174, 158-162
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Microsoft Windows: System Resources

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

What are System Resources?

The system resources area is a special area of memory that Windows sets aside for graphics objects. No matter how much RAM you have installed, however, the system resources area is limited to only four 64K memory heaps in Windows 3.1. Even though there are four separate heaps in Windows 3.1, the memory allocated to one cannot be used by another if one runs out of available space. This means that if you do a lot of graphic-intensive work, you will use up the system resources very quickly, even if you have a lot of memory free. System resources include icons, window size and location, window attributes, menu and window text, line types, graphical fill patterns, brush shapes, and other reusable objects common to Windows applications.

How to find out how much you have free:

You can find out how much free memory and free System Resources you have from the Program Manager or File Manager. From either program, select "About Program Manager" or "About File Manager" from the Help menu. The heap with the lowest percentage free is reported as the amount of Free System Resources you have.

How do you free System Resources?

If you get an error message that you're low on memory or resources, the best way to free space is to exit Windows and start again. You can, however, do the following to reduce the amount of resources being used by Windows 3.1.

* Limit the number of open applications and files. Quitting from open applications frees most USER.EXEÊobjects that the application was using. However, GDI.EXE objects, such as pens and brushes, may not be freed until you exit from Windows and start again.

* Reduce the number of program groups and icons in the Program Manager or Norton Desktop. Each group takes up a fixed amount of memory, regardless of how many items are contained within a group. You may also want to consider using the File Manager as your shell instead of the Program Manager.

* Displayed icons in groups in the Program Manager use some of the System Resources. System resources are not released when the group is minimized, or if the icon is deleted during a Windows session. However, if you minimize the group or delete unnecessary icons, this memory will be freed next time you restart.

* If you have an accelerated video card, make sure that you're using the most recent video driver for your video card. Accelerated video cards virtualize system resources and vary in their ability to release system resources. Using Microsoft's VGA driver ensures the best use of the system resources.

* Disable Pointer.exe from MS Mouse v8.20a and/or screen savers such as AfterDark.

* Simplify complicated layouts in FileMaker Pro. Each object on the layout uses system resources; even the small black handles that appear in the corners of an object when you select it use system resources.

Much of this information has been obtained from articles in the Microsoft Knowledge Base. For further information about System Resources, see article Q90762, Windows: Information on System Resources in Windows 3.0 & 3.1, in the Knowledge Base, or call Microsoft Technical Support for Windows at 206/637-7098.

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Mac241 Prints to ImageWriter LQ Unidirectional Only

I print from White Pine's Mac241 to an AppleTalk ImageWriter LQ and want the printer to default to bidirectional/Draft mode instead of unidirectional/Best Quality. Mac241 gives only a Page Setup box and not a Print Options box.

Is it possible to alter the AppleTalk ImageWriter LQ driver to change the default settings?

This article has been archived and is no longer updated by Apple.
If the driver was modified in this way, the software would then be unsupported.

White Pine Software confirmed that the software does not offer the user a choice of unidirectional of bidirectional.

For more information, search under: "White Pine"

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ClarisWorks: Version 2.0 Notes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 2.0 Key Enhancements:

New Capabilities
* Complete outlining feature allows users to organize their thoughts and documents using seven popular outline styles including Harvard, legal, numeric and bulleted formats.
* Presentation Slide Show with QuickTime support. you can create dynamic slide show presentations complete with background and border colors, QuickTime movies and fade between slides. Presentations can be either manual or auto-advance.
* Shortcuts offer push-button access to the 150 most frequently used commands such as spell checking, cell formatting or auto-summing. Just as with the menus, the icon palette automatically configures itself to the environment being used (e.g. text or spreadsheet).
* Full-color paint capabilities and 32 gradient fills allow users to add even more striking graphic effects to documents.
* With all these new capabilities, ClarisWorks 2.0 is still under 600K.

New Word Processing Features
* Automatic text wrap around graphics creates more professional-looking brochures, flyers, newsletters and more.
* Custom text styles allow users to create, name and save frequently-used text styles for instant access.
* Individually variable column widths. Users simply click on the column controls button to automatically add columns to their layouts; then visually adjust column size by dragging the column to the preferred width.
* Show and hide invisible characters allow users to view all format commands in their documents for accuracy.
* Expanded spell check selection. you can now spell check either their entire document or only specific blocks of text.
* Original date and time clock permanently reflect the original date and time a document was created.

Expanded Charting and Spreadsheet Capabilities
* Hi-Low-Close charts are ideal for tracking pricing trends, such as stocks, with defined beginning and end points.
* Combination charts allow users to combine chart options -- like using a line chart with a bar chart -- to illustrate contrasting data more effectively.
* Pictogram charts translate plain numeric data into compelling charts that graphically depict data.
* Unparalleled chart format customization. you can customize any or all of their charts -- change fonts, styles, adjust orientation, title and legend placement and size, select symbols, colors, scales, patterns, 3D and more.
* Spreadsheet cell wrap. When cell wrap is applied, text automatically wraps within the cell boundaries.
* Lock Title option locks column headings in place so they remain in constant view for quick reference as users scroll through documents. This also reduces the need for screen splitting.

New Database Features
* Automatic field entry from pop up menu. you can save time and avoid repetitive data entry by creating a pop up list of data. This also ensures data consistency and accuracy.
* Automatic serial numbering.
* Automatic date, time, creator, and modifier stamps.
* Automatic field validation (uniqueness, within range, emptiness).
* More than 50 pre-defined Avery label formats make it a snap to generate labels.

Graphics Enhancements
* Color paint environment includes 18 tools and six transformation effects.
* Gradient palette adds pizzazz to presentations with 16 black and white and 16 color gradients.
* Bezigon and Polygon drawing tools make it easier than ever before to create and style curves and shapes.
* Repeat Object Placement simplifies the placement of duplicate graphics by automatically placing duplicates of graphics in equidistant sequence from the original.

Communications
* Kermit file transfer protocol enables educational institutions and others that use this protocol to send files easily.
* Phone Book. you can enter all frequently used phone numbers into the Phone Book. Then, by simply selecting the name of a person they wish to contact, the phone number is automatically dialed.

System 7 Support
* Publish and Subscribe
* Apple events
* Balloon Help.

In-Package Support Materials:
* Users Guide
* Getting Started Guide with tutorial

* Quick Reference Guide
* Context-sensitive Help system
* Free America Online software and registration to access online support.

System Requirements and Compatibility:
* Macintosh Classic, LC, Plus, SE, II family or portable computers.
* Requires 2 floppy disk drives and 1 MB RAM (use of Communications module requires hard disk and 2 MB. System 7 users require 2 MB.).
* Hard disk recommended.
* System 6.0.5 or higher.

Price and Availability:
* $299 suggested retail in the U.S.
* $99 upgrade price in the U.S.
* $129 U.S. competitive trade-up through September 30, 1993.
* ClarisWorks 2.0 will be available in the U.S. in March, 1993.

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Claris Products: Localization

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
European versions of Claris products use Network serialization (this serial number has nothing to do with the Registration number).

If the same copy is on two different machines in the network then only one can be launched at a time. Attempting to launch the second will give an error message saying that the maximum number of users of this application has been exceeded.

Claris also offers a Concurrent User License (CUL), which does allow the same copy to be launched multiple times but counts the number of launches and when a preset limit is reached it will disallow and further attempts to launch.
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FileMaker Pro: Portions of Font or Script Menu not Visible

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Unlike the Macintosh, which scrolls long menus, Windows 3.x wraps long menus in several columns. Claris decided to maintain a consistent interface between the Mac and Windows versions of FileMaker Pro by sticking with menu arrangement for the Scripts menu and the Font list on the Format menu. Pop-up menus with long value lists can also run into the problem. If you have a large number of fonts, long value lists, or a large number of scripts, it is possible that some of the entries will not show up on the screen. This is because once Windows fills up the screen with its menus, it provides no way to scroll to parts of the menu that are not visible.

One workaround for this operating system limitation is to increase the resolution of your Windows video driver (if your video card can support a higher resolution). Here are some other fixes for the three situations the long menu problem can appear: the Font selection of the Format menu, long pop-up menus, and the Scripts menu.

1. Font list on Format Menu

If you are using FileMaker Pro version 2.0, you can change fonts by using the Text Format selection on the Format menu. FileMaker Pro 2.1 added a feature that allows you to configure the Font list on the Format menu to show just the fonts you choose, and therefore not fill up the screen with multiple columns. The Configure/More Fonts option in the Format menu allows you to remove fonts from the Font list on the Format menu, without having to remove fonts from your system. A Configure/More Fonts selection appears at the top of the list of fonts when you choose Font from the Format menu, and this Configure selection lets you pick and choose which fonts you wish to appear in the font list. You can still use any available Windows font by using the Text Format selection on the Format menu to change the font on a selected field or text object on a layout.

If you have a lot of fonts installed, however, you may not even be able to access the Configure/More Fonts option with a mouse, and you do accidentally change fonts when you don't mean to.

The best way to access this is to not use the mouse, but to use command keys, instead:

ALT-T [formaT menu]
F [Font]
F [configure/more Fonts...]

Remove fonts from the menu until you have a manageable number. You can use the mouse for this. Note that you can still access fonts that you remove from the font menu by selecting the text object or field you want to format, then using Apply Font from the Configure/More Fonts... dialog box.

Another good trick with Windows is not to keep the mouse button held down when selecting from menus. To get to the Text Color option, for example, click once on the Format menu and then let go of the mouse button. If you then click on Text Color, for instance, thus "jumping over" everything in between, you can avoid the problem of the long font list drawing on the screen.

2. Long Value Lists Formatted To Show As Pop-up Menus

If you have long value lists and format them to appear on the layout as pop-up menus, consider formatting the field to show the value list as a pop-up list instead. This will only show a few items from the value list at one time and provide a scroll bar so that you can scroll through the items in the value list.

3. Long Scripts Menu

If your scripts menu is causing the difficulty, you can either shorten the names of some scripts, so you can show more columns, or remove some of the scripts from the menu by de-selecting the "Include in menu" checkbox. Scripts that are removed from the menu can be accessed from buttons, other scripts, or by performing the script from the ScriptMaker dialog box. As with the Font selection on the Format menu, sometimes so many columns appear that the ScriptMaker selection can not be chosen from the Scripts menu. In that case, you can still choose ScriptMaker with its key combination:

Alt - C Brings down Scripts menu (While holding down the Alt key, press C)
S Chooses ScriptMaker from the Scripts menu that was brought down with Alt - C

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MacDraw Pro: How to Print a Color Palette

Listed below are the steps for printing a Color Palette.
This article has been archived and is no longer updated by Apple.
To print a palette:

1. Display the desired pallet on an Untitled screen. View by color is suggested
2. Take a screen shot using Command-Shift 3
3. Open up the resulting picture in MacDraw or TeachText (System 7)
4. Print the document

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ClarisWorks 2.0: XTND Translators Included

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisWorks 2.0 Files

	Read	Write
ClarisWorks 2.0	Y	Y
ClarisWorks 1.0	Y	N

Import/Export	Read	Write	Remarks
Word Processor			
Acta 3.0	Y	N	
AppleWorks	Y	2.0	
AppleWorks GS	Y	N	WP only
MacWrite 5.0	Y	Y	
MacWrite II	Y	Y	
Microsoft Word 3.0	Y	Y	
Microsoft Word 4-5	Y	4.0	
Microsoft Word PC	4.0-5.0	4.0	DOS
Microsoft Winword	Y	Y	Window
Microsoft Works 1.1	Y	Y	
Microsoft Works 2.0	Y	Y	
RTF	Y	Y	
Text	Y	Y	
WordPerfect 1.0	Y	N	
WordPerfect 1.0.x	Y	1.0.2	
WordPerfect PC 4.2	Y	Y	DOS
WordPerfect PC 5.0	Y	N	DOS
WordPerfect 2.x	Y	2.0	
WriteNow	Y	1.0, 2.0-2.2	
WriteNow NeXT	Y	Y	NeXT
Draw & Paint			
Movie	Y	N	
GIF	Y	N	
PICT	Y	Y	
EPSF	Y	N	
TIFF	Y	N	
MacPaint	Y	N	
Database			
AppleWorks	Y	N	(No AWGS filter)*
Microsoft Works 2.0	Y	N	
ASCII	Y	Y	Return/Tab delimited
DBF	Y	Y	
DIF	Y	Y	
SYLK	Y	Y	
Spreadsheet			
AppleWorks	Y	N	(No AWGS filter)*
Microsoft Works 2.0	Y	N	
ASCII	Y	Y	Return/Tab delimited
DBF	Y	Y	
DIF	Y	Y	
SYLK	Y	Y	
Microsoft Excel 3.0	Y	Y	
Communications			
Text	N	Y	

*Save AppleWorksGS database and spreadsheet files as ASCII text before opening as database or spreadsheet in ClarisWorks. To retain

TA42224_ClarisWorks_XTND_Translators_Included.pdf

AppleWorks GS spreadsheet formulas, choose View Formulas before saving as ASCII text.

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ClarisWorks: Decreased Performance of High-speed Serial Communications

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Macintosh Hardware System Update 1.0 is an extension which fixes errors in System 7.1 which result in decreased performance of high-speed serial communications in Classic II, LC, LC II, IIsi, IIvx, IIvi, Quadra 900, Quadra 950. Inaccuracies in the system clock were also fixed for that set of CPUs.

If you have one of the CPUs above, run System 7.1, and use the ClarisWorks communications environment, we recommend you obtain this extension.

In addition, the Hardware System Update 1.0 fixes:

* errors in ejecting floppy disks in IIsi, IIci, IIvx, IIvi, Quadra 700, Quadra 950;
* includes a new version of the Memory Control Panel which prevents users from setting RAM disk sizes to inappropriate values.

The extension is free from user groups and on-line software archives.
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ClarisWorks: Week of Year Based on Fiscal Year

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Let's say you would like to know what week of the year a certain date falls on. FileMaker Pro and ClarisWorks both have a WeekofYear function which returns the number of weeks from January 1 based on a supplied date. If you want to calculate the number of weeks starting at a date other than January 1, as in a fiscal year beginning date, you can use the following calculation given your file contains the field ProjectDate:

Week of Year (calculation, number result) = INT ((ProjectDate - Date (3,1,Year (ProjectDate)))/7)+1

The Date function is where the start date is formed. In this example, the start date is 3/1 of the year of the ProjectDate.

Calculating radians for degrees including the units for minutes and seconds
The Radians function in ClarisWorks spreadsheet documents converts an angle measurement given in degrees into radians, the standard unit used in trigonometric functions. This function has one argument, or variable, which is the number of degrees and fractions of a degree expressed as a decimal number. If your angle measurements are expressed in degrees, minutes, and seconds you must convert these numbers to a single decimal number within your formula in order to convert it to radians.

The following formula will do this. It assumes the degrees are in column B, the minutes in column C, the seconds in column D, and that you want to calculate the radians in column E:

E1 = RADIANS (B1 + (C1/60) + (D1/3600))
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Claris Applications: Envelope Settings for DeskWriter and StyleWriter

Helpful hints for printing envelopes on a DeskWriter or StyleWriter

Note: This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Knowledge Base.

This article has been archived and is no longer updated by Apple.
The following table shows the correct margin settings for printing envelopes. For DeskWriters, be sure to select Envelope Media in the page set up dialog, and modify the document margins to the values shown in the table.

Printer (Driver Ver.)	Top Margin	Bottom	Left	Right
DeskWriter (3.1	0	.57	.25	.25
DeskWriter C (2.0)	.17	.57	.25	.25
DeskWriter 550C (1.0)	.13	.13	.75	.31
DeskWriter 560C (5.0)	.125	.125	.75	.306
StyleWriter (7.1.2)	.28	.30	.68	.84
StyleWriter II (1.0)	.28	.50	.75	.75

After setting your document margins, use Text Frames in MacWrite Pro or ClarisWorks to position your return and mailing addresses (for an example, see the Envelope document in the Samples folder).

Envelope feeding in the DeskWriters
The original DeskWriter and the DeskWriter C accept envelopes one at a time. The envelopes are fed in top first. Page Setup is set to portrait when printing envelopes.

The DeskWriter 550C and 560C accept multiple envelopes. The envelopes are fed sideways so that the top of the envelope is the left printing side of the printed page. Page Setup is set to landscape when printing envelopes.

Envelope feeding in the StyleWriter
StyleWriter I printers accept envelopes top edge first, one at a time via a manual feed. Page Setup is set to portrait when printing envelopes.
StyleWriter II printers accept envelopes sideways, and you must press the lever to the envelope setting.

Note: StyleWriter ink is water soluble, can smear and become unreadable if it gets wet. Do not print envelopes on the StyleWriter if there is any possiblity of the envelope getting wet.
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ClarisWorks: Blank Spreadsheet Pages Being Printed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks only prints cells which contain data by default. However, it will print pages for blank cells when you apply a format to an entire row.
To duplicate this issue:

1. Select an entire row by clicking on the row header.
2. Apply a format (either a font change or a numeric format).
3. Enter some data in the first few columns.
4. Print (the default Print Range is "cells with data")

Several pages of blank spreadsheet grids will be printed out.

Formatting an entire column does not produce this problem.

If you need to apply a row format, select the cell range rather than clicking the row header. Another option is to select a cell range to print and choose Print Range from the Options menu.
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ClarisWorks: Charting Non-Adjacent Rows or Columns

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact and ClarisWorks do not include a built-in feature to chart non-adjacent rows or columns in a Spreadsheet or Table. A data chart can only include a single contiguous range of cells.

There are two workarounds for this:

The best workaround in to use another blank area of the spreadsheet or table to contain the adjacent rows or columns that you want. For example, say you want to chart numbers in columns B, D, and F, starting with row number 2:

NOTE: ClarisImpact tables do not automatically show row or column headings. To show headings, select TABLE OPTIONS from the TABLE Menu and check Column Headings and Row Headings.

1. Create a spreadsheet or table.
-In Claris Works, this is done by selecting FILE and NEW, then selecting the Spreadsheet Option.
-In ClarisImpact, click once on the Table tool, then drag the Table onto your layout.
2. Select some unused columns to the right; for example, column AA.
3. In cell AA2, enter the formula =B2Ó (no quotes). Cell AA2 will contain the value from cell B2. In cell AB2, enter the formula D2. In cell AC2, enter the formula =F2.
4. Use the Fill Down command in columns AA..AC to fill down from row 2 to the last row to be charted. The contents of columns B, D and F are copied into columns AA..AC, which are adjacent.
5. Chart these adjacent rows.

An easier but less complete workaround is to chart the original range of cells (here, columns B through F), then change the series in the chart to transparent. To do so, select a series item in the chart legend that you donÕt want charted (for example, the series for column C), then change the pen and fill patterns to transparent [note: the Toolbar will appear above your Table in ClarisImpact.

If the tools are not available in a ClarisWorks Spreadsheet, select SHOW TOOLS from the VIEW menu]. The bar or line in the chart for that series will change to transparent; however, the space for that chart item will remain, and the series names will still be listed in the legend. There is no way to make these series names not display, but you can draw white rectangles over these unwanted series names to mask them.
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ClarisWorks: Alternate for Enter Key

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Control-C (not Command-C) performs the same as the Enter key on a Macintosh

The Enter key is used for such actions as:
- Entering a record in FileMaker or ClarisWorks
- In ClarisWorks, changing from editing a text object to selecting it, so you can move or resize it. (Just like clicking on the selection arrow tool in the tool bar).
- In ClarisImpact, when entering data into a Table and you want to accept a cell entry.

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ClarisWorks: Can‘t open Text file by Double-Clicking

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Plain text files saved from ClarisWorks 2.0 are saved as MacWrite 5.0 text files (the file Type attribute is MACA). Therefore, if you save from ClarisWorks 2.0 as a plain text file, then try to reopen it into ClarisWorks by double-clicking the text file icon, you'll see an alert that says "The document XXX could not be opened because the document that created it could not be found."

To open the file:
1- Use the Open command in the ClarisWorks File Menu (Be sure to choose "Word Processing" as the Document Type in the "Open" dialog box), or
2- Drop-launch the file icon onto the ClarisWorks application icon (drag the icon onto the ClarisWorks application icon {not a folder icon}, then release the mouse button).
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ClarisWorks: Can‘t Select Entire Spreadsheet By Clicking

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks you can hide rows and columns in the spreadsheet by clicking on the border of a row or column header and dragging to collapse it.

However, if you hide the first row or column, you cannot click on the intersection between the row and column headers to select the entire spreadsheet. If you click on the intersection, you will get the resize pointer, which will allow you to resize the rows or columns which have been reduced to zero.

To select the whole sheet, you must use Select All from the Edit Menu and select Row Height or Column Width from the Format menu to restore the spreadsheet to its default column widths or row heights.

Tip: When you collapse the first few rows or columns, first resize Row 1 or Column A, leaving just a little space so it isn't collapsed all the way. This will prevent the selection problem.
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ClarisWorks: Hiding Spreadsheet Cells

Spreadsheet rows and columns can be reduced to a row height of zero to hide the cells.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Spreadsheet rows and columns In ClarisWorks and Table rows and columns in ClarisImpact can be reduced to a row height of zero, thus hiding the cells. For example, you might want to have data in your spreadsheet which is used for calculations but which should not print, and you don't want to use the Print Range command (you wish to print a discontiguous range). To reduce the spreadsheet row height or column width to zero, select the desired rows and either 1) drag the divider between two selected rows up above the next divider or 2) choose Row Height or Column Width from the Format Menu (Table menu in ClarisImpact) and type "0" into the size field.

To restore your spreadsheet to its original appearance, choose Select All from the Edit menu and check the "Default" box in the Row Height and Column Width dialogs. This will display all cells at their default 14 pt. height and 1" width.
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PMMU Adds Clock Cycle to Memory Access

Is there any reason that a Macintosh II with 8MB of RAM would slow down with a PMMU installed? My Macintosh II seems to be slower with the PMMU.

This article has been archived and is no longer updated by Apple.

Installing a Paged Memory Management Unit (PMMU) in a Macintosh II should not cause it to operate slower than a Macintosh II with the original Address Management Unit* (AMU) installed. Each device adds a clock cycle to memory access and, therefore, requires a second wait state.

The 68030 processor used in other members of the Macintosh II family has the equivalent of a PMMU built-in, and thus does not require the extra clock cycle for memory access. This allows a 68030-based Macintosh to run approximately 8 to 10% faster than a Macintosh II.

* Also known as the Hochsprung Memory Management Unit (HMMU), named after its designer, Ron Hochsprung.

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Claris: Translating Microsoft Word Documents With Tables

Three ways to get a table from a Word document into a Claris application's document properly formatted.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When opening a Microsoft Word document with a table (using the Open, Insert, or Place File commands), each cell is placed on a separate line, with an extra return at the end of each row. For example, this table:

cell 1 cell 2
cell 3 cell 4

will be converted to this in the document in MacWrite, ClarisWorks or MacDraw Pro:

cell 1
cell 2

cell 3
cell 4

There are three ways to get a table from a Word document into a Claris application's document properly formatted:

Note: These methods work with Microsoft Word 5.1. If using Microsoft Word 5.0 or earlier, table data is not copied to the clipboard as tab-delimited text; the data is copied in a return delimited format as shown above. Thus, upgrade to Word 5.1 or try solution #2 below.

Solution #1: Copy and Paste
1. Open the document in Microsoft Word.
2. Select the document, including the table(s). Choose Copy.
3. Switch to a new or existing document in your Claris application. Choose Paste. The table data is pasted in as regular tab separated text.
4. Select the table data, then set tabs in the ruler to properly align the columns.

Solution #2: Convert Table to Text in Word
1. You can convert the table in Microsoft Word to regular tab-separated text. Once converted, you can copy/paste into a Claris applicationÕs document. For instructions, go to Microsoft WordÕs online help; scroll down to the Tables topic; select the subtopic 'Converting a Table to Text.'
2. After converting the table to text, set tabs in the ruler to align each column. Then copy/paste the document to the Claris applicationÕs document.
Note: to preserve the original Word document with tables, either close the Word document without saving, or Save As with a different file name.

Solution #3: Converting the Word Table to a Claris application's Table
Select the entire table in Word and Copy. Then switch to the Claris application and paste. Select the data you pasted and in:

MacWrite Pro: Choose Insert Table from the Frame menu.
ClarisWorks 2.0: Show the Shortcuts Pallete and click the Make Table button.
ClarisWorks 1.0: Create a spreadsheet frame and paste. Resize the frame as needed.
ClarisImpact 1.0: Create a Table Model and paste. Resize Model as needed.

Solution #4: Using Find/Change in the Claris Application to Reformat the Table Data
If you don't have the Microsoft Word application, and thus can't open the original Word document:
1. Open the Word document in the Claris application. Select the table data, then Cut. Open a new document, then Paste the table data into the new document. Then follow the instructions below:

In MacWrite Pro:
2. Choose Find/Change from the Edit menu.
3. Type Command-Return twice. This will enter \¦\¦ into the Find field.
4. Tab to the Change field and type XXXX (or anything else thatÕs unique to this document).
5. Click the Change All button.
6. Choose Find/Change again from the Edit menu.
7. Type Command-Return. This will enter \¦ into the Find field.
8. Tab to the Change field and type Command-Tab.
9. Click the Change All button.
10. Choose Find/Change again from the Edit menu.
11. Type XXXX.
12. Tab to the Change field and type Command-Return.
13. Click the Change All button.

14. Select all the data, Copy and Paste into other the document you Cut it from in step #1. Choose Insert Table from the Frame menu, and press OK.

In ClarisWorks 2.0:
2. Choose Find/Change from the Edit menu.
3. Type \\p\\p into the Find field.
4. Tab to the Change field and type XXXX (or anything else thatÕs unique to this document).
5. Click Find Next and then click the Change All button.
6. Choose Find/Change again from the Edit menu.
7. Type \\p into the Find field.
8. Tab to the Change field and type \\t
9. Click Find Next and then click the Change All button.
10. Choose Find/Change again from the Edit menu.
11. Type XXXX.
12. Tab to the Change field and type \\p
13. Click Find Next and then click the Change All button.
14. Show the Shortcuts pallete and click the Make Table shortcut.

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ClarisWorks: "This is a ClarisWorks 1.0 document" Alert

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Problem: When opening a new document in ClarisWorks 2.0, you may see this alert:

This is a ClarisWorks 1.0 document. A copy will be opened in 2.0 format and "[v2.0]" will be added to the filename." This is acutally normal the first time a 1.0 document is opened with 2.0. However, if you are seeing the same dialog repeatedly on opening the same document read on.

Solution: You have an automatic stationery file in your Claris folder that was created using ClarisWorks 1.0. Whenever you open a new document in version 2.0, ClarisWorks is opening and converting this file.

(An automatic stationery file is a stationery file named "ClarisWorks WP Options", ClarisWorks SS Options", etc.)

To make this alert stop appearing whenever you open a new file:
1- Open a new document
2- From ClarisWorks 2.0, save as an automatic stationery file, replacing the existing file (see page 2-22 in the ClarisWorks 2.0 Handbook for further instructions)

- Or -

delete this file from the Claris folder on your hard drive, and create a new one in ClarisWorks 2.0.
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MacDraw Pro: Selecting Objects on Multiple Slides

In Slide mode, you want to select objects on multiple slides. For example, you might want to select all the text objects, then change them to a different font.
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In slide mode, only the master slide and the current slide are visible. All other slides (layers) are hidden. To select objects on multiple slides:

1- Change to Layers
2- Select the Layers command. You'll see that only two layers are visible, the current and the master slide layer.
3- Show (unhide) all hidden layers:
- (MacDraw Pro) In the Layers dialog, Select All (Command-A), then click Show, then click OK.
- (MacDraw II) In the Layers dialog, click Show All, then click OK.
4- To select all text objects, click the text tool, then press Command-Shift-A
(or, turn on Multi-Layer Selection in Preferences, then press Command-A (Select All)
5- Make changes as needed
6- When done, choose Turn Slides On to return to slides mode.
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MacInDos: Cross-Platform File Transfer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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MacInDos is a Windows utility that allows PCs to transfer files to and from high density (1.44MB) disks that were initialized on a Macintosh. This program can be used by Windows users to copy Macintosh ClarisWorks and FileMaker Pro files so that they can be used by the Windows versions of these programs.

Mac-In-DOS is published by Pacific Micro. For more information, contact Pacific Micro at:

Pacific Microelectronics, Inc.
201 San Antonio Circle C250
Mountain View, CA 94040

Phone: 415/948-6200
Fax: 415/948-6200
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ClarisWorks: Macintosh Created Footnotes May Show Overflow Symbol

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In ClarisWorks for Windows documents originally created in ClarisWorks for the Macintosh, a problem may occur where footnotes show the overflow symbol (a small box with an X in it) at the end of the footnote. This problem seems to happen most often when the fonts used to create the document are not available on the Windows machine.

When a font on the Macintosh is not available on a Windows machine, Windows uses Font Substitution to determine which Windows font seems similar enough to the Macintosh font. By default, Windows knows to substitute TimesNewRmn for Macintosh Times, and Arial for Macintosh Helvetica. Additional font substitutions can be added to the WIN.INI file in the Windows directory. For more information about Font Substitutions, refer to your Windows documentation.

To remove the overflow symbol from the footnote, simply select it and delete it or backspace over it.

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PhoneNetTalk: Changing Directories in the Open / Save Dialogs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When using PhoneNetTalk to access a Macintosh file server from a PC, moving too deep into nested sub-directories (Macintosh folders) may eventually seem to stop working. Double-clicking on sub-folders, or selecting a folder and clicking the Open button from the Open or Save dialogs does not change the current working directory. This only seems to happen after at least four levels of sub-nesting of folders. Changing the current working directory in the properties of a Program Manager icon does not correct this issue.

This appears to be a problem in Windows (all versions), since similar behavior can be noticed in many other Windows applications. The only suggested workaround at this time is to not nest directories too deeply on Macintosh servers where ClarisWorks for Windows documents need to be stored.
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ClarisWorks: Fill Patterns On-Screen Different Than Printout

Issues exist on the Windows platform due to a limitation of the platform -- not Claris software.

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When printing documents that use patterns for filling-in graphic objects, or for lines, the patterns don't appear the same on printouts as they do on the screen. They appear to be solidly filled, or even shaded.

What is actually happening is the dpi (dots per inch) of the fill pattern is getting increased from 72 dpi (on-screen) to the usually higher dpi resolution of the printer. At present, all versions of Windows do not properly handle patterns of sizes other than 8x8. As a result, the pattern shrinks down as the resolution increases, causing it to look shaded or even solid when printed out.

At this time, the only workaround for this limitation is to create your objects in, or paste them into, a paint frame created within your document.
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ClarisWorks: Disk Configuration

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisWorks 2.0 comes on 3 disks, labeled Disk 1, Disk 2 and Disk 3. The education version includes a stamp to that effect on disks 1 and 3.

.sit indicates a Stuffit compressed file.

Brackets [ ] are used to show which items are folders and to list the files contained in Stuffit archives which contain several files in one.

Disk 1:
READ ME
Installer
Installer Script
Installer Files [folder]
Claris Help System.sit
ClarisWorks Labels.sit
Main Dictionary.sit
Tutorial.sit [multi-file archive]
[Artwork for Letterhead]
[Employee of the Month]
[Pegasus Logo]
[Sales Performance]
[Sample Objects]
User Dictionary
Communications [folder]
Apple Modem Tool.sit
Claris Kermit Tool.sit
CTB Resources
Serial Tool.sit
Text Tool.sit
TTY Tool.sit
TTYFont
VT102 Tool.sit
VT102Font
XMODEM Tool.sit

Disk 2:
ClarisWorks Help.sit
ClarisWorks.sit
US Thesaurus.sit

Disk 3:
Palettes.sit [multi-file archive]
[16 Hues]
[Pastel]
[Rainbow]
[Strange]
[Vivid]
Samples.sit [multi-file archive]
[ABOUT Sample Files]
[Business Cards]
[Checkbook]
[Lease vs. Purchase]
[Logo Ideas]
[More About Shortcuts]
[Mortgage Analyzer]
[Name & Address-Extended]
[Newsletter-Draw]
[Personal Stationery-Fancy]
[Presentation-Draw]
[Resum□ A]
[Resum□ B]
[VT320 Keys]

Stationery.sit [multi-file archive]
[ABOUT Stationery]
[Business Letterhead]
[Business Memo]
[Business Stationery]
[Fax Cover Sheet]
[Internal Memorandum]
[Mail Merge Letter]
[Name & Address]
[Name & Address-Extended]
[Name & Address-Standard]
[Newsletter A]
[Newsletter B]
[Newsletter-WP]
[Personal Stationery]
XTND [folder]:
Acta 3.0.sit
AppleWorks DB/SS.sit
AppleWorks GS.sit
AppleWorks.sit
ASCII.sit
Claris XTND System.sit
DBF.sit
DIF.sit
EPSF PFLT.sit
Excel.sit
GIF.sit
MacPaint 2.0.sit
MacWrite 5.0.sit
MacWrite II.sit
Microsoft Word 3.0.sit
Microsoft Word 4-5.sit
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Claris Applications: Lines Not Printing to LaserWriter IIf/IIg

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If you notice that horizontal or vertical lines in your documents are not being printed correctly to your LaserWriter IIf or IIg, you will need to make a simple adjustment to your LaserWriter's setting. To do this you will need the LaserWriter tools disk that came with your printer.

Just follow these three steps:

1. Open the LaserWriter Utility application on the LaserWriter disk.
2. Under the Utilities Menu, choose 'Set PhotoGrade.'
3. Move the slider all the way to the left towards the 'More Levels of Gray' option.

Your printer will then been reconfigured with the proper settings.
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MacDraw Pro: Returns Inside Text Objects in PICT file Missing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Returns inside text objects appear to be stripped out when saved as PICT and reopened into another application. When reopened, the text objects will be the correct size.

However, if you make the text object wider, the text will reflow to fit the new bounding box, as if no returns were entered into the text object. When tested with MacDraw Pro, ClarisWorks and Canvas, the issue seems to occur going from any one program to any other. So, it doesn't seem to be an application-specific issue.

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ClarisWorks: Communications Troubleshooting

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Communications issues can be divided into 3 areas: making the connection, sending/receiving text, and transferring files. These correspond to 3 commands in the Settings menu, Connection, Terminal, and File Transfer. When troubleshooting, first determine which of these 3 areas is the issue.

1. Connecting With the Modem
- Make sure you have chosen Open Connection from the Session menu.
- Make sure that the modem is plugged in and switched on.
- Check if you have the right port selected by choosing Connection from the Settings menu. Also set the baud rate at the speed of your modem.

With the BBS or Online Service
When you successfully connect with a service using the Apple Modem tool, you will get a message: "Connection established at 2400 baud" or whatever baud you connected at. Press the OK button to enter Terminal mode and begin your session. Sometimes it is necessary to press the Return key after this to trigger the host to begin sending you data.

- Successful Connection but no signs of life - Proceed to the section below entitled "Terminal."

- Unsuccessful Connection - Since the Apple Modem tool insulates you from the connection process, it can be useful to switch to the Serial Tool when having connection issues.

Using the Serial Tool to Troubleshoot
Choose Connection from the Settings menu and select the Serial Tool. Make sure the correct baud rate and port settings are selected and press OK. Open Connection and type AT. The modem should answer with OK. If there is no response, type AT&F. This resets your modem to factory settings. Once again, there should be a response of OK. If there is still no response, the modem is either not connected properly, not functioning properly, or you do not have a proper cable.

If you get an OK response from the modem, type ATDT followed by the phone number to dial. In essence, you are manually doing what the Apple Modem Tool does automatically.

You will commonly see a string of messages such as:
DIALING
RINGING
MODEM
CONNECT 2400

If you are able to connect, but still nothing else happens, even after pressing the Return key:

- Choose Connection from the Settings menu. Make sure you have the correct baud rate and other settings for your modem and the service you are calling. The 2 most common settings are:
a. parity - none, data bits - 8, stop bits - 1, handshake - none
b. parity - even, data bits - 7, stop bits - 1, handshake - none
- If the steps above fail, proceed to the section below entitled Terminal.

Apple Modem Tool and Initialization Strings
If you are able to connect with the Serial Tool and not with the Apple Modem Tool, it is likely that your modem doesn't like the initialization string the Apple Modem Tool is sending before dialing. Switch back to the Apple Modem Tool in the Connection dialog and choose Custom from the modem popup menu. If you don't see a Custom option, hold down the option key and try again (you have an older version of the Apple Modem Tool). Delete the initialization string and press OK. Try connecting using the Apple Modem Tool now.

2. Terminal
(Unless specified otherwise, all directions refer to the Terminal dialog: select Terminal from the Settings menu.)

If you are able to connect but have trouble sending or receiving data:

- If you have not already done so, make sure the baud rate and other port settings are correct for your modem and the service you are calling (Connection Settings dialog).

- Not receiving data - Verify that the On Line option is checked.

- Strange characters scattered throughout incoming data - Connection settings are probably incorrect. See above for the 2 most common settings. Also, the terminal type may be wrong. Try switching to another terminal tool. If none of this works, call the System Administrator of the service to ask for details about what settings to use.

- Unexpected characters appear or characters lost - Bad connection. Log off and call back. If the issue remains, try reducing the baud rate or changing to a different handshake method in the Connections dialog.

- What you type doesn't appear on screen - The host computer is not echoing what you are sending. Turn on Local Echo.

- Data appears as double characters - Turn off Local Echo.

- Incoming data writes over last character on the first line - Turn on Auto Wrap to Next Line.

- Incoming data writes over same line - Turn on New Line on a Return.

- Lines of incoming data are double spaced - Turn off New Line on a Return.

- Data loss when pasting - Choose Preferences from the Edit menu and set a character paste delay. If the issue seems to be at the beginning or end of a line, set a line delay. 1=1/60 of a second so start out with a number like 10.

3. File Transfer
- Not enough room to receive file - If you have enough hard disk space, the file may have corrupt header information. If the file doesn't have a resource fork (is not an application or a document with resources) switch the file transfer method to Straight XModem in the File Transfer dialog. If you have ClarisWorks 2.0 and the service supports Kermit, another option is the Kermit tool. The XModem Tool included with ClarisWorks 2.0 offers improved MacBinary handling of files which will prevent this issue from happening in the first place in many instances. For more details see the document "Out of Memory or Disk Space when Downloading Files."

- Transfer Failures - If a transfer fails, it could be due to a bad connection or phone noise. Try connecting again and when downloading the file, notice in the status dialog if there are errors in blocks being sent or received. If there are, increase the Timeout and Retry numbers in File Transfer Settings.

Text Transfer Tool
If data is lost when uploading via a Text file transfer, try slowing down the rate of transmission by increasing the Delay Per Character or Line (File Transfer dialog). You can also try using handshaking (Connection dialog).
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ClarisWorks: Calculating Elapsed Time

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If you would like to know the number of hours elapsed between two time fields in a ClarisWorks database or spreadsheet, use the following technique.

Assuming you already have two time fields defined as follows:

StartTime (Time)
EndTime (Time)
The formula for the calculation is as follows:

ElapsedTime (Calculation, number result) = (EndTime - StartTime) * 24

In a spreadsheet, assuming the start time is in cell A2 and the end time is in B2, use the formula:

=(B2-A2)*24

ClarisWorks stores the time fields as a fraction of a day. Midnight is 0.0, 6:00 AM is 0.25, Noon is 0.5, and 6:00 PM is 0.75. When two time fields are subtracted, the result is a decimal that can be converted to hours by multiplying by 24.
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Macintosh II Family: Monitor Power Receptacle Power Limit

How much power can a monitor connected to the Macintosh II or Macintosh IIci monitor input receptacle consume? I know how much the AppleColor RGB monitor consumes (160W), but is it possible to have a monitor connected that consumes more power?

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Three amps at 110 volts (1.5 amps at 220 volts) is the maximum amount of power that can be drawn from any Macintosh II monitor power input receptacle. This means that 330 watts is the maximum wattage that can be pulled from the monitor power input receptacle.

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ClarisWorks: Communications with a TDD Modem

"I want to use my computer and modem to talk with a deaf friend who has a TDD. What settings do I need to use?"

by Andy Baird, AFC of the DisAbilities forum on America Online (edited with his permission - Thanks Andy!)
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

Note: AppleWorks is the new name for ClarisWorks 5.0x
This article has been archived and is no longer updated by Apple.
This question comes up again and again. It seems logical: why not use your computer and modem to communicate with TDDs? Trouble is, more often than not because of conflicting standards it won't work.

Most TDDs use a very old technology called Baudot (pronounced "baw DOUGH"). It has different character codes than computers and uses completely different audio tones to send signals through phone lines. Regular computer modems can't understand Baudot tones or codes, and most TDDs, especially older ones, can't understand the ASCII character codes and high speeds we use with our computers. It's a standoff.

Now, if you're lucky, your friend may have more recent, more deluxe TDDs that can communicate in ASCII as well as Baudot. If that's true, then you need to set your modem to 300 baud (the speed is important) and try 8 data bits, 1 stop bit, no parity and half--not full--duplex. You may have to try other parity settings (even or odd) to get this to work, depending on how your friend's TDD is set up.

If you friend does not have an ASCII-compatible TDD, there are a few alternatives:

1. Persuade your friend to purchase a new TDD.
2. Persuade your friend to get a computer with a modem and get on AOL or any other national bulletin board service like CompuServe, GENIE, and FIDO-net bulletin boards.
3. Buy a combination Baudot/ASCII modem.

That third option sounds good, but there's a big problem. Two problems, in fact. First, almost all of the combination Baudot/ASCII modems out there are not "Hayes compatible." That means they can't be used with standard programs (like the AOL software, or Microphone or Crosstalk) because they don't recognize standard commands to to do things like dial out. They usually come with their own special, limited-purpose software.

Problem number two: all of the combo modems, including the one that is Hayes-compatible (see below) will only go up to 300 baud in ASCII mode! Nobody in their right mind would ever try to use a 300 baud modem to log onto AOL or any other computer info service...it's about ten times too slow. So if you bought one of the Ultratec modems to talk to your friends with TDDs, you would STILL have to keep your regular high-speed modem for use with AOL. That's an expensive, complicated setup.

Bottom line: ask your friend if s/he has an ASCII-capable TDD. If s/he does, you can connect with her or him (with luck and some fiddling around). If not...consider the alternatives mentioned.

Sources for equipment and information:

Harris Communications
800-825-6758 (voice)
800-825-9187 (TDD)
612-946-0924 (fax)
Supplier of a wide variety of deaf-related products, including phone flashers, books, videotapes and the complete line of Ultratec TDDs. Ask for their catalog.

Ultratec
6442 Normandy Lane
Madison WI 53719
608-238-5400 (voice/TDD)
608-273-0707 (V/TDD)
The major source for TDDs in the U.S. Their Hayes-compatible ASCII/Baudot modem, the "Intellemodem," runs at 300 baud in ASCII and 45.5 baud in Baudot.

Phone-TTY Inc.
202 Lexington Avenue
Hackensack NJ 07601
201-489-7889 (voice)
201-489-7890 (TTY)
201-489-7891 (FAX)
201-489-3323 (CBB)

Manufactures the CM-4; also distributes other makes of modems, TDDs, signalling devices etc.

Krown Research Inc.
10371 West Jefferson Blvd.
Culver City CA 90232
213-839-0181 in California
800-833-4968 elsewhere
Manufactures the SM-85 modem and other TDD devices.

MicroFlip
11211 Petworth Lane
Glenn Dale, MD 20789
301-262-6020 (V/TDD)
Manufactures the MIC300i modem and the associated software for MS-DOS, called "FullTalk".
Published Date: Feb 18, 2012

ClarisWorks: Finding the Minimum Non-Zero Value in a Range

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you use the MIN function to find the lowest value in a range, any empty cell in that range will force the MIN function to return a zero. To find the minimum non-zero value in a range, you need to first create a calculation that will return either the non-zero value for each cell or a value that is higher than the non-zero minimum in the range.

Let's say you have numbers entered in A1 to A10. In B1, enter the following formula:

=IF(A1 = 0,MAX(A1..A10),A1)

Plain English: If the value in A1 is zero, return the highest value from A1 to A10; if it is not zero, return the number. Once you have entered this, select cells B1 to B10 and fill down. Now you will have a column of numbers where the zeros (or empty cells) have been replaced by the highest number in column A. Now to find the minimum non-zero value in column A use this formula:

=MIN(B1..B10)

Since there are no zero values in column B, it will return the lowest number.

Note: Instead of MAX(A1..A10), you could use any number that would be higher than the non-zero minimum, such as 10,000,000 or MAX(A1..A10) -1.

Although ClarisImpact Tables have no visible cell references this solution will still work.
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ClarisWorks: Getting a Command-Key Symbol into a Document

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In certain fonts, there are certain special characters that are accessed by holding down the Control Key along with another key. For example: Choosing the Chicago font and typing "Control q" should type the "propeller" or "daisy" symbol that appears on the Command Key.

This does not work in a ClarisWorks Word Processing or Paint document. Instead either nothing appears or the correct key is replaced by a space. If the desired keystroke is done in KeyCaps, and then copied and pasted into ClarisWorks, the result is the same.

However, typing "Control q" in Chicago font DOES work in the Spreadsheet environment.

Here is a way to get the character into a Word Processing or Paint document:

1. In a spreadsheet or a spreadsheet frame, click on a cell and set the font to Chicago.
2. Set the Size to 48 (24 if you are using an ImageWriter) and set the Row Height to 60.
3. Now in the cell, type Control Q. This gives you the quadrille character.
4. Snapshot the screen by pressing Shift-Command 3.
5. Switch over to the Finder and double click the Picture 1 file you just created.
(Under System 7, this will use TeachText to open the picture. System 6 will require a paint program.)
6. Drag a selection rectangle around only the large quadrille character, and type Command-C to Copy.
7. Now switch back to ClarisWorks and open a new Graphics document.
8. Paste. Then under Options, choose Scale Selection and set each direction's reduction to 25% (50% if you are using an ImageWriter).
9. Click on to select and then Copy the resultant graphic.
10. Now return to your original Word Processing document, and paste the quadrille in wherever you need it.

Since the quadrille or "propeller" Command symbol was created four times larger, it prints at a higher resolution.

You can Copy it into your scrapbook for use in future documents.
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ClarisWorks: Incompatibility with ClickChange

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There has been an incompatibility reported between ClarisWorks and ClickChange 2.0. ClickChange is an utility that allows you to customize your menus, colors, windows, etc. from the Finder.

The makers of ClickChange have heard reports of the same issue with GreatWorks and MS Works, so they are trying to fix the problem in their next version. Contact the manufacturer for update information.
Published Date: Feb 18, 2012

Macro Wait: Waiting for Special Characters

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following codes can be entered into the "Wait for characters" field in the Macro Wait dialog box. These codes are not included in the documentation.

\\B for backspace character
\\D delete
\\\\ backslash
\\E escape
\\@ null
\\R return
\\T tab
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ClarisWorks: Rows or Columns Missing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In all versions of ClarisWorks, it is possible to resize the columns or rows so that they are not visible on-screen, giving the impression that the cells have been deleted. This is especially difficult to diagnose if a number of columns or rows were selected at the time that they were resized, because it might appear that column F in the spreadsheet is next to column C or that row 20 is immediately below row 10.

This is an excellent feature. You might want to have spreadsheet data which is entered into columns, but which does not print, or you might want to have spreadsheet cells collapsed so that they do not take up room on the screen when working with a large spreadsheet. Because the data entry in these cells remains intact, and because the calculations in the collapsed cells still calculate, you can have a huge amount of functionality 'hidden' in this way.

To restore the spreadsheet to its original display, you can use the Select All command and enter the Column Width dialog or the Row Height dialog and click the checkbox next to Use Default. This will restore all of the columns in the spreadsheet to their default width, but sometimes there is a lot of design work which has been invested in the display. To return only a range of cells to their original display, without changing the whole spreadsheet back to the default, you would have to select the affected range and make the appropriate adjustment.

In the example above, select columns C and F, then choose Column Width with Use Default to make columns D and E appear. Select rows 10 and 20 then choose Row Height with Use Default to make rows 11 through 19 appear.
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ClarisWorks: Thesaurus Offers Inaccurate Suggestions

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you do a Thesaurus lookup with a capitalized word, and Word Finder does not know the word, you can get inaccurate suggestions as to the closest matching word.

To duplicate this:
1. Launch MacWrite Pro, ClarisWorks or ClarisImpact.
2. Type and select the word 'Dum'. Capitalization is important.
3. Bring up the Thesaurus.

You get a list of suggestions beginning in the middle of the ju's and ending with 'Xerox copy' and 'Synonym finder'. If you change the word to 'dum' and do another lookup, you get a more reasonable list.

This occurs with all languages. In addition, single letters tend to give odd results. Looking up synonyms for 'b' will provide a list of close matches beginning with 'a' as well as 'b'.

Thesaurus version 3.7 is the current version as of 4/2/93 and it exhibits this problem.
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ClarisWorks: Aladdin ShortCut Issues

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Shortcut 1.5.2 from Aladdin Systems seems to interfere with the operation of the ClarisWorks 2.0 Open dialog, causing ClarisWorks to unexpectedly quit with a Type 1 error.

The solution is to turn off the BounceBack option under the "Other" menu in the Shortcut control panel.
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ClarisWorks 2.0: ClarisWorks 1.0 Translators File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 1.0 stores Spreadsheet and Database translators in a file called 'ClarisWorks Translators' rather than in the Claris Translators folders as with Word Processing and Graphic translators. In other words, ClarisWorks 1.0 has three items in the Claris folder within the System folder (Claris XTND System, ClarisWorks Translators, and Claris Translators folder). ClarisWorks 2.0 stores all translators as individual files in the Claris Translators folder.

Beta versions of the ClarisWorks 2.0 Installer removed the ClarisWorks Translators file. The final release of ClarisWorks 2.0 was modified so that the installer does not remove the ClarisWorks 1.0 translator file. Therefore, ClarisWorks 1.0 and 2.0 can be run concurrently without affecting translation.

If you are not running ClarisWorks 1.0 any longer (only running ClarisWorks 2.0) then trash the "ClarisWorks Translators" file and you will save approximately 100k of hard disk space.
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Irregular Text Wrap Around Bitmapped Graphics

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks and ClarisImpact can do an irregular text wrap around objects created with ClarisWorks or ClarisImpact draw tools. It can also do this with object-oriented PICT images you Insert, but only after ungrouping the object. The Ungroup command is in the Arrange menu.

If you apply the irregular text wrap option to other kinds of images (any paint frame, EPSF, TIFF or bitmapped PICT), the text will wrap only to the edge of the picture's frame, and not the boundaries of the image.

If you would like to wrap text around these other kinds of images, here's how you can do it:

1. Bring the image into your document.

- If you have an object-oriented EPSF image:
a. Select the arrow tool
b. Choose Insert from the File menu to open the image.

- If you are using a bitmap image with ClarisWorks (paint frame, TIFF, bitmap EPSF or bitmap PICT):
a. Create a Paint frame.
b. Choose Insert from the File menu to open the image. It is placed inside the paint frame.
c. Choose the arrow tool.

d. Set the paint frame border and fill to none. This makes the background of these images transparent.

- If you are using a bitmap image with ClarisImpact (paint frame, TIFF, bitmap EPSF or bitmap PICT):
a. Choose Place File... from the File menu.

2. Outline the boundaries of the image with the polygon, bezigon, or freehand tool.
3. Choose Move to Back from the Arrange menu.
4. Set the fill of the object from step 2 to white and the pen to none.
5. Choose Text Wrap from the Options menu (Text menu in ClarisImpact). Set the wrap to Irregular.

ClarisWorks and ClarisImpact will now wrap around the invisible object that you created in step 2 but will appear to wrap around the picture referred to in step 1.

MacWrite Pro allows irregular text wrap around all types of graphics without any workaround. Also, irregular wrap around inserted PICTs does not work until the object is ungrouped.

NOTE: if this solution does not work check to make sure text wrap has been turned off on the object described in step 1.

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Macro Files not Cross-platform Compatible (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks Macro files created on one platform cannot be transferred to another platform. The information needed to perform a macro is totally different from one platform to the next.
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Macros Won‘t Use Function Keys Depending on Type of Keyboard (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When recording macros in ClarisWorks 1.0 and ClarisWorks 2.0, you have the option of using either an Option-Command key equivalent or a Function key to execute your Macro.

However, if the macro is defined on a Macintosh with no function keys (the Apple Standard ADB Keyboard or Mac Plus keyboard), the only function key which can be assigned is F5 (for newly-opened documents) or the last-defined function key equivalent (for macros which have been defined using an extended keyboard). Additionally, although that f-key can be assigned, it cannot be executed on that keyboard. If the file is opened on a Macintosh with function keys, F5 will work correctly.

If the macro is created using a keyboard with function keys, the function key equivalents will remain assigned for the macro if the file is opened on a Macintosh without function keys. This means that you would have to select Play Macro in order to execute the macro, or remap the key equivalents so that option-command keys are used. If the macro will be used in a mixed environment with some extended keyboards and some standard keyboards, option-command equivalents should be used to prevent misunderstandings.

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Non-Styled Text Pastes in System Font (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When text is copied to the clipboard, some programs do not provide information such as which font to use, size, and styling features such as boldface, underlining, etc. Non-styled information pasted from the clipboard to a ClarisWorks document will come in as the default font and style defined by the Operating System, rather than the current font and style at the insertion point.

Styled text pastes into ClarisWorks documents in the font and styles defined for it when it was copied to the clipboard.

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NPER (Number of Periods) Documentation Error (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The first manual for ClarisWorks 1.0 (labeled U91-600-006A on the back of the cover) has an error in the example for the NPER function. The example shown is:

NPER(10%/12,-250,-2000,12000) returns $32.77 using a fixed number format

This example is trying to show that in order to purchase a $12,000 car at 10%, with a $2,000 down payment, and payments of $250 a month, you would have to make a little more than 32 payments; but this improperly shows the use of the function. The proper use and example is shown in the second manual for ClarisWorks 1.0 (labeled U91600-006B on the back of the cover), and is as follows:

NPER(10%/12,-250,10000) returns 48.86 months using a fixed number format
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Perfect Circles or Squares and the Shift Key Constraint (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q: I hold down the Shift Key to draw out a perfect Circle or Square and it comes out as an Oval or Rectangle. What's happening?

A: You've discovered a feature which is allowing you to set the angle of the diagonal of an ellipse, rectangle, or rounded rectangle. To create a square or circle:

- Under the Edit menu, choose Preferences*.
- Click on the Graphics icon.
- Reset the number for the Mouse constraint back to 45¡.

See pages 2-55 and 4-5,6 in the ClarisWorks 2.0 User's Guide. (Item 3 on page 4-6 should say "rectangles, rounded rectangles, and ovals")

*ClarisImpact:
Preferences is located under the Layout menu.
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PMT (Payment) Function Documentation Error (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks 1.0

The first manual for ClarisWorks 1.0 (labelled U91-600-006A on the back of the cover) has an error in the example for the PMT function. The example shown is:

PMT(10%/12,36,-2000,12000) returns a -$222.67 in a currency number format.

This example is trying to show a purchase made over 3 years at 10% with a $2,000 down payment, but improperly shows the use of the function. The proper use and example is shown in the second manual for ClarisWorks 1.0 (labeled U91600-006B on the back of the cover), and is as follows:

PMT(10%/12,36,12000-2000) returns a -$322.67 in a currency number format.

ClarisWorks 2.0

The first 2.0 manual (labelled U92600-012A) also has an error in the example for the PMT function. The example shown is:

PMT(10%/12,36,12000,-2000) returns -$339.34 in a currency number format.

The correct formula and result is:

PMT(10%/12,36,12000-2000) returns -$322.67 in a currency number format.

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Smart Quotes Cause Bad Formula Message (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When creating a Match Records formula or defining a calculation field in ClarisWorks, you will get a "Bad Formula" message if you use smart quotes instead of regular quotes. Using smart quotes in a FileMaker calculation formula will cause the alert: "This field can't be found."

An extension called Smart Key automatically substitutes smart quotes, also known as curly quotes, for regular ones as you type. Turn off or disable this extension before defining fields or using Match Records.

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Redraw Problem with Protected Spreadsheet Cells (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

To reproduce:
Open a new spreadsheet document. Click on cell C1 and type =A1. Protect cell C1. In cell A1, type in a long string of text. You will notice cell C1 will display the text that you typed in cell A1. Unprotect cell C1, go back and retype a few characters in cell A1. Cell C1 will display the text you entered. However, ClarisWorks will not erase all of the existing text that was entered previously.

Simply scroll so that the cell is out of view and scroll back to force the cell to refresh.

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MacDraw: Precision Bitmap Alignment

If a rectangle is created in MacDraw and two copies are printed to a LaserWriter, one may measure 150mm x 200mm, yet the other may measure 151mm x 201mm. There is a variation in both dimensions. Sometimes, however, they may match perfectly.

I'm using the LaserWriter in a four-layer printing process and find this inconsistency very annoying to work with.

Since the variation is in both dimensions and the age of the LaserWriter is relatively new, I believe that the paper weight (which is within specification), the paper finish, and the age of the LaserWriter are unlikely to be possible causes of the problem.

I would be satisfied if the LaserWriter fell within a specification, but since there is no specification outlining the acceptable variations, I am having problems.

Can you help?

This article has been archived and is no longer updated by Apple.

The size variance described is a result of PostScript interpretation of the bitmapped image. This results from attempts to change a 72-dpi image into a 300-dpi image. This is not an exact ratio. There may be as much as a 4% variance in PostScript's interpretation. PostScript's attempts at correction may vary slightly during each pass.

To compensate for this difference, choose Page Setup from the File menu. On the right side of the Page Setup dialog box there is an Options button. Click this button, and an additional dialog box appears. The fourth checkbox is labeled Precision Bitmap Alignment (4% reduction). Be sure this checkbox is marked. Using this option increases the printing time; however, the printouts will be consistent during each pass.

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Spreadsheet and Text Frames in Paint Environment

Spreadsheet and text frames are converted to a bitmap in the Paint Environment as soon as you leave the frame.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Spreadsheet Frames

If you create a Spreadsheet frame in the ClarisWorks 2.0 Painting environment and then click outside the frame, the spreadsheet is instantly converted to a bitmap. Consequently, you will not be able to add any more numbers or calculations to your Spreadsheet frame.

To prevent accidentally converting your spreadsheet into a bitmap before you are ready, create the spreadsheet in the Spreadsheet module and then copy/paste the data into a spreadsheet frame. Save a copy of the spreadsheet from the Spreadsheet module in case you need to update your Spreadsheet frame.

Text Frames

A text frame in a Paint document is fully editable until you leave the frame (i.e. select another tool) at which time the frame is bitmapped. If the Invisible Formatting Characters are showing at the time the frame is bitmapped then the Invisibles will also be bitmapped.

ClarisWorks 2.0 shows and hides Invisibles through Preferences, the Shortcuts palette and Command-;

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Slanted Lines Do Not Display Pen Patterns (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
In ClarisWorks for Windows version 1.0v1, slanted lines with pen patterns appear as thin dashed lines on screen at 100% zoom.

Explanation:
When viewing thin slanted lines or slanted lines at low zoom levels, they show as thin dashes and the pattern is not displayed.

Solution:
This problem does not affect printing or viewing at higher resolutions. It is only displayed on screen this way.

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Arrow Keys Do Not Change Chart Types

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problem:
When creating a chart in ClarisWorks for Windows 1.0v1's spreadsheet module, the arrow keys will not allow you to move between the different chart types.

Solution:
In ClarisWorks for Windows 1.0v1, the arrow keys are not designed to work this way.
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Arrowhead Lines Disappear When Graphic is Ungrouped

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:

If a ClarisWorks for Windows 1.0v1 document contains lines with arrows on them, saving to the Windows MetaFile (.WMF) format, closing and later re-opening the document, the arrowhead lines will disappear when the graphic is ungrouped.

At this time, there is no workaround for this issue.

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Either Mouse Button Can Select Graphic Tools and Color Palettes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In Windows, the left button is the default button for primary use. This can be changed in Windows by choosing the "Swap Left/Right Buttons" checkbox under MOUSE in the Control Panels. The button chosen by the user is the only button which can be used for dialogs in ClarisWorks for Windows 1.0v1. However, ClarisWorks for Windows 1.0v1 allows you to click on graphics tools and color palettes using either mouse button.

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Jagged Fonts in Toolbar When Using Microsoft VGA Driver and TrueType is Off

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The text in the toolbar and status areas of ClarisWorks for Windows 1.0v1 may appear to be jagged when the Microsoft VGA driver is being used, and TrueType is turned off in Windows 3.1.

To correct the problem, either change to a different video driver or, more preferably, enable TrueType fonts for Windows 3.1.

The video driver can be checked/changed through Windows Setup (usually found in the "Main" program group)

TrueType fonts can be turned on/off by going into Control Panels (also under "Main"), selecting Fonts, selecting the TrueType button, and selecting the checkbox titled "Enable TrueType Fonts".
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Option-Print Bypasses Print Dialog - Problems with Fax Drivers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In Claris Works 2.0 and ClarisImpact, holding down the option key while selecting Print bypasses the Print dialog, sending the document directly to the currently selected printer.

Fax Drivers
Many FAX utilities allow you to fax from any application by pressing a key sequence when selecting Print. Normally the fax dialog comes up, and allows you to enter the phone number and cover page information. Since holding down the option key (plus any other key, if applicable) will send your document to the fax utility without a dialog, this has the undesired result of faxing to the last phone number used in the fax utility or printing to the currently selected printer.

Workarounds
Some fax utilities will allow you to select a new key sequence to activate them. Choose a sequence that does not use the option key (example: command-shift). If you cannot change the activation key from option to something else, you can:

1. Manually select the fax driver in the Chooser.
2. Use a macro utility like QuicKeys2 to change printer drivers with a key sequence.

3. Go ahead and option-Print, but cancel printing before the document goes to the fax utility by pressing command-period when you see the printing status dialog. Doing another option-Print will bring up the Print dialog for you to specify a phone number. For each document you fax, you will need to cancel the printing status dialog and option print again to bring up the Print dialog.

Note: Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation.

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Publication Correction - WordPerfect 2.x Translator (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Page B-3 of the ClarisWorks 2.0 User's Guide does not list the WordPerfect 2.x translator that is available for word processing import and export.

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Screen Refreshes Twice When Deleting Columns or Rows in Spreadsheet (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
When deleting cells on a ClarisWorks1.0v1 spreadsheet document, the screen refreshes twice. This happens if the user is deleting columns or rows.

Solution:
In the Preferences dialog (under the Edit menu), select the checkbox indicating Offscreen Drawing.

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Cannot Protect Blank Cells when Selecting An Entire Column or Row (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When you choose to Protect cells in either an entire column or an entire row, only the cells that are not blank will be protected. As other cells are later filled in, they can be protected by selecting the Protect Cells command again.

This is true of both ClarisWorks for the Macintosh through version 2.0v1, and ClarisWorks for Windows 1.0v1.

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Application Modified or File is Busy, Try Again Later Message when Launching

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are two possible causes to this alert:

Cause #1:
If you have changed the name of a Claris application to have a period in front of it (for example ".MacWrite Pro"), the application will give you an erroneous error message that it has been modified and is not usable, or that the File in Busy, and to try again later. This only occurs on machines running System 6.

This is a well-known "feature" of all systems before System 7. Filenames starting with a period are supposed to be reserved for drivers (such as .Sony).

The solution is to remove the period from the front of the name.

Cause #2:
AutoDoubler is running, and has compressed the file before you have entered your name and serial number into the opening screen. The solution is to uncompress the file, run the application, personalize the app. with your name, etc. You can then let AutoDoubler compress the program, and it should work correctly.
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Documents Imported From Word for Windows May Show Incorrect Margins (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks for Windows has the ability to import Word for Windows documents into the word processor module. When ClarisWorks for Windows 1.0v1 imports these documents, the margins may change by up to 0.01 inches. This only seems to happen when the Word for Windows documents in which the margins are smaller than 0.5 inches. Choosing Document from the Format menu and resetting the margins will not reset the margin back to the correct value.

Because the change is only 0.01 inches, it should not be noticeable on any printouts. Claris Testing is aware of this problem, but no workaround is available at this time.

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Objects May Move When Ungrouping Imported Graphics (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When ClarisWorks for Windows 1.0v1 ungroups some Windows MetaFiles (.WMF files) that were originally created in other programs, it is possible that some of the objects will move slightly from their intended positions. The objects can be manually repositioned after ungrouping them to restore the original appearance of the graphic.

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Customizing the Modem Initialization String (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Question: How do I set the modem initialization string in ClarisWorks. Specifically, I want to turn off the modem speaker before dialing.

Answer: To customize the modem initialization string:

1. Open a new communications document or one you have previously set up.
2. Select Connection from the Settings menu.
3. Choose your modem type or Hayes-compatible from the modem popup menu.
4. From the same popup menu, choose Custom. (If you do not see a Custom item, hold down the option key before clicking on the menu. You have an earlier version of the Apple Modem Tool and should obtain the ClarisWorks 1.0v3 update or ClarisWorks 2.0 upgrade.)
5. You will be presented with a dialog which displays the initialization string for the previous selection. The string must begin with AT, and can be followed by whatever AT commands you want, all strung together. Add M0 (that's M-zero) to turn off the modem speaker. Consult your modem manual for details on the Hayes commands it recognizes.

If you want all new communications documents to default to this setting, title it ClarisWorks CM Options and save as ClarisWorks Stationery into the Claris folder in your System folder.
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Transferring Files Between PCs and Macintosh Computers Via Modem or FTP

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

With products such as FileMaker Pro and ClarisWorks that can read in data files created on a different type of computer, it is sometimes desirable to transfer the file between a PC and a Macintosh via a modem. The data files can be sent to the other type of computer and opened directly in the program's counterpart on the other platform without any sort of file translation. However, if you need to transfer files this way, you should ensure that the following holds true:

Whether transferring the file by modem or a network transfer program such as FTP, make sure that the file is not compressed. An extension on the filename of .SIT, .CPT, or .DD from the Macintosh, or .ZIP or .ARC from the PC would indicate that the file is compressed.

Via Modem:

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1. The Macintosh communications software and the PC / Windows communications software must both be able to send and receive files via the same protocol, such as XMODEM, ZMODEM, or Kermit.

2. There are two possible types of "binary" file transfers on Macintosh computers. One is called MacBinary, and is used mainly when transferring files between two Macintosh computers. A more generic file transfer format is called Binary, and should be used when transferring files between Macintosh computers and non-Macintosh computers.

3. From the PC, the binary file type should be used.

4. As with all other modem communications, ensure that the two machines have are set to the same baud, parity, etc.

Via FTP:

TCP/IP users using FTP to transfer files should establish their connection in the normal fashion. Then, also follow steps 2 and 3 above, so that FTP can transfer the file in straight binary mode, rather than MacBinary mode.

For more information, consult the documentation that comes with your communications software package of choice.

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300/600 DPI Print Options Do Not Appear in ClarisWorks (All)

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This article has been archived and is no longer updated by Apple.

In some Windows applications, options are available in the Print dialog to select how many dots per inch (DPI) printers should use for output. For example, the Hewlett Packard LaserJet 4 can print to 300 DPI or 600 DPI, and some programs show a choice in the print dialog for 300/600 DPI.

These options do not appear in ClarisWorks for Windows because they are not part of the standard print dialogs that Windows provides to applications. To select the resolution that you would like for ClarisWorks for Windows to use, choose the Printers control panel, and select Setup for your printer.

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Italicized Text Not Spaced Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problem:
Italicized text displays on-screen with a large space after certain letters.

Explanation:
Some text characters in certain fonts request two character widths when displaying on-screen due to the limited resolution of video display. This will be true in any application that does not manually compensate through kerning or other letter spacing techniques.

Solution:
This issue does not effect printing, only on-screen display.

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Cirrus Logic Video Chip Set may cause GPF in GDI.EXE when Printing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Windows PCs with the Cirrus Logic 54xx video chip set running Windows 3.1 VGA may cause a General Protection Fault (GPF) in GDI.EXE when printing.

Contact your OEM (Original Equipment Manufacturer) for the latest drivers.
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Copying from the Paint Environment and Pasting Elsewhere (PT,DR,WP,DB)

Copying from the Paint environment and pasting into another environment will create a Paint frame set at 72 dpi resolution.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Copying from the Paint environment and pasting into another environment will create a Paint frame. This can be inconvenient for several reasons:

* The frame has a border and that border prints unless you change the pen color of the frame to white or translucent or apply a pen width of none.
* In order to resize the Paint object you must select the frame, use the Paint tools to select the objects inside and then use the Scale menu item to resize the object.
* ClarisWorks creates a default 72 dpi resolution paint frame, even if the graphic came from a Paint document set for a higher resolution.

To paste paint graphics as one draw object instead of a paint frame, first paste the painting to the scrapbook. Then copy the image from the scrapbook and paste it into the Draw module. This will remove the Paint frame and allow the object to be resized like a Draw object. However, it will be a 72 dpi graphic, even if the Paint document was set for a higher resolution.

Note: Even if a paint document is set to a resolution greater than 72 dpi, the image will be pasted into a draw document as a 72 dpi bitmap. To return the graphic to a greater resolution, double click in the paint frame you pasted and choose Resolution & Depth from the Format menu to change the settings. It is not possible to paste a ClarisWorks Paint graphic with a resolution greater than 72 dpi into another program. Instead, Save As PICT.

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Entering Invisible Characters with Command Key in the Find Dialog (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks can search for invisible formatting characters such as tabs, returns and column/page breaks. For a complete list, refer to page 2-30 of the User's Guide for ClarisWorks 2.0.

The manual states that you can use Command-Tab to enter a tab, Command-Return for a return and Command-Enter for a break. However, using these key commands causes the find to be performed immediately and does not let you enter additional settings.

Workaround:
Use the alternate methods listed in the manual and below in place of the Command-key sequences.

\\t = Tab
\\p = Return
\\c = Page or Column Break

NOTE: This problem does NOT occur in ClarisWorks 1.0
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GIF Files That Won‘t Translate

The GIF translator only supports the GIF 87A standard. ClarisWorks currently cannot translate other types of GIF files.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The GIF XTND translator included with ClarisWorks 2.0 only supports the GIF 87A standard. Trying to open an 89A type GIF file will result in a message that the translator could not read the file. Other GIF types may not appear in the Open dialog.

You can convert these GIF files to the ClarisWorks-compatible GIF format by using GIFConverter. This is a shareware program available on Macintosh computer BBS services (AOL, Compuserve, etc.) and from user groups. To do this:
1- Open the GIF file in GIFConverter
2- Choose Save As
3- Click the Options button
4- Click the checkbox for "87A compatibility"
5- Click OK
6- Name the file, then click Save

This file can now be opened or inserted into ClarisWorks.
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Macros Don‘t Record Clicking the Close Box (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 2.0 macros do not record clicking the close box of the Find/Change, Help and Clipboard windows.

If you record a macro which closes one of these windows by clicking the close box, and then goes on to perform other actions, playing the macro will result in the message: "Menu item not found; macro aborted."

To recreate the problem:

1. Choose Record Macro from the File menu
2. Type Command-F
3. Type in a word that can be found in your current document
4. Close the Find window by clicking the close box in the upper left
5. Make the found word Bold.
6. Choose Stop Recording from the File menu
7. Perform the Macro

As you watch the macro play, notice that it does not close the Find window. Since the Find dialog isn't closed, and the only menus that appear with it open are File, Edit and View, the Bold command cannot be performed and you get the message: "Menu item not found; macro aborted."

Workaround:
Use the keyboard equivalent for closing a window (Command-W).

NOTE: ClarisWorks 1.0 doesn't exhibit this issue.

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Wrong Help Screen Comes Up ?? Not Context-Sensitive (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Both ClarisWorks 1.0 and ClarisWorks 2.0 provide context-sensitive help by choosing Help from the Apple menu. However, installing ClarisWorks 2.0 might cause confusion if you are using both ClarisWorks 1.0 and ClarisWorks 2.0 on the same machine.

Since both applications use a file called "ClarisWorks Help," and since the upgrade installer replaces the 1.0 help file in the Claris folder with the 2.0 help file, choosing Help in ClarisWorks 1.0 after installing ClarisWorks 2.0 will often result in the wrong help screen coming up. Other reasons why the wrong version of the help system might be used include customized installations, installing on an external hard drive or launching a copy of ClarisWorks 2.0 that was installed on a network volume.

The workaround is to place the ClarisWorks 1.0 Help file in the ClarisWorks 1.0 folder and to place the ClarisWorks 2.0 Help file in the ClarisWorks 2.0 folder. The Claris Help System file will need to exist in both the 1.0 and 2.0 ClarisWorks folders. Make sure that there is no ClarisWorks Help file in the Claris folder in the System Folder. Since each application will use its own version of the help file (even though both are using the updated Claris Help System file), erroneous help screens will not come up.

Note that if you leave any ClarisWorks Help file in the Claris folder, each copy of ClarisWorks might use it, but will use it differently, depending upon the version of the Application and the Help file:

Help 1.0:
ClarisWorks 1.0 - No Problem
ClarisWorks 2.0 - No Context Sensitive help. Help System opens to Index, but works normally. Not all of the new features are described. (If the new help file is in the same folder as ClarisWorks 2.0, it will be accessed normally, regardless of what Help file is in the Claris folder.)

Help 2.0:
ClarisWorks 1.0 - Mistaken Context-Sensitivity brings up wrong help screens, some of which talk about features which are not present in ClarisWorks 1.0.
ClarisWorks 2.0 - No Problem

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Error (-47) While Installing Communications Tools On A PowerBook or on a Quadra 660AV/840 AV With an Apple GeoPort Adapter (CM)

Active Serial Tool can prevent the installation of communications tools. Turn off extensions for a successful installation.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you are installing ClarisWorks 2.0 or 2.1 onto a volume that currently has the Apple Serial Tool installed (usually PowerBooks with internal modems), the Apple installer that ClarisWorks uses will generate a -47 error message (File is Busy) when installing Disk 3. You will also get this message when installing ClarisWorks on a Quadra 660 AV or Quadra 840 AV that has the Apple GeoPort Adapter (which is essential for using the telephone, answering machine fax features) installed.

This is because we update the Serial Tool as part of our installation procedure. Because the Serial Tool is active on startup, we are not able to replace it, hence the File is busy alert. The Apple installer cannot handle conditional installs (if file is busy, then skip to next),so the installation is canceled when the error occurs.

Solution:
Restart and hold down the Shift key until you see the message "Extensions off." Then run the installer. Restarting without extensions will turn of the Serial Tool and allow the complete installation to take place. In the case of the GeoPort software, you could also specifically disable it before attempting installation.

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Find/Change does not Work with Greg‘s Buttons 3.0 (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This has been fixed by Greg's Buttons version 3.2 and above.

Greg's Buttons 3.0 has a feature that allows you to fill alerts and dialog boxes with color. Unfortunately this feature conflicts with the Find/Change dialog in ClarisWorks 1.0 and 2.0. Find/Change may appear to work at first but after closing the Find/Change window any attempt to access it again will fail.

Workaround:
Just turn off the Colorize Alerts and Dialog boxes feature or exclude ClarisWorks with the Exclude button.
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Spaces Lost Between Text Followed by Repeated Punctuation Characters (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you have text at the beginning of a line followed by a repeated punctuation character (such as 'Total Amount Due.....') the spaces in the text may get closed up (such as 'TotalAmountDue.....'). This happens in all versions of ClarisWorks.

The workaround in ClarisWorks 2.0 is to use a tab fill character, which is set up in the Tab dialog.

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ClarisWorks: Applying Patterns, Colors, Gradients to Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Method 1:
The easiest way to apply a pattern/color/gradient to text is to use the Paint Bucket:
1. Select the color or pattern you wish to apply to the text.
2. Click the paint bucket tool.
3. Position the paint bucket over the letter you want to change and click once.
4. Fill one letter at a time.

Method 2:
A painting or scanned image can be applied to text but the method is more complex (this method can also be used to apply color/pattern/gradient to many letters at once):
1. First paint your custom pattern or import your scanned image (make sure the image is large enough to cover all the text).
2. Select the text using the Lasso tool or the Selection Rectangle with the command key (if you press the Command key while dragging the Selection Rectangle, the selection will enclose just the image and none of the surrounding white area).
3. Move the selected text onto the pattern or scanned image.
4. Select the Transform menu and choose Pick Up.

Method 3:
The only problem with the former method is that it will fill letters that have loops (Ex: "O", "P", "Q", etc). The following method is more tedious since it requires you to fill one letter at a time but the results are cleaner:
1. First paint your custom pattern or import your scanned image (make sure the image is large enough to cover all the text).
2. Select the Magic Wand tool.
3. Click on a letter (first try a letter that has a loop in it).
4. Move the selection onto the pattern.
5. Select the Transform menu and choose Pick Up.
6. Move the text away from the pattern.

NOTE: You might also try drawing a line under the text so that it connects the bottoms of all the letters. This way, you won't have to select each letter individually. After you have applied the pattern/color/gradient you want, erase the line.

Method 4:
You can also fill multiple letters by using the Fill command under the Transform menu. To do this:
1. Use the Command-Select with the square selection tool (or the lasso) to select the text that is to be filled.
2. Select the color or gradient that you want to use.
3. Click Fill under the Transform menu.

This will fill in o's,e's,r's etc. in which case use the Magic Wand method previously mentioned.
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Generating Control Characters with Macintosh Plus (CM)

The Macintosh Plus does not have a Control Key, you can create a Macro to work around it.

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This article has been archived and is no longer updated by Apple.

Question:
How can I generate control-characters in the communications environment when I dial into a host computer? I have a Macintosh Plus and it doesn't have a control key. Other communications packages let me use the option key as the control key.

Answer:
The Communications Toolbox from Apple Computer, Inc., which ClarisWorks uses to provide Communications capabilities, doesn't support mapping the option key to the control key for Macintosh Plus owners. You can however, create a macro on a computer which has a control key and execute that macro with a key sequence on your Macintosh Plus.

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Opening 1.0 Communications Documents in 2.0 (CM)

After installing ClarisWorks 2.0, opening a ClarisWorks 1.0 communications document set to use the Apple Modem Tool deletes the phone number and results in an error message.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
After upgrading to ClarisWorks 2.0, when opening ClarisWorks 1.0 Communications documents which have the Apple Modem Tool as the selected Connection tool, you will get the message: "Could not configure connection tool." The document will open, but the phone number will be missing.

Explanation:
ClarisWorks 2.0 automatically updates the Apple Modem Tool to Version 1.1.1. The new tool does not properly open old ClarisWorks documents. Trying to open up the documents with ClarisWorks 1.0 will result in the same error message.

Solutions:

A. Reenter the phone number, check the other settings and save the converted document.

B. Replace the new Apple Modem Tool (in the Extensions Folder in the System Folder) with the older tool from the ClarisWorks Communications Folder on the ClarisWorks 1.0 Communications Disk. This is not recommended since the new tool contains enhancements.
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Grammar Checkers for ClarisWorks and MacWrite Pro

A list of grammar checkers which support the ClarisWorks and MacWrite Pro file formats and those which plan to in the future.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
1. Supports grammar checking through the clipboard:

Correct Grammar
SoftKey International, Inc.
800-227-5609 (Sales)
404-428-0008 (Technical Support)

2. Currently supports grammar checking for ClarisWorks 1.0 files:

Grammatik 5 For The Mac
WordPerfect Corporation
801-228-9917 (Customer Support)
801-225-5000 (General)

3. Not planning to support Grammar checking for ClarisWorks or MacWrite Pro files

Sensible Grammar For The Macintosh
Quality Computers
800-777-3642
313-774-7200

RightWriter Mac
Que Software
800-992-0244

NOTE: All of the above Grammar checkers do support MacWrite II format. See page 2-21 in the ClarisWorks 1.0 Handbook or page 2-14 in the ClarisWorks 2.0 User's Guide for assistance in saving to MacWrite II format. No grammar checker to date supports ClarisWorks 2.0 files.

Sensible Grammar can check a document on the Macintosh clipboard. You issue a Select All Command (Command-A) followed by a Copy Command (Command-C) to copy the document onto the clipboard. Then you use Sensible Grammar to check the text. Although this saves the format of your document, Sensible Grammar can only suggest changes in the text on the clipboard and cannot make the actual changes. You have to write down the changes and enter them manually after you return to ClarisWorks.
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ZModem Tool for ClarisWorks Communications Environment (CM)

ClarisWorks does not include a ZModem tool, but several tools are available from other software developers.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Mark/Space Softworks sells a ZModem tool for $29.95. It supports auto receive, picks up interrupted transfers in the middle, supports batch transfers, and includes full status information. A demo version available via online services enables downloading but not uploading.

Mark/Space Softworks
800/799-4737
510/649-7627
408/982-9781 (support)
408/982-9780 (fax)
mspace@netcom.com

Seaquest Software sells a ZModem tool as a standalone product.

Seaquest Software
4200 NW Columbia Ave.
Portland, OR 97229-2952
503-531-0252
Fax: 503-629-8442

Communications Toolbox-compatible ZModem tools are also available from other software manufacturers but only by purchasing their complete communications products.

Sitcom
Alladin Systems, Inc.
408-761-6200

PacerTerm
Pacer Software Inc.
619-454-0565

CrossTalk for Macintosh
DCA
404-442-3210
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Date Format Preference and Insert Date Have Incorrect Information or "D"‘s Where a Date Would Be Expected

On machines that have had Windows 3.0 installed, a setting for an International preference may not get set correctly. Quit ClarisWorks, open the International Control Panel, click OK, and close the control panel to reset the preference properly.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:
Date Format menu in Preferences has "D"s instead of dates. When you choose Insert Date, you get these "D"s within the Date string.

Explanation:
This only happens with Windows 3.0 or when you install Windows 3.1 over a 3.0 installation. Windows 3.0 sometimes has an incorrect international setting that does not get reset when you install Windows 3.1.

Solution:
1. Exit from ClarisWorks
2. Open the International Control Panel
3. Click the OK button
4. Relaunch ClarisWorks

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Saving Default Settings Using Stationery for ClarisWorks Windows

How to set default settings for your ClarisWorks documents, including special steps for the Communication module. The manual accidentally omitted how to set these automatic documents.

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This article has been archived and is no longer updated by Apple.
ClarisWorks for Windows 1.0v1 has the ability to store many default settings that are not in the Preferences dialog. Examples of such settings might be the default font to use, default size, page margins, or even a default logo to place in the header. To set these defaults, setup a new, blank document with all of the settings as desired, then choose Save As from the File menu. The file type should be changed from ClarisWorks to ClarisWorks Stationery, and the file should be saved in either the ClarisWorks directory, or the Claris directory (which is usually located as a sub-directory under the Windows directory). The name for the file should be one of the following:

WPOPTION.CWS -- Word Processing Default Options
DBOPTION.CWS -- Database Default Options
SSOPTION.CWS -- Spreadsheet Default Options
GROPTION.CWS -- Graphics Default Options

The communications module simply launches Microsoft Terminal, which ships with Windows. Since it is not a native ClarisWorks application, saving the settings is a little bit different. Do the following to save the default baud rate, communications port, etc. for the communications module:

1. Open a new communications "document".
2. From Terminal's Settings menu, select the appropriate communications, terminal preferences, binary transfer settings, etc.
3. Do not set the phone number unless you will always dial the same number all the time.
4. From the File menu, choose Save As.
5. You can name your settings file anything you wish, as long as it adheres to the standard DOS naming conventions of eight characters (no spaces) followed by the extension for the program, e.g., DEFAULT.TRM.
6. It is best to save the file in your Windows directory, where Terminal.exe is located. This will require you to change the directory from C:\\CLWORKS to C:\\WINDOWS.
7. Exit ClarisWorks.
8. Use a text editor such as Notepad or Write to edit the CLARIS.INI file, which is located in your Windows directory.
9. In the [ClarisWorks] section, edit the "Terminal=" line to indicate that you want Terminal to launch using the file you created in Step 5, above. In this example, Terminal will launch with the settings file, default.trm. For clarity, a caret is used to indicate that you should type a space.

Terminal=TERMINAL.EXE^C:\\WINDOWS\\DEFAULT.TRM

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Import-Export Translators for ClarisWorks for Windows

This is the list of import and export translators that ship with ClarisWorks for Windows 1.0v1

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This article has been archived and is no longer updated by Apple.
The following is a list of import and export translators supported by ClarisWorks for Windows 1.0v1:

WORD PROCESSING
DOS text *.txt
MS Word for DOS *.doc
Rich Text Format *.rtf
Text *.txt
Word for Windows *.doc
WordPerfect 5.1 *.doc

GRAPHICS
Computer Graphics MetaFile *.cgm
DIB-Bitmaps *.bmp
EPSF (TIFF preview only) *.eps, *.ai
Macintosh PICTÕs *.pct
Windows MetaFile *.wmf
Tagged Image File Format *.tif
ZSoft Paintbrush files *.pcx

DATABASE
ASCII text *.txt

DBF files *.dbf
DIF files *.dif
SYLK files *.slk

SPREADSHEET
ASCII text *.txt
DBF files *.dbf
DIF files *.dif
Excel 3.0 *.xls
Lotus 123-1A *.wks
Lotus 123-2 *.wk1
Lotus 123-3 *.wk3
SYLK files *.slk

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Importing Certain CGM Files May Cause ClarisWorks 1.0v1 to Crash

Some non-standard forms of the CGM file format will cause ClarisWorks 1.0v1 to crash because of of the way that the file is saved.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

ISSUE:
Importing CGM files imported from certain applications (i.e. Professional Draw) causes ClarisWorks 1.0v1 to crash.

Explanation:
A small number of applications export CGM files in a non-standard format. This file type is not supported by ClarisWorks for Windows.

Solution:
Export the file from the original application using another format.
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Kerning Incorrect When Using Generic / Text Only Printer Driver

The Generic / Text Only printer driver does not support graphics, which includes TrueType fonts, but ClarisWorks does not remove TrueType fonts from the Font Menu to reflect this limitation.

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This article has been archived and is no longer updated by Apple.
If the kerning or spaces between characters appears too tight in some places, and too loose in others, make sure the default printer driver is not set to Generic/Text Only. The Generic / Text Only printer driver does not support graphics, which includes TrueType fonts, but ClarisWorks for Windows 1.0 still lists TrueType fonts in the Font menu.

To restore proper kerning, you should first select a different printer driver to be the default printer in the Windows Control Panel. Select all the text in your ClarisWorks document and choose the font that you want to use from the Other... item in the Font menu, even if the font appears in the Font menu list.

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Creating Row Titles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In order to create titles for the rows in the Spreadsheet module in ClarisWorks or in Resolve, the title information can be inputted into the first row. After typing into the first row, select the whole row by mouse-clicking on row "A" and it will highlite the whole row. Pull down the menu in ClarisWorks under Options and select Lock Title Position. In Resolve, pull down the menu under View and select Lock Title Position. This will make it present on the top of every page that is being printed out.

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Locking a File Does Not Work

Locking a ClarisWorks 2.0 document from the Get Info dialog box does not work.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This problem has been fixed in ClarisWorks 2.1.

Selecting Lock File from the Get Info dialog box does not prevent you from saving changes to a ClarisWorks 2.0 document. You will get warning messages that the file is locked when you open the file, but the file is not read-only as you might expect.

The problem occurs in the French version of ClarisWorks 2.0 as well.

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Using Sony Monitors With Display Card 8/24GC

I want to use the Sony MultiScan CPD-1304 monitor with the new Display Card 8/24GC. Will this work?

This article has been archived and is no longer updated by Apple.
If the CPD-1304 monitor works with the Macintosh High-Resolution Video Card (the current 8-bit display card), there won't be any problem with the Display Card 8/24GC signals driving the Sony CPD-1304. (We have not been able to verify that the CPD-1304 monitor works with the Macintosh High-Resolution Video Card, but we do know that Sony's CPD-1302 monitor works with that card.) However, you will need to use a different cable to connect the two devices because the cards have different connectors.

An issue with regard to the cable concerns the sense pins, which tell the card what type of monitor is attached. For the Sony CPD-1302 monitor, the sense pins should be configured as below, where 0 = Ground and 1 = Not Ground. To ground a sense pin, tie it to the C&VSYNC.GND signal.

Sense pins			Hor x Vert Dot		Vert
10	7	4	Display	Pixels	Clock	Refresh
1	1	0	12" Monochrome Monitor	640 x 480	30.24	66.7
			13" Color Monitor			

Here are the pinouts for the Macintosh Display Card 8/24GC:

Pin	Signal	Description
1	RED.GND	Red Video Ground
2	RED.VID	Red Video
3	CYSNC~	Composite Sync
4	MON.ID1	Monitor ID, Bit 1 (also known as SENSE0)
5	GRN.VID	Green Video
6	GRN.GND	Green Video Ground
7	MON.ID2	Monitor ID, Bit 2 (also known as SENSE1)
8	nc	(no connection)
9	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3 (also known as SENSE2)
11	C&VSYNC.GND	CSYNC & VSYNC Ground
12	VSYNC~	Vertical Sync
13	BLU.GND	Blue Video Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC~	Horizontal Sync
Shell	CHASSIS.GND	Chassis Ground

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Double-Clicking on Application Icon Not Showing New Document Dialog or Opening New Document Window

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This article has been archived and is no longer updated by Apple.

If you double-click on the ClarisWorks or ClarisImpact program icon and the New Document dialog does not appear, this means that it is already running in memory on your computer. (Even though you may not have any document windows open, the program can still be running in RAM). This is normal, and virtually all programs on the Macintosh perform this way.

To open a new document, do the following:
1. Double-click the application icon
2. Select the New command from the File menu

Additional Background Information:
You can tell that a program is running in several ways:
1. The icon is grayed or darkened
2. System 7: The application menu in the upper right corner lists the program name
3. System 6, MultiFinder On: The application name is listed at the bottom of the Apple menu.

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About Version 2.0 Macintosh, Press Release

Early users rave about superior integration, new features;"This is the only product I need"

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SANTA CLARA, Calif. -- March 24, 1993 -- Claris Corporation today announced that ClarisWorks 2.0, the complete productivity solution for business, education and home, is shipping and now available at authorized Claris resellers in the U.S. ClarisWorks 2.0 extends the lead of the #1-selling Mac "Works" program with clearly superior integration and ease of use, and more functionality than any other Mac integrated product.

ClarisWorks adds three completely new capabilities to the program and more than 300 productivity enhancements to the existing environments. In addition, push-button Shortcuts make ClarisWorks 2.0 even easier to use than the original award-winning version. And users of PowerBooks and lower-end Macintosh computers will find that compactness and speed have not been compromised: at under 600K, the application is still the smallest in the integrated category and as fast as ever.

Beta Testers Praise ClarisWorks 2.0

Early users of ClarisWorks 2.0 praised the product's unique integration and extensive new capabilities. "ClarisWorks is a great value for its price," said Michael Cohen, a producer at the Voyager Company in Santa Monica, Calif. "It's incredible that there's so much power in a program that takes up less than a megabyte!"

John Hindle, member of the Carleton Board of Education in Nepean, Ontario, said, "The ease of use, transparency of integration and depth of each of the new components in ClarisWorks 2.0 combine to make this software the premier integrated package on the market. There is no equal."

Bill Bowden uses ClarisWorks 2.0 on a range of Macintosh computers including powerful Mac IIfx systems and low-end Mac SE and PowerBook computers at the British Columbia Automobile Association in Burnaby, BC. "For tracking travel customers and organizing mailing lists, ClarisWorks 2.0 is ideal. Its new features give you more options, yet the program is simple to use -- any level of computer user can operate it," said Bowden.

"It was love at first sight," for Frank Short, computer services coordinator for the Ossinging Union School District in New York. "ClarisWorks 2.0 is ideal for the 250 middle school students in our district who use computers in the classroom. It is a much richer product than Microsoft Works. And because all the components are on one page, it is easier to use and easier to train others on. ClarisWorks 2.0 is the only product I need," said Short.

For editor Lou Flemal, new word processing features and painting capabilities in ClarisWorks 2.0 make it simple to create his Scuba Diving Club newsletter. "Text wrap and improved tab and column controls turn the word processor into a user-friendly page-layout program. And thanks to the new painting capabilities, I don't have to leave ClarisWorks to edit the graphics that will be inserted into my newsletter," said Flemal.

Dave Kile, president of Alpha Technologies Group in Marriottsville, MD, produces and distributes a software movie collection called "ClipTime" to the educational community. "ClarisWorks 2.0 really packs a powerful punch for education customers who want to integrate slide show presentation capabilities into the classroom," said Kile. "ClarisWorks 2.0 allows me to demonstrate my product easily and take advantage of its sophisticated functions for a very reasonable price -- with no technical hassles."

Key Enhancements

ClarisWorks 2.0 includes new outlining, presentation slide show and painting capabilities to address the day-to-day demands of most generalist computer users who produce a range of documents and need to manage information. It also boasts enhancements to all of the original environments: word processing, spreadsheet, charting, database, graphics and communications.

Automatic text wrap around graphics enables users to create more professional-looking newsletters, brochures and flyers. Custom text styles, expanded spell check selection and show/hide invisibles speed word processing tasks.

Users now have 12 chart type options including combination and pictogram to translate data into compelling charts. Additional new spreadsheet capabilities include text wrap in a cell for producing professional tables and a lock title option.

New automatic database field entry and validation options eliminate repetitive keystrokes and ensure database accuracy and consistency. Support for more than 50 predefined Avery label formats makes it simple to create mailing labels.

Bezier curves and 32 gradient fills add to the array of powerful graphics tools. Expanded communications capabilities such as Kermit file transfer support let users modem documents anywhere. ClarisWorks 2.0 also supports System 7 features including Publish and Subscribe and Balloon Help.

ClarisWorks 2.0 also features a new Shortcuts option that offers users unique push-button access to frequently-used commands. Users can

perform 150 tasks from spell checking to formatting spreadsheet cells by simply clicking an icon from the floating, dockable Shortcuts palette.

Pricing Information
The price of ClarisWorks 2.0 remains unchanged from the original version. In the U.S., the suggested retail price is $299. Upgrades from ClarisWorks 1.0 are $99. A $129 competitive trade-up price is also being offered through Sept. 30, 1993.

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About Version 2.0 Macintosh, Product Fact Sheet

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Product Description:
ClarisWorks 2.0 software is the complete productivity solution for business, education and home.

ClarisWorks 2.0 dramatically enhances the already #1-selling Macintosh Works product. It adds brand new capabilities such as outlining and presentations, and enhances each existing environment while retaining the superior integration, small size and speedy performance of ClarisWorks 1.0. And new Shortcuts make it even easier to use than the original award-winning version. The result is an even better value than ClarisWorks 1.0 that will appeal to a broader customer base of generalist users.

Target Customers:
* Small and Medium Business users will find that ClarisWorks 2.0 is the only general productivity tool they'll need for creating standout letters, memos, reports, presentations, proposals, sales flyers, address books, contact lists and newsletters.
* K-12 Educators will find ClarisWorks 2.0 to be an even better teaching tool with new important capabilities such as presentations, outlining, painting and Kermit support, yet retaining the simplicity, superior integration and size of the current favorite, ClarisWorks 1.0.

* Large Corporations will minimize their hardware and software acquisition and training costs. The superior integration, consistent user interface and new Shortcuts feature in ClarisWorks 2.0 let new users and field staff using PowerBooks get the most out of their computer. And outstanding Claris customer support, combined with the product's on-line help and in-box training materials, ensure users will be productive from the start.
* Mobile professionals will benefit from the program's small size -- which is still under 600K -- and speedy performance. And with its extensive file exchange capabilities, users can read and save files to most other popular software programs, even in multi-platform environments.
* Higher Education students, faculty and administrators will use ClarisWorks 2.0 as a one-stop productivity tool. Its new outlining, full-strength word processor and extensive charting capabilities perfectly address the expanding needs of college users.
¥ Home users will appreciate the excellent value ClarisWorks 2.0 offers them. At the same price as ClarisWorks 1.0, users get three completely new capabilities, more than 300 enhancements, and Shortcuts to improve their productivity.

Key Enhancements:
New Capabilities
* Complete outlining feature allows users to organize their thoughts and documents using seven popular outline styles including Harvard, legal, numeric and bulleted formats.
* Presentation Slide Show with QuickTime support. Users can create dynamic slide show presentations complete with background and border colors, QuickTime movies and fade between slides. Presentations can be either manual or auto-advance.
* Shortcuts offer push-button access to the 150 most frequently used commands such as spell checking, cell formatting or auto-summing. Just as with the menus, the icon palette automatically configures itself to the environment being used (e.g. text or spreadsheet).
* Full-color paint capabilities and 32 gradient fills allow users to add even more striking graphic effects to documents.
* With all these new capabilities, ClarisWorks 2.0 is still under 600K.

New Word Processing Features
* Automatic text wrap around graphics creates more professional-looking brochures, flyers, newsletters and more.

* Custom text styles allow users to create, name and save frequently-used text styles for instant access.
* Individually variable column widths. Users simply click on the column controls button to automatically add columns to their layouts; then visually adjust column size by dragging the column to the preferred width.
* Show and hide invisible characters allow users to view all format commands in their documents for accuracy.
* Expanded spell check selection. Users can now spell check either their entire document or only specific blocks of text.
* Original date and time clock permanently reflect the original date and time a document was created.

Expanded Charting and Spreadsheet Capabilities
* Hi-Low-Close charts are ideal for tracking pricing trends, such as stocks, with defined beginning and end points.
* Combination charts allow users to combine chart options -- like using a line chart with a bar chart -- to illustrate contrasting data more effectively.
* Pictogram charts translate plain numeric data into compelling charts that graphically depict data.

* Unparalleled chart format customization. Users can customize any or all of their charts -- change fonts, styles, adjust orientation, title and legend placement and size, select symbols, colors, scales, patterns, 3D and more.
* Spreadsheet cell wrap. When cell wrap is applied, text automatically wraps within the cell boundaries.
* Lock Title option locks column headings in place so they remain in constant view for quick reference as users scroll through documents. This also reduces the need for screen splitting.

New Database Features
* Automatic field entry from pop up menu. Users can save time and avoid repetitive data entry by creating a pop up list of data. This also ensures data consistency and accuracy.

* Automatic serial numbering.
* Automatic date, time, creator, and modifier stamps.
* Automatic field validation (uniqueness, within range, emptiness).
* More than 50 predefined Avery label formats make it a snap to generate labels.

Graphics Enhancements
* Color paint environment includes 18 tools and six transformation effects.

* Gradient palette adds pizzazz to presentations with 16 black and white and 16 color gradients.
* Bezigon and Polygon drawing tools make it easier than ever before to create and style curves and shapes.
* Repeat Object Placement simplifies the placement of duplicate graphics by automatically placing duplicates of graphics in equidistant sequence from the original.

Communications
* Kermit file transfer protocol enables educational institutions and others that use this protocol to send files easily.
* Phone Book. Users can enter all frequently used phone numbers into the Phone Book. Then, by simply selecting the name of a person they wish to contact, the phone number is automatically dialed.

System 7 Support
* Publish and Subscribe
* Apple events
* Balloon Help.

In-Package Support Materials:
* Users Guide
* Getting Started Guide with tutorial
* Quick Reference Guide
* Context-sensitive Help system
* Free America Online software and registration to access online support.

Support Services for Registered Owners:

Customer Relations
* Maintains registered customer database.
* Handles non-technical questions, i.e., registration status, etc.
* (408) 727-8227
* Phone lines staffed from 8 a.m. - 5 p.m. PST, Monday through Thursday and 8 a.m. - 2 p.m. PST, Friday.
* (800) 544-8554 for product upgrade order forms and instructions.

Technical Support
* Handles technical questions, problems with operating the software.
* Consists of a dedicated team of Technical Support Specialists.
* (408) 727-9054.
* Phone lines staffed from 6 a.m. - 6 p.m. PST, Monday through Thursday and from 6 a.m. - 2 p.m. PST, Friday.
* 24-hour Voice AnswerLine, (800) 735-7393.
* 24-hour Fax AnswerLine, (800) 800-8954.
* Support is also available through Claris forums on America Online and CompuServe.

System Requirements and Compatibility:
* Macintosh Classic, LC, Plus, SE, II family or portable computers.
* Requires 2 floppy disk drives and 1 MB RAM (use of Communications module requires hard disk and 2 MB. System 7 users require 2 MB.).
* Hard disk recommended.

* System 6.0.5 or higher.

Price and Availability:
* $299 suggested retail in the U.S.
* $99 upgrade price in the U.S.
* $129 U.S. competitive trade-up through September 30, 1993.
* ClarisWorks 2.0 will be available in the U.S. in March, 1993.

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Cell References Not Updating in Spreadsheet Formulas

A problem exists in ClarisWorks 1.0 v1 for Windows where cell references in formulas with very long text strings do not always get updated correctly. Shortening the formula or placing the string in another cell and referencing it in the formula should fix this problem.

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Cell references in spreadsheet formulas with very long text strings do not always get updated correctly.

There are two simple workarounds to this problem:

1. Shorten the text string in the formula.

2. Put the long text string in another cell and use a reference to it in your formula

Example: If your formula currently reads as:
="Total this Quarter in US Sales - $"&SUM(A1..A10)
you could place "Total this Quarter in US Sales - $" into a cell (e.g. C20) and reference it in your formula:
=C20&SUM(A1..A10)
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Creating a New Layout with More Fields Than Can Fit on a Single Page

When creating a new layout, fields won't be added if they extend beyond the bottom of the page. They can be added manually using the Insert Field command from the Layout menu.

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In ClarisWorks for Windows 1.0v1, creating a new layout in a database containing more fields than can fit vertically down a page creates labels for all the fields, but only creates the number of fields that can fit on the page.

To add those fields that were not automatically added to the layout, Choose Insert Field from the Layout menu, Choose a field and click the OK button. You can then manually place the field anywhere on the layout.
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Imported WordPerfect File has no Left or Right Margins

An imported WordPerfect file has no left or right margins.

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WordPerfect does not keep track of margins for an entire document, only for each paragraph. In ClarisWorks, individual paragraph margins cannot be outside of the margins set for the whole document. For example, consider a WordPerfect document in which all paragraphs but one have a left margin of one inch. The fifth paragraph out of ten has a left margin of zero. When this document is brought into ClarisWorks, the "global" document left margin must be zero, even though there is only one paragraph with this margin. Since there is always a possibility of encountering a paragraph with a zero margin within a Word Perfect document, and since in ClarisWorks, individual paragraphs must have margins equal to or greater than the "global" document margin, the WordPerfect filter sets the value of the "global" document left and right margins to zero.

Currently there is no workaround to the issue.

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Inserted Footnotes Do Not Automatically Renumber Existing Footnotes

If a document already has footnotes in it, and a document with footnotes is inserted into the original document, the footnotes are not all automatically renumbered.

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In ClarisWorks for Windows 1.0v1, inserting a document with footnotes into a document that already has footnotes does not automatically renumber the footnotes.

You must manually renumber the inserted footnotes.

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Loading an Invalid Macro File Displays Incorrect Error Message

Attempting to load an invalid file as a Macro file will give the same message as trying to load an invalid document.

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In ClarisWorks 1.0v1, if you attempt to load an invalid Macro file, you will get the following error message:
"Unknown file type. This file cannot be opened as a ClarisWorks document."

This same message is presented whenever an invalid file is loaded, independent of whether that file is a document or macro file.
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Ungrouping a Two-Sided WMF Polygon Gives it a Third Side

Two-sided polygons saved to the Windows MetaFile (WMF) format have a third side added to them when they are ungrouped in ClarisWorks. Saving the object as a PICT in its creator application and reinserting the PICT (.PCT) instead corrects this issue.

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In ClarisWorks for Windows 1.0v1, if you ungroup a two-sided polygon that was inserted from a Windows MetaFile (.WMF) document, it will be given a third side, closing the polygon.

Save the object as a PICT (*.PCT) file and reinsert it before ungrouping it.
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WK1 Files Lose All Text Color Formatting When Translated into the ClarisWorks Spreadsheet Format

When importing or exporting information from or to the WK1 or WK3 format, text color, font, and style information is lost. This is because our translation system only looks for the actual spreadsheet file, and not for the FMT (formatting) file that accompanies it.

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When importing WK1 files into ClarisWorks for Windows 1.0v1, all of the text color formatting is lost.

No color, font or style information is being imported or exported in any of the Lotus filters currently. Only WK1 and WK3 formats support formatting information, and they do it by using a second file to keep this information (.FMT and .FM3). Our filter system is not currently setup to deal with input and output to two different files at once.

At this time, there is no workaround for this, other than to re-stylize the text once it is translated into the ClarisWorks format.

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Arial Not Available in the Font Menu

ClarisWorks for Windows places the first 22 fonts in the font menu. It is possible that Arial will not show up in this list, even though it is still going to be the default font. Manually adding it to the menu will fix the problem.

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If you install ClarisWorks for Windows 1.0v1 with ATM turned on, it is possible that Arial will not be available in the font menu even though it is still the default font.

When you install ClarisWorks, it creates the font by taking the first 22 fonts in the system. It is possible that Arial will not be among them.

1. Choose Other... from the Font menu and manually add Arial by clicking the Add to Menu checkbox.
2. Turn ATM off before installing ClarisWorks for Windows.

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Cannot Hide the Tool Palette Within a Macro

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If you hide (or show) the tool palette while recording a macro, this action will not be recorded. The rest of your actions will be recorded and will work properly.

There are currently no workarounds for this issue.
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Cannot Print a Document in Landscape Mode with Generic Postscript Driver

The Generic Postscript print driver does not update itself properly when you change from Portrait to Landscape mode. Using a specific Postscript printer driver for your printer should fix the problem.

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This article has been archived and is no longer updated by Apple.
You cannot print a ClarisWorks for Windows 1.0v1 document in landscape mode to the generic Postscript print driver.

The generic Postscript driver does not receive a modified print rectangle when you choose landscape in the common print dialog box.

Use another Postscript driver, preferably the one designed for your specific printer.
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Printing Large Bitmaps to Postscript Crashes in Windows 3.0

If ClarisWorks for Windows crashes while trying to print a large bitmap to a Postscript printer, reducing the size of the bitmap, or rotating it in the original creator of the bitmap and then importing into ClarisWorks, should fix the issue.

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ClarisWorks for Windows 1.0v1 will crash if you try to print a large rotated bitmap image to a Postscript printer under Windows 3.0 only.

Reduce the size of the bitmap image or do not rotate it in ClarisWorks (i.e. rotate the graphic in the original graphics package first before inserting it into ClarisWorks).

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PICT Graphic Disappears when Scaling or Zooming

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A PICT image which entirely disappears when you scale, stretch it or use the zoom feature is probably corrupt. This has only been reported with a PICT graphic which was created in another application and brought into ClarisWorks or ClarisImpact.

To remove the corruption, copy the image, paste it to the Scrapbook (a Desk Accessory in the Apple menu), then copy from the Scrapbook and paste back into ClarisWorks. Alternatively, you can copy the image to a Draw document, Save As PICT and Insert/Place the PICT file.

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Modifying Application Resources

Using resource editing utilities like ResEdit has several implications for Claris applications.

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Using resource editing utilities such as ResEdit, some Macintosh enthusiasts modify their system and applications to suit their personal preferences. An example is modifying command key equivalents for menu items.

Claris Technical Support does not support the use of ResEdit or any other resource editing utility. Resource editing has several implications for Claris applications:

Compressed Resources Un-modifiable:
The resources of some Claris applications are compressed. The benefit is that application size is decreased, taking less space on your hard drive. However, a side effect is that compressed resources cannot be edited.

Updaters:
Claris releases updaters from time to time which take an existing copy of a Claris application and create a new version which is up to date. Updaters will only work on unmodified Claris applications. If you run an updater on a modified Claris application, you will get an error and the update will be aborted. The solution is to reinstall the application from your original diskettes and run the updater on that copy.

System Crashes & Anomalies:
ResEdit is a powerful program in that it can change the actual programming code an application uses to run. Used improperly, it is possible to undermine stability or even render an application useless.

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Basic Algebraic Expressions

Description of the parts of an Algebraic Expression

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In several of Claris products you can produce algebraic calculations. While it is not usually necessary for us to know how to come up with the correct calculations, it is helpful to know how they can be set up.

VARIABLES: In products without scripting languages, there are no ways to describe a variable as such. In other words, you can't 'solve for X' in an equation like '3*X^2 - 6*X + 2.' What you can do is to describe a holder, like a field in FileMaker or a cell in a spreadsheet to take the place of the X. The above equation could be used as written in FileMaker if you have a number field called 'X" or in a spreadsheet written as '3*A1^2 - 6*A1 + 2,' where your variable is the number entered in field X in FileMaker or in cell A1 in the spreadsheet.

EXPONENTS: Shorthand for an exponent on a Macintosh is the carat (^) character. The example '3*X^2 - 6*X + 2' would read 'Three X squared minus six X plus 2.'

OPERATORS: Note that while in algebraic writing you can have '3X,' while in our programs this expression will return an error message. It is not understood that when you have two components of an expression without an operator between them, they will be multiplied. Therefore you would have to write '3 * X' to get the same result.

The algebraic expression '3X^2 - 6X + 2' would have to be written '3 * X^2 - 6 * X + 2.'

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Converting ClarisWorks Files across Platforms

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ClarisWorks 3.0 for Windows and ClarisWorks 3.0 for the Macintosh are essentially the same version and share the same binary file format. Because of this, files can be shared between the two platforms, retaining both data and formatting (with some exceptions). Version 1.0v1 for Windows and 1.0v4 for Macintosh can also share the same files. In all other cases, it is recommended that you upgrade to ensure that both users sharing files have the same version.

There needs to be some method in place to exchange the actual data. Apple File Exchange, PC Exchange, Access PC, and DOS Mounter all enable you to copy a file from a DOS-formatted floppy disk to a Macintosh hard disk. The other method is a network connection. Assuming that one computer can read the others data, here are the steps needed to share files between the programs.

ClarisWorks for Macintosh --> ClarisWorks for Windows
Save (or Save As) a document with a filename no more than eight characters in length, this is the character limit set by DOS. Include the suffix ".CWK" to the filename.

For example: Myfile becomes Myfile.CWK.

ClarisWorks for Windows --> ClarisWorks for Macintosh
In most cases, you will not be able to double click files that come from a PC to open them with ClarisWorks on your Macintosh. Instead, choose Open from the File menu and open the file that way.

Sharing files between different versions
It is recommended that you upgrade to ensure that both users sharing files have the same version. When this is not possible, here are a few tips:

Version 2.0 and 3.0 can directly read any file created by either Windows or Macintosh versions of 1.0. However, version 1.0 cannot open 2.0 or 3.0 files. To exchange files with someone who has 1.0 , you must do a Save As in another file format. Try RTF for Word Processing documents, SYLK for Spreadsheets and DIF or TEXT for Databases. Use EPSF or PICT for Graphics documents.

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Subscriber to Microsoft Word Publisher Missing Graphics

A Publisher from Microsoft Word 5.1 contains a graphic. When you subscribe to the Edition file in MacDraw Pro 1.5, the subscriber does not include the graphic. The height of the subscriber frame will be very short; tall enough to hold a single line of text, or tall enough to hold any text that is published with the graphic. Also, the Preview in the Edition file will not show the graphic.

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It is not clear whether this is an issue with MacDraw Pro or Microsoft Word.

Most users of Pub/Sub will want to Publish and Subscribe in the opposite direction: publish from MacDraw Pro, subscribe in Word. There are no known issues doing this.
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Rocky Mountain BASIC: No Exact Equivalent for Macintosh

I'm using Rocky Mountain BASIC on an HP. Is there a similar package for the Macintosh?

This article has been archived and is no longer updated by Apple.
The only implementation of BASIC for the Macintosh that is remotely similar to "Rocky Mountain BASIC" for the HP9000 series is Microsoft QuickBASIC. There are numerous differences, however, especially considering the machine-specific details of each BASIC. Rocky Mountain BASIC uses many commands and parameters that mean nothing to computers other than HP9000 systems. Likewise, Microsoft QuickBASIC uses Macintosh-specific commands that do not exist on other computers, as well as command syntax in traditional Microsoft BASIC style -- a style much different than that of Hewlett Packard's BASIC.

They do share the important ability to use subprograms and functions, but the method of implementing these is quite different between the two languages. Microsoft QuickBASIC would give your customer a powerful BASIC, but porting anything other than the simplest programs from Rocky Mountain BASIC will not be a trivial task -- especially with programs that are I/O-intensive because these tend to be the areas where the languages differ the most.

There are some definite benefits to using Microsoft QuickBASIC over HP's BASIC, such as advanced debugging features (breakpoints and animated tracing for source-level debugging) as well as the simpler mouse interface. Users can quickly grow accustomed to the Microsoft QuickBASIC product, while Rocky Mountain BASIC has a cruder interface and takes more time to master. Of course, you are already using Rocky Mountain BASIC, so the change in programming environment will be dramatic; to what degree depends on how familiar you are with Macintosh user interface conventions.

If you need additional information on Microsoft QuickBASIC, we suggest that you contact Microsoft directly. They should be able to provide more up-to-date information and could, perhaps, assist in deciding if their product will fit your requirements.

For more information, search under: "Microsoft"

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ClarisWorks Crashes When Importing 24 bit TIFF Images

Inserting or Opening 24bit TIFF images will crash ClarisWorks 1.0v1 for Windows. The error message is "ClarisWorks caused a General Protection Fault in module TIFF.XTD."

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This article has been archived and is no longer updated by Apple.
ClarisWorks 1.0v1 for Windows cannot import 24bit TIFF images. A GPF is generated and ClarisWorks crashes. The error message is "ClarisWorks has caused a General Protection Fault in module TIFF.XTD." There is no known workaround at this time.
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White Bands Appearing on Page when Printing to HP 500, 550 printers

ClarisWorks 1.0v1 for Windows will produce white bands on a page when printing with CG Times printer font with the version 3.0 Deskjet drivers.

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This article has been archived and is no longer updated by Apple.
ClarisWorks 1.0v1 for Windows prints blank white bands approximately every 3 inches on a page when printing the CG Times printer font to HP 500 and 550 series Deskjet printers with the HP printer driver version 3.0. The workaround is to use another font.
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PICT Files Saved from Paint Environment Print with White Lines

Horizontal white lines appearing on printout may be caused by the PICT file & turning off Faster Bitmap printing.

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PICT files saved from the Paint environment and inserted into another application or another ClarisWorks environment may print with horizontal white lines through the graphic.

To recreate this:
1. Save the ClarisWorks Paint file as a PICT
2. Insert/Import that PICT into another software program (or another ClarisWorks environment)
3. Open Page Setup and uncheck Faster bitmap printing
4. Print

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EPSF Preview Does Not Appear on a Windows Machine

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The EPSF filter for Claris CAD and MacDraw Pro saves the preview in the resource fork of the resultant EPSF file. When you transfer Macintosh files to a DOS disk the resource fork is stripped out. Therefore, you will get no preview from those files when you open them in Windows.

The only workaround is to open the EPSF file in a program like Adobe Illustrator, which has an option to save an IBM preview with EPSF files. Once open, select that option and save as EPSF. You can then transfer the file to Windows and the preview will appear.
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FileMaker Pro 2.0 for Windows Cannot print to ImageWriter II, II LQ

Although it is possible to connect to an Apple ImageWriter II or II LQ through Farallon PhoneNET PC, it is not possible to print from FileMaker or any other graphics-based application in Windows to the ImageWriter II or IILQ.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Farallon Computing's PhoneNET PC network software allows you to connect to printers with either Postscript or Epson emulation. However, the Epson emulation mode only allows text printing. FileMaker Pro 2.x for Windows and ClarisWorks for Windows require the ability to print graphics, and so will not print to an ImageWriter II.
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Can‘t Change Format of Date and Time Data in Browse Mode (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The format of data in Date or Time fields can only be changed in Layout mode using the Field Format command in the Options menu, or by double clicking the field. The field format command is not available while in Browse mode.

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Freehand Objects Don‘t Print as Smoothly in 2.0 (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Freehand objects from the Draw environment in ClarisWorks 2.0v1 do not print as smoothly as they do in ClarisWorks 1.0, even if the object has been automatically or manually smoothed.

Also, Freehand objects from the Draw environment in ClarisWorks 1.0 do not convert smoothly into ClarisWorks 2.0., even if the object has been automatically or manually smoothed.

Workaround: Objects drawn in ClarisWorks 1.0 can be copied and pasted successfully into ClarisWorks 2.0 documents. They are pasted as a grouped object (whether they were grouped before or not) and will print just as they did in ClarisWorks 1.0. However, if ungrouped, the objects will suffer from the same smoothing discrepancies as above.
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Numeric vs. Verbose: Modem Confirmation Codes

Inability to dial using the Apple Modem Tool may be due to the modem responding with numeric confirmation codes.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Inability to dial using the Apple Modem Tool may be due to the modem responding with numeric confirmation codes. The Apple Modem Tool does not respond to numeric confirmation codes that are returned by the modem during initialization sequences. It only recognizes Verbose (English) commands.

Most Hayes compatible Modems can be placed in the Verbose mode by including the AT command "V1" in the initialization sequence. Many Modems have switch settings that can also make the verbose mode the default mode of the Modem.

If the Modem you are using is not capable of being initialized to respond in the verbose mode, then the Apple Modem Tool will not work and the Serial Tool must be used instead. This will require the use of user entered AT commands to initialize the Modem and dial out.
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Save Menu Item Grayed Out or Command-S Not Working (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Save command will be gray (unselectable) if:

- The document is empty (blank), or
- There have been no changes to the document since it was last saved

To save the document when the Save command is grayed out, use the Save As command.

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LaserWriter IINTX With Hard Drive: How Fonts Are Accessed

Can you explain how the AppleShare Print Server handles an attached hard drive on a LaserWriter IINTX? That is, if the hard drive has many fonts installed, does the print server know to get "downloadable" fonts from the hard drive, or does it go back to the Macintosh?

This article has been archived and is no longer updated by Apple.
The fonts installed on the LaserWriter IINTX hard drive appear as though they were in the LaserWriter IINTX ROM. Adobe and Apple designed the hard drive option so that the LaserWriter IINTX operates transparently, and the user can access additional fonts without having to download them with utilities.

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TIP: Hidden Charting Features

Several useful charting features in ClarisWorks 2.0 that are not documented.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
There are several useful charting features in ClarisWorks 2.0 that are not documented:

* Hold down the Command key while clicking a text object in a chart to get a shadowed text effect that can be ungrouped and manipulated.
* Press Command and shift keys and click again on the text object and you will notice that the angle of the text shadow will change in a clockwise direction.
* Hold down the Option key and click on the legend to widen the X-axis of the chart. Press Option and Shift while clicking the legend to change the Y-axis.
* Option-shift click the title of a chart to see what your chart size would look like if you were to remove the title from the Chart.

An article regarding these hidden spreadsheet features appears in the ClarisWorks Journal (March 1994, Volume III, No. 3, page 11). The ClarisWorks Users Group published the ClarisWorks Journal and can be reached at:

313-454-1969 (phone)
313-454-1965 (fax)
Published Date: Feb 18, 2012

Apple Ergonomic/Adjustable Keyboard Incompatibilities

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When assigning ClarisWorks macros to function keys on the Apple Ergonomic/Adjustable keyboard, the option for function key assignment is grayed out, even when the separate number/function pad is connected. However, if you go ahead and specify a function key anyway, it will work. A future version of ClarisWorks will address the improperly disabled option.

Cursor keys on the number pad do not successfully generate VT100 cursor keys sequences with the VT102 Terminal Tool 1.0.2 and earlier. This tool needs to be revised by Apple in order to support cursor keys on the newer keyboards such as the Adjustable and the PowerBook. Apple has not announced any revision plans as of 12/1/93.

Otherwise, all keys on the number pad of the Adjustable Keyboard seem to work as expected with ClarisWorks.
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Backing Up Original Diskettes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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1. Initialize enough blank double-sided disks for the job.
2. Insert each new disk and when you are asked to initialize it, click on Two Sided.
3. Eject the initialized disk by dragging its icon to the trash.
4. Double-click the icon of your hard drive to to open its window.

One disk at a time, follow this procedure:

1. Insert one of the original disks.
2. Drag the icon of the disk on top of the icon of the hard drive (this will copy it).
3. Eject the original disk by dragging its icon to the trash.
4. In the window for your hard drive, click once on the new folder just created.
5. Under the Edit menu, choose Copy.
6. Insert a blank, initialized floppy and click once on its icon to select it.
7. Press the Return key once (this selects the title below the icon).
8. Under Edit, choose Paste.
9. Double-click the icon of the new folder on your hard drive to open its window.
10. Under the Edit menu, choose Select All.
11. Drag any one of the now selected icons to the icon of the floppy disk (this will copy all its files onto the floppy).

12. Close the new folder's window, and drag this folder into the trash.
13. Eject the newly copied disk by dragging its icon to the trash.

Repeat the steps with each of the other original disks.

To do the actual installation:
1. Iinsert the backup disk of the Installer.
2. Double-click its icon to open it.
3. Double-click the icon of the Installer and follow the instructions.

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Bold, Low-resolution Fonts Overwrite Non-bold Text (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks 2.0, if you are using a low-resolution ("city-named") font while printing to an ImageWriter II, bold text will overwrite adjacent non-bold text when you select "better Graphics" and "Best printing" in the Print dialog box.

There are several workarounds, each with a negative side effect. One is to select "Better Text" in the Print dialog box, but this will probably cause margins to be incorrect (see XReferences). You could also choose "Faster printing" instead of "Best," although this will obviously diminish print quality. Yet another workaround is to change the low-resolution font to high-resolution font, but this isn't a great choice either, because the whole point of using low-resolution fonts is because they look better when printing to an ImageWriter (they're also a good choice for on-screen displays).

This problem occurs with ImageWriter drivers 2.7, 7.0 and 7.0.1.

This chart lists low-resolution fonts and their high-resolution equivalents:

Athens --- (none)
Chicago --- (none)
Geneva --- Helvetica

Monaco --- Courier
New York --- Times
San Francisco --- (you've gotta be kidding)
Venice --- Zapf Chancery

Similar problems happen when using ClarisImpact such as text being cut off at the right edge of the paper and the margins printing incorrectly.

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Calculating Elapsed Time Over Several Days (DB,SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It is not easy to calculate an elapsed time, especially if that time begins on one day and ends on another. Here's how to do it. Assuming the following fields (formatted appropriately as date and time fields):

DepartureDate
DepartureTime
ArrivalDate
ArrivalTime

The following calculation formula will yield a decimal difference between the departure date/time and the arrival date/time:

Elapsed Time (Calculation, Number result) = ROUND((('ArrivalDate'+'ArrivalTime')-
('DepartureDate'+'DepartureTime'))*24),2)

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Cell References not Updated Correctly after Inserting Cells (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This has been fixed in ClarisWorks 2.1v2 and above.

In ClarisWorks 2.0v1, the cell references of any formula which contains BOTH a cell range AND a cell reference will NOT be updated correctly when cells, rows or columns are inserted within the specified range. An example of such a formula would be = B1+SUM(B3..B5).

This problem also occurs in ClarisImpact Tables or Data Charts.
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Communications Document Takes a Long Time to Open (CM)

Since the scrollback log of ClarisWorks 2.0 is set to "limited by memory," files can grow in size and take a long time to open. There are two options for dealing with this.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks 2.0 sets the scrollback log to "Unlimited." This is convenient for storing as much of a session as possible. However, if you use the same document to log on again and again, the scrollback log will grow in size. This both increases the file size and the time required to open the document. For example, a 300K document could take up to 30 seconds to open depending on the model of Macintosh.

There are several options for dealing with this:

1. After you are finished with a session, and have reviewed or retrieved what you needed from the scrollback log, choose Clear Saved Lines from the Session menu to clear the scrollback log. Note that all data in the scrollback will be lost, so be certain before doing this.

2. Set up a communications document for each service you log onto with all the proper settings and when saving it, choose ClarisWorks Stationery from the File Type popup menu. When you open the document, a new Untitled clone of the document will be opened, leaving the original untouched for your next session.

3. If you don't need a large scrollback log for your sessions, decrease the scrollback log size in the Preferences dialog.

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Data Missing from Capture File (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are some situations where turning on CaptureFile does not save all the information you see during your session. Here are some pointers for making sure all the information gets saved:

Session Menu
"Save Lines Off Top" controls the saving of text to the capture file when "Capture from Port" is selected in Preferences. Be sure that this command is checked in order to capture the text.

Preferences
Data capture control is only enabled when "Capture from Port" is selected in the Preferences Communications window (in the Edit menu). The command "Save Lines Off Top" has no effect on capture if "Capture from Screen" is selected in the Preferences menu. Note that "Save Lines Off Top" will always control what goes to the Log or Scrollback window.

"Capture from Screen" is the default in CW 1.0. "Capture from Port" is the default in CW 2.0.

TIP: To pause a capture rather than turning the mode on and off, hold down the option key while selecting the Session menu. The Stop capture menu item will say Pause Capture instead. To resume capturing, hold down the option key and select Resume Capture from the Session menu.
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Decreasing Scrollback Log Size Discards Data in Log (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the Preferences dialog, you can set the size of the scrollback log. The default is "Unlimited." Decreasing the size of the scrollback results in the loss of any data currently in the scrollback above the size specified. ClarisWorks does not provide a warning that data will be lost.

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Eliminating Duplicate Records (DB)

Using a spreadsheet document, it is possible to automatically identify duplicate records in a ClarisWorks database.

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Although ClarisWorks has a sophisticated database environment, there are certain useful features usually found only in dedicated database programs like FileMaker Pro. One of these useful features is the ability to identify duplicate records.

However, ClarisWorks has a significant advantage because of its modular document structure: you can look at database data in the spreadsheet environment and make direct comparisons between records, which are treated as separate rows in the spreadsheet. This method allows you to find and eliminate duplicates from your ClarisWorks database.

A strong understanding of ClarisWorks database and spreadsheet creation and usage is necessary to implement this article.

1. From a copy of your file choose "Show all Records" from the Organize menu. Sort the database by the field which has the duplicate values. (If you are searching for duplicate addresses, for instance, you would sort by Address.)

2. Define a the following field in your database:

DUPLICATECHECK (Number)

3. Choose Save As... from the Edit menu. From the Save as... dropdown menu choose DIF. Name the file DATA.DIF. Click the Save button. You have now saved a data file for use later. Now Delete all of the records in the copy of your file by using the Clear command in the Edit menu.

4. Use the Open command to create a new spreadsheet document using the DATA.DIF file just created.

5. In the Spreadsheet, click in row 2 of the DuplicateCheck column and enter the following formula:

=IF(AND(A2=A3,A1<>A2),1,IF(AND(A2<>A3,A2<>A1),2,0))

6. Use the Fill Down command to fill the formula down for as many records as you had in your database.

7. Choose Select All from the Edit menu to select your entire spreadsheet then choose Copy from the Edit menu.

8. Switch back to the empty DB document copy (use the View menu) and choose Paste from the Edit menu.

9. Use the Find command to find all zeros in the DuplicateCheck field.

10. Choose Clear from the edit menu. Your duplicates will be gone.

Explanation:
To identify duplicates, you need to be able to directly relate information between two records in your database. That is not possible in the Database document itself, but we can use a spreadsheet formula to perform that comparison for us, because any cell in the spreadsheet can be referenced from any other cell.

In this case, you export the information in the DIF format so that you can see the field names below the column titles. The formula is designed to compare the entries in column A for unique entries: if you need to compare a different field, you can substitute that column for column A in the formula. If you need to compare more than one field, you can use the Concat function with the previous formula in the following manner:

IF(AND(Concat(A2,B2)=Concat(A3,B3), Concat(A1,B1)<>Concat(A2,B2)),1, IF(AND(Concat(A2,B2)<>Concat(A3,B3),Concat(A2,B2)<>Concat(A1,B1)),2,0))

Both formulas always result in either the value 0, 1 or 2. The number 2 is used for entries in your database that are already unique. The number 1 is used for entries in your database which are the first in a series of entries (the first duplicate in a group of duplicates). The number 0 is used to identify the second and all subsequent duplicates in a group of duplicates.

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Exporting Database Data with Styles

Since you can select records in ClarisWorks databases and copy them , it is possible to export data with Fonts and Styles intact.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks exports data using the Save As command and supports several standard database formats. All of them are plain text formats which strip the different fonts and styles you apply to text in fields.

However, since you can select records in ClarisWorks databases and copy them, it is possible to export data with Fonts and Styles intact.

1. Select a record by clicking outside of a field and then Select All
2. Copy
3. Create a new ClarisWorks WP document, and Paste.

Note: To control which fields get copied and in what order, create a standard layout with all the fields and re-order them, deleting any you don't want copied.
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Formula Displayed in Cell Instead of Value

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If a cell diplays a formula instead of the value it is supposed to be calculating, it is probably because:

1) The formula is not preceded by an equal sign ("=") or

2) The option "Display Formulas" is checked in the Display dialog, under the Options menu (Display Formulas is not an option in ClarisImpact).
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Gradients won‘t Print at Full Resolution

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you publish a gradient and subscribe to it in another ClarisWorks document, the subscriber will print the gradient at 72 dpi instead of the full resolution of the printer.

Publish & Subscribe transports objects through the system clipboard, causing the special hinting of a ClarisWorks gradient to be lost.

This also occurs when you copy a gradient, paste it into the Scrapbook, copy from the Scrapbook and paste back into ClarisWorks. In fact, ClarisImpact will not even print the gradient within the confines of the object.

Copying and pasting without going through the Scrapbook retains the full quality of the gradient.
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Greater Zoom % Required for Accurate Display at Resolutions above 72 dpi (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Pixels in a 72 dpi Paint document or frame are displayed very accurately since most Macintosh monitors have a 72 dpi resolution. For Paint documents with greater resolutions, ClarisWorks can only approximate the display of the pixels.

Increasing the resolution of a paint Document/Frame decreases the size of the drawing area and the images contained in that drawing area. Basically, each pixel is reduced in size. Since most screens only display 72 dpi it is necessary to increase the zoom level to 200% or greater to accurately place higher resolution pixels. In general, greater resolutions require greater Zoom percentages.

Here is an easy example to help understand the issue:
1. Open a new Word Processing document
2. Create a Paint frame
3. Set the Paint frame to 144 dpi resolution
4. Use the Pencil or Line tool to draw a horizontal line all the way across the frame
5. Increase the Zoom until you can see that the line does not actually reach the edge of the frame

Now try the same scenario but Zoom to 200% before drawing the line across the frame. This time you will be able to draw the line all the way across the frame.

Resolutions and recommended Zoom percentages:
72 dpi ---> 100% Zoom
144 dpi ---> at least 200% Zoom
288 dpi ---> at least 400% Zoom
300 dpi ---> at least 800% Zoom
360 dpi ---> at least 800% Zoom

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Green won‘t Print to an ImageWriter II with System 7.x (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When printing from ClarisWorks 2.0 or ClarisImpact to an ImageWriter II with a color ribbon and the 7.0 or 7.0.1 ImageWriter driver, some shades of green may print as black. This happens with all Print dialog box settings: better text, better graphics, best printing, and faster printing.

The shades of green that do print from the basic, installed Claris Color Palette, are the 5th through the 7th colors in the green column (see Figure 1).

The ImageWriter 7.0 driver is supplied with System 7.0 and 7.0.1; the ImageWriter 7.0.1 driver is supplied with System 7.1.

There is no workaround. The ImageWriter 2.7 driver, supplied with System 6.x, prints the green fine at all settings.

Figure 1: The green colors in the basic palette that print.

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Helvetica, Condensed, Full Justified not Printing Justified (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you are running System 7.1, you may notice that a ClarisWorks Word Processing document or a ClarisImpact Report document that has the following attributes does not print justified:

1. Font --> Helvetica
2. Style --> Condensed
3. Alignment --> Full Justified
4. Helvetica TrueType and screen fonts are in a common suitcase in the Fonts folder

Workaround:
Remove all TrueType and screen fonts from the Helvetica Suitcase so that they are loose in the Fonts folder. TrueType fonts can be distinguished from screen fonts by the triple 'A' on their icon.

NOTE: When installing System 7.1, the TrueType and screen font versions of Helvetica are combined in a common suitcase.
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Image Splits or Disappears when Using Perspective or Distort (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It is possible for an image to split, dissapear or even move out of the selection area when Distort or Perspective is applied. This appears to happen only if an image is changed slightly. In other words, moving the selection handles greater than 2 to 3 pixels will work fine. Anything less and the image will probably change improperly.

The only solution if an object changes improperly is to use Undo.

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Japanese and Chinese WorldScript Incompatibility: Bold Vertical Lines in Font Menu (All)

ClarisWorks 2.x and MacWrite Pro are not compatible with World Script, causing bold vertical lines in the font menu when using the Japanese or ChineseScript.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Q: When I run ClarisWorks or MacWrite Pro after installing the Japanese Language Kit, the Fonts menu has only bold vertical lines instead of the names of the fonts.

A: ClarisWorks and MacWrite Pro are not compatible with World Script. You have two options:

1. Remove all the Language Kit extensions from the extensions folder, or use an extension manager utility to disable them. Since you will lose your WorldScript features with this method, choice number 2 is a better option.

2. Workaround:
- Restart will all extensions off by holding down the Shift Key.
- Trash the Claris Fonts file that's in the Claris folder in the System Folder.
- Launch ClarisWorks or MacWrite Pro; this will create a new Claris Fonts file.
- Locate the file from the Finder. Get Info on this file and Lock it.
- Restart normally. The Claris fonts menu will show all available font names (though the names will be in the Chicago font).

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Keyboard Appears Locked, Every Key Causes Beep - Easy Access and the Return Key (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In a Word Processing document, if you hold down the Return key for more than four pages, Slow Keys from Easy Access will activate itself. This can actually happen in any application that will accept the return key held down.

When Slow Keys activates, it may appear that you are no longer able to use the Keyboard. Actually, you still can, but you have to hold a key down for a few seconds before it appears.

The solution is to open the Easy Access control panel and turn Slow Keys off.

NOTE: Rather than using a bunch of return characters to move to a next page, use the Insert Break command in the Format menu to insert a page break character. Pressing the Enter key does the same thing.
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Line Width of .02 pt (DR,PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisWorks User's Guide states that you can specify a line width of .02 to 255 pts in the line size dialog, but when entering .02 the result is a .03 pt wide line. To get a .02 pt wide line, enter 0 or choose Hairline from the line width popup menu.
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Make Default in Preferences doesn‘t Remember Pathname of Loaded Palette (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks 2.0 and ClarisImpact allow the creation of Preference defaults without saving a stationery document. One of the Preference choices is Palettes and one of the options is Load Editable 256 Color Palette. However, Claris programs will not remember the pathname for the palette when making a default. Claris programs will remember that an editable 256 color palette has been selected, but not the specific palette. Claris programs simply revert to the standard palette.

Workaround:
Use a stationery document to remember the Preference default for Editable 256 Color Palette. Stationery documents settings override all defaults set through the Preferences.

NOTE: Make Defaults will remember the pathname to a palette in the document from which you set the default since the pathname is stored in the document.
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Margins Incorrect when Printing to ImageWriter II (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When printing a word processing document to an ImageWriter, the right hand margins may appear to be larger than anticipated. This is especially true when "Better Text" is selected in the Print dialog box (change to "Better Graphics"). This is caused by the way the ImageWriter prints text. (NOTE: ClarisWorks version 2.1v1, 2.1v2, and 2.1v3 did not have a Better Text or Better Graphics feature. ClarisWorks 2.0 and 2.1v4 do.)

A workaround for this behavior is to set the right hand margin to 0". This adjustment can be made in the Document section under the Format menu. Turning off "Show Margins" is also recommended. By changing the right hand margin, the difference in pixel width is compensated for and the right hand margin will be roughly equivalent to that of the left. This is under the assumption of 1" margins and an 8 1/2" X 11" page.

If you create a stationery document with these margins, you can avoid having to set them each time you open a new ClarisWorks WP document. See page 2-20 of the User's Guide for details on how to create a default stationery file.

Why this happens:
The text is made up from a series of "dots" (pixels) which when printed closely to each other make up the solid text of the printed output. The pixels on the Macintosh screen are square, while the pixels in the ImageWriter are rectangular. The difference in the pixel width translates to text that is more compact and therefore takes up less width across the screen.
ClarisWorks uses the square pixels in its calculations for the text frame width, which is what determines the amount of text that is displayed on each line. Currently, there is no method for ClarisWorks to compensate for the difference in pixel width and its effects on the output.

This printing problem occurs with ImageWriter drivers 2.7, 7.0 and 7.0.1. It does not occur with ClarisWorks 1.0.

If a ClarisWorks 2.0v1 (Mac) WP document is printing to an ImageWriter II and the printed text looks condensed or scrunched together, this may be due to the margins being incorrect as discussed in this article.

We have one report that installing a software package called "BetterWriters v1.0.1" from GDT Softworks fixes this problem.

Apparently, this software package also fixes a slow-speed printing problem found while using SuperLaserSpool.

Claris Tech Support has not tested either of these fixes.

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Mortgage Analyzer Sample File Miscalculates Yearly Totals (SS)

Here's how you can personalize the template to meet your specific needs!

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Under certain circumstances, this Mortgage Analyzer template file will miscalculate the yearly totals.

Here's how you can quickly correct the problem AND give yourself as many months calculated as you may need !

1. Open the original Mortgage Analyzer file from the Samples folder.

2. Drag through cells E16 through J17.

3. Under the Options menu, select Unprotect Cells.

4. Click on cell E16 and change the formula in it so that the 12 now reads D5 instead. Press Enter.

5. Go down to cell E17 and change the formula in it so that the 12 now reads D5 instead. Press Enter.

6. Click on cell I17 and change the formula in it so that the E4 reads E6 instead. Press Enter.

7. Click on cell J17 and edit it so that F4 (near the end of the formula) reads F6 instead. Press Enter.

8. Drag through cells E16 through J17.

9. Under Options, select Protect Cells.

10. Now, drag through cells B17 through J17 and also drag down as far as you need the months to be calculated. (Too far is no problem, you can delete unwanted formulas later.)

11. Under Calculate, select Fill Down. Be sure AutoCalc, under the Calculate menu, is checked.

Save the file for future use before adding specific data into it.

Published Date: Feb 18, 2012

Objects Cropped when Resolution of Paint Frame is Changed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When changing the resolution of a Paint Frame, objects close to the right edge of the Paint Frame may be cropped.

How to recreate:
1. Create a Paint Frame.
2. Place an object close to the right edge of the frame.
3. Change the resolution to 300 dpi.
4. Notice that the frame is not large enough to show the entire object.

Solution:
1. Select the Arrow tool.
2. Click once on the Paint Frame.
3. Notice that the Paint Frame has selection handles on each of the four corners.
4. Click and hold down on the lower right selection handle and drag until the frame is big enough.

Published Date: Feb 18, 2012

Opening 1.0 Documents in 2.0 (CM)

The message: "Could not configure connection tool" is the result of a new version of the Apple Modem Tool which doesn't properly open documents created with the older version.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
After upgrading to ClarisWorks (CW) 2.0, you may get the following message when opening 1.0 Communications documents:

"Could not configure connection tool."

The document will then open but the phone number will be missing. This message will only occur with documents configured with the Apple Modem Tool. This is due to the fact that CW 2.0 automatically updates the Apple Modem Tool to Version 1.1.1. The new tool will not properly open CW documents created with the older version. Trying to open up documents with CW 1.0 after CW 2.0 will result in the same error message.

The solutions are:

1. Reenter the phone number, check the other settings and save the converted document. The warning will not appear the next time you open the document.

2. Replace the new Apple Modem Tool (in the Extensions Folder in the System Folder) with the older tool from the ClarisWorks Communications Folder on the ClarisWorks 1.0 Communications Disk.

Note: Using the older version may result in less stable communications. The new version contains several enhancements.
Published Date: Feb 18, 2012

Paint Document File Size is Greater than PICT or Draw (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Inserting a PICT file into a Paint document and saving will result in a file which is larger than the original PICT file. Copying and pasting from a draw document to a paint document will have a similar result.

PICT is object oriented whereas the Paint environment saves in bitmaps. Likewise, ClarisWorks drawing files are object oriented. Object oriented files can store the description of each object in the file using very little RAM or disk space. Conversely, bitmap environments, like ClarisWorks Paint files, store every dot (pixel) of information. Thus, PICT and ClarisWorks draw files are usually smaller, since it takes less memory to store the description of say, a square, than it takes to store all the dots in a bitmap that look like a square.

Workaround:
The Paint environment allows you to change the resolution and bit depth of a document or frame. Standard settings are 72 dpi and pixel depth of 256. If your painting contains fewer colors, then change the pixel depth accordingly. For example: a black and white painting saved as 72 dpi and 256 depth was 305k, resaved as 72 dpi and Black & White depth was 40k.
Published Date: Feb 18, 2012

Publication Correction: Horizontal & Vertical Perspective (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Page 5-21 of the ClarisWorks 2.0 User's Guide shows an example of horizontal and vertical perspective. The figures for horizontal and vertical perspective are mislabeled.

To correct the misprint just swap the labels for these two graphics.
Published Date: Feb 18, 2012

Publication Correction: "Using ClarisWorks" (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In Chapter 6, page 370 of "Using ClarisWorks" by Laurie Miller Love, there is an error in the direction on converting a relative reference cell to a absolute reference cell. The instruction is step 2 states:

"Hold down the Option Key as you click in cell E9. By Option-clicking, you can automatically convert the reference to cell E9 from relative to absolute."

The correct key sequence should be Command-Option and click.
Published Date: Feb 18, 2012

Selecting Landscape doesn‘t Change Orientation of Paint Document (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Like most Paint programs, the ClarisWorks 2.0 Paint Environment will not switch to landscape (wide) orientation simply by selecting Landscape from Page Setup. An additional step is needed. Choose Document from the Format menu and change the Pixels Across and Pixels Down to reflect the correct measurements. Dimensions for U.S. letter are:

Portrait (tall) = 468 across & 648 down
Landscape (wide) = 648 across & 468 down

NOTE: To create a full letter size page, it is necessary to increase the default memory allocation to ClarisWorks. See the User's Guide for recommendations on memory allocations for various sizes and resolution and depth settings of Paint documents.
Published Date: Feb 18, 2012

Shear, Slant & Perspective Only Moves Image in One Direction or on one Axis (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It is possible to Slant, Shear or use Perspective on an image vertically or horizontally but not both ways at once. The direction you move the handle first is the only direction you will be able to shear unless you restart the process. The simplest method for shearing both directions on one image is:

1. Select the image you want to shear
2. Choose Shear from the Transform menu
3. Drag one of the handles up or down
4. Now try to drag any handle left or right (notice that this is not possible)
5. In order to shear horizontally, click once outside the image (notice that the image is still selected but that the handles are gone, clicking twice deselects the image)
6. Choose Shear from the Transform menu again
7. Now you can drag left or right
8. Repeat steps #5 - 7 in order to switch shearing directions again

There is no keyboard equivalent to change shear directions.

Published Date: Feb 18, 2012

Token Ring Nodes: Physical or Logical Unit Issues

Are Macintosh Token Ring workstations addressed as PUs or LUs?

This article has been archived and is no longer updated by Apple.
Nodes are either a physical unit (PU) or a logical unit (LU) in an SNA environment.

A Macintosh system with a TokenTalk NB Card running MacDFT or MacAPPC is a downstream PU. A Macintosh system running TokenTalk is neither a PU nor LU -- these terms do not apply unless MacDFT or MacAPPC is being used.

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Show/Hide Invisibles Shortcut not Available (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It is possible to display invisible formatting characters in the word processing environment and in a text frame in any other environment, including the database environment. Toggling these invisibles on and off is most easily done via the Shortcuts palette, but the Invisibles shortcut will not appear in the database environment while in Browse mode. To toggle the Show Invisibles command, type Command-Semicolon or choose Preferences from the Edit menu and click the Text icon.

Published Date: Feb 18, 2012

Specifying Field Order and List for Export/Save As (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Choosing Save As and specifying Text file type in ClarisWorks (versions 1.0-4.0) exports all records and all fields in the order fields were created. To control the choice and order of fields on export from ClarisWorks, create a layout just for exporting with fields ordered from top to bottom and use cut and paste instead.

1. Create a layout with fields arranged in the exact order you desire
2. While in Browse mode, select/hilite all the records for export
3. Choose Copy from the Edit menu
4. Open a new Word Processing document
5. Choose Paste from the Edit menu
6. Choose Save As... from the File menu and save as a Text file. The result is a tab-separated text file.

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Trading SYLK files with Excel Causes an Out of Memory Error in Excel (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When transferring SYLK files between Excel 4.0 and ClarisWorks, there exists a situation where Excel will get an out of memory error message.

To reproduce:

1) Create a simple spread sheet in ClarisWorks 1.0 or 2.0 with a couple cells, and then export it out as SYLK. Call this file "F1".

2) Open "F1" in Excel 4.0. Then save the Excel file out as SYLK. Call this file "F2".

3) Open the "F2" file in CW and then save it out one more time as SYLK. Call this file "F3".

4) Open "F3" in Excel. You will get an out of memory error message.

SOLUTION
To work around this problem, use Excel 3.0 as the file type by which you transfer files between ClarisWorks and Excel 4.0.
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Translated Excel and Microsoft Works Spreadsheet Files Grow in Size

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Sometimes, translating Microsoft Excel or Microsoft Works spreadsheets with ClarisWorks results in file sizes greater than the original file. In one case, a 20K Excel file grew to 180K in ClarisWorks.

The most likely explanation is that an entire row or column has been formatted in Excel or Microsoft Works, which inserts formatting information in hundreds of cells. When ClarisWorks translates this spreadsheet, it must create a document with many more rows and columns than actually contain useful data, resulting in a larger file size since ClarisWorks stores this data differently than Excel and Microsoft Works.

If you find this to be the case with any of the spreadsheets you translate, select the cells in the original application which have data and copy and paste into a new spreadsheet in that application. Save the file and translate it into ClarisWorks. This will usually result in a file size that is even smaller than the original spreadsheet file.
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Translator Does Not Handle Complex Documents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacWrite Pro and ClarisWorks 2.0 come with WinWord and WordPerfect Win translators which are capable of retaining details such as columns, footnotes, headers and footers.

However, some items cannot be translated. Two of the dialogs you may see when this happens are:

"The translator does not handle complex documents."

"Metafiles and Tiffs not supported."
Published Date: Feb 18, 2012

Why ClarisWorks may Switch to XMODEM When Attempting to Transfer a File With MacBinary Mode (CM)

If the file transfer method switches from MacBinary to XMODEM, and/or if your downloaded file has a generic icon and isn't openable by double-clicking, try the suggestions in this article.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Sometimes when downloading a Macintosh file using the XMODEM file transfer tool, the file refuses to transfer in the MacBinary mode and uses Straight XMODEM instead.

If this happens, it's probably because the file header is corrupt or the file was uploaded improperly. Most likely the BBS from which you are downloading is DOS Based. The reason that the the transfer switches to straight XMODEM is that a file can only be downloaded as a MacBinary file if the transfer protocol recognizes a proper Mac Header (file type and creator).

If you download the file anyway, you may be able to open the resulting generic file with a word processor, but the file is probably not a text file. What is downloaded is a generic file, which results in non-printable characters to be filtered out when opened with a text processor.

Instead, try just using straight XMODEM and then use some utility that allows changing of the file type and creator (such as ResEdit or Disktop) and set it properly. If you cannot find out the proper file type/creator, then the file will have to be reuploaded properly or you will not be able to use it.
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Chaining Macros with Function Keys Error

Chaining Macros with Function Keys will not work correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:
When attempting to chain two macros assigned with function keys (F7, F8) together by means of a third macro, a dialog box should appear after recording stating "There was nothing to record." Dialog does not appear.

Example:

1. Create two macros and assign one macro to the function key F7 and the other to the function key F8.
2. Bring up the Record Macro dialog box and begin recording.
3. Press the F7 and then the F8 function keys.
4. Stop Recording.

Solution:

This will be fixed in the next version.
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Crashing after an Unsuccessful Print

The first print after an unsuccessful print (due to paper jam, etc.) will cause a crash when using a Qume CrystalPrint printer.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:
While printing to a Qume CrystalPrint with print manager off, the first print after an unsuccessful print (due to paper jam, etc.) will cause a crash.

Solution:
Turn print manager on.
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Macro File Deleted after Pressing Esc

After pressing ESC, the Macro file is deleted in error.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Macro file is permanently deleted after pressing Esc key in Edit Macro.

Example:

1. Load a macro file.
2. Select Edit macro from the Macro menu.
3. Select Delete button and a dialog will appear asking "Permanently delete the selected macro(s)?".
4. Hit the Esc key and the file is permanently deleted. The Esc key should logically cancel the operation but works oppositely.

Solution:

This will be fixed in the next version.
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Recording Macro Icon Disappears

Selecting Save stops the macro recording

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:

When you are recording a macro, the recording icon will disappear when you save the file or when opening a help window and the recording stops.

Example:

1. Create a new WP document.
2. Select Record Macro from the Macro menu and click on the record button.
3. Select Save As from the File menu and save the file. The recording icon will disappear and the macro will stop recording.

There is no current work around for this problem.

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Text Ruler Disappears

When you click outside the text frame, the text ruler disappears

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:

Text ruler disappears when you click outside the text frame.

Example:

1. Create a new graphics document.
2. Select the Text Tool and type in a letter.
3. Select the Text ruler from the Format/Rulers dialog menu.
4. Click outside the text frame.

* Notice that the ruler disappears (zoom in or zoom out and it reappears).

Explanation:

The ruler will try to draw flat when it is disabled, except in cases where the current document type is not known, in which case it will erase the tab well area. When you first display the ruler it knows what the current data set is and draws with the flattened button look. When you click out of the text frame it is in a transition state and just erases.

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Tile Across does not work

The tile across feature is not supported under Windows 3.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:

The Tile across feature won't work in Windows 3.0.

Solution:

This is only supported by the MDI extensions in Windows 3.1.

Published Date: Feb 18, 2012

Windows 3.0: Clear and Undo Clear will freeze system

In the Spreadsheet environment, filling all cells, then clearing and undo clear, will result in a system freeze

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:

In a Spreadsheet document, if you fill all cells with data and then select Clear, and immediately select Undo Clear, Windows 3.0 will freeze.

Solution:

This is a known problem with Windows 3.0 and can be corrected by upgrading to Windows 3.1.

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Can‘t Find by Calculated Dates Without Using the TEXTTODATE Function (DB)

If you can't find by a date, you probably need to use the TEXTTODATE function in the calculation formula.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When specifying a date result in a calculation field, it is not enough to simply choose Date from the Format Result popup menu. You must also surround the specified date with quotes and the TEXTTODATE function. Using the incorrect formula will return a date which looks correct, but does not result in a successful Find.

Incorrect Date (Calculation, Date result) = IF('Period'="Q1&2","1/1/93","6/1/93")

Correct Date (Calculation, Date Result) = IF('Period'="Q1&2",TEXTTODATE("1/1/93"),TEXTTODATE("6/1/93"))

The NOW Function
The TEXTTODATE function does not work with the NOW function, causing an ERROR result. Therefore, it is not possible to find a date in a calculation field with the formula: NOW() which is often used as a way for auto-entering the date a record is created.

ClarisWorks 2.0 offers Entry Option features which include auto-entering the creation date into a date field, so the NOW function method is not required.

In ClarisWorks 1.0, a workaround is to create an additional calculation field called DateFind set to return a date result using the formula:

DateFind (Calculation, Date Result) = TEXTTODATE(DATETOTEXT('NowCalcFld'))

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Crash and GPF When Using Hercules Graphite Video Board

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The display drivers for the Hercules Graphite Video board will cause crashes in ClarisWorks. The message is "ClarisWorks has caused a General Protection Fault (GPF) in module AGX.DRV." The AGX.DRV file is a driver for the Hercules Graphite Video Board.

The solution is to switch to the standard VGA driver in Windows. It is not known if a more recent Hercules driver will work.

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Crashing When Importing EPS Graphic Caused by Display Driver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problem:
Inserting an EPS graphic twice with the embed Postscript option checked with some 800 x 600 video drivers will cause ClarisWorks for Windows to crash.

Explanation:
We believe that this is caused by problems in certain video drivers.

Solution:
Change to a standard VGA driver. You can also try other 800 x 600 drivers.
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Cursor Not Changing When Large Graphic Being Redrawn

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
While a large graphic is redrawing on the screen, the cursor does not change to indicate that the computer is currently working when the cursor is placed off screen.

Solution:
There is no current work around for this problem.
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Document Close Button Not Closing Document in Windows 3.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problem:

Under Windows 3.0, double clicking on the document control menu does not close the document. It works with all other windows applications.

Solution:

This is a problem with Windows 3.0. Upgrading to Windows 3.1 fixes the problem.

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Incomplete Printout When Printing to NEC SilentWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problem:
Printing at low resolutions with an NEC SilentWriter using HPPCL emulation (using a HP driver) will cause incomplete printout.

Solution:
Use the NEC supplied driver or print at high-resolution.

Published Date: Feb 18, 2012

Text Exported in RTF Format Loses Color Information

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Problem:

Files exported in RTF format from ClarisWorks and imported into Word Perfect lose all of the text color information.

Solution:

Currently there is no workaround for the problem.
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Outline Styles Not Preserved When Not in Outline View (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the ClarisWorks 2.0 word processing environment, when using Outline View, be aware that styles applied by the Outline Format will not be preserved when you deselect Outline View; text created while in Outline View will revert to Helvetica, regardless of any other style changes you've made in your document - even if they are the document's default.

For example, if you are typing a document with Helvetica font and you select Outline menu, Outline View, Harvard Format , your outline will be displayed in New York - which is the typestyle that the Harvard format uses. But once you exit Outline View, your text will become Helvetica, because that New York typestyle was applied by the Outline feature.

If you are working with a document that has, say, Palatino as its default typestyle, and you switch to Outline View, any text you've already typed will show up in Palatino in the Outline. Text you type beyond that will appear in whatever typestyle is defined for that Outline format. Once you exit Outline View, any text that was typed in Palatino format before you entered Outline View will remain Palatino; any text that was styled by the Outline format will become Helvetica - even though Palatino is the "default" for your document.

If you are in Outline View and you manually change a typestyle by selecting text and choosing another typestyle, that style will be kept when you leave Outline View. This reversion to Helvetica only happens with typestyles that are applied by the Outline Format itself.

There is no workaround, other than using Helvetica as your default typeface.

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Converting Time to a Decimal Value (SS, DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To convert time to a decimal value where 2:45 would equal 2.75, use the formula:

HOUR(A1)+MINUTE(A1)/60

This extracts the hour and adds it to the minutes divided by 60 to convert minutes to a decimal.
Published Date: Feb 18, 2012

Increasing the Spacing Between Footnotes

Footnotes are automatically formatted as single spaced, with no extra lines between them. For clarity of reading, you may want to add a blank line between each footnote.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The spacing between individual footnotes maybe be increased by simply adding an extra paragraph return at the end of the previous footnote.

EXAMPLE:

[BEFORE]

_____
1 Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.«EXTRA RETURN IS TYPED HERE, AT END OF FOOTNOTE»
2 Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex easden commodo consequat.«ANOTHER EXTRA RETURN IS TYPED HERE»
3 Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi.

[AFTER]

_____
1 Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.¶

2 Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex easden commodo consequat.¶

3 Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi.

Published Date: Feb 18, 2012

White Text Prints about One-Half Character to the Right of its Apparent Position

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

White text (any size, any font) prints about one half character to the right of its expected position based on screen placement. The actual displacement is proportional to the font size, but is usually equivalent to one half character at any given font size.

This effect may be seen on any printer, while printing either black & white, color or greyscale.

Workaround: the only workaround for this problem is to intentionally displace the text object on screen until it prints in the proper location.

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Styles Don‘t Print After Saving as EPSF

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Certain printer-resident fonts such as Symbol and Zaph Dingbats do not have an italic face. Applying an italic style to them will make them appear and print as italic. However, when a document with these fonts formatted as italic is saved as an EPSF file, reopened in MacDraw Pro and printed, the fonts appear italic but do not print as plain. This was tested with MacDraw 1.5v2 and EPSF translator 1.0v3. To duplicate the problem:

1. Create a new document.
2. Create a text object in a font that is resident on your printer (e.g. Symbol). Leave it as Plain Style.
3. Duplicate it or create a new text object in the same font. Choose Italic from the Style menu.
4. Choose Save and select EPSF from the file type pop-up menu. Name the file and Save.
5. Choose Open from the File menu and open the file you saved.
6. Notice that the font appears as italic on screen but prints as Plain text to a LaserWriter.

Published Date: Feb 18, 2012

ClarisWorks 1.0 Macintosh Text Translator

MacWrite Pro 1.0v4 includes a ClarisWorks 1.0 Macintosh Text Translator. This translator allows you to transfer word processing documents between MacWrite Pro and ClarisWorks 1.0 for the Macintosh.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This translator enables MacWrite Pro to open and save ClarisWorks 1.0 Mac word processing files. Headers, footers, margins, columns, paragraph formatting and fonts are all retained. ClarisWorks frames are not translated, so graphic, spreadsheet and text frames will not appear in the resulting MacWrite Pro document. Likewise, MacWrite Pro frames such as text, pictures, notes and tables are not translated when saving as ClarisWorks 1.0. The one exception is anchored or in-line graphics which are translated successfully.

To use this file, place it in the Claris Translators folder which resides in the Claris folder in the System Folder.

YOU MAY ONLY USE THE TRANSLATOR WITH AUTHORIZED, LICENSED COPIES OF MACWRITE PRO UNDER THE TERMS OF THE ENCLOSED LICENSE AGREEMENT.

This translator is available from America Online, CompuServe, AppleLink, the Claris BBS.
Published Date: Feb 18, 2012

Combining Two or More Fields into a Single Field- Concatenations Explained (DB)

Adding fields and text together through concatenation

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

'Concatenation' is a simple concept. It means to link things together.

For example, if you have a first name Louis and a last name Armstrong and you concatenate them, you get Louis Armstrong. Actually this particular concatenation has a third element - the space between the first and last names.

Claris products use the ampersand (&) to concatenate fields and/or text. Notice in the examples below that text (as opposed to numbers, field names, dates or functions, etc.) are surrounded by quotation marks ("). To get the space between the first and last names, we concatenate them with a space enclosed in quotation marks.

Given that you have fields First Name and Last Name, here are formulas that will concatenate them for you. [for clarity, the caret (^) has been used to show where you should type a space]

FileMaker
Full Name (calculation, text result) = First Name & "^" & Last Name
This means, 'link together the entry in the First Name field, a space, and the entry in the Last Name field.'

ClarisWorks
Full Name (calculation, text result) = 'First Name' & "^" & 'Last Name'

(Notice that in ClarisWorks, the field names are surrounded by apostrophes)

In ClarisWorks, there is also a concatenation function built in. The following formula produces the same results as the above two:

Full Name (calculation, text result) = Concat('First Name',"^",'Last Name')
This means, 'link together the following items: the entry in the First Name field, a space, and the entry in the Last Name field.'

To go to the next line in FileMaker add & "¦" to the concatenation where you want the line to break. However, in ClarisWorks, using either method above, you cannot place a carriage return within the concatenation. In addition, ClarisWorks calculation fields do not word wrap to a second line. They will only use one line one line, so any calculation result which continues beyond the width of the field will be cropped.

Published Date: Feb 18, 2012

Demo Disk - What Is Included, Installation, General Use

Typing Install at a dos prompt will run the demo's install program, and more information is contained in a file called readme.wri that is installed with the demo program in the CWDEMO directory.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The ClarisWorks 1.0 for Windows Demo Disk contains two files: Install.bat and demo.exe. Installing the demo is handled by the install.bat file. This runs a DOS installation program, so the install.bat can be run from inside Windows or from a DOS prompt.

1. Exit Windows, so that you see a Dos prompt
2. Insert the ClarisWorks Demo disk in either the A or B drive
3. Type A: or B: depending on which drive the demo disk is in, and press enter
4. Type "Install" and press enter

If a "Not ready reading drive" error occurs after typing Install, check to see what drive the disk is in. If it is in the B: drive, you must type B: and press enter, otherwise DOS will look at the wrong disk drive and produce the error "Not ready reading drive".

After the files are installed, you will have a CWDEMO directory with the demo program, sample files, and a Claris directory inside the CWDEMO directory with picture filters and other auxiliary files. Double - clicking on the CWDEMO.EXE will run the demo version of ClarisWorks. Also in the CWDEMO directory is a file called README.WRI that has instructions on installation and operation of the demo, and there is a ClarisWorks file called PRINTME.CWK that has instructions on creating some example documents with ClarisWorks.

The demo program's install routine does not create an icon for the ClarisWorks 1.0 for Windows demo, so one must be created by hand.

1. Start Windows, if you are still at a Dos prompt
2. In Program Manager, pull down the File menu and select New
3. Choose Program Group, and name the group "ClarisWorks Demo"
4. From the File menu, choose New and select Program Item
5. Type C:\\CWDEMO\\CWDEMO.EXE in the Command Line box

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Exchanging ClarisWorks Database Files with FileMaker Pro 2.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When you need to transfer information between a ClarisWorks and a FileMaker database, use the DIF format. This format preserves the field names, making it much easier to merge files. When opening a DIF file that was exported from FileMaker Pro 2.0, ClarisWorks automatically creates the fields necessary to accommodate your data. Each field has the same name as it did in FileMaker Pro and uses Text as its field type.

If you want to add FileMaker Pro data to an existing ClarisWorks database, you can follow these steps:

1. Export the information from FileMaker Pro using the DIF format.

2. Use the ClarisWorks Open command to import the DIF file. A new ClarisWorks database will be created using the field names in the DIF file. All field types will be Text.

3. Select the records to be moved and copy them.

4. Open the database where the information belongs, and paste. The information will be added to the database, with fields matching up automatically.

Since ClarisWorks matches field names while pasting, this makes it easy to exchange information between ClarisWorks and FileMaker Pro databases on a consistent basis.

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How to Add Borders to Report Headers and Footers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Claris Resolve shares some technology with Wingz by Informix. In Wingz, you can use menu commands to place borders around the report header and footer. Although Claris Resolve doesn't give you menu commands to accomplish this, you can use two script commands instead.

To use these commands, just type them into the entry bar and press Command-Return. This tells Resolve to consider your entry as a command to be executed immediately, not a cell value or formula.

To turn on header borders, type:

select report header single line border

To turn off header borders:

select report header no line border

You can substitute footer for header and double for single if you like.
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How to Chart Discontinuous Ranges

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Sometimes you want to consolidate values from different parts of your worksheet into a single graph. Claris Resolve doesn't let you directly select and chart discontinuous ranges. But here are two ways to work around that limit.

Close neighbors

If your series are within a couple rows or columns of each other, you can graph the whole block and take out the ranges that shouldn't appear on the graph:

1. Select the entire range, including the area you don't want included, and chart it.
Notice the chart legend contains a marker for all series, including the ones you don't want used.

2. Double-click the marker for any series you don't want on the chart. This will present the Series dialog box.

3. Click on the Delete button to remove the series from the chart (this will not affect the data on the worksheet).

4. Repeat steps 2 and 3 for each unwanted series.

Far-flung ranges
If your ranges are widely separated on the worksheet, you can chart one series and manually add the others:

1. Select the first contiguous group of data and chart it.

2. Double-click a the series marker in the legend of the chart. The Series dialog box appears.

3. Click the Duplicate button. This will create an exact duplicate of the selected series.

4. Double-click on the duplicate series item to bring up the Series dialog box.

5. Change the data range to the next range of data you want charted.

6. Adjust any symbols or colors as needed.

7. Click the OK button.

8. With the duplicate series still selected, choose a new color from the fill color palette in the tool bar.

9. Repeat steps 2 through 8 for each new series you want to add to the chart.

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How to Resize Rotated Items

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Rotated objects do not resize the way other objects do. When resizing, ClarisCAD uses the non-rotated position of the object, adjusts it, then reapplies the rotation angle. For example, if you widen a group containing a rectangle rotated 90 degrees, the rectangle will actually end up taller after the resize.

If you need the object to resize in proportion to other objects in a group, try the following:

1. Save out the group as a PICT file, then open it back into ClarisCAD. The object will then resize as expected.

-OR-

2. Ungroup the objects, select any rotated polygons and squares, and choose Unjoin from the Arrange menu. This has the effect of making ClarisCAD "forget" the objects were rotated. To reassemble the unjoined polygons, shift select each line that forms a polygon, and when all parts of a polygon are selected choose Join from the Arrange menu. If you now re-group all previously grouped objects, they should resize as expected.
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Out of Memory Message When Importing

How to increase the memory assigned to an application

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If the error message "Out of Memory when importing document" appears when importing a document, the memory reserved for the application may not be large enough to accommodate the imported file. Generally this error message occurs with large TIFF or PICT images, though it can occur with any large file. Here's how to increase the application's memory allocation:

1. Quit the Application and return to the Finder.
2. Go to the actual application program icon (not a document created in the application) and click once to select it.
3. From the File menu, select Get Info.
4. Increase the memory in the Application Memory Size box at the bottom of the Get Info window. If you are using System 7.1, increase the Preferred Size. Increasing memory by 500, to 1000K, should be enough to import most images. The more color depth and the larger the image, the more memory will need to be increased.

Sometimes, increasing memory allocation will not fix the problem. The next step is to find the file "XTND Translator List" and delete it. Generally, this file is kept in the System folder in the Preferences folder, though it may also be in the Claris or Extensions folders, or in the System Folder itself. This file is used by the Claris XTND system as an index to where all the file translators are located, and it might be corrupted. Deleting forces a fresh, clean XTND Translator List to be built.

If deleting the XTND Translator List does not solve the problem, reinstall the Claris XTND system and the Claris Translators. Both of these files should be installed in the Claris folder in the System Folder.

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What to Do When your Screen and the Printout DonÕt Match

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Sometimes you print your worksheet and cells that show properly on the screen are filled with asterisks on the printout. Or, the legend disappears from a chart you've constructed.

The problem is that measurements for fonts and graphic items can differ slightly between screen resolution (72 dpi) and printer resolution (300 dpi or more).

- If cells are filled with asterisks ("******"), zoom into 400%. The asterisks should appear here, and you can make minor adjustments to the column width so the value will fit. Viewing at 400% gives you a more accurate picture of what Resolve is sending to the printer.
- If charts change their appearance, ungroup them before printing. Normally, Claris Resolve automatically designs charts for the best appearance. Changes in object measurements at the higher, printed resolution can cause Resolve to change its mind about what will look attractive. Ungrouping a chart turns off this auto-design feature.

- Check page setup. If font substitution is active, the printer will be using different fonts than you specified on-screen.

Select the right range for regression analysis

The Regression Range (or Matrix Range) defined when using the Regression option in the Matrix dialog box must include at least one row more that the number of columns specified.

For example: If your Regression Range includes one Dependent variable and two Independent variables (three columns) then at least four rows (observations) must be defined (five if column titles are included).

If fewer rows than columns are defined, Claris Resolve will report, "Insufficient number of observations." If the same number of rows and columns are specified, you'll be told, "No observations." Valid results are obtained only when there are more rows (observations) than columns (variables).

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"Not Enough Memory to Run Application" Error Message

Modifying the Autoexec.bat file allows ClarisWorks to run correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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If memory on a DOS/ Windows machine is configured improperly, or there is a driver conflict, the error message "Not enough memory to run application, please close some applications and try again" will appear. One particular instance is this:

Config.sys Autoexec.bat
C:\\dos\\setver.exe Pcache
C:\\windows\\himem.sys C:\\windows\\smartdrv.exe
dos=high Prompt pg
files=10 Set Mouse=C:\\mouse
stacks=9,256 c:\\mouse\\mouse.com
Path ....
Set temp=c:\\dos

Removing the Pcache line in the Autoexec.bat, increasing files to 40, and adding a Buffers=20 line allowed ClarisWorks to run.

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Capturing and Printing a Screen Shot in Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Sometimes it is necessary to obtain a hardcopy of your screen. In order to get a copy, or screen shot, of your screen you need only press the Print Screen key. This copies the current screen to the Windows clipboard. Here are the complete steps:

1. Press the Print Screen key.
2. Open Paintbrush, usually in the Accessories group.
3. On the options menu, select Image Attributes. Click on the Pels radio button.
4. Set the Width to 640 and the Height to 480. If you are using higher resolutions, use the appropriate settings - 800 x 600 or 1024 x 768.
5. From the View menu, select Zoom Out.
6. From the Edit menu, select paste.
7. Click in the gray area to the left of the crosshatched rectangle.
8. From the View menu, select Zoom In.

You will now see a copy of your screen you were looking at when you pressed the Print Screen key. Under the File menu, you can now select Save and save the screen shot as a .BMP file. Otherwise, you can immediately print out the screen shot by selecting Print from the File menu in Paintbrush.
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Character Clipped When Printing to Laserjet

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When printing out of the database module of ClarisWorks 1.0v1 for Windows, number fields formatted as currency and aligned right may clip the last character when printing to HP Laserjet printers in native PCL mode. Clipping also depends on how many digits are in the field, with numbers longer than 5 significant figures (such as 100.23) exhibiting the symptom more often. The solution is to set the option to print TrueType as graphics.

For HP Laserjet II and III series printers:
1. Select Print Setup from the File menu.
2. Click the Options button on the right side of the Print Setup dialog box.
3. Check the "Print Truetype as Graphics" checkbox

The HP IV driver must change graphics mode from HP-GL/2 to Raster, and then the Print TrueType as Graphics option can be selected.
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How to Get a Page Break when Importing Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Q. I want to import a text file into ClarisWorks that includes page breaks. I tried pressing the Enter key to get them, but it's converted to a simple return. What do you suggest?

A. If you have a text editor that can handle special text characters, insert ASCII 12 (hex $0C) wherever you want a new page. That should give you the breaks you need.

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Display Card 8■24 GC: Questions and Answers (11/94)

Here are some questions and answers about the Macintosh Display Card 8*24 GC.

This article has been archived and is no longer updated by Apple.

Q) The card supports NuBus master and slave block transfer modes. I was under the impression that not all Macintosh models support block transfer mode.

a) Does this imply that there are third-party video cards that DO support block transfer? If yes, do you know the manufacturers' names?

b) Will the Display Card 8*24 GC run even faster when talking to one of these video cards (faster than without block transfer, but still not as fast as the on-board video)?

A) The Macintosh IIfx does support slave block transfer mode; the other Macintosh models do not have this support. The Display Card 8*24 GC block transfer function is primarily for use between NuBus cards with block transfer abilities.

a) We currently do not know of any third-party cards that support block transfer. Beside the Display Card 8*24 GC, the only video card we know of that supports block transfer is the Display Card 8*24 in its 8-bit mode.

b) The Display Card 8*24 GC would accelerate a second card that has block transfer to a greater degree than it would accelerate a second card that does not have block transfer. The second card (with block transfer) would not run as fast as the Display Card 8*24 GC performing all operations itself. (We assume that "on-board video" means the video on the Display Card 8*24 GC as opposed to logic board video, like on the Macintosh IIci.)

Q) It seems that the use of off-screen bitmap algorithms actually slow down the Display Card 8*24 GC.

a) Is this true?

b) How does adding DRAM to the card boost off-screen performance?

c) Do I need to rework my graphics code to use it?

A)

a) We are unsure what you are asking -- slow down the Display Card 8*24 GC compared to what? If this is in reference to moving off-screen bitmaps across NuBus compared to using the local DRAM for off-screen bitmaps, the answer is yes, moving bitmaps across NuBus is slower than using the local DRAM.

b) When DRAM is installed on the card, it is automatically used for off-screen bitmaps.

c) Since the off-screen bitmaps automatically and transparently use the DRAM, there is no need to change an application's code to take advantage of this function.

Q) More generally, do you have any information that outlines all the factors that determine the ultimate speed of any graphic operation? For example:

a) Speed of the CPU running QuickDraw routines relative to AM29000 speed. (How much faster is the AM29000 QuickDraw than the regular Macintosh version?)

b) On-screen versus off-screen algorithms.

c) On-board video versus third-party video cards.

d) Effect of various NuBus byte lane width specifications when transferring data from one board to another.

e) 1-bit versus 8-bit or more graphics.

A)

a) This depends on the action being taken; a straight line from point A to point B will not benefit to the degree that a complex polygon would. The AM29000 performance is from 5 times to 30 times faster than unaccelerated performance.

b) The creation of the on-screen image and off-screen image will be equal. Since only QuickDraw variables and small data structures are moved across NuBus, there is an improvement in this image creation compared to standard video cards. However, the biggest benefit is when the previously created off-screen image is moved onscreen.

c) We are not sure what is being asked. We do not have specifications for third party-cards. (We hope this is the information being requested.) Typical reads and writes from the Macintosh to display cards are performed in 1000 and 500 nanoseconds, respectively. (This is what we believe you are requesting for the standard video cards.) The Display Card 8*24 GC and writes to its frame buffer (off-screen bitmaps in DRAM) at a rate of 66 reads 60 132 nanoseconds. (This is what we believe you are requesting for the on-board video specifications.)

d) We have not been able to locate an answer for the byte lanes issue. We will do our best to provide details on this in a later response.

e) The following applies during image movement from Macintosh memory across NuBus to standard video cards or during image movement from Display Card 8*24 GC frame buffer to Display Card 8*24 GC display:

When moving 24-bit images, you are moving 4 times as much data than moving 8-bit images and 24 times as much data than moving 1-bit images. When moving 8-bit images, you are moving 8 times as much data than moving 1-bit images.

The movement of image data from Macintosh memory to the Display Card 8*24 GC is different because only variables and small portions of data structures are being moved across NuBus--not large, deep bitmap images. There is a small increase in the amount of data sent as you move from 1-bit to 8-bit to 24-bit; however, 8-bit and 24-bit are very close. The bitmaps grow dramatically; the variables and data structures remain relatively flat.

Q) When does the Display Card 8*24 GC accelerate third-party cards?

A) The Display Card 8*24 GC accelerates other video cards via its pseudo-block transfer. This is similar to block transfer in that it claims the bus for a 16 NuBus data word transaction, but different in that it must send an address word for each data word that it sends. The extra transfer activity makes pseudo-block transfer slower than block transfer, but it is still an improvement over normal NuBus access times.

Article Change History:
07 Nov 1994 - Changed 8/24 to 8*24 for consistency with other articles.

Support Information Services

TA42413_Display_Card_GC_Questions_and_Answers_.pdf

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Use Macros to Add a "Replace All" Command

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Sometimes you want to fill all the fields in the selected set of records with the same value. For example: you just sent bill reminders to several hundred customers. You want to put today's date into the "reminder sent" field for all those records.

Here's how to build a ClarisWorks macro to handle the chore:

1. Create a new ClarisWorks database file with any two fields. Add three empty records. This file lets you use the commands necessary for the macro, without affecting any actual data.

2. Click into any field.

3. Choose Record MacroÉfrom the Macro item of the File menu.

4. Call the new macro "Repeat Loop" and specify the keyboard equivalent Command-Option-r. Click "Record."

5. Type the following key combinations in sequence:
Command-A
Command-V
Command-Return
Command-Option-r
Command-Shift-J

Once you press Command-Shift-J, the macro is finished recording.

6. Again choose Record Macro from the Macro item of the File menu.

4. Call the new macro "Replace All" and specify the keyboard equivalent Command-Option-=.

7. Type the following key combinations in sequence:
Command-A
Command-C
Command-G

At this point, the "Go to Record" dialog box appears. Type the number 1 then press Return.

Continue with the following key combinations:
Command-Option-r
Shift-Command-J

8. Choose Save Macros... from the Macro item of the File menu to store your work on disk.
Whenever you want to use your new "Replace All" command, just click into a field and press Command-Option-=. The contents of that field in every record will be changed to match the value in the current record. When the macro reaches the end of the database, you stop it by pressing Command-Period.

How it works
If you were to manually update the file, you would probably copy the field value you wanted to the clipboard. Then, starting from the first record, you would paste it into the appropriate field in each record. Suppose the cursor was in the field holding the value you wanted replaced throughout the database. Here's the steps you would take by hand:

A. Copy the entire contents of the current field.

B. Go to the same field in the first record.

C. Replace whatever is in the field with what's on the clipboard.

D. Go to the next record.

E. Go to step C.

The first macro sequence you created, in step 5, performs steps C through E. It selects everything in the current field, pastes whatever is in the clipboard, moves to the next record (Command-Return), then calls itself (Command-Option-r). In other words, the last step in the macro is to "type" the keyboard equivalent for itself. This way the macro repeats itself forever or until you press Command-Period to stop it.

The next macro, the one you set up in step 7, sets things up. It's analogous to steps A and B. The macro copies the current field value to the clipboard, then moves to the first record in the found set. (Fortunately, when you use the Go To Record command ClarisWorks doesn't move the insertion point to a different field.) The last step in the macro, Command-Option-r, sets loose the recursive "Repeat Loop" macro through all your records, replacing the data.

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White-colored Text can be Hard to Read (WP)

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This article has been archived and is no longer updated by Apple.

Q. I imported a 10-page AppleWorks term paper to ClarisWorks, but the window seems blank. What's happening?

A. Sometimes extraneous data in the AppleWorks file misleads the translator into using a white text color. Your work is there, but you can't see it. Just use choose Select All from the Edit menu, then choose Text Color from the Style menu to set the color to black.

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About Version 1.0v4 Macintosh Updater, Read Me

This is the Read Me file included with the ClarisWorks 1.0v4 Updater. It explains how to use the updater and also covers the mechanics of exchanging files between the Macintosh and Windows version of ClarisWorks 1.0.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

What's New with ClarisWorks 1.0v4?

This revision of ClarisWorks is for users who need to exchange files between the Mac and Windows versions of ClarisWorks 1.0. ClarisWorks 1.0v4 will automatically recognize ClarisWorks Windows files that have the .CWK and .CWS file extension1. This eliminates the need for any external file utilities to convert your files. This new version also substitutes the correct fonts (if possible) when opening a ClarisWorks Windows file. No other enhancements or fixes have been added.

ClarisWorks 1.0v4 uses the same file format as the previous versions, so you will be able to open and work with your previous documents without any conversion or modification.

How the Updater Works

This updater will create a new version of ClarisWorks in the same place that you store your current copy of ClarisWorks. This update will only modify ClarisWorks 1.0v1, v2 and v3. The update is a two step process. In Part I, you will update the application. In Part II, you will update the file translators.

Virus Detection Software

The Updater makes several changes to the resources in ClarisWorks. Many virus utilities consider this activity improper and may try to prevent it. To avoid this inconvenience, disable all virus detection software and restart your Macintosh before applying the update.

Hard Disk Space

For this installation to be successful, be sure that you have at least 1MB of free disk space.

Part I: Updating the Application

1. Double click on the ClarisWorks 1.0v4 Updater icon.
2. Click OK.
3. The Updater will attempt to find your copy of ClarisWorks. If the Updater fails to find it, you will need to locate and select your current version of ClarisWorks.
4. Click Update.
5. You will then get a status bar showing ClarisWorks is being updated. When it has finished, you will get a dialog that indicates a successful update. Click OK to continue.
6. From the desktop, go to the folder that contains ClarisWorks.You will find your original program and the new version which will be labeled ClarisWorks 1.0v4.

7. To ensure the updater worked correctly, double click on the new ClarisWorks application. If successful, quit ClarisWorks and return to the Finder.
8. Place your original version of ClarisWorks in the Trash and choose Empty Trash from the Special menu in the Finder.

Part II: Updating the Translators

ClarisWorks uses a special file, ClarisWorks Translators. Because this file changes with each version, you will need to update your existing ClarisWorks Translators file. To replace this file follow these steps:

1. Open the System Folder on your hard disk.
2. Locate and Open the Claris folder.
3. Copy the new ClarisWorks Translators file from the updater diskette into the Claris folder; respond OK when asked whether to Replace the existing file. Note: be sure not to copy this file into the Claris Translators folder. If you do, the import/export capability will not work.
4. The standard installation of ClarisWorks places the ClarisWorks Translators file in the Claris folder. If you have done a custom installation, this file will either be in the System Folder or in the same folder as ClarisWorks. If this is the case, locate the file and replace as directed.

5. Close all of your folders.

Congratulations, you've successfully updated to 1.0v4!

Exchanging files between ClarisWorks Macintosh and Windows

Using Diskettes-

To successfully exchange files between Macintosh and Windows you need to be aware of a few issues. If you plan to exchange files via diskette, your Macintosh must be equipped with a Superdrive (FDHD). You must also have one of the following software programs: Apple File Exchange,

Access PC, DOS Mounter or PC Exchange (Apple File Exchange is included with every Macintosh whereas the other software packages mentioned must be purchased separately). Refer to the manual included with these programs for questions regarding their operation.

Naming Files-
When moving from Windows to Mac or Mac to Windows your file name must have a .CWK or .CWS extension. In addition, when moving from Mac to Windows you must follow DOS naming conventions and use only eight characters in your file name or it will be truncated to eight characters.

Opening Files-
Once your file has been transferred onto your hard drive, you will be able to open the file by using one of two methods. The first method is to open the file from within ClarisWorks by using the Open command from the File menu. The second method is to Drop Launch the file (System 7 required) from the Finder. To Drop Launch, select the file you want to open and drag it on top of the ClarisWorks application icon. When you release the mouse button, ClarisWorks will automatically open the file. This method will also opens multiple files simultaneously.

Because of the operating system differences between the Mac and Windows platforms, you will not be able to open ClarisWorks Windows files on your Mac by double clicking on them. Instead, use one of the methods listed above. Once you have opened the file and saved it on your Mac hard drive, as a ClarisWorks Mac file, you will be able to double click the file to open it.

For Questions With This Updater Contact Technical Support at:
Claris Corporation
Technical Support MS-C12
5201 Patrick Henry Drive
Santa Clara, California 95052-8168

Technical Support for Macintosh Applications: 408-727-9054
Technical Support for Microsoft Windows Applications: 408-727-9004
Hours: Monday - Thursday, 6 AM to 6 PM & Friday: 6 AM to 2 PM (Pacific Time).

Technical Support Bulletin Board 408-987-7421

24-Hour Online Services
America Online: Keyword CLARIS
CompuServe: Go CLARIS

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Exchanging Files between the Macintosh and Windows Versions

This is an expanded excerpt from the ClarisWorks 1.0v4 Macintosh Updater Read Me document.

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Using Diskettes

If you plan to exchange files via diskette, your Macintosh and Windows machines must be equipped with a Superdrive (FDHD). You must also have one of the following software Macintosh programs to save a file to a DOS formatted floppy: Apple File Exchange, Access PC, DOS Mounter or PC Exchange (Apple File Exchange is included with every Macintosh whereas the other software packages mentioned must be purchased separately). Refer to the manual included with these programs for questions regarding their operation.

Using Network Servers

If you have a network server which lets Macintosh and Windows computers share files, you will be able to share ClarisWorks files seamlessly as long as you use naming conventions.

Naming Files

When moving from Windows to Mac or Mac to Windows your file name must end with the .CWK or .CWS extension. The .CWS extension is used for stationery files. In addition, when moving from Mac to Windows you must follow DOS naming conventions and use only eight characters in your file name or it will be truncated to eight characters.

Opening Windows files on the Macintosh

You will need ClarisWorks 1.0v4 for Macintosh to be able to open ClarisWorks Windows files. An Updater is available on America Online, Compuserv e, AppleLink and the Claris BBS (408-987-7421; settings 8/N/1) as well as via Claris Customer Assistance at 408-727-8227.

Once your file has been transferred onto your hard drive, you will be able to open the file by using one of two methods. The first method is to open the file from within ClarisWorks by using the Open command from the File menu. The second method is to Drop Launch the file (System 7 required) from the Finder. To Drop Launch, select the file you want to open and drag it on top of the ClarisWorks application icon. When you release the mouse button, ClarisWorks will automatically open the file. This method will also opens multiple files simultaneously.

Because of the operating system differences between the Mac and Windows platforms, you will not be able to open ClarisWorks Windows files on your Mac by double clicking on them. Instead, use one of the methods listed above. Once you have opened the file and saved it on your Mac hard drive, as a ClarisWorks Mac file, you will be able to double click the file to open it.

Opening Macintosh files in Windows

After saving a Macintosh file to a DOS formatted floppy or a network server, as long as it follows the naming conventions outlined above, you will be able to open it via the open menu in ClarisWorks for Windows or by double clicking the file in File Manager.

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Paint Lines or Edges of Objects Printing Jagged (Not Smoothly) (PT)

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If lines or the edges of objects in the ClarisWorks Paint environment/frame print jagged or not as smoothly as you'd like, check to see if the Color/Grayscale option from the Print Dialog Box is chosen.

If so, choose the Black and White option (also in the Print Dialog Box) and print again.

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Printing To A Com or Serial Port

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you want to print to a Com, or serial communications, port you must have the following commands in your Autoexec.bat file:

MODE LPT1=Com1

No baud rate statement is needed, the default settings used should work fine.
If all your other Windows applications can print to the printer connected to a COM port but FileMaker Pro reports that it is unable to print to LPT1 then you must edit the Claris.ini file to read:

Printer=

Deleting the data after the equals sign will cause FileMaker Pro to use the Windows default.
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Dr. Watson Utility

Dr. Watson logs may help Technical Support troubleshoot a crash when using a Claris application.

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Dr. Watson is a Microsoft utility that ships with Windows 3.1 to record system information during a crash. You can easily set up Dr. Watson to run in the background whenever you run Windows. If your computer crashes, Dr. Watson will record what the error was, in what memory location it occurred, and what applications were running at the time of the error.

To install Dr. Watson:

* Open the Startup group from the Program Manager in Windows.
* Choose New from the File menu and select Program Item. Click OK.
* Type the following in the Program Item Properties dialog box:

Description: Dr. Watson
Command Line: drwatson.exe
Working Directory: [leave blank]
Shortcut Key: None

Dr. Watson creates a text file in your Windows directory called drwatson.log that you can read with a word processor. If the file already exists, Dr. Watson appends new information to the file. If your log becomes too large, you can rename or delete the file. The next time Dr. Watson runs, it will create a new drwatson.log file.

If you get a GPF or crash in a Claris application, you can have a Technical Support specialist review the Dr. Watson log. You can either upload the text file to our BBS at (408) 987-7421 or print the file and fax it to Technical Support at (408) 987-7447.

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Margins Always Default to One Inch for Paint Document, But Vary on Other Documents (PT)

Here's a way to have your ClarisWorks Paint documents default to margins smaller (or larger) than one inch.

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When you create a new Paint document in ClarisWorks 2.0 or higher the margins are always preset to one inch. All other documents vary depending on the type of printer that is chosen when creating a new document. If you like smaller margins make a Stationery document to save your preferred margins. To set the new margins as the default, name the Stationery document "ClarisWorks PT Options" and save it into the Claris folder located in the System Folder.

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Margins Appear Different Between Text Ruler and Graphics Ruler (All)

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The graphics ruler starts measuring from the beginning of the left margin (printable area) whereas the text ruler starts measuring from the edge of the page (including non-printable area). Therefore it may appear you have less printable area in a Paint or Draw document vs. a Word Processing document even though the margins are the same.
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Unused Space in Calculation Field Not Removed By Sliding Objects (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Sliding objects up and left to remove unused space is set by default when creating a label layout. However, if the field on the left is a calculated field and the fields to the right are regular text fields, sliding will not occur.

For example, if you are making address labels and want the comma to be right after the name of the City, using a calculation and concatenating would do it. But the State and Zip Code fields will no longer slide left, eliminating the blank space.

The only workaround is to combine the whole row of fields in the calculation.

For example, a single calculation to concatenate these fields including a comma might be:

CityStateZip (calculation, text result)= 'City'&" , "&'State'&" "&'Zip'

Or the CONCAT function could be used:
CityStateZip (calculation, text result)= CONCAT('City',", ",'State'," ",'Zip')
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Macintosh SE: Color QuickDraw Print Restrictions

I created a PowerPoint document with a number of colors defined. The document printed without problems to a 35mm slidemaker from their Macintosh II, but when I printed the document from a Macintosh SE, I could print only eight colors.

1) Can you receive the same color printout results from a Macintosh SE or any Macintosh?

2) Are there restrictions when printing color from a Macintosh SE?

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1) Macintosh Plus, Macintosh SE, and prior models support only the eight colors that are available in the original QuickDraw. All Macintosh II computers and the Macintosh SE/30 support Color QuickDraw, which provides 256 colors. Therefore, using original QuickDraw (Macintosh Plus, Macintosh SE, and earlier) provides eight colors; while using Color QuickDraw (Macintosh II family and Macintosh SE/30) provides 256 colors. However, please note the third-party issues below.

2) There is a limit of eight colors as supported by the ROMs in the Macintosh SE. However, please note the third-party issues below.

Some third parties have devised methods to work around the limits imposed by the Macintosh ROMs. Some third-party film recorders (slidemakers) do not work with the Macintosh SE/30 under Color QuickDraw, but work on the Macintosh SE/30 by assigning colors to be equal to certain black and white patterns. (This also may be supported on the Macintosh SE and Macintosh Plus.)

Other third-party products can print Macintosh II 8-bit color images from a Macintosh SE/30 without any changes. Without knowing which 35mm film recorder is in use, we cannot tell you the limits the product imposes on the Macintosh. To understand these limits, check the film recorder documentation.

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Cannot Print Hairlines to a StyleWriter or Personal LW LS (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisWorks 1.0 and 2.0 cannot print hairlines to a StyleWriter or Personal LaserWriter LS. All other printers can produce hairlines from ClarisWorks.

ClarisImpact has been tested with the StyleWriter I & II and prints hairlines perfectly.
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ClarisWorks Splash screen Slow On Launching (International Serialized Versions Only)

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The more recent serialized versions (International only) of ClarisWorks splashscreen are slow loading due to looking over the network as part of the serialization (copy protection scheme) to see if there are any other copies of ClarisWorks with the same serial number. After serializing a copy of ClarisWorks, it takes 20 seconds to launch with AppleTalk turned ON and only 5 seconds to launch with AppleTalk turned OFF. It always took longer to launch serialized copies but it now takes even longer because it is looking across zones. Before it only searched within the current zone.

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Fonts from Adobe Type On Call may be Corrupted

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It's not unusual for corrupt or incomplete fonts to spell trouble for your applications. Claris programs might crash at the startup screen, or you might notice fonts changing unexpectedly as you scroll through your document, zoom in and out or change views. Some problems are more obvious than others, and some programs may show trouble, while others seem to work fine.

What is unusual is that some efforts to solve the problem can make it worse. For example, one way to avoid font troubles is to stick with a single font vendor and use the the latest versions of their font suitcases. If you select Adobe as your font vendor, you could turn to the most recent Type On Call CD-ROM as your source of the latest font files.

Adobe Type On Call, available with Adobe SuperATM or separately, offers the complete collection of Adobe typefaces on a CD-ROM. As you need typefaces, you can call Adobe, give them a credit card number, and they will supply you with a code to unlock fonts as you need them.

The problem is that the unlocking scheme does not work well with some CD-ROM software drivers. For example, if you use an Apple CD-ROM drive, you must use version 4.0.2 or later of the Apple CD-ROM extension. Otherwise, fonts you copy from the unlocked volume of the Type On Call disk will usually be corrupt. The font suitcases will look identical to non-corrupt ones -the same number of bytes, etc.- but will not function correctly.

The best solution is to obtain the Apple CD-ROM extension 4.0.2 or later. This is currently unavailable from most online services. You must contact your dealer.

Another solution that seems to work well is to copy the bitmap suitcases from the unlocked volume of the Type On Call CD. When Adobe's locking technology is not in use, the files seem to transfer correctly.

Many other companies use similar locking techniques for distribution of fonts, software, and technical information. If you are experiencing trouble using software from one of these types of products, contact the vendor to make sure your driver software is compatible with the locking technology.

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Line Spacing Double After Saving as Microsoft Word 4.0 (WP)

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Paragraphs which are set for line spacing in points rather than the default measurement will have line spacing of twice that size when saved as Word 4.0 and opened in Microsoft Word.

Steps to recreate:
1. Create a new ClarisWorks WP document.
2. Enter a paragraph of text, enough to create multiple lines.
3. Choose Paragraph from the Format menu and select pt (points) from the Line Spacing popup menu. Press OK.
4. Save As MS Word 4.0.
5. Open the document in Word and notice that the line spacing is double what you specified in ClarisWorks. For example, a line spacing of 16 pt in ClarisWorks is saved as 32 pt in MS Word format.

The same test was done with ClarisImpact and ClarisWorks using the Word 4.0 translator but opening the file in Word 5.1. The translation produced an extra carriage return at the end of the document whereas MacWrite II files converted to Word 5.1 did not produce the extra carriage return.
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Master Page Not Saved as PICT (DR)

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In a ClarisWorks 2.0 Drawing document, you can select "Edit Master Page" from the Options menu to create objects that will show on every slide in a Slide Show.

Objects created while editing the Master Page of a drawing document are not saved when the document is saved as a PICT file.

A workaround is to choose "Edit Master Page" (Options menu), then "Select All" and "Copy" (Edit menu). Then deselect "Edit Master Page" and use the "Paste" and "Move To Back" commands on each page of the document before using the "Save As..." command.
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Text Frame Border Doesn‘t Print (All)

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Applying a line width to a text object results in a light gray border on screen, which prints as white (invisible) to a black and white printer incapable of printing grayscale such as the ImageWriter or StyleWriter I.

To make the line black, simply select the text object and choose a pen color of black.
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ClarisWorks: Transparent Paint Frame Prints Opaque to PostScript Printer

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Adding a Paint frame reserves an area in the current document. If the Paint frame is filled with the transparent pattern, the objects on the document that were placed first will appear through the portions of the Paint frame that don't display the image. The result on screen is seamlessly integrated Paint, Text and Draw elements, with a layered or superimposed visual effect.

However, when printing to a PostScript LaserWriter with the Color/Grayscale option selected in the Print dialog box, the Paint frame will print white or opaque, unlike what you may see on the screen. In order to get the Paint frame to print without a white box around it, choose Black and White rather than Color/Grayscale in the Print dialog box.

NOTE: This is a known limitation of PostScript. Thus, another workaround would be to print to any QuickDraw printer.

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"Sorry, that area is too complicated" Error Message (PT)

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When trying to select an area with the magic wand, lasso tool, or the selection rectangle with the Command key held down, the error message stating, "Sorry, that area is too complicated" may occur.

Explanation:
ClarisWorks and ClarisDraw use Quickdraw routines that are available through the Mac's operating system. The Macintosh operating system defines an element called a region. A region can be any arbitrary shape which can be described by combinations of pixels, lines, ovals, etc. The operating system stores the shape as a compressed collection of the individual scan lines (horizontal lines). One wide rectangle that is somewhat flat would be a small region. One tall rectangle, narrow or not, would be a larger region in the Macintosh scheme because it passes through several scan lines. Anyway, the Macintosh is limited to regions of no more than 32k of data. If you have created a picture and selected a large region with the magic wand or lasso (like trying to lasso a lot of light spray painting), you get the error described above. Applications like Photoshop work around this problem by not using Apple's provided QuickDraw utilities.

Workaround:
Reduce the total area that you're attempting to select at one time.

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If Statements Returns Both Results Separated By Comma

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If you are using an international version of Windows or have otherwise changed settings in the International Control Panel so that a comma is the decimal separator, as opposed to a decimal point, you may get extra commas from an If statement in the ClarisWorks spreadsheet.

Example:
Cell A1 has the number 12 in it
Cell A2 has a calculation: =IF (A1 , 5,1)

Cell A2 will result in 5,1 if the International Control Panels have a comma for a decimal separator as opposed to a decimal point. Changing the Control Panel settings back to a decimal point fixes the problem.
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Fixing Problems with Sliding Objects - Calculation Field Workaround (DB)

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ClarisWorks and FileMaker Pro include a feature called Slide Objects which will allow you to remove extra space within fields when printing. Slide Objects can slide left, removing unused space between two adjacent fields (say, FirstName and LastName). Slide Objects can also slide up, removing blank lines when a field is blank.

In ClarisWorks versions 1, 2 and 3, to get sliding objects to work, you will need to place the fields very precisely. Please read Part II below for instructions. Note: if you're using ClarisWorks version 1.0v2 or 1.0v3 and importing data, you will need to update to version 1.0v3 or later.

Note: ClarisWorks 4.0/5.0 label layouts:
ClarisWorks 4.0/5.0 includes a Label Assistant. Use the label assistant to create your label layouts, instead of following the instructions below. It's easier to create a new layout with the Label Assistant than to fix an existing layout. To use the Label Assistant, open your database, then go to Browse, then select ClarisWorks Assistants from the Help (?) Menu.

Note: FileMaker Pro 3.0 label layouts:
FileMaker Pro 3.0 label layouts contain Merge Fields instead of field boxes. These merge fields automatically slide the data together, without using the Sliding Objects feature. So, you donÕt need to follow the instructions below. You can use Merge Fields on any layout where you want the data to slide together

The following two parts explain how to make Slide Objects work:

Part 1 - Using a Calculation Field Instead
This method uses calculation fields to concatenate (combine) the data into a single field. When you use this field on your layout, Sliding Objects is not needed, because the data in the calculation field is already combined. This can be much easier than using the original fields with Sliding Objects.
Disadvantages:
The data will be duplicated in your file, making the file larger. Also, in ClarisWorks, since text in calculation fields won't wrap, you should only use this for text that will fit on a single line.

Part 2 - Getting Sliding Objects to Work in ClarisWorks

This method explains how to place the fields on a layout and get Sliding Objects to work properly.

Part 1 - Fixing Problems with Sliding Objects - Using a Calculation Instead

Fixing sliding left:
You can replace the fields on your layout with fields with the data concatenated (combined). These fields already have the data combined, so the Sliding Objects feature is not needed. You should define one calculation field for each row where your layout has multiple fields.

Consider this field layout:
«First Name» «Last Name»
«Address 1»
«Address 2»
«City», «State» «ZIP»

In this example, you would define one calculation field to replace First Name and Last Name on the layout. You would define a second calculation field to replace «City», «State» «ZIP».

A. Defining the Calculation Field.
This is how to define a new field called CityStateZip Combined, which will replace the City, State and ZIP fields on your layout. (For this example, when you see the underscore character (_), that means to type a space.)

1) Go to Define Fields. Type in the name of the new field, 'CityStateZIP Combined.' Click the Calculation button. Click Create.

2) Click on the popup menu to change the calculation result to Text.

3) Enter the calculation formula. It will look like this -
FileMaker: City & ",_" & State & "_" & Zip
ClarisWorks: 'City' & ",_" & 'State' & "_" & 'Zip'
ClarisWorks (alternate formula): CONCAT('City',",_" , 'State' , "_" , 'Zip')

4) Define similar calculation fields as needed. For example, you could define a calculation field called Full Name, to replace the First Name and Last Name fields on your layout. Sample forumulas for ClarisWorks:
'First Name' & "_" & 'Last Name'
A better formula that handles the space between the two fields:
IF(ISBLANK('First Name'),"",'First Name'&"_") & 'Last Name'

B. Placing the Calculation Fields on your Printing Layout
1) First, go to the Layout mode. Delete any fields that you will replace with calculation fields. To delete a field, click once on the field, then press the Delete key. Delete any text objects, such as a comma, as needed.

2) Add the calculation fields to your layout
ClarisWorks: use the Insert Field command from the Layout menu

FileMaker Pro: Drag the Field Tool from the tool bar area on the left, into the Body of your layout. Release the mouse button, then select the first calculation field you want on the layout. Do not click the checkbox to add the field label. Do this again for each additional calculation field to add to the layout.

3) Position the fields: drag the field boxes into position. They can touch, but they should not overlap.

Sliding Up:
Sliding Up generally works in both FileMaker Pro and ClarisWorks, as long as the field boxes are not overlapping. To enable Slide Up -
ClarisWorks: Go to Edit Layouts or Layout Info and click the checkbox for Sliding Up
FileMaker Pro: Select all the fields on the Layout, then go to Sliding/Printing or Slide Objects.

Part 2 - Getting Slide Objects to Work In ClarisWorks
To get fields to slide properly when you print, follow these guidelines:

1) Fields cannot touch or overlap. Try increasing the view magnification to 200% to check this.

2) Field boxes in the same row need to have both the tops and bottoms of the field boxes aligned. The easiest method is to select the fields in a row, then use Align Objects to align the top edges. Then resize the boxes as necessary to align the bottom edges. To resize a field box, click once on a box to select it. Then drag the handle in the lower right corner.

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Macintosh: Protecting the System Folder from Tampering

I need to prevent my users from changing or removing resources from their System Folders. Do you know of a good way to do this?

I have already made the System Folders invisible with ResEdit. Are there any potential problems with this approach?

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System Software 6.0.x will not run INITs from invisible files. Because your files are visible (but the folder is not), this should not be a problem. However, other applications may have problems with this method.

A better, but more expensive, solution would be to use a security package (such as Empower, from Magna) which supports password protection of specific folders. Another solution is Casady & Greene's Access Managed Environment (A.M.E.), an integrated security and virus program with numerous utility-like options (activities log, passwords, auto sign on/off, etc) for the individual or multiple users.

For more information, search the Technical Info library under: "Magna" and "Casady & Greene"

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Aligning Database Fields (DB)

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Q. No matter how hard I try, I can't get the database fields to line up evenly in my ClarisWorks screen displays and reports. There must be a way to make this easier than just trying to align everything "by eye".

A. "Autogrid" is an invisible grid of rows and columns that "hides" behind your ClarisWorks screen. With Autogrid turned off, you can move objects anywhere on the ClarisWorks screen. With Autogrid turned on, all objects automatically line up with the nearest row or column on the grid.

Go to the Options Menu and make certain the Autogrid feature is turned on when you work with your database. (You know that Autogrid is on if the Options Menu includes the "Turn Autogrid Off" option.)

ClarisWorks' "Align" feature also makes it easy to line up rows and columns. Just select the objects you want to align, choose Align Objects from the Arrange Menu, and mark the appropriate boxes in the Align Objects dialog box that will appear on your screen.

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Area Codes Disk for ClarisWorks (DB)

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Area Codes Disk

The ClarisWorks (CWUG) Public Domain Library now includes Bruce Shanker's Area Codes Disk. This disk contains three ClarisWorks database files with city names, area codes, time zones, and other information for more than 3,000 cities in the United States and throughout the world. ClarisWorks users who make long distance calls will appreciate these useful files that Mr. Shanker originally developed for AppleWorks and imported into ClarisWorks.

The ClarisWorks Users Group (CWUG) is an association that supports ClarisWorks users. CWUG provides technical support and information about ClarisWorks and enhancements to that program.

ClarisWorks Users Group
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(313) 454-1969 Fax: (313) 454-1965
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Published Date: Feb 18, 2012

Cannot Multi-launch ClarisWorks from Novell Server (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
After installation on a Novell Server, multi-launching from the server may not work when some people have Read/Write access and others only have Read access. If everyone has Read access only, everything works fine.

Solution:
1. In File Manager go to the CLWORKS directory. Select CLWORKS.RSR and under File get properties.

2. Click on the Network button, click on the checkbox for Sharable and close all the dialogs.
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Claris CAD / Adobe Type Reunion Incompatibility

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Using Claris CAD 2.0v3 and Adobe Type Reunion (any version, currently 1.1). On some model Macs (IIfx and SE/30), XTND may not work properly. The symptoms: either the Show popup menu does not list any XTND file types, or the Show popup menu is missing entirely.

The problem seems to be CPU specific; that is, the problem does not seem to occur on a IIci or a Quadra 800. Other Macintosh models were not tested. These results are from an informal test by Claris Technical Support, not a comprehensive compatibility test.

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ClarisWorks: Crashes after Install but Runs OK after Rebooting

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Q: ClarisWorks crashes immediately after I install the program but runs reliably after I reboot my system. Why would that happen?

A: The ClarisWorks installation routine creates some new folders and installs its files in those folders. Some systems cannot locate those files until you reboot your computer. Thus, you should always restart your Macintosh after using the Installer. [Ed: This is true for most sophisticated Macintosh applications, not just ClarisWorks.]

Use ClarisWorks' "Easy Install" routines whenever possible. That ensures that the files go in the correct folders. (For example, the "ClarisWorks Translators" file goes inside the Claris Folder that should be in your System Folder. The ClarisWorks Translators file is not an XTND translator and, therefore, does not go in the Claris Translators folder that also resides in the Claris Folder.)

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ClarisWorks Runs OK on Certain Computers But Not on Others (All)

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Q: ClarisWorks runs reliably on the computers at my school but will not launch on my system at home. What might cause this problem?

A: When you launch ClarisWorks, the program performs a number of tasks including building a custom font menu, checking for viruses, locating the Claris Help, Dictionary, and File Translation files, and initializing memory. Thus, a crash at startup could indicate a problem with fonts, a problem with the disk or disk directory, a virus, a problem with the way you arranged the Claris support files, or a conflict with one of your system extensions. This is complicated, but not unmanageable.

Start by rebuilding your desktop; that is, boot your computer while you hold down the Command and Option Keys and respond "OK" to the on-screen prompt.

Next, check for conflicts between your system extensions (CDevs and Inits) and ClarisWorks by de-activating your extensions and then running ClarisWorks. [Ed: A "CDev" is a Control Panel Device that you can modify through the Macintosh Control Panel. CDevs show up as "Control Panel Documents" when you list the contents of the System Folder by name, date, size, or kind. "Init" is a generic term for any other system startup extension.]

If you use System 7, this process is easy; just hold down the Shift Key while you reboot your system. That will keep your System Extensions from loading. If you can then launch ClarisWorks, your problem is an Init or CDev. Remove them from your System Folder and then systematically reinsert them and reboot until you identify the problem.

If you use System 6.x, you must move all your Inits and CDevs from your System Folder to another folder and reboot. Then reinstall your system extensions one at a time, restart, and launch ClarisWorks until you identify the source of your problem. [Ed: You can identify the Inits and CDevs by viewing the contents of your System Folder by "Kind". That makes it easy to move all the Control Panel Documents and Startup Documents to a different folder.]

Finally, you should check for directory problems by running Disk First Aid, the Norton Utilities, MacTools, or some other disk utility.

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ClarisWorks Tip: Create Two Views of your Database Documents

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Changing a database layout requires you to switch between Layout mode (where you format the layout) and Browse mode (where you see the effect of your changes). Of course, the need to repeatedly switch between modes can be tedious.

To increase your efficiency, create two views of the same data. Then you can display your document in both Layout and Browse modes simultaneously (see Figure 1) and immediately see your changes on the screen.

Follow these steps to create separate Layout and Browse views of your database file:

1. Display your database in Browse mode.

2. Choose "New View" from the View Menu. ClarisWorks will open another window with the same view of your document.

3. Choose "Layout" from the Layout Menu to change the new view to Layout mode.

4. Choose "Tile Windows" from the View Menu. ClarisWorks will arrange the windows so you can see both views on the screen. Any changes you make in Layout mode will immediately appear in the Browse mode view.

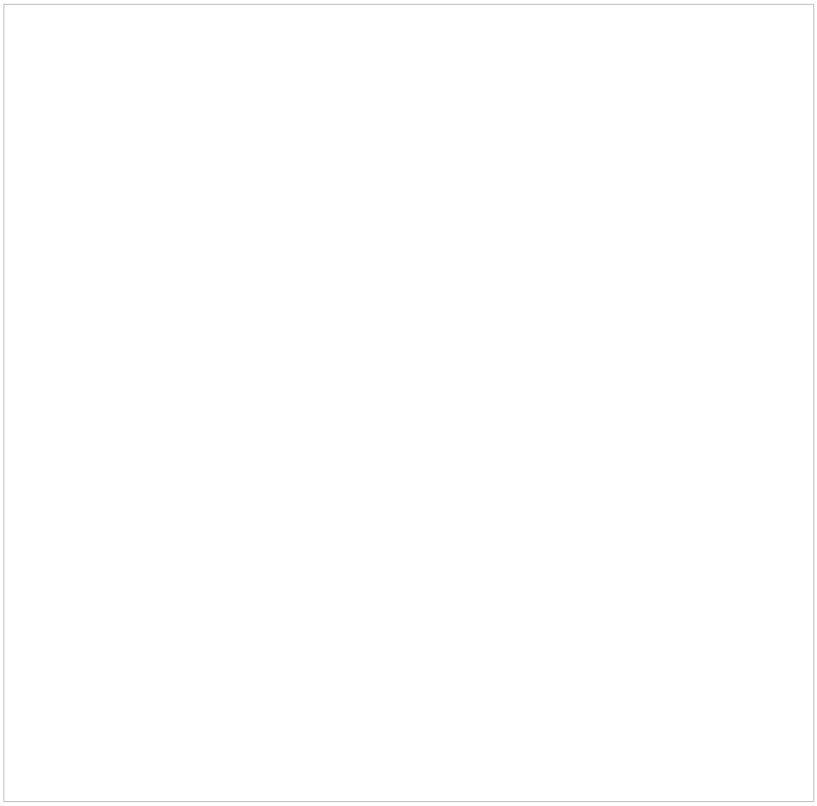

Figure 1

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ClarisWorks Tip: Use ClarisWorks‘ BEEP and ALERT Functions in Spreadsheets and Databases (DB,SS)

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The BEEP and ALERT functions of ClarisWorks let you warn users of mistakes they make when using a ClarisWorks spreadsheet or database template.

BEEP sounds the system beep; ALERT sounds the beep and displays an alert box with the message you specify.

For example, the formula :

=IF(A10<0, ALERT("Illegal negative value in Cell A10"),A3*A10)

will display a warning message if cell A10 contains a negative number. Otherwise, this formula displays the product of cells A3 and A10.

Figure 1 contains a ClarisWorks spreadsheet template showing a warning message produced by the ALERT function.

VI. Use ClarisWorks Pane Tools to lock titles on your spreadsheet screen.

ClarisWorks lets you lock the top rows and left-hand columns of your spreadsheet templates as "titles" on the screen. The titles stay on the screen when you scroll around a large worksheet.

ClarisWorks titles go in a separate window "pane" at the top or left side of your screen. (For example, note the separate horizontal pane in Figure 2 that contains the titles at the top of the screen.) You create the pane by dragging the horizontal Pane Tool down the screen to set your titles. You can use the vertical Pane Tool to the right of the Zoom Controls at the bottom of the spreadsheet window to lock columns as titles on the left-hand edge of your screen.

VII. Use the NOW function to enter the current date or time in a spreadsheet cell or a database record.

The NOW function of ClarisWorks displays the current date or time in a spreadsheet cell or database record.

In a spreadsheet, enter =NOW() as the formula and set the number format of the cell to display a date or time. In the database environment, define the field as a calculated field, enter the formula NOW(), and select "Date" or "Time" from the "Format result as..." pull-down menu.

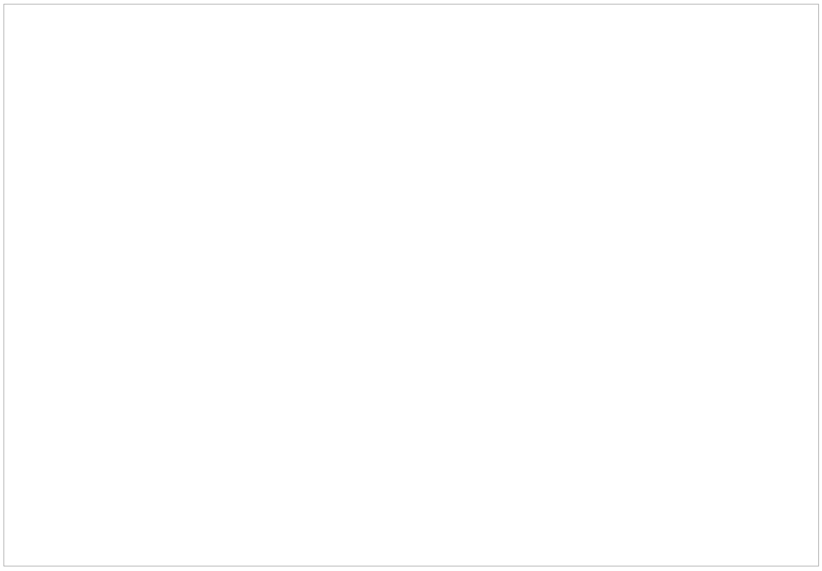

Figure 1:

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ClarisWorks Tip: Use Text and Graphic Frames in a Spreadsheet for Your Notes (WP,SS,DR)

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ClarisWorks lets you create text and graphic frames within your spreadsheets. You can use these frames to present instructions about the template or to annotate or highlight a particular spreadsheet cell or cell range (see Figure 1).

To annotate a cell, select the Text Tool and click and drag to create a text frame in the spreadsheet next to the information you want to annotate. Then enter the text you want to appear in your note. You can leave the text frame selected when you save your template and tell the reader to delete the text frame by pressing the Delete Key after they read the note.

You can also use the graphic tools to create an attractive border around the message like the example in Figure 1. Follow these steps:

1. Select the Rectangle Tool. Then click and drag in the spreadsheet to create a rectangle.

2. Select a fill pattern from the Fill Palette.

3. Select the Text Tool and click within the rectangle.

4. Select a font, font style, and font size from the Font, Size, and Style Menus. Then type the text you want in your label.

5. Select the Arrow Tool. Then click once on the text and resize and reposition the text block within the graphic.

6. Select the graphic and establish the final size and position for the graphic object.

IX. Use the tear-off fill and pen tool palettes.

ClarisWorks offers "tear-off" fill and pen tool palettes that you can put anywhere on your screen. To save time and effort, put the palettes next to the objects you are creating or modifying. The torn-off palettes remain open until you click on their Close Boxes.

To tear off a palette, click on the tool to open the palette and drag to the right until the palette tears away from the left edge of the screen.

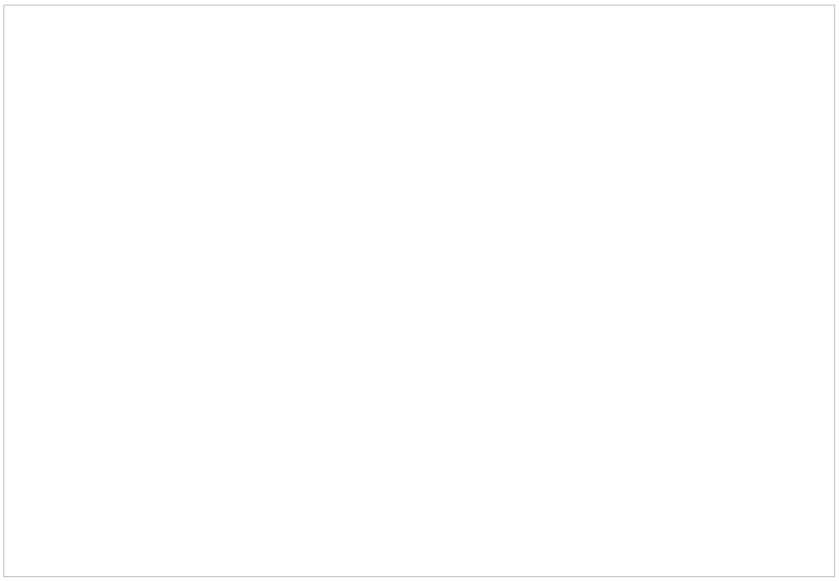

Figure 1

Published Date: Feb 18, 2012

ClarisWorks Tip: Use the Command-(minus) Keystroke to Save Time Entering Data (DB)

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Pressing Command-(minus) enters the current date, time, or record number in date, time, and number fields respectively. That can save you time and effort when you enter data into your database records.

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Converting Apple III Text Files to Macintosh

I'm trying to transfer some text files on Apple III disks to 3.5- inch floppy disks so I can open the files on a Macintosh. What cables and software are needed for this?

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If you still have the Apple III, the files can be transferred using Access III, MacTerminal, and either cable (Apple Part #) 590-0555 or cables 590-0169 AND 590-0550.

If using the Apple III serial card, have the card set to no modem eliminator. If using the built-in port C, make sure you're using the .RS-232 driver rather than the .PRINTER driver. You can find the .RS-232 driver for the built-in port C on the System Utilities Data disk.

Make sure both systems are set for the same baud rate, data bits, and so forth, and then simply set one system up to send a file and the other one to receive a file.

If only the disks are available, you can use this method. Because Apple III SOS and Apple II ProDOS are file-compatible, using an Apple IIe, Apple IIGS, or Apple IIc with both a 5.25-inch disk drive and a 3.5-inch disk drive, transfer the files to a 3.5-inch disk. Use AFE to transfer the files to the Macintosh disk.

Both of these options assume that the files are text-only. If they are QuickFile or Three Easy Pieces files, see the Tech Info Library for instruction on converting the files to Microsoft Works.

Another option would be to have an outside service, such as Pivar, convert the files for you.

For more information, search under: "Pivar"

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ClarisWorks Tip: Use the Spell Checker to Count Words (WP)

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The Spell Checker included with ClarisWorks and ClarisImpact makes it easy to count the number of words in a document. Just perform a regular spell check. When you are done, these two Claris programs will display the number of words it checked in the document (see Figure 1). Since ClarisWorks and ClarisImpact check every word, the number next to "Words Checked" is the number of words in the document.

Remember that ClarisWorks can also count the number of words in your spreadsheet and text frames.

NOTE:
MacWrite Pro has a much more sophisticated system for counting words, sentences, etc. in a document without using the spell checker.

[ClarisWorks 3.0 has a feature in the Edit>Writing Tools menu for counting characters, words, sentences, etc.]

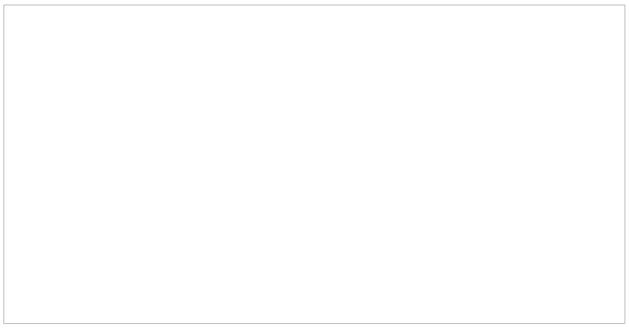

Figure 1

Published Date: Feb 18, 2012

ClarisWorks Tip: Use the Spreadsheet Tool to Create Tables and Charts (WP,SS)

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The word processor environment of ClarisWorks provides the tabbing tools necessary to create tables and charts for your documents. But the Spreadsheet tool makes it even easier to align your text and numbers. Figure 1 depicts a word processor document that uses a spreadsheet to format tabular data.

Follow these steps to create a table in your documents:

1. Click and drag with the spreadsheet tool when you need to create a table or chart.

2. Set the column widths you need in your spreadsheet.

3. Enter the data into the spreadsheet cells and format the cells to meet your needs.

4. Choose "Display" from the Options Menu and turn off the grid lines, column headers and row headers to make the spreadsheet frame look like part of the text.

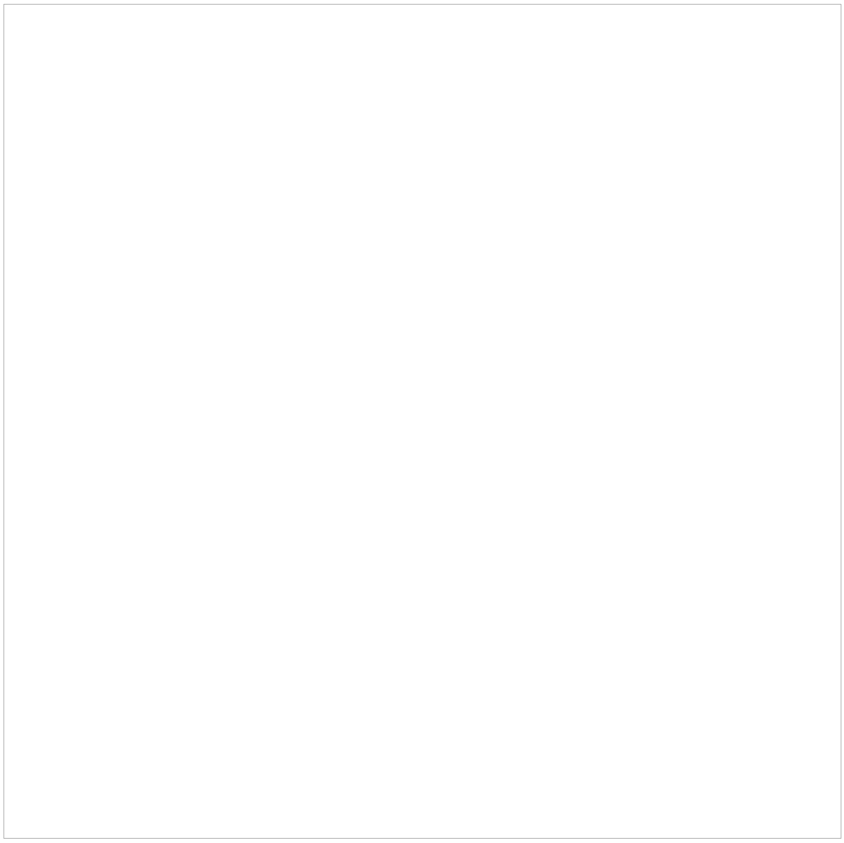

Figure 1

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Creating a Letterhead Macro in ClarisWorks (WP)

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A Letterhead Macro

Let's create a macro that stores both text and formatting commands. This macro will produce a letterhead with a single keystroke, like the example in Figure 1.

ClarisWorks macros work more reliably if you select your choices from the menus instead of using the keystroke alternatives. Thus you should avoid using quick keys such as Command-A instead of choosing "Select All" from the Edit Menu. Don't worry if you make a mistake as you type; just use the Delete Key to erase your error and correct your work.

Follow these steps:

1. Create a new word processor document.

2. Issue a Command-Shift-J to start recording the macro.

3. Assign the macro to keystroke Option-Command-l (for "letterhead") and name the macro "Letterhead".

4. Type the text that will appear in the letterhead. Then press the Return Key five times to leave four blank lines.

5. Use the mouse to select "Insert Date" from the Edit Menu.

6. Press the Return Key twice to leave a blank line after the date. Your screen should now look like the example in Figure 2.

Your next task is to change the date format to match the example in Figure 3. Follow these steps:

7. Go to the Edit Menu and select "Preferences".

8. Click on the current date format and hold down the mouse button while you drag the mouse to a more appropriate format. Then click on the "OK" button.

You are now ready to format your letterhead. Proceed as follows:

9. Go to the Edit Menu and choose "Select All". Then choose a font from the Font Menu.

10. Highlight the lines of text you want to center and click on the Center Text icon on the ClarisWorks Ruler.

11. Put the cursor anywhere in the first line of text and triple-click to select the line. Then go to the Style Menu and select "Boldface".

12. With the first line of text still highlighted, select "14 point" from the Size Menu.

13. Click anywhere below the date to put the insertion point where you normally start typing.

14. Finally, stop recording the macro by issuing a Command-Shift-J. Alternatively, you can select "Macros" from the File Menu and "Stop Recording" from the Macros Menu.

Now test the macro by creating a new word processor document and issuing an Option-Command-l. The screen will flash as ClarisWorks creates your formatted letterhead.

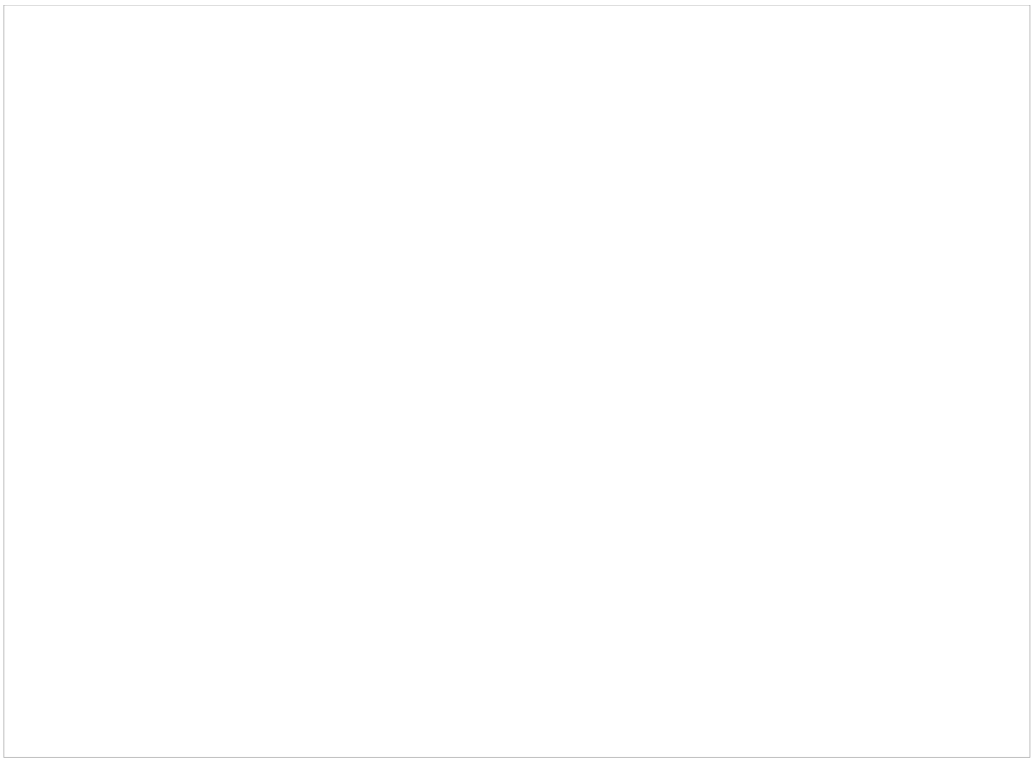

Figure 1

Figure 2

Figure 3

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Graphic File Formats (DR,PT)

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Many graphic programs store their files in a "native" file structure that you cannot read with other programs. However, users want to transfer images between applications, so programmers developed a series of common file formats that the industry now uses to share art created in graphic programs. The most commonly used file transfer formats are Paint, PICT, EPSF (also known as EPS), and TIFF.

Most programs can save their graphic images in multiple formats. For example, Paint programs can usually save in both Paint and PICT format files. Thus, you cannot determine the type of art stored in a file from the type of file on the disk.

As a ClarisWorks user, it is comforting to know that you can import art stored in any of the commonly used formats. But you should know the advantages and disadvantages of each format so you can select the most appropriate art for your application.

Paint Format

Paint format (also called MacPaint format) is the most limited of the file formats. Documents stored in Paint format can be no larger than 8 inches by 10 inches and must be a black and white image.

However, Paint format files are generally small, and art stored in Paint files often contains a great deal of visual detail.

Paint format art stores images in a single large bitmap, and thus offers the poorest resolution of all the graphic formats. For example, circles are not "objects" but instead consist of a series of darkened pixels that form the shape of a circle. As a result, the edges of the circle are not smooth, and enlarging the circle magnifies the "jaggies".

The resolution of Paint files also suffers because these files store shades of gray as patterns of white and black pixels. This can result in unpleasant patterns or stripes (called "banding") when you import these images into ClarisWorks.

Finally, the Paint programs used to create these files convert all text in the image into a bitmap. The text becomes part of the picture instead of a collection of letters, and any programs you use to improve text output will have no effect on the text in these files. In addition, Paint format files do not contain Postscript or TrueType information that your printer can use to enhance your output.

ClarisWorks can import Paint format files, and you can resize and rotate images stored in Paint files. However, you cannot edit these images.

PICT Format

PICT files are compact and can store black and white or color images. The PICT format does not set limits on document size or the number of colors used in your graphics; these limits depend on the application used to create the image.

PICT is the most flexible of the commonly used image storage formats because PICT files can contain images created with Paint or Draw programs. However, this flexibility can cause confusion because PICT art maintains the characteristics of the Paint or Draw program used to create each graphic.

Thus, PICT files created by a Paint program contain the same bitmapped images and suffer from the same resolution problems as bitmapped images stored in Paint format files. Specifically, (a) these images lack the resolution of objects drawn with Draw programs, (b) any text in the image is treated as a graphic, and (c) resized images can suffer from the "jaggies" and "banding".

ClarisWorks can import, resize, and rotate bitmapped graphics stored in PICT files but does not offer the tools you need to otherwise modify these graphics.

This stands in contrast to object-oriented art created by a Draw program and saved in a PICT file.

The object-oriented art uses the QuickDraw routines in your Macintosh to mathematically create the images that appear on the screen. Thus, art created with Draw programs maintain higher resolution when you resize or scale the image with ClarisWorks. In addition, images created with these programs automatically print at the highest resolution available from your printer. This is also true of text included in your images, since Draw programs use all the font enhancement technologies installed in your system.

Finally, and most importantly, ClarisWorks gives you the tools necessary to modify Draw images. You can import these object-oriented graphics

in ClarisWorks, ungroup the image, and edit the illustration.

EPSF

Bezier Draw programs can create high-quality, detailed images. These programs store their images in EPSF (for Encapsulated Postscript) format to capture all the detail in these drawings. EPSF files contain a PICT screen image and the Postscript language definition of the image for your printer. These images are optimized for Postscript printers but produce the highest quality output possible from any printer.

ClarisWorks can import, rotate, and resize images stored in EPSF files, but the program does not have the tools needed to edit these graphics.

TIFF

TIFF (Tag Image File Format) files, usually generated by scanning programs and high-end drawing programs such as Adobe PhotoShop, contain detailed information about a graphic. These files can store the most attractive and elaborate color graphic images. But the files are often enormous.

If you allocate enough memory to ClarisWorks, you can import, rotate, and resize TIFF format images with ClarisWorks. However, ClarisWorks does not provide the tools needed to edit these images.

Telling Them Apart

As a ClarisWorks user, you should know the type of art stored in a graphics file. This is particularly true because ClarisWorks lets you modify object-oriented but not bitmapped images. Thus, given a choice between two PICT files containing the same visual image, you should choose the object-oriented graphic instead of the bitmapped graphic.

Most clip-art libraries identify the file formats of the art on their disks. For example, the CWUG Public Domain Library includes disks with PICT, EPSF, and TIFF art. You know that you can import, resize, and rotate all the art. You also know that you cannot otherwise modify the EPSF and TIFF graphics.

The problem is determining what you can do with the art stored in PICT files, because those files can contain either bitmapped or object oriented art.

Dissecting PICT Files

Here is a way to use ClarisWorks to determine the type of art stored in a PICT file. Follow these steps:

1. Launch ClarisWorks and indicate that you want to create a new graphics document.

2. Select "Insert" from the File Menu. Scroll through the files on the Insert Window until you find the file you want to check, click on that file, and click on "OK".

3. Select "Ungroup Picture" from the Arrange Menu (or press Command-Shift-G) to ungroup the image. If the image was created in an object-oriented program, it will separate into several shapes, each with four "handles". You can modify the image with ClarisWorks.

If the object does not ungroup, the image was created in a Paint program.

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Hanging Paragraphs Macros (WP)

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Let's create two macros that will help you format documents. The first macro will set the Ruler to produce a hanging paragraph. The second macro will return the Ruler to the default paragraph format.

Follow these steps to create a "hanging paragraph macro":

1. Select "New" from ClarisWorks' File Menu and indicate that you want to create a new word processor document.

2. Issue a Command-Shift-J or go to the Macro Menu and select "Record Macro" to indicate that you want to create a new macro.

3. Define the macro key as Option-Command-h and name the macro "Hanging Paragraph".

4. Put the pointer on the Left Indent Marker (the right-facing triangle at the one-inch mark) in the Ruler at the top of the screen.

5. Hold down the Option Key, then click and drag the Left Indent Marker to the 1-1/4-inch mark on the Ruler.

6. Stop recording the macro by issuing a Command-Shift-J or by selecting "Macros" from the File Menu and "Stop Recording" from the Macros Menu.

Test the macro by creating a new word processor document and issuing an Option-Command-h. ClarisWorks will reset the Ruler to accommodate an indented paragraph.

Now repeat the steps above and create a macro that resets the Left Indent Marker back to the one-inch position on the Ruler. Assign this macro to Option-Command-u ("Un-indent"). (You must hold down the Option Key to move the Left Indent Marker.)

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Help System Cannot be Opened (All)

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This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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Q. The ClarisWorks manual suggests that the program offers a help system. Yet every time I select "Help..." under the Apple Menu I get the message "Sorry, the Help stack cannot be opened." Why do I get this message?

A. The help system requires approximately 225K of free memory. If your system has less than 225K of memory available after you launch ClarisWorks, you get a message that says you cannot open the Help stack.

If you want to use the help system and don't want to add memory to your computer, follow these steps to reduce the amount of memory allocated to ClarisWorks:

1. Quit ClarisWorks and return to the Finder.

2. Navigate to the ClarisWorks Icon. Click on the Icon and choose "Get Info" from the File Menu (or press Command-I). The Get Info Window will appear. (See Figure 1.)

3. Set the Application Memory Size to a value 100K less than the present value (in this case, set the Application Memory Size to 800).

4. Click on the Close Box to close the Get Info Box.

5. Relaunch ClarisWorks and see if you can run the help system.

If not, repeat steps #1 through #5 until you access ClarisWorks' help system.

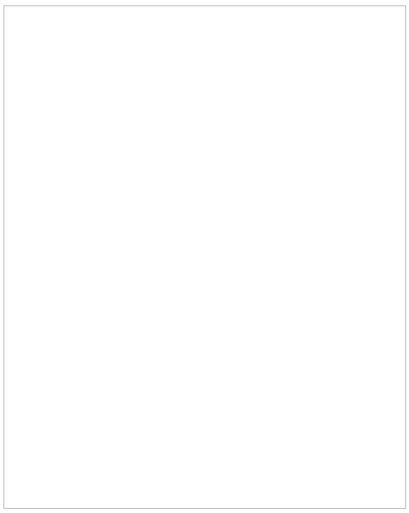

Figure 1

Published Date: Feb 18, 2012

Hints for Transferring Files (All)

This is a portion of an article that originally appeared in the ClarisWorks Journal, the monthly publication of the ClarisWorks Users Group, Box 701010, Plymouth, MI 48170; (313) 454-1969; Fax: (313) 454-1965. Copyright ClarisWorks Users Group; reprinted with permission.

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As you know, the Claris XTND technology lets you transfer data between ClarisWorks and dozens of other applications. The list of translators is extensive, but not comprehensive. For example, Claris does not offer translators for PageMaker, Publish It!, or newly released programs such as Word 5.x and Microsoft Works 3.0.

The trick is to use a file format that you can read and write with both ClarisWorks and the other application. For example, Microsoft Works 3.0 can read and write Works 2.0 files. You can save your ClarisWorks and Works 3.0 documents in Works 2.0 format and transfer the Works 2.0 format file between applications.

Microsoft Word 5.x and ClarisWorks can both read and write Word 4.0 files. That lets you use Word 4.0 format files to transfer documents between Word 5.x and ClarisWorks.

Most programs can read and write Text files, but Text files do not contain any information about the fonts and format of your document. Thus, you should use a common application format (such as Word 4.0) or RTF (Rich Text Format) file whenever possible to preserve the format of your original document.

CWUG members who do extensive work requiring file transfers should contact DataViz, manufacturers of MacLinkPlus, a file transfer utility for the Macintosh. MacLinkPlus includes dozens of XTND translators that work with ClarisWorks, MacWrite II, and other Claris products that support the Claris XTND technology.

[DataViz Inc, 55 Corporate Drive, Trumbull, CT 06611; (800) 733-0030; Fax: (203) 268-4345.]

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How to Add a Caption to a Graphic in Word Processor Documents (GR,WP)

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How to Add a Caption to a Graphic

Follow these steps:

1. Choose "Show Tools" from the View Menu (or press Shift-Command-T) to open the tool palette. Note that the Text Tool is selected in the palette, even though your graphic is selected in the document.

2. With the Text Tool selected, hold down the Option Key and click once to the right of the figure. Holding down the Option Key tells ClarisWorks to create a new text frame within the document.

3. Change the font to Helvetica 10 point italic.

4. Type "Figure 1:" and then your caption.

5. Press the Enter Key to select the text frame.

6. Drag the text frame or use the Arrow Keys to place the text to the right of the graphic.

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How to Add Charts to Word Processor Documents (WP,SS)

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There are four ways to add graphics to a ClarisWorks word processing document:

1. You can use the graphics tools to create the graphic within the word processor document.

2. You can copy and paste the graphic from other ClarisWorks documents or from other applications.

3. You can use the Insert Command in the File Menu to insert a graphic stored in a file on a disk.

4. You can add a spreadsheet frame to your document and create a chart or graph from your spreadsheet data.

Whether you should create the graphic within the word processor document or in a separate document depends on your application. Graphics that you create within a document retain their position on the page and do not move with the text. You must manually drag and reposition the graphic each time you edit your text. Thus, you should create graphics within the document if you want to control their placement on the page.

How to Add a Chart

In this tutorial, you will use a spreadsheet frame to add a chart to your document.

You will add the chart to the top of the second column of the document. Follow these steps:

1. Open a new word processing document.

2. Select the Spreadsheet Tool from the tool palette. Then click and drag to create a spreadsheet frame that contains rows A and B and columns 1 through 5.

4. Enter data from Figure 1 into the spreadsheet.

5. Change the font in cell A1 to Geneva 10 point bold. This text will become the chart title.

6. Select cells A1 through B4. ClarisWorks will use the text in column A for the chart title and axis labels.

7. Choose "Make Chart" from the Options Menu (or press Command-M) to open the Chart Dialog Box.

8. Click on the line chart icon in the dialog box and select the options shown in Figure 2. (Do not select "Color" if you have a black and white monitor.)

9. Click on "OK" to create the chart. The line chart will appear as a graphic object on top of the report.

10. Use the selection handles to reduce the size of the chart so it is about three inches wide and three inches tall.

11. Drag the chart into the upper right corner of the document so it covers the spreadsheet frame (see Figure 3). Leaving the spreadsheet hidden in the document makes it easy to recreate the chart if you want to edit your data.

Now you will add a text frame that contains information about the source of your data. Continue as follows:

12. Select the Text Tool from the tool palette.

13. Create a new text frame by holding down the Option Key and clicking once within the chart border near the bottom of the chart.

14. Change the font to Geneva 9 point italic.

15. Type "Source: Antarctic Weather Bureau, 12/92" within the text frame.

16. Press the Enter Key to select the text frame. Then drag one of the right-hand handles further to the right until all the text fits on one line.

17. Use the Arrow Keys to move the text into place in the lower left corner of the chart.

18. Hold down the Shift Key and click on the chart to select both objects. Then choose "Group" from the Arrange Menu (or press Command-G) to group the objects together.

Your chart is now complete. Save your document.

If you ever need to change the data in the spreadsheet, select the chart and choose "Move To Back" from the Arrange Menu. The chart will move to the back layer, behind the spreadsheet frame. That makes the spreadsheet frame accessible. Any changes you make to the data in the spreadsheet will immediately appear in the chart; the link between the spreadsheet frame and the chart will remain intact unless you copy or cut and paste the chart. Then select the spreadsheet frame and choose "Move to Back" from the Arrange Menu to re-display the chart.

Figure 1

Figure 2

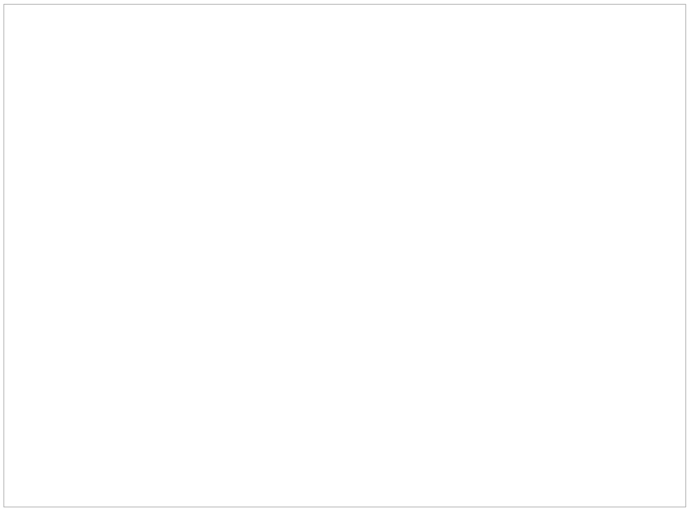

Figure 3

Published Date: Feb 18, 2012

How to Insert Graphics in Your Word Processor Documents (GR,WP)

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There are four ways to add graphics to a ClarisWorks word processing document:

1. You can use thegraphics tools to create the graphic within the word processor document.

2. You can copy and paste the graphic from other ClarisWorks documents or from other applications.

3. You can use the Insert Command in the File Menu to insert a graphic stored in a file on a disk.

4. You can add a spreadsheet frame to your document and create a chart or graph from your spreadsheet data.

Whether you should create the graphic within the word processor document or in a separate document depends on your application. Graphics that you create within a document retain their position on the page and do not move with the text. You must manually drag and reposition the graphic each time you edit your text. Thus, you should create graphics within the document if you want to control their placement on the page.

How to Insert a Graphic

The "cut and paste" method you just used makes it easy to add ClarisWorks graphics to your word processor documents. But you cannot use cut and paste procedures to import clip-art and other files stored on a disk. Instead, you use the Insert Command to import graphics stored in PICT, TIFF, EPSF, and MacPaint 2.0 format files.

Follow these steps to import a graphic file into your document:

1. Scroll to the point in your document where you want the graphic to appear.

2. Click where you want to add the graphic and press the Return Key to add a blank line. Then click to put the insertion point at the beginning of the blank line.

3. Choose "Insert" from the File Menu, navigate to the disk or folder that contains the PICT, TIFF, EPSF, or MacPaint graphic file, and select that file. Then click on "Insert" to insert the graphic in the document.

Now you will size or "scale" your graphic. Continue as follows:

4. Click once on the graphic. A selection box will appear around the graphic with a "handle" in the lower right-hand corner.

5. Click on the handle and drag to resize and/or re-scale the graphic.

You can also use ClarisWorks' Scale Selection command to resize or re-scale the graphic. Select the graphic, choose "Scale Selection" from the Format Menu, and type a horizontal and/or vertical scale percentage in the dialog box. Then click on "OK".

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Using an ADB Keyboard With the Macintosh Portable

Can the Apple Extended Keyboard be used with the Macintosh Portable? I will be using the keyboard while the Macintosh Portable charger is plugged in.

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Yes, the Apple Extended Keyboard (the original as well as the Extended Keyboard II) can be used with the Macintosh Portable, as can the Apple Standard Keyboard and other ADB devices that follow our specifications. The differences will be in key layout, battery drain, and waking up the Macintosh Portable.

The Apple Standard Keyboard draws a maximum of 100mA, and the Apple Extended Keyboard draws a maximum of 85mA. The Macintosh Portable keyboard and keypad (or trackball) together draw 75mA. From these numbers, you can see that adding the Extended Keyboard more than doubles the ADB power requirements. This decreases battery life somewhat. Since you will be using the Extended Keyboard with the charger plugged in, this shouldn't affect you.

Another point, though minor, is that the only way to manually wake up the Macintosh Portable is by pressing a key on the built-in keyboard. External ADB keyboards cannot provide this functionality. You will have to power up the Macintosh Portable by pressing a key on the built-in keyboard instead of the externally attached ADB keyboard.

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How to Kern Headlines (WP)

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Kerning adjusts the space between pairs of letters to enhance the aesthetic quality and readability of your documents. You use kerning in body text to smooth the visual flow between letters ?? usually by decreasing the space between the characters. This is called "negative kerning". In headlines, "positive kerning" adds space between letters to produce an attractive effect.

Unlike dedicated page layout programs and some high-end word processors, ClarisWorks and ClarisImpact do not offer a kerning command. But you can achieve positive kerning by adding small spaces between characters in your headlines. Follow these steps to kern your headlines:

1. Type the headline.

2. Place the I-beam cursor between the letters that need kerning.

3. Go to the Size Menu and select a small size font. For sizes smaller than 9 points, use the "Other" option to enter sizes as small as 4 points.

4. Press the Space Bar to insert a space.

5. If the size of the space is not satisfactory, press the Left Arrow, and double-click. This selects the space; then return to step 3.

Also see article, "Use Bind Text to Apply Kerning in ClarisDraw"

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How to Manage Smart Quotes (All)

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When you look at a ClarisWorks or ClarisImpact document, you will see that the program automatically implements some typographic features that enhance the quality of your printed material. Most obvious is the use of "printer's quotes" or "curly quotes" (the curly single and double quotation marks such as " and ') instead of standard Macintosh quotation marks (such as " or '). Printer's quotes add an elegant touch to your printouts.

Smart Quotes

ClarisWorks and ClarisImpact use a feature called "Smart Quotes" to put printer's quotes in your documents. The Smart Quotes feature looks at the character to the left of the insertion point and then determines whether an opening or closing quotation mark should appear in that location. By monitoring the insertion points, ClarisWorks automatically converts an opening or closing quotation mark into a printer's quote.

However, there are at least two situations when Smart Quotes are inappropriate. First, there are times when you may not want those fancy quotes (for example, when you use an apostrophe to abbreviate a length in "feet", a quotation mark to indicate "inches", or when preparing documents to be sent by modem). Second, there are times when Smart Quotes gets confused (for example, when you start a quote directly after another character, such as a left parenthesis).

Fooling Smart Quotes

Fortunately, there are workarounds that make it easy to overcome both of these problems. For example, you can follow these steps to force Smart Quotes to enter an opening quote:

1. Put the cursor where you want the opening quote to appear.

2. Press the Space Bar to insert a space. You will delete that space later, but now it signals Smart Quotes to type an opening quote.

3. Press the Quotation Mark Key to enter the opening quote character.

4. Move the cursor to the left of the opening quote character.

5. Press the Delete Key to delete the unwanted space.

Similarly, you can force ClarisWorks and ClarisImpact to type a closing quote by typing any character other than a space, typing the quotation mark, and then deleting the extra character. This can be useful when typing abbreviations for years, as in '92.

Turning off Smart Quotes

Turning off Smart Quotes gives you less attractive output but avoids occasional problems associated with using printer's quotes. With Smart Quotes disabled, ClarisWorks and ClarisImpact enter straight quotation marks in your documents. To turn off Smart Quotes in Claris Works, select "Preferences" from the Edit Menu (Layout Menu in ClarisImpact)and click in the Smart Quotes box on the Preferences Dialog Box. Standard (straight) quotation marks will then be entered in the current document until you reactivate Smart Quotes. [Ed: Note that the default setting for Smart Quotes in any new document is "on." However, Smart Quotes can be turned off when you prepare a Stationery file. Thereafter, documents prepared from the Stationery file will have Smart Quotes turned off.]

Remember to turn off Smart Quotes for any documents you will send by modem. The characters used by ClarisWorks for Smart Quotes do not match the ASCII character set. Thus, transmitted documents prepared with printer's quotes will usually contain a plus sign (+) in the place of either the single or double printer's quotes.

Getting Printer's Quotes When You Want Them

Fortunately, you can still get printer's quotes in your documents when you want them. Just press Option-[to enter an opening double-quote and Shift-Option-[to enter a closing double-quote. Similarly, Option-] and Shift-Option-] enter opening and closing single-quotes, respectively.

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How to Paste Graphics in Your Word Processor Documents (GR,WP)

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There are four ways to add graphics to a ClarisWorks word processing document:

1. You can use thegraphics tools to create the graphic within the word processor document.

2. You can copy and paste the graphic from other ClarisWorks documents or from other applications.

3. You can use the Insert Command in the File Menu to insert a graphic stored in a file on a disk.

4. You can add a spreadsheet frame to your document and create a chart or graph from your spreadsheet data.

Whether you should create the graphic within the word processor document or in a separate document depends on your application. Graphics that you create within a document retain their position on the page and do not move with the text. You must manually drag and reposition the graphic each time you edit your text. Thus, you should create graphics within the document if you want to control their placement on the page.

Graphics that you paste or insert in a document move with the text. You should paste or insert graphics that you want to "flow" with the text.

How to Paste a Graphic

This tutorial describes how to copy and paste a graphic from another document (or another application) into a ClarisWorks document.

First, you will need to create a graphic; follow these steps:

1. Create a new graphics document. Then use the drawing tools to create a multi-object graphic; the quality of the graphic is not important.

2. Choose "Select All" from the Edit Menu (or press Command-A) to select all the elements in the graphic. Then choose "Group" from the Arrange Menu (or press Command-G) to group the graphic elements into a single object.

3. Choose "Copy" from the Edit Menu (or press Command-C) to copy the graphic to the clipboard.

Now you will paste the graphic into the middle of the first column of a two-column word processing document. Continue as follows:

4. Open the word processing document and scroll until the middle of the first column is visible on your screen.

5. Choose "Rulers" from the Format Menu, click on "Graphics", and click on "OK". This switches from the text ruler to the graphics rulers. The graphics rulers will make it easier to place the graphic precisely on the page.

6. Click where you want to paste the graphic (see Figure 1). Then press the Return Key to add a blank line. Click to put the insertion point at the beginning of the blank line.

7. Select "Paste" from the Edit Menu (or press Command-V) to paste the image from the clipboard into the document. The graphic will appear at the insertion point on the page.

Figure 1

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How to Print Part of a Spreadsheet (SS)

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How to print a spreadsheet the way it appears on the ClarisWorks screen instead of printing the whole spreadsheet

Q. I use ClarisWorks' "pane" feature to split my spreadsheet screen and keep different parts of the spreadsheet in constant view. Is there any way to print the spreadsheet the way it appears on the ClarisWorks screen instead of printing the whole spreadsheet? If not, is there another way for me to print separate parts of the spreadsheet at one time?

A. There are at least two ways to get the output you want. One approach is to capture an image of your screen. A second technique is to "hide" the unwanted columns or rows in your spreadsheet.

The screen capture feature built into all Macintosh computers makes it easy to capture an image of any ClarisWorks screen. Press Shift-Command-3 any time you want to capture the screen; your Macintosh will create a Paint file called "Screen 0" (if you use System 6) or "Picture 0" (if you use System 7) . Your computer automatically names successive files "Screen 1", "Screen 2", and so on.

Then you can use ClarisWorks to view and print the image. Select "Open" from the ClarisWorks File Menu, click on the Import Options lever, and click on the Graphics Button. Then navigate to the root directory of the drive you use to store ClarisWorks and select the "Screen 0" or "Picture 0" file. ClarisWorks will create a new document that contains the screen image (see Figure 1). You can then print, rotate, or resize the image.

This is a bit-mapped image, so you cannot use ClarisWorks to edit the image. However, the article on page 4 of this issue of the ClarisWorks Journal describes how you can use a paint program to modify these screen-shot graphics.

Although it is easy to capture a screen image, your resulting output will include all the elements on the screen, including the ClarisWorks menus and the ÒframeÓ of the window. In addition, the bit-mapped image you capture does not produce high quality printing.

A more elegant approach is to "collapse" the spreadsheet rows and columns you do not want to appear in your printout. To do that, select the columns (or rows) you want to collapse and choose "Column Width" (or "Row Height") from the Format Menu. Type a zero in the dialog box and click on "OK". The columns and rows seem to disappear (see Figure 2).

For example, suppose you only want to print columns A through C and N through P. That means you want to collapse columns D through M. Select columns D through M and set their column widths to zero. When you print the spreadsheet, columns D through M will not print.

To restore (or "un-collapse") the columns, select the columns on either side of the collapsed section (in this case, columns C and N), and set the column width to its original size.

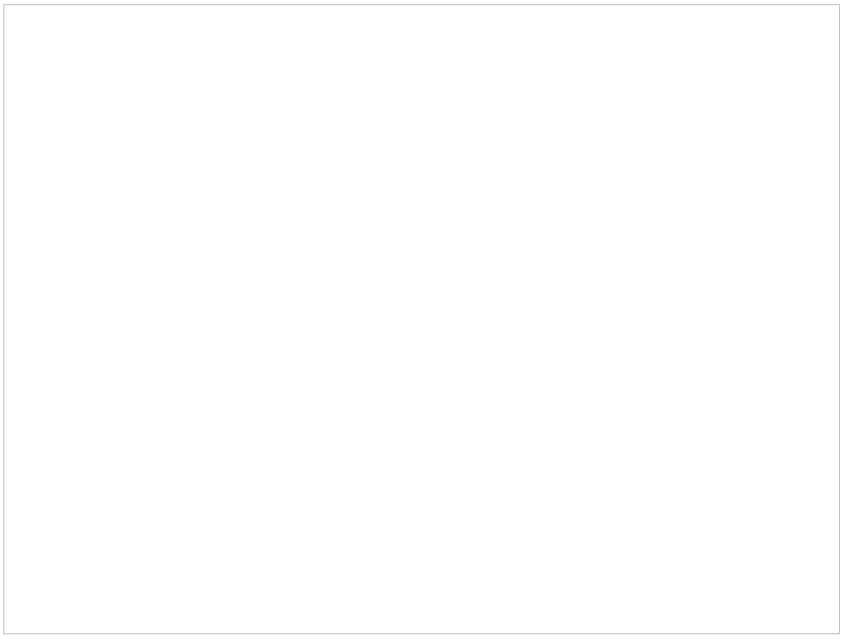

Figure 1

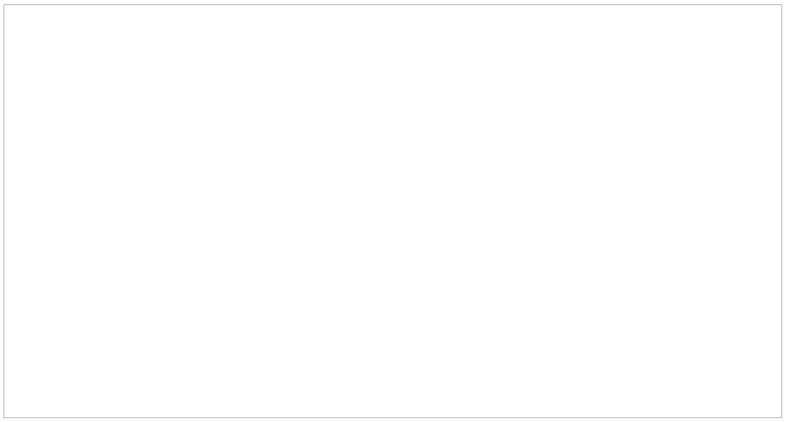

Figure 2

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How to Transfer Data from ClarisWorks to FileMaker Pro (DB)

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Some of the power of ClarisWorks comes from its ability to export and import files to and from other applications. Unfortunately, Claris does not offer XTND translators to transfer files between the company's ClarisWorks and FileMaker Pro applications. However, transferring data between these applications is easy once you know the necessary steps.

Understanding DIF

The key to transferring data between FileMaker and ClarisWorks is to save the data in a file format recognized by both programs. Since both programs can export and import files in Data Interchange Format (DIF), and since database files in DIF retain their field names (unlike other available formats), you should use DIF files for these transfers.

DIF files include two types of records. The first records in the file contain information about the structure of the original database, including the field names and other information about the database file. The remainder of the DIF file contains the data organized so the importing application can create a new database that replicates the original source file.

Transferring a database from ClarisWorks to FileMaker is similar to the process you used to transfer a database from FileMaker to ClarisWorks. Proceed through these four stages:

Stage I. Prepare to Transfer Your Database

Before transferring your data, you should record some information to help you import your data into FileMaker.

Get the ClarisWorks database file on your screen and follow these steps:

1. Record an image of each ClarisWorks layout. To do that, select Layout from the Layout Menu to display a layout on the screen. Then capture or print the screen image using image capturing software. Later you can print those images with ClarisWorks. Certain combinations of Macintoshe computers and printers can create and print paint files via Command-Shift-3 or Command-Shift-4.

2. Write down each field name and field type in the file. Include the formulas you entered for every Calculation and Summary field.

3. Print a copy of each report you developed for the database.

Stage II: Export the Data as a DIF File

Now you are ready to create a DIF file that contains your ClarisWorks data. Follow these steps:

4. With the ClarisWorks database file on the screen, go to the File Menu and select "Save As..."

5. In the "Save As" Dialog Box on the screen, click on the file format button (which reads "ClarisWorks" in its default mode), then select the "DIF" option from the pop-up menu .

6. Enter a file name for your new file. Add the suffix ".DIF" to the end of the file name to help you identify the file. Then click on the Save Button.

7. Quit ClarisWorks.

Stage III. Import the DIF File into FileMaker

Your next task is to convert the DIF file into a FileMaker database. Continue as follows:

8. Launch FileMaker and click on "Cancel" if any dialog boxes appear. Then go to the File Menu, and select "New".

9. FileMaker will prompt you to create a new database. Navigate to the folder and/or volume where you want to store the new database file. Then enter a name for your FileMaker database and click on "New".

10. The Define Fields Window will appear on the screen; it looks like the example in Figure 1.

11.Type in the names of the fields and select their field types. You gathered this information in step #2 earlier.

12.Type in the formulas that you used in your ClarisWorks Calculation and Summary fields. Then click on ÒDoneÓ.

You are now ready to import records from the DIF file into the new FileMaker database.

13. Go to the File Menu and select "Import"

14. With the Import Window on your screen, click on "Import Records". FileMaker will display the dialog box that appears in Figure 2.

15. Navigate through the folders and disk volumes until you find the DIF file you created with ClarisWorks.

16. Double-click on the file name. FileMaker will display the window that appears in Figure 10. This window lets you select the fields that transfer into FileMaker. You want to import the complete ClarisWorks file into FileMaker; click on "Done". FileMaker will make all necessary conversions and will display the new database.

17. Issue a Command-S and save your new FileMaker database.

Stage IV: Enhance the New Database

Your ClarisWorks field names and records will translate into FileMaker. You do not have to define the field types; you did that earlier. However, you must still re-create your layouts. Continue as follows:

Recreating Layouts

18. Start by printing a copy of each layout that you saved as a paint or PICT file earlier.

19. Choose one of your printouts as the basis for a new layout in your FileMaker database.

20. Go to the Select Menu and select "Layout".

21. Refer to the printout and recreate the first layout by arranging fields and field names. To do this, click the mouse on a particular field or field name and drag it to the new location. Use the Alignment Command on the Arrange Menu to line up the fields and designators.

22. To change the appearance of field names or data, click on an item (or hold down the Shift Key as you click on a number of items) to select the item. Then, go to the Format Menu and select fonts, sizes, and styles to meet your needs.

23. Save your file; then print your new layout for future reference.

24. To prepare additional layouts for data entry or for your reports, select Layout from the Layout Menu, and repeat steps #21-23 for each screen format and report.

That completes the process of translating the FileMaker database into ClarisWorks. You can now add, edit, or delete records and print your reports as if you created the original database file with ClarisWorks.

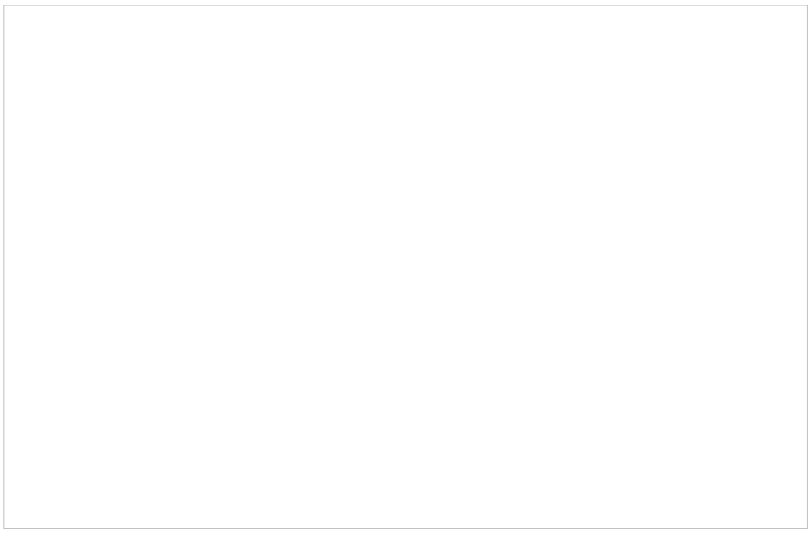

Figure 1

Figure 2

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Installation to a Novell server sometimes gives an Invalid Path error (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Installation to a Novell server sometimes gives an Invalid Path error.

There is some inconsistency with the MAP command on Novell. If the volume "TEST" is mapped to T: and a subdirectory CLWorks is mapped to V: and you try to install to the subdirectory by typing V:\\CLWORKS, you will get an Invalid Path error because the user doesn't have the correct privileges in the top level T:

Solution:
Typing T:\\MADMAX\\CLWORKS as the installation path will eliminate this mapping inconsistency.
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Managing Your Macros in ClarisWorks (All)

This is a portion of an article that originally appeared in the ClarisWorks Journal, the monthly publication of the ClarisWorks Users Group, Box 701010, Plymouth, MI 48170; (313) 454-1969; Fax: (313) 454-1965. Copyright ClarisWorks Users Group; reprinted with permission.

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ClarisWorks stores all your macros/shortcuts in a file called "ClarisWorks Shortcuts". This file is located in the "Claris" folder which is located in the "System Folder". These macros/shortcuts are always available to all ClarisWorks files (unless otherwise specified). To make macros/shortcuts created on Computer A available on Computer B just copy the "ClarisWorks Shortcuts" file from Computer A to Computer B (NOTE: Computer B may already have a "ClarisWorks Shortcuts" file so don't delete macros/shortcuts that were created specifically for Computer B).

ClarisWorks stores your macros in collections called "sets"; it stores each macro set in a different file. You can create one large set that contains all your macros or create separate sets that contain macros for different ClarisWorks environments. For example, you can store all your word processor macros in one set, your spreadsheet macros in a separate set, and your communications macros in a third set. You can also develop customized macros for any specific project. For example, students can create their own sets of macros and store their personalized macros on their floppy disks.

Follow these steps to save your current set of macros:

1. Go to the Macro Menu and select "Save Macros". ClarisWorks will display the Save Macros Dialog Box .

2. Assign a file name to the set of macros and store the macro in a folder of your choice. We suggest that you add the suffix ".macros" to the file name and that you store all general macros in the ClarisWorks folder. You can store all task-specific macros in their respective task folders.

ClarisWorks lets you create a special set of macros called your "default macros" that it automatically loads when you launch ClarisWorks. To declare a default set, save your macro set in a file called "ClarisWorks Macros" in the ClarisWorks folder.

You make a macro set active by "loading" the set into ClarisWorks. Just select "Load Macros" from the Macro Menu and select the macro set you want to use. That set will remain active until you select a different set or quit ClarisWorks.

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Menu Commands in the ClarisWorks Graphics Environment (DR)

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A list of all available menus in the Graphics Environment of ClarisWorks with descriptions of their functions and keyboard equivalents.

The Apple Menu

The Apple Menu lets you access a dialog box that provides information about your copy of ClarisWorks, including the serial number and the version number. From this menu you can also access the ClarisWorks' Help system (Command-?) and any Desk Accessories you installed.

ClarisWorks offers key combinations that duplicate commands available on the menus. "Command?" indicates that you can invoke the Help system by holding down the Command Key and pressing "?".

The File Menu

The File Menu allows you to control the features of the document as a whole. Here is a summary of the commands available in this menu:

New: Command-N. Lets you create a new document.

Open: Command-O. Lets you open an existing document.

Insert: Lets you insert a graphic created in another program and saved in PICT, TIFF, PAINT or EPS format.

To insert a graphic, follow these steps:

1. Go to the File Menu and select "Insert".

2. A dialog box will appear asking which file you would like to insert. Select the graphic you want to use and click on "Insert".

3. The graphic will appear in your document and be selected. You can move or re-size the graphic, but you cannot edit it.

Close: Command-W. Closes the current document. (Or click on the "close" box.)

Save: Command-S. Saves the current document.

Save as: Command-Shift-S. Lets you save the current document using a different name or as a Stationery (template) file or in PICT format.

Macros: Lets you create macros to automate procedures.

Mail Merge: Command-M. Lets you merge files for printing.

Page Setup: Lets you select the paper size, orientation, and some printer effects such as font substitution and precision bitmap reduction. (These options are printer-specific. See your printer manual.)

Print: Command-P. Activates the Print Dialog Box to let you print a document.

Quit: Command-Q. Quits ClarisWorks, prompting to see if you want to save any unsaved, open documents.

The Edit Menu

The Edit Menu lets you modify objects you created.

Undo: Command-Z. Undoes the last action you performed. The menu selection name reflects the action to be undone. For example, if you drew a square, the selection name will be "Undo New" and selecting it deletes the square. If you changed a fill color, the selection name will be "Undo Format" and selecting it reverts the fill to the original color. Once you select "Undo", it changes to "Redo" and lets you redo the action you just undid.

Cut: Command-X. Copies the selected objects or text to the clipboard and then deletes them from the screen.

Copy: Command-C. Copies the selected objects or text to the clipboard but does not delete them from the screen.

Paste: Command-V. Copies the objects or text from the clipboard to the document. In the case of text, it copies the text to the cursor location.

Clear: Deletes the selected objects or text. Has the same effect as pressing the Delete Key.
Select All: Command-A. Selects all unlocked objects in the current document.

Duplicate: Command-D. Makes a single copy of the currently selected object. The copy will be shifted to the right and down. It will be in front of the original.

Reshape: Command-R. Lets you move, add or delete individual vertices of a selected polygon.

Smooth: Command-(. Smooths the selected polygon by rounding all vertices.

Unsmooth: Command-). "Unsmooths" the selected polygon and returns all vertices to their angular shape.

Preferences: Activates a menu that lets you set some of the default values. These are broken into two categories: text and graphics. The text section lets you turn Smart Quotes on and off, turn Fractional Character Widths on and off, turn Auto Number Footnotes on and off, select the Starting Footnote Number, and select the Date Format. The graphics section lets you determine the number of selection points in an object, whether Polygon Closing is Automatic or Manual, and the degree of Shift Constraint.

Changing Polygon Closing to Manual means that a polygon will not close unless you double-click on the original vertex. If Polygon Closing is set to Automatic, the last point you draw will be connected to the starting point, closing the shape.

Changing the degree of Shift Constraint changes the constraint placed on moving objects, lines or polygons when you hold down the Shift Key. The Shift Constraint value must be between 0¡ and 45¡.

Note that the changes you make in the Preferences Dialog Box only effect the current document and any objects created after the change.

The Format Menu

The Format Menu lets you control the format of text and word processor frames. A few graphics-specific commands include:

Document...: Lets you control the size of the current document. You can set the margins, select the starting page number, select the numbers across and down, and turn Show Margins and Show Page Guides on and off.

Rulers...: Lets you control the appearance of the rulers. You can select Text or Graphics rulers. Text rulers appear only across the top of the page and show tabs, alignment and line controls. Graphics rulers run up the left edge and across the top of the page and do not allow any text control.

You can select the number of divisions on the ruler. Selecting "8" will divide each inch into 1/8th-inch markings.

Finally, you can select the units displayed on the ruler as inches, picas, points, millimeters or centimeters.

Arrange Menu

Move Forward/Move Backward: Command-Shift-+/Command-Shift--. Moves the selected object forward/backward one level in 3-dimensional space.

Move to Front/Move to Back: Moves the selected object to the top/bottom level.

Align to Grid: Command-K. The graphics environment offers an invisible grid that makes it easier to line up your objects. The grid divisions are set using the "Rulers" Command from the Edit Menu. Align to Grid lets you move the selected object to align with the closest grid division.

Align Objects:Command-Shift-K. Lets you align selected objects. A dialog box appears, letting you select the vertical and/or horizontal alignment you want to use. You must make selections on both sides of the dialog box.

Rotate: Command-Shift-R. Rotates the selected object by 90¡.

Flip Horizontal: Flips the object around the vertical axis.

Flip Vertical: Flips the object around the horizontal axis.

Group: Command-G. Groups the selected objects. After grouping, multiple objects can be moved and resized as if they were one object.

Ungroup: Command-Shift-G. Ungroups the selected group. The separate components can then be manipulated individually.

Lock: Command-H. Locks the selected objects. Locked objects cannot be moved, deleted or modified.

Unlock: Command-Shift-H. Unlocks the selected, locked objects. They can then be moved, deleted or modified.

Options Menu

Hide Graphics Grid: Hides the graphics grid. When the grid is hidden, this becomes "Show Graphics Grid" and selecting it causes the grid to appear.

Turn Autogrid Off: Command-Y. Turns off the Autogrid. The Autogrid causes shapes to "snap" to the grid when you are moving or drawing them. With the grid off, you can draw shapes of any size and move the shapes to any position. With the grid turned off, this menu selection title becomes "Turn Autogrid On" and selecting it turns the grid back on.

Scale Selection: Lets you scale the selected objects to the selected horizontal and vertical percentages.

Object Info...: Command-Shift-I. Lets you change one of the following three options, depending on the selected item:

Round Corners: Rounds the corners of the selected rectangle by a selected radius.

Modify Arc: Lets you alter the starting point and radius of the selected arc.

Modify Frame: Lets you change the format of the selected spreadsheet.

Frame Links: Lets you "link" text blocks so that text will flow from one to the next.

View Menu

The View Menu lets you create a new View Window of the current document, display the margins, and increase or decrease the scale of the view.

The View Menu also lets you show/hide the toolbar and the rulers, arrange the windows side by side in reduced size (tile), arrange the full-size windows one on top of the other (stack), and select a window to display at the front of the stack.

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Payroll Master - Payroll Program for ClarisWorks

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ActaSoft recently announced the release of Payroll Master, which uses ClarisWorks to automate the payroll for a small or medium-size business. Payroll Master automatically produces gross and net weekly, biweekly, or monthly payrolls for any number of employees, and calculates Federal Withholding, Medicare, state taxes, and up to two user-defined deductions. The templates print forms W2 and W3 and post all totals to a report generator that prints payroll stubs and daily, weekly, quarterly, and annual reports.

Payroll Master which is compatible with AlphaCheck Mac, ActaSoft's automated checkbook and accounting package, lists for $95.

[ActaSoft, 19700 Wells Drive, Woodland Hills, California 91364; (818) 996-6731.]
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Replacing Invisible Characters in ClarisWorks (WP)

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ClarisWorks and ClarisImpact can find and replace tabs and returns. You can use this feature to replace a series of spaces with a tab or to delete "hard returns" from a document. That makes it easy to convert spaces to tabs in tables and remove blank lines or "hard returns" from documents you prepare or import into ClarisWorks.

The trick is to enter a Command-Tab or Command-Return after you invoke the Find Command. ClarisWorks will insert a "\\t" or "\\p" in the Find/Change Dialog Box (see Figure 1).

Replacing Spaces with a Tab

Follow these steps to replace a series of spaces with a tab:

1. Put the cursor at the beginning of a document and press Command-F (or select "Find/Change" from the Edit Menu).

2. Click in the Find Box and press the Space Bar to enter the number of spaces you will replace. Work carefully, because nothing will appear on your screen.

3. Click in the Change Box and enter a Command-Tab. The box will display a "\\t" (see Figure 1).

4. Click on "Find Next" and then change all of the strings of spaces to tabs.

Deleting Hard Returns

You create a blank line in Claris programs by entering two returns. The following procedure replaces two consecutive returns with a single return; thus this procedure deletes all blank lines from the document. Follow these steps:

1. Put the cursor at the beginning of the document.

2. Press Command-F to call up the Find Dialog Box.

3. Click in the Find Box and press Command-Return twice. That tells Claris programs to search for two consecutive Returns. The box will contain "\\p\\p" (see Figure 2).

4. Click on the Change Box and press Command-Return. The box will contain one "\\p".

5. Click on "Change All". Claris porgrams will replace all double returns with single returns, and the entire document will now be single spaced."

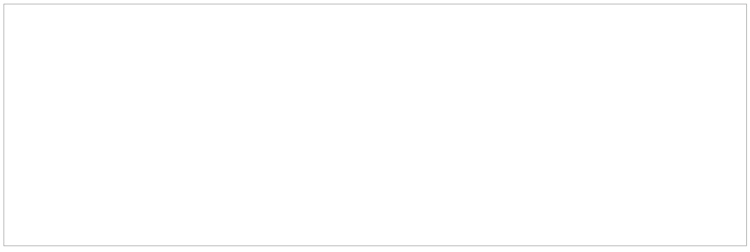

Figure 1

Figure 2

TA42467_Replacing_Invisible_Characters_in_ClarisWorks_WP.pdf

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Macintosh IIfx: UN8 PROG CELL Socket Explanation

What is the function of the slot labeled "UN8 PROG CELL" on the Macintosh IIfx main logic board?

This article has been archived and is no longer updated by Apple.

The UN8 PROG CELL socket on the Macintosh IIfx logic board is for the parity memory controller.

This is only present on those Macintosh IIfx computers that are originally ordered with the parity option. There is no way to upgrade a non-parity Macintosh IIfx to have the parity option.

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Sources for Macintosh-compatible Fonts (All)

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There are three general sources for Macintosh-compatible fonts: commercial fonts, shareware fonts, and public domain fonts. Within these categories, you will find bit-mapped fonts and outline fonts in multiple formats (PostScript and TrueType).

Apple includes a variety of fonts with its system software and with its printers. These fonts provide a good foundation for a font collection, but other sources offer more variety.

Bit-mapped Fonts

Today, there are virtually no commercial sources for bit-mapped fonts. However, you can still get bit-mapped fonts from font designers who put their fonts in the public domain or who distribute their fonts as "shareware" (where the user agrees to pay for a font if he or she decides to use the font). Shareware and public domain fonts are available from on-line services such as CompuServe, America Online, and GEnie, from resellers such as EduCom, or from computer user groups.

Outline / Scalable Fonts

Mail order vendors offer a large selection of commercial outline fonts at discounted prices. Retail computer stores offer them too, but their collections are often less complete. Adobe, Bitstream, and Casady and Greene are the major commercial "font foundries" for PostScript and TrueType fonts, but there are others (e.g., FontBank).

In an innovative marketing approach, Adobe recently put their entire font collection on a CD-ROM in a "locked" format. When you buy the disk, the company gives you the passwords to unlock the font combinations you select. Later, if you want additional fonts, you simply pay a fee for the necessary passwords.

Developers also produce outline fonts that they put in the public domain or distribute as shareware. In the case of shareware fonts, the font you initially receive may not include all the characters, but the shareware designer will send a disk with the full version when you remit the shareware fee.

Commercial fonts are usually well-designed throughout, but the visual quality of shareware and public domain designs varies, so test these fonts thoroughly before including them in your collection.

A Legal Note

Several shareware and public domain fonts produce documents that look identical to those printed with available commercial fonts. This might seem like an infringement of copyright, but it can be legal.

Under U.S. copyright law, any shape that can be read by a human as part of a character set cannot be copyrighted. So, it is possible to legally duplicate a commercial outline font, as long as you meet two conditions:

1. The code sent to the printer to reproduce the characters cannot be the same as the code sent by the original font.

2. You cannot use the original font name.

Note that it is a violation to copy outlines of symbols such as the character included in all Adobe fonts for the Macintosh and other special characters, such as "dingbats".

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System 7.1 Update Problems (All)

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Some CWUG members report that they cannot transfer ClarisWorks files into other applications after they install System 7.1. The problem manifests itself by either not letting you export files from ClarisWorks into other applications or by creating files that you cannot read with the other application.

The CWUG members who experienced difficulties all used Apple's System 7.1 updater package for System 7.0 and 7.01. The problem did not occur when members installed Apple's complete System 7.1 package.

However, you do not need the complete System 7.1 package. If you cannot export your ClarisWorks files, just reinstall ClarisWorks after you update to System 7.1.

CWUG member Steve Taffée suggests that you also replace the Claris translators (in the Claris Translators Folder in your System Folder) whenever you experience problems importing or exporting files. Then use the Finder to remove the "XTND Translator List" file from your System Folder (for System 6.x users) or the Preferences Folder within your System Folder (for System 7.x users). ClarisWorks creates this file to keep track of its translators and does not notice changes in the translators unless you force the program to recreate the file.

We remove the XTND Translator List file from our System at the first sign of problems with the translators. ClarisWorks recreates that file the next time you launch the program.

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The Contents of the ClarisWorks for Windows box

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The contents of the ClarisWorks for Windows box are:

1 ClarisWorks Getting Started Book
1 ClarisWorks Handbook
1 Quick Reference Foldout
1 Envelope with 2 application diskettes and a registration card
1 Suggestion card
1 51/4" Disk Request Form

The multiuser pack also includes:

1 ClarisWorks Network Server Setup booklet
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Three Ways to Align Objects (GR)

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ClarisWorks gives you three ways to align objects on the page:

Align Objects Command: The Align Objects Command on the Arrange Menu aligns the tops, bottoms, centers, and left or right edges of any two or more objects.

Autogrid: The Autogrid feature automatically jumps objects to the nearest grid coordinates. With Autogrid on, you either:

1. Drag objects close to their desired position and let ClarisWorks place the objects in their final position, or

2. Use the Arrow Keys to move the selected object(s) one grid space with each Arrow keypress.

"Visual" Alignment: Both the Align Objects and Autogrid features align objects mechanically, not "visually". For example, neither approach makes it easy to line up the end of a diagonal arrow with the center of a word.

To align objects visually, turn the Autogrid on and use either the mouse or Arrow Keys to place the objects close to their desired positions. Then turn the Autogrid off and use the Arrow Keys to "nudge" the selected objects into their final positions.

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Transferring Bank Street Writer Files (WP)

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Q. Is here any way to read my Apple II Bank Street Writer files into ClarisWorks?

A. Yes, just follow these steps:

1. Boot your Apple II with Bank Street Writer. Press the Escape Key repeatedly as the program boots; Bank Street Writer will display the Utility Program Menu.

2. With the Utility Program Menu on the screen, select #2 ("Convert Writer File"). Then follow the prompts that tell Bank Street Writer to convert your file from Binary to Text. Enter the file names and disk drives that contain your disks. Otherwise, accept all the default entries that appear on this screen. Bank Street Writer will create a ProDOS text file.

3. Launch ClarisWorks and follow the directions from your manual that describe how to import AppleWorks word processor files.

You can use similar procedures to transfer documents into ClarisWorks from any Macintosh, Apple II, or MS-DOS program that can produce ASCII (Text) files.

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Using a Command Symbol in ClarisWorks (WP)

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A letter in the August/September 1992 issue of the ClarisWorks Journal indicates that you cannot include a Command (Command) symbol (also called a "quadrille") in a ClarisWorks document. Our thanks to the more than a dozen CWUG members who sent us their favorite workarounds for this problem. Most of these letters described how to create the Command symbol in a graphic or word processing program and import the symbol into ClarisWorks.

The most elegant solution we found was one developed by CWUG' Public Domain Librarian, Nanette Luoma, who created a ClarisWorks-compatible font that contains the Command symbol. You add the font to your system and relaunch ClarisWorks. From then on, you can select the font and type a Q to insert a Command symbol in a document.

You can even create a ClarisWorks macro that switches to the Quadrille font, types the Command symbol, and returns to your default font.

CWUG's new Command Symbol Font Disk includes both Postscript and TrueType versions of the Quadrille font. ClarisWorks users running under System 7.x should copy the font into the System Folder and restart their Macintosh. CWUG members using System 6.x should use Font DA Mover to install the font in their system.

The Command Symbol Font Disk costs $6 plus $2 s/h per order from the Public Domain Library, CWUG, Box 701010, Plymouth, Michigan 48170; (313) 454-1969; Fax: (313) 454-1965.

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Using Sticky Spaces (WP)

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Q. Why doesn't ClarisWorks automatically keep the date with the name of the month when you get to the end of a line? Is there any way to keep words and phrases together when they appear at the right margin?

A. What you need are "Sticky Spaces", which tell ClarisWorks not to split two words at the end of a line. Typing Option-Space puts a "sticky space" in your document. (ctrl-space in Windows) This works in ClarisWorks and most other applications.

This solution works in most Claris programs.

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What You Should Know about Italics and Boldface (WP)

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This article describes how the Macintosh manages italics, boldface, and other font styles. The goal is to help you produce more attractive documents with ClarisWorks.

Font Families

Professional font designers create "families" of fonts. Most font families contain Roman, italic or oblique, boldface, and other fonts that the designer creates with common design elements.

For example, Goudy Old Style is available in Roman, italic, bold, bold italic, extra bold, heavyface, and heavyface italic. The fonts are designed to work together to produce attractive documents.

Font vendors sell fonts in "collections", each of which includes different fonts from the same family. For example, Adobe sells two collections of Goudy Old Style fonts. The Goudy 1 disk contains the basic fonts, including Roman, italic, bold, and bold italic. The Goudy 2 collection includes the extra bold, heavyface, and heavyface italic fonts.

You should install all the fonts included with each family. Every font you install will appear on the Font or Format Menu within ClarisWorks.

How to Use the Fonts

ClarisWorks gives you three ways to choose between the different styles. First, you can select the appropriate font from the ClarisWorks Font or Format Menu. (Figure 1 shows the ClarisWorks word processor Font Menu with the seven different forms of the Postscript Goudy font installed in my system. Figure 2 shows the same menu after installing Type Reunion, Adobe's system extension that organizes your Font Menu.)

You can also switch between the Roman, italic (or oblique), and bold versions of a font by selecting the "standard" (Roman) version of the font from the Font Menu. Then you choose Plain Text, Italic, or Bold from ClarisWorks' Style Menu. ClarisWorks will check your system for the appropriate font and use the correct font for your text.

Finally, you can use the Command-T, Command-I, and Command-B keystrokes to switch between these fonts.

Each font you add to your system takes up space on your hard disk, in memory, and on the Font Menu. So some Macintosh users only install the Roman (or plain text) version of their Postscript fonts. Selecting Plain Text, Italic, and Bold from the Style Menu still produces different fonts, which look superficially like the italic and boldface fonts provided by the font vendor. However, the differences between these mathematically calculated fonts and the fonts provided by the font developer are apparent if you compare the true italic fonts to the fonts "created" by your Macintosh.

Italics Versus Oblique

With the italics font missing, the Macintosh creates a new version of the selected letters, all of which slant to the right by about 15 degrees. This slanted font is more correctly called an "oblique", not an "italic" font.

There is nothing inherently wrong with an oblique font. In fact, oblique fonts work well with sans serif typefaces and often come with those font families. However, you rarely use oblique styles with serif fonts such as Times and Goudy because the slanted strokes are in disharmony with the horizontal orientation of the serifs in the letter forms.

Font developers avoid this problem by designing true italics, which are cursive characters with the look of hand-lettering. Of course, the mathematical approach does not consider design issues. Thus, calculated slanted letters often have awkward serifs, flares, and other elements. Figure 4 shows the difference between Goudy Italic and the mathematically generated oblique substitute that the Macintosh generates if you command italic without the Goudy Italic font installed in your system.

The lesson is clear: Make certain that you install all the fonts in each family.

Printed Output

As with most ClarisWorks documents, your printed output depends on a combination of the fonts in your system and your printer. Without the

italic font, ClarisWorks prints oblique characters on an ImageWriter or QuickDraw laser printer. However, Postscript devices print the document using the Roman version of the font with incorrect line breaks.

Although you can save disk space and memory by not installing all the font styles in a family, doing so seriously compromises the visual impact of your ClarisWorks documents.

Mixing Fonts

Type designers keep the general characteristics of the parent font in mind when they create an italic or boldface version of a font. However, the difference between the two is usually so strong that you can often use the italic from one font family with the Roman characters of another. This is particularly true of serif fonts like Times, Goudy, Palatino, and New Century Schoolbook.

For example, Palatino includes exaggerated serifs, a wide range of character widths, and wide capital letters that draw lots of attention. These characteristics combine to yield a typeface that is lively and daring. That makes it a good candidate to try with italics from other font families. Figure 5 presents some examples.

This approach also works with many other serif fonts. For example, the ClarisWorks Journal uses Times italic with Goudy Oldstyle Roman, with no loss of design integrity. [Ed: This is Goudy italic, which we find less readable than Times italic because of the extra swashes on many characters. This is our standard Times italic, which we find more readable.

Conclusion

Producing visually appealing documents with a computer is a blend of skill and art. Although there is no substitute for experience with different font combinations, the following guidelines should help you produce more attractive documents:

1. The slanted and boldface fonts created by the Macintosh do not offer the subtle adjustments incorporated by professional designers. Make certain that you install the italic or oblique and boldface versions of all the fonts you use with ClarisWorks.

2. Experiment with mixed standard and italic fonts in documents printed with serif fonts such as Times, Goudy, Palatino, and New Century Schoolbook.

3. Always judge your fonts by your printed output, not their quality on the screen. The Macintosh screen's 72 dots per inch (dpi) resolution does not show how your work will look at 300 dpi or greater, especially in sizes under 24 points.

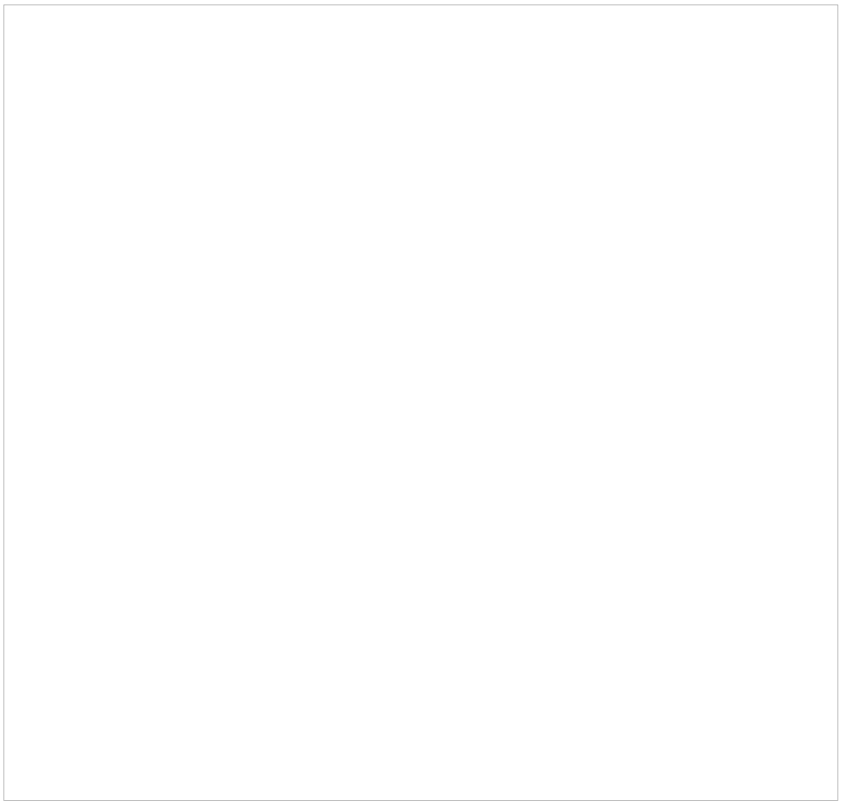
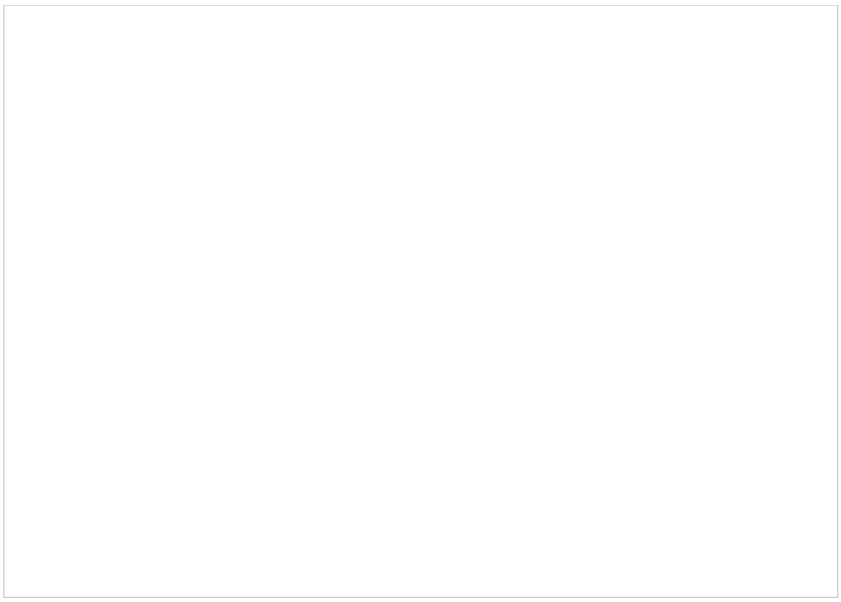


Figure 1

TA42477_What_You_Should_Know_about_Italics_and_Boldface_WP.pdf



Published Date: Feb 18, 2012

MacDFT: Support With IBM 3274 Cluster Controller

I am trying to configure the 3274-51C cluster controller. The IBM people said that the cluster controller has four types of configuration, A, B, C, and D. This cluster controller has "Configuration Support A-C", and extended memory is needed for "Configuration Support D".

1) Can I connect the Macintosh to the 3274-51C setup with "Configuration Support A, B, or C"?

2) Will MacDFT run this way?
This article has been archived and is no longer updated by Apple.
Twelve different models of the 3274 are available. The suffix after the model number indicates the environment in which the controller is used.

- The "A" suffix indicates a channel-attached SNA environment.

- The "B" and "D" suffix indicate a channel-attached non-SNA environment.

- The "C" suffix indicates a remotely attached environment.

Models 21, 31, and 41 support up to 32 attached devices. Model 51 supports 12 devices, and Model 61 supports 16 devices.

Most 3274 control units are capable of supporting DFT devices. Generally, the hardware does not determine whether a control unit can support DFT. Rather, the control units' microcode software supplies the additional function necessary to support DFT. However, minimum memory requirements are necessary for DFT support. In some cases, 3274 control units may require memory upgrades to have enough memory for DFT support.

Assuming you have enough memory, MacDFT will run with the above configuration if the controller microcode is 65 or higher. In remote bisynchronous, you can run MacDFT only in CUT mode.
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Which Font to Choose for Tables (SS)

This is a portion of an article that originally appeared in the ClarisWorks Journal, the monthly publication of the ClarisWorks Users Group, Box 701010, Plymouth, MI 48170; (313) 454-1969; Fax: (313) 454-1965. Copyright ClarisWorks Users Group; reprinted with permission.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Most ClarisWorks users realize that proportionally-spaced fonts (like Palatino or Times) produce more attractive output than their mono-spaced cousins (such as Monaco or Courier). That is because the designers of proportionally-spaced fonts adjust the space allocated to each letter to accommodate the different widths of the various letters. For example, proportionally-spaced fonts allocate less space for the letter "i" than the letter "m". By contrast, mono-spaced fonts allow the same space for each character. The designers of these typefaces often "squeeze" and "stretch" the horizontally to fill their allocated space. As a result, words like "mimic" and "medium" often look distorted in your documents.

However, allocating different widths to each character would make it difficult to use proportionally-spaced fonts in any document that includes columns of numbers. Fortunately, font designers recognize that numbers must line up in columns, so most professionally designed fonts include mono-spaced numbers. As a result, you can use almost any well-designed proportionally-spaced font in your ClarisWorks spreadsheets.

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Compatibility Issues: MacDraw II and Adobe Printer Driver Version 8.0

This article describes PostScript printer compatibility issues with MacDraw II

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
* Color images may not print properly when using the "Color/Grayscale" option.

* Saved EPS files with PICT preview may not be imaged properly when inserted into other applications.

* You may encounter that graphic lines will be visible when printed when they should be hidden.

* With MacDraw Pro, imported images with patterns will not print correctly if they are rotated before printing. 324

* With MacDraw Pro, you cannot cancel out of a print job. 810

* With MacDraw Pro, inserting a bitmap and saving as an EPS files with PICT preview may result in incorrect images when inserted into other applications. 670

* With MacDraw Pro, you cannot import an EPS file that does not contain an PICT preview. 246

* With MacDraw Pro, you may encounter a system error when importing a more complex EPS file. 469

* With MacDraw Pro, polygons may not image properly when printed. 459

* With MacDraw Pro, documents containing more than one imported EPS file may not print correctly. 796

* With MacDraw Pro, saving an EPS with a screen PICT may not image properly when inserted into another application. Image should print correctly. 7010

* With MacDraw Pro, saving an EPS with a screen PICT may not image properly when inserted into another application and scaled to another size. Image will print as displayed on screen. 360

Published Date: Feb 18, 2012

Compatibility Issues: MacDraw Pro and Adobe Printer Driver Version 8.0

This article describes PostScript printer compatibility issues with MacDraw Pro.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

* Imported images with patterns will not print correctly if they are rotated before printing.

* You cannot cancel out of a print job.

* Inserting a bitmap and saving as an EPS files with PICT preview may result in incorrect images when inserted into other applications.

* You cannot import an EPS file that does not contain an PICT preview.

* You may encounter a system error when importing a more complex EPS file.

* Polygons may not image properly when printed.

* Documents containing more than one imported EPS file may not print correctly.

* Saving an EPS with a screen PICT may not image properly when inserted into another application. Image should print correctly.

* Saving an EPS with a screen PICT may not image properly when inserted into another application and scaled to another size. Image will print as displayed on screen.

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Problems Printing with Helvetica Black

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When tabs are inserted using the text tool in MacDraw Pro with Helvetica Black font causes the printer to print out blank boxes in place of the tabs.

The only work around to this to change to a different font or use Helvetica Bold type style.
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ClarisWorks 2.0 for Macintosh Box Contents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

1. Registration card
2. Software Licensing Envelope containing three disks (Disk 1, Disk 2 and Disk 3)*
3. "Ideas?" suggestion card
4. International Spelling Dictionaries flyer
5. ClarisWorks Installation Guide
6. ClarisWorks Quick Reference card
7. ClarisWorks Getting Started Guide
8. ClarisWorks User's Guide

There may be additional promotional and/or third party materials in the box. The contents is subject to change without notice.
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Conflict with Microsoft Mail notifier option

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a recognized conflict between Microsoft Mail's notifier option and several Claris products. While exact version by version compatibility is not available, Microsoft supplies the following advice to users of Microsoft Mail. (excerpted from Microsoft Knowledgebase)

...When a Mail message is received while using MacWrite and Claris CAD, the Macintosh hangs. If you are in MacDraw II, you will not receive notification of new mail regardless of your preferences.

...To avoid this problem, turn off all notifier preferences and do not attempt to read your mail while using a Claris Product.

This problem is known to occur with versions up to and including Microsoft Mail 3.00

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Numbers entered with text characters will be seen as text with numeric value of 0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Typing a comma or a dollar sign in a numeric entry in a spreadsheet cell will cause Resolve to see the entry as text, rather than as a number. The result is that the entered value will be aligned left and will not be usable in a calculation. (The text value will be seen to have a numeric value of 0)

To solve the problem, remove any non-numeric characters from the cell. To have the numeric value show up as currency, select the cell, choose CURRENCY under NUMERIC in the FORMAT menu.

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Linking Spreadsheets Using Publish & Subscribe (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It is often asked if it is possible to link the data in two ClarisWorks Spreadsheets like Excel. Although there is no linking feature, Publish & Subscribe works just as well. ClarisWorks only publishes the data that is selected and the subscriber can include the subscribed data in a calculation. ClarisWorks only requires the Published document to be saved in order to update the Subscriber.

This solution also works with ClarisImpact Table Models.

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MacDFT: Running On A Token Ring Through PS/2

I'm installing Macintosh IIci systems with TokenTalk NB Cards using MacDFT software. I will be routing the packets through a PS/2 with an AppleShare PC Card installed to their front-end processor (3745) to the host. I want to be sure that I won't have any problems routing their packets through the PS/2.

This article has been archived and is no longer updated by Apple.

First, we are not clear how the AppleShare PC Card is used in this situation since it is not needed for communication to the host.

We assume that the PS/2 is on the Token Ring that is attached to the front-end processor using a Token Ring Interface Coupler (TIC). MacDFT 1.1 running over the TokenTalk NB Card on the same Token Ring can communicate directly to the TIC/front-end processor without going through the PS/2.

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Minor Tick Marks Only Available in Certain Graphs/Charts (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks 2.0 allows you to set Major and Minor tick marks on the axis of a graph. Even though ClarisWorks allows you to set Minor tick marks for any graph, the Minor tick marks will only show when using the following charts:

* X-Y line
* X-Y Scatter

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Printing a List of Questions with the Answers to Each (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Q: How can I make a report of my survey database in the format:

Question 1:
Answer (person 1)
Answer (person 2)
Answer (person 3)

Question 2:
Answer (person 1)
Answer (person 2)
Answer (person 3)

A: With ClarisWorks, there are 2 approaches you can choose from. One is to create the fields Question Number, Answer and Person. Each record in the database would be the answer to a single question with the question number noted. A sub-summary layout part by Question Number with the Question Number field in the sub-summary and the Answer and Person field in the Body part would give you the printout you want. The downside to this approach is that all a person's answers aren't kept together in one record.

The other approach is to create a field for each question and also a layout for each question. One by one, you would switch to each layout, select all records and copy. By pasting into a WP document, you could assemble the desired report.

FileMaker Pro 2.0 offers a third approach. It can produce this report using repeating fields and a 2-database design where you import repeating fields from the data entry file and split them into separate records. This is demonstrated in the Survey Analysis file of the cross referenced article.
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Error Message "Cannot Start More Than One Copy of Application"

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you attempt to install an application and get the error message "You cannot start more than one copy of specified program" check the Windows task list. You can do this by minimizing Program Manager and double clicking on the desktop to see what applications are running. If Windows "Setup" is running you can get the error. Exit Windows Setup and restart the Claris installation process.

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Importing an RTF File with Multiple Headers and Footers (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Importing an RTF file with multiple headers and footers will produce a file that has no headers or footers.

Explanation:
ClarisWorks only allows for one head or footer per document.

Solution:
Eliminate all but one header and footer in the original document before saving out as an RTF document for importing into ClarisWorks.

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No Page Range Specified in Mail Merge (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When you click the Print Merge button in the Mail Merge dialog box, the Print dialog box is opened with the page range option selected but no pages specified. Clicking the OK button to begin printing results in an error dialog stating that "The 'From' and 'To' fields are empty ..."

You must either specify a page range or choose the 'All' option before clicking the OK button to begin printing.

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Non-TrueType Fonts Will Not Print at 75/150 dpi from ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Non-truetype fonts (Bitmap and ATM) will not print at 75/150 dpi with certain Hewlett-Packard print Drivers.

Explanation:
This is a defect in the print drivers. Many other applications (including the Write accessory that comes with Windows) exhibit the same behavior.

Solution:
Print at 300 dpi.
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Saving and Reopening a WMF Graphic as a PICT (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
Saving and reopening a WMF graphic as a PICT will result in the bottom half being clipped off.

Solution:
Ungroup the graphic before saving it to a PICT document.

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Spreadsheets Display Black Row and Column Headers (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:

Spreadsheets display black row and column headers on PCs with the ATI Ultra video card. ClarisWorks palettes may also display as solid black rectangles.

Explanation:
This issue only occurs if a 256 color bitmap is used for the wallpaper.

Solution:
Change the wallpaper to a 16 color wallpaper pattern.

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Type within WMF graphics is converted to Arial (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
Type within WMF graphics saved out of ClarisWorks is converted to Arial.

Solution:
There is currently no workaround for this issue.

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Pie Charts Print As Bitmaps to DeskWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

3-D pie charts from will print to the DeskWriter as bitmaps, even when copied and pasted into other applications. This occurs in all versions of Claris Resolve.

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Updater Generates an Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Claris updaters combine your original software with a list of changes and create a new, completely up-to-date application. For this to work correctly, you need to have a previous version that it can update. There are several reasons why an updater might generate an error message.

Incorrect Version
For instance, the ClarisWorks 2.1v2 updater can update version 2.0v1, but not 1.0, since there was a major upgrade between 1.0 and 2.0 which costs $99 and includes a new set of manuals and disks.

Non-U.S. Version
Updaters only work with standard U.S. Macintosh versions. Trying to update an International or site-licensed version will result in an error message.

Application was modified
The updater is very particular about what it will and won't update. The application has to be unmodified, so if you used ResEdit or any other utility to change any resources, you won't be able to use the Updater on that copy. Application corruption can also cause error messages. In both cases, simply install the application from your original diskettes and run the updater on the unmodified application.

Bad Download
When downloading an updater, there is no guarantee that it will download cleanly. Phone noise and other anomalies can cause faulty transmissions. How can you tell if corruption was introduced during downloading? Click once on the Installer and choose Get Info from the File menu. If either of the memory settings is set to zero, then the download was unsuccessful and you will need to try downloading it again. The same applies to the Updater itself. If you click on it once, choose Get Info, and see memory settings set to zero, then that copy may be corrupted as well. This type of corruption can often result in a -50 error message.

If the Updater Doesn't Work for You
If you think your version meets all the requirements above and the updater is unsuccessful:
1. Re-install the application from your original diskettes,.
2. Restart your Macintosh and hold down the shift key until you see the message "Extensions Off". If you have System 6, follow the instructions for disabling INITs in the System Crashes & Bugs document in this folder.

3. Run the updater on the fresh application you just installed.
4. If the update is still unsuccessful, and you got a system error as opposed to a "resource is different" error, try increasing the amount of memory allocated to the updater. Click on the updater icon once to select it and choose Get Info from the File menu. Increase the preferred size by 200K if you have enough memory on your Macintosh to accommodate that.
5. Download another copy

If the update is still unsuccessful, call Apple Technical Support.

Below are some of the known Updater error messages which can occur:

ALRT 400
The ClarisWorks 2.1v4 updater does not update the Power Mac version of ClarisWorks 2.1v3.

BNDL 128 resource is different
Some ClarisWorks owners modify the ClarisWorks file icons with ResEdit to show the environment a file was created in. This generates a BNDL 128 error. Re-install a fresh copy of the ClarisWorks application using original disks, and run the updater on that copy.

BOBO resource is different
This is caused by running the ClarisWorks 2.1v2 Mac U.S. updater on a Canadian version.

CODE 1 resource is different
FileMaker Pro customers should be directed to simply replace the FileMaker Network file with the one in the updater folder. They do not need to run the 2.1v2 updater because they already ran a previous release. Only the FileMaker Network file was changed in the re-release, to fix a Power Macintosh bug.

CODE 17 resource is different
Restart your Macintosh and hold down the Shift key until you see the message "Extensions off." The n run the updater. This error has been reported by Performa owners updating ClarisWorks 2.0 and seems to be related to a standard Performa extension.

Curs 25001 Resource is different.

TA42501_Updater_Generates_an_Error.pdf

This message is due to a program that has made changes to the cursor. (Application was modified). Simply install the application from your original diskettes and run the updater on the unmodified application

DITL #129 resource is different
Claris Corporation modifies DITL #129 for site licensed software. As a result, some updaters are not compatible with site licensed software. In addition, a reseller version of ClarisWorks 2.1 was built for ComputerWare with a special splash screen which contains a legal agreement that specifies that the software should only be used internally.

DITL #130 resource is different
The ClarisWorks 1.0v4 Updater generates a DITL 130 error and aborts updating when used on a copy of ClarisWorks which came pre-installed on a Performa. Currently, this is only a known problem with ClarisWorks 1.0v3 Performa. The 1.0v4 update is only necessary for ClarisWorks owners who need to open ClarisWorks for Windows files. Customers who receive the DITL 130 error and need to open Windows files should be shipped a free 1.0v3 - Program replacement disk. They will be able to install and update that copy of the ClarisWorks application.

Error -21 or Error -22
You may receive this error when attempting to update on a Power Macintosh. Increase the application memory by highlighting the updater application icon, then go to the File menu and select Get Info. Increase the the memory to 3000K in the preferred memory box. Then try updating again. In general, applications not written specifically for the PowerMacs require more memory to run properly under emulation.

Error -37
Attempting to save the updated application to the same location as the application being updated and changing the default saved file name to the same name as the old application will generate a -37 error message after Okaying the dialog asking to replace the file. After quitting the Updater, the original, unchanged application can be found in the trash. Simply saving the updated application using the default file name, "New <application name>", avoids the problem. (Fixed in UpdateMaker 2.1)

Error -50
Most likely a corruption introduced during downloading. Follow the troubleshooting steps above and if they donÕt work, try downloading it again.

SIZE 1 resource is different."
The Claris Organizer 1.0v2 updater generates the message: "Could not update 'Claris Organizer' because it is not the file that this update is designed for - the SIZE 1 resource is different." This message indicates that the memory allocation for Claris Organizer has been adjusted . The updater will work properly if you change the memory settings back to their original settings: The Minimum Size "800" and Preferred Size"1200". Once you have changed the memory allocation back the original size then run the Claris Organizer 1.0v2 Updater.

Other Notes
LaserPro copy protection modifies the application and prevents updaters from working properly.

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ClarisWorks and Phone Dialing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks does not include direct support for dialing a telephone. This decision is based, in part, on Apple Computer's stated goal of introducing modular telephony extensions for system software. This would give phone dialing abilities to all applications, rendering any custom efforts we could build into ClarisWorks obsolete (and possibly prone to error) when the telephony extensions are introduced.

Currently there are a few options that you can try to use for phone dialing through third party software:
* Desktop Dialer. a combination ADB device and Apple event-aware desk accessory. Modest RAM and hardware requirements. Eliminates the need for a modem or a connection to the Macintosh sound port for dialing a phone. Costs $75. Sophisticated Circuits Inc., 19017 120th Ave. N.E., Suite 106, Bothell, WA 98011, (800) 827-4669, (206) 485-7979, fax (206) 485-7172.

* QuicKeys 2 & most dialer utilites. It is possible to use a macro utility such as QuicKeys2 in conjunction with a non-Apple Event-aware dialing utility. For instance, Snap is a control panel phone dialer which comes with In Touch by Advanced Software. It dials a number in the clipboard from within any application by pressing a user-defined hot key. Dialer is a shareware DA which uses a similar approach. Dialer can be obtained from online services or your local user groups.
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New Document Shortcut Not Using ClarisWorks Option File (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you have set up ClarisWorks 2.0 options files, and you open new documents using the Shortcuts palette , you'll find ClarisWorks won't use your options file; it will simply create a new, standard document. Using the Shortcuts palette bypasses the "New Document" dialog box; this prevents the Options file from being applied.

There are two workarounds:

Open new documents from the "New" menu choice from the File menu.

Record a macro to open a new document. Be sure to select "With Shortcut" in the Record Macro dialog box. If you also choose "In Short Cuts Palette", you will be able to create a new document whether or not you have existing documents open. (The new document Shortcuts provided with ClarisWorks are only visible when there are no documents open).

Please see page 2-20 of the ClarisWorks 2.0 User's Guide for information on options files. See page for 8-50 of the ClarisWorks 2.0 User's Guide for information on Shortcuts and Macros.

This problem has been fixed in versions 2.1 - 4.0.
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DOS 3.3: Commands ignored

The CTRL-D of a DOS command must be the first character on an output line and must immediately follow a carriage return. If it doesn't, the command is printed on the screen or to the printer, but is ignored by DOS.
This article has been archived and is no longer updated by Apple.
GET or PRINT statements that end with one of the following often cause this problem:

- ";" semi-colon
- "," comma
- tab
- space

A PRINT statement on the line above a DOS command generates the necessary carriage return; alternatively, define D$ as a carriage return and a CTRL-D:

```
10 D$ = chr$ (13) + chr$ (4)
```

DOS commands are also ignored when improperly used. IN# and PR# DOS commands, for example, must be sent out as:

```
10 print chr$(4);"IN#0"
20 print chr$(4);"PR#0"
```

For further explanation, refer to pages 100 through 103 of The DOS Manual or page 25 of The DOS Programmer's Manual.
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EtherPort Installer Upgrade for System 6.0.4 & 6.0.5

This article contains information on an upgrade for Novell's EtherPort installers.

This article has been archived and is no longer updated by Apple.
Novell has updated their installers to work with System Software 6.0.4 and 6.0.5. You can obtain the updated installers from Novell, or install the drivers on a system running System Software 6.0.4 or 6.0.5 using this workaround:

To install Novell EtherPort drivers on systems running System Software 6.0.4 or 6.0.5:

1) Start up the system from a 6.0.4 or 6.0.5 System Tools disk.

2) Eject the Tools disk.

3) Insert the Novell Installer disk and execute the Installer from that disk.

Be prepared to swap the disks a few times when prompted by the Installer program. This procedure differs from the normal install procedure of starting up from the Installer disk.

To obtain the new Installer disk, contact Novell. Note that there are two different updated versions of the Installer program for the two different Novell EtherPort II cards distributed:

Version 2.5 Rev e This is for the "Intel" or long EtherPort II card.
Version 3.25 Rev b This is for the "National Semiconductor" or short EtherPort II card.

For more information, search under: "Novell"

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Object(s) in the Layout Footer May Slide Up Into the Body Part and Print After Each Record (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In the ClarisWorks 2.0 database environment, it is possible to insert a footer as a layout part , which allows you to have information print at the bottom of each printed page when printing from that layout. You can also remove blank space between objects when printing by choosing Layout menu, Layout Info.... and clicking the slide options.

However, if you have set your layout to slide objects, because you expect that there will be empty fields on the layout and you wish to maintain a professional appearance on your printout, you may find that fields or objects in the layout Footer will slide up into the body part and print after each record.

The workaround is to add a footer by choosing Format menu, Insert Footer... (available when in the Browse mode) to place any information that you want to print at the bottom of each page. Please note that a footer entered in this manner will appear on every layout in your database.
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Pasting a Single Value into a Range in a ClarisWorks Spreadsheet (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ability to paste a single value and have it fill a range with a single step is not available in ClarisWorks. The easiest way to accomplish this task is to use the following steps:

1. Enter a value into a cell in your spreadsheet document.
2. Highlight the range of cells you want. Single click or drag-select down, then across.
3. Choose Fill Right, and then Fill Down from the Calculate menu (or press Command-R, then Command-D; Ctrl-R and Ctrl-D on Windows).

You could also automate the fill steps above in a Macro/Shortcut if you are using ClarisWorks 2.0 or higher.

This solution also works for ClarisImpact Tables. The only difference is that Fill Right and Fill Down are Available from the Table menu.
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Some Keyboard Shortcuts Not Supported On Macintosh Plus (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
On other than a Macintosh Plus computer, text of a ClarisWorks Word Processing document/frame or a ClarisImpact Report document or Word Processing Model can be selected from the keyboard.

Option-Shift-Right Arrow will select the word to the right of the insertion point.

Option-Shift-Left Arrow will select the word to the left of the insertion point.

On a Macintosh Plus computer, the Left Arrow produces a "+", the Right Arrow an "*", the Up Arrow a "/" and the Down Arrow an "=".
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Using a ClarisWorks Macro to Automatically Print Every Other Page (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you want to print on every other page (so that you can print on both sides of each page), there is a way to do this using ClarisWorks. The manual method is to select Print in the File menu, click in the radio button "From ____ To: ____" and fill in the first page number in both blanks. Then repeat the procedure for the successive pages you want to print.

To automate this procedure, record a macro. The following example will print the odd numbered pages. When you begin recording, name the macro and give it a keystroke.

Then type:
Command-P (to bring up the Print dialog box)
Tab 1 (to place the number "1" in the From blank)
Tab 1 (to place the number "1" in the To blank)
Return (to activate the printing of page 1)

Command-P
Tab 3
Tab 3
Return (to activate the printing of page 3)

Continue the steps for 5, 7, 9 etc. Since printing pages that do not exist has no effect, go out to the farthest page number you might want to print in the future. Now record a Macro to print the even numbered pages. Simply run these two macros in the future.

If you have ClarisWorks 2.0, you can link these macros to your own customized palette button for one click use in the future.

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"Could Not Configure Connection Tool" Error Message (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If phone numbers in the Connection Settings dialog are entered with spaces, the ClarisWorks Communications environment will generate an error message which reads "Could Not Configure Communication Tool." This is especially confusing if you are using the Phone Book, because it is more natural to enter phone numbers with spaces and parentheses or to use an outside line extension such as "9" followed by a comma.

The Right Way: 9,408-727-9054 or 408-727-9054 or 9,4087279054

The Wrong Way: 9, (408) 727-9054 or 9,(408) 727-9054 or (408) 727-9054

You will also get this error message when dialing with the Dial menu in the status bar of ClarisWorks 2.0 if the Serial Tool is selected in Connection Settings, or if you change the Type field in the Address Book to something other than PhoneNumber.
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Inadvertent Ability to Save Changes to a Locked Claris CAD 2.0 File on an AppleShare 3.0 Server

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Under AppleShare 3.0vX, if you lock a Claris CAD 2.0vX file residing on a server using the Get Info window from the Finder, you will still be able to save changes to the file even though it is locked. The locked file behaves correctly on individual machines, but not when saved to AppleShare servers.

A workaround would be to save the file as a stationery file.

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Mail Merge Dialogue Box Fails To Reopen Fully (WP,DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When opening the mail merge dialogue box (by selecting File menu, Mail Merge...), the dialogue box opens properly. But when it is docked by clicking the zoom box in the upper right corner, and then expanded, it expands only to half its original size.

To see the entire box again, close the window and reselect File menu, Mail Merge... (or press the command, shift and M keys).
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Opening Files Created by Microsoft Word Versions Other Than 3, 4, 5, PC and WinWord (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Page B-3 of the ClarisWorks 2.0 User's Guide shows a Microsoft Word translator in addition to the Microsoft Word 3, 4, 5, PC and WinWord translators. Some people might expect that this indicates that ClarisWorks will open versions of Microsoft Word other than 3, 4, 5, PC and WinWord.

To open files created by older versions of Microsoft Word, open the files in a newer version of Word and save the files in that version's format.

Alternatively you could open the files in a text processor such as Vantage, or open the file in MacWrite Pro (hold down the Option key while choosing Open in the File menu), although you will lose some formatting and there will extraneous characters that will need to be stripped out.
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ClarisWorks Page Break Before a Sub-summary (DB)

ClarisWorks cannot designate that a part on a database layout should always advance to a new page before printing - but there is a workaround.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Q. I want my ClarisWorks database to print with a page break before each sub-summary. How can I get it to do this?

A. ClarisWorks cannot designate that a part of a database layout should always advance to a new page before printing. However, you can achieve something similar to this. Let's say you are a teacher with several classes. You have a database of students for all your classes and want to print a report that prints the class and a list of students in that class (a sub-summary when sorted by class). You want each class to start on a new page. To do this, try these steps

1. Create a layout with a Body part and a Sub-summary part (when sorted by Class) above the body.
2. Position the Class field in the sub-summary, and the Student field in the body.
3. Shrink the body to the minimum vertical height that still can contain the student field.
4. Enlarge the sub-summary so that it pushes the body all the way to the bottom of the layout.
5. Sort the file by Class.
6. Print the report. Each class group will start on a new page.

TIP: On the Macintosh, if you are printing to an Apple LaserWriter, be sure to select the Larger Print Area check box in the Options of Page Setup, otherwise you'll get only one student per page.

Another option to creating a separate sub-summary category on each page is to do a find for one of the items to be summarized and then generate the Sub-Summary report. Repeat doing a find for the second item to be summarized, etc. This will give the same results although it requires more effort to do. If the same report is to be used, then Macros could be used to automate part of the procedure.

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ClarisWorks 2.0 and 2.1 for Macintosh: Technical Specifications

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Technical Specifications of ClarisWorks 2.0 and 2.1 for Macintosh

All Documents (except Communications)
Max. Number of Open Documents - Limited by available memory
Max. Number of Open Views per Document - Limited by available memory
Max. Number of Objects per Document - 65,534
Max. Object Size - 32,767 x 32,767 points
Min. and Max. Object Scaling - 25% to 400% both horizontally and vertically
Min. and Max. Header and Footer Size - One third of the chosen paper size
Min. and Max. Margin Settings - Specific to the chosen printer
Min. and Max. Printer Reduction - Specific to the chosen printer
Min. and Max. for Starting Page Number - 0 to 9000
Number of Split Bars - 2 Horizontal and 2 Vertical (9 panes)
Min. and Max. View Scale - 3.125% to 3200%
Max. Number of Slides (pages) - Limited by document size**
Max. Slide Background Colors - 8, 16, or 81 fixed colors/256 editable colors**
Max. Slide Border Colors - 8, 16, or 81 fixed colors/256 editable colors**
Rulers Types - 2 (Text and Graphics)
Rulers Units - 5 (Inches, Picas, Points, Millimeters and Centimeters)

Number of Divisions per Ruler Unit - 1 to 512
Number of Formats - 5 (General, Currency, Percent, Scientific and Fixed)
Number Precision - 0 to 15 places
Date Formats - 5
Time Formats - 4
Default Shortcuts Buttons - 10 (Cut, Copy, Paste, Undo, Bold, Italic, Underline, Open, Save and Print)**
Other Shortcut Buttons - 19 (Align Center, Align Justify (not SS), Align Left, Align Right, Clear, Edit Macros, Edit Shortcuts, Hide/Show Margins, Hide/Show Page Guides, Insert Document, Plain Text, Play Macro, Record Macro On/Off, Slide Show, Spell Check, Stack Windows, Strike-Thru, Thesaurus and Tile Windows)**
Max. Number of Macros - 65,535
Dictionary - 110,000 words
Thesaurus - 660,000 synonyms
User Dictionary - 32,767 character capacity
Graphics Formats - 6 XTND Filters (EPSF, GIF, MacPaint 2.0, PICT, QuickTime Movie and TIFF)**

Word Processing Documents
Max. Number of Pages Across - 9
Max. Number of Pages Down - (65,534 / Number of Column per page) / Number of Pages Across
Max. Number of Columns - 9
Min. Space Between Columns - .06 inches

Max. Number of Footnotes - 65,534
Min. and Max. for Starting Footnote Number - 0 to 9999

Word Processing Environment
Outline Formats - 7 (Diamond, Numeric, Harvard, Legal, Bulleted List, Check List and one custom format per text frame)**
Outline Topic Labels - 12 (None, Diamond, Bullet, Check Box, Harvard, Leader, Legal, Letter Caps, Letter, Numeric, Roman Caps and Roman)**
Max. Number of Customizable Outline Levels - 16 **
Max. Number of Outline Levels - 256 **
Min. and Max. Space Before Paragraph - 0 pt. to 255 pt. **
Min. and Max. Line Spacing - 4 pt. to 512 pt. **
Min. and Max. Space After Paragraph - 0 pt. to 255 pt. **
Number of Text Styles - 11 (Plain, Bold, Italic, Underline, Strike Thru, Outline, Shadow, Condense, Extend, Superscript, Subscript)**
Max. Number of Defined Styles - 20 (the first eight get key equivalents) **
Min. and Max. Font Size - 4 pt. to 255 pt. **
Number of text Colors - 8, 16 or 81 fixed colors / 256 editable colors **
Max. Number of Style Changes in a (Set of Linked) Text Frame(s) - 65,534

Types of Text Wrapping Around Objects - None, Regular and Irregular **
Number of Alignment Options - 4 (Left, Center, Right and Full Justification)
Number of Tab Marker Types - 4 (Left, Center, Right and Decimal)
Tab Fill Types - 4 (None, -, _ and .) **
Max. Number of Tab Settings per Paragraph - 20
Default Word Processing Shortcuts Buttons - 10 (Hide/Show Invisibles, Custom Style, Increment Font Size, Decrement Font Size, Make Table, Copy Ruler, Apply Ruler, Align Left, Align Center and Align Right) **
Formats Supported - 25 XTND Translators (Acta 3.0, AppleWorks 2.0-3.0, AppleWorks GS, EPSF, GIF, MacPaint 2.0, MacWrite, MacWrite II, MS-Word 3.0-4.0, MS-Word PC, MS-Works 1.1-2.0, MS-Write, PICT, RTF, Text, TIFF, WordPerfect 1.0-1.02, WordPerfect 4.2-5.0 PC, WriteNow 1.0-2.2 and WriteNow NeXT) **

Draw Documents
Max. Number of Pages - 9999 across by 9999 down but less than 32,767 total

Draw Environment
Number of Tools - 10 (Line, Rectangle, Rounded Rectangle, Oval, Arc, Polygon, Freehand, Bezigon, Regular Polygon and Eyedropper)**

Min. and Max. Number of Sides for a Regular Polygon - 3 to 40 **
Max. Number of Points per Polygon or Freehand Object - 8,192
Number of Editable Gradients - 32 editable gradients**
Number of Fill/Line Colors - 8, 16 or 81 fixed colors / 256 editable colors **
Number of Fill/Line Patterns - 64 editable patterns **
Min. and Max. Line Width - .03 pt. to 255 pt.
Number of Arrow Line Types - 3 (Start, End and Both Ends)
Default Drawing Shortcuts Buttons - 10 (Align Top, Align Left, Align Bottom, Align Right, Align Horizontal Centers, Align Vertical Centers, Irregular Text Wrap, Move Forward, Move Backward and Rotate 90 Degrees) **
Other Drawing Shortcuts Buttons - 17 (Autogrid On/Off, Decrement Line Width, Distribute Horizontally, Distribute Vertically, Duplicate, Flip Horizontal, Flip Vertical, Increment Line Width, Move to Back, Move to Front, No Text Wrap, Regular Text Wrap, Reshape, Smooth, Group, Ungroup, Unsmooth) **

Paint Environment (subsumes the Draw Environment) **
Min. Number of Pixels - 36 across and 36 down

Max. Number of Pixels - 2000 across and 2000 down
Color Depth Levels - 6 (B&W, 4, 16, 256, Thousands and Millions)
Resolution Levels - 5 (72, 144, 288, 300 and 360 DPI)
Paint Modes - 3 (Opaque, Transparent pattern, Tint)
Grid Sizes - 5 (2, 4, 8, 16 or 32 pixels)
Number of Tools - 18 (Line, Rectangle, Rounded Rectangle, Oval, Arc, Polygon, Freehand, Bezigon, Regular Polygon, Eyedropper, Selection Marquee, Lasso, Magic Wand, Paint Brush, Pencil, Paint Bucket, Spray Can and Eraser)
Number of Editable Brush Shapes - 32
Number of Fill/Line Colors - B&W, 4 or 16 / 256 editable colors
Min. and Max. Spray Can Dot Size - 1 to 72 pixels
Min. and Max. Spray Can Flow Rate - 1 to 100 (units?)
Default Painting Shortcuts Buttons - 10 (Opaque Mode, Transparent Mode, Tint Mode, Lighter, Darker, Tint, Fill, Blend, Rotate 90 Degrees and Zoom to Fit)
Other Painting Shortcuts Buttons - 9 (Autogrid On/Off, Decrement Line Width, Duplicate, Flip Horizontal, Flip Vertical, Increment Line Width, Invert and Pickup)

Spreadsheet Documents

Max. Number of Cells - 256 Columns by 16,384 Rows = 4,194,304 cells
Min. and Max. Column Width - 0 to 510 pts.
Min. and Max. Row Height - 0 to 256 pts.
Number of Page Breaks per Document - 65,535
Max. Lock Titles Area - 128 Columns by 128 Rows **
Max. Number of Characters in a cell - 255
Cell Alignment - 5 (General, Left, Center, Right and Wrap) **
Cell Border Types - 5 (Outline, Left, Top, Right and Bottom) **
Number of Functions Available - 100
Default Spreadsheet Shortcuts Buttons - 20 (AutoSum, Align Center, Align Left, Align Right, Align Wrap, Borders Outline, Borders Right, Borders Bottom, Area Chart, Bar Chart, Line Chart, Pie Chart, Commas, Currency, Delete Cells, Insert Cells, Show-Hide Formulas, Percent, Sort Down and Sort Up) **
Other Spreadsheet Shortcuts Buttons - 25 (Align General, Auto Calc On/Off, Auto Size Column, Auto Size Row, Calculate Now, Copy Format, Decrement Decimal, Increment Decimal, Gridlines On/Off, Hi-Lo Chart, Next Date, Next Time, Negative Parenthesis, Paste Format, Pictogram Chart, Scatter Chart, Scientific Notation, Set Print All, Set Print Selected, Solid Gridlines, Stacked Area Chart, Stacked Bar Chart, Stacked

Pictogram Chart, XY Line Chart and XY Scatter Chart) **

File Formats Supported - 7 XTND Translators (ASCII Text, DBF, DIF, SYLK, AppleWorks SS, MS-Works 2.0 SS and MS-Excel 3.0) **
Maximum number of cells in a sort 65520

Charts
Chart Types - 12 (Pie, Bar, Stacked Bar, Area, Stacked Area, Line, X-Y Line, Scatter, X-Y Scatter, Hi-Low Pictogram and Stacked Pictogram) **
Max. Length of Chart Title, Legend and X-Y Axis Labels - 255 **
Positions for Legend/Title - 8 (Upper Left, Upper Middle, Upper Right, Middle Left, Middle Right, Lower Left, Lower Middle and Lower Right) **
Types of Axis Ticks - 4 (None, Outside, Inside and Across) **
Number of Chart Symbols - 12 **
Chart Symbols Colors - 8, 16 or 81 fixed colors / 256 editable colors **
Chart Symbol Size - 4 to 250 points **
Positions for Label Data - 9 (Upper Left, Upper Middle, Upper Right, Middle Left, Center, Middle Right, Lower Left, Lower Middle and Lower Right) **

Database Documents
Max. Number of Records per Document - 32,767
Max. Number of Fields per Document - 255
Min. and Max. Number of Chars. in a Field Name - 1 to 63

Field Types - 6 (Text, Number, Date, Time Calculation and Summary)
Max. Number of Chars. in a Text or Number Field - 510 chars. less 20 for each style change in the field
Max. Number of Chars. in Calculation or Summary Field Formula - 254
Number of Available Functions - 89
Max. Number of Layouts in a File - 32,767
Min. and Max. Number of Chars. in a Layout Name - 1 to 31
Layouts Types - 5 (Standard, Columnar, Labels, Blank and Duplicate)
Max. Length and Width of Layout - 1 page (will use objects placed below)
Number of Layout Parts - 5 (Header/Footer, Body, Sub-Summary and Leading/Trailing Grand Summary)
Max. Number of Columns in a Layout - 12
Max. ClarisWorks Labels - up to 110 label models can be defined in the file**
Max. Number of Find Requests - 32,767
Max. Length of a Match Records Formula - 255 characters
Default Database Shortcuts Buttons - 10 (Select Equivalents, Select Non-Equivalents, Select Less Than, Select Greater Than, Sort Up, Sort Down, Resort, New Record, Omit Record and Show All) **
Other Database Shortcuts Buttons - 5 (Delete Record, Hide Selected, Select Less Than or Equal, Select Greater Than or Equal and Resort) **

File Formats Supported - 6 XTND Translators (ASCII Text, DBF, DIF, SYLK, AppleWorks DB and MS-Works 2.0 DB) **
Max. Number of characters in a field imported from DIF, DBF, and ASCII Text (Tab-Seperated-Text)File - 255 characters.

Communications Documents
Max. Number of Open Documents - Limited by available memory **
Max. Memory of Log Window - 32,767 lines, kilobytes or screens (?) **
Number of Included Tools - 6 (Apple Modem, Serial, Text, XMODEM, Kermit, TTY and VT102) **
Max Entries in PhoneBook - 32,767 **
Default Communications Shortcuts Buttons - 10 (Print, Save, Copy, Paste, PhoneBook, Open Connection, Wait Connection, Reset Connection, Send File and Receive File) **
Other Communications Shortcuts Buttons - 8 (Close Connection, Edit Macros, Edit Shortcuts, Macro Wait, Play Macro, Record Macro On/Off, Stack Windows and Tile Windows) **

** New Since ClarisWorks 1.0

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Printing Shadow Style to Non-PostScript Printers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you modify text with the "Shadow" style, you may not get the expected results when you print to a non-PostScript (True Type) printer. Although the text looks OK on the screen, the Shadow effect may be very minimal when printed.

The issue involves the print driver translation of a 72 dpi screen image to 360 dpi printed output. On the screen, shadowed text is offset by one pixel, or 1/72 of an inch. The StyleWriter print driver also offsets shadowed text by one pixel, but one pixel is only 1/360 of an inch. If you look closely enough at the output you can discern the difference.

This affects all non-PostScript (QuickDraw) devices. Shadowed text on ImageWriter II printers at 72 dpi appear fine. With LaserWriter LS printers at 300 dpi, the effect is a little more pronounced. With StyleWriter printers at 360 dpi, it is most pronounced.

Apple is aware of this issue.

The issue occurs with bitmapped and TrueType fonts, but Adobe Type Manager (ATM) allows you to print true drop shadow styled text on QuickDraw based printers, especially the higher resolution ones. When you install ATM, install the fonts that come with it. Because TrueType fonts take precedence over others when printing, the TrueType fonts in your System will need to be removed for this solution to be effective.
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System 7 Tune-up and ClarisWorks Installation (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
On page 2 of the ClarisWorks 2.0 Installation Guide, one of the requirements listed is that the System 7 Tune-Up (version 1.1.1) needs to be installed. This is based on Apple's recommendation for proper system operation. The Tune-Up addresses many system software level issues relating to memory, file storage, speed, and printing. It should be noted that this is true of ANY Macintosh application, not just ClarisWorks.

Please refer to TIL article# 10150: "**System 7 Tune-Up 1.1.1: Availability, Installation**" for more information on the Tune-Up.

Users may also upgrade to later versions of system software, please refer to TIL article# 30152: "**Mac OS: Upgrading from Older OS Versions**" for more information on upgrading system software.

While ClarisWorks (or any other Macintosh application) will run without the Tune-Up installed, users may experience unexpected software anomalies that would otherwise be eliminated by the Tune-Up. This requirement was included in the Installation Guide to prevent this.

To find out if the Tune-Up has been installed, switch to the Finder and under the Apple menu select "About This Macintosh...". If the Tune-Up has been installed there will be a bullet to the right of the System version, i.e. 7.01·.

A special note for Macintosh Performa users: System 7.01p includes the Tune-Up as part of the system software and does not require a call to Apple. This version will only be found on Macintosh Performa 200 and 400 models. All other Macintosh Performa computers are shipping with System 7.1p or later and do not require the Tune-Up.

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Wrapping the Text in a Text Frame or Text Model Around a Picture (All)

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To wrap text in the body of a ClarisWorks Word Processing document around an object, simply select the picture with the Arrow tool and choose Text Wrap... from the Options menu.

ClarisImpact automatically wraps around any object or Model drawn in the Report environment.

If the text is in a ClarisWorks Text Frame or ClarisImpact Text Model and you wish to wrap it around an object or picture, add the steps below:

1. Select the Text Frame or Text Model with the Arrow tool.
2. From the ClarisWorks Options menu, choose Frame Links; or from the ClarisImpact Text menu, choose Frame Links.

Similarly, to make the Text Wrap feature work in a ClarisWorks Drawing document or a ClarisImpact Drawing or Presentation document, the Frame Links command must be enabled for the underlying text object. This is true even if you won't be linking this text object to any other Frames or Models. To do this:

1- Select the text object(s) behind the graphic to be wrapped
2- From the ClarisWorks Options menu, choose Frame Links; or from the ClarisImpact Text menu, choose Frame Links.

NOTE: This solution will also work with a ClarisImpact Outline Model. After following the steps above simply use the To Outline feature from the Text menu.

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KanjiTalk: Running U.S. Applications

Can any Macintosh operating system version be mixed with any application on a Kanji Macintosh? For example, while running U.S. System 6.0.x with Kanji fonts, could I run the English versions of MacWrite II and PageMaker and print in Kanji on a Kanji LaserWriter?
This article has been archived and is no longer updated by Apple.
Sometimes, you can successfully run a U.S. application with KanjiTalk and have a Kanji script appear in the data space and print in a Kanji script to a LaserWriter IINTX-J. However, if it hasn't been localized properly, you may encounter many more issues, possibly serious, compared to mixing and matching applications and operating systems localized for other countries. Most English applications don't support the 2-byte character set. Exceptions exist with applications like Excel or WordPerfect.

A U.S. application that uses the Script Manager, which makes it possible to support non-Roman scripts: Arabic, Hebrew, Japanese, and Chinese, may be functional (with minor incompatibilities) or usable (with somewhat minor inconveniences). Some likely incompatibilities include text-positioning issues requiring you to press the backspace key twice, incorrect date and time formats, different numerical and character delimiters, and so on. (Remember: Kanji uses a 2-byte-wide word.) With other less-compatible applications, serious system faults may occur at any time, including when changing font parameters or printing a PostScript font.

Generally, you may have fewer issues using graphic-oriented packages than text-oriented packages. Also, you can use any operating system on any Macintosh, keyboard differences aside.

Although you can usually use a non-U.S. (or other) word processor with the U.S. Macintosh OS, or vice-versa, we do not recommend using non-Kanji applications with the Kanji OS, or vice-versa.
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Printing ClarisWorks 1.0 and 2.0 Communications Documents (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

"You can't print a communications document. Select the data you want to print, copy it, paste it into a word processing document, and print it from there."

The above text appears in the ClarisWorks 1.0 Communications Handbook, page 2-24, or the ClarisWorks Handbook Performa, page 2-24.

This isn't the case with ClarisWorks 2.0.

In ClarisWorks 2.0, you can print a communications document (both the data in the terminal area and the scrollback) during a communications session or after the session. You print a communications document as you do any other ClarisWorks document.

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Pasting Finder Icons

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Macintosh Finder in System 7 allows you to copy the icon which is attached to any file by opening the Get Info screen for the file, clicking on the icon and choosing Copy from the Edit menu. You can then paste the icon into any Claris application.

The information that is copied, however, is a little bit more than the simple icon picture. Every Macintosh icon has a "mask" attached, which gives the icon its distinctive highlighted appearance whenever the icon is selected.

All Claris graphics applications treat the pasted icon as a grouped pair of icons. However, they treat the mask differently. MacDraw II and MacDraw Pro both show the mask as an object which is entirely black. MacDraw II also loses any icon color.

ClarisWorks 1.0, ClarisWorks 2.0 and ClarisImpact all display the mask as a white transparent object after ungrouping.
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Files Installed by ClarisWorks 1.0v1 for Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is a list of the Dynamic Link Library (.DLL) files, executable (.EXE), and other related files installed by ClarisWorks 1.0v1 for Windows.

Directory:

C:\\WINDOWS

CLARIS.INI - Contains information about location of the program and installed options

NOTE:

ClarisWorks does not modify the WIN.INI or SYSTEM.INI during the installation process. All relevant information is stored in CLARIS.INI. If you already have another Claris product installed (like FileMaker), there will be a CLARIS.INI. When you install ClarisWorks, it will update the existing CLARIS.INI.

C:\\WINDOWS\\CLARIS

USENG.NDX - The main dictionary (used by the ClarisWorks spell checker)
USERD.SPL - User Dictionary (custom dictionary you can add terms to)
UTHES.MTH - US English Thesaurus

Files with an extension of XTD. These are translator files, and allow you to open documents created in other applications. The translator files allow you to import and export your data between ClarisWorks and other software applications. ClarisWorks installs 21 XTD translator files into the Claris directory. Please refer to Chapter 2, page 8 for more information about importing files created by other applications into ClarisWorks. Chapter 2, page 21 contains information about exporting your work from ClarisWorks into other applications.

C:\\CLWORKS

CLWORKS.EXE - ClarisWorks application program file
CLWORKS.HLP - ClarisWorks Help
README.CWK - README file with any last minute tips/corrections to printed manual

Also make sure the following files are in the CLWORKS directory:

CWKBDHK.DLL
DLGFONT.FON
CLWORKS.RSR
FONT.MAP

C:\\CLWORKS\\SAMPLES

14 files with a .CWK extension. These are sample ClarisWorks documents you can open from ClarisWorks.

C:\\CLWORKS\\TUTORIAL
PEGALOGO.WMF - Windows Metafile (graphic image)
EMPLOYMO.RTF - Rich Text Format (RTF) document
PEGASART.WMF - Windows Metafile (graphic image)
QRTYLYPRT.CWK - ClarisWorks document
LTRHDART.WMF - Windows Metafile (graphic image)
PEGLTRHD.WMF - Windows Metafile (graphic image)
SMPLOBJS.CWK - ClarisWorks document
SALESPRF.CWK - ClarisWorks document
NEWSLTTR.CWK - ClarisWorks document

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Increasing the Size of a ClarisWorks Layout

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ways to accommodate more fields on a page, or to make the layout larger is to do one or more of the following:

1) Make the size of the font for your fields smaller.

2) Increase the size of the page in the Page Setup dialog.

3) In the Page Setup dialog, change the Reduce/Enlarge option to a lesser percentage (like 50%). (This option is usually the easiest and most preferable.)

4) Change the margins in the Document dialog (choose Document under the Format Menu) to a lesser number.

Remember-

1) ClarisWorks still has a limit of 255 fields for a database document.

2) Changing items in the Page Setup dialog will change how all your layouts print out until these options are reset.

3) In order for fields to be visible, they must be contained in a part. You may need to drag the body down to the bottom of the layout to see all the fields.
Published Date: Feb 18, 2012

Keyboard Shortcut Error in French ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The keyboard shortcut for defining a new record in the database module in ClarisWorks for Windows is shift+control+N.

In the French getting started manual (page 6-7), however, the shortcut is noted as shift+N (Maj+N), and it should be (Maj+Cntrl+N).
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A New Perspective on Charts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q. The tops of the bars in my 3D bar chart do not exactly correspond with the number on my axis. The tops of my bars are consistently about 20% below the correct position on the axis.

A. This is due to the perspective of the 3D chart. By default, the width of the bar (both depth and width) is only 60% of the base volume for that bar. Because of this, there is some real space between the bar and the axis. Since these charts are rendered in true 3D space, there is some perspective error caused by the space between the bar and the axis.

There are several solutions to this symptom.

The easiest and most effective workaround is to set the Series Width value from the "Chart Info..." dialog under the Edit menu to 100. This will make the the bars volume fill 100% of the base. This makes the space between the bar and the axis 0 so there will be no error in perspective.

You can also use the "3D Option..." dialog under the Chart menu to change the vertical perspective to 0 (or close to it). This will have the affect of viewing the chart head-on so the perspective error will be reduced.

Published Date: Feb 18, 2012

Using Outline View as a Writing Tool

The outliner is great for brainstorming and organizing your work. You can also use it to simulate style sheets and drag-and-drop operations.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Among the outline formats you can choose in ClarisWorks 2.0 and ClarisImpact 1.0 is custom formatting, where you define how each level will be indented and what font, size and style the text will be. This is an extremely powerful feature. It allows you to specify standard styles to use at different levels of your document.

With each new section or sub-topic, there is no need to manually indent paragraphs and apply formats. Instead, you just create a new topic at the level you want. The custom outline format takes care of the rest.

And if you decide to change the way a certain level looks, modifying the level format changes every topic of that level to the new format automatically. While you can do the same thing with the Define Styles feature in Claris Works, the custom formatting feature in the Outline menu adds the additional capability to control paragraph indents.

Outline View vs. Page View

Most often, you use Outline View as a notepad to organize your ideas. Once organized, you leave Outline View to format and fill out their document. However, there is another approach which is potentially more efficient, especially for longer, structured documents such as research papers and business reports.

For example, imagine this document was in outline view. It's possible if you set Topic labels (Labels in ClarisImpact) to None and indents (Left Indent in ClarisImpact) to zero.

This brings up an interesting point. For documents that use topic and sub-topic headings with varied paragraph formats, it may make the most sense to start in Outline View and stay there. An added benefit of composing your document in this way is that you can quickly move paragraphs and sections around since you can grab a whole topic.

For instance, say you decided this sentence should come before the one above. Rather than cutting and pasting, you can just click in the left margin on the first line in the paragraph and drag the cursor up until you see a black bar appear before the paragraph above. Let go of the mouse button and the paragraph will be repositioned.

Collapsing Topics

You can even collapse topics to get an overview. This paragraph could be considered a sub-topic of the topic "Collapsing Topics." If you were viewing this in the ClarisWorks or ClarisImpact outliner, you could double-click the heading to collapse all the paragraphs under it. What a time-saver in long documents! You could use the Expand To command and specify level 1, 2 or whatever, depending on how much detail you want to see.

Creating New Topics in Claris Works

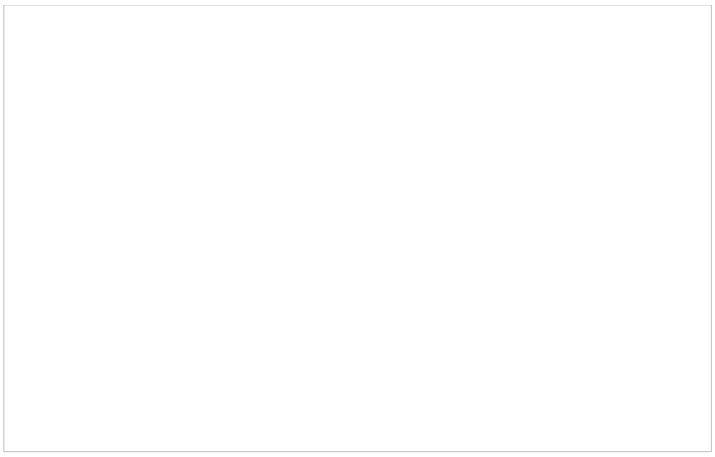
Unlike ClarisImpact, Claris Works does not have preset topics or levels in the outliner; however, creating new topics is easy. To create a new topic on the same level in Claris Works, just press return. For a new sub-topic, press Command-R or choose New Topic Right from the menu. For a new section, press Command-L or choose New Topic Left.

If you've already created a topic but want to change its level, choose Move Left or Move Right from the menu. In addition to the command key equivalents listed in the menu, you can use Control-right arrow or left arrow to move right or left.

[A template demonstrating these techniques in Claris Works is available for download from Claris forums on America Online and CompuServe, and the Claris BBS.]

Figure 1 - Custom outline formats simulate elements of the article's text: Headlines, subheadings, and body text.

TA42527_Using_Outline_View_as_a_Writing_Tool.pdf



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Gray Line other than Margins Showing when Page View is On (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You may notice a second gray line or double margin in a ClarisWorks 2.0 Paint document under some of the following conditions:

- Page View is toggled on
- Page Setup size is larger than the document size
- Margins have been reduced
- Pixels across or down have been increased

The extra line represents the Document size you have set. In order to change the document size to match Page Setup choose Document from the Format menu (change pixels across and/or pixels down).

NOTE: The document size may have been chosen by ClarisWorks based on the available memory. Close documents to free more of the available memory or allocate more memory to ClarisWorks.

If you have enough memory allocated to ClarisWorks then the default settings for a new Paint document (1 inch margins all around, Pixels across = 468 and Pixels down = 648) will make your Document size and your Page Setup size match exactly. If you need to change Page Setup to Landscape Orientation then switch the Pixels across and Pixels down. If you set your margins to 0.5 inches all the way around then your document size will need to be set to 540 Pixels across and 720 Pixels down.
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How to Convert Fractional Values to Decimals (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Sometimes you have to work with numeric values that are expressed as fractions. For example, 2 3/4 to mean 2.75. ClarisWorks can't sort or do arithmetic when values are expressed this way. To convert the fractions to decimal values, use the following calculation:

Given a ClarisWorks Spreadsheet cell A1 contains a fraction, the following formula will return a decimal equivalent:

=IF(FIND("/",A1,1)=0,A1,LEFT(A1,FIND(" ",A1,1)-1)+ (MID(A1,FIND(" ",A1,1)+1, FIND("/",A1,1)-FIND(" ",A1,1)-1)) / RIGHT(A1,LEN(A1)-FIND("/",A1,1)))

This formula works as long as a space separates the whole part of the number and the fractional part, and a slash (/) is used to express the fraction.

This formula will also work for a ClarisImpact Table.
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How to Import Files that Contain Returns within Fields

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks lets you enter more than one line of information into database text fields. This handy feature isn't supported by many database programs, so ClarisWorks has to make special accommodations for this feature when you export information. It departs from the standard tab-delimited text format; any returns pressed within text fields are converted to a special character, ASCII 11 (this is also the character FileMaker Pro uses.) This feature applies for exports only. When inserting or opening a text file in the ClarisWorks 2.0 database, the ASCII 11 is converted to a space, not a return.

If you want to preserve the returns within your database text fields, you need to follow a different procedure than usual. One method you can use is to change the returns within fields to some special series of characters before you save the file as text. Later, when you insert the file, you can change the special characters back to a return.

Here is a step-by-step description of what you need to do:

1. Pick your own special character, or series of characters. You should use text that you don't use in your database, such as the bullet (·) or paragraph symbol (¶). In this example, we'll use "#@#".

2. Change the returns in your database file to your special character.

a. Choose Find/Change from the Edit menu. You may be accustomed to using this command with word processing tasks, but it also work with the database environment.

b. Type \\p into the Find field. This tells ClarisWorks to search for carriage returns.

c. Type #@# into the Change field.

d. Click Change All and confirm that you know this command cannot be undone. ClarisWorks will change all return characters to #@#.

3. Save the file as text. (Or, use the DIF format, if you want to preserve field names.)
When you insert or import the file, you use the Find/Change command again to restore the returns within fields:

1. Choose Find/Change from the Edit menu.

2. Type #@# into the Find field.

3. Type \\p into the Change field.

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FAXstf and ClarisWorks

When using FAXstf with ClarisWorks and ClarisImpact, there are several anomalies.
This article has been archived and is no longer updated by Apple.
When using FAXstf with ClarisWorks and ClarisImpact

- Fax will not be selected when the Option key is held down.
- ClarisWorks and ClarisImpact will not allow addressing or scheduling of the fax.

Selecting Fax will not occur because these Claris programs uses the same Option key to print without a dialog screen that the fax software uses as its default to select faxing within an application.

The solution is to change the activation sequence to something else, such as Command-Option. Follow these steps:

1. Open FAXstf.
2. Select "settings" from the Apple menu.
3. Open the fax menu settings.
4. Change the activation sequence to one that will allow you to fax from ClarisWorks.

The above information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Knowledge Base. For software updates to ClarisWorks refer to the Apple Software Updates Web site at http://www.apple.com/swupdates.

Note: AppleWorks is the new name for ClarisWorks.
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Lines Created with Tab Fill Leaders May Not End at the Same Point if Text Precedes the Tab (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Lines created with Tab Leaders may not end at exactly the same point if text precedes the tab. Try this example:

1. Create a new word processing document
2. Insert a Left Tab on the Ruler at 4 inches
3. Double-click on this tab and the Tab dialog box should appear
4. Choose the solid line as the Fill type and click OK
5. Type "Hello", press Tab & press Return
6. Type "Goodbye", press Tab & press Return

Notice that the two lines do not end at the same point. Even with fractional character widths turned on, they do not match on screen or on printout. Development is aware of this symptom.

In the meantime, choosing a mono-spaced font, such as Courier, or turning on Fractional Character Widths may alleviate this.
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Problems Printing from ClarisWorks to Brother HJ 400 (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It has been reported that you can have difficulties printing to a Brother HJ 400 dot matrix printer from the word processing environment in ClarisWorks. This is not a supported printer.

This might be solved by turning on Fractional Character Widths in Preferences.

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Unable to Print ClarisWorks 2.0 Database to GCC WriteImpact (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks 2.0 Database documents and the GCC WriteImpact printer do not work together (typically an error of ID = 04). This has been verified with GCC technical support. This occurs with the newest printer driver (version 2.1.1 or earlier). Other environments such as Word Processing print fine to the WriteImpact. ClarisWorks 1.0 Database documents print fine to the WriteImpact.

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"Color QuickDraw is Required to Open this Document" Alert

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Symptom:
When opening a file, an alert appears that says "Color QuickDraw is Required to Open this Document".

Explanation: The document you're attempting to open is either a Paint document, or has a paint frame in it. This document was created on a color-capable Macintosh that supports full color. However, the computer you're using to open the document does not support full color (Macintosh Plus, SE, Classic).

These Macintosh models do not support opening documents that have full color paint objects in them. (They can, however, open ClarisWorks documents that have color objects or color text.) There is no workaround, other than reopening the document on a color-capable Macintosh, deleting the color paint object, then resaving the document.

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How to Handle a Crashed Program in Windows NT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
An application designed for Windows 3.0/3.1 such as FileMaker Pro 2.0, 2.1 or ClarisWorks 1.0 for Windows run in Windows NT in what is called WOW (Windows on Windows) emulation. When running FileMaker Pro or ClarisWorks in this emulation mode any other 16-bit application also running is dependent on this emulation session. If one 16-bit application crashes or locks up, all other 16-bit applications running in the WOW will also lock and cannot be accessed until you close the application that crashed.

To close a crashed application in Windows NT:
1. Press the Ctrl key, Alt key, and Del key on your keyboard all at the same time.
2. Choose Task List, select the application that has stopped responding and click "End Task". This will free all other 16-bit applications running.

Note: Any 16-bit application running in Windows NT will be in a single WOW emulation.
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Graphics Preview in the Insert Dialog Box (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q) Why do some graphic files not Preview in the Insert... dialog box?

A) Page 2-11 of the ClarisWorks 2.0 Macintosh Getting Started Manual indicates that you can preview graphic files before using the Insert... command to insert them into your document. When you look at page 3-38 of the User's Guide, you can even see a preview of the Pegasus Logo (MacPaint) provided with the ClarisWorks Tutorial files. Unfortunately, this picture in the manual is misleading, and cannot be reproduced on your screen.

In reality, the Preview showing in the dialog box is based upon QuickTime's ability to preview the image. The preview checkbox and Create button in the Open and Insert dialog only show up if you have the QuickTime extension installed. Only PICT graphics and QuickTime movies can be previewed (the poster or preview frame of a QuickTime movie is a PICT graphic).

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FileMaker Pro, ClarisWorks Running Slowly in Windows NT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Windows NT is a 32 bit operating system. This does not mean that it can not run a 16 bit application such as FileMaker Pro or ClarisWorks, Windows NT will run them in an emulation mode called Windows on Windows or WOW.

A WOW session is only started when the first 16 bit application is launched in Windows NT, and because of this the first 16 bit application that launches takes longer to start up. You can decrease the amount of time it takes for the first 16-bit application to launch by creating an icon for WOWEXEC.EXE and putting it in the STARTUP group.

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ATI Graphics Ultra+/Pro Mach32 Video Driver Information

How to troubleshoot possible conflicts with ATI's mach32 video drivers.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The following information was provided by ATI Technical Support to help troubleshoot possible video driver conflicts with Windows products.

Memory Problems

ATI technical support recommends excluding the range A000-C7FF from your memory manager. If you are using DOS's memory manager, the emm386 line in the config.sys would read as follows:

C:\\DOS\\EMM386.EXE NOEMS X=A000-C7FF

Also, edit the SYSTEM.INI file and include the following line in the [386Enh] section:

EMMExclude=A000-C7FF

Current Drivers

As of September 1993, the latest mach32 (pronounced "mock 32") video driver for the ATI Graphics Ultra+ and ATI Graphics Ultra Pro boards is version 2.1. The FlexDesk control panel will tell you what resolution you are running, how many colors you can show, and what version of the driver you have. To update the video driver, download the following files from ATI's BBS: LOADER.ZIP and M32WXX.ZIP, where XX is the current version of the driver. The updater will ask you if you want to uninstall the existing drivers; you should answer yes.

The files are available from Library #17 of the ATI forum on CompuServe or by calling the ATI Download Bulletin Board.

For troubleshooting purposes, you can use Microsoft's VGA (640x480) or 8514/a (1024x768) drivers instead of ATI's drivers.

ATIKEY.EXE is a utility that ships with the mach32 drivers and allows you to switch resolutions on the fly. This utility may be added to the load= line in the win.ini. If you suspect that ATIKEY might be causing problems, simply remove it from the load= line and then restart Windows.

Quick Time For Windows Problems

FileMaker Pro ships with the option to install Quick Time for Windows. To see if Quick Time is installed, Select About FileMaker Pro from the Help menu, then select Info.

To use Quick Time for Windows with the ATI mach32 video driver version 2.3 in Windows, set DeviceBitmap=OFF in the [mach] section of the WIN.INI file.

For more information:
ATI Technical Support: (905) 882-2626
ATI BBS: (905) 764-9404

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information. The Knowledge Base article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

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Troubleshooting Non Japanese Applications

Difficulties when using a US version of the application on the Kanji operating system

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you are having symptoms that your application doesn't support 2 Byte Japanese characters, you are probably using a US version of application on Kanji Operating System. Fonts and inserting the cursor do not function properly.

· As the backspace key is pressed, the deleted Japanese character unexpectedly turns into another character. As more characters are deleted, the more garbled the end of the line becomes.

· The application accepts Japanese characters. However, the cursor appears to be away from the end of the text line. When placing a cursor within a line, characters are not inserted where the cursor is.
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Find/Change and WorldScript

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Certain WorldScript fonts will not display correctly in the Find/Change dialog window, they will show up as boxes.

The Find/Change dialog box uses regular Chicago (from the system) in its Find/Change dialog and certain WorldScript fonts do not have a corresponding characters, therefore they will not display correctly in the dialog window.

WorldScript and WorldScript fonts do not take into account dialog windows that access the system on which the program running.

This however does not prevent Find/Change from working correctly. The characters that are either typed or pasted into the Find and Change fields may not appear correctly, but they will work and will make the correct finds and changes in the document.

This would not be a problem for a version of MacWrite Pro working in a native environment. For example a Russian system with a Russian font would work fine.
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MacPlot not Compatible with AV machines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The MacPlot 1.2 driver that we currently ship under special request is not 32-bit clean. This means that it does not work properly under the memory management scheme known as 32-bit addressing. The DSP (Digital Signal Processor) chips in the new AV computers (660av and 840av) require 32-bit addressing, as well as all Power Macintosh computers, so this option can not be turned off as it could be in older machines.

The Claris version of the MacPlot driver, therefore, will not work on these computers. If you wish to plot from one of these machines, you will need to contact Microspot to obtain an upgrade to a 32-bit clean version of the driver (MacPlot Classic or Pro).

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.
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Numbers Formatted as Currency are Aligned Left and Don‘t Calculate

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Typing a comma or a dollar sign in a numeric entry in a spreadsheet cell will cause Claris Resolve or ClarisWorks to see the entry as text, rather than as a number. In other words, if you type '12,000' into a cell formatted as currency, the entry will show up without the dollar sign, and will be aligned left. If you then try use that cell in the formula of another cell, the entry in that cell will be seen as zero.

To solve the problem, remove any non-numeric characters from the cell.

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"Not Enough Memory to Run Application" Messages in Windows NT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you receive a "Not Enough Memory...." error message when launching an application in Microsoft Windows NT, this is possibly because no default printer has been established for the NT environment. This is more likely to happen when the Windows NT workstation relies on a Windows NT Advanced Server for printing services, which makes it unnecessary to load any drivers for printing. If you open Control Panel - Printers you can check for a default printer and install a new driver if there is no default printer driver present.

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Unexpected Quit With Over 64MB of RAM When Using Headers and Footers (WP)

Only occurs in ClarisWorks 2.0v1 (fixed in ClarisWorks 2.1v2)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
On a Macintosh with 64MB of RAM or more, ClarisWorks 2.0v1 crashes after closing a word processing document with a header or footer. The crash affects only the application and displays the error message Òapplication unknown has quit, due to an error of type 1.

To recreate...
1) Launch ClarisWorks 2.0v1 on a machine with 64MB of RAM (or greater) or set the available RAM to 64 MB using virtual memory in the Memory Control Panel.
2) Create a new word processing document.
3) Insert a header, footer, or both.
4) Close the document.
5) Select "yes" or "no" when prompted to save the document.

This has been recreated on the following Macintosh models: Quadra 800, 950, Centris 650, Macintosh IIfx, and Macintosh IIci (all running System 7.1). ClarisWorks 1.0 does not crash under these conditions.
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Invisible Characters May Disappear When Text is Right Justified (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Invisible characters may disappear when text is right justified. Try this test:

1. Create a new Word Processing document in ClarisWorks or a new Report document in ClarisImpact.
2. Press the Return key
3. Turn on Show Invisibles from Preferences
4. Press the up arrow once to move the cursor to the first line
5. Click the Right Justify icon in the menu bar

Notice that the invisible representing the Return has disappeared but will reappear if Left Justification is chosen. This can happen with other types of invisible characters (such as a page break) if Right Justification is chosen.
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Using the Check List Outline Format - Be Sure to Save Changes (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This happens in ClarisImpact 1.0 and Claris Works 2.0 (including localized versions). It is fixed in ClarisWorks 2.1

If you use the Check List Outline Format to keep track of things completed you need to be sure to save your document.

To see the error: if you open a previously created ClarisWorks 2.0 or ClarisImpact 1.0 Word Processing document using the Check List Outline Format, put a check in one of the boxes to indicate that an item has been done/completed, then close the document, you will not be prompted to save changes. Upon reopening the document, you will find that the check box is no longer checked.

To work around the problem, do some sort of text editing in the document or select Save from the File menu before closing.
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Hardware/System Requirements and Compatibility for ClarisWorks 2.0 and 2.1 for Macintosh (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Required Equipment:

· Apple Macintosh Plus, Centris, Classic, LC, SE, Performa, PowerBook, II or Quadra family computer
· Hard disk drive and minimum 1 MB memory
· 2MB memory for System 7 and communications environment
· System software 6.0.5 or later, System 7, or System 7 Pro

(Note: To take advantage of 2.1's support for PowerTalk, System 7 Pro is required. 2.1 will run on System 6.0.5 or later, but will not support PowerTalk without System 7 Pro. Version 2.0 does not support PowerTalk, but will run with System 7 Pro as well as with 6.0.5 or later and any version of System 7 thru and including System 7 Pro).

A list of specific printers which have been certified or verified as fully functional with ClarisWorks 2.0 is not available. In general , a printer that is compatible with Apple print drivers and/or the above referenced Systems should work with ClarisWorks 2.0.

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Installing ClarisWorks on a Server for Network Installations (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Use the following procedure to install ClarisWorks on a central server volume so that it can then be installed through the network from, and onto, any networked Macintosh computer:

1) Create a folder on the server called ClarisWorks Install Files.
2) Drag copy each of the three disks of the software into this new folder. This will create three folders named Disk 1, 2 and 3.
3) Now open the folder called Disk 1 and option-drag the two files: Installer and Installer Script "up" one layer, i.e. out of that Disk 1 folder but still in the ClarisWorks Install Files folder. This will make a copy of the files so that they exist in the Disk 1 folder as well as the ClarisWorks Install Files folder.

To install from a networked Macintosh computer:
1) Find and open the ClarisWorks Install Files folder
2) Double-click the Installer Script file. This will "unstuff" and install the ClarisWorks files onto the local computer's hard disk.

These instructions are provided with the understanding that you have purchased sufficient copies of the product to comply with the software licensing agreements that apply to it.
Published Date: Feb 18, 2012

A/UX: How To Partition 45MB Removable Drive

I would like to format and partition a 45MB removable cartridge for use with A/UX. Because HD SC Setup does not recognize the Mass Microsystems 45MB removable drive, can this be done? I seem to remember a command called "dformat" from prior UNIX experience with a Plexus machine.

This article has been archived and is no longer updated by Apple.
According to Mass Microsystems, their 45MB removable drive does not work under A/UX at this time. It works only under Macintosh OS.

Fortunately, we found a solution by the Usenet comp.unix.aux newsgroup at Stanford University. They posted a fix for the SyQuest SQ555 44MB (and possibly other) removable hard disk drives to work under A/UX 1.1.

We tried the patch program under Macintosh OS, and it does work under A/UX 1.1. Basically, the patch program sets the Error Page Parameter correctly so that the parameters are compatible with A/UX.

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The Insertion Point (Cursor) Doesn‘t Move Across The Page To The Right (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Symptom(s):
Upon opening a new ClarisWorks Word Processing document or a new ClarisImpact Report document, the insertion point just stays on the right margin even after you begin typing. As you continue to type, either the text wraps down to the second line before you get to the end of the first line, or the text goes to the end of the first line but does not wrap at all - seemingly disappearing somewhere into an abyss behind the right margin.

Holding down the Delete key eventually begins to delete those characters you type on the first line, after it deletes the characters you can't see, yet you did type.

When you choose Select All in the Edit menu, the very first character you typed selects (sometimes, a fraction of that character) or the entire document selects. If your text wrapped inappropriately, notice that the area to the right of the text selects - though it cannot be deleted.

Cure: Troubleshoot the Fonts folder. The above conditions seem to occur only with System 7.1. Usually, the font is the default, Helvetica. If you can select the whole document, just changing the font by selecting another font in the Fonts menu should bring the desired result. If so, delete Helvetica from your Fonts Folder and copy it back to your System Folder from the Fonts disk of your System disks.
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Graphics Export Result in PICT or EPSF with Too Many Pages (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the applications which use the Claris Graphics Engine, it is possible to adjust the drawing size for your documents separately from the absence or presence of objects on that page. This can cause difficulties when you wish to export your document for use in another application and have made changes to the drawing size.

In other words, if you have a multi-page Drawing document, you can reduce the number of pages in your file. (To do so in ClarisWorks (all versions), you use the Format menu and choose Document; in ClarisImpact you use the Layout menu and choose Document.)

However, if you have placed objects on the deleted pages prior to removing the pages, objects which are on the extra pages are not deleted. If you use the Save As... command to save your file in a transfer format like PICT or EPSF (the latter not an option from ClarisWorks) the resulting PICT or EPSF file will have a drawing size which is large enough to include all of the objects in the document, not just the objects on the displayed pages.

For example, if you have a 10-page vertically-oriented drawing document, and place a line at the bottom of page 10, then go to the document format dialog and change the number of vertical pages to 2, the line at the bottom of page 10 will no longer be visible. If you use the Save As... command to create a PICT file from your 2-page document, the PICT image will be 10 pages tall, and will have a line at the bottom.

This also happens in ClarisWorks Windows when saving to PICT or Windows Metafile formats.

To avoid this, be sure to delete all objects from any pages that are no longer used and will be deleted in the document format dialog.

This is not an issue in MacDraw Pro, MacDraw II or Claris CAD, which do not allow you to make the drawing size smaller than the size of the objects in the drawing area.

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Using the MONTHNAME Function in ClarisWorks (DB,SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In ClarisWorks and ClarisImpact, to calculate and display the name of the month which has been entered into a date field, you must use the Month function to get the month number, then use the MONTHNAME function on that value.

ClarisWorks Database:
Here is a calculation to extract the name of the month from a date field:
Month = (Calculation, Text result) = MONTHNAME(MONTH('DateField'))

ClarisWorks Spreadsheet or ClarisImpact Table:
The formula to accomplish the same task, assuming the date is in cell A1 would be:
=MONTHNAME(MONTH(A1))

If you do not use this structure, and attempt to use the MONTHNAME function directly upon a date, you will get an #ERROR! result in the field. (#ARG! in a spreadsheet cell). This is because the MONTHNAME function works on a integer number value from 1 to 12 inclusive, while ClarisWorks stores dates internally as serial numbers representing the number of days since January 1, 1904.
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Another Way to Count Words

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Another way to count words in ClarisWorks or MacWrite II is not with Spell Check but with Find/Change. Here are the steps:

1. Choose Find/Change from the Edit menu.
2. Type a space in the Find section and a space in the Change section.
3. Click the Change All button.
4. Click Okay to the message "The Change All feature is not undoable".
5. The next dialogue box that appears will have a count of how many spaces were changed to spaces and should correspond to the number of words in your document.

If you entered double spaces after every period then ADD the following steps to count your words more accurately:

6. Type a period in the Find section and a period in the Change section.
7. Click the Change All button.
8. Click Okay to the message "The Change All feature is not undoable".
9. The next dialogue box that appears will have a count of how many periods were changed to periods and should correspond to the number of double spaces in your document.
10. Subtract the number of periods changed from the number of spaces changed.

* You may want to backup your file the first time you try this method since you cannot Undo the Change All feature.

If you are going to do this regularly, you may want to upgrade to MacWrite Pro. MacWrite Pro can provide full statistics on your document (word count, paragraph count, modification dates, revision number, etc.)

Also, if you convert spaces to returns, you can import the file into a database and get average word length, a real word count, count the number of "I's", "you's", "and", etc.

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Spellchecking a Document With Ligatures (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Spellchecker in ClarisWorks and MacWrite don't support ligatures.

These are single letters that represent two other letters, like fi and fl...
ClarisWorks, ClarisImpact and MacWrite do not contain the ability to generate ligatures, but they can be created elsewhere (for example with shareware program such as Add/Strip) and brought into MacWrite or ClarisWorks.

We would need to program our spell checker to convert from ligatures to standard letters (do the spell checking), and back to ligatures again (to replace a spelling) in order for spellchecking to work. We would need to keep track of another set of characters and be able to convert them.

ClarisImpact, MacWrite and ClarisWorks seem to handle ligatures differently. It seems MacWrite will stop sending the text when it hits a ligature and ClarisWorks & ClarisImpact knows it is ligature and sends it anyway, letting the spell checker handle things. The spell checker does not handle these characters.

Example of problem using the word "Traffic", the ligature being used is "fi"....

MWII spell checker doesn't recognize it. What it brings up is the word "traf", seeing the ligature at the end of the word and cutting off the rest of the text.
In ClarisWorks 2.0 and ClarisImpact the spell checker brings up "traf ú c", the "ú" representing an unknown character.

Suggested workaround:
Check spelling on your document first, then convert characters to ligatures.

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A/UX: How to Reformat a Third-party Disk for Macintosh OS

I'm working with a large number of A/UX systems with A/UX configuration on Maxtor 200MB disks. However, we need to reinitialize some of the Maxtor disks to all Macintosh OS. Of course, Apple's HD SC Setup doesn't recognize these disks. Can you suggest a disk-formatting product that would successfully reinitialize them?

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How did you format the Maxtor 200MB disks to work under A/UX? You would have needed some type of disk formatter or partition software to format the Maxtor 200MB disks to work under A/UX.

Here are two ways to reinitialize the Maxtor 200MB disks for Macintosh OS only:

1) Since it is an A/UX disk, you can use "dp" under A/UX to repartition the entire disk into a single Macintosh partition. To do this, remove all of the "Apple_UNIX_SVR2" partition types and enlarge the Macintosh "Apple_HFS" partition types.

Note: Do not delete the "Apple_Partition_map" and "Apple_Driver" partition types.

2) Use the Macintosh hard-disk management software called "Silverlining" from La Cie Ltd. For more details, search the Technical Info library under "La Cie."

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Subscribers Don‘t Update Until File Is Opened (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Macintosh System 7 has a feature called Publish & Subscribe, which lets you select a part of your file, call it a Publisher, and link it to Subscribers in other files. If you make changes to the Publisher and use the Save command, the Subscriber is updated automatically. This works because data is stored on disk in an Edition File, which contains the data and any changes to the data. When you open a ClarisWorks 2.0 file with one or more Subscribers, the file checks every Subscriber's linked Edition File to see whether any changes have been made, and if there are changes, the Subscriber is updated.

If both files are open, you can see the updating happening on-screen when you choose Save in the file with the Publisher, because the Subscriber checks the Edition File for changes when it is open.

However, if you do not have both documents open at the same time, updates to the Subscriber from Published data stored in the Edition File will not take place until you actually open the document which contains the Subscriber. In addition, if you make changes to the Publisher and don't save them, the Subscriber will not be updated to show those changes.

This means that if you make changes to a ClarisWorks 2.0 or ClarisImpact file with the Publisher and save, then try to use the Print command from the Finder to print the file with the Subscriber, those changes will not be reflected in the printout. If you open a ClarisWorks or ClarisImpact file with the Subscriber, it will get the updated information from the Edition file on disk and print with the correctly-saved information from the Publisher.

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Update to Subscriber Doesn‘t Generate "Save Changes?" Dialog (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you have a Subscriber in a ClarisWorks 2.0 or ClarisImpact document, and changes are made to the Edition file to which that Subscriber is linked, then open the document, the Subscriber updates to show the most recent information. (You can see the change on-screen.)

However, if you close the file, there is no prompt to save changes. The changes are not retained until you choose the Save command in the file with the Subscriber, although every time you open the file, you will see the changes take place in the Subscriber.
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Claris Applications: User Dictionaries are the Same for All

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
All current Claris products use the same User Dictionary. Therefore it is not necessary to have multiple User Dictionaries. For example, the User Dictionary from MacWrite II can be used with MacWrite Pro.
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ClarisImpact: Connectors Don‘t Choose Shortest Distance Between Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are situations where the connector between two objects doesn't seem to take the shortest route between them, or when the connector doesn't seem attached to the object.

The most likely scenario for the first problem is when the distance between the two objects is less than the minimum length set in the Connector Settings dialog.

The setting in the dialog is the minimum length for each half of a right angle connector. If you have set a minimum of .25", then you will need at least .5" between objects to get the connector to draw correctly. That's .25" for each half of the connector. There is no minimum length for straight connectors.

For example, if you have two flow chart elements that are .5" apart, and you have the set the minimum connector length to .1", you will have no problem. But if you move the two objects closer together, ClarisImpact will try to find the shortest path between the objects that it can draw, maintaining the minimum length set by the connector.

The solution is to move the objects further apart, or to lower the minimum setting in the Connectors dialog. Another problem that might occur is if the end of the connector is not really 'connected' to an object, but merely rests near it. You can tell if this is the case if you move the object. If they are not connected, the object will move but the connector will not.

You can reattach the connector to the object by clicking and dragging the end of the connector over the point of the object that you wish to connect it to. When the mouse is over a part of the object that it can connect to (an edge, or the center) you will see a small plus sign (+) near the cursor. Releasing the mouse when you have that cursor will attach the connector to the object.

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Creating a Title or Blank Lines in an Outline

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Although the outline mode is a very convenient way to organize information, sometimes you may wish to type text which is not a part of the outline structure.

For example, Legal format begins every topic with a number. You might want to title your outline so that the Label is omitted from the first line, but that would also omit the first outline number. You might also want descriptive notes or extra text under an outline item, but you don't want that text to have outline characters.

However, if you create a text frame, the outline can be pushed below the title using text wrap.

In ClarisWorks:
1) Create your outline using the Outline View option in the Outline menu.
2) To add a title, hold down the Option key on your keyboard and click and drag a rectangular area within your margins at the top of your document. Note that your cursor must be an i-beam, so start your title area to the right of the first topic label. (Be sure to drag an area all the way across the width of the area between the margins. If you do not, the topic label will be to the left of the title, and the first topic will begin to the right of, instead of below, the title.)
3) When you release the mouse, a box will appear over your outline, and the cursor will be blinking within the box. Type in your title, and format the text as desired.
4) Press the Enter key to select the text frame, then select Text Wrap... from the Options menu. Choose regular text wrap, and the outline should move down below the title.

In ClarisImpact:
1) Open a new report.
2) Select To Outline from the Text menu.
3) Create your outline.
4) To add a title, first select the text tool. Then hold down the Option key on your keyboard and click and drag a rectangular area within your margins at the top of your document. Note that your cursor must be an cross-hair, so start your title area inside of the margins. (Be sure to drag an area all the way across the width of the area between the margins. If you do not, the topic label will be to the left of the title, and the first topic will begin to the right of, instead of below, the title.)
5) When you release the mouse, a box will appear over your outline, and the cursor will be blinking within the box. Type in your title, and format the text as desired. Note that text wrap was already selected for the new text object you created, so the Outline was automatically pushed down.
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Freehand Objects do not Preview or Print to HP Deskwriter.

If you create an object with the freehand line tool, copy it, quit the program, re-launch the program, then paste that object into a new text frame, that freehand object will not print to an HP DeskWriter printer and the HP Print Preview option will not show the object.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Here's how to duplicate it:

1. Using the freehand tool, draw an object.
2. Copy the selected object.
3. Quit - then relaunch the application.
4. If you are using ClarisWorks, open a new WP document. If you are using ClarisImpact, create a new report document or text frame.
5. Paste. In ClarisImpact, you must use Option-Paste to insert the graphic as an inline graphic.

(Notice that when pasting the graphic as an inline graphic or an object within the text frame, it appears to be inserted correctly.)

6. With an HP DeskWriter driver selected, select Print form the file menu.
7. In the Print dialog box, select Preview.

Notice that the freehand object does not appear.

This happens in the Preview of several different DeskWriter drivers.

Workaround: It seems that if the drawing is grouped, or, consists of several freehand objects - all of which are copied as a group, then pasted following the procedure above, then ungrouped, they print.
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Making Text Wrap Work in Drawing Documents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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To make the Text Wrap feature work in a ClarisWorks Drawing document or a ClarisImpact Drawing or Presentation document, the Frame Links command must be enabled. This is true even if you will not be linking any frames. [Note that you can set Frame Links for a single text frame or for the entire document. It is easier to simply set this option for the entire document.]

To do this, choose Frame Links from the Options menu. The text will then wrap according to the Text Wrap option that you have set for the graphic object.

If you are using ClarisImpact, the Frame Links command is in the Text menu.

Keep in mind that text will not wrap irregularly around EPSF, imported PICTs or MacPaint or objects which are in Paint frames. For a workaround, see TIL article# 55230: "**Irregular Text Wrap Around Bitmapped Graphics**".
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ClarisImpact: Two Kinds of Model Borders

How to see the difference between selecting a Model frame and selecting its contents.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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When you select certain models in ClarisImpact, you might see two different types of borders on the model frames. When a model is first created a gray border surrounds the model frame. The gray border indicates that you are working within that model and can modify the elements within (such as adding more rows to a Table).

If only the selection handles appear around the model then it is only possible to modify the model frame itself (such as changing the border color of the model), but not its contents. Try the following steps to see the difference:

1. Create a new model and notice that the new model has a gray border around the edge (and possibly selection handles on each corner)
2. Click anywhere on white space and notice that the model is only selected with handles on each corner
3. Click on the white space again and notice that the model is completely deselected
4. Now try clicking on the model again and notice that only the selection handles will appear
5. Click once more on the model and the gray border will appear

Furthermore, the gray border comes in two varieties: a gray border with selection handles and a gray border with no selection handles. The only two models that do not have selection handles with the gray border are Organizational Chart and Flow Chart. The reason is that it is possible to resize all models except for Flow Chart and Organizational Chart by dragging the selection handles. ClarisImpact gives you instant feedback so that you do not have to remember which models can be resized and which cannot.

NOTE: Objects other than models do not have two levels of selection. For example, if you draw a star, the only indication that the star is selected are the selection handles on each corner.

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Claris Pro Pack: Discontinued

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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As of October 11, 1993, the Claris Pro Pack is no longer available.

The Pro Pack was a set of templates for FileMaker Pro 1.x, MacWrite II, and MacDraw Pro.
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ClarisWorks: Maximum number of Pages has been Exceeded (WP)

Launch Claris Works, and try to open a Word Processing document. Claris Works takes a long time to open. As the document attempts to open, the following information box is displayed:

"The maximum number of pages has been exceeded".

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This article has been archived and is no longer updated by Apple.
Go to Control Panels, Printers. Check the paper size. Setting the printer back to letter or legal page size should fix the problem.

There is an upper limit on the amount of inches (or pages) that Claris Works can support for a given document. With the page set to a small size, the word processor could not open a new document correctly.

Note: The word processor was the only module affected by the small page size. All other modules functioned properly.
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Claris Applications: Launching Faster in Microsoft Windows NT (WOW)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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To make launching the first 16-bit application faster, create a icon for WOWEXEC.EXE and put it in the STARTUP group.

Microsoft Windows NT is a 32-bit true operating environment. This does not mean that it cannot run a 16-bit application such as FileMakerPro or ClarisWorks. It will run them in an emulation mode, Window On Window (WOW). WOW is only started when the first 16-bit application is started in Windows NT; therefore, it takes longer for the first application to actually launch.

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The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.
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Macintosh II Video Card: Features (2/95)

This article describes the original Macintosh video card.

This article has been archived and is no longer updated by Apple.
The Macintosh II video card provide scolor capability for simultaneous display of up to 256 colors on the Apple High Resolution Color Monitor. With the card's three 8 bit digital to analog converters (RGB) there are more than 16 million possible colors to choose from.

Color Modes
---
* One bit per pixel for 2 color output

* Two bits per pixel for 4 colors

* Four bits per pixel for 16 colors

* Optional Eight bits per pixel for 256 colors

Video Signals
---
* RS343 Analog RGB for Apple High Resolution Color Monitor

* RS343 Analog Green signal for Apple High Resolution Monochrome Monitor

* RS170 Composite interlaced video for analog RGB monitors, film recorders and projection TV's

* RS170 Analog Green signal for composite interlaced video with sync for analog monochrome monitors, film recorders, and projection TV's

Hardware Features
---
* Multiple video card operation for larger screen area For example, 2 cards handle 2 video screens for viewing different or large format documents.

* Standard VIDEO RAM configuration of 256K for 1, 2, and 4 bit color modes 8 chips of 150NS 64x4 KBit Video RAM.

* Upgraded VIDEO RAM configuration of 512K for 8 bit color mode 8 additional chips of 150NS 64x4 Kbit Video RAM

*** Video RAM contains a shift register for the copying of rows of bits from the RAM array. This allows reads and writes to the RAM array and the shift register simultaneously. This is not a feature of standard or common RAM and is necessary to the workings of the video card.

* Two Oscillators provide timing signals of:
30.24MHz for Macintosh II monitors (RS343)
12.27MHz for RS170 monitors (Composite Monochrome interlaced video)

* Slot independent operation

* Triple 8 bit digital to analog converters for 2 to the 24th colors equalling 16.8 million.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy, corrected spelling of sync.

Support Information Services
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GS/OS: Disk Dialog Enhancement Request

A school wants to "alter" the way the Apple IIGS works with 5.25-inch disks. They have "standard" Apple IIGS systems with 3.5-inch and 5.25-inch disk drives. The students use the 5.25-inch drives for their data disks and run the applications from the 3.5-inch drives.

They start up the Apple IIGS with a 3.5-inch disk, and they get the 3.5-inch disk icon and the 5.25-inch disk drive icon. If a student puts a 5.25-inch disk in the drive and double-clicks the drive icon, the system mounts the disk and shows the 5.25-inch disk icon. If the student double-clicks the disk icon before a disk is inserted, the Apple IIGS says that the disk is unreadable (there is no disk), and asks the user to "Eject" or "Continue". The students insert their disks, because they know the system can't eject something that's not there. Then, they click "Continue". The Apple IIGS then formats (erases) their data disks.

Can you change the dialog box that asks if you want to "Eject" or "Continue" to "Stop" or "Continue" (or something to that effect)? Can the drive detect that there is no disk inserted and give a different dialog box?
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In GS/OS 5.0.2, you get two dialog boxes when an empty 5.25-inch drive icon is double-clicked. (This also occurs when the 5.25-inch drive contains a blank or unrecognizable disk.)

The first dialog is the one you describe with the "Eject" and "Continue" buttons. The second is a dialog asking to "Cancel" or "Initialize". This is where the user has the opportunity to stop the initialization process.

Because the first dialog is dismissed only with a mouse click, the possibility of pressing the Return key too many times is eliminated. However, the second dialog defaults to the "Initialize" button; therefore, pressing the Return key causes the disk just inserted to be erased. However, if the "Cancel" button is clicked, the initialization process is terminated. Thus, there is a two-step process to invoke the initialization operation.
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Dictionary Information for Scriptable Claris Applications

Here is a brief explanation of how the dictionaries are generated by AppleScript and how they are useful in learning how to use AppleScript with Claris Applications.

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Applications that are "Scriptable" by scripting applications such as AppleScript contain a resource called the "AETE Resource". If an application does not contain the resource, it can not be sent events by AppleScript. The following Claris Applications contain this resource:

MacDraw Pro 1.5
MacProject Pro 1.5
FileMaker Pro 2.0
Claris Resolve 1.1
ClarisWorks 2.x (NOTE - Though an AETE resource is available, AppleEvents are NOT a supported feature of ClarisWorks)

This resource contains information about the application's ability to accept Apple Events sent to it by other programs. AppleScript can take the information in this resource and compile a dictionary of the events and objects for that application.

The dictionaries are organized by the particular suites the events fall into. For example, FileMaker Pro supports events for the 1) Required Suite, 2) a special subset of the Core, Table, and Database suites, and 3) its own FileMaker Suite. Each suite has information regarding the specific events such as 'Duplicate', and 'Open', that fall into its suite. Also included in the suite information are details regarding the classes of elements that the events can be applied to such as Application, Field, Record.... etc. In addition, there are properties that describe aspects of the elements (for example, one property of layouts in FileMaker Pro is whether they are protected by any access privileges) in the dictionary. For more information about AppleScript's dictionaries, refer to "The Tao of AppleScript" published by Hayden Books.

It is important to use the syntax detailed by the dictionary in order to use AppleScript with the chosen application. For example; FileMaker Pro can count the number of objects in any given class (such as scripts) and return that number to AppleScript. So if we want to get this number we might be tempted to create an AppleScript like this

"Count the number of scripts of document 1".

In essence this is correct. however, executing this script would return an error because it does not follow the syntax set forth in the dictionary. The correct statement is:

"Count the number of FileMaker Script of document 1".

Notice that the statement says "FileMaker Script" and is singular. Semantical differences like this are important and, if paid attention to, will make the learning process of scripting Claris Applications much easier.

It is also important to recognize that AppleScript is a powerful tool. Using its ability to create dictionaries will greatly speed up the learning process of using it with Claris Applications.

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Files Exported as EPSF in any Claris Application will not Print from Quark 3.2

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Files exported as EPSF in any Claris application will not print successfully from Quark XPress 3.2. The document will either not print out at all, not even generating an error message, or generate a Postscript error: error undefined, offending command: objectcoord.

Quark is aware of the problem and said it would be fixed in 3.3. Some customers have confirmed this. However, a ClarisDraw customer reported that the problem remains in 3.3.

An option is to use Quark 3.0 or 3.1. Also, try contacting Quark for further information.

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MacDraw Pro: Printing Handouts with LaserWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When printing handouts with the LaserWriter 8.1 driver, text will not print after the first page. The LaserWriter 8.1 driver will only print the graphics on all subsequent pages.

There is a Read Me note that comes with the 8.0 driver and it indicates that there will be some difficulty when printing with the 8.1 driver and MacDraw Pro.

Workaround: Change to the LaserWriter 7.2 driver if you need to print handouts.
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GS/OS: //WRITE and Network Printing

I have now experimented with a variety of different settings and still can only be sure of getting AppleWorks to print to a LocalTalk ImageWriter. Another major problem I found was inserting a disk with software that GS/OS doesn't recognize (specifically, //WRITE from Random House Media).

I found a "solution" with some bugs. Here it is. I use the old AppleShare GS Workstation disk. Select CHOOSER.II from the menu, select the LocalTalk printer, escape from the menu, and choose the option that lets you provide a pathname to the software you want to use (in my case, //WRITE). This is where the problems arise.

1) On the new ROM Apple IIGS, the keyboard seems to be remapped so that the "/" key produces a "}". The only way to get the "/" is by using the one on the numeric keypad. On an older Apple IIGS, the keyboard is normal. Why?

2) A second problem arises after //WRITE is launched, and I've created a document and sent it to the printer. On the new ROM Apple IIGS, it goes to the printer, prints successfully, but the screen seems to go into 40-column mode. The machine still works, but you can't read the text (letters overlap). On the older Apple IIGS, everything works the same, but the screen remains normal. Why?

3) Can the menu that appears on the Workstation Disk be edited to place the name of the application in it and delete options I don't want users to play with (System Utilities, Server Log-on, and so on)?

This article has been archived and is no longer updated by Apple.

1) The only way we were able to duplicate this result was to go to the Control Panel, select the Alphabet device, and set the Keyboard item to "Spanish". In other language selections, various other characters were displayed. Only in the "Spanish" setting did the "}" character appear.

2) According to the people at Random House, they discontinued their software division about two years ago. We could not find anyone at Random House who knew anything about //WRITE, which is at least two years old. Without Random House assistance with this issue, we were unable to find a workaround to the 40-column problem.

3) The menu items are hard-coded into the menu application. There is no way to change the items in the list. Aristotle or Let's Share are the only network menu systems that can be modified.

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Black and White Paintings Printing Inverted with LaserWriter 8.0 Driver (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This has been corrected in ClarisWorks 2.1.

A Black and White painting may invert when printing if the following conditions are true:

1. Depth is set to Black and White from the Resolution & Depth dialog box
2. You are using the LaserWriter 8.0 driver
3. You are printing in Color/Grayscale rather than Black and White

Workaround:
Set your print driver to Black and White rather than Color/Grayscale. To do this:

1. Choose Print from the File menu
2. Click Options
3. Choose Black and White
4. Click Okay
5. Click Print

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Locking the Title position of a Row and a Column (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It is possible to lock several Rows and several Columns at once but the manual only covers how to lock columns or rows (page 6-26 of the ClarisWorks User's Guide). For example, let's say you wanted to lock Column A and Rows 1 & 2. Follow these instructions:

1. Click to select Column header "A" (this will highlight the entire column).
2. Choose Lock Title Position from the Options menu.
3. Click and drag to select rows 1 & 2 at the far left to select entire rows.
4. Choose Lock Title Position from the Options menu.

To lock Column A & B and Rows 1 & 2:

1. Click and drag to select Column header "A" and "B".
2. Choose Lock Title Position from the Options menu.
3. Click and drag to select rows 1 & 2 at the far left to select entire rows.
4. Choose Lock Title Position from the Options menu.

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ClarisWorks Spreadsheet: Behavior of Data in Wrap Aligned Cells

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the Spreadsheet environment of ClarisWorks 2.0, in addition to regular alignment controls, you can choose an alignment option called "wrap." This option allows you to have flowing text inside a spreadsheet cell. It is an extremely useful feature if you wish to create text tables and multiple lines of text inside a cell. With cells that have the wrap alignment assigned, you can set the row height to be very tall, and have the text fill the cell from top to bottom.

This can be a problem, because the wrap alignment option handles entered data differently based on the type of data that has been entered:

If you simply type text into the cell, it will appear at the top of the cell, starting at the left (or any alignment position that you have specified).

If you enter a number, it will appear at the bottom of the cell, aligned at the right (or any alignment position that you have specified). To make the number appear at the top of the cell, you must enter an Option-space after the number. (Keep in mind that this makes the number a text value.)

If you enter a formula into the cell, the result of the formula will appear at the bottom of the cell, aligned left or right, depending upon the format of the formula result. (text is at the left by default, numbers are at the right) If you have chosen an alignment option, it will override the default settings.

There is no workaround that would allow you to change the baseline inside the cell and move the results of formulas to the top of the cell.

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How to use Outlines and Regular (non-outlined) Text in the Same Document (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks 2.0 and ClarisImpact, sometimes you might wish to use Word Processing or Report documents that have Outlines inside them, but not have the entire document be formatted as an Outline.

To create an Outline within a Word Processing document, simply create a text frame and choose Outline View from the Outline Menu (ClarisWorks) or To Outline from the Text Menu (ClarisImpact). The text frame will have the outline formatting and the main body of text will not.

A Text Frame can be created in a ClarisWorks Word Processing document by selecting the text tool and holding down the Option key while dragging out a frame.

To create a Text Model in a ClarisImpact Drawing document, simply select the text tool and drag out a frame. In a Report document, select the text tool and hold down the Option key while dragging out a frame.
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ClarisImpact: All About Object Libraries and Clones

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

One of the features that makes ClarisImpact so easy to use is Object Libraries. Claris provides a plethora of Object Libraries with ClarisImpact and you can also make your own. An Object is any picture, text or model. A Library is a place to archive objects. To use an existing Library first make sure you have installed the ClarisArt folder (Easy Install will automatically install this folder of graphic libraries or you can use Custom Install) and then follow these steps:

1. Create a new ClarisImpact document or open an existing one.
2. Choose Open Library... from the File menu.
3. Navigate to the ClarisArt folder and open any Library such as "Animals (B&W)".
4. Double-click on the desired Object Library.

Once you have found an object you would like to place on the document:

1. Move the mouse arrow onto the object in a Library and notice that the Arrow turns into a Hand.
2. Click and hold the Hand on the object and then move the mouse to the document area (a rough outline of the object should move with the Hand).

3. Let go of the mouse when you are at the desired location of the object.

An alternate way of adding an object from a Library to a document:

1. Click in the document where you want the picture to be placed.
2. Click on the object in the Library palette so that it highlights.
3. Click the Use button.

Adding a picture to an Object Library is just as easy. First draw a picture using the ClarisImpact drawing tools or import an existing PICT, GIF, TIFF or EPSF type graphic. To import a picture:

1. Create a new ClarisImpact document or open an existing one.
2. Click in the document where you want the picture to be placed.
3. Choose Place File... from the File menu.
4. Navigate through the dialog box to the location of the picture.
5. Double-click on the desired picture.

To add a picture from a ClarisImpact document to a Library:

1. Open a existing Library from the ClarisArt folder.
2. Select the object in the document you want to add to the Library.
3. Click the Add button in the Library floating palette.

To add many objects at once to a Library simply select multiple objects and then click the Add button on the Library floating palette. NOTE: Selecting many objects can done by using the Shift key when clicking on additional objects, by using Select All from the File menu or using the arrow tool to draw a selection rectangle around the objects. If you want to add many objects to a Library as one picture use the Group feature from the Arrange menu before clicking the Add button.

Creating your own Object Library is just as easy. Just choose New Library from the File menu and an Untitled Library will appear. Here is a good time to point out the menus on the Library floating palette. Notice that each Library floating palette has a set of menus: File, Edit and View. Choose Save As... from the File menu on the Library floating palette to archive your own custom Object Library. The View menu has an interesting menu choice called "View Options...". This allows you to change the way the Library floating palette looks.

Also, notice the triangle just to the right of the Use button. Clicking on the triangle will make more choices available such as Rename and Find. Rename allows you to change the name of an object. Find allows you to locate an object in a Library that has grown too large to easily scroll through.

When an object is moved from a Library into your document a Clone is made. Clones can be useful if you decide to edit an object but have used that same object in many places throughout your document. As an example, place two different objects from a Library many times into a single document. NOTE: Only the first copy of an object needs to be placed in the document using an Object Library. Subsequent copies of an object can be copied and pasted or duplicated. Next, change any of the objects to a different fill color. What if you wanted all of your objects to be changed to the new color? Follow the steps below:

1. Select the object that has the fill color.
2. Choose Replace Clones... from the Edit menu.
3. Notice that the only Master Objects that appear in the scrolling list are those that have been placed from an Object Library.
4. Click the button Use Selected.
5. Click Replace All.

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ClarisImpact 1.0: Apple Event and AppleScript Support

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact supports the Required Suite of Apple Events: Open Application, Open Document, Print, and Quit.

ClarisImpact does not support AppleScript.
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ClarisImpact 1.0: Box Contents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is the contents of the box:

1. Registration card
2. Software License Envelope containing five disks (Disk 1, Disk 2, Disk 3, Disk 4 and Disk 5)
3. "Ideas?" suggestion card
4. International Spelling Dictionaries flyer
5. ClarisImpact Installation Guide
6. ClarisImpact Quick Reference card
7. ClarisImpact Getting Started Guide
8. ClarisImpact User's Guide

There may be additional promotional and/or third party materials in the box. The contents are subject to change without notice.

For a complete listing of the disk contents, refer to TIL article# 55618: "**ClarisImpact 1.0: Disk Contents**".

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ClarisImpact 1.0: Disk Contents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisImpact 1.0 comes on 5 disks: Disk 1, Disk 2 ,Disk 3, Disk 4 and Disk 5.

.sit indicates a Stuffit compressed file.

Brackets [ ] are used to show which items are folders and to list the files contained in Stuffit archives which contain several files in one.

Disk 1:
READ ME
Installer
Installer Script
Installer Files [folder]
Main Dictionary.sit
User Dictionary

Disk 2:
Claris Impact Application

Disk 3:
ClarisImpact Help.sit
Minimal ClarisArt.sit
Arrows (Color)
Balloons (Color)
Business Images (Color)
Common Symbols (Color)
Computers (Color)
Education (Color)
Flags A-J (Color)
Flags K-Z (Color)
Illuminated Letters (Color)
Shapeburst (Color)
Stars (Color)
Trees and Shrubs (Color)

Tutorial Files.sit
Continental logo.EPSF
Finished files
Occupancy Data Chart
Occupancy table.XL3
Organization Chart
ORG_OUTL.TXT
Renovation Timeline
Sample Objects
Tutorial Library

Claris XTND System
Claris Translators [Folder]
ASCII.sit

CGM.sit
Claris XTND Bridge.sit
DIF.sit
EPSF.sit
Excel.sit
GIF.sit
MacDraw II 1.1.sit
MacDraw Pro.sit
MacPaint 2.0.sit
MacPaint.sit
MacWrite II.sit
Microsoft Word 3.0.sit

Microsoft Word 4-5.sit
Movie.sit
PICT.sit
RTF.sit

Disk 4:
More ClarisArt.sit - Stuffit Lite document
Animals (B&W)
Appliances (B&W)
Architecture
Arrows (B&W)
Astrology Symbols
Backgrounds/QuickTime
Balloons (B&W)
Borders (B&W)
Borders (Color)
Business Forms
Business Images (B&W)
Chemistry
Code Flags
Common Symbols (B&W)
Computers (B&W)
Education (B&W)
Electronics - Basic Logic
Electronics - Digital
Fabric Care (B&W)
Flowchart Symbols-2D
Flowchart Symbols-3D
Foods (B&W)
Foods (Color)
Furniture (B&W)
Furniture (Color)
Globes (B&W)
Globes (Color)
Hands (B&W)
Hands (Color)
Holidays (B&W)
Holidays (Color)
Illuminated Letters (B&W)
Map Symbols (B&W)
Map Symbols (Color)
Meteorological Symbols
Networking Symbols (B&W)

Networking Symbols (Color)
Office Furniture (B&W)
Pictograms (B&W)
Pictograms (Color)
Road Signs - USA (B&W)
Road Signs - USA (Color)
Shapebursts (B&W)
Stars (B&W)
Tools (B&W)
Tools (Color)
Transportation (B&W)
Trees and Shrubs (B&W)
USA - 2d (B&W)
USA - 3D (B&W)
World Maps 1
World Maps 2
World Maps 3
World Maps 4

ReadMe - ClarisArt TeachText Document

TA42585_ClarisImpact_Disk_Contents.pdf

Disk 5:
ClarisImpact B&W Styles.-Stuffit Lite document
10" PowerBook Slides
13" Apple RGB Slides
35mm Slides
9" SE Slides
Calendar Elements
Calendar Styles
Chart Elements
Chart Styles
FlowChart Styles
FlowChart Symbols
OrgChart Elements
OrgChart Styles
Outline Styles
Overhead Slides
Table Elements
Table Styles
Timeline Elements
Timeline Styles

ClarisImpact Color Palette[Folder]
240 Grays
Cyan to Blue
Earth Tones
Pastels
Presentation
Red to Yellow
Violet to Magenta
YellowGreen to GreenBlue
ClarisImpact Color Styles.sit
10" PowerBook Slides

13" Apple RGB Slides
35mm Slides
9" SE Slides
Calendar Elements
Calendar Styles
Chart Elements
Chart Styles
FlowChart Styles
FlowChart Symbols
OrgChart Elements
OrgChart Styles
Outline Styles
Overhead Slides
Table Elements
Table Styles
Timeline Elements
Timeline Styles
Extras

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ClarisImpact 1.0: Hardware Requirements

CPU, RAM and Hard Disk space Requirements for installation and use.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

· Macintosh SE, Classic, LC, Performa, PowerBook, Macintosh II, Centris or Quadra family computer (LCII or later recommended)
· Hard disk drive and minimum 2 MB memory (4 MB Recommended)
· 4MB memory for System 7
· System software 6.0.7 or later, or any version of System 7
· For Complete Installation approximately 20 MB of free HD space is required

NOTE: When installing, ClarisImpact needs additional space on disk for temporary files. Therefore, installing will require more than 20 MB of hard disk. The temporary files will be deleted after installation is complete.

Also, if you do not wish to use 10.5 MB of hard disk space for ClarisImpact, you can limit what is installed by ClarisImpact. For instance, you may not want the 7.5 MB of clip art that is included with ClarisImpact. Either trash the ClarisArt folder after doing a full installation or try a custom install right from the beginning. For more information on custom installation see TIL article# 55729: "**ClarisImpact: Disk Space Sizes for Custom Installations**" .

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Macintosh: Making Multicolored Silk Screen Masters

Do you know of a way to use a Macintosh, scanner and a LaserWriter to make silicon film and, from this film, make multi-colored silk prints?

I read about something like this; I believe that the "system" was called PENTAGRAPH. The article also stated that "CAD is a newcomer to the silk print industry. ..."

Do you have any information on such a product?

This article has been archived and is no longer updated by Apple.
The only process that appears to be similar to what you want is called "silk-screening". If this is what you are looking for, part of the solution is Macintosh-based, and part of it is based on traditional silk-screening techniques. Here is how silk-screening works:

Silk-screening is a photographic process. A light-sensitive emulsion is layered onto silk. This emulsion is exposed through an image on a film positive, much like creating an image on photographic print paper. Once exposed and processed with photographic-type chemicals, the silk lets ink to pass through unexposed areas and blocks the passage of the ink exposed areas. Any material placed under this processed silk screen receives the ink that passes through. This leaves an image on the material under the silk screen. This is the portion of the process that is based on traditional silk-screening methods. A graphics supply house should be able to provide all the tools and materials required for this phase of the operation.

The Macintosh can be used to create the film positive, which replaces the usual photographic film positive. Any software that prints to the LaserWriter can be used to create this image, including graphics and CAD software. Once the image is created, printing an image on transparencies provides the equivalent of the film positive. You will, however, be limited to the size of transparencies that fit into the LaserWriter.

To create multiple colors, use one transparency for each color. This requires some type of color separation capability: either direct color separation in the application, or an application that provides several layers of images--one layer for each separate color.

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Comparison: ClarisImpact Flow Chart and Org Chart

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact Flow Chart and Organizational Charting tools are designed to compete with leading dedicated programs such as TopDown and OrgChart Express by Kaetron Software Corp., OrgPlus for Macintosh by Banner Blue Software, or EasyFlow by HavenTree Software. Many of the features found in these programs can be found in ClarisImpact.

Features include displaying names in a multiple of ways, moving objects freely with links, assigning different connection line widths to objects, and publish and subscribe. Other features which can be found in both ClarisImpact and dedicated products are:

· Drawing boxes and connecting lines automatically
· Formatting with style sheets
· Custom chart styles
· Custom border styles
· Different levels of magnification
· Customizable and ANSI symbol
· Auto Line rerouting when moving or resizing objects or symbols
· Color picker and pattern support
· Frames automatically expand or shrink when adding or deleting symbols
· Import custom symbols
· Word wrap
· Find and change
· Open multiple documents simultaneously
· Columns inside symbols
· Create dividers inside symbols
· Ability to change measurement size (i.e. pica, metric, inches)
· Manual or full control over connecting line placement
· Header and Footers with automatic page numbering (ClarisImpact Report Document)
· Auto connect multiple symbols to one symbol

One of the major advantages ClarisImpact has over dedicated packages is its ease of integration: the Flow Chart or the Organization Chart can be placed and edited in a ClarisImpact Report or Presentation. Placing or importing a chart created by a dedicated package into a word processing or presentation software package would involve exporting and importing using a compatible file format. ClarisImpact eliminates the need for import and export since these tools are easily accessible in the Draw, Report, or Presentation modules.

Several features not supported in the ClarisImpact Flow Chart and Organizational Chart which are supported by dedicated packages include:
· Password protection for sensitive data with multiple levels
· Page view
· Collapse or expand branches
· Export DXF, GEM, HPGL, PCX, SYM, WPG
· Printing languages ESC-L graphics, DMPL and CaPSL
· Text binding to connecting lines
· Database (Note: in ClarisImpact, you can create tables)
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ClarisImpact: How to set Timelines to a 40-hour Week

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacProject Pro uses calendars to determine the working schedule of a Timeline. ClarisImpact is not quite as sophisticated but limits can be specified so that the durations you enter are calculated on a 40-hour work week (skipping weekends).

1. Create a new Timeline Model
2. Click on Custom from the resulting dialog box
3. Change Days/Week to 5
4. Change Hours/Day to 8

While MacProject Pro can specify Holidays when determining durations, ClarisImpact cannot.
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Macros Don‘t Convert When Converting A File From ClarisWorks 1.0 to ClarisWorks 2.0 (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you have recorded macros in a ClarisWorks 1.0 file, those macros will be lost upon converting the file to version 2.0. The macros must be recorded again after the conversion to 2.0.

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Multi-Monitor Presentations

When doing a presentation in ClarisWorks 2.0 or ClarisImpact how can I get the slide show to appear on my second monitor? I tried moving the window to my second monitor but the slide show keeps moving back to my startup screen.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

ClarisWorks 2.0 and ClarisImpact show their slide shows on your startup screen regardless of what screen your document is actually on. To change your startup screen follow the procedures below:

1. Quit ClarisWorks 2.0 or ClarisImpact.
2. Choose Control Panels from the Apple menu.
3. Notice that one of the screens has a tiny menu bar on it.
4. Grab the menu bar and move it to the other monitor.
5. Restart your computer and try the presentation again.

(Note that, depending upon one of the settings in the Monitors Control Panel, you may not need to restart your machine. If you've selected "Rearrange Upon Close" instead of "Rearrange Upon Restart" then you just have to close the Monitors Control Panel to change the arrangement of the monitors.)

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PICT Imported Through Clipboard must be Ungrouped to be Edited

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
PICT's that are imported or brought in via the Clipboard will need to be ungrouped before they can be edited in ClarisImpact or ClarisWorks. This includes objects or groups of objects created in other drawing programs and saved as PICT or copied via the Clipboard.
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ClarisImpact: Resizing Multiple Columns in Table or Timeline Models

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It is possible to resize multiple columns in the Table and Timeline models. Follow the steps below:

1. Select the entire column(s). This means each row in all the columns you want to resize.
2. Move your cursor onto a column divider in the top row until your cursor changes.
3. Click and hold down on the column divider and drag left or right.

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ClarisImpact: Text Appears Jumbled

Text in a model appears jumbled. The dates at the top of a Timeline are written over each other. The Labels in a Chart are garbled.

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This article has been archived and is no longer updated by Apple.

Make your Model frame wider so that the frame contents fit better within the frame boundaries. You can do this by clicking once on the Timeline frame so that the selection handles appear, then click and hold down your mouse arrow on one of the selection handles and drag.

If you are working with the Timeline Model, you can also try the following solution. Select the Timeline by clicking on it. Choose Timeline Scale... from the Timeline menu. You will see a dialog box where you can change the timeline scale to a larger division. For instance, change the timeline scale from weeks to years. Because a larger scale has fewer data points, you may find that individual data points do not overlap.

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ClarisImpact: Ungrouping a Model Makes it a Picture

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The following Models can be Ungrouped easily from within ClarisImpact so that they can be edited like any other drawing created in ClarisImpact:

Flow Chart
Organization Chart
Calendar

* Other Models can be Ungrouped and the methods for doing so are covered below.

Common uses for Ungrouping a Model:
1. You want to remove an element from one of the Models but ClarisImpact does not have a feature for removing that item. For example, maybe you would like to remove an axis or the numbers on the axis from a Data Chart.
2. You want to change one of the elements in one of the Models but ClarisImpact does not have a feature for modifying that element. For instance, you might want to change the dotted lines between the rows and columns of a Timeline to solid lines or longer dashes or a different color.

Selecting a Model for Ungrouping:
Ungroup is located under the Arrange menu but will remain grayed out if the Model is not selected correctly. Before Ungrouping, make sure that the Model you want to Ungroup is selected only with the black selection handles on each corner and not the gray selection border. If the gray selection border is showing then press the Enter key and the Model will then be properly selected for Ungrouping. If your Model is not yet selected then click on it once to properly select it for Ungrouping (clicking twice will select the Model using the gray border).

What happens to the Model:
Once a Model is Ungrouped it no longer has the same characteristics/attributes of the Model tool that created it. In other words, Ungrouping a Model changes it to a drawing. A warning message will appear stating, "Once ungrouped, you will not be able to edit the Model using Model Tools and commands. Continue?". In the case of the Models that cannot be Ungrouped easily, the menu choices Ungroup and Group are grayed out.

How to Ungroup other Model Types:
You can ungroup a Data Chart if you first separate the data table using the Separate Table command from the Chart menu (the Separate Table command will only be available when a Data Chart Model is selected with the gray border). When separating a message will appear stating, "Separating the Table from the Chart will make the Chart values only modifiable from the Table. Continue?". Once separated you will need to cut and paste the Chart so that it can then be Ungrouped. If you do not cut and paste the chart, Ungroup will remain grayed out. If your Data Chart has been created from a Table using the Make Chart Command under the Table menu then you will not need to Separate the Table since it already is separated. Simply cut, paste and then Ungroup.

If you wish to Ungroup a Table or Timeline Model you will need to paste the Model into the Scrapbook temporarily. In order to paste a Model into the Scrapbook you will need to first select it with just the black selection handles. Once this is done, cut and then paste the Model into the Scrapbook. Now that your Model is in the Scrapbook, cut it from the Scrapbook and paste it into your ClarisImpact document. Now you will be able to Ungroup it. This method can also be used with a Word Processing or Outline Model but since there is only text in one of these Models and mostly text in the other it will not be helpful to Ungroup these two types of Models.

Warning:
Make a back-up of your Model in case you make a mistake or decide you need to modify the Model with the Model tools again. In other words, once a Model is Ungrouped it will remain a drawing forever.

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ClarisImpact: What does the Extract Button Do?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When adding element styles for a Timeline, Chart or Table you have the added capability of copying the currently selected element to the Element editor. This makes it very easy to take an element that you have been working with, and define it as a style. This is done by clicking the Extract button. Follow these steps to locate the Extract button:

1. Create a Chart (or a Timeline or a Table)
2. Select an element in the Chart such as a bar from a bar chart
3. Choose Element Styles... from the Chart menu
4. Click once on the triangle that appears in the resulting palette
5. Click on the Add button
6. The Extract button should be in the lower left hand corner of the resulting dialogue box

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ClarisImpact: Explanation of Cursor Appearance Changes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The ClarisImpact cursor will change during a creation of a document.

Some advantages of changing the appearance of the cursor include:
1) You know if you've chosen a frame or the contents of the frame.
2) You know whether or not there is another step to the current action.
3) The cursor changes depending upon its position over your document.

Each time a new frame is selected or an object is changed, the cursor will change to let you know the status of the operation. If no frame is selected, clicking and dragging will produce a hand with a pointing finger.

When selecting a new frame to be created, such as an outline or a table, the cursor will change from the Selection Tool (Arrow) to a Crosshair (+). After the frame has been created, the cursor will change to:

Text Frame = I-Beam
Outline Frame = I-Beam
Spreadsheet Frame = Thick Plus
Chart Frame = Thick Plus
Time Line Frame = Thick Plus (by clicking above the Task name but below the frame edge, the cursor will change to a arrow pointing down. Clicking with this cursor will highlight the column.)
Organization Frame = Gray Arrow. When adding or editing text, the cursor will change to an I-beam.
Flow Chart Frame = Gray Arrow. When adding or editing text, the cursor will change to an I-beam.
Calendar Frame = Gray Arrow. When adding or editing an event or banner the cursor will change to an I-beam
Line = Crosshair (+)
Shape = Crosshair (+)
Grab Hand = Selecting an object from a library palette
Arrow with small marquee = indicates that you can move the frame
Published Date: Feb 18, 2012

OmniPage: Incompatible with Macintosh Portable

I have a Macintosh Portable and want to know if OmniPage scanning software works on the system. It wasn't listed in the compatibility list in a recent Apple mailing.

Also, will a half-page or hand-held scanner work with the Macintosh Portable? Is there a list of scanners and scanner software that work with the Macintosh Portable?

This article has been archived and is no longer updated by Apple.
OmniPage requires a 68020-based system with 4MB RAM to run. With these requirements, OmniPage will not work on the Macintosh Portable. We have yet to contact CTA, publishers of TextPert, but their package is listed as running on any Macintosh with a minimum of 1MB RAM.

We don't know of a list of compatible scanners and scanner software. However, Logitech (ScanMan) and Thunderware (LightningScan) indicate that their products work fine with the Macintosh Portable.

For more details, search the Technical Info library under "CTA."

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Creating Outlines Within Word Processing Documents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks 2.0 and ClarisImpact, sometimes you might wish to use Word Processing documents that have Outlines inside them, but which aren't completely formatted with Outline topic numbers.

To create an Outline within a Word Processing document, simply create a Text Frame or a Text Model and choose Outline View from the Outline Menu (ClarisWorks) or To Outline from the Text Menu (ClarisImpact). The Text Frame or Text Model will have the outline formatting and the main body of text will not.

You may also want to consider using the Text Wrap feature on the Outline. See the following articles for more information:

"Making Text Wrap Work in Drawing Documents"
"Wrapping the text in a Text Frame or a Text Model wrap Around a Picture"
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Using the MacWrite 5.0 XTND Translator for Older Versions of MacWrite

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The MacWrite 5.0 XTND translator opens MacWrite files from versions 4.5, 4.6, 5.0 and 5.01. The MacWrite 5.0 XTND translator is included with ClarisWorks, MacDraw Pro, MacWrite Pro (all versions); also with MacWrite II 1.1 (all versions).

This translator will not open MacWrite 2.2 files. If you need to open a MacWrite 2.2 file into one of the Claris applications listed previously, use either of these two methods:

1- Open the MacWrite 2.2 file in Microsoft Word, then save out as any file type that your Claris application can open (Word, MacWrite, MacWrite II, RTF, etc.). You can then open this file into your other Claris application.
2- Open the MacWrite 2.2 file using MacWrite 4.5, 4.6, 5.0 and 5.01. Resave, then open the file into your other Claris application.

Note: MacWrite 4.5 runs only on 68000-based Macintosh computers. MacWrite 5.01 will open and save using System 7.1 and earlier, but only on older Macintosh models (Quadra 700 and earlier).
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Publish and Subscribe not Working when Edition File is Moved to a New Computer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Publish & Subscribe may not update the Subscriber when the Subscriber, Publisher and Edition files are moved to another computer. Publish and Subscribe is networkable so as to facilitate group editing of a document. Even if you move the Edition file along with the Publisher and Subscriber documents, the original path to the edition file is remembered. Tests at Claris showed that launching the files on a different computer will initiate an attempt to mount the volume of the original computer if file sharing is enabled.

Workaround:
If you do not want your files to remember the original location of the Edition file then create a new edition file at the computer on which you wish to use the files.
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Calculating a Date 30 Days From a Date Field (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Sometimes you may want to use a calculation to determine the number of days from a specific date. For example, you may enter a purchase date and want to have a calculation add 30 days to determine the due date of the payment. Use the formula below to add 30 days to a field called PurchaseDate, where the result displays in a field called DueDate. The DueDate formula is

DueDate (Calculation, Date result) =
DATE(YEAR('PurchaseDate'), MONTH('PurchaseDate'), DAY('PurchaseDate'))+30

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Fade Option In Slideshow Not Available on Black & White Displays

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Fade is not available on systems that do not have a color screen. This includes Black & White and Grayscale screens. Examples include most PowerBooks and large Black & White monitors.

Fade is an option that allows you to have a transition between each slide of a presentation.
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Sending PF (Function) Keys (CM)

ClarisWorks enables me to send function keys F1-F4 with the Keys menu or on my numeric keypad, but how can I send function keys greater than that, like PF5-PF24?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks 2.0 comes with a VT320 Keys sample file which has shortcut buttons that provide a full function key set. You can modify this file for your use, or send the function key sequences manually with the following key sequences:

Press the Escape key, and then press a number key between 1 and 9, or the zero key for 10, hyphen for 11 and equal for 12. Press escape, then shift and a number key (or hyphen or equal) to generate function keys 13 through 24.

The same key sequences will work from ClarisWorks 1.0 Communications.
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Smart Quotes Don‘t Work Correctly after Shift-Return (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 2.0 and ClarisImpact all allow you to create text with typographically correct quotation marks.

However, when using these curly "Smart" quotes in your text, if you use Shift-Return to enter a "soft return" (Shift-Return also creates a second line within an outline topic) and begin that second line with a quotation mark, you will incorrectly get closing smart quotes instead of opening smart quotes. Essentially, the "Smart" quotes get confused.

To get the correct quotation mark, add a blank space at the beginning of the line after the Shift-Return, type in the quotation mark, then delete that extra space.
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Connecting to the Multiple Listing Service (MLS) With ClarisWorks (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Real Estate agents use an online service known as Multiple Listing Service (MLS) to download information about properties. An account must be created for each agent requesting access. A code will be issued for each account, and that will be the key to connecting to the service. Below are the settings needed in a ClarisWorks Communications document to properly connect to the service. This has been tested in the San Francisco Bay area, and may not be valid in other areas (the number you dial may need a different configuration than the following):

While in a Communications document, select Connection... from the Settings menu.
Enter the phone number of your service in the box next to Dial Phone Number
Baud Rate: 2400
Parity: Even
Data Bits: 7
Stop Bits: 1
Handshake: None

Next, select Terminal... from the Settings menu.
Emulation: VT100 or VT102 Tool
Check the Local Echo box
Enter the access code into the Answerback Message box (Sample: XXXX1234). Be sure your code is entered with all letters UPPERCASE.

You are then ready to select Open Connection from the Session menu.

NOTE: It is common to simply Capture Data as it scrolls onto the screen. This leaves property features listed with cryptic codes. Consult your manual for the commands needed to download a comma delimited file. Comma delimited data can be imported or pasted into a database. A database is a quick way to display property features as full words (Example: "SF:5,490" could be displayed as "5,490 Square Feet"; "HZ:9 VT:76" could read "Map Coordinates: Horizontal=9, Vertical=76")

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Incorrect File Transfer of Quote and Apostrophes (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When transferring a file, particularly when using Text file transfer protocol, quote marks and apostrophes may be converted to other characters when received. These characters include R's, S's, and U's. This is due to the fact that when the document was originally created, the Smart Quotes option in the Preferences was on. Always turn the Smart Quotes option OFF when composing a document for transfer, if Text transfer protocol will be used, or if you are unsure if the software on the receiving system supports Smart Quotes.

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AppleShare Network: How to Check for ProDOS Files

I have Apple IIGS systems and Apple IIe systems on an AppleShare 2.0.1 network. When the Apple IIGS starts up, it shows ProDOS 1.8 and GS/OS, yet when the Apple IIe systems start up, they show ProDOS 1.4.

I have an application (MECC Communikeys) that apparently doesn't work correctly with ProDOS 1.4. (One Apple IIe works OK, but the other Apple IIe systems lock the entire network.)

Where is ProDOS 1.4 coming from? I've checked for P* and P16 and even copied them from one folder to another.

This article has been archived and is no longer updated by Apple.
When setting up an AppleShare File Server for an Apple IIe and Apple IIGS environment, two copies of P8 are installed. One copy is installed when the server is updated with the Apple II Setup Disk for the AppleShare File Server (a Macintosh disk). This copy is placed in the Server Folder. Another copy is installed when GS/OS is loaded from an Apple IIGS using the GS/OS SYSTEM.DISK and SYSTEM.TOOLS (Apple IIGS disks). This copy is at the root level of the server.

It appears that an early version of the Apple II Setup Disk was used on the server. Earlier versions of that disk contained earlier versions of P8. Reinstalling the Apple II setup should provide the current version of ProDOS. Use the Apple II Setup Disk marked:

"Version 2.1; For use with Apple IIGS System Software 5.0".

How did you check for the ProDOS files? Was the check done from an Apple IIGS? Was the check done from a Macintosh on the network? Was checking done on the server from within the Admin application? Was the server restarted with a floppy disk and then checked for these files?

If the check was from a Apple IIGS workstation, the Server Folder is not visible. This is where one of the ProDOS files resides, and you would find only one of the ProDOS files.

If you checked from a Macintosh on the network, the result would be the same as when checking from an Apple IIGS workstation. There is no Server Folder available.

If checking was done on the server from within the Admin application, you will see the Server Folder, but you cannot open that folder and review its contents.

If the server was started up from a floppy disk and then the check was done, a second P8 file will be visible in the Server Folder.

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ClarisWorks 2.0: Printing Issue With the Sample File "Name & Address - Extended"

There is something wrong with the sample file named "Name & Address-Extended" that ships with ClarisWorks 2.0.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The issue occurs with the "For Printing" layout. While it looks fine in Page View, upon printing, the footer is at the bottom of every record rather than just at the bottom of the page.

Attempts to reproduce this symptom on a new file were not successful so it appears that this sample file is damaged.

Workaround:
Delete the Footer and the contents of the Footer.
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Zoomed Letters Cut Off or Clipped at the Right Margin (WP)

When viewing text at an odd zoom level (let's say 125%), text may be cut or clipped at the right margin.

(You can zoom in by choosing View menu, View Scale...)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Turning on Fractional Character Widths under Preferences... in the Edit menu will usually alleviate this symptom.
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System Freezing at the Splash Screen Spells Font Trouble

Troubleshooting corrupt font or fonts in Claris applications for the Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Most Claris applications present a font menu with the fonts names appearing in their own typeface. Using this feature, you don't have to remember a font's name - this WYSIWYG Font Menu allows you to select fonts you have installed based on what they look like.

To create this special menu, Claris applications will create a picture of the font name, as it would appear in its own 12-point typeface. This picture is usually stored in a file in the Claris folder inside your System folder. This file is called Claris Fonts, ClarisWorks Fonts (for ClarisWorks 4.0), or FM Pro Fonts (for FileMaker Pro 3.0), depending on the applications and the versions you have.

It's handy the next time you use the program, so the image doesn't have to be recreated every time. Problems can occur when fonts become corrupt or when there are font ID number conflicts. Claris applications will have trouble using corrupt fonts to build this WYSIWYG font list at launch, which means the application will crash at the splash screen. Programs that offer an unenhanced Font menu do not encounter this problem.

Error messages that you might see include "Application has unexpectedly quit with an error of type 1", or "type 11" (on the Power Macintosh computers) or the Claris application may just freeze and not generate an error message (in this case, the freeze is the error message).

Here are several things to try, with the pros and cons of each.

Lock the Claris Fonts file inside the System Folder.

Actually, the file could appear in the System Folder, Claris folder, Preferences folder, or application folder. Locking the file will prevent the product from attempting to build a new one. After you lock the Claris Fonts file, you should be able to launch the application.

Advantages: It's fast. It's reliable. It is easy. It's a temporary fix.

Disadvantages: The Font menu no longer appears in the native typeface. The bad font is still there and may cause problems later.

Restart from a Disk Tools disk, which would have a factory-condition font setup.

Advantages: It's fast. It's easy. It's completely reliable.

Disadvantages: This solution cures only the symptoms of troublesome fonts. After using the Disk Tools disk, you still have to troubleshoot to find the bad font.

Remove the offending font(s) and install fresh ones from the System disks.

Advantages: Most of the time, this is a reliable fix.

Disadvantages: It takes time to locate the offending font. You can test each individual font or try relaunching the application with smaller sets of fonts installed.

There's a great article in the Tech Info Library which deals with this subject, titled "Crashing/ Hanging when Launching Application." Although it was written specifically for FileMaker Pro, it is useful for troubleshooting problems like this.

Claris applications for Windows also create font menus in their native typeface. This article is titled "Understanding The CLARIS.FNT Font File."

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Equal Sided Polygon Tool Works Differently from Other Tools

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The equal-sided polygon tool (stop sign) is the only tool that is preset to draw from the center rather than the edge.

This can be confusing, because no other tool automatically draws from the center.

All other tools require you to hold down the option key while drawing to get the same effect. The reasoning behind this choice is that the equal-sided polygon tool draws only symmetrical shapes, which are easier to draw from the center.
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ClarisWorks: How the Alignment Controls Work

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The Alignment controls in Claris products always give you four vertical options and four horizontal options for aligning selected objects:

Top to bottom:

Align Top Edges - Aligns the top edges of all of the selected objects with the object that is highest on the page.

Align Bottom Edges - Aligns the bottom edges of all of the selected objects with the object that is lowest on the page.

Align Centers calculates the vertical distance from the top of the topmost object to the bottom of the bottom object and aligns the centers of all of the selected objects at the midpoint of that distance.

Distribute Space calculates the vertical distance from the top of the topmost object to the bottom of the bottom object and evenly distributes he selected objects along that vertical distance.

Left to right:

Align Left Edges aligns the left edges of all of the selected objects with the object that is furthest left on the page.

Align Right Edges aligns the right edges of all of the selected objects with the object that is furthest right on the page.

Align Centers calculates the horizontal distance from the left of the leftmost object to the right of the rightmost object and aligns the centers of all of the selected objects at the midpoint of that distance.

Distribute Space calculates the horizontal distance from the left of the object furthest left to the right of the object furthest right and evenly distributes the selected objects along that horizontal distance.
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ClarisImpact: Text Wrap and Drop Shadows

The Text Wrap feature ignores drop shadows and outline bullets.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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The Text Wrap feature ignores drop shadows and outline bullets. Text wrap allows you to wrap text around a graphic, but if you add a drop shadow to a graphic, or if you are working with outlines, wrapped text may overlap the drop shadow. In addition, Outline bullets do not wrap, although the outline text wraps normally.

1. Select your graphic and turn Text Wrap off.

2. Outline the boundaries of the graphic (including the drop shadow) with the polygon, bezigon, or freehand tool. (We recommend the polygon or bezigon tool.)

3. Choose Move to Back from the Arrange menu.

4. Set the fill to white and the pen to none.

5. Shift-click the graphic (so that both the graphic and the new object are selected) and choose Group from the Arrange menu.

6. Choose Text Wrap from the Options menu. Set the wrap to Irregular. Now ClarisImpact will wrap around both objects, and the wrap will take into account the drop shadow.

Now ClarisImpact will wrap around both objects, and the wrap will take into account the drop shadow.

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Creating a Column of Sequential Numbers (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Here is a quick way to create a column of sequential numbers:
Type "1" in cell A1 and the formula "=A1+1" in cell A2 (both without the quotes). Then select cells A2 thru A10 (or whatever) and choose Fill Down from the Calculate menu (or type Command-D).

Creating a column of numbers followed by a period is tricky. Simply typing "1." will result in that cell being interpreted as a number (1.0) which equals 1, therefore the decimal is automatically stripped away.

To avoid this, type the following into cell A1(with the quotes): ="1."
Then type this formula (again, with the quotes) into cell A2: =A1+1&"."
Select cells A2 thru A10 and choose Fill Down.

Explanation:
The value of cell A1 is: 1. but the numeric value is 1. Because cell A2 is performing arithmetic functions, it takes the numeric value of cell A1 and adds 1 to it, resulting in 2. This result is then concatenated (combined) with the period.
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ClarisWorks for Windows 1.0: Cannot use CTRL-ALT-H to Record a Macro

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
CTRL-ALT-H does not work when recording a macro with ClarisWorks for Windows 1.0. You must use another key combination.
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Changing the Frame of a Paint Object Pasted into A Word Processing Document (PT,WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Any time you paste a paint object into another environment, it will be pasted in with a surrounding frame. When you paste a paint object into a word processing document as an inline character it will have a frame around it. In line characters are not considered objects, and as such, can't have their fill or pen attributes changed.

The easiest way to work around this is to copy and paste the paint object into a drawing document first, change the pen pattern to transparent, and then copy and paste that element into the word processing environment.

Another method would be to paste the paint object on top of the word processing document by choosing the pointer tool from the status bar before pasting. Then change the pen pattern to white or transparent and then cut and paste the object into your document.

The above information also pertains to the limitation of changing the frame of any other object (ie - spreadsheet frame) once it is pasted into a word processing document as an inline character.

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Error Message "Cannot Modify a Non-Modifiable Subscriber" (SS)

When I Publish some data from a ClarisWorks Spreadsheet or a ClarisImpact TabIe, I cannot change the font, style or size of the published numbers in the Subscribing Spreadsheet or Table. I get the message "Cannot modify a non-modifiable subscriber". Since ClarisWorks publishes with a generic font, how am I supposed to change the text attributes?

or

When I Publish formatted numbers (for example, currency or fixed) from one Spreadsheet or Table to another, the formatting is lost in the Subscribing document.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Set the number format, font, style or size in the document before subscribing to the edition file.

NOTE: The above solution only needs to be used from Spreadsheet to Spreadsheet or Table to Table. For example, creating a Spreadsheet edition file and subscribing from a Word Processing file still allows modification of the Subscriber.

If you have further difficulties with formatting the data, please refer to the article "Text Formatting Difficulties With Publish and Subscribe" (article# 55659).
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Many Ways to Select Records to Create a Found Set (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Sometimes a found set is not easily assembled by using Match Records or Find. A found set is necessary when trying to print only some records, export only some records or print merge only some records. Being able to select multiple records in a variety of ways therefore becomes essential.

The Basics Regarding Selecting Records and Creating Found Sets:
The simplest way to select a record is just to click on a record. Two types of selections could occur. Either a field is selected or a record is selected. If a field is selected the outlines of the field boxes for the record you clicked on will appear and the specific field you clicked on will have a cursor blinking in it ready for keyboard entry. If you click on a record but not within a field the whole record will highlight.

Once you have succesfully highlighted a record, choose Hide Unselected from the Organize menu. Notice that all other records disappear and the status bar to the left of your records (just below the flip chart) indicates that only one record out of many are selected. Choose Show All Records from the Organize menu and all of your records will appear again. Now choose Hide Selected from the Organize menu and notice the record that was selected disappears. Take note of the status bar before choosing Show All Records.

Thus, you have created a found set of one record. Look to your User's Guide for more information regarding how to create a found set using Find and Match Records. This article only covers how to create a found set by selecting multiple records.

Advanced Techniques to Select Records and Make Found Sets:
Selecting multiple records falls into two categories: contiguous and non-contiguous. To select a set of contiguous records follow the steps below:

1. Highlight the first record you want in the set
2. Scroll down to the last record you want selected
3. Hold the Shift key down while clicking on the last record in the set
4. Choose Hide Selected or Hide Unselected from the Organize menu

Notice that all the records between the two records you clicked on are selected.

To select non-contiguous records follow the steps below:

1. Highlight the first record you want in the set
2. Use the flip chart to move to your next record
3. Hold the Command key down while clicking on the next record
4. Repeat steps 2 through 3 as many times as necessary
5. Choose Hide Selected or Hide Unselected from the Organize menu

Notice that only the records you clicked on are selected this time.

A really easy approach to putting non-contiguous records into a found set (but possibly more time consuming) is to highlight a record and choose Hide Selected Records from the Organize menu. You can repeat these steps as many times as necessary until you have assembled your found set. Only performing a Find or choosing Show All Records will disrupt what you have put into a found set.

Since Match Records only highlights records and does not hide the unselected, it is possible to combine the techniques outlined above with Match Records to more easily assemble a found set.
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Text Formatting Difficulties With Publish and Subscribe

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you Subscribe from a ClarisWorks 2.0 (or higher) Spreadsheet or ClarisImpact Table Publisher without first formatting the cell, the published data will come in with no formatting. For example, if your published data is formatted as currency, and you don't select the subscribing cells and format them as currency BEFORE subscribing, you will just get the data (1 for $1.00, etc.)

This is actually normal. The same thing happens if you simply copy and paste data from a ClarisWorks Spreadsheet document to a ClarisWorks Word Processing document (as opposed to into a Spreadsheet frame, which can be formatted). Refer to the Tech Info article entitled "Pasting Number-Formatted Data from SS to WP" for a full explanation.

Possible Symptom:
If you format the cells in the subscribing document and then subscribe, you will notice that all but the first cell will come in with the proper formatting.

Suggested workaround:
In the publishing document, include a blank cell as the first cell in the published data.

Another Possible Issue:
If you modify the data in the publishing spreadsheet and then save, the subscriber is updated but loses all formatting. There is no workaround for this at this time.

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DAL and VAX: Async Connection Issue

I am evaluating Data Access Language (DAL, formerly known as "CL/1"). I set up an asynchronous connection (through a modem) to a VAX with Red Ryder with these settings:

1200 baud
No parity
8 data bits
1 stop bits
XON/XOFF

I connect to another VAX using DECnet with a "c MIS001". This is the VAX with the DAL server running. Leaving the terminal session open and using the DAL test application, I invoke this host connection script direct1200:

direct1200:async:com1:1200:Noparity:8databits:1stopbits:Bothxonxoff:128:Nomodem

This returns a "connection failed", error 10628(0) asynch() with no message.

I tried using the async1 host:

async1:async:com1:1200:Noparity:8databits:1stopbits:BXonxoff:128:Modem:Tone::se
cs:attempts

This returns a "Connection to host async failed", error 10643(0) async() with no message.

Then it returns a "connection failed", error 10628(0) async() with no message.

I think this is because of the round-about connection to the host, but it seems if I already made the connection, the DAL tester should piggyback on the connection. I verified that the AppleTalk connection works and can access data this way. Therefore, it does not seem to be a server-based problem.

1) What script should I use for this type of connection?

2) How easy would it be to write a host script, so I don't have make the connection through Red Ryder?
This article has been archived and is no longer updated by Apple.
We talked with Network Innovations, and they stated that their asynchronous protocols work only with VAX systems directly connected to the asynchronous link (in this case, the modem). In other words, they do not support logging on to one host, connecting to a second host via DECnet, and running the DAL server from that second host. They are aware of this issue and are looking at ways to resolve it in the future, but there is no workaround at the present time.
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ClarisImpact: Creating and Saving Model Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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To create a model that can be saved as a Model Style, you must:

1. (Optional) If necessary, go to Element Styles and create elements that will be used in the model
2. (Optional) If necessary, go to the appropriate options to create or modify objects/formats that will be used in the model: Connector Settings, Level Settings, Frame Spacing, Spacing, and Sizing.
3. Create your model using any of the following options to modify the model: ElementStyles, Connector Settings, Level Settings, Frame Spacing, Spacing, or Sizing.

Note: If you do not use Element Styles, Connector Settings, Level Settings, Frame Spacing, Spacing, and Sizing to create and modify objects, some object formats may be stripped out of the model when it is added as a Model Style. For example, if you change the color of task boxes in an Org Chart from white to blue, by using the color palette, when you save the Org Chart as a Model Style, the task boxes will be white. The blue task boxes will be stripped out because you did not use the Element Styles dialog to create or apply the blue work boxes.

To add a Model Style:

After having created a model you would like to use again:

1. Select the model
2. Select Model Styles from the Model Menu
3. Click the Add button. This will create a Model Style named Style X, where X is a number.

You may get a dialog warning you that some formats may be stripped.

NOTE: If the model does not look correct in the sample, you will have to go back to either the Element Settings to create or apply an element, or you may have to go to one of the other settings, spacing, or sizing options to apply a format option correctly.
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ClarisImpact: Creating Master Slide Styles for Non-Installed Monitors

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When you are trying to create or use a Master Slide Style, and wish to use a monitor size other than what you have available, select the other monitor size in the pre-creation dialog for presentations.

When you select Master Slide Styles from the View menu, you will see and be able to use saved styles, even if they are not supported by your current hardware setup.

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ClarisImpact: Editing Element Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Element Styles control the settings for individual parts of a model. They define styles for boxes, connectors, etc. Element styles work differently and control different settings in each type of model. The Element Styles are stored in either the ClarisImpact Color Styles or ClarisImpact B&W Styles folder.

There are two methods for editing Element Styles. The first method is used when editing Element Styles for either the Calendar, Organization Chart, or Outline.

When editing these Element Styles, you use the Style Editor window. In this window, you use tools and various menu items to edit elements of the selected style. You can use various palettes to change element colors, sizes, etc.

The second method is used when editing Tables, Data charts, and Timelines. In these models, you edit Element Styles through the Element dialog.

Flow Charts use symbols, and do not have Element Styles.

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ClarisImpact: Flow Chart Model Styles Apply only to Connectors

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Flow Chart Model Styles can only be applied to connectors between symbols, not to the symbols themselves. So, when you create a Model Style for a Flow Chart, it will show you the symbol(s) that were used in that chart. However, if you see a Flow Chart with triangles and you want to apply those triangles to the current chart, you cannot do it with the Apply button in the Model Styles dialog.

To change the symbol type for a particular Flow chart or separate objects in that Flow Chart you must do the following steps:

(1) Go to the chart level
(2) Select the objects for which you want to apply the symbol
(3) Select Symbol from the Flow Chart Menu
(4) Select the symbol you wish to apply
(5) Click the Apply Button

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ClarisImpact: Format Options are Ignored when Saving Organization Chart Model Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

1. If you click on a box or any other object of the Organization Chart and make a format change to that object by using one of the palettes (such as the color or pattern palettes), you cannot save these format changes in a Model Style. This is because you made changes directly to the model and did not apply existing elements to that model. ClarisImpact references the Elements Styles library to create models. If you do not use existing Element Styles to create a model, changes you have to the model will be ignored.

Solution: From the OrgChart menu, use Element Styles, Connector Settings, Level Settings and Frame Spacing to modify an Org Chart.

2. Because Organization Charts are level-based, in order to save a model style, each level must have the same Element Styles applied to that level. For example, if you have 2 blue worker boxes at a level 2 and you use the Element Styles dialog to change 1 worker box to yellow, when you try to save this as a Model Style, that level will revert to a default setting. Similarly, if you change individual workers or connectors, then try to add an Org Chart as a Model Style, a dialog box may warn you that it cannot add the modifications. If all workers or connectors are not the same at a given level, ClarisImpact will ignore the applied format options.

Solution: Make sure that all the workers on each level are the same.

See related article "Creating and Saving Model Styles"
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ClarisImpact: Possible Confusion when Naming/Creating a Model Style

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

You cannot add a Model Style with a specific name. You must first add the Model Style with the default style name (Style X, where X is a number), type the new name for the Model Style while that style is selected, and click the Rename button.

EXAMPLE: You create an Org Chart that has oval task boxes. You wish to save this as a Model Style. You go to the OrgChart menu item and select the Model Styles item, type "Oval" as the name, click the Add button and expect to create a new Model Style called "Oval". ClarisImpact will remove the word "Oval" from the Name line and replace it with "Style 2" and add a style called "Style 2". This interface can be very confusing.

The name that is typed into the name bar refers to the selected Model Style. Thus, if you click the Rename button, it will rename the selected style. However, if you click Add, it will add a new style based on the style that is selected in the document. Thus, the name of the style will revert to a default name.

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ClarisImpact: Master Slide Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Master Slide Styles are similar to the Model Styles. Master Slide styles are used with presentations. Unlike Element Styles and Model Style options, Master Slide Style options are accessed through the View menu.

Master Slide styles store all formatting settings:
- background fill and graphic elements
- placement and size of title and body place holder
- font, font size, text settings
- Level Settings for the outline model in the body place holder
- slide size (document size or output medium)

(See page 14-18 of the manual for a complete list)
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Publishing may Make Some Graphics that are Not Selected, Publish Anyway

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Publish and Subscribe works differently in ClarisWorks and ClarisImpact than it does in MacDraw Pro.

All of these programs allow you to select any object or objects from a document and publish them. However, ClarisWorks and ClarisImpact publish everything inside the rectangular Publisher boundaries. MacDraw Pro works differently in that it only publishes the selected items regardless of the proximity of other objects in the document.

Therefore, anything that is close enough to the selected objects to fall within the boundaries of the Publisher will be included in the edition file.
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ClarisImpact & ClarisWorks: How to Insert Inline Graphics

How to integrate pictures or other objects into your body text.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Both the ClarisWorks Word Processing Environment and the ClarisImpact Report Environment allow you to paste graphics in-line (so the graphic flows with the text). However, the procedure is slightly different in each application.

In ClarisWorks 2.0:

Make sure the Text Tool is selected in the Tool Bar by choosing Show Tools from the View menu. Now you can use Copy and Paste or Insert to place the inline graphic.

To paste a graphic on the Drawing Layer (so that it does not flow with the text, but does allow you use the Text Wrap feature), click on the Arrow tool in the toolbar before Copying and Pasting or Inserting a graphic.

ClarisImpact:

To add an inline graphic, hold down the Option key while selecting Paste under the Edit menu, or use the keyboard equivalent Option-Command-V. This is described in the User's Guide on page 13-69.

If you do not hold down the Option key while Pasting, ClarisImpact will automatically paste the graphic on the Drawing layer so that you can use the Text Wrap feature.

Using Place File to insert a graphic in ClarisImpact is a two-step process, because Place File... always inserts graphics on the Drawing layer. Use Place File... to insert the graphic, select it with the arrow tool, Cut and then Option-Paste at the desired location.

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TA42633_HighSpeed_Printer_Solutions_for_the_Macintosh_(TIL05569).pdf

High-Speed Printer Solutions for the Macintosh

A customer needs a high-speed printer setup for a Macintosh SE or Macintosh IIcx to print labels in volume. The quality of print does not matter--Draft mode and readable is all that is needed. The ImageWriter II that is being used now takes 6 to 7 hours to print the current list, and this list will quadruple next month. Are there any dot-matrix connections to high-speed printers that truly take advantage of the printer's speed? Epson's package can only go as fast as the converter.

This article has been archived and is no longer updated by Apple.
The majority of high-speed printers are line printers, not dot-matrix. Support Engineering uses a Printronix Model 300XG Line Printer with a Centronics parallel interface. The product used to connect it to the Macintosh is no longer available, but searching the "Buyer's Guide" on AppleLink with "parallel and serial and printer" as criteria, we found references to a number of products to connect high-speed parallel printers.

Among the products found were:

- Grappler C/Mac/GS from Orange Micro

- ParaLink from Jonathon Freeman Technologies, Inc.

- Macintosh Port Adaptor from Cambridge Automation, Inc.

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ClarisImpact: No Defaults for Object Library Window Sizes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
It is possible to change and save settings for each Object Library so that the palette window opens with:

- A specified number of rows and/or columns.
- The thumbnail or preview of each graphic in a certain size.

It is not possible to save a default setting for all your object libraries at once. Each one needs to be set individually. Follow the steps below:

1. Open an Object Library.
2. Choose Viewing Options from the View menu (the View menu that is on the palette).

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Claris Applications: QuickDraw GX Support

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
As of October 1, 1996 there are no Claris products certified to be operational with QuickDraw GX. Although in some circumstances MacWrite Pro, ClarisImpact, and FileMaker Pro can print using the QuickDraw GX print driver they are not certified for use with QuickDraw GX and cannot take advantage of its new capabilities. All other Claris Products should only be used with the Non-QuickDraw GX printer drivers.

QuickDraw GX was shipped with System 7.5 for use with those applications that are certified as QuickDraw GX compatible. Applications not certified to work with QuickDraw GX should use the standard printer drivers.
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Claris Impact: Replace Clones does not Work as Expected

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Replace Clones may not work properly if two different Libraries have objects with the same name. For example:

1. Open the Animals Library
2. Add the "Cow" object to the document
3. Create a Circle
4. Create a new Library and add the Circle to the Library
5. Rename the circle to have the name "Cow"
6. Add the new "Cow" object to the document

Try using Replace Clones now. You should notice that Replace Clones identifies objects by name and will replace any object named "Cow". If you are using more than two Libraries and each Library has an object with the name "Cow" then you may find that Claris Impact will disregard some of the Cows when using Replace Clones.

Workaround:
Do not use the same name for different objects.
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Claris Impact: Using Library Clip Art with Calendars

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Clip art from a Claris Impact library cannot be placed directly into a Calendar created in Claris Impact. However, you can place that clip art into an Element Style and apply that style to a day or a series of days in the Calendar.

To place clip art from a library into a Calendar, perform the following steps:

1. Select the day or series of days to which you wish to add the art.
2. Choose Element Styles from the Calendar menu.
3. Click New to create a new element style.
4. Click on the Library icon to open a library.
5. Place the library object in your Element Style.
6. Click Ok.
7. Click Apply to assign the Element Style to the selected calendar days.

Of course, you can always quickly add graphics to your documents with Libraries. You just cannot place them as a part of a Calendar frame without performing these steps.
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Exporting Using "Format Output" Option Doesn‘t Include Text Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When exporting to a text file, the Specify Field Order for Layout dialog has an option called "Format Output Using the Current Layout". This option does not support exporting any text attributes, including style, size or font. Text style attributes include case (Upper, Lower, Title), bold, italic, small caps, and so forth.

Thus, no formatting options can be exported from text fields. Case attributes can be exported by defining a calculation field, then exporting the calculation field. For example, to export a field in Title case, define a calculation field with this formula:
Proper (Textfield).

In the case of number, date and time fields, the options supported for export include the options in the Number Format, Date Format and Time Format dialog boxes. For example, you can export a number field with $, % or a fixed number of decimal places. You can export a date field with the date spelled out using any format that can be displayed on the layout (e.g., December 31, 1994). You can export a time field with the time spelled out using any format that can be displayed on the layout (e.g., 8:31pm).
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ClarisWorks: Choosing Function Key When Recording a Macro and Apple Adjustable Keyboards

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When recording a macro in ClarisWorks, the Record Macro dialog gives you an option of assigning a function key to invoke or play the macro later. Normally, when you select the Function Key radio button, a box highlights showing the next available function key in black.

Because the Apple Adjustable Keyboards function keys are actually on a separate keypad, ClarisWorks doesn't see them in the same way it sees them on an Apple Extended Keyboard. When using the Adjustable Keyboard, ClarisWorks will show the appropriate function key, but it will be gray. It will still work though - meaning depressing the grayed out function key after recording the macro will play that macro.

This is only an issue if you are using ClarisWorks 2.0 and System 7.1 - it is fixed in ClarisWorks 2.1 or later, and in later versions of the system software. If you are using System 7.1, you can correct this by installing the System Update 3.0 (which updates you to System 7.1.2), it will then show the function key in black in the Record Macro dialog.
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"Show" is Gone from the Bottom of the Open... and Place File... Dialog Boxes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The "Show" menu that displays at the bottom of the Open... and Place File... dialog boxes will disappear if the Claris XTND System is not installed properly. Make sure the Claris XTND System file is in System Folder: Claris.

Other Claris applications will still show this menu even if Claris XTND System is not installed properly.

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ClarisWorks SS: Decreasing Rows and Columns in the Document Error Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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To remove cells in a ClarisWorks spreadsheet, simply choose Document... in the Format menu, and type the appropriate number of columns across and/or rows down before clicking OK.

Should this action result in an error message "The selected value must be in the range x to x", it is because ClarisWorks thinks there is data in one or more of the cells you are attempting to remove. Sometimes this is an invisible formatting character which can't be seen on screen.

To resolve the problem, drag-select through the cells you are attempting to remove and choose Clear in the Edit menu.

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ClarisImpact Product Information (short version)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisImpact is a brand-new application from Claris that dramatically simplifies the creation of top-quality business graphics . Choose from professionally-designed templates to automatically create organization charts, timelines, flow charts, data charts, calendars and more. Place AND edit these "smart" graphics directly in printed reports and slide shows using Impact's integrated word processing and presentation capabilities. ClarisImpact includes everything you need to create high-impact business graphics, all in one easy-to-use application.

- $399 suggested retail price (SRP) in the U.S.
- Currently registered owners of MacDraw Pro can purchase ClarisImpact for Macintosh for $99, or choose ClarisDraw for $99 (SRP).
- Registered owners of MacDraw II, ClarisWorks, or comparable competitive graphics applications can purchase either ClarisDraw or ClarisImpact for $149 (SRP).
- Customers who purchased MacDraw Pro after June 1, 1993 can purchase ClarisImpact for Macintosh for a special price of $49, or upgrade to ClarisDraw for Macintosh for a special price of $29 (SRP).

See article "ClarisImpact SRP and Upgrade Options" and "Product Fact Sheet, ClarisImpact 1.0 for Macintosh" for more detailed information.
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ClarisDraw: Product Information

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisDraw is the next generation of the best selling MacDraw software, offering over 75 new features and the ease of use that has made MacDraw the graphics standard. Now included are intelligent alignment and connection capabilities, full color painting, enhanced text effects, drag and drop symbol library access, 3,400 high quality graphic elements and full compatibility with the upcoming Windows release. Like its MacDraw predecessor, ClarisDraw makes easy, intuitive work of freeform art, technical illustrations, space planning, light desktop publishing, basic presentations, and virtually any graphics task. ClarisDraw is the ideal product for the non-artist who needs a versatile, reliable and easy to use graphics product.

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ClarisWorks: Fill Down, Fill Right Commands

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If you've written a formula that calculates cells in one row and you'd like to apply that formula for additional rows without manually pasting it for each cell, click into the cell with the formula, drag to highlight cells downward and choose Fill Down from the Calculate menu. Alternatively, you can drag to the right and select Fill Right from the Calculate menu. Cell references in the formula will be incremented by 1 automatically unless you indicate an absolute reference by preceding the cell reference with a $ symbol, e.g. A1.

The Fill commands also work for entering data (not just formulas) you want to repeat through a range of cells.

This is covered in Page 6-11 of the ClarisWorks 2.x User's Guide, Page 5-12 of the ClarisWorks 2.x Getting Started manual, and in the Online Help (look for "Cells: filling automatically" in the index.)

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ClarisWorks: Importing Gif Files into ClarisWorks (DR, All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When importing gif files into ClarisWorks that were translated onto the Mac using Apple File Exchange, they will not be recognized as GIF files by ClarisWorks. This is because Macintosh files have a Type and Creator identifier, but files from other platforms don't have them.

The work around for this is to use a program such as Drop Info, ResEdit, File Typer, or Get More Info to change the file type descriptor To GIF. Once this is done, ClarisWorks will recognize the file as a gif file.
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ClarisWorks: Splitting (or Creating) a Subset Database (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The ClarisWorks database environment allows you to easily create subset databases from a master database. This can be useful if you want to create a fully-functional copy of your database that only has records for people who are working for a specific company, or for everybody who has responded to an invitation.

Here are two methods for creating a subset database from a master one. It should be noted that the method used for isolating the subset of records is important. For clarification of these methods (find, match, select) please refer to the article "Many Ways to Select Records to Create a Found Set (DB)"

Method One:
1. Make a copy of your current database (within the database choose File, Save As, or within the Finder you can duplicate the file).
2. Open the copy of the database
3. Choose Organize menu, Show all records
4. Match the desired records or manually select using the shift and Command keys (Using Match or Select will highlight the selected set)
5. Choose Organize menu, Hide selected (This will leave you with the records you want to remove visible)
6. Under the Edit menu, choose Select All
7. Choose Edit menu, Clear
8. Show all records in the Organize menu
9. Save the database
You now have saved the edited version and the original is still intact

Method Two:
It should be noted that this method uses the File menu "Insert" command which is a feature added to ClarisWorks 2.0 (It's not available in version 1.0 for Macintosh or Windows)

Perform the following steps:

1. Open your current database. We'll assume that it is called "Mailing List."
2. Use the Layout menu, Find command to create a "found set" of records. (This automatically hides the records you don't want to save)
3. Use the Save As... command in the File menu to save a DIF file on disk. Let's call it "Mailing List.DIF" so that you can recognize it easily. (This saves just the data into a text file)
4. Use the Save As... command in the File menu to save a copy of the current database on disk. Call that file "Mailing List Copy" so that you can recognize it easily.
5. Choose Open from the File menu and open "Mailing List Copy".
6. Choose Organize menu, Show All Records, then Edit menu, Select All
7. Choose Clear from the Edit menu. (This will empty "Mailing List Copy" so that we can bring new records into it.)
8. Choose the Insert command from the File menu, and specify the "Mailing List.DIF" file for import.
9. In the Import Matching dialog, all of the field names on the right will match the first import record on the left. Just click OK.
10. Use the Save command to save the newly-imported records.

You're done! Now, you've got your original file with all of its records, and you've got a second file called "Mailing List Copy" that has only the records that you wanted.
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ClarisWorks: Improving WYSIWYG Results With Adobe Type Manager

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What you see on screen should, ideally, look exactly the same as what is printed. Unfortunately, screen display never perfectly matches printed output because monitors have lower resolution than printers. With fewer pixels available to represent a character of a given size, the screen display generally deviates to some degree from the printed output. Windows application use either 72 or 96 pixels on screen for each inch of paper displayed. Most Laser printers print at 300 pixels per inch of paper. The limitation of matching screen display and printout is caused by roundoff errors in converting the number of pixels used for the text onscreen to the number of pixels used for the text on printout.

When using Adobe Type Manager with a PCL printer such as an HP Laserjet, checking the "Use Pre-built or Resident Fonts" check box in the ATM control panel lets the printer driver use fonts resident on the printer itself at print time. However, screen and printer fonts are separate and do not match as well as a scaled font such as an ATM font or a True Type font. When you clear the Use Pre-built or Resident Fonts check box, your text and graphic images will print as displayed on-screen.

Full justified text set to a small point size sometimes extends beyond the right margin on screen, but prints correctly. The screen font Windows has picked is a different size, and turning off the Use Pre-built or Resident Fonts option in the ATM Control Panel can help improve the match between screen display and printed output.

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ClarisDraw, Impact: Workaround to Apply Kerning and Tracking

Simulate typesetting basics like kerning and tracking in ClarisDraw and ClarisImpact by using the Bind Text (in ClarisDraw) and SmartAlign features.

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Tracking and kerning in ClarisDraw and ClarisImpact

Although ClarisDraw and ClarisImpact do not support a tracking (character or letter spacing) or kerning (custom adjustment of space between individual pairs of letters) feature, it is possible to achieve the same effect for your text. Here's how to do it.

Tracking

In ClarisDraw, you can use the Bind Text feature to simulate text tracking:

1. Create a straight horizontal line the length of your text block.
2. Select the text block and the line.
3. Choose Bind Text from the Text menu.
4. Select transparent from the Pen Pattern palette (the first choice in the Pattern Palette is "transparent") to make the line invisible.
5. Choose Bind Text Options... from the Text menu.
6. Increase the Tracking percentage to make the spacing between letters greater. Decrease the Tracking percentage to make the spacing between letters tighter.

Tip: Use the above technique for titles, where larger point sizes (roughly 18 point and above) create the optical illusion of more space between the individual characters.

Kerning

In both ClarisDraw and ClarisImpact, you can use the SmartAlign feature to create relationships that can simulate kerning:

1. Create each letter in each word as a separate object. (If you wish to kern only the characters within a single word, create each letter of that word as a separate object.)
2. Select all of the separate objects and use the Alignment command to Create an "align bottoms and distribute space" relationship.
3. Click on the last letter of the text and use the arrow keys to kern the whole word or sentence (remember to turn Autogrid off).

Also see article, "How to Kern Headlines".

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Macintosh Portable: Does Not Support SCSI Disk Mode (3/95)

Can I connect the Macintosh Portable to another Macintosh via the SCSI port?

This article has been archived and is no longer updated by Apple.
No, the Macintosh Portable does not support SCSI Disk Mode as is supported on most PowerBook computers.

For many reasons, you should not connect two Macintosh computers via SCSI cables, with the exception of PowerBook computers which support SCSI Disk Mode. This includes all PowerBook models except for the PowerBook 140, 145, 145B, 150, and 170.

The most important reason is that you would then have two devices (the computers, and often the internal drive) on the bus with the same SCSI ID. Further, a straight-through cable would connect outputs to outputs and inputs to inputs, which would bring communications to a halt.

Article Change History:
16 Mar 1995 - Updated list of computers which support SCSI Disk Mode.

Support Information Services
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Differences Between Type 1 and Type 3 Fonts

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Type 1

Type 1 fonts are outline fonts based on the Postscript language. Type 1 fonts are programmed according to the outline font format introduced by Adobe, and the Type 1 format is an open industry standard. Most Postscript printers contain a number of Type 1 fonts in ROM, and additional fonts can be downloaded. Type 1 fonts are more compact than Type 3 fonts, and the Type 1 font is the only font format ATM can rasterize.

Type 1 fonts are both encrypted and hinted. Encryption is the process used to protect font information (hints and character data) from inspection or modification. The encryption key has been published in the Adobe Type 1 Font Format book but is still useful for discouraging casual theft. Hinting consists of information added to an outline font greatly aid in better screen display at small point sizes (when using ATM) or when printing to low resolution Postscript devices or to non-PostScript devices. Hinting helps control vertical alignment, consistent stem widths, filling-in of counters, and discontinuities in thin strokes.

Type 1 fonts are multi-platform capable (Macintosh, PC, Unix) and more compact than Type 3 or TrueType fonts. They are easier to develop than TrueType fonts and their quality is more consistent. However, most differences between Type 1 and TrueType fonts are transparent to the user. The hand-tuned bitmaps for Windows TrueType fonts look better on screen than the bitmaps ATM creates.

Type 1 fonts are packaged in platform-specific formats (Macintosh, PC, Unix). The printer driver or downloader converts these platform-specific outlines into a device independent format expected by a Postscript printer and specified in the Type I Font Format book. This means a Type 1 font can be downloaded to any Postscript printer and be used by any Postscript file coming from a variety of platforms.

Type 3

Type 3 is an outline font format introduced by Adobe. The Type 3 format is also a Postscript program but unlike the Type 1 format Type 3 fonts do not contain hints. Type 3 fonts are also called "user-defined fonts," and are useful for describing complex graphic shapes, such as a logo. Type 3 fonts, like Type 1 fonts, may be a normal text face or a symbolic font. Unlike Type 1 fonts, the character descriptions for a Type 3 font can potentially use any graphic operator in the Postscript language. Because of this flexibility, the two most common uses of Type 3 fonts are for logos (symbolic) and for bitmap fonts where each character description is a small bitmap (more specifically, an image mask). For example, Microsoft's Windows 3.1 Postscript driver converts TrueType fonts into Type 3 bitmap fonts for printing to Postscript printers. Type 3 fonts are Postscript fonts which do not work with ATM because they allow use of the full Postscript language and ATM is not a full Postscript interpreter. They are not hinted and can exist in bitmap or outline form. They are useful for complex or ornamental fonts or logos. The Faux fonts made by Super ATM are Type 3 fonts.

Other Types

All Postscript fonts, whatever the type, contain the same basic data for describing character shapes. The different types are justdifferent ways of encoding the font for various systems.

Type 0 - Composite, or Kanji fonts. They can handle much larger character sets than Type 1.
Type 1 - Encoded in ASCII, and can be shared across a network.
Type 4 - Encoded in binary format for use on display postscript systems.
Type 5 - These fonts are ROM-based.
Type 6 - These are cartridge based fonts.

Special Characters

Although the Postscript language implements an ASCII character encoding scheme by default, this is changeable. Every font has an array called the Encoding array that maps character codes to names of procedures that draw the characters. It is possible to change this array in order to implement a different encoding system. Getting at unencoded characters is another reason to modify the encoding vector. Many Postscript fonts contain unencoded characters. These characters exist in the font, but by default are not placed in the Encoding array. Older printers containing version I Adobe fonts were delivered with a default "Standard Encoding" that is a subset of the ISO Latin I character set, and were missing characters we currently included see ROM font supplements. All downloadable Adobe fonts, and most ROM fonts depending on their date, are now complete.

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ClarisWorks: Extension (Init) Conflict with MenuChoice 1.1 (All)

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MenuChoice 1.1 (which creates hierarchical menus under the Apple menu) causes the Style menu to disappear when toggling back and forth between the Apple menu and ClarisWorks 2.0.

Published Date: Feb 18, 2012

CLARIS SWEEPS DATABASE, INTEGRATED AND GRAPHICS SOFTWARE CATEGORIES IN MACLIFE GRAND PRIX Ô94

Claris Macintosh software ranks number one in Japan

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
SANTA CLARA, Calif., -- February 3, 1994 -- Japanese versions of FileMaker Pro, ClarisWorks and MacDraw Pro software from Claris Corporation have won first-place honors in the MacLife Grand Prix '94. MacLife is one of the most influential monthly computer trade magazines published in Japan.

MacLife editors nominated products in twenty-five software categories including integrated software, graphics, database and others. The MacLife Grand Prix '94 winners were selected exclusively by reader's choice. FileMaker Pro,ClarisWorks and MacDraw Pro, the best-selling Macintosh products in their categories, were each named winners.

"The MacLife Grand Prix recognition is an important honor for Claris," said Daniel L. Eilers,Claris president and chief executive officer. "Hit products have fueled remarkable growth for Claris in Japan, as our revenue almost tripled in 1993."

Japan, where Macintosh business is expanding dramatically, ranks number two following the United States for sales of Macintosh systems. Claris Japan is committed to supporting this growing market and continues to provide Japanese Macintosh users with powerful, truly usable software solutions.

Claris products won 55 first-place awards from computer publications worldwide in its fiscal year 1993. Thanks to this steady stream of hit products, customers are rewarding Claris with great growth. Claris entered the ranks of the 10 largest personal computer applications vendors in 1993, growing by 48 percent with revenues for FY93 of $154.4 million - the highest growth rate of any of the top-ten vendors.

Claris Corporation, a leading worldwide vendor of Macintosh and Windows applications for business, education and home, is a subsidiary of Apple Computer, Inc., with headquarters in Santa Clara, Calif.

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Published Date: Feb 18, 2012

ClarisWorks: New ZModem Tool for Communication Environment (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

One of the most frequently asked of frequently asked questions on the Macintosh Internet discussion groups has been, "Is there a freeware or shareware ZMODEM tool for Communications Toolbox (CTB) programs?" Until very recently, the answer was always "No, and there aren't really any common commercial ones either." Aladdin solved the commercial conundrum by including one with their popular new program, SITcomm, and DCA's CrossTalk for Macintosh also includes one. But now, thanks to Mark/Space Softworks there is a free ZMODEM tool on the nets.

The tool (which lives in your Extensions folder) works with numerous CTB programs such as the communications modules in ClarisWorks, GreatWorks, and Microsoft Works, Synergy's powerful VersaTerm, and Tim Endres's free Termy. It supports auto receive, picks up interrupted transfers in the middle, supports batch transfers, works over telnet connections and serial connections using software flow control, and includes full status information.

The catch? "There must be a catch," you say. You're right. The free version of the ZMODEM tool is actually a demo for the $29.95 commercial version, but the difference between the two is that the free demo version supports only downloading. Thus, if you're like most people and mostly or only download files, the demo will serve your needs. And of course, you can order the full version with the order form included with the demo should you wish to take advantage of the speed and features of ZMODEM when uploading.

Mark/Space Softworks
800/799-4737
510/649-7627
408/982-9781 (support)
408/982-9780 (fax
mspace@netcom.com
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ClarisWorks: Performa Clip Art Collection Tip

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you open up any of the "Performa Clip Art Collection" files directly, it will open itself into the Drawing (Graphic) environment. This makes it difficult to work with if the document contains more than one image. (These images cannot be Ungrouped even though the Ungroup Picture command is available under the Arrange menu.)

A better option for these multiple image files:
Note: The full color Painting environment in ClarisWorks can demand a large amount of RAM - Increase ClarisWorks RAM memory allocation as high as possible before attempting these steps (see the Installation Guide, page 12)

1- Open the (multiple image) clip art document.
2- Under the File menu, select Save As.
3 - Pop down the Save As menu and select PICT format.
4 - Type in a name, and click Save.
5- Under the File menu, select Open and Pop Down the Document Type menu to select Painting.
(If the available memory needs to be set higher, only part of the document may open.)
6 - Select and Open the PICT file you just saved.

Now you will be able to select any part of the artwork with the lasso tool, Copy it, and Paste it into your own document.
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ClarisWorks: Instructional Books for Teachers and Classrooms

ClarisWorks Training resources for Educators
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks in the Classroom
(1/1/97 - No longer available from Claris - Available from CWUG (313) 665-8991)
Claris Corporation
This collection of 25 lesson plans covers language arts, social studies, mathematics, and science, integrating computers into the curriculum. Developed by the North York (Ontario) Board of Education and published by Claris Corporation, it offers hands-on active learning experiences using concepts and skills that cross disciplines. Included is a disk with files the students use for their work.

ClarisWorks for Teachers
(1/1/97 - no longer available from Claris - will be available from 3rd party)
Claris Corporation
Made especially for Teachers, this 208-page tutorial contains six well-designed, concise lessons that teach you how to manage classroom tasks with ClarisWorks. The step-by-step lessons show you how to prepare letters to parents, produce school newsletters, develop grade books, maintain student records, and develop a presentation with ClarisWorks. Published by Claris Corporation.

Essentials of ClarisWorks
Jan Harrington
This 270-page student textbook and associated ClarisWorks data disk is part of the series of popular "Essentials of..." books published by Course Technology. "Essentials of ClarisWorks" includes an introduction to Macintosh computing and step-by-step instructions that describe how to use the ClarisWorks environments. Each chapter concludes with a series of exercises where you practice the skills you just learned. Cost is $29. Amy Oliver, Course Technology, Inc., 1 Main Street, Cambridge, MA 02142; (800) 648-7450; Fax: (617) 225-7976.

Hands-On ClarisWorks
Arthur Leuhrmann and Herb Peckham
This 496-page textbook is designed for a half-year course in grades seven and above on word processing, databases, spreadsheets, graphics, and communications using ClarisWorks. The Hands-On ClarisWorks package includes the textbook, a data disk with dozens of sample files and templates referenced in the book, a 96-page teacher's guide, and a set of reproduction masters. Cost is $34.95. C¥WUG special price, $29.95. A sub-set of Hands-On ClarisWorks entitled "ClarisWorks Word Processing" is also available for $29.95. Teachers can examine either set for 30 days without obligation. Then you either pay for or return the sample materials. Computer Literacy Press, 5750H Obata Way, Gilroy, CA 95020; (800) 225-5413; Fax: (408) 848-1483.
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ClarisWorks: How Postscript Fonts Work

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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PC Fonts consists of three files:
.AFM - Adobe Font Metric
.PFB - Printer Font Binary
.INF - Font Information

Windows Screen fonts consists of:
.PFM - Printer Font Metrics - contains only metric information.
FON - Windows bitmap screen fonts and metrics information.
* Postscript printers and HP PCL printer require .PFM files.
Windows screen fonts are 96 dpi at standard VGA 640x480 resolution.

Mac Fonts consists of three files:
Adobe Font Metrics,
Bitmaps screen fonts,
and Outlines files.

Mac screen font:
Contain bitmap font
and metrics font.
Macintosh bitmaps are 72 dpi.

Font Parts

Bitmap font (Screen Fonts) - A pattern of dots (bits) that closely resembles a character shape in a given typeface, point size, rotation and resolution. Bitmapped characters used as screen fonts tend to be jagged, as opposed to smooth characters generated from outlines. Bitmaps cannot be scaled without distortion and require consider-able storage space. They provide screen pictures to your applications of what certain fonts look like at specific sizes.

On the Macintosh, when applications are launched, they read the system for installed bitmaps and then build the font menu from this information. These bitmap fonts can be installed in the system file, with a font utility, or if using System 7.1, in the Fonts folder. If you ever need to use a font size in your application different from those sizes installed, then the operating system will scale the nearest bitmap size to approximate the requested size on screen unless you have ATM. Bitmapped fonts for both System 6 and System 7 have numbers appended to the ends of their names. Numbers correlate with the bitmap sizes contained in the bitmap file. For example, the "Adobe Garamond Bold 18" file describes the appearance of all characters in the Adobe Garamond Bold typeface when displayed at 18 point size. Bitmaps of many sizes and styles are usually grouped together within a single suitcase file. Under System 6, the contents of suitcase files may be examined with the Font/DA version 3.8 or later. Under System 7, double-clicking on a suitcase file will open the file and display the bitmaps, just as if the suitcase file were a folder.

Outline font-A method of describing the shapes of the characters in a typeface by a program. This mathematical representation of lines and curves is resolution-independent and device-independent.

Outline fonts (Printer fonts) contain mathematical descriptions of each character in a typeface's character set. This description applies to all sizes. All Adobe Postscript out-line fonts have the slanted A icon with horizontal lines in the background. Postscript printers have the ability to scale outline fonts to produce high quality, high resolution output. With ATM installed, outline fonts make it possible to display all sizes of text at maximum screen resolution, as if bitmaps for all possible sizes were available.
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ClarisWorks: Modem Types Reduced in Apple Modem Tool 1.5 (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
With the release of Apple Modem Tool 1.5, Apple decided to discontinue built-in initialization strings for modems made by other manufacturers, due to support issues. You can add a custom initialization string by following these directions:

1. Select Connection from the Settings menu.

2. Select your modem type from the modem popup menu if it is listed. Otherwise, look for your modem in the list or recommended initialization strings below and specify the corresponding string by choosing Custom from the popup menu and entering it. (If you do not see a Custom item, hold down the option key before clicking on the menu. You have an earlier version of the Apple Modem Tool and should obtain the ClarisWorks 1.0v4 updater or purchase the ClarisWorks 2.1 upgrade.)

3. If you didn't find your modem in the list below, you can either call your modem manufacturer to ask them what string to use, or select the Hayes-compatible option in the Apple Modem Tool dialog.

TIP: If you want all new communications documents to default to using the new initialization string you set, select Save As, title your document "ClarisWorks CM Options", select ClarisWorks Stationery from the popup menu, and save it into the Claris folder in your System folder.

Modem Type	Recommended Initialization String
Apple 1200	ATS0=0V1E1H0X1
Apple 300	ATS0=0V1E1H0X0
Apple Data Modem 2400	ATS0=0V1E1H0X4 \\N0 &C1
Apple Personal Modem	ATS0=0V1E1H0X1
Apple Portable Data Modem 2400	ATS0=0V1E1H0X4 &C1
Global Village PowerPort	AT &F %C1 \\J0 \\N4 \\Q3 W1
Global Village TelePort	AT &F Q0 L1
Hayes 9600 Ultra/Optima	AT &F
Hayes Compatible Modem	ATS0=0 V1 E1 H0 X4
Hayes SmartModem	AT S0=0 V1 E1 H0 X4 &C1
Macintosh PowerBook Modem	ATS0=0V1E1H0X4 &K3
Microcom AX	ATS0=0 V1E1 H0 X4 &C1
Practical Peripherals 9600SA	AT &F S0=0 &C1 W1
Prometheus 2400 Plus	AT &F3 \\V1 \\Q3 \\X1
Prometheus 9600	AT &F S0=0 &D0 X4 *M1*F3*E5
Prometheus Ultima	AT &F S0=0 &D0 X4 *M1*F3*E9
Prometheus Ultima Home-Office	AT &F &D0 \\X1
PSI Comstation 1/4/PowerModem	AT &F &C1
PSI ComStation 2	AT &F &C1 W1
PSI ComStation 3/5	AT &F &C1 W1
Shiva NetModem 2400	AT &F
Shiva NetModem E	AT &F W1
Shiva NetModem V.32	AT &F
Supra FaXModem Plus	AT &F1 &C1 W1
Telebit QBlazer	AT &F &C1 X2 S58=2 S68=255
Telebit T1600	AT &F9 X12 &C1 &D0 S111=0
Telebit T2500	AT &F S0=0 S58=2 S66=1 S92=1
Telebit T3000	AT &F9 X12 &C1 &D0 S111=0
TeleBit Trailblazer	AT S0=0 V1 E1 H0 X3
US Robotics Courier 2400 E	ATS0 V1 E1 H0 X4 &C1
US Robotics Courier V.32	AT &F X7 E1 Q0 V1 &V1 &B1 &C1 &D0
US Robotics HST	AT &F E1 &B1 &H1 &R2 S0=0

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ClarisWorks: Line and Character Spacing on Printout Not Matching Preview

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This article has been archived and is no longer updated by Apple.

In order to get correct WYSIWYG response with ATM fonts, be sure and click the Preserve Line Spacing button in the ATM Control Panel. However, using this option may clip characters slightly on non - Postscript printers. You can also minimize or eliminate inaccurate line spacing and page breaks by leaving the Preserve Character Shape option on and using your application to adjust the line spacing manually.

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ClarisWorks: Text Fading At Edges of Printout When Printing Landscape

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When printing in landscape mode to a PCL printer such as an HP Laserjet II, III or IV series printer, make sure the printer has the setting FORM LINES=60.

This setting will prevent printed text from fading out at the edge of the page and will also cure banding and 1 letter printing on envelopes.

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Claris Ships ClarisWorks 2.0 English/Spanish Bundle for Education Market

Integrated software tailored for bilingual instruction and ESL programs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
SANTA CLARA, Calif., -- February 16, 1994 -- Claris Corporation today announced that ClarisWorks 2.0 for Macintosh, the #1 best-selling integrated software on Macintosh, is now available in a special English/Spanish bundle for the Education market. The bundle consists of both English and Spanish versions of the product. Both versions offer identical features and user interfaces. The Spanish version has been fully localized with Spanish menus, on-line help, dictionary and thesaurus. The consistency between the two versions makes ClarisWorks ideal for students who are transitioning from one language to another, particularly Spanish students who are learning English.

"Claris recognizes that there are many philosophies to teaching in bilingual programs," said Karen Billings, manager of education solutions for Claris Corporation. "This ClarisWorks English and Spanish bundle can be used in programs whose primary focus is to teach Spanish-speaking students to read and speak English or to teach the core subjects in Spanish while students are learning to speak English. We are bundling ClarisWorks English and Spanish versions to provide students and educators with the best software solution for bilingual and ESL regardless of teaching philosophy."

This enhanced bundle seamlessly integrates word processing, graphics, spreadsheets, charting, database management and communications tools giving education users new ways to easily manage and share information. The ClarisWorks English/Spanish bundle is available now to education institutions in the U.S.

"For both administrative tasks and classroom use, ClarisWorks is one of the best integrated software solutions," said Stephen Cohen, district technology planner for Paterson Public Schools in Paterson, NJ. "Using ClarisWorks 2.0 English and Spanish versions, we're developing an international business studies program for high school students. ClarisWorks provides students fluent in both English and Spanish with a complete tool set for recording, analyzing and presenting data gathered while studying social science subjects like the recent North American Free Trade Agreement."

ClarisWorks sets standard for integrated software

ClarisWorks features a breakthrough in interface design that is unique among integrated packages. While other integrated products bolt together separate mini-applications, ClarisWorks seamlessly integrates word processing, spreadsheet, charting, database, graphics and communications environments.

ClarisWorks 2.0 includes new outlining, presentation slide show and painting capabilities giving students, instructors and administrators a complete set of tools to produce a wide range of documents and manage a variety of information. Worldwide, educators use ClarisWorks for everything from developing lesson plans and creating student exercises, to tracking progress reports and calculating student grades. ClarisWorks is used by more education institutions than any other integrated software package.

Pricing and availability

The ClarisWorks English/Spanish bundle is available to all K-12 and higher education institutions including public and private schools and regional education agencies direct from Claris. The suggested list price for the ClarisWorks bundle is $199 and site licensing options are available. For more information about the ClarisWorks English/Spanish bundle or pricing options, contact Claris Education Sales at (800) 747-7483.

Claris Corporation, a leading worldwide vendor of Windows and Macintosh applications for business, education and home, is a subsidiary of Apple Computer, Inc. with headquarters in Santa Clara, Calif.

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Offer for Claris CAD Customers to Switch to Vellum Extended by Ashlar Indefinitely

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Prices Subject to change, please call Ashlar at 800-877-2745, outside the United States, call 408-746-1800 for more information

Ashlar has extended indefinitely its discount on Vellum to registered Claris CAD customers. Registered Claris CAD users can purchase Vellum 2.5 from Ashlar for $695 for the 2D and $795 for the 3D. This is a significant discount off the standard retail prices of $2495 (2D) and $2995 (3D).

Ashlar Vellum 2.12, the original version available to registered Claris CAD at a special discount price, was available for $399 for 2D and $499 for 3D. When version 2.5 became available, ALL VELLUM CUSTOMERS,including Claris CAD users and regular retail customers, who had purchased Vellum prior to November 1, 1993, were required to pay an upgrade fee to receive Version 2.5. Those who purchased Vellum 2.12 at FULL RETAIL after 11/1/93 received a free upgrade to Vellum 2.5. Claris CAD registered users purchasing the product after 11/1/93, continue pay the initial discount price plus the upgrade fee.
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ClarisImpact: Disk Space Sizes for Custom Installations

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisImpact Easy Install uses approximately 20MB of disk space to complete the installation. However, the Installer needs additional hard disk space beyond what these files use, which is used for expanding compressed files.

You may not need all of the files that a full install puts on your drive, or you may not have enough disk space to complete the full install. By pressing Customize, you can pick and choose which files you need. For example, if you don't have a color monitor, you can save some space by installing ClarisImpact with only the Black & White styles.

If you install all of the Claris Art, it takes up 7.5MB of disk space. You can save some space by installing minimal Claris Art, which takes up only 1.7MB of disk space, or if you have existing artwork or graphics in PICT, TIFF or EPSF, you can skip the Claris Art altogether.

If you are comfortable working on a program without the online help, you can save another 1.6MB of disk space.

NOTE: If you have other Claris applications, you already have a Main Dictionary, Claris XTND System, and Claris Translators in your Claris folder. The ClarisImpact Installer will only install those translator items that you don't already have, and will update older versions of the Main Dictionary and XTND System.

Below are some sample Mac configurations and custom install options. The first column of numbers is hard disk space required for the installation, the second column is actual disk space taken by the installed files. Remember that after the installation is complete, the ClarisImpact files will only take up the amount of space in the right column.

1. If your Macintosh has a black and white monitor with System 6.07, and no need for additional artwork or special fonts (a "Bare Bones Installation"):

ClarisImpact Application	1.3MB	1.3MB
B&W Styles	1.6MB	1.5MB
Total:	2.9MB	2.8MB

2. For a Macintosh running System 7 with a black and white monitor, where you will be creating mostly report documents and charts:

ClarisImpact Application	1.3	1.3
B&W Styles	1.6	1.5
ClarisImpact Help	2.0	1.6
Fonts for System 7	1.4	1.1
Dictionaries	336K	336K
Total	6.6MB	5.8MB

3. For a Macintosh running System 7.1 with a color monitor, where you have a need for some artwork and you'll be translating files from other programs into ClarisImpact:

ClarisImpact Application	1.3	1.3
Color Styles	1.8	1.7
Color Palettes	64K	32K
Minimal Claris Art	2.1	1.7
Fonts for System 7.1	1.4	1.1
XTND Package	1.2	980K
Total	7.8MB	6.8MB

4. You have a Mac with a large color monitor and have System 7.1. You create presentation slides and complex reports but you want to add punch to your work:

ClarisImpact Application	1.3	1.3
Color Styles	1.8	1.7
ClarisImpact Help	2.0	1.6
Claris Art	9.3	7.5
XTND Package	1.2	980K
Fonts for System 7.1	1.3	1.1
Total	16.9MB	14.1MB

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LocalTalk PC Card: How to Configure It for TOPS

TOPS documentation claims support for the LocalTalk PC Card. I want to communicate through the card from a PC using TOPS. Although TOPS claims support for the card, their technical support group could not tell us how the card must be configured. Can you help?

This article has been archived and is no longer updated by Apple.
TOPS Technical Support told us how to configure their software for use with the LocalTalk PC Card. The most common problem encountered in this situation is that some required software is not included with the LocalTalk PC Card. AppleShare PC and the LocalTalk PC Card were originally shipped as a package. They are now separate items.

Users of the TOPS card should have an AUTOEXEC.BAT file that looks like this:

```
ALAP
PSTACK
TOPSTALK
TOPSKRNL
```

Users of the LocalTalk PC Card should have an AUTOEXEC.BAT file that looks like this:

```
LSL
LTALKP
ATALK
COMPAT
TOPSTALK
TOPSKRNL
```

Note that the first two files for the TOPS card user are replaced by the first four files shown for the LocalTalk PC Card user. The .COM files associated with the names above are included with AppleShare PC.

After starting up with the above AUTOEXEC.BAT file on disk, run TOPS menu and proceed as described in the TOPS documentation.

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ClarisImpact XTND Translators Included in Package

Contents of the Claris Translators folder for ClarisImpact.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Listed below are the XTND translators included with ClarisImpact, organized by environment.

Report environment:

Filter	Version	Import/Export	Platform	Open Save Place
ASCII Text	1.0	I	Both	OP
CGM	1.0x26	I	Mac	OP
DIF	1.0	I	Both	OP
EPSF	1.0v4	I/E	Mac	OSP
GIF	1.0	I	Both	OP
MacDraw II 1.1	1.0v4	I/E	Mac	OSP
MacDraw Pro	1.0x16	I/E	Mac	OSP
MacPaint	2.0v2	I	Mac	OP
MacWrite II	1.0v2	I	Mac	OP
MS Word 3.0	1.0v1	I	Mac	OP
MS Word 4-5**	1.0v3	I	Mac	OP
MS Excel 3.0	1.0	I	Mac	OP
MS Write 1.0	*	I	Mac	OP
PICT	2.0v2	I/E	Mac	OSP
QuickTime Movie	1.0	I	Mac	OP
RTF	1.0v2	I	Both	OP
SYLK	1.0	I	Both	OP
Text	1.0v1	I	Both	OP
TIFF	2.0v2	I	Both	OP

Presentation environment:

Filter	Version	Import/Export	Platform	Open Save Place
ASCII Text	1.0	I	Both	OP
CGM	1.0x26	I/E	Mac	OSP
DIF	1.0	I	Both	OP
EPSF	1.0v4	I/E	Mac	OSP
GIF	1.0	I	Both	OP
MacDraw II 1.1	1.0v4	I/E	Mac	OSP
MacDraw Pro	1.0x16	I/E	Mac	OSP
MacPaint	2.0v2	I	Mac	OP
MacWrite II	1.0v2	I	Mac	OP
MS Word 3.0	1.0v1	I	Mac	OP
MS Word 4-5**	1.0v3	I	Mac	OP
MS Excel 3.0	1.0	I	Mac	OP
MS Write 1.0	*	I	Mac	OP
PICT	2.0v2	I/E	Mac	OSP
QuickTime Movie	1.0	I	Mac	OP
RTF	1.0v2	I	Both	OP
SYLK	1.0	I	Both	OP
Text	1.0v1	I	Both	OP
TIFF	2.0v2	I	Both	OP

Drawing environment:

Filter	Version	Import/Export	Platform	Open Save Place
ASCII Text	1.0	I	Both	P
CGM	1.0x26	I	Mac	O
DIF	1.0	I	Both	P
EPSF	1.0v4	I	Mac	OP
GIF	1.0	I	Both	OP
MacDraw II 1.1	1.0v4	I	Mac	O
MacDraw Pro	1.0x16	I	Mac	O
MacPaint	2.0v2	I	Mac	OP
MacWrite II	1.0v2	I/E	Mac	OSP

MS Word 3.0	1.0v1	I/E	Mac	OSP
MS Word 4-5**	1.0v3	I/E	Mac	OSP
MS Excel 3.0	1.0	I	Mac	OP
MS Write 1.0	*	I/E	Mac	OSP
PICT	2.0v2	I	Mac	OP
QuickTime Movie	1.0	I	Mac	OP
RTF	1.0v2	I/E	Both	OSP
SYLK	1.0	I	Both	P
Text	1.0v1	I/E	Both	OSP
TIFF	2.0v2	I	Both	OP

*The MS Write 1.0 translator is packaged inside of the Microsoft Word 3.0 translator.
** The MS Word 4-5 translator translates versions 4.0 and 5.0 of Word. Versions 5.1 and later of Word are not supported. Translations of those documents might result in garbage characters, incorrect formatting or error messages.
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ClarisWorks: Apple Events Are Not Supported

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Applications that are "Scriptable" by scripting applications such as AppleScript, contain a resource called the "AETE Resource." ClarisWorks 2.0 through 2.1v2 contained an AETE resource. This resource was removed in ClarisWorks 2.1v3 and v4. AppleEvents are NOT A SUPPORTED FEATURE OF CLARISWORKS, nor have they been fully tested by Claris. You can still send events to ClarisWorks 2.1v3, v4, and 3.0 but Claris Corporation does not recommend or support this.

Here is how the ClarisWorks 2.1v1 and 2.1v2 event dictionary appears in the AppleScript Script Editor. ClarisWorks 2.0 did not include Core: Class events.

Required Suite: Events that every application should support

Quit Application: Quit application
Quit Application

Print Documents: Print the specified list of documents
Print Documents alias -- List of documents to print

Open Documents: Open the specified list of documents
Open Documents alias -- List of documents to open

Open Application: Sent by finder when user double clicks on the application
Open Application

Core Subset: Subset of definitions from the core suite

Get Data: Get the data from an object
Get Data reference -- The object whose data is to be returned
[Return Type type class] -- Desired types for data
Result: anything

Set Data: Set an object's data
Set Data reference -- The object to change
Data anything -- The new value

Class Document: A live document
Elements:
Record by numeric index, by name
Properties:
Name string [r/o] -- The name of the document

Class Record: A Data Base record
Elements:
Cell by numeric index, by name
Properties:
Index integer -- The record number

Class Field: A Data Base field
Elements:
Cell by numeric index, by name
Properties:
Name string [r/o] -- The name of the field

Class Cell: A Data Base cell
Properties:
Name string [r/o] -- The name of the field
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CLARIS ENDS DEVELOPMENT OF CLARIS RESOLVE

Claris Resolve users offered option to purchase ClarisWorks for Macintosh at special reduced price

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
SANTA CLARA, Calif. -- February 28, 1994 -- Claris Corporation today announced that it has ceased development of the Claris Resolve spreadsheet application and will not sell it after March 31, 1994. Claris will continue to provide technical support for registered Resolve users for one year (through March 31, 1995).

To assist Claris Resolve owners who may want to move to another spreadsheet in the months ahead, Claris is offering these users ClarisWorks 2.1, the #1 best-selling integrated application on Macintosh, for a special price of $29 in the U.S. through September 30, 1994. The suggested retail price for ClarisWorks 2.1 is $299.

In addition to its spreadsheet functionality, the "document-centric" approach of ClarisWorks combines full-featured word processing, database, painting, drawing, outlining, communications and presentations capabilities in a single compact application. Many Claris Resolve users in education, home and business settings who do not require custom spreadsheet applications and scripting may find its breadth of solutions a compelling choice.

"Despite its usability breakthroughs, superior performance and minimal hardware footprint, Claris Resolve was unable to garner the necessary market acceptance to be a sustainable long-term competitor in the Macintosh spreadsheet market," said Steve Pollock, vice president of worldwide product marketing. "While clearly a difficult decision, this move enables Claris to focus on delivering award-winning cross-platform products in important categories, and evolving key Macintosh applications. It is our hope that by extending the ClarisWorks special offer as one possible transition path and by continuing technical support for an additional year, Claris can show its appreciation for the past support of Claris Resolve owners."

Claris Background

By consistently focusing on products for generalist users, a fast-growing segment of the total software market, Claris has grown to one of the 10 largest personal computer applications software vendors worldwide. Claris recently reported that net revenues for the first quarter of FY1994 were $44.9 million, representing 16 percent growth over the $38.8 million posted the same quarter in 1993.

Claris growth rate continues to outpace the software industry average. The company's FY1993 revenues were $154.4 million, a 48 percent increase over FY1992.

The continuing success of FileMaker Pro and ClarisWorks on both Windows and Macintosh platforms accounted for much of first-quarter growth, Claris said. Those products are best-sellers in the Macintosh database and integrated software categories, respectively.

Claris launched 1994 with the shipment of MacWrite Pro 1.5, the popular Macintosh word processor, and ClarisImpact on Macintosh, the first of a new family of cross-platform graphics products. This year Claris will also introduce new software for Apple's Macintosh with PowerPC microprocessor, and continue to break new ground in combining power and usability with Windows and Macintosh applications.

For general information about Claris products and non-technical questions, users should call customer relations at (800) 3CLARIS. Claris Resolve users who wish to order ClarisWorks at the special $29 price should call (800) 544-8554. Their Claris Resolve product serial number will be requested as proof of purchase.

Claris Corporation, a leading worldwide vendor of Windows and Macintosh applications for business, education and home, is a subsidiary of Apple Computer, Inc., with headquarters in Santa Clara, Calif.

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ClarisWorks: Macintosh Version 2.1v2 Updater, Release Notes

Release Notes included with ClarisWorks 2.1v2 Updater

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Welcome to ClarisWorks 2.1!

Thank you for choosing ClarisWorks 2.1. We're excited about this new release of ClarisWorks and we hope you will enjoy using it. This document provides some late-breaking information that couldn't be included in the printed manual.

Please read this file carefully. It contains several important tips that may give you better results or make it easier for you to use ClarisWorks. You may even wish to print this document for use after you have installed ClarisWorks.

PERFORMANCE TIP

* Adjusting ClarisWorks Memory

As with any Macintosh program, you will gain greater flexibility and performance if you increase your application memory size. This is especially true if you work in the Paint environment, work with larger documents, or work with a number of documents during the same session. Similarly, if it takes a long time to print documents, increasing the memory size may help. For more information on increasing memory size, consult the ClarisWorks Installation and New Features Guide, under adjusting memory.

NEW FEATURES AND CHANGES IN VERSION 2.1

ClarisWorks version 2.1 has a number of powerful new features, and enhancements to several existing features. The Installation and New Features Guide describes the most important changes. Additional information is outlined below.

* Balloon help is now available for the buttons in the shortcuts palette. If you are unsure of which command a button performs, choose Show Balloons from the Help menu to display the name of the button.

* The Make Custom Style shortcut now appends style information to the font and size in the Style menu.

* If you import a PICT file into a paint frame or document, ClarisWorks now matches the imported file's resolution. It will also use the color table of the original picture.

* If you set the default fill pattern to be transparent, ClarisWorks now displays the Transparent icon in the pattern indicator of the tool panel.

* New file filters have been added to ClarisWorks 2.1. A ClarisWorks 1.0 text filter has been included to simplify translation of ClarisWorks 2.0 or 2.1 files to ClarisWorks 1.0. A new filter provides support for reading and writing Excel 4.0 files.

* ClarisWorks 2.0 and 2.1 files are identical. Version 2.0 can open version 2.1 files automatically and vice versa. ClarisWorks 1.0 files can be opened in version 2.1. You will be notified when ClarisWorks 1.0 files are opened in version 2.1 and, to ensure that your ClarisWorks 1.0 files are not saved over unintentionally, a suffix "[v2.1]" will be appended to the file name. If you want to replace your ClarisWorks 1.0 files with ClarisWorks 2.x versions, you may do so easily. Simply perform a Save or Save As, remove the "[v2.1]" when defining the file name, and click "Yes" when asked if you want to "Replace existing" file.

* Discretionary hyphens included in documents created in version 2.1 will appear as box characters when the file is opened using 2.0.

SOME TIME SAVING FEATURES

* "ABOUT Stationery"

This file contains information about using and creating Stationery files with ClarisWorks 2.1. Stationery files are templates that can save you time when you create a new document such as a memo or letter. To access the "ABOUT Stationery" file, select New... from the File menu, click on the pop-up list to the right of the Stationery label, select "ABOUT Stationery", and click OK.

* "ABOUT Sample Files"

This file describes the Sample Files that are included with ClarisWorks 2.1. Some of the sample files were specifically created to be used as is-just enter your own information. Other sample files demonstrate the wide range of possibilities ClarisWorks provides. "ABOUT Sample Files" is in the Sample Files folder within the ClarisWorks 2.1 folder.

* "More About Shortcuts"

Shortcuts are timesavers that give you pushbutton access to over 150 of the most frequently performed day to day tasks. You can personalize your Shortcuts palette to include those commands that you find useful. For a complete list of the Shortcuts and brief descriptions of what they do, open "More about Shortcuts". You will find it in the Sample Files folder within the ClarisWorks 2.1 folder.

PRINTING TIP

* LaserWriter IIg/IIf Owners

If you notice that horizontal or vertical lines in your documents are not being printed correctly, you will need to make a simple adjustment to your LaserWriter's settings. To do this you will need the LaserWriter tools disk that came with your printer. Just follow these three steps:

1. Open the LaserWriter Utility application on the LaserWriter disk.
2. Under the Utilities Menu, choose Set PhotoGradeTM.
3. Move the slider all the way to the left towards the "More Levels of Gray" option.

Your printer has now been reconfigured with the proper settings.

COMMUNICATIONS NOTES

* Claris Kermit Tool

ClarisWorks 2.0 includes a Kermit file transfer tool for Apple's Communications Toolbox. It is automatically installed into the Extensions folder under System 7 or into the Communications Folder under System 6. This tool behaves in much the same way as the XMODEM file transfer tool. If you use System 7, you can turn on Balloon Help under the Help menu to get additional information.

* VT320 Keys

This sample document contains Shortcuts that are the equivalent of function keys found on VT220 and VT320 terminals. When you open the document you will see information on using these Shortcuts.

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Claris Applications: Crashes when Launched from a Server

What to check for if your application crashes when you launch from a server machine

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Launching a server-based application may result in a crash at the point of the splash screen display, if the workstation is running a 68040 microprocessor. Apple Computer is aware of the issue, and is distributing a system extension named Network Launch Fix, version 1.0.2, that corrects the issue. Note that this issue only applies to 68040 computers.

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Multi-launching ClarisWorks from a Network Server (All)

Results of informal testing of the multi-launch capabilities of ClarisWorks 2.1v2 along with some historical findings about previous versions.
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This article has been archived and is no longer updated by Apple.
ClarisWorks can be installed on a server and legally launched by multiple users as long as the server uses a "software mechanism" that meters usage and locks out those concurrent users in excess of the legal number of licensed copies owned. Claris has not officially tested this configuration, but informal testing indicates only a few limitations, outlined below.

NOTE: This configuraton is only recommended for sites that have Macintosh computers without hard drives or where hard drive space is very minimal.

1. Install ClarisWorks on the server using the Easy Install button.
2. After installing, open the System folder and then open the Claris folder.
3. Choose Select All from the Edit menu and drag all the files into the ClarisWorks application folder that the installer created at the root level of your hard drive.
4. Arrange the files in the ClarisWorks folder so that the ClarisWorks application, and the Sample Files and Tutorial folders are visible and all the other files are hidden from view in the window.
5. Set the access priviledges on the server according to your needs. Note that limitations differ depending on whether you provide write access or not.

In our informal testing, all of the following actions were done simultaneously on two guests to test the multi-user capabilities of the auxiliary files located in the ClarisWorks folder on the server.

Things that worked fine with read/write access

Online Help
Show Balloons
ClarisWorks Stationery
XTND
Thesaurus
Auto Hyphenation

User Dictionary - A word added by one user is accessible by another user. Thus, the User Dictionary is shared by all users.

Preferences - The Make Default button modifies the Preferences file, but this doesn't take effect for other users until they Quit and re-launch ClarisWorks. Default Preferences are loaded at launch time. The same Preferences file is shared by all users, making individual default preferences impossible in this configuration. However, each person can create preferences for individual documents without using the Make Default button.

Things that didn't work with read/write access

Main Dictionary - only accessible by one user at a time; successive users get the erroneous message "Cannot find Cannot write to hyphenation dictionary."

Claris Fonts - Only the first user to launch ClarisWorks sees WYSIWYG fonts in the Fonts menu. With access priviledges set to Read Only, no one sees WYSIWYG fonts.

ClarisWorks Labels - Only one user can access ClarisWorks Labels at once. Successive simultaneous users will only see the Custom item.

Additional things that didn't work when access priviledges were set to read only

Clicking the Learn button in the spell checker brings up the erroneous message "Cannot find Cannot write to hyphenation dictionary..."

Recording a macro without selecting the Document Specific checkbox results in an alert that the File is Locked. The same thing happens if you try to Edit the Shortcuts pallette.

Clicking the Make Default button in Preferences results in a File is Locked alert.

Font menu is not WYSIWYG for first user to launch or any successive users.

Earlier Versions

Only ClarisWorks1.0v3 and later are capable of being multi-launched off a network server.

TA42674_Multilaunching_ClarisWorks_from_a_Network_Server_All.pdf

ClarisWorks 2.0v1 crashes when a person does a spell check when someone else is also using that feature. Only the second user crashes. The person who was already using the feature is unaffected.
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Basic Troubleshooting for PowerTalk issues with ClarisWorks and MacWrite Pro

Basic Troubleshooting for PowerTalk issues

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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Q:After the installation of an application, the mailbox is gone from the desktop.
A: Installer script turns off the mailbox since it is seen as an application. Go into the PowerTalk setup control panel and verify that PowerTalk services are unavailable and reboot the machine.

Q: In ClarisWorks 2.1 or MacWrite Pro 1.5, the mail command is gray under the file menu.
A:Either 7 pro is not installed or PowerTalk services are unavailable. To check for 7 pro, do about this Macintosh and verify that the system version is 7.1.1. If that's what they have, again go into the PowerTalk setup control panel and verify that PowerTalk services are available.

Q: In ClarisWorks 2.1 or MacWrite Pro 1.5, I sent a document and it never arrived at the destination.
A: Was it sent as server based mail or direct AppleTalk? Whichever it was try the other method, by readdressing the mailer. Are you able to send mail to that particular destination using AppleMail?

Q: In ClarisWorks 2.1 or MacWrite Pro 1.5, After I've chosen the Add mailer command, I click on the recipients button to address the letter and nothing comes up or it freezes?

A: Remember, Mailer and above is system level, Below Mailer is Claris territory. Best way to check for problems is again try to address an AppleMail document the same way and look for the same results.

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ClarisWorks and MacWrite Pro Now are both Powertalk-savvy.

MacWrite Pro 1.5 and ClarisWorks 2.1 fully support PowerTalk, the new collaboration software built into Apple Computer Inc.'s System 7Pro.
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ClarisWorks and MacWrite Pro now are both Powertalk-savy. What does that mean? PowerTalk is one of the first products to come out of Apple's emerging technology, AOCETM (Apple Open Collaboration Environment),the set of programming and human interface elements that will one day be as common as the print command in all your applications.
Until that day comes, ClarisWorks 2.1 and MacWrite Pro 1.5 are ahead of the game in this new genre for software: collaborative applications that help individuals communicate and work together with others more effectively. PowerTalk lets you consolidate and share data. In addition, you can also send electronic mail and faxes directly from within MacWrite Pro1.5 or ClarisWorks 2.1.
The new Mail command in the File menu is what you use to address and send several types of local and remote messages. You can attach any type of document including text, graphics,video and sound to your mail documents. With this new soft ware, you no longer have to exit your document, open a communications application, create a document and attach your MacWrite Pro or ClarisWorks document to send local or remote messages.
This is no ordinary electronic mail. You can mail in three ways, as:
* **Apple Mail.** This would be useful if the recipient does not have the PowerTalk savvy application you are using to send mail. Since AppleMail comes with System 7 Pro the recipients of your mail will be able to view and edit the document from within AppleMail. Think of the AppleMail environment as TeachText, your very basic word processor.
* **Snapshot.** The recipient gets a picture (PICT format) of your document with all the formatting. I can be read in AppleMail.
* **Native format.** The recipient gets a document of same type. Providing they have the same Application you sent it in, they will get a MacWrite Pro or ClarisWorks document. You can also take advantage of the XTND translator system that is part of the Claris application send files in an appropriate format. Just address your document and choose Send from the Mail sub-menu in the File menu. Send spreadsheets from ClarisWorks, QuickTime movies in MacWrite Pro frames. Since the process is streamlined and uniform, you don't have to think about it.

Collaborative capabilities PowerTalk is more than just electronic mail. AOCE technology also includes authentication services and over the wire encryption to prevent wiretapping on the network.PowerShare catalog services are available in a powerful, flexible, easy-to-maintain distributed database. PowerTalk offers built-in store and forward messaging in addition to mail. Through the use of service access modules, PowerTalk users will be able to exchange information with anyone, on any platform, including fax and voice mail.
Exchanging ideas in a workgroup has never been easier. Whether you need to talk to people in groups or to individuals who dial in remotely, application s that support PowerTalk offer you a number of solutions that save you time and simplify the present ways you communicate. In sum, PowerTalk allows you to:
* Exchange mail with other PowerTalk users without a server or system administrator.
* Send items with a simple "drag and drop" of desktop icons
* Send a single document over multiple delivery mechanisms (fax, electronic mail, and so on) with a single command
* Receive all your mail from multiple sources in a single desktop mailbox
* Use PowerTalk Catalogs to organize the information you refer to most often when collaborating with others
* Implement basic mail services with the AppleMail letter application, which supports text, images, video, and sound
* Protect your mailbox and other PowerTalk services with a single access code
* Use legal and binding digital signature (DigiSign software) to approve documents electronically
* Use PowerTalk-savvy applications to further automate and extend your messaging capabilities
* Obtain additional authentication and encryption capabilities with optional PowerShare servers.

The method and the magicÉ On a basic level, PowerTalk has support for AppleTalk,which allows a small team of users to communicate on a network without the use of a server. If you have a small work group, and you want to be able to send mail back and forth, System 7 Pro and ClarisWorks is potentially all you need to run your office. Larger workgroups will want to use PowerShare Collaboration Servers, with the full range of server-based options and centralized administration of such services as messaging, calendaring and project management.

Setting up your PowerTalk services is as easy as installing System 7 Pro, and launching either ClarisWorks 2.1 or MacWrite Pro 1.5. After installing System 7 Pro, your desktop will be a little different than before. You will have a PowerTalk folder on the root level of your hard drive, new icons on your desktop, and two new Apple Menu items. The new interface items are explained briefly below. The PowerTalk desktop. Using System 7 Pro, you will find PowerTalk installed in its own folder, in addition to having new icons on your desktop. The icons are for Catalogs (the "electronic yellow pages" that contain addresses, mail centers and services), the PowerTalk KeyChain, which gives you access to servers on your network, and the Mailbox, which contains incoming electronic documents, such as faxes and e-mail, addressed to you.
PowerTalk Key Chain: The Key Chain opens on your desktop to show the services available to you and provides a way to add and remove services. Gain access to all your services by typing just one access code.You can easily add keys to the Key Chain, one for each AppleShare and file sharing account, your PowerShare service, Direct Dialup mail, Direct AppleTalk mail, and any other third party-supplied PowerTalk-related service such as fax and other mail systems. You can quickly lock your Key Chain to secure your services while you are away from your computer. But, if you forget to do so and your computer is left idle for a specified number of minutes, PowerTalk will automatically lock your Key Chain for you.
Mailbox: Incoming mail items arrive in a single universal mailbox directly on the Macintosh desktop. That means all your QuickMail's, internet mail, AppleLinks, electronic faxes are all in one place, consolidated. Items can be opened, copied to folders, and otherwise manipulated just as you would any other desktop objects. From the Mailbox, you can also view the correspondence you have sent to others.
Catalogs: The Catalogs icon on your desktop allows you to see the catalogs (for example, collections of information about people,

services, and other things you can work with) to which you have access. Information is displayed hierarchically, and you can search by key words or phrases. Open catalogues to browse Information Cards (see entry below). PowerTalk also lets you create catalogs of information that facilitate your collaboration with others, from simple group address lists to collections of images or sounds.

Information Cards: Information cards are new kinds of Finder icons that hold information about people, places, or things, including addresses of users and groups with whom you want to communicate.You can send mail in the Finder by dragging and dropping files or folders to the destination single addressee or group addressee Information Card. Think of it as having their address right on your desktop.

DigiSign Utility: This utility takes advantage of encryption technology to facilitate a means of attaching electronic approval to computer-generated documents. Not only can this feature potentially save paper that gets used during requests for signatures, but this feature is also helpful in providing an audit trail of people that have worked on a document during a work cycle. More importantly, the digital signature that is gets attached is legal and binding (unlike a scanned signature), because to get your digital signature, you must go through the process of getting your digital signature notarized and certified by the appropriate authority (please refer to your System 7 Pro guide that came with your system software for details)

The power of PowerTalk is surely in its simplicity as well as its ability to fit into large and small workgroup situations. Its underlying framework of AOCE technology is both what allows you to take advantage of your present methods of communication and what will prepare you for things to come in the ever-changing world of personal computing. Applications like ClarisWorks and MacWrite Pro take advantage of all the full feature set of PowerTalk and can now be thought of as groupware or collaborative software to address the growing communication needs in the work- place.

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ClarisWorks: Clearing all Text Attributes (DB)

Clear all formatting of text by moving the data into a spreadsheet and then back into the database.
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Changing the font attributes of specific data while in Browse mode will affect the formatting in all of the layouts of your database. If at some point, you need to remove this formatting, there are a couple of steps you can follow. Simply stated, you can clear all formatting of text if you move the data into a spreadsheet and then back into the database.

ClarisWorks for Macintosh

Start by going to a layout that contains all of the fields in your database. If you are not sure if you have one, create a new Standard layout. (Note: As long as you have fewer than 41 fields defined, this new layout should contain all of your fields. If you have more than 41 fields defined, you will have to insert the fields into the layout individually)

From this layout, click outside a field to select an entire record, then hold the Command key down while you type the following:

```
A  X  N  4  Return  V  C  W  N  V
```

These are the keyboard command equivalents of:

```
1) Command - A     Select All
2) Command - X     Cut
3) Command - N     New...
4) Command - 4     "Spreadsheet"
5) Return          "OK"
6) Command - V     Paste
7) Command - C     Copy
8) Command - W     Close
9) Command - N     "No"
10) Command - V     Paste
```

Note: This solution is designed to replace all of the records (that are not hidden) with new records that contain the same data, yet without formatting. If you only need to remove the formatting from one field of one record, or a selected group of records, skip the Command-A (select all), and start with Command-X (cut).

ClarisWorks for Windows

Start by going to a layout that contains all of the fields in your database. If you are not sure if you have one, create a new Standard layout. (Note: As long as you have fewer than 41 fields defined, this new layout should contain all of your fields. If you have more than 41 fields defined, you will have to insert the fields into the layout individually)

From this layout, click outside a field to select an entire record, then hold the Control key down while you type the following:

```
A  X  N
```

Select Spreadsheet type from the New document dialog box, and then once again, hold down the Control key and typeÉ

```
   Return  V  C  W
```

Hold down the Alt key and type N, then type Control - V

These are the keyboard command equivalents of:

```
1) Control - A     Select All
2) Control - X     Cut
3) Control - N     New...
5) Return          "OK"
6) Control - V     Paste
7) Control - C     Copy
8) Control - W     Close
9) Alt - N         "No"
10) Control - V     Paste
```

Note: As with ClarisWorks for Macintosh, this solution is designed to replace all of the records (that are not hidden) with new records that contain the same data, yet without formatting. If you only need to remove the formatting from one field of one record, or a selected group of records, skip the Control-A (select all), and start with Control-X (cut).

An alternative solution is to save the file as ASCII and then insert it back into the document.
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ClarisImpact Table functions listing

One Page list of functions from Claris Works that work in Claris Impact, including names and syntax.

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Claris Works Spreadsheets and ClarisImpact Tables share the same set of calculation functions. While these features are documented in Appendix A of the Claris Works User's Guide, ClarisImpact makes no mention of these calculation functions. Listed below are all the functions and their syntax available in both ClarisImpact 1.0 and Claris Works 2.0.

ABS(number)
ACOS(number)
ALERT(value)
AND(logical1, logical2,...)
ASIN(number)
ATAN(number)
ATAN2(x_number, y_number)
AVERAGE(number1, number2,...)
BEEP()
CHAR(number)
CHOOSE(index,value1,value2,...)
CODE(text)
COLUMN({cell})
CONCAT(text1, text2,...)
COS(number)
COUNT(value1, value2,...)
COUNT2(searchvalue, value1,...)
DATE(year, month, day)
DATETOTEXT(serial_number {,format_number})
DAY(serial_number)
DAYNAME(number)
DAYOFYEAR(serial_number)
DEGREES(radians_number)
ERROR()
EXACT(text1,text2)
EXP(number)
FACT(number)
FIND(find_text, in_text {,start_offset})
FRAC(number)
FV(rate, nper, pmt, {pv}, {type})
HLOOKUP(lookup_value, compare_range, index {,method})
HOUR(serial_number)
IF(logical, true_value, false_value)
INDEX(range, row, column)
INT(number)
IRR(range {,guess})
ISBLANK(value)
ISERROR(value {,error_type})
ISLOGICAL (value)
ISNA(value)
ISNUMBER(value)
ISTEXT(value)
LEFT(text, number_of_characters)
LEN(text)
LN(number)
LOG(number {,base})
LOG10(number)
LOOKUP(lookup_value, compare_range, result_range {,method})
LOWER(text)
MACRO(text)
MATCH(lookup_value, compare_range, {type})
MAX(number1, number2,...)
MID(text, start_position, number_of_characters)

MIN(number1, number2,...)
MINUTE(serial_number)
MIRR(safe, risk, values,É)
MOD(number, divisor_number)
MONTH(serial_number)
MONTHNAME(number)
NA()
NOT(logical)
NOW()
NPER(rate,pmt,pv{,fv} {,type})
NPV(interest_rate,payment1,payment2,...)
NUMTOTEXT(number)
OR(logical1, logical2,...)
PI()
PMT(rate,nper,pv{,fv} {,type})
PRODUCT(number1, number2,...)
PROPER(text)
PV(rate,nper,pmt{,fv} {,type})
RADIANS(degrees_number)
RAND({number})
RATE(fv,pv,term)
REPLACE(old_text, start_num, num_chars, new_text)
REPT(text, #_of_times)
RIGHT(text, number_of_characters)
ROUND(number, number_of_digits)
ROW({cell})
SECOND(serial_number)
SIGN(number)
SIN(number)
SQRT(number)
STDEV(number1, number2,...)
SUM(number1, number2,...)
TAN(number)
TEXTTODATE(date_text)
TEXTTONUM(text)
TEXTTOTIME(time_text)
TIME(hour,minute,second)
TIMETOTEXT(serial_number {,format})
TRIM(text)
TRUNC(number)
TYPE(value)
UPPER(text)
VAR(number1, number2,...)
VLOOKUP(lookup_value, compare_range, index {,method})
WEEKDAY(serial_number)
WEEKOFYEAR(serial_number)
YEAR(serial_number)
Published Date: Feb 18, 2012

About ClarisImpact 1.0v2

ClarisImpact 1.0v2 was released mainly to make localization changes. Some issues found in ClarisImpact 1.0v1 have been resolved in the new version.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The key changes for 1.0v2:

- Spell checking on 68000 machines under certain circumstances no longer crashes the application.
- Page setup options are now correctly recognized for several Apple Quick draw printers (Stylewriter II, Apple Color Printer and others).
- Ruler changes in Style editor are now recognized correctly.
- Model and element styles were updated to correctly handle ruler changes in Style editor.

No documentation or on-line help changes were necessary, but all disks require updating.

Published Date: Feb 18, 2012

Cannot resize a Flow or Org Chart Model

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
It is not possible to resize a Flow or Org Chart Model.

The only workaround is to ungroup these types of Models so that you can resize them as a PICT. Although it still looks like a Flow or Org Chart, you will not be able to add new positions or use other Flow or Org Chart features. Given this, it is important not to ungroup any Model unless you are completely satisfied with it or you have made a copy of it.
Published Date: Feb 18, 2012

Changing the Font, Size or Style of Data Chart labels in ClarisWorks and ClarisImpact

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Changing the font, size or style of a Value Label in a Data Chart Slice or Bar is not obvious. In order to change the font it is necessary to first select the Series box in the Legend corresponding to the Slice or Bar that has the percentage value you wish to change. A white circle will appear in the center of the Series box indicating that it is selected. At this point you can choose any font, size or style.

NOTE: It is necessary to change each slice in a Pie chart individually.

Published Date: Feb 18, 2012

No More than 16 Outline Levels in ClarisWorks and ClarisImpact

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact and ClarisWorks have a limit of 16 levels for outlines.
Published Date: Feb 18, 2012

ClarisImpact: What does Keep Transformation in Replace Clones do?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Keep Transformations in the Replace Clone dialogue enables you to keep any changes (such as scale, resize, flip, rotation, etc.) that may have been applied to a specific object while still allowing you to apply changes to all of your clones. Try this example:

1. Create a new Drawing document.
2. Open the Animals Library.
3. Drag the Cow to the document three times.
4. Change the first cow by resizing it.
5. Change the second cow by filling it with the color green.
6. Select the second cow with the arrow tool.
7. Choose Replace Clones... from the Edit menu.
8. Click on the button Use Selected.
9. Click Replace All.

Notice what happens. Since the Keep Transformations box is checked, the first cow stays resized but is changed to the color green. The third cow is also changed to green.

Now try the same nine steps above, but uncheck the Keep Transformation box. Notice that all the cows are all the same size and green.

Published Date: Feb 18, 2012

ClarisImpact: Wrong Phone Number in Demo Disk Watermark

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
One of the differences between the ClarisImpact demo disk and the regular program is that it prints a watermark over your document. If you were to create a blank page and print it, you would see the words, 'ClarisImpact Demo,' followed by 'To order, call: 1-800-554-8554.'

This phone number is incorrect. The correct number is 1-800-544-8554.

As of April, 1994 the ClarisImpact demo disks have been corrected so that the watermark has the correct phone number. The new watermark is outlined text instead of gray text and reads "ClarisImpact Demo, for more information call 1-800-3-CLARIS".
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ClarisImpact: Version 1.0v1 Spelling Checker Crashes on 68000 Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Spell Checking on a 68000 Macintosh (Classic, SE or Mac Plus) will cause ClarisImpact 1.0v1 to crash with this message, "Sorry, a System Error occurred. File System Map inconsistent." Other messages are possible, such as "Unexpectedly Quit", etc.

If you have an accelerated 68000 Macintosh the crash will not occur when spell checking since the accelerator typically will be using a 68020, 68030 or 68040 processor to accelerate.

This is fixed in ClarisImpact 1.0v2. Contact Claris Customer Assistance at 408-727-8227 for an update.

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800K Disks for ClarisImpact 1.x

How to obtain double density diskettes
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact ships on high density diskettes. 800k replacement disk are available and can be sent for free to any customer who requests.

A postage-paid card with an offer for the 800k disks should have been included in the ClarisImpact packaging.
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ClarisImpact: Adding Connectors between Positions in Org or Flow Chart

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
It is possible to draw a connector between two Symbols in a Flow Chart Model but not in an Organization Chart Model.

To draw a connector in the Flow Chart:
1. Click on the Symbol until the add element controls appear.
2. Click and hold down in the center of that Symbol.
3. Drag to the center of the Symbol you want to connect.

Workarounds for the Organization Chart:
1. Try ungrouping the Chart by selecting the Chart and choosing Ungroup from the Arrange menu. This will transform the Organization Chart into a drawing so that connectors can be drawn between any object. The disadvantage is that the you will no longer be able to use Organization Chart commands, because you now have just the graphic representation of that Organization Chart.
2. Try drawing a line with the drawing tools. This line will not be associated with the two Elements it is connecting but if drawn carefully will appear to be a connector.

Organization Charts do not allow connectors to be added since all possible organizational structures can be achieved using the add element controls (the arrows that appear around a Element when you click on it).
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ClarisImpact: Adding Many Objects as one Library Item or as Many Library Items

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you select a number of objects in a document, then try to add the objects to a Library with the Add button, all the objects will be added as a separate items in the Library.

If you want all of the selected objects to be added to a Library as one item, you must first Group the objects.

The Group and Ungroup commands are in the Arrange menu.
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ClarisImpact: Applying Element Style to Adjacent Days

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the ClarisImpact Calendar, "Adjacent Days" are those days which are a part of the calendar grid, but not part of the calendar month. These might be the last few days of the previous month, or the first few days of the next month, which appear at the beginning and end of a calendar created for the current month.

However, if you choose Adjacent Days in the Calendar Settings dialog after applying an Element Style, ClarisImpact will apply that Element Style to the Adjacent Days in the current calendar.

To see it happen:

1) Apply an element style to a day in the calendar.
2) Go to Calendar Settings and turn on Adjacent Days.

You will not see the problem if Adjacent Days is already checked when you apply the Element Style to a Calendar day or if you have not applied an Element Style before you check Adjacent Days.

To fix the problem, shift-click on the Adjacent Days to select them, then apply the desired Element Style from the Element Styles floater to change them back to their original appearance.

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Banners Cannot be Part of a Model Style

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Banners applied to a Calendar will not be remembered by creating a Model Style. This is because banners are extra items on a Calendar that can change from day to day.

Remember that Model Styles save structural information such as what font or what Element Styles a Calendar is using.
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Calendar Styles Cut Off Text In Calendar Day

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Adding an Event or typing text directly into a calendar day will clip the text if the style for that calendar has a thick line or other graphics at the top of the day. The field where the text will show up is at the top of the day style.

The text will be in front of the graphic, but if the contrast between the color or pattern of the graphic and the text is not sufficient, the text will appear to be clipped at the graphic.

If you follow the instructions in the ClarisImpact Getting Started booklet for creating a calendar and applying the International style, your text will appear clipped for this reason.

Two work arounds are:

1. change the color of the text so that it contrasts;
2. change the Element Style for that day.

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Can‘t Save Empty Outline as Model Style

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You cannot save an Outline as a Model Style unless there is some text in the Outline frame.

If there is no text in the Outline frame, ClarisImpact will beep at you.
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ClarisWorks: Cannot Change White and Black Colors in Palette

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

White and Black (the first and last choices on the 256 Editable Color Palette) are not editable. Normally, when double-clicking on a color from the 256 Editable Color Palette, a color wheel will appear with color choices.

ClarisWorks, ClarisDraw and ClarisImpact will simply beep at you if you double-click on Black or White in the Color Palette.

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ClarisArt Index

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is a list compiled from the ClarisArt book included with ClarisImpact. Following each Library name is the page number in the ClarisArt manual where the pictures and then names of those pictures are listed.

Animals 2-2
Appliances 2-3
Architecture 2-4
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Published Date: Feb 18, 2012

ClarisImpact Does Not Support Two-Color Patterns

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro and MacDraw II documents that have two-color fill patterns will import correctly, but the two-color fills will be replaced with a single-color fill.

In the case of a 68000 Macintosh (Macintosh Plus, SE or Classic) white may dominate.

ClarisImpact does not support two color patterns.
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ClarisImpact Gradients Appear Jagged at Extreme Zoom Levels

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Gradients drawn in certain models display more jagged than other objects when viewed at high zoom percentages. Those objects are displayed as PICT objects, displayed on-screen by the QuickDraw display engine rather than the ClarisImpact display engine.

To see the problem:
1. Create a Pie Chart.
2. Fill one of the slices with a gradient.
4. View the edge of the slice with the gradient at 3200%.

The gradient will print properly.
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ClarisImpact Network Installation

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Use the following procedure to install ClarisImpact on a central server volume so that it can then be installed through the network onto any networked Mac:

1) Create a folder on the server called ClarisImpact Install Files.
2) Drag copy each of the five disks of the software into this new folder. This will create three folders named Disk 1, 2, 3, 4 and 5.
3) Now open up the folder called Disk 1 and option-drag the two files: Installer and Installer Script 'up' one layer, i.e. out of that Disk 1 folder but still in the ClarisImpact Install Files folder. This will make a copy of the files so that they exist in the Disk 1 folder as well as the ClarisImpact Install Files folder.

To install from a networked Mac:
1) Find and open the ClarisImpact Install Files folder
2) Double-click the Installer Script file. This will 'unstuff' and install the ClarisImpact files onto the local Mac's hard disk.

These instructions are provided with the understanding that you have purchased sufficient copies of the product so as to be in accordance with Claris software licensing agreements.
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ClarisWorks 2.1v2 Does Not Print Certain Objects To The HP DeskWriter Printers. (DR)

There are printing problems specific to ClarisWorks 2.1v2.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When printing from ClarisWorks 2.1v2 to a Hewlett-Packard DeskWriter printer, some objects may not print. Claris has confirmed these problems with most of the DeskWriter printer drivers (DW 2.0, 3.0, 3.9, 5.0 and 6.0 as well as DW-550 1.0 and 2.0).

Some objects that may not print are:

1. Lines drawn with the Freehand tool.

2. Transparent Polygons (Polygons with no fill).

3. Transparent Bezigons (Bezigons with no fill).

4. Transparent Regular Polygons (Regular Polygons with no fill).

Claris Engineering is aware of the problem.

Workarounds: Update your software to ClarisWorks 2.1v4.
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Converting PowerPoint or Persuasion Presentation to ClarisImpact

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Most presentation programs are based on the Outline structure for creating text in a presentation. ClarisImpact 1.0 does not have the capability to convert outlines to Presentations.

PowerPoint and Persuasion documents will not convert directly to a Presentation document in ClarisImpact simply because ClarisImpact does not have a filter for translating these file formats. Your best bet is to copy and paste as much information from PowerPoint or Persuasion to ClarisImpact.

See Chapter 14 for instructions on how to get the best results when making a presentation.
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AppleTalk Phase 2 and LocalTalk-Based Networks

I would like to clear up what appears to be some confusion about the use of AppleTalk Phase 2 on a LocalTalk-based network. This is my understanding of the situation:

1) AppleTalk Phase 2 does not necessarily provide any benefit on a LocalTalk-based network and, in particular, does not enhance network performance. It may, however, be useful where the number of nodes on an Internet are expected to exceed 256 (because of address lengths).

2) It is better to use AppleTalk Phase 2 on a LocalTalk-based network when connecting to another AppleTalk Phase 2 network (removing the overhead of the AppleTalk Phase 2 Upgrade Utility). There are also some other benefits related to zone naming and removing some old limitations on Internets. To upgrade a LocalTalk-based network to AppleTalk Phase 2, all that is necessary is to copy the AppleTalk file that comes with AppleTalk Internet Router into the System Folder of any LocalTalk machines.

3) All networked machines should be upgraded to AppleTalk Phase 2 as it eventually will be included in ROMs, and additionally, Apple will stop shipping the AppleTalk Phase 2 Upgrade Utility with the router (from the MacLAN documentation).

4) Can you tell me where devices like LaserWriters fit in? On the AppleTalk Phase 2 Upgrade Utility, when you search for network devices, Macintosh systems with the AppleTalk file are identified as AppleTalk Phase 2. Other Macintosh systems are identified as AppleTalk Phase 1 (that is, on LocalTalk), and LaserWriters are identified as unknown devices. What does this mean?

5) Why does the router need the upgrade utility to route between AppleTalk Phase 1 and AppleTalk Phase 1? How is it used (that is, does it convert the address to AppleTalk Phase 2 and back again)?

Will you confirm or correct my understanding of this issue. I am aware that opinions do differ somewhat within Apple, indicating that there is some confusion in this matter.

This article has been archived and is no longer updated by Apple.

1) AppleTalk Phase 2 routers on LocalTalk-based networks do offer better performance than AppleTalk Phase 1 routers in the following situation:

Reduced broadcast traffic: One of the key reasons for customers to upgrade from AppleTalk Phase 1 to AppleTalk Phase 2 is the split horizon RTMP enhancement. Split horizon reduces the number of redundant routing table entries exchanged by routers. The split horizon algorithm is: All entries whose forwarding port in the routing table is equal to the port out that the entry is being sent are omitted from the RTMP Data packet. In other words, Router A will not include network numbers in RTMP packets broadcast on Network X when Network X is the path (forwarding port) for Router A to reach these other networks.

This information applies to LocalTalk-based networks connected via AppleTalk Internet Routers. Note that each AppleTalk Internet Router running the AppleTalk Phase 2 Upgrade Utility broadcasts AppleTalk Phase 1 and AppleTalk Phase 2 RTMP packets on LocalTalk-based networks. This means that an AppleTalk Internet Router running the AppleTalk Phase 2 Upgrade Utility actually increases broadcast traffic on LocalTalk-based networks networks connected to it.

AppleTalk Phase 2 does not provide any benefit to LocalTalk-based networks and Internets for node addressing. Node IDs are still 8 bits (0-255), and network numbers are still 16 bits (0-65,535).

2) The AppleTalk file you are referring to, when installed in the System Folder, causes version 53 of AppleTalk to be used in place of the ROM version of AppleTalk. Version 53 of the AppleTalk driver gives users on LocalTalk-based networks the ability to support some of the new high-level AppleTalk calls that do not in any way change the protocols used on the LocalTalk physical medium. These new high-level AppleTalk calls are documented in Macintosh Technical Note #250.

It is not necessary to use the AppleTalk Phase 2 Upgrade Utility on AppleTalk Internet Routers when no AppleTalk Phase 1 routers are on the Internet. This means that an all-LocalTalk Internet using only AppleTalk Internet Routers does not require the use of the AppleTalk Phase 2 Upgrade Utility. The LocalTalk nodes do not require the use of AppleTalk version 53 in this scenario.

LocalTalk-based networks, running AppleTalk version 53 or not, do not receive "other benefits related to zone naming and removing some old limitations on Internets" as you imply. LocalTalk networks have not changed in this respect with the advent of AppleTalk Phase 2.

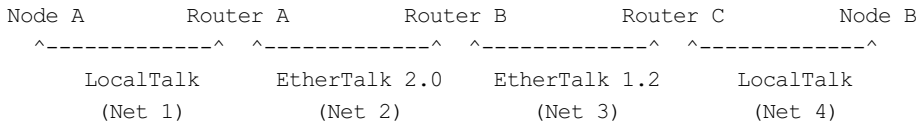
3) Yes, all non-LocalTalk AppleTalk devices should eventually upgrade to AppleTalk Phase 2 compatibility. Yes, future Macintosh systems will ship with AppleTalk version 53 or later in ROM. Eventually, the AppleTalk Phase 2 Upgrade Utility will stop being shipped with the AppleTalk Internet Router. There is no timeframe for this.

4) AppleTalk devices that attach to a network via LocalTalk will continue to work on AppleTalk Phase 2 Internets as they do now on AppleTalk Phase 1 Internets. Remember, LocalTalk-based networks have the same limitations running under AppleTalk Phase 2 that they had under AppleTalk Phase 1. The AppleTalk "Phase 2 Node Identifier" utility that comes on the AppleTalk Phase 2 Upgrade Utility disk declares an AppleTalk node as AppleTalk Phase 2 if the AppleTalk version is 53 or greater and the AppleTalk type is "Macintosh xxx" where "xxx" is the type of Macintosh. If the AppleTalk version is less than 53 and the AppleTalk type is "Macintosh xxx", the node is identified as AppleTalk Phase

1. Nodes with an AppleTalk type other than "Macintosh xxx" are identified as unknown devices.

5) The AppleTalk Internet Router does not need the AppleTalk Phase 2 Upgrade Utility when routing between two LocalTalk-based networks. The AppleTalk Phase 2 Upgrade Utility allows the AppleTalk Internet Router to broadcast and receive AppleTalk Phase 1-style RTMP packets. This is all the AppleTalk Phase 2 Upgrade Utility does. The only time the AppleTalk Internet Router needs the AppleTalk Phase 2 Upgrade Utility is when there is an AppleTalk Phase 1 router on the same physical cable as the AppleTalk Internet Router.

An example of this:




```
Router A is an AppleTalk Internet Router
Router B is an AppleTalk Internet Router
Router C is a Kinetics FastPath 4 - AppleTalk Phase 1 only
```

Since Router C, the FastPath, is an AppleTalk Phase 1 router, the AppleTalk Internet Router (Router B) must run the AppleTalk Phase 2 Upgrade Utility. The AppleTalk Phase 2 Upgrade Utility causes Router B to generate and broadcast AppleTalk Phase 1-style RTMP packets onto Net 3. Router A does not need to use the AppleTalk Phase 2 Upgrade Utility because it is not on the same physical cable as the AppleTalk Phase 1 router (the FastPath). If Router C was replaced with an AppleTalk Internet Router and Net 3 was an EtherTalk 2.0 network, the AppleTalk Phase 2 Upgrade Utility would not be needed on any of the routers.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
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Default Spacing Dialog Updates Incorrectly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you click on a radio button that is already filled in the Default Spacing dialog of the Flow Chart menu, the Amount boxes will update to show that the other radio button is active, but the correct radio button will not be active.

This means that the values in the Amount boxes will be correct for the unfilled button, rather than the filled button.

There are two solutions available:
1. Do not click a radio button that is already chosen.
2. Click the radio button again and it will switch back to the correct Amounts.
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Drop Shadow Turns Legend or Title Black

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Applying a Drop Shadow to the Legend or Title of a Chart may turn the Legend or Title black.

Legend and Title will turn black with the following Model Styles:
Deco Line
Deco Pie
Deco Bar
Informal Bar
Informal Line
Informal Pie

Only Title will turn black with the following Model Styles:
Modern Bar
Modern Line
Modern Pie

Once the Legend or Title has been changed to black, it will stay black even if you remove the drop shadow.

Workaround:
Select the Legend or Title and fill it with white or some other color. Once you have changed the shadowed Legend or Title to a white fill you can save the new version of this Chart as Style. To save the new version of the Chart as a new Style:

1. Select the Chart so that the gray border surrounds it.
2. Choose Model Styles... from the Chart menu.
3. Click the Add button.
4. Type in a Name for this new Chart.
5. Click the Done button.

This new Style will appear in the Data Chart pre-creation dialog box at the bottom of the list.
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Equal Width SmartSize Relationship is Lost with Align Vertically

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you have objects with an Equal Width SmartSize Relationship and then Align them Vertically, the equal width relationship will be lost. To see this problem:

1. Create two objects of differing widths and select them.
2. Choose the Alignment command from the Arrange menu.
3. Create an Equal Width Relationship by checking the Create box and then clicking on the Size Horizontal button (upper right hand Alignment icon). Notice that the triangles which indicate the Equal Width Relationship appear.
4. Click on the Align Vertical Center icon (lower line, second from left) or the Align Vertical button.

You will see that the symbols showing the Equal Width Relationship are no longer there.

To make this work properly:
Reverse steps 3 and 4. As a general rule, you should apply object alignment before applying object SmartSize relationships.
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Get Two Managers on Your Organization Chart

Several different ways to have two managers appear on your organization chart.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact does not support having two Manager positions at the top of an Organization Chart hierarchy. However, it is sometimes desirable to create such a chart, especially in situations where an individual might report to two managers.

To create this chart, you can try any of these four techniques:

- Create a Manager Element Style that is transparent and use the next level of positions down to start the managers.
- Select Manager from the Organization Chart menu to create a new stand-alone Manager in the current Organization Chart, then manually draw a line between the Worker and the new Manager so that it appears that the Worker reports to two Managers.
- Create the Managers as parts of different frames and overlay the two Organization Charts.
- Ungroup the Chart, so that it is no longer a model frame, but a group of graphic objects, and add any objects you want. The disadvantage to this method is that you lose your Organization Chart tools.

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Gradients Not Visible At Extreme Zoom Levels

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Displaying a gradient at extreme zoom levels in an object with many sides is a very complicated process. High zoom levels may cause ClarisImpact not draw the gradient at all, making it appear that the object has no fill.

You may even get an error message stating, "Some gradients may not be drawn because they are too large. Please note that this alert will not be repeated."

The object will still print with the gradient fill, and when you return to a less extreme zoom level, you will see the gradient fill again on-screen.

Here is an example of how to see this happen:

1. Create a star as large as the screen.
2. Fill the star with a gradient.
3. Zoom to 3200 percent.

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Help Does Not Work While Straight Connector Tool is Selected

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact Help will not come up if the straight connector tool is selected. If the Help window is open before selecting the straight connector tool it will come to the front, but if it is not open you will get a watch cursor that does not move.

Clicking on the document window will return you to the correct cursor. Make sure the straight connector tool is not selected when you try to choose Help.
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ClarisWorks: How to Choose A Different Palette

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact, ClarisWorks 2.0 and ClarisDraw can use an 81 color palette and an Editable 256 color palette. ClarisWorks and ClarisImpact default to using the 81 color, non-editable palette, while ClarisDraw defaults to a 168-color palette.

To change the palette being used, choose Preferences from the Edit menu (ClarisWorks) or the Layout menu (ClarisDraw and ClarisImpact). Once inside Preferences, choose Palettes (ClarisWorks) or Color (ClarisImpact) or Colors & Gradients (ClarisDraw). When changing to the editable 256 color palette you will have the choice of using the default editable 256 color palette or loading a different editable palette by clicking the Load Palette button (ClarisWorks or ClarisImpact) or the Open button (ClarisDraw).

Here are the editable palettes available for ClarisImpact:

Claris color palette
240 Grays
Cyan to Blue
Earth Tones
Pastels
Presentation
Red to Yellow
Violet to Magenta
YellowGreen to GreenBlue

Here are the editable palettes available for ClarisWorks:

Claris color palette
16 Hues
Pastel
Rainbow
Strange
Vivid

For ClarisImpact, these additional color palettes are in the ClarisArt folder located in the ClarisImpact folder. ClarisWorks installs these palettes in the Colors and Gradients folder in the Claris Folder located in the System Folder.

The 81 color palette is NOT editable but contains the most commonly used colors. The advantage is that it is smaller and takes less space on the screen when you tear it off. This palette is best used with monitors that support 256 colors or fewer.

The editable 256-color palette is larger and editable. By double-clicking on a color you can change what shows in this palette. NOTE: Black and white are not editable and you will hear a beep if you try to change them.

Changes made to any palette are document-specific. In other words, if you open a new document, it will use the default palette. The best way to save a color palette for future use with another document is to use the Save Palette feature in Preferences.

Remember, clicking the Make Default button in Preferences will only remember that you are using an editable palette, not which one you are using.

The easiest way to always use a particular palette is to create a Stationery document (the Stationery document will remember which palette you have chosen).
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ImageWriter Faster Printing Disabled

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
After printing once to an ImageWriter, the Faster item in the Print dialog may be disabled.

The only work around is to quit the program and relaunch it.
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ClarisWorks: Methods for Saving Gradient and Pattern Palettes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Gradients and Patterns palettes are much like the Editable 256 color palette: double-clicking on an existing gradient or pattern lets you modify it. The problem is that any new document will not have these new gradients or patterns available. How do you save these palettes for future use?

1. Use a Stationery document to save a modified pattern or gradient for future use.

2. Libraries can also be used to save commonly used gradients, colors and patterns. Simply draw any object and apply the pattern, gradient or color. Add this object to a Library. To use the gradient, pattern or color, add the object and click on that object with the eyedropper. Now any object you draw will have those characteristics.

3. You might want to create a document with all your custom gradients, patterns and/or colors and open it any time you wish to use one of the gradients, patterns or colors. You will be able to copy and paste a gradient, pattern or color from that document into your current document.

Published Date: Feb 18, 2012

Model Styles Not Appearing in Model Pre-creation Dialog

Model Styles are stored in a folder called ClarisImpact Styles which is stored at the same level as the application. By default, ClarisImpact Preferences is automatically placed in this location. Changing these names and locations can cause issues.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue:
Model Styles do not show in the Model Styles dialog or in the Pre-creation dialogs.

Solutions:
Try the following solutions one at a time, restarting the application after each solution to see if the issue is fixed. If the issue persists, quit the application and try the next solution.

- From the Finder, perform a find for 'ClarisImpact Color Styles' or 'ClarisImpact B&W Styles' depending on which you are using.
- If the Styles folder is NOT found, reinstall ClarisImpact or attempt to determine if the folder has been renamed.
- If it is found, choose Preferences from the Layout Menu in ClarisImpact (Models section) and check the name of the Current Style Folder. Also, make sure the ClarisImpact Styles folder is located in the same folder as the ClarisImpact application (Styles can also be located in the Claris Folder or the System Folder).
- If the ClarisImpact Styles folder is NOT located in the same folder as the application, when modifying Preferences you could get an error message stating "Could not find the 'ClarisImpact Styles' folder in the application, Claris or System folders. Create it in the application folder?". The issue here is that the folder does not exist and/or has been moved. Follow the steps above to resolve this error message. NOTE: If you would like to locate your ClarisImpact program on the desktop (or anywhere other than the ClarisImpact folder) then try using an alias instead.
- If you reinstall your ClarisImpact application and styles folder, also delete the ClarisImpact Preferences file from the Preferences folder in your System Folder. The preferences could keep track of an erroneous location for the sytles folders.

A Note on File Compression:

Many people use compression utilities to create more space on their hard drives. These compression utilities perform their compression in one of two ways: either they compress the entire formatted contents of the drive, and apply what is called "driver-level compression," or they compress each individual file on the drive and apply what is called "file compression."

- If the Styles from the ClarisImpact Styles folder are compressed by file compression utilities such as Auto Doubler or Disk Doubler, they will not appear in the Model Pre-creation dialog box.
- Driver-level compression utilities like Times Two and MoreDiskSpace do not prevent the ClarisImpact Styles from appearing in the Pre-creation dialog.
- NOTE: ClarisImpact and ClarisDraw Libraries are different. Either compression technique will work fine with ClarisImpact or ClarisDraw Libraries.

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New Rows and Columns Insert without Model Style

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Inserting a Row or Column into a Table or a Task into a Timeline created using a Style will insert without the Style. In other words, the newly inserted Row, Column or Task will look different than the original rows, columns or tasks because it was inserted without a Style.

Solution:
1. Click on any cell in the Table so that it is selected.
2. Choose Model Styles... from the Table menu.
3. Choose the Style that you want applied to the entire Table.
4. Click the Apply button and the click Done.

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New Terms in ClarisImpact

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Assistant - In an Organizational Chart, a special position that reports to a Manager but is on a different level from other Worker positions.
Adjacent Days - "Adjacent Days" are those days which are a part of the calendar grid, but not part of the calendar month. These might be the last few days of the previous month, or the first few days of the next month, which might appear at the beginning and/or end of a calendar created for the current month.
Banner - a Calendar Event that spans many days. See page 10-2 and 10-7 for best explanation. See below for explanation of Event.
Clone - Once an object is dragged onto a document from a Library it becomes a clone. Also, see below about Replace Clones.
Connector Line - Intelligent lines that connect elements in an Organization Chart or Flow Chart. Connector Lines can also be drawn between objects with the Connector Tool. If you move one of the objects joined by a Connector the line will automatically reshape to accommodate the change. See page 11-29 for information about drawing your own Connectors lines.
Duration - In a Timeline, the length of time it takes to complete a task. See Chapter 8 for more information about Timelines.
Element - the smallest component of a Model. For Example, a bar in a Bar Chart.
Element Style - Color, fill, pattern, background or other style you can apply to the components of a Model.
Event - Text you add to a single day on a Calendar. Similar to a Banner. See Chapter 10 for discussion of Calendar Models.
Latest Start/Finish - The latest time to start/complete a task without delaying the schedule. See Chapter 8 for information about Timelines.
Library - Art contained inside a special document. Items can be dragged from a Library onto a document easily. Make your own libraries or use pre-designed Libraries in the ClarisArt folder.
Manager - Any position in an Organizational Chart with other positions reporting to it.
Planned Finish/Start - In a Timeline, the date you plan to complete/start a task. See Chapter 8 for more information regarding Timelines.
PointGuide - Shows the center of an object or the center point of an object's height or width on any side with a plus sign next to the arrow. Also, the arrow will turn white when it is over an object.
Position - An element in an Organization Chart that represents a job function. Positions usually appear as boxes.
Replace Clones - Allows you to find and replace Clones. For example you could make a change to one of the Clones and change all of them with this feature.
Slack Time - In a Timeline, the period between the Planned Finish date and the Latest Finish date. See Chapter for information about Timelines.
Style - Color, pattern, gradient, text, line setting or other that apply to a Model or an Element within a Model. Styles show in the Model pre-creation dialog.
Subordinate - In an Organizational Chart, a Position that reports directly to another Position.
Symbol - An Element in a Flow Chart connected by Connector Lines to other Symbols.
Task - A project or component of a project that is scheduled and tracked on a Timeline. See Chapter 8 for information regarding Timelines.
Topic - In an Outline, the major headings. Subtopics are subordinate to Topics. See Chapter 9 for more information about Outlines.
Worker - Any position in an Organizational Chart that does not have subordinate positions reporting to it. See Chapter 4 for more information regarding Organizational Charts.

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Nifty Pie Chart features

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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1. Option-click on any piece in a PIE chart and it will be extruded from the pie (option-clicking on the corresponding Series in the Legend will have the same results).

2. Clicking on a bar of a Bar Chart or a piece of pie in a PIE Chart and entering a number followed by the ENTER key will automatically change the attached Table. This eliminates the need to go to the attached Table to modify a Chart.

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No Automatic Text Wrap for Library Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact automatically wraps text around graphics that are drawn while in the Report Environment. This is not true for graphics that are Placed or dragged from a Library, because those objects have not yet had their Text Wrap option specified.

Just select the library graphic and choose Text Wrap from the Text menu to specify the desired Text Wrap option.
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Not Printing Many Slides per Page

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Print dialog, when printing from a Presentation document, has an option for "Slides per page". It is possible to choose 2, 3, 4, 5 or 6 slides per page.

This feature only applies when printing handouts.
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Option-Click Doesn‘t Make Pie Chart Slice Extrude

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In a Pie Chart created from a Table rather than from a Data Chart, option-clicking a slice of the pie chart will not cause the slice to extrude.

Workaround:
Option-click the corresponding Series box in the Legend of the chart.

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Org Chart with No Text Loses Items when Saved as PICT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
An Organization Chart that contains no text and is saved as a PICT will lose connector lines and/or positions when placed back in ClarisImpact and ungrouped.

Fortunately, there are a number of work arounds:
1. Use Copy and Paste or Publish and Subscribe to place Organization Chart frames in the same document or other documents.
2. Put text in any one of the positions before saving as a PICT. (Once you have ungrouped it you can remove the text.)
3. Ungroup the Organization Chart before saving as a PICT.

We have also imported Organization Chart PICTs into ClarisWorks and encountered the same behavior. Therefore, it is possible that this will occur with all Claris programs and third party programs.
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Outlines in Report Documents Cannot Become Model Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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While in the Report environment it is possible to convert the text to an Outline by using the "To Outline" choice from the Text menu but it is NOT possible to make a Model Style from the resulting Outline. This is indicated by the grayed out Add button in Model Styles.

Explanation:
The Report environment is not a Model. However, it is possible to create an Outline Model in the Report environment and then save it as a Model Style.

Solution:
Use Stationery instead.
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Pasted Text Does Not Conform to Model Style

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Text that is pasted into a model (for example in an outline, or pasted into a field in an Organization Chart position) will have the attributes of the text, not the model. In other words, if you copy some text that is plain and paste it into an outline, the text will be plain. Even if that level of the outline is set to bold, the text will be plain.

Of course you can then select the text and change its attributes, or you can reapply the model or element style and the text will take on the new attributes.
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Pasting in-Line Graphics not Re-Sizing Model Horizontally

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Copying & Pasting a graphic or Model into a Text or Outline Model will put that graphic or Model in-line with the text. If the Text or Outline Model is smaller than the graphic you would expect the Text or Outline Model to resize, but it will only resize vertically.

Workaround:
Resize the Text or Outline Model horizontally by dragging one of the selection handles.
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Replace Clones Doesn‘t Work With Grouped Clones

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Replace Clones feature ceases to function on Clones that have been grouped with other objects or other clones.

Grouping a Clone permanently changes it so that it can never be used as a Clone again.
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Rotated Arcs Print Clipped

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Rotated arcs that are not grouped with another object are clipped when pasted in-line in a report document. The arcs will also print clipped.

Workarounds:
1. Group the arc with any other object before pasting it. For example, you could draw a small line segment, set its pen color to white, send it to the back and group it with the arc. The line would not be visible and the arc will appear correctly on screen and will print correctly.

2. Do not paste your graphic in-line.
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Shift Selecting an Object Reshapes the Object Slightly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you have both the Autogrid and PointGuide on, shift-selecting a point on an object made with a Shape Tool may reshape the object slightly. This happens because the PointGuide constrains to the nearest Autogrid point, which might not be exactly the point on which the object handle was located.

To see the problem:

1) Draw a star with the star shape tool
2) Turn on Autogrid and PointGuide
3) Select Reshape from the Arrange menu
4) Hold down the shift key and click one of the points of the shape

Workaround:
Turn off PointGuide or Autogrid. This will only happen when both of them are active.
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Slow Printing With Older LaserWriter Drivers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When printing to a laser printer from ClarisImpact, the version of the printing software that you have installed on your Macintosh can have a significant effect upon the print speed.

To check the version of the LaserWriter software on your Macintosh, choose Page Setup from the File menu when you are looking at your ClarisImpact document. Immediately to the left of the OK button in the top right corner of the Page Setup dialog, you will see a number. That number is your printing software version number.

Some files may take a long time to print using the LaserWriter 7.x driver. Printing may be up to ten times faster using LaserWriter driver 8.0. To get the most up-to-date driver for a non-Apple printer, call your printer manufacturer. To get the updated driver for Apple printers, call Apple at 800-767-2775.

Complicated files may include scans or EPSF images or even sophisticated documents created with the drawing tools in ClarisImpact.
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SmartAlign Relationship Indicators Disappear

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Moving objects after using the Alignment feature could make the Alignment dot indicators seem to disappear. This happens whenever you have two or more objects which are selected and exactly on top of each other: overlapping handles are invisible.

The relationship between the objects still exists but the dot indicators are on top of each other and canceling each other out.

Try this test to recreate the problem:

1. Create a square of any size.
2. Duplicate that square.
3. Select both squares.
4. Choose Alignment from the Arrange menu.
5. Check on the Create checkbox.
6. Click on the Align Top button (top row, first choice).

Notice that the relationship is indicated by a dot on each square.

7. Move one square on top of the other.

Note that the relationship dots has disappeared.
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Some Models Cannot Have a Background Gradient

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
It is not possible to apply a gradient fill to some Models even though it is possible to choose a color fill.

Models which cannot have a gradient fill are:
Timeline
Table

ClarisImpact will beep at you if you attempt to fill one of these Models with a gradient. All other Models will allow gradient fills.

Workaround:
Change your Timeline to a transparent fill (first choice on the pattern palette) and then draw a rectangle that matches the dimensions of the Timeline. Fill the rectangle with a gradient and send it behind the Timeline.
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Timelines can Only Display Dates in Timeline Scale

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Although it is possible to change the Time Scale in a Timeline Model so that the tick marks indicate days, weeks, months, quarters or years it is NOT possible to change what appears above the tick marks. ClarisImpact will only display dates.

Many people have requested the ability to display other types of time indicators such as:

Week 1, Week 2, Week 3, etc.
Day 1, Day 2, Day 3, etc.
Month 1, Month 2, Month 3, etc.

This is being considered for the next version of ClarisImpact.
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DOS 3.3: The I/O vectors

The Apple monitor sends all input and output, including Applesoft and Integer BASIC's I/O, to a pair of two byte vectors. DOS takes the contents of these vectors and saves them to memory, then puts pointers to itself in the monitor's I/O vectors.

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DOS is no longer able to intercept commands when the I/O vectors are changed. A DOS routine starting at $3EA, accessable from BASIC with call 1002, checks the monitor I/O vectors to see if they point to DOS. This routine stores the current values in the I/O vectors and points to DOS in the vector if DOS isn't already there. It's most useful when the I/O vectors need to be modified to a custom I/O routine like the High-Res Character Generator routine in Contributed Software, volume 3. Here's how to use the Character Generator and DOS:

```
10 poke 54,0
20 poke 55,96
30 call 1002
40 print chr$(4);"catalog"
50 print chr$(4);"PR#0"
```

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Two ways to Save a Model: as a Style or a Library Item

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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You can store commonly used Models as a Style or as objects in a Library.

To save a Model in a Library:
1. Create a Model.
2. Select the Model with the arrow tool so that there are selection handles on each corner but no gray border.
3. Choose New Library from the File menu.
4. Click the Add button.
5. Save the Library.

To save a Model as a new Model Style:
1. Follow steps 1 through 2 above.
2. Choose Model Styles... from the 2cnd to last menu. This menu will be different depending on the Model you create.
3. Click the Add button.
4. Name the Style.
5. Click the Done button.

Styles you create will show in the pre-creation dialog box when creating a Model. Choose Open Library from the File menu to access a Library you have saved.

Remember that you can save multiple Models of different types in one Library. You can also save a number of Models as a single object (make sure to group the Models before adding them to a Library if you want them treated as one object).
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"Not Enough Chart Data" or Chart Error After Moving Table Cells

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Swapping the right hand or bottom rows of a Table may cause a chart made from that Table to display a message that there is not enough data to draw the Chart or it may redraw the Chart incorrectly.

To see the problem:
1) Create a 3 column by 3 row Table
2) Fill the top row and left column with text
3) Fill the rest of the cells with numbers
4) Select all of the cells and make a line chart
5) Select the second column and drag-swap it with the third column.

You will get a message that there is not enough chart data or the Chart may redraw incorrectly. The problem is that ClarisImpact does not reset the data range to include the column that was moved.

To work around this problem:
1. After you have swapped the rows, go to Range... under the Chart menu and type in the correct range.
2. Reselect the table data and recreate the chart.
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"Not Enough Memory to Display PICT Preview" Error Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Saving a ClarisImpact file that has PICT objects in it as a MacDraw Pro file (under low memory conditions) may result in an alert message that there is not enough memory to display the PICT preview.

MacDraw Pro files do not have a PICT preview, so this alert is meaningless. Hitting the Continue button should save the file correctly.

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Calculating The Number Of Work Days (weekdays) Between Two Cells Formatted As Dates (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To calculate the number of work days (weekdays) between two cells formatted as dates will require the following formula. This tech note assumes that A1 contains the column heading "StartDate", B1 contains "EndDate" and C1, "Total Work Days" .

C2 (formula)
= I NT((B2-A2)/7)*5 + MOD(B2-A2,7) - IF(MOD(B2-DATE(1904,1,3),7) < MOD (A2-DATE (1904,1,3),7),2,0)

Here's the logic:

1. Take the number of weeks between the two dates and multiply the result
by five working days per week.

2. Add the remaining days which do not make up a full week.

3. If Enddate occurs on a day of the week before Startdate, then subtract the
2 weekend dates.

This formula will provide an accurate calculation of the work days between any two dates. It assumes that StartDate is earlier than (or equal to) EndDate. This does not count the first and last days as work days. If you want Monday through Tuesday to return 2 work days (instead of 1), add one (+1) to the end of the calculation formula.

This formula does not account for Holidays.
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Calculating The Number Of Work Days (weekdays) Between Two Date Fields (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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To calculate the number of work days (weekdays) between two fields formatted as dates will require the following formula. This tech note assumes that your database contains the date fields, StartDate and EndDate. Define a new calculation field and name it, TotalWorkDays. The formula for this calculation is as follows:

TotalWorkDays (calculation, number result)
=INT (('EndDate'-'StartDate')/7)*5 + MOD ('EndDate'-'StartDate',7) - IF (MOD ('EndDate' - DATE (1904,1,3),7) < MOD ('StartDate'-DATE (1904,1,3),7),2,0)

Here's the logic:

1. Take the number of weeks between the two dates and multiply the result by five working days per week.

2. Add the remaining days which do not make up a full week.

3. If EndDate occurs on a day of the week before StartDate, then subtract the 2 weekend dates.

This formula will provide an accurate calculation of the work days between any two dates. It assumes that StartDate is earlier than (or equal to) EndDate. This does not count the first and last days as work days. If you want Monday through Tuesday to return 2 work days (instead of 1), add one (+1) to the end of the calculation formula.

This formula does not account for Holidays.

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Place File... and Publish & Subscribe Do Not Create New Cells or Tasks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When you Place a Text file or a SYLK file or into a Table or Timeline, you might want ClarisImpact to automatically create the correct number of cells or tasks for you.

This is not a feature of ClarisImpact. You must set the correct number of cells in the Table or Timeline before using Place File... to import the data. If your Table does not have enough cells, excess data will be lost.

Solution:
Make sure you resize your Timeline or Table appropriately before Placing or Subscribing.

NOTES:
1. Copying and Pasting data will force ClarisImpact to create more cells or tasks.
2. Publish and Subscribe will also not create new Cells or Tasks in a Timeline or Table.
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Technique for Conserving Labels (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you have blank labels, and you have only used some of the labels on a page in a previous printing, you may want to reuse those pages by turning them bottom edge up.

If, however, your labels have been pre-printed with a return address or something that makes them "one way only" in your printer, or you've done the above on the page already, here's a technique to print onto the labels that are remaining on the sheet:

1. Use label sheets that have some missing from the top this way.

2. Add new blank records to the database - one for each missing label on the sheet.

3. Sort by any field that always has data in your records. This puts the new blank records at the top.

Delete the blank records after printing.

NOTE: many label and printer manufacturers strongly caution against inserting partially used sheets of labels into a printer because the mechanical parts used to advance the paper in the printer may cause a label to peel off and jam inside your printer. Consult your printer manual or the label box to make sure it is safe to reinsert partially used label sheets in your printer.
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Wrong XTND Translators Shipped With ReadySetGo! 6.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Ready Set Go 6.0 (RSG), a page layout program, uses the Claris XTND Translator System and supplies its own set of translators. These may be used by Claris programs, resulting in the errors.

A temporary workaround is to select the specific translator you wish to use instead of leaving the selection on "All Available"

The desired fix is to contact RSG (Manhattan Graphics) for a 6.02 update. The update, which fixes the problem, is available free of charge for users of 6.0.

Manhattan Graphics
(914) 725-2048
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A/UX: Data Structure of "sa" Manual Correction

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

We've tried to use the records in the "sardd" files (directory /usr/adm/sa) to monitor some system resources and to get information about freemem, freeswap, and other dynamically changing parameters.

The customer found that the structure of the records written by "sadc" and the description of this structure in "sadc(1M)" did not match. I checked and found that the records written by "sadc" are 228 bytes on our system and the size of "sa" (System Accounting), as described, is 304 bytes.

Please send me the structure of the information contained in the records of /usr/adm/sa/sardd.

This article has been archived and is no longer updated by Apple.
We researched the data structure of "sa", and it seems that the one described in the "sadc(1M)" manual page is wrong; the "sa" data structure defined in the sa.h header file and used by the "sadc" program has the following structure:

```
struct sa {
struct sysinfo si; /* defined in /usr/include/sys/sysinfo.h */
int szinode; /* current size of inode table */
int szfile; /* current size of file table */
int sztext; /* current size of text table */
int szproc; /* current size of proc table */
int mszinode; /* maximum size of inode table */
int mszfile; /* maximum size of file table */
int msztext; /* maximum size of text table */
int mszproc; /* maximum size of proc table */
long inodeovf; /* cumulative overflows of inode table since boot */
long fileovf; /* cumulative overflows of file table since boot */
long textovf; /* cumulative overflows of text table since boot */
long procovf; /* cumulative overflows of proc table since boot */
time_t ts; /* time stamp */
long devio[NDEVSII4]; /* device unit information */

#define IO_OPS 0 /* number of I/O requests since boot */
#define IO_BCNT 1 /* number of blocks transferred since boot */
#define IO_ACT 2 /* cumulative time in ticks when drive is active */
#define IO_RESP 3 /*cumulative I/O response time in ticks since boot */
};
```

The total size of structure "sa" is 740. However, the record size of "sa" is computed as below:

recsz = sizeof (struct sa) - sizeof d.devio + recsz * sizeof d.devio[0];

The result of recsz from the above equation = 740 - 512 + 0 = 228

However, the first record of the data file will have the size of 232, which includes a 4-byte header at the beginning of the data file. The rest of the records have a record size of 228. If you monitor the size of data file, the size will have this order: 232, 460, 688, 916, 1144, and so on.

Concerning the record of the system accounting report file (/usr/adm/sa/sardd), the "sar" program generates different sizes of output files (from the input

file "sadd" created with "sadc" program) depending on the options specified in the "sar" command line. By default, without any option, the "sar sadd-file" reports with the CPU utilization:

time-stamp %user %sys %wio %idle

If the -A option (all the options -uqbwcayvm) is used, it generates all supported information, like -b for reporting buffer activity, -y for reporting the tty device activity, and so on.

We reported the inconsistency of the "sa" data structure specified in "sadc(1M)" to A/UX Engineering.

Published Date: Feb 18, 2012

Arrow Keys Work Differently In ClarisWorks 2.1 Than In ClarisWorks 1.0 or 2.0 (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In ClarisWorks 1.0 and 2.0, pressing the left or right arrow keys while entering data in the data entry bar of a spreadsheet document would select the cell to the left or right of the current cell.

In ClarisWorks 2.1, using the arrow keys while entering data will move the cursor to the previous or next character in the entry bar, similar to the way text entry works in a word processing document. To move to the adjacent cell, hold down the Option key while pressing the left or right arrow key. Or press the Enter key to enter the data and then you can use the arrow keys to move to adjacent cells.

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Equation Editors and EGO Support

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 4.0 for Mac and Windows and MacWrite Pro 1.5 support EGO (Equation Graphic Object) for use with equation editor applications. EGO allows you to double-click on the equation and open the equation back in your equation editor, for additional editing.

ClarisWorks and MacWrite Pro are also compatible with equation editors that do not support EGO. With non-EGO aware editors, you'll copy and paste the equation to ClarisWorks via the clipboard. Or, you'll save the equation as a PICT or EPSF file, then Insert that image into your ClarisWorks document.

These programs support EGO:

Expressionist 3.2

Waterloo Maple Inc.
450 Phillip St.
Waterloo, Ontario, Canada N2L 5J2

519-747-2373
800-267-6583
519-747-5284 (fax)
Web: http://www.maplesoft.com
- - - - -
MathType 3.1

Design Science, Inc.
4028 Broadway
Long Beach, CA 90803

310-433-0685
800-827-0685
310-433-6969 (fax)
Web: http://www.mathtype.com/mathtype/
- - - - -
ChemDraw

CambridgeSoft
875 Massachusetts Ave.
Cambridge, MA 02139

617-491-6862
617-491-8208 (fax)
Web: http://camsci.com
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Drawings Pasted Into Microsoft Word Print Incorrectly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Freehand objects and polygons that are brought into Microsoft Word will print incorrectly when using the LaserWriter 8 driver.

Although the image appears correctly on the screen, when printed, the pen color is used as the fill color instead of the correct fill color (e.g. a red triangle with a yellow border will print as solid yellow). In informal testing, the drawing printed correctly from MacDraw Pro and ClarisWorks as well as from Word Perfect. It appears this is an issue with Microsoft and the LaserWriter 8 driver, since the problem only occurs when using Microsoft Word (and PowerPoint) in conjunction with the LaserWriter 8 driver. Microsoft Technical Support is aware of the problem.

The only known work-around is to use the LaserWriter 7 driver.
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Apple‘s Portable StyleWriter Driver Update Fixes Some Problems (SS, CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
GDT Softworks, writers of Apple's Portable StyleWriter Driver has announced that two printing problems are confirmed as fixed in their upcoming driver release, version 2.5.

One printing problem surfaced when printing charts to the Portable StyleWriter. In the legend, only the text of the first series will print.

The other problem related to printing from the Communications environment. The page length was being set incorrectly such that only the top two thirds of the page was printed.

The release of the new Apple Portable StyleWriter Driver version 2.5 is scheduled for late March, 1994.
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Placing Spreadsheet Files in ClarisImpact Table or Chart Models

If you have information in a ClarisWorks or Excel spreadsheet that you want to use in a ClarisImpact report, you can import the spreadsheet data into either a table or chart model by saving the spreadsheet as a SYLK or an Excel file or by copying and pasting the cells into a ClarisImpact table/chart.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here are two methods for placing spreadsheet data into your ClarisImpact table or chart model. If you have information in a ClarisWorks or Microsoft Excel spreadsheet that you want to use in a ClarisImpact report, you can import the spreadsheet data into either a table or chart model by saving the spreadsheet as a SYLK or by copying and pasting the cells into a ClarisImpact table/chart.

These are the steps for placing a SYLK file into a ClarisImpact table:

1. In your spreadsheet file, save your file as a SYLK file type.

2. Launch ClarisImpact, and create a new drawing, presentation or report document.

3. Choose the Table or Chart tool, specify model style and number of rows and columns, then click OK.

4. Click in the first cell, choose Place File. In the dialog box, change All Available to SYLK.

5. Choose your SYLK file and click Place. The SYLK format captures the formulas used in your spreadsheet, while Copy and Paste do not. It's important to choose the SYLK translator in the Place File dialog box. If All Available is chosen, "garbage characters" may be placed in the table/chart.

NOTE: Before you create the SYLK file, make a note of how many rows and columns are used in your spreadsheet. When you create the table or chart in ClarisImpact, specify the same number of rows and columns as your spreadsheet. If you haven't specified enough rows or columns, only part of your data will be placed into ClarisImpact. The first figure (Figure 1) is a table specifying two rows and four columns, and was resized after placement. Figure 2 was created with eight columns and four rows. If you haven't allotted enough cells in the Table to allow room for a formula, you may get a message "Formula which could not be understood has been replaced with a value." Add more cells and replace the file.

Figure 1

Figure 2

Copying And Pasting
You can also use Copy and Paste to place your spreadsheet data into ClarisImpact. If you want to use a section of your spreadsheet, you can copy the selected cells and paste them into a table or chart cells. Unlike the SYLK import, ClarisImpact adds rows and columns to accommodate your data. Copy and Paste brings over the numbers that result from a formula, but not the formulas. This is true for pasting Microsoft Excel or ClarisWorks spreadsheets.
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ClarisImpact: Selection Handles NOT Placed accurately in an Ungrouped Org Chart

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In order to resize an Org Chart, it is first necessary to ungroup it. Any of the positions from the Basic Style Org Chart (represented by a rectangle) will not have accurately placed selection handles after resizing.

Steps to recreate:
1. Create an Org Chart using the Basic Style.
2. Ungroup the Org Chart.
3. Resize one of the positions so that it is less than 0.20" in height.

Notice that the Selection Handles are no longer on the corners of the rectangle.

Workaround:
Use any other Element Style in place of the Plain Element Style for the positions in the Basic Org Chart Style. Custom Model Style and other Org Chart Styles do not have the same problem.
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ClarisImpact: Slices in an Exploded Pie Chart Overlap or Cover Slice Labels

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Slices in a pie chart may overlap or cover a slice label when all slices are exploded and the chart is set to tilt. The workaround is to not explode one or more slices or to not tilt the chart.

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ClarisImpact: Carriage Returns in Org Chart

ClarisImpact cannot add a carriage return to an Organization Chart field in the same way that it can with a Flow Chart field (Option-Command-Return).
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is no feature for adding a carriage return to a ClarisImpact organization field as there is with a flow chart field (Option-Command-Return). If you need carriage returns in your organization chart, use Copy and Paste to add a carriage return from a Text model or Report document into your organization chart field. To do this, follow these steps:

1. Create a Report document.

2. Go to the Layout menu and select Preferences.

3. Select Preferences from the Layout menu. Set Text Preferences to Show Invisibles. Click OK to exit Preferences.

4. Back in your Report document, type a few carriage returns and copy one. A carriage return character appears as a bent arrow.

5. Return to your Drawing document and paste your copied carriage return into the fields in your Org Chart where you wish to display carriage returns.

You may want to create an Element Style that has a text block with returns already in it. Here's how to do this:

1. In your organization chart document, select Element Styles... from the OrgChart menu.

2. In the Element Styles palette that appears, click on the triangle button (it points down) to display more options.

3. Click the New button. Rename your style to "Carriage Return."

4. Click the Edit button, which brings up the Style Editor.

5. To add carriage returns, begin typing carriage returns to create a text block. Drag this text block to the organization chart element space.

6. Click OK to exit the Style Editor.

To use this style again in future organization chart documents, you choose the Element Styles... menu, select the "Carriage Return" style and click the Apply button.

Alternate technique
Rather than pasting carriage returns into organization chart fields, you may consider adding extra fields (through the Style Editor) to the organization chart element. This is the equivalent of adding extra lines or carriage returns in an organization chart element. Here's how to do it:

1. Bring up the Element Styles palette in your organization chart Document by selecting the Element Styles... menu from the OrgChart menu.

2. Next, bring up the Style Editor window by clicking on the triangle button for more options; then, type the name of your new style (you might call it "More Fields") in the name box; and click on the New Button.

3. In the Style Editor, drag new fields from the Field tool to your organization chart element.When you release your mouse button, the Field Definitions dialog box appears. Highlight the field you want and click OK.

4. You may need to adjust the size of your organization chart element before you exit the Style Editor.

The new fields appear as extra lines in your organization chart element when you use the style you created here for future organization chart elements.

Remember, an Organization Chart Element Style needs to have at least one field.
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MacDraw Pro: Drop Launch Doesn‘t Translate MacDraw II Files

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Macintosh System 7 has a feature called "Drop Launching," which allows you to drag a file icon over the icon of the application that created it and launch that file into the application. Claris applications allow you to drop-launch in System 7.

In addition, because MacDraw Pro uses the XTND translation system to open and convert files from other document formats, you can drop-launch onto MacDraw Pro files which were created in MacDraw II or files which are in standard graphic formats. MacDraw Pro will launch and translate the files.

However, if you drop-launch a file and MacDraw Pro launches but the file does not open up as a MacDraw Pro document, it is likely that the XTND translation has failed for some reason. To troubleshoot the problem:

1. Quit MacDraw Pro.
2. Open the System Folder.
3. Open the folder titled "Claris."
4. Make sure that there is a file called "Claris XTND System" and a folder called "Claris Translators."
5. Open the Claris Translators folder and make sure that it contains a file called "MacDraw II 1.1"

If any of these files are not present, disable any virus protection and reinstall MacDraw Pro. If all of these files are present, and are exactly where they should be:

1. Open the Preferences Folder inside the System Folder.
2. Throw away the file titled "XTND Translator List."
3. Try drop-launching the file again.

If the file still will not drop-launch successfully, call Claris Technical Support.
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ClarisWorks: Converting AOL Stock Portfolio Data into a Spreadsheet (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Curr. Symbol	Qty.	Purch. Price	Gain/ Change	Price	Loss	Value
AMER	1	70 1/2	+5 3/4	25	+45.50	70.50
BORL	1	13 3/4	+1/2	21	-7.25	13.75
IBM	1	54 1/4	+2 1/4	47	+7.25	54.25
MSFT	1	80 3/4	-1/2	83	-2.25	80.75
SGI	1	24 3/4	-3/8	28	-3.25	24.75

The data above is an example of what you get when you save an America Online (AOL) stock portfolio as a file. It can be useful to analyze this information in a spreadsheet. However, spreadsheets require data separated by tabs, and since the portfolio is saved with spaces in between columns of data rather than tabs, some text processing is required.

The find/change command in ClarisWorks comes in handy here. The following instructions step through a process which results in a spreadsheet version of your portfolio.

1. After saving the stock portfolio as a file, open the file and copy the data.

2. Create a new ClarisWorks word processing document and paste. Delete the Totals row.

3. Choose Find/Change from the Edit menu.

4. Enter 2 spaces in the Find field and \\t into the Change to field. Press Change All.

5. Enter \\t\\t into the Find field. Keep pressing Change All until you get the message that zero occurrences were replaced.

6. Select All and Copy.

7. Create a new ClarisWorks spreadsheet and Paste.

If you want to convert Prices from fractions into decimal numbers, use the formula below. In this example, the fractional value in Price (starting in C4) is being converted into a decimal number in column H. You can cut and paste this formula into cell H4 and use the Fill Down command in the Calculate menu to fill a selected range automatically.

```
=IF(FIND("/",C4,1)=0,C4,LEFT(C4,FIND(" ",C4,1)-1)+ (MID(C4,FIND(" ",C4,1)+1, FIND("/",C4,1)-FIND(" ",C4,1)-1))
/ RIGHT(C4,LEN(C4)-FIND("/",C4,1)))
```

NOTE: BBEdit and McSink are even better suited to doing steps 3-5 because they can convert space runs of 2 or more to a single tab. Both are available in the AOL libraries, keyword: FILESEARCH.
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ClarisWorks: Frame Not Showing But Still Part Of The Document

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you have a floating spreadsheet frame on a word processing document on any page but the first and you deleted all of the text on the page containing the frame the page will disappear but the contents of a cell in the spreadsheet frame will be found by doing a find in the Find/Change dialog box. The find will not display the page with the frame but does acknowledge the presence of the item you were looking for. To make the frame reappear you need to select the text tool, click into the document and hit enter to add more pages.

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ClarisWorks: VT102 Application Emulation & Keyboards

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are problems with several of the Apple Keyboards (including the PowerBooks) in properly mapping VT102 application sequences to the keypad and cursors from the hardware. The software keypad (under the "Keys" menu) usually works ok. The problem is not with ClarisWorks itself but with the VT102 tool (1.0.1 and earlier), which is written by and supplied to us by Apple Computer.

The lists of keyboards affected include but are not necessarily limited to:
PowerBooks
Apple Keyboard II
Apple Adjustable Keyboard

The keys possibly affected include:
The Arrow (Cursor) keys
The "+" keypad key
The "-" keypad key

The workarounds are as follows:
Use the "Keys" Menu.
Substitute an extended or original Apple Keyboard for the problem keyboard.
Wait (hopefully) for a fix from Apple in the form of a updated VT102 tool.
Find a 3rd party VT102 or VT320 tool that works (BBS's or 3rd party vendors).
Use some other communications program that does not use the Communications Tool Box.
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MacDraw Pro: Gradients in Polygons don‘t Print to the StyleWriter I

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Polygons (other than rectangles) filled with directional gradients in MacDraw Pro may not print to the StyleWriter I printer using the StyleWriter I driver. The polygon itself will print properly, but it will not be filled with a gradient.

This appears to be a problem with directional gradients that are oriented very closely to the four main quadrant axes: 0¡, 90¡, 180¡ and 270¡. Editing the gradient so that it is oriented at least 5¡ away from the axis (i.e., 95¡ instead of 90¡), then reapplying that edited gradient to the polygon, appears to solve the problem.

"Circular" and "Burst" gradients appear to print properly, although, as with all gradients printed to a StyleWriter I, they print very slowly and in "bands" (both are QuickDraw limitations).

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ClarisImpact: Beep When Applying Element Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Question:
When I try to apply an Element Style to an Element in some Models, ClarisImpact just beeps at me. Why?

Answer:
Not all Element Styles can be applied to every Element in every Model. ClarisImpact indicates that this Element Style is not applicable to the selected Element by beeping at you. For example, it is not possible to apply a gradient element such as the "Blue-coral gradient" Element Style to the background of a Chart Model.

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ClarisImpact: Hardware and System Software Compatibility

Hardware and Peripheral devices which have been tested with ClarisImpact.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisImpact 1.0v1 is certified as fully functional in the following hardware and System software environments with a minimum memory requirement of 2 MB RAM (System 6.0.x) or 4 MB RAM (System 7.0.x):

Macintosh Portable
Macintosh Plus
Macintosh Classic family
Macintosh SE family
Macintosh II family
Macintosh Quadra family
Macintosh PowerBook family
Macintosh Duo family
Macintosh LC family
Macintosh Centris family

A hard disk drive is required for all machines. 32-bit QuickDraw version 1.2 or higher is required for all machines with color ROMs (SE/30, LC, or II family) that do not have 32-bit QuickDraw in ROM.

Monitors Supported

Apple 9" display (Plus, SE, SE/30, and Classic)
Apple 10" display (PowerBook and Duos)
Apple 12" color monitor
Apple 12" gray scale
Apple 13" RGB monitor
Apple 14" RGB monitor
Apple 16" RGB monitor
Apple 21" RGB monitor
Apple Portrait monochrome monitor
Apple Two Page display gray scale monitor
Radius Full Page Display monitor
Radius Two Page Display monitor
Radius Two Page Display RGB monitor

Radius Pivot Display monitor
SuperMac 19" color monitor

Printers Supported

Apple LaserWriter family (Plus, II, II NT, IINTX, IINTR, IIf, IIg, IISC, Select 300, Select 310, select 360, Pro 630)
Apple Personal LaserWriter family (NT, SC, LS, 300)
Apple StyleWriter
Apple StyleWriter II
Apple Color Printer
Apple ImageWriter family (I/II/LQ)
HP LaserJet family (III, IIIp, IIID, IIIsi, 4M)
HP PaintWriter
HP DeskWriter family (500, 500C, 550C)
QMS ColorScript 100
Seiko ColorPoint PS
Tektronix Phaser 4693DX
Montage FR1 (Slide Printer)

System Software

System software version 6.0.7
System software version 6.0.8
System software version 7.0
System software version 7.0.1

System software version 7.0.1
System software version 7.1
System software version Pro

Print Drivers

Apple LaserWriter 6.0.2
Apple LaserWriter 7.1.2
Apple LaserWriter 8.1.1
Apple StyleWriter 7.2.3
Apple StyleWriter II 1.2 (Print share/Direct)
Apple Color Printer 1.0 (Print share/Direct)
Apple ImageWriter 7.0.1 (Serial/Direct)
Apple ImageWriter LQ 7.0.1 (Serial/Direct)

HP DeskWriter 3.9
HP DeskWriter C 3.0
HP DeskWriter 550C 2.0
HP PaintJet 3.07a

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ClarisImpact and ClarisWorks: Filled Patterns May Make Value Labels Unreadable

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Charts created with a pattern fill (especially a "hatch" pattern) may make the value labels unreadable on screen and on printout. This could happen with any of the Chart types value labels including percentages in slice with a PIE Chart.

When printing with the Color/Grayscale print option turned on, the percentages will be shown in white. When printing with the Black & White print option turned on, the values will be displayed in black. In both cases the numbers will be difficult to read if an alternating white and black pattern fill is used.

Some Things You can Try:

1. Try changing the font size or style so that the label value is more readable. In order to change the font or style it is necessary to first select the Series box in the Legend corresponding to the slice, bar , etc. that has the value you wish to change. A white circle will appear in the center of the Series box indicating that it is selected. At this point you can choose any font, font size or style and the label value will change.

2. A less desirable choice would be to not use your preferred pattern. Use a solid fill or a pattern fill that does not alternate from white to black.

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ClarisImpact: Documentation Error on Connectors: UG Page 1-18

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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On page 1-18 of the ClarisImpact User's Guide there is a table describing the different types of drawing tools. The definitions for Straight Connector and Right-angle Connector are incorrect. They should be as follows:

Straight Connector: Draws a straight connecting line between two objects.

Right-angle Connector: Draws a right-angle connecting line between two objects.

NOTE: Connector lines are intelligent lines that connect objects. If you move an object, the connector line automatically reshapes to accommodate the change in placement. Connector lines can be drawn with the drawing tools and are one of the main components in an Organizational Chart and a Flow Chart.

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ClarisImpact: Error in Help System - Linking Text Frames

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisImpact electronic Help section regarding linking text frames is misleading because there is a missing step. Between steps 2 and 3 there should be another step to select the Arrow tool.

To locate this mistake in electronic Help:

1. Choose Help from the Apple menu.
2. Click once on the Keyword button.
3. Scroll till you find "Linked Text Command" and click once on it.
4. To the right will appear the text "Linking Text".
5. Once you click on this word the Help section will appear with the missing step.

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ClarisImpact: Free Rotate Makes SmartAlign Inaccurate

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you use the Free Rotate command on objects that have been SmartAligned, the alignment of the rotated objects may be inaccurate. This is especially true if the objects are of different sizes.

The SmartAlign command should be used after the objects have been rotated and adjusted to their final orientation.

This issue is very difficult to reproduce.
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DAL: RMS, VAX Rdb, & VAX DBMS Support Q&A

I have some questions about Data Access Language (DAL, formerly known as "DAL") that I need help with:

1. Is Rdb a relational database product that DEC ships free with VMS? Currently, DAL supports Rdb files (that is, you plug it in and play).

2. Is RMS an older relational file structure supported by third-party products like DATATRIEVE. When will DAL support for RMS files be available?

3. DATATRIEVE seems to be a query/script language for accessing RMS files. Does DATATRIEVE keep its own data files in RMS in such a way that DAL will be able to directly read them, or do we have to run some conversion process?
This article has been archived and is no longer updated by Apple.
VAX Rdb/VMS is the DEC relational database management system. However, only Rdb Run-time is bundled with the VAX/VMS operating system. For Interactive and development use, users still have to purchase separate licenses from DEC. Please check with a Digital Sales Office for more information on this licensing.

VAX Record Management Services (VMS RMS) is not an older relational file structure, but rather it is the data management subsystem of the VMS operating system. In combination with the VMS operating system, RMS allows efficient and flexible storage, retrieval, and modification of data on disks, magnetic tapes, and other devices. Currently, RMS supports three file organizations: Sequential, Relative, and Indexed. It supports both Sequential Access and Random Access for Record Access modes. Currently, DAL does not support accessing RMS files directly.

VAX DATATRIEVE, a query and report system, provides a uniform access method for data stored by RMS, VAX Rdb, and VAX DBMS (a multi-user, general-purpose CODASYL-compliant network database management system). DATATRIEVE is also a
Digital product, not a third-party product. Using DATATRIEVE, users can retrieve or modify data without considering the underlying storage method or physical location of the data. Because DATATRIEVE is only a query and report system, the storage of data is determined by the data management subsystem, like RMS, or a database management system, like VAX Rdb or VAX DBMS. If the data being used by DATATRIEVE is from VAX Rdb, DAL should be able to access it. Accessing RMS files directly is not possible with DAL as stated above. DAL will not be able to access data from VAX DBMS either.
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ClarisImpact: How to Change Field Names in Organization Charts

Just how do you change the default names for the fields in an organization chart?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Q. I am currently using Element Styles to edit or add a field to a Position in an Organizational Chart but I cannot figure out how to change the name of the fields. I can put a new field on the Position but I cannot give it a new name.

A. Field names are not changed in Element Styles. To change a field name choose Level Settings... from the OrgChart menu. In the resulting dialog box you will see a section for Default Values. Pop-up the menu in that section and choose Field Prompts.

The resulting dialog will let you modify field names.

NOTE: It is not possible to add a new field. You can only modify the field names that are already listed.

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ClarisImpact: How to Place Graphics In-Line

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Holding down the option key while choosing Paste from the Edit menu allows you to paste a graphic in-line with the text.

However, you cannot hold down the option key while choosing Place File... from the File menu to get the graphic or text you are placing to insert in-line. Holding down the option key forces ClarisImpact to use the AppleWorks translator regardless of what you are trying to Place.
Published Date: Feb 18, 2012

ClarisImpact: Models Don‘t Convert When Using Save As

I created an Outline in ClarisImpact and then saved it as a Word document. When I opened the document in Word there was no Outline. In fact, there was nothing at all. What am I doing wrong?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

You have created an Outline Model. Because Model frames in ClarisImpact are in a custom proprietary format, if you save directly to a Word Processing format, it is likely that the format does not support these special items. In this case, Word does not understand what the frame contains.

Solution:
Use the "To Outline" feature in the Report environment. This actually converts your Report document into an Outline document. This Outline will open in Word or any other word processor without the bullets but with all the properly indented tabs and text.

NOTE: The "To Outline" feature is available from the Text menu.

No Models will convert to a foreign file format, because no other product directly implements the features of ClarisImpact.

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ClarisImpact and ClarisWorks: Preferences Apply Only To Current Document

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When you use the Preferences command in the Layout menu, you are choosing specific preferences for the current document. Those preference selections have no effect upon other documents in ClarisImpact or ClarisDraw.

If you choose the "Make Default" button in Preferences, you will create a ClarisImpact or ClarisWorks Preferences file in the Preferences Folder in your System Folder. That file will be used by ClarisImpact or ClarisWorks whenever you create a new document, but the Preferences file is only referenced by these programs when a new document is created; changing those preferences, even if you choose "Make Default," will not make any changes to already-existing documents.

If there is no ClarisImpact or ClarisWorks Preferences file, these programs will use its built in defaults to assign settings to new documents.

The ClarisImpact or ClarisWorks Preferences file will be accessed normally by ClarisImpact if it is located in the Claris folder in the System Folder, the Preferences Folder in the System folder, or in the ClarisImpact or ClarisWorks Folder where the application is located.

Another method for saving settings for new documents is to use stationery. Consult page 2-27 in the ClarisImpact User's Guide or page 2-20 of the ClarisWorks 2.0 User's Guide for details.

Published Date: Feb 18, 2012

ClarisWorks, MacDraw Pro, and MacWrite II: Spell Checking Finds Objectionable Words

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in version 2.3 of the Main Dictionary

Early versions of the Main Dictionary contained several objectionable words. When you spell check with certain misspellings, the spell checker would offer an objectionable word as an alternate spelling.

The older versions of the Main Dictionary with this problem were shipped with MacWrite II through version 1.1v4, ClarisWorks 1.0 (all versions), MacDraw Pro (all versions), and FileMaker Pro (versions not verified).
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ClarisImpact: Use Command-Tab to Place a Tab into an Outline

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q:
I want to create a tab marker in an Outline. I have no problems putting the tab marker on the ruler but when I type the Tab key the level of the Outline changes. How do I enter a tab into an Outline?

A:
Hold down the Command (Apple) key while typing a tab.

Published Date: Feb 18, 2012

ClarisDraw, Impact, and Works: Print Preview

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Print Preview is invoked by choosing Page View from the View menu. NOTE: The Word Processing environment is always in Page View and cannot be turned off.

In ClarisImpact and ClarisDraw:
Print Preview in invoked by choosing Show Page Breaks from the View menu. NOTE: The Report Environment is always in Print Preview and so Show Page Breaks will always be grayed out.

IMPORTANT:
Page View and Show Page Breaks simply show page breaks and margins. To get the full capability of Print Preview it is necessary to use Zoom. Zoom will allow you to decrease the size of the page so you can view one or more pages on a small screen.
Published Date: Feb 18, 2012

ClarisImpact: Underlined Values in Timelines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Underlined values indicate that a value has been entered manually and not calculated by the Timeline. Whenever you change a value it will have an underline unless it is exactly the same value that the Timeline would have calculated.

When you initially create a Timeline, the Planned Start date for the first Task and all the Durations will be underlined to indicate that these values have not been calculated.

The underlines WILL print and there is no preference for turning off the underline feature.
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ClarisImpact: Page Setup problems with StyleWriter and Apple Color Printer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is fixed in ClarisImpact 1.0v2. Call Claris Customer Assistance at 408-727-8227 to obtain a free copy.

Normally when the Paper Size or Scaling Percentage (%) is changed in Page Setup the document changes on screen so that you can visualize what will eventually print. Paper Size and Scaling Percentage changes do not change on screen when using the StyleWriter, StyleWriter II or Apple Color print drivers with ClarisImpact. Even though ClarisImpact will not show any visible changes on the screen, printout will be reduced or enlarged to meet your Page Setup scaling specifications.

All other print drivers will correctly display any changes to Scaling Percentage on screen and printout. The ClarisImpact Development team is aware of this issue.

Easy steps to reproduce issue:
1. Create a new Drawing document.
2. Zoom down to 25%.
3. Choose a LaserWriter driver from the Chooser.
4. Change the Page Setup Scale percent to 50%.

Notice that the document size changes.

Now repeat the above steps but change step 3 so that you are using a StyleWriter driver instead. Notice that the Page Size does not change. Again, this issue is only visual. Printing the document will result in a document 50% smaller.
Published Date: Feb 18, 2012

ClarisWorks and ClarisImpact: Sixteen Color Setting in Monitors Causes the Highlight Color to Become Corrupt

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
How to recreate the issue:

1. Under the Control Panels, select Color, and choose Purple as the Highlight color.
2. Also under the Control Panels, select Monitors and reset to sixteen colors.
3. Open or go to ClarisWorks or Claris Impact.

Workaround:
1. Set your highlight color to either the Yellow or Grey setting in the Color Control Panel's menu OR
2. Select "Other" from the menu and then select a color in the OUTER ring of the color wheel.

NOTE: This occurs in ClarisImpact 1.0, ClarisWorks 2.0 and 2.1. It does not occur in ClarisWorks 1.0.
Published Date: Feb 18, 2012

LaserWriter: How to Change the Manual Timeout

I want to change the manual-feed timeout on a LaserWriter IINT. I read the Tech Info Library article "LaserWriter Timeout Specifications", which states that this can be done and refers you to the "PostScript Language: Reference Manual". Because I'm no PostScript expert, I would like to get a PostScript program that changes the manual-feed timeout to 120 seconds.

This article has been archived and is no longer updated by Apple.
Changing the timeout is done with the "setdefaulttimeouts" PostScript operator. This operator establishes the default values, job, manual feed, and wait for the three timeouts. At the beginning of each job, these values are used to initialize the job, manual feed, and wait timeouts. Each parameter must be a non-negative integer denoting the length of a timeout in seconds. The value of 0 indicates that the corresponding timeout should never occur. The default values for job, manual feed, and wait are 0, 60, and 30, respectively. A PostScript program, like the one that follows, can be sent to the printer to change timeout values:

```
serverdict begin 0 exitserver
statusdict begin
# # # setdefaulttimeouts
end
```

where # # # should be replaced by the job, manual-feed, and wait-timeout values in seconds. In your case, you want to change the manual-feed timeout to 120 seconds and keep the other values the same. You third line should look like this:

```
0 120 30 setdefaulttimeouts
```

The PostScript program then can be downloaded to the printer using a download utility, like Widgets, that comes with the CE Software DiskTop Utility. For more details, search the Technical Info library under "CE Software, Inc.."

Published Date: Feb 18, 2012

Rotated Objects Print Incorrectly with the LaserWriter 8.x Printer Driver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When printing using the LaserWriter 8.0 or 8.1.1 printer driver, some objects may be rotated in an odd way. Drawings which printed properly with previous printer drivers will look askew with these two LaserWriter drivers.

This issue has been fixed with the LaserWriter 8.2 driver. (Please see the notes that come with this driver version.) Upgrading to the LaserWriter 8.2 driver is the best solution to this issue.

Since the objects in a document and their placement determine whether you will experience this issue, knowing how to create a document which exhibits the symptom, is central to knowing the workarounds. Here are the steps to recreate such a document:

1. Create an ellipse, arc, round-cornered rectangle, or in MacDraw II, MacDraw Pro or Claris CAD, a rectangle
2. Create a polygon
3. Draw one or more objects
4. Rotate the object you created in step 1
5. The polygon you created in step 2, and any object created after that, will be rotated to the same angle as the object you rotated in step 1

This issueinvolves the relative stacking order of the object in step 1 to the object in step 2 (the polygons need to be stacked "above" the rotated object for this to occur).

Workarounds:

- Move all poly-based objects (polygons, bezigons, etc.) to the back of the document
- Alternatively, if possible, move objects other than poly-based ones to the front
- Go back to using the LaserWriter 7.x driver

Additionally, you could also

-Save the document in EPSF format, re-open the EPSF file, and print that in its entirety

The symptom can occur when printing the document in the foreground or background, with either Postscript Level 1 or 2.

Also note that this issue isn't confined to MacDraw II, MacDraw Pro, Claris CAD, or Claris products in general. The issue has been found to occur when printing from other programs such as Microsoft Word, Microsoft Excel, Microsoft PowerPoint, ResEdit, PICT Detective, Canvas 3.0 and Canvas 3.5.

ClarisWorks and ClarisImpact do not exhibit this issue.

Interesting technical sidelight: in step 1 of the procedure above, the instruction calls for you to "create an ellipse, arc, round-cornered rectangle, or in MacDraw II, MacDraw Pro or Claris CAD, a rectangle." The reason for the difference with MacDraw II, Pro and Claris CAD, is that these products all internally "tell" the printer that a rectangle is actually a rounded rectangle - with the radius of the corners set to zero. So MacDraw and Claris CAD will exhibit this behavior, even with a rectangle, while other draw applications may not.

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ClarisImpact: Very Wide Spacing Between Letters on Printouts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

You may see VERY wide spacing (1/8 to 1/3") between characters when you print from ClarisImpact if you are using an old version of the Hewlett-Packard DeskWriter driver. Upgrading to anything beyond 2.x will fix this issue.

A temporary workaround until you obtain a new driver from HP is to copy and paste your work into a new ClarisWorks document. Print from the new document.

To get the current HP Driver, you can do any one of the following:

- Call the HP Driver Update number directly at 303 353-7650.
- Fax your request to 303 335-7655 Specify the driver version you are currently using, your printer name and type, your name address and daytime phone number.
- Use the "HP First" Fax answer line (similar to ours). It can Fax you back a driver request form - call it at 800 333-1917 with your Fax number ready to key in.

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ClarisWorks and ClarisImpact: Adding Durations in Minutes to a Start Time (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Given a start time in A2 and two duration times in B2 and C2 expressed as number of minutes, the formula for end time would be:

=A2+B2/1440+C2/1440

Use the Number command in the Format menu in ClarisWorks or the Number Format command in the Table menu in ClarisImpact to set the end time cell to display as time rather than a decimal.

Times are expressed internally as a decimal value in ClarisWorks and ClarisImpact, with midnight being equal to 1 and noon to .5. The number of minutes in a day is 1440 which we used here to reduce minutes to a fraction of the day so that we could add it to the start time.
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ClarisImpact: Creating Conditional Loops using the Flow Chart

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
It is possible to create a conditional loop using a Flow Chart, but you cannot do it with the Add Element controls (the arrows that appear when you click on a Symbol).

To add the arrow between the Symbol titled "1D" and the Symbol titled "1A" it is necessary to draw the connector manually. Follow the steps below:

1. Click on the Symbol until the Add Element controls appear
2. Click and hold down in the center of that Symbol.
3. Drag to the center of the Symbol you want to connect.

The connector created will be just like the connectors created with the Add Element controls.

This solution will not work with an Organization Chart.
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ClarisImpact: Data in Table does not Appear to Copy and Paste

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The first column of a Table using the Traditional Model Style is formatted with white text. If you try to copy and paste the data from the first column, it will appear NOT to paste.

Solution:
Change the text color before you copy or after you paste.
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ClarisWorks: Text Wrap Near the Right Margin Causes Line Spacing To Revert To Single Spacing

This is an issue exclusive to ClarisWorks 2.1v2.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks version 2.1v2 has a known issue when formatting an object with the Text Wrap option. If the object is located at the right margin of the document, the text which is actually effected by the text wrap option will revert to single line spacing.

If you paste the graphic inline or move it to the left margin, it will work fine.

This issue is fixed in 2.1v3 and 3.0.
Published Date: Feb 18, 2012

Updating to ClarisWorks 2.1v2 Generates The Alert, "This document uses fonts not installed in your system."

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This has been fixed in ClarisWorks 2.1v3 and above.

Claris has confirmed that some customers may see the following alert, "This document uses fonts not installed in your system." This alert may occur upon opening documents created with ClarisWorks 2.0 with their updated ClarisWorks 2.1v2.

The alert lists the "missing" fonts by number. Clicking OK opens the document and shows the fonts that were reported missing. This has happened on systems where no fonts have been installed or deleted. Therefore it seems that the alert is erroneous.

Claris Engineering is aware of the issue.
Published Date: Feb 18, 2012

Functionality of Demi-cercles And Rayon In ClarisWorks 2.0Fv1 Is Switched In The Rectangle (Arrondi d‘angle) Dialog Box.

Rayon functions as expected if you choose Demi-cercles and enter the points into the Rayon point field.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

There is a problem with the Rectangle dialog box in the French version of ClarisWorks 2.0. The dialog, Arrondi d'angle, appears similar to the US version, with it's corresponding dialog for Rounded corners. However, the option, Demi-cercles, which should correspond to the Round ends in the US version, actually functions like the Radius. Rayon, functions as Rounded corners in the US version. The field for entering the points of the Radius positioned adjacent to Rayon, does indeed relate to Rayon (Radius), but will not have an effect unless Demi-cercles is selected.

The issue is apparent when you take the following steps...

1. Launch ClarisWorks 2.0Fv1 and Open a Draw (Vectoriel) document.

2. Using the Rectangle tool, create a rectangle.

3. Click twice on the object to bring up the Arrondi d'angle (Rectangle) dialog.

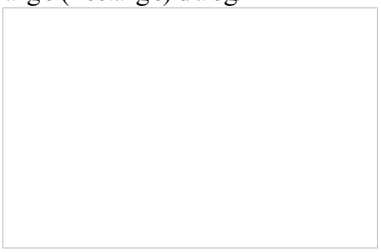

Figure 1

Claris Engineering is aware of the issue.

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Issue with Apple‘s ProDOS Extension When Saving ClarisWorks Files as AppleWorks Format (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Apple now ships a ProDOS extension that allows you to mount a ProDOS disk onto a Macintosh desktop. It also allows the transfer of files between a ProDOS and Macintosh computer system. Previously this was only possible using Apple File Exchange (AFE).

Unfortunately, the ProDOS extension does not work properly when using it to transfer an AppleWorks file to an Apple II or IIGS, if that file was created in ClarisWorks and saved as AppleWorks format.

1. If you save your ClarisWorks word processing file as an AppleWorks 2.0 file directly to your Macintosh hard drive, and then drag the file from the hard drive to a ProDOS diskette, the file will not open on an Apple IIe or Apple IIGS. In this procedure, the ProDOS extension loses the file type information. Normally the file type should be $1A but ProDOS changes it to $00. If you have an Apple IIGS you could use a Disk Editor to change the file type back to $1A, but in the case of an Apple II there is no workaround, except to use AFE to transfer the file instead.

2. If you save your ClarisWorks word processing file as an AppleWorks 2.0 file directly to your ProDOS diskette the file will be not be readable on any ProDOS machine. In this procedure, the ProDOS extension does save the file properly. The only workaround is to use AFE instead.

NOTE: If you have the ProDOS extension running while using AFE, then AFE will also fail to transfer the file properly. Remove the ProDOS extension and restart your computer before using AFE.

Another workaround:
Save your ClarisWorks files as a text file instead and import the text file into AppleWorks. The ProDOS extension will work properly with plain text files. The disadvantage to this method is that you will lose all formatting characteristics such as bolding or margins. Most importantly, though, the text will transfer.
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ClarisWorks: Spreadsheet Data "Disappears" When Inserting or Deleting a Header or Footer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Question:
Some of my spreadsheet disappeared when I inserted a Header/Footer. How do I get it back?

Explanation:
Whenever you insert a Header/Footer or remove a Header/Footer, ClarisWorks automatically turns on Page View so that you can see the Header/Footer, or see that it is gone.

Page View only shows the Print Range since it is like a Print Preview. This may make some of your spreadsheet seem to disappear, if a Print Range of specific cells has been chosen instead of the default "All cells with data".

Solution:
Under the View menu notice that there is a checkmark next to Page View. Choose Page View to turn off this feature.

Another solution would be to change your Print Range to include the portions of the spreadsheet you want to see. Choosing "All cells with data" will ensure that all of your spreadsheet will always show on screen and print. Print Range is found under the Options menu.
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ClarisWorks: Can‘t Access the Error Correction Settings in Apple Modem Tool Dialog (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks 2.1 comes with a new Apple Modem tool which offers modem error correction controls. If you select your modem from the popup menu and these controls are disabled, your modem does not support error correction. If your modem is not listed in the popup menu, you can create your own modem settings by selecting Custom.

To get access to the Error Correction settings in the Apple Modem tool 1.5 connections dialog:

1. Choose Hayes compatible from the popup menu (Settings menu, Connection Settings)
2. Then select Custom from the same popup menu.
3. Click the checkbox for "Modem supports software error correction." If you modem supports hardware error correction, also click the hardware checkbox.

You will then have access to the Error Correction popup menu. Selecting Optional or Required from that menu will enable the Correction Type popup menu which offers options for Software MNP or hardware.

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Help File for French Version of ClarisWorks for Windows is in English

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisWorks for Windows version 1.0CFv1 help was in English.

This has been fixed in the current revision of ClarisWorks PC 1.0CFv1.
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ClarisImpact: Need to Select SYLK File Type in Order to Import SYLK Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
SYLK files will not import correctly into a ClarisImpact Table if the file type "All Available" is used. ClarisImpact will use a Text or ASCII translator unless the Show menu from the Place File... dialog box is changed to "SYLK".

Normally, Claris products can take a quick look at the header of the file and pick the correct translator instead of requiring the exact translator to be chosen.
Published Date: Feb 18, 2012

Outline Levels Not Retained When Pasting from ClarisWorks Into ClarisImpact - Use Open or Place File Instead (WP)

ClarisWorks outline levels are not retained when copied via the clipboard and pasted into a ClarisImpact outline frame. All outline items paste in as level 1 paragraphs.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

To bring a ClarisWorks outline into ClarisImpact with levels intact, save the ClarisWorks document and use the Open (to create a new document) or Place File (to insert into an existing document) commands in ClarisImpact.

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ClarisImpact: Placing a File into a Timeline

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Timelines have the ability to show many columns of information such as Planned Start, Duration, etc. through the Data Display menu choice. You might think if a column is not showing on screen then that column will not be used during import (import refers to using Place File... or Copy/Paste). Unfortunately, this is not true. That is why column order is so important when importing. The import order (same as display order) is listed below:

1. Task Name
2. Planned Start
3. Duration
4. Latest Finish
5. Actual Start
6. % Done
7. Actual Finish

ClarisImpact imports into all columns whether they are showing or not. As a general rule, your text file should contain 7 Tabs-worth of data (one for each column of data, whether or not the column is displayed in the table). For any columns for which you do not have actual data, it is still necessary to have a Tab of blank data in your text file. The only exception is when the blank columns occur at the end. For example, if you want to import into the first three columns but not the last four then you do not have to include tabs as space holders for the last four columns.

Also, remember to make sure the data you are importing is of the same data type as the Timeline columns. If you are importing into a Date column then make sure the data you are importing is of date format. Generally, the Timeline will just not import the data if it is of the wrong data type (thus leaving a blank column after import). The same thing could happen if you do not properly match up your Timeline columns with your import data.

Lastly, Place File... will not create new rows if the import data uses more rows than are currently in your Timeline. Always create enough rows when Placing data into a Timeline. Copy/Paste will create new rows if they are needed.

NOTE: The Data Display dialog is incorrect because it switches the above order for "% Done" and "Actual Finish".
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ClarisImpact: Cannot Change Date Formats in Timeline

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Two of the five Date Formats available for Timelines will sometimes not allow the modification of a date in the Planned Start, Planned Finish, Actual Start or Actual Finish column (even if the date is accurate). Date format options appear in this order from the Date Format... dialogue box:

6/11/95
Jun 11, 1995
June 11, 1995
Sun, Jun 11, 1995
Sunday, June 11, 1995

The top three formats do not cause any problems. The last two formats will sometimes not allow modification, indicated by a beep but NO error message. The beep simply means ClarisImpact will not accept what you are entering.

Workaround:
All of the date formats except for the first choice are not meant to be edited. When changing a date, do not just modify the day or year, retype the entire date in the format mm-dd-yy instead of the long format (once entered, ClarisImpact will automatically reformat to the long version of the date).

NOTE: Although the last 4 date formats are for display only and not meant to be modified in their long form only the last two date formats will cause problems. Therefore it is safe to edit the first three date formats in long form but not the last two.

The ClarisImpact Development team is aware of this issue.
Published Date: Feb 18, 2012

Macintosh and Distributed-Session Controllers (8/94)

IBM has an SDLC card that distributes 3270 series sessions over IBM's implementation of Token Ring.

1) Is there software for the Macintosh that lets the Macintosh get a session from the SDLC card over Token Ring?

2) If yes, can the Macintosh be bridged to Ethernet or LocalTalk and get a session through that topology?

This article has been archived and is no longer updated by Apple.
There is no software available at this time that lets a Macintosh connect to a distributed-session controller, like a PC with an SDLC card. Essentially, the ability to accept one of the distributed sessions from an SDLC interface requires software that is not yet available on Macintosh. Our only solution is the expensive route of using a true 3174 or compatible controller, or SNA Gateway product and terminal emulation.

You can also talk to Tri-Data, DCA (formerly Avatar), and Wall Data. All of these companies can address the needs of distributed 3270 sessions (Wall Data can also use the Serial NB Card). The Macintosh SE, Macintosh SE/30 and Macintosh II systems can use distributed SDLC sessions through an Apple Network System products, like Avatar MacMainFrame, Tri Data Netway 2000, Wall Data SNA*ps, or Andrew NetAccess. Note however, that these products do not provide a true solution, because there are no Apple or third- party products that use NetBIOS distributed SDLC sessions over Token Ring as implied by the request and are limited to a set number of sessions available for distributing.

Given the use of the third-party products listed here, it is also possible to acquire sessions across different network topologies through the use of routers, as in the case of an Apple Internet Router supporting LocalTalk installed with an Ethernet card or Token Ring card.

Article Change History:
30 Aug 1994 - Updated with additional third-party offerings.
26 Jul 1993 - Company title changed from Avatar to DCA (Digital Communication Associates).
23 May 1990 - Updated for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

ClarisWorks: Color ANSI and VT420 Communications Tool

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ASC makes a terminal tool which supports VT420 and PC-ANSI graphics. Informal testing indicates that the tool is compatible with ClarisWorks. The tool adds color ANSI graphics support.

Below are the file description and Read Me file for the demo tool available in the Claris forums and Claris BBS. The demo version supports sessions up to 8 minutes long. If you decide to use the tool, you can purchase a fully functional version from ASC.

DEMO FILE DESCRIPTION

Enclosed is vt420 and PC-ANSI terminal tool for the Communication Toolbox (CTB). The CTB is part of your system if you run Sys 7 or later an can be installed on Sys 6.0.4 or later.

This tool offers full color support (also in vt mode), ANSI graphics, speed, drag & drop keyboard mapping and much more....

When used with 5PM Term or 5PM Pro from ASC it also offers full Printer Support by re-directing terminal printer stream to your local or LAN connected Macintosh Printer.

The tool can be used over LAT, modem, serial, ADSP and TCP/IP (with our telnet tool called TCPack).

The demo can also be downloaded from Internet at netcom.com anonymous FTP path "pub/ascus/".

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DEMO INSTALLER READ ME

This Installer will install :

asc420/ANSI Terminal tool for DEC-VT420 and PC-ANSI emulation.

Installation Procedure

The Installer requires that you run Apple's System version 6.04 or higher.

If you run System 6.x, make sure that you have installed Apple's Communication Toolbox before using this Installer.

The connectivity tools will be installed into your active "Extensions" folder if you are running System 7 or higher or into your active "Communications Folder" if you are running System 6.x.

Fonts Installation Procedure

On System 7.1 or higher the Installer will copy the required fonts into your active "Fonts" Folder.

For older systems the fonts will be put into a folder called "Fonts - Put into System" located on the same level than the 5PM Pro and 5PM Term applications.
You will then have to copy these fonts into your "System" file using the "FontDAMover" application if you are running System 6.x or by dragging them onto your System file or folder if you are running System 7.

Required Third Party Products

Some of the ASC products require some third party software or hardware in order to be used.
This third party software is not provided with this demonstration version for legal reasons.

Most of the third party drivers are however provided with the commercial product.

The following third party products may be required to fully test the enclosed products:

Communications Toolbox

Apple's Macintosh Communications Toolbox is required to be installed in your system before you install ASC products. If your Macintosh is running version 6.x of the System Software you will have to make sure that the Communications Toolbox is installed. The Communications Toolbox is already integrated in System 7 or higher.

MacTCP

Apple's MacTCP driver is necessary in order to test our TCP/IP related tools TCPack and FTPack.
Version 2.0.2 is recommended by Apple for use with System 7.1. It is fully compatible with System 6 and 7.

LAT

LAT connectivity is shipped with the commercial product, but not included with this demonstration version. LAT connectivity for the Communications Toolbox can be purchased from APDA.

The Connectivity Environments

Our Environments are a collection of tools and drivers which allow you to connect to the host environment of your choice. Remember that these environments might also work for configurations of which they do not bear the title. We are working on new environments, and are open to suggestions to help us serve you better.

UNIX/VAX

This environment allows you to connect to UNIX and VAX type systems, using VTxxx terminal emulation. The asc420 terminal tool is capable of emulating VT400, VT100, VT220, VT320, VT52, as well as PC/ANSI and VT100-AU/X. It allows you to connect to almost any type of UNIX system, as well as many of the bulletin boards and mail services. Connections can be made using TCP/IP, LAT, ADSP, serial connection as well as via almost any modem. Files can be transferred to and from the host using FTP or simple XModem. Other connections or file transfers (such as DECNet or Kermit) can be made by using other existing third-party tools.

IBM Mainframe

This environment allows you to connect to IBM mainframe systems, using IBM-3270 terminal emulation. The asc3270 terminal tool is capable of emulating IBM-3278 Models 1 through 5, as well as IBM-3279 Models 2 and 3. It allows you to connect using either SNA or TCP/IP to IBM computers running systems such as VM/CMS, MVS/TSO and CICS/VS. Files can be transferred using IND$File or FTP.

AS/400

This environment allows you connect to IBM AS/400 systems, using IBM-5250 terminal emulation. The asc5250 terminal tool is capable of emulating IBM-3477, IBM-3179, IBM-3180, IBM-3196, IBM-5292, IBM-5291, as well as IBM-5251. It allows you to connect using either SNA or TCP/IP. Files can be transferred using FTP or the Text file transfer tool.

Demonstration Version Validity

All ASC products provided with this Installer will be fully functional until March 15, 1994. After that date the basic demonstration will allow you test the product for sessions not exceeding 8 minutes.

If at that stage you would like to extend your evaluation period, please contact us :

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Company : ASC
Address : P.O. Box 160549
Zip/City/State : Cupertino, CA 95016-0549 / USA
Phone : (408) 725 4242
Fax : (408) 725 4243
AOL : ASCUS
compuserve : 73243,36
E-mail : marketing@ascus.com

TA42796_ClarisWorks_Color_ANSI_and_VT_Communications_Tool.pdf

In Europe :
Company : ASC
Address : 9551, route de Saint Laurent du Var
Zip/City/State : F-06610 La Gaude / FRANCE
Phone : (33) 93 24 76 00
Fax : (33) 93 24 76 06
E-mail : adv.soft@applelink.apple.com
Published Date: Feb 18, 2012

ClarisImpact: How to Duplicate a Slide

There is no feature for duplicating a slide. The best method is to copy and paste the information. More detailed instructions are below.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you are trying to duplicate the entire slide then follow these directions:
1. Click on the Arrow tool.
2. Choose Select All from the Edit menu.
3. Choose Copy from the Edit menu.
4. Create a New slide.
5. Click on the Arrow tool.
6. Type the Delete key once (to delete what is on the current slide).
7. Choose Paste from the Edit menu.

NOTE: If are copying the entire slide, it may be advantageous to try the Master Slide feature, covered in Chapter 14 of the ClarisImpact User's Guide.

If you just want to copy the data in the Body or the Title, follow these instructions:
1. Click into the Title or Body section until the blinking cursor appears.
2. Choose Select All from the Edit menu.
3. Choose Copy from the Edit menu.
4. Create a New slide.
5. Click into the Title or Body section until the blinking cursor appears.
6. Choose Paste from the Edit menu.

Published Date: Feb 18, 2012

MacDraw Pro: Large Arcs Will Not Print on LaserWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you make a drawing that spans several pages and draw an arc over 53 inches long, the arc, and anything on the page with the arc, will not print using LaserWriter print driver 7.2. The 8.1.1 driver will print a small portion of the arc, rotated at an undefined angle.

The solution is to group the objects together and scale the selection to 25%. Change the page setup to 400% (you may have to relocate the drawing to print on the page where you want it) and then print.
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ClarisWorks: Lookups Only Work When Values are in Ascending or Descending Order (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The ClarisWorks functions LOOKUP, HLOOKUP, VLOOKUP and MATCH are similar to a lookup in FileMaker but for a Spreadsheet. There is one major difference though. The values in your lookup range need to be in ascending or descending order. If the range is not in order then you will get unexpected results or an error of "#N/A!".

Appendix A of the ClarisWorks User's Guide has more information regarding these Spreadsheet functions.

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Truncated Word in Print Setup Dialog When Using the StyleWriter II with ClarisWorks French Version

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
On the French operating system, using the StyleWriter II driver:

In the print dialog box for printing a database file with the StyleWriter II driver, on the bottom right, the option "Les fiches en cours d'utilisation" (visible record) is displayed with the "n" half cut.

This is a known bug.
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Accents Not Correct in the Help Window for ClarisWorks French Version

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Under the Apple menu, choose Aide. In various areas you will see that the accents are correct until actually selected.

For example:
in Sommaire, choose Base de donnees, and select Creation d'une requete (notice accents are correct here).

What appears on the top left of the ClarisWorks Aide window as a result is Creation d'une requete.

This is a known bug in the French version of ClarisWorks.
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ClarisImpact: All Flow Chart Symbols Not Available

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Easy Install installs all files from ClarisImpact, but the full set of Flow Chart Symbols is not automatically available.

Following is an explanation from the Read Me file included with ClarisImpact:

The "ClarisImpact Color Styles" and "ClarisImpact B&W Styles" folders contain a second set of Flowchart files located in the folder named "Full Flowchart Styles". These files contain the same Basic and Computer Network model and element styles that are in the first set of files and include the rest of the style families - Business, Deco, Informal, International, Modern, and Traditional.

To use these styles, replace the "Flowchart Symbols" and "Flowchart Style" files in the "ClarisImpact Color Styles" or the "ClarisImpact B&W Styles" folders with the files in the "Full Flowchart Styles" folders. Note: if you have customized the original files, rename or make a copy of them before they are replaced.
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ClarisImpact: Arrow Moves when Line is Rotated and Resized

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
I added an arrow to a line and then rotated it but when I try to resize that line, the arrow switches to other side of the line.

Workaround:
The best workaround is to remove the arrow and add it again.

Claris Development is aware of this issue.
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ClarisImpact: Can‘t Make Body Smaller in Presentation Master Slide

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

You can't make the Body smaller than the sample outline on the Master Slide in a Presentation in ClarisImpact. You can reshape it, but the text block will not be smaller than the size needed to display the text.

There is no workaround.

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ClarisImpact: Cannot Copy and Paste Date from Table to Timeline

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

It is not normally possible to copy and paste a date from a ClarisImpact Table into a ClarisImpact Timeline date cell. While ClarisImpact will allow you to paste the date, it will beep at you and change the date back to the original when you try to move to another cell. This is because ClarisWorks and ClarisImpact store dates internally as serial numbers.

This does not happen when pasting into a Time line date cell that is empty and has never had a date entered into it.

If you copy a text date value from the ClarisImpact Table (where you enter ="3/1/94"), it will paste without a problem.

Also, =DateToText(Date(Year(A1), Month(A1), Day(A1))), entered into A2 (or any other cell), gives a result that can be copied from A2 and pasted into a timeline date cell.

Other programs work fine when copying and pasting a date to a ClarisImpact Time line. One example would be FileMaker (actually, if it is a calculated date copied from FileMaker to a ClarisImpact Time line it will also not work). ClarisWorks Spreadsheet dates also copy and paste fine.
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ClarisImpact: Changing Connector Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Right angle connectors and straight connectors are actually two different kinds of objects, like circles and squares are different kinds of objects.

Unlike circles and squares, however, you can change the connectors from one type to another.

For connectors drawn with the connector drawing tools or in a Flow Chart: Select the connector you wish to change (see below) and go under the Layout menu to Connectors... Just click the kind of connector you wish to change to and hit the OK button.

For connectors in an org chart, select the connectors you wish to change and go under the OrgChart menu and select Connector Settings... Make the changes you would like and hit OK.

To select the connectors, simply click on the connector line itself. To select multiple connectors, hold down the shift key and click on the connectors you wish to change. To select all connectors, go under the Edit menu and choose Select All, or hit Command-A.
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Claris Products and Power Books using External Monitors

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The mirror feature on Power Books that support an external monitor will only mirror the size of the Power Book screen to that second monitor. This happens with all Claris products and any other Macintosh software product. The problem is a limitation of the mirror feature.
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ClarisImpact Performs some Operations very Slowly using TimesTwo

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Certain operations in ClarisImpact could slow down dramatically if TimesTwo file compression is installed.

There are several different compression technologies in use today. The two most common are "File Compression" utilities and "Driver Compression" utilities. File compression utilities give you more space on your hard disk by making each file smaller. Driver compression utilities give you more space on your hard disk by telling the hard disk drivers that there is more space available to store files.

TimesTwo is a driver compression utility, while AutoDoubler and Now Compress are two products that compress your files rather than your drivers.

TimesTwo
Golden Triangle Computers, Inc.
11175 Flintkote Avenue
San Diego, CA 92121
(619)587-0110

Now Compress
Now Software, Inc.
319 SW Washington Street, 11th Floor
Portland, OR 97204
(800)237-3611
(503)274-2800

AutoDoubler
Fifth Generation Systems, Inc.
10049 N. Reiger Road
Baton Rouge, LA 70809
(800)873-4384
(504)291-7221
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ClarisDraw, Impact: Clip Art Provided Can be Ungrouped

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
All the Library art provided in the Claris Art folder has been designed for easy modification. Most objects have several levels of grouping so that you can modify some parts and not others. For example, all of the signs in the Road Signs Library will ungroup so that you can change the name on the sign.

To ungroup an object:
1. Select an object with the arrow tool so that the square selection handles show on each corner of the object.
2. Choose Ungroup from the Arrange menu.

Each object that has selection handles on it can now be individually modified. After you have modified one of the pieces you can regroup the object.

It is also possible that the graphic has several layers of grouping. For example, try ungrouping one of the World Maps, specifically the map of Africa. The first ungroup will separate the map of Africa into 5 layers:

Top Layer = Country Names
Second Layer = Outlines of Countries
Third Layer = Outline of Continent
Fourth Layer = Black filled Outline of Continent
Bottom Layer = Drop Shadow of Continent

If you next select the Second Layer and ungroup it you can remove just one or several countries from Africa and work with them individually.
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Finder Menu Overlaps ClarisWorks Menu - French Version

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Launch ClarisWorks (preferably in English, so you can see the two different menus in different languages), create a document, save it. Go to the Finder, click on the document, and under the File menu, choose Open. You will see that the word "Fichier" overlaps the word "Edit" in the English version and "Edit." in the French.

When working with the French version, it seems (incorrectly) that the "Fichier" is the application menu, not the Finder's; therefore, one is given the impression that the application menu has been altered.

This is a known bug.
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ClarisImpact: Incompatibility with Square One

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Square One, a utility for launching files and applications, is incompatible with ClarisImpact. Launching ClarisImpact with Square One bypasses the New Document dialog and just shows two ClarisImpact menus: File and Edit. You can then choose New from the File menu to bring up the New Document dialog, but there is no Open... button as there should be.

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ClarisImpact: Items Resize in Creation Order

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Items being resized using the resize icons in the Alignment palette will be resized to the dimension of the object drawn first.

To reproduce the problem:

1) Draw a small rectangle and then a large rectangle.
2) Select both and hit one of the resize icons on the Alignment palette.
3) Note that the dimension used is that of the small rectangle. It was drawn first.
4) Undo.
5) Lock the small rectangle.
6) Select both and hit the resize icon.

ClarisImpact will beep and no resizing will occur.

There are no workarounds.
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ClarisImpact and Draw: Listing of Useful Libraries for Creating Maps

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are several Libraries in ClarisImpact and ClarisDraw that are ideally suited for making maps. They are listed below:

Common Symbols
Map Symbols
Road Signs - USA
Transportation
Trees and Shrubs
USA
World Maps 1, 2, 3 & 4

These libraries could be used to make maps for a school project, for a business presentation or for a map to your house.

Picture Libraries are located in the Claris Art folder, if you have performed a complete installation of ClarisImpact or ClarisDraw. If they are not present, use the installation disks to install them.

NOTE: in order to connect roads easily, keep Auto Grid turned on.
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ClarisImpact: Making an Outline with the Same Text Size on Every Level

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
All of the outline styles that ship with ClarisImpact are set to have different text sizes on different levels. You can easily change that so that all of the levels have the same text size, and save it as a model style to use over and over.

To make the text the same size on each level:

1) Create an outline
2) Go under the Outline menu to Level Settings.
3) In the Level Settings dialog, hit the Select All button. This highlights each level.
4) Set the size to your desired point size.
5) Hit Done.

To save the style:
1) Go under the Outline menu to Model Styles.
2) Hit the Add button.
3) Type in a name for your new style.
4) Hit Rename.

Now, each time you make a new outline, ClarisImpact will bring up your style as an option.
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ClarisImpact: Objects have Different Rulers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
All objects created in ClarisImpact can have their dimensions displayed and modified through the Object Size... palette under the Arrange menu. These dimensions can display in inches, millimeters, centimeters, picas and points and are based upon the ruler settings (the unit of measure can be changed by choosing Rulers... from the Layout menu).

The issue occurs when you change the unit of measure in the middle of a drawing. The dimensions displayed in Object Size... will not be converted to the new unit of measure on any existing objects. All new objects will display the new unit of measure. Try this example:

1. Create a new Drawing document.
2. Create a rectangle.
3. Choose Object Size... from the Arrange menu. Notice that the dimensions for the selected object are in inches.
4. Choose Rulers... from the Layout menu and change the unit of measure to millimeters and then click the Okay button.
5. Draw a new rectangle. Notice that the dimensions for this object are displayed in millimeters.
6. Click on the first rectangle and notice that the unit of measure in the Object Size palette changes to inches.

Claris Works reacts differently to the same procedure. When changing the unit of measure all objects are converted to the new unit of measurement.

The only workaround is to redraw the objects that do not have the correct unit measurements.

The ClarisImpact Development team is aware of this issue.
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ClarisImpact & Draw: Option-Copy from Illustrator does not Work Properly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Holding the Option key down while copying a picture in Adobe Illustrator allows you to copy PostScript art into another application via the clipboard. Illustrator generates a PICT Preview so that you can see the art on the screen after you paste.

However, ClarisImpact and ClarisDraw print both the PICT Preview and the PostScript art. The PostScript version of the object prints on top of the PICT Preview, so when printed the object may appear to have a jagged edge as if it were a bitmap.

Workaround:
Save your PostScript art from Illustrator as EPSF and import the EPSF into ClarisImpact or ClarisDraw using Place File... from the File menu.
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ClarisImpact: Option for Faster is Grayed out when Printing to a Stylewriter I

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When printing to a StyleWriter I from ClarisImpact you will notice that the option for Faster is grayed out.

This is not the case with the StyleWriter II print driver. Contact your local Authorized Apple Dealer or Apple Computer, Inc. at 800-SOS-APPL for more information on how to acquire the the StyleWriter II driver.
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ClarisWorks & Impact: Page/Slide Numbering

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You can add slide/page numbers to your documents in ClarisImpact and ClarisWorks.

ClarisImpact:
1. Create a new Presentation document
2. Go to the Master slide
3. Create a Text block (Text Model)
4. Choose Insert Slide # from the Text menu

ClarisWorks:
1. Create any type of document (except database)
2. Choose Insert Header or Footer from the Format menu
3. Choose Insert Page # from the Edit menu

Note that you cannot add page/slide numbers to MacDraw Pro or ClarisDraw documents.
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ClarisImpact: Placing a Banner over a Graphic on a Calendar Day

You would like to place a graphic on a calendar day or month and then place a banner over it. If you paste the graphic on top of the calendar, click on the banner, and send it forward, the banner will not overlay on top of the graphic. This is because the graphic and the calendar are essentially treated as similar objects.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
To send an element such as a banner to the front or back of a graphic, incorporate the graphic directly within the calendar using the style editor. Here are the steps...

- Select the days or months of the calendar you want
- Choose "Element Styles" from the Calendar menu
- Click on "New" in the "Element Styles" palette (if it is not available, click on the down arrow flag to make it visible).
- Create the graphic or paste it into the style editor
- Apply this style to the day or month

Now that the graphic is within the calendar, you can send the banner to the front or back of the graphic.
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ClarisImpact: Presentation: Master Page changes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When editing the Master Page of a Presentation document you may get the message, "Update all existing Titles and Bodies with the text format and position of the current Master Title and Body?" with three button choices; "Yes", "No" and "Cancel".

1. Clicking "Yes" will update all of your EXISTING slides to conform to the modified Master Slide. This may be problematic if you have changed some of the slides to be slightly different than the Master Slide. For instance, you may have decided to change the Label type of Outline on one slide or maybe the color of a Title on one slide has been changed. If this is true and you click "Yes" then specific slides settings will be erased.

2. Clicking "No" will not update any current slides but will change any new slide to follow the new Master Slide changes. This method is best used when current slides have modified individually. By clicking "No" you will be able to keep changes to existing slides but have the new Master Slide apply to all new slides that are made.

3. Clicking "Cancel" will discard all new changes made in the Master Slide.

Hints for creating slides:
When creating slides it is a good idea to think through the presentation first. Determine whether all the slides are going to be based on the same Body and Title or whether they are going to vary. In this way you will be able to use the information in this article to plan your strategy better.

NOTE: Only changes to the Body or Title in the Master Page will cause the above message to appear. This might be caused by the movement of the Title or Body or by the changing of the text attribute in the Title or Body. Making changes to the background color of the Master Slide will not cause this message to appear.
Published Date: Feb 18, 2012

ClarisImpact: Rotated Table Model only prints Outline of Model to DeskWriter

Printing a rotated Table Model in ClarisImpact to a DeskWriter will only print an outline of that Table. You will also receive a message saying that there is not enough memory to complete the job.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Use a custom Model or the Basic Style Model. All other Model Styles will not print correctly to a DeskWriter when rotated.

NOTE: This printing issue has been tested with all versions of the DeskWriter driver including the newest 5.0 version. All other printers work fine with rotated Tables.

Steps to re-create:
1. Create a Table Model in the Draw environment using any Model Style other than Basic.
2. Rotate the Table 90 degrees.
3. Print to a DeskWriter.

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ClarisWorks and ClarisImpact: Sample in Series section of Chart Options not changeable

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Sample box in the Series section of Chart Options is selectable but not changeable.

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ClarisImpact: Smart Quotes Appear Backward using Certain Fonts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisImpact ships with several fonts for customer use, one of which is Futura. This font acts peculiarly when smart quotes are being used. The quotes are backwards. There is nothing that can be done to change this since the problem is with the font.

Published Date: Feb 18, 2012

ClarisImpact: Table of Contents Errors in ClarisArt Book

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Table of Contents in the ClarisArt book has incorrect page references. Instead, use the Library Catalog located at the beginning of Chapter 2.
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ClarisImpact & Draw: What Connectors can Connect to

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Connectors only 'connect' to certain points of objects and groups. Below is a list of kinds of objects and the points on them that connectors will connect to.

Lines: endpoints, midpoints
Squares, Rectangles,Notes, Text frames: line endpoints and midpoints, object centerpoint
Circles, Ovals: 3, 6, 9 and 12 o'clock and centerpoint
Rounded rectangles: line end and midpoints, and the endpoints and midpoints of the arcs that make up the corners, and the centerpoint of the rectangle
Smoothed polygons: endpoints and the midpoint of the polygon
Unsmoothed polygons: any control point on the polygon
Groups: Group centerpoint, group cornerpoint, and the midpoints of the bounding rectangle lines of the group
Connectors: Cannot connect
Framed models (tables, data charts, calendars, time lines): Frame endpoints, midpoints and centerpoints of models
Unframed models (org charts, flow charts, outlines): frame end- and midpoints, centerpoints or models

You can connect to other points in a model if you ungroup the model. To do so, cut the model, paste it, and ungroup it. The model will become a graphic object and you will not be able to use any of the model commands or functions, but you will be able to connect to points on the objects.
Published Date: Feb 18, 2012

ClarisImpact: When converting from Outline to Org Chart, how do I get Information into the Title Field?

There is a feature in ClarisImpact that allows you to convert an Outline to an Org Chart. Since an Outline and Org Chart are based on a similar hierarchical structure this method works mostly as expected (See page 4-23 of the User's Guide for instructions).

The only issue the manual does not cover well enough is how to get data from an Outline Topic or Subtopic into a second or third field on the same Org Chart Position (it does mention the following solution on page 9-14 of the User's Guide).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Use a Shift-Return to separate lines within an Outline Topic or Subtopic. When converting to an Org Chart, ClarisImpact will interpret these special returns as the beginning of a new field within the same Org Chart Position.
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ClarisWorks Communication Document Crashes When Used With Power Macintosh Upgrade Card (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue has been fixed with the System Update 3.0 from Apple.

When running ClarisWorks 2.1(up to and including 2.1v3) in native mode on a Macintosh 680xx machine with a Power Macintosh Upgrade card, using the Communication Environment will cause a system crash whenever a menu item is selected.

There is no workaround in the native version. The Mac 680xx version in emulation does not exhibit this issue.

The issue lies with the Apple Comm Tool Box, and has been fixed with System Update 3.0 from Apple.
Published Date: Feb 18, 2012

ClarisImpact: Geneva Font has Poor Spacing in Timeline

A customer has reported an issue with the Geneva font displaying incorrectly in a ClarisImpact Timeline. The spacing was so poor that the Timeline status bar would display garbage because the text would spill over from one column to the next.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The customer reported that reinstalling the font did not help but turning off Fractional Character Widths from Preferences solved the problem.

Claris Technical Support has been able to duplicate this issue.
Published Date: Feb 18, 2012

ClarisImpact: List of Fonts Installed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Below is a listing of all the fonts that ship on Disk 5 of the ClarisImpact 1.0 disk set.

Bernhard Modern
Bodoni
Commercial
Futura
Impress
Kuenst
Zapf Humnst

Several versions of each of these fonts is shipped. For example, Bodoni ships with a regular and an italic version.
Published Date: Feb 18, 2012

ClarisImpact: Sharing data with MacProject Pro

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact Timelines can be created using MacProject Pro data. To share data, follow these steps:

1. Go to any chart in MacProject Pro that can display the columns: Start Constraint, Start On, Start no earlier than, Start no later than, Earliest Start, Finish Constraint, Finish no earlier than, Finish no later than, Finish On, Latest Finish, Duration, Actual Start, Actual Finish and % Done.

2. Organize up to 7 columns in the SAME order as the ClarisImpact column order listed below. If you only want to place one column into ClarisImpact export that one column.

Impact columns are ordered:
Task Name
Planned Start
Duration
Latest Finish
Actual Start
Actual Finish
% Done

3. Export the data in TAB DELIMITED format.

4. Open a ClarisImpact Timeline and place you cursor in the first cell.

5. Display as many (or more) rows as you wish to place

6. Display the columns you wish to place data into.

7. With your cursor in the first cell, select Place fileÉ from the File Menu.

NOTES
If you do not expand the columns and rows to accommodate all the data that is to be placed, only part of the data displays as transferred. Keep in mind that exporting Start and Finish dates from MacProject allows you to create a ClarisImpact timeline that looks very similar to one you create in MacProject, but there may be extra slack or an unmeetable finish that you may need to adjust.Share data MacProject Pro timeline
Published Date: Feb 18, 2012

ClarisImpact & ClarisDraw: Do Not Access Math Coprocessor

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisImpact and ClarisDraw do not address the math coprocessor in a Macintosh. Installing one in a computer that does not have one will not speed up the product.

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ClarisWorks: Pricing of 2.1v3 Speedup Update for the Power Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The speedup price to update from ClarisWorks 2.0 or 2.1 to 2.1v3 for the Power Macintosh is $29.00.

There is no on-line updater for the Power Macintosh speedup. Is is shipped as a full disk set, from which either the 68k or Power Macintosh versions can be installed (based on the type of processor detected by the installer).

All prices are in U.S. dollars unless specified otherwise. Prices and availability are subject to change without notice. In the U.S., call 800-544-8554 to place an order. In Canada, call 800-361-6075.
Published Date: Feb 18, 2012

File Transfer Protocols and ClarisWorks Communications (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is a brief description of several common file transfer protocols. The methods available to you when using ClarisWorks can vary. Currently, the Macintosh Communication Toolbox (which is used by ClarisWorks) ships with tools supporting the XMODEM and ASCII Text protocols only. ClarisWorks 2.x includes the Claris Kermit Tool as well. Tools for other protocols (such as Kermit, YMODEM and ZMODEM) can be attained from online services and distributors.

Mark/Space Softworks sells a ZMODEM tool for $29.95. They can be contacted at (800) 799-4737.

XMODEM/XMODEM-CRC - The BBS supports two variations of the XMODEM protocol, originally developed by Ward Christensen, called XMODEM and XMODEM/CRC respectively. XMODEM offers the advantage of error checking on a block by block basis to assure that the data sent contains no errors. It does this by adding a checksum byte to the end of each 128 byte block of data; the receiver calculates its own checksum and compares it to the one received. If an error is detected in the transmission, XMODEM will request that WILDCAT! retransmit the block of data. In addition to the above checksum comparison, XMODEM/CRC adds another level of error detection using a complex Cyclical Redundancy Check algorithm.

XMODEM and XMODEM/CRC are slow transfer protocols when compared to many others available. They should only be used when your software supports no other protocol. XMODEM/CRC is preferable to XMODEM due to its greatly improved error checking.

1K-XMODEM - This protocol performs exactly like regular XMODEM/CRC, but increases the block size to 1024 bytes, hence the name 1K. It is slightly faster (on fairly clean phone lines) than regular XMODEM due to a smaller number of blocks being sent, and therefore fewer block checks being made.

YMODEM - YMODEM is a protocol devised by Chuck Forsberg of Omen Technology which adds a number of enhancements to protocol based transfer. Block sizes are variable at 128/1024, but 1K is the usual size. Error checking makes use of CRC-16, accurate to 99.99%. By definition, all YMODEM transfers are capable of sending multiple files at one request, with the file size and date included in the "header block" sent prior to each file. YMODEM supports multiple file transfer (both down AND up) of up to 99 files with WILDCAT!.

NOTE: A number of communication programs incorrectly use the term YMODEM but actually send using 1K-XMODEM. This practice is not proper and will result in a failure when used with a true YMODEM transfer as used by WILDCAT!. Use of YMODEM, if supported by a callers software, is recommended over XMODEM and 1K-XMODEM for speed, reliability, and features.

YMODEM/G - This variation of YMODEM is available only to callers making a "reliable" connection using a modem supporting MNP (Microcom Networking Protocol) or the USRobotics ARQ hardware error checking or the most recently introduced correction method, V.42/V.42bis. If a MNP connection is detected, WILDCAT! will add this protocol choice (as well as 1K-XMODEM/G) to the available options.

MNP is a hardware based system in which the modems perform the actual error checking and correction, if needed. The software such as WILDCAT! and Qmodem simply send the information blindly from one system to the other using the protocol for block sorting information only. For this reason, these two protocol choices ONLY appear if a MNP connection is detected at logon.

YMODEM/G is among the fastest protocols with the exception of the newer versions of ZMODEM discussed below. If you have a modem that supports MNP or ARQ, YMODEM/G should be your usual choice on the BBS. Connections using two USRobotics HST modems, with ports locked at 19200 or 38400 at both ends, results in throughput in excess of 1725 characters per second! YMODEM/G also supports multiple file transfer (both down and up) of up to 99 files at on time.

1K-XMODEM/G - This version of 1K-XMODEM makes use of MNP hardware error correction to do away with the block-by-block checking in the normal version. The result is a very fast single file transfer protocol for use if YMODEM/G is not readily available.

ZMODEM - This is another protocol developed by Chuck Forsberg. It is a "streaming protocol", one which sends variable sized blocks of data with CRC-32 error checking for an accuracy of 99.9999%, but does not wait for an acknowledgment from the receiving computer. The sending system assumes data received is OK unless a repeat request is sent for a specific block. This streaming activity tends to make ZMODEM one of the fastest protocols available (but slightly slower than YMODEM/G or 1K-XMODEM/G). ZMODEM also supports multiple file transfer capability, and should be considered in situations where MNP is not available, or another batch transfer protocol cannot be used. ZMODEM also has the unique capability to resume file transfers that have been aborted for some reason and thus only partially completed. This is called crash recovery.

KERMIT - This protocol's main claim is not speed, but rather its ability to interact with many types of computers from mainframes to micros. It can cope with systems limited to seven-bit characters even when the data to be transmitted is in eight-bit form. All characters to be sent are translated into standard printable characters and reconstructed on the receiving end. While not terribly efficient, it is sometimes an absolute necessity for data transfer involving different types of systems and terminal types. It is not normally recommended for PC to PC transfers. Kermit

transfer speed can be dramatically increased by tuning its optional parameters

ASCII - ASCII transfer is simply the sending of information as characters, and is limited to 7 bit information. The transfer of files in ASCII mode can be done if your system is capable of any type of data capture. ASCII transfer is limited, and some sort of error checking protocol is required if you intend to transfer files with extensions of EXE, OBJ, COM, ARC or ZIP, as well as tokenized BASIC programs and files containing the IBM PC special ASCII characters (ones with ASCII values above 128). These files cannot be transferred in ASCII mode since ASCII transfer is only 7 bit and these types of files require the full 8 bit transfer of the data, with no translation of the contents of the file.

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ClarisWorks: Objects Created With the Polygon and Bezigon Tools Not Printing in Color (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This has been fixed in ClarisWorks Version 2.1v2 and above.

When printing to color printers, such as the Hewlett Packard DeskJet 1200C, objects created with the polygon or Bezigon tools may not print in color, but instead may print as black-filled objects.

This is a known bug with the LaserWriter 8.x driver. It is not specific to the HP DeskJet 1200c. The objects will print in color as well as black. The issue is that the fill color becomes the same as the pen color (which is usually black).

If you are unable to obtain the 2.1v2 update to ClarisWorks, a suggested workaround is to print using the Apple LaserWriter 7.2 driver. Or try applying the pen color that you actually want as the fill color. It won't look right on the screen, but it should print with the fill color you want.
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DOS 3.3: INTBASIC and FPBASIC on the master diskette

The INTBASIC and FPBASIC files on the master diskette load automatically into your Language Card if you have one. Since these files are written to operate specifically in the memory space of the Language Card, they don't work anywhere else.
This article has been archived and is no longer updated by Apple.
To use Applesoft with your Apple II (which has Integer BASIC built in), you need either the Applesoft Firmware Card or the Language Card installed into your system.

Apple II+s have Applesoft built in; therefore, your system needs the Integer BASIC firmware card or a language card to use Integer BASIC.
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NEW EDUCATION SOFTWARE AVAILABLE FROM CLARIS AND CLARIS SOLUTIONS ALLIANCE MEMBERS

ClarisWorks solutions available for both administrative tasks and classroom use

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

SANTA CLARA, Calif., -- April 18, 1994 -- Claris Corporation today announced that leading education publishers in the Claris Solutions Alliance (CSA), which includes third party software developers, consultants, trainers and publishers, have developed courseware and classroom resources designed for use with ClarisWorks, the award-winning integrated software solution available for Macintosh and Windows.

New education software solutions address a variety of curricula including language arts, foreign language, mathematics, science, social studies, and special education as well as classroom management and administration.

"At Claris, we're excited about education and exploring new ideas that will have long lasting value for schools and students," said Karen Billings, manager of education solutions for Claris Corporation. "By combining powerful, easy-to-use software from Claris with innovative education solutions, educators will be equipped to implement creative approaches to learning that utilize computers as powerful learning tools."

ClarisWorks tutorials for higher education programs

Mitchell McGraw-Hill has published two new ClarisWorks tutorials designed for education majors and certificate program participants. Using ClarisWorks for the Macintosh and ClarisWorks for Windows tutorials, students learn word processing, graphics, spreadsheets, charting and database applications. Each lesson contains objectives, a hands-on tutorial, a command summary and self-tests.

Templates ease curriculum building
and class management for K-12 educators

ClarisWorks in the Classroom is a set of templates designed to bring innovative computing and learning to elementary education. With these templates, children are able to learn the fundamentals of computing while also improving reading, writing and arithmetic. The lessons contain a teacher's manual which recommends the age group for the templates and how each lesson should be structured.

ClarisWorks for Teachers is a guide to help educators become more productive in managing everyday classroom tasks. ClarisWorks for Teachers includes templates for student information, grade recording, letters to parents, newsletters, room layouts, evaluation portfolios, progress reports, schedules and more.

Education solutions pricing and availability

Using ClarisWorks for the Macintosh and Using ClarisWorks for Windows are available directly from Mitchell McGraw-Hill for $16.50 each or through campus resellers. Contact Mitchell McGraw-Hill at (800) 338-3987. ClarisWorks in the Classroom and ClarisWorks for Teachers are available directly from Claris for an education suggested retail price of $29 each. Additional CSA-member developed education solutions are available directly from their publishers. For more information on Claris education solutions, call (800) 747-7483. Internationally, contact Claris at (408) 987-7000.

Claris Corporation, a leading worldwide vendor of Windows and Macintosh applications for business, education and home, is a subsidiary of Apple Computer, Inc. with headquarters in Santa Clara, Calif.

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Shape Tools Objects print black from PageMaker

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Pasting or Placing a Shape Tool object with a white fill from Impact into PageMaker shows fine on-screen but prints with a black fill.

Shape Tools include any shape from the last palette on the Tool Panel such as the five 5-point star.

Solution:
When in PageMaker, hold down the Option key while choosing Print from the File menu. This will override the Aldus printer drivers and use the Apple Printer drivers instead.

This is a problem with at least PageMaker 4.2. Aldus representatives have reported that PageMaker 5.0 has changed some of their print drivers, but it is unknown if this fixes the problem. PageMaker 3.0 users can change to an Apple Print Driver through the Print dialog box.
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MacDraw Pro: Manual Feed Printing Results in Type 1 Error

This issue has been reported to Claris Tech Support, but has not been verified.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
An error of type 1 occurs and the application, "Unknown" unexpectedly quits when the following criteria are met:

* Your document was created with MacDraw Pro 1.5v2 on a Power Macintosh 6100/60
* You try to print a document with the Manual Feed option selected on a Personal LaserWriter NT using the LaserWriter 8.1.1 driver (appropriate ppd selected)

The same document prints fine with Cassette Feed.

Suggested workaround: Use LaserWriter driver version 7.x.
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Not Possible to Crop or Mask Images

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro does not have the ability to Crop or Mask images, whether drawn in MacDraw Pro or imported from another application.

Workaround:
Try using white boxes to cover the portions of the graphic that you want to Crop. This is not a good method if you are trying to Crop an image for use in another program. Consider another program for editing images such as BrushStrokes from the Claris Clear Choice division of Claris.
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Master Slide Backgrounds do not Save to PICT or EPSF

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
Exporting a slide from the Presentation environment does not export some graphics or text.

Explanation:
Graphics or text created within the Master Slide will not export when trying to Save a slide to another graphic format such as PICT or EPSF. Anything added to the Master Slide is subject to not being exported. This could be a background from a Model Style or any type of graphic or text created while in the Master Slide.

Solution:
1. The best solution is to copy all the elements you added to the Master Slide and paste them onto every slide. If you have many slides then try solution 2.
2. Exporting your slides to MacDraw Pro or MacDraw II format will correctly save out any graphics added to the Master Slide. If you have MacDraw Pro or MacDraw II you could then open the file and save it to PICT. The best method, though, would be to open the file in MacDraw Pro so you could save to EPSF. In general, EPSF will capture the quality of the Slides better.

The ClarisImpact development team is aware of this issue. Presentation Backgrounds Save As Pict.
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Add a Colored Border to a Cell in a ClarisImpact Table

What to do if you want your cell border to be something other than black.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
To add a colored border to a cell, follow the steps below:

1. Select a cell or cells in a Table.
2. Choose Cell Borders from the Table menu.
3. Select the type of border you desire and click OK.
4. Choose Grid Display from the Table menu.
5. Select the color you want next to Cell Borders and click OK.

NOTE: Using the color palette next to the Pen will not change the color of the cell border. Remember that adding a fill color to a cell is done by selecting the cell or cells and then choosing a fill color from the color palette next to the Fill tool (the paint bucket).
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New Electronic Help Features

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact and ClarisDraw introduce a new Help System with many advantages.

Searching results in a list of areas where the keyword was located rather than the old way of locating the first occurrence and showing that area of Help. Thus, searching should be much more efficient.

The interface has been improved. Color and graphics have been added. The Help window can be enlarged to any size.

Your own notes can now be added to the Help System to facilitate the learning process.

A Hot Key links Balloon Help and the Help System. Turn Balloon Help on, point at something so that a Help Balloon appears and then type the Help key from the keyboard (if you have an extended keyboard). Help will automatically be opened to the section related to that balloon.

It is possible to print any section of Help.

Words in blue text can be clicked on to pop-up more information regarding them. This can be very helpful when the definition of a word is covered in another section but you cannot remember the definition in this section.

In addition, the new online help system introduced with ClarisImpact and ClarisDraw contains many of the step-by-step instructions found in the User's Guide, which effectively guides you through a procedure. Pictures are included to make examples very easy to follow. The Troubleshooting section, which contains commonly asked questions, such as "How do I..." or "What happens when I...." will probably answer many of your questions. A Glossary of terms provides definitions to all the terminology that may be new to you.

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Problem Opening ClarisWorks Paint Documents With Macintosh Easy Open (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There appears to be a problem with the extension Macintosh Easy Open, version 1.0.2, and ClarisWorks paint (PT) documents. Sometimes double-clicking on a ClarisWorks PT document does not allow ClarisWorks 2.0v1 to open it. Claris has been unable to reproduce the problem with ClarisWorks 2.1, but it may happen in that version also.

Current workarounds:

Launch ClarisWorks and use the Open Dialog Box (File Menu, Open...) to open the PT document.

Remove the Macintosh Easy Open Extension from the Extensions Folder and restart the Macintosh.

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Issues Custom Installing Fonts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Custom install gives you the option of installing your fonts in three different ways:

ClarisImpact Fonts for 7.1 or Greater
ClarisImpact Fonts for 7.0
ClarisImpact Fonts for 6.0.7

All three of these choices install the same fonts but in different ways. If you do not match the correct Font choice to your System Software version the following will happen:

1. If you have System 7.0 or 7.1 and accidentally choose to custom install "ClarisImpact Fonts for 6.0.7" then when you restart your computer you will get a message stating, "True Type is already installed... skipping installation!!!" Also, if you have System 7.1, your fonts will have been installed into the System suitcase rather than the fonts folder. To fix the first issue, remove the True Type extension from your Extensions Folder (it also may be at the System Folder level) and throw it into the Trash Can. System 6 needs the True Type extension but System 7 already has it built-in. To solve the second issue (for System 7.1 users only), simply double-click on your System and move the fonts into the Fonts folder.

2. If you have System 7.0 and accidentally choose to custom install "ClarisImpact Fonts for 7.1 or Greater" then your fonts will be installed in a folder called Fonts (it actually creates the folder called Fonts) in the System Folder. To fix this issue, simply drag the fonts from the System Folder into the System and then delete the folder called Fonts.

3. If you have System 7.1 and accidentally choose to custom install "ClarisImpact Fonts for 7.0" then your fonts will be installed in the System rather than the Fonts folder. Although it is okay to install your fonts into the System it is preferable under System 7 to install your fonts into the Fonts folder. To correct this issue, simply open the System and drag the fonts into the Fonts folder.

4. If you have System 6.0.7 or greater and accidentally choose to install "ClarisImpact Fonts for 7.0" then your fonts will still be installed properly into the System. While this is where the fonts should go it is possible that the True Type extension may not already be in your System Folder. The solution for this issue is to go back and custom install "ClarisImpact Fonts for 6.0.7".

5. If you have System 6.0.7 or greater and accidentally choose to install "ClarisImpact Fonts for 7.1" then your fonts will be installed into the System Folder and will not work properly. These fonts need to be removed from the System Folder and custom installed properly by using "ClarisImpact Fonts for 6.0.7".

For your convenience, below is a listing of all the fonts that ClarisImpact installs:

Bernhard Modern
Bodoni
Commercial
Futura
Impress
Kuenst
Zapf Humnst

Several versions of each of these fonts is shipped. For example, Bodoni ships with a regular and an italic version.

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Apple IIGS/Macintosh Versus PC-LAN Baseband Network

I just finished a competitive bid against IBM in a local school district. We were using AppleShare and Farallon PhoneNET cabling with existing in-plant wiring; IBM was bidding PC-LAN Baseband and Novell.

What can you tell me about PC-LAN Baseband, especially regarding its competitive position against Apple products?

This article has been archived and is no longer updated by Apple.
IBM has two different networking schemes that are referred to as PC-LAN: Baseband and Broadband. They pitch Baseband for K-12 labs. Using the PC Network Adapter-II in the XT bus machines, like the original PC and PS/2-25/30, and the PC Network Adapter II/A for the MicroChannel machines, it is a 2Mbps CSMA/CD protocol run over unshielded, twisted-pair telephone wiring. The network uses the IEEE 802.2 LLC standard like AT&T StarLAN. A typical configuration is cabled in daisy-chain fashion using RJ-11 telephone jacks and telephone cabling with up to eight stations within a maximum 200-foot chain compared to a 4000-foot network limit with PhoneNET.

NetBIOS support is not provided directly on the card; it is via two software products, the PC Network Protocol Driver and the LAN Support Program. This network does not support 8022 LLC protocol or APPC/PC. This takes away from available, application memory. In addition, because Novell is the chosen server architecture, Windows is rumored to have difficulty--giving the Apple IIGS and Macintosh a further edge. As of March, 1990, IBM has not tried to demonstrate Windows on this configuration, lending support to this rumor.

The PC-LAN Baseband network can be enlarged using the IBM 5173 PC Network Baseband Extender, which has 10 ports. The network can be extended to 10 arms of eight workstations each, and the length of the daisy-chain arm is extended to 400 feet using the Extender. This means that the radius of a PC-LAN Baseband network cannot exceed 400 feet, giving a significant advantage to LocalTalk and PhoneNET networks. The maximum network is 80 stations, unless a router is used to bridge multiple networks together or to jump to another topology, such as Ethernet or Token Ring.

Apple's advantage against IBM as being Apple's Strategic Network Direction--AppleTalk over twisted-pair with higher-speed backbones versus a network direction on IBM's part that was not strategic (Novell and PC-LAN Baseband as opposed to Token Ring and LAN Manager). Both the Macintosh and Apple IIGS to give a Finder interface and graphic applications have the Finder interface, whereas IBM can show only Microsoft Works as evidence of their graphics interface. Further, Apple has a strategic graphics interface and contrasted the offering from IBM, which was not robust enough to run a Windows environment. Finally, the 8086 technology is not strategic for IBM and that Windows and OS/2 are really geared for the 80286 and above technology. This leaves schools wondering about the long-term viability of PS/2-25s.

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Resizing the Rightmost Column in a ClarisImpact Model or ClarisWorks Frame

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Resizing a column of a Table in ClarisImpact or a Spreadsheet frame in ClarisWorks is easy with the exception of the rightmost column.

Normally you would move the mouse pointer to the divider between the column header (ClarisWorks) or the divider between the columns of the first row (ClarisImpact) and wait for the mouse pointer to change to the shape (arrows pointing both directions) that indicates that you can adjust the column width by clicking and dragging. Unfortunately, there is no dividing line on the last column because there is no column to the right.

Follow the instructions below to resize the rightmost column:

ClarisImpact:
1. Click on any cell within the column that you wish to resize.
2. Choose Column Width from the Table menu and change the resulting dialog box.

ClarisWorks:
1. Click on any cell within the column that you wish to resize.
2. Choose Column Width from the Format menu and change the resulting dialog box.

The numbers in the Column Width dialog show the size in Points. There are 72 points in an inch. So, to make the column one-half inch wide, set the Column Width to be 36 points wide.
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Spellcheck not Functioning on Thai System 7.1 (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Scenario:
ClarisWorks 2.1 on Thai system 7.1 (TH1-7.1):
- using US keyboard
- using US ClarisWorks and US dictionary
- his system allows typing Thai characters

Issue:

- performing spell check on US text with NO Thai characters: spell check window appears with STRANGE characters (such as %$#) and Thai characters....when selecting "Skip", it crashes; when selecting "Cancel", exits.
- in menus, there are Thai characters, also in splash screen

more detail:

- this occurs regardless of font used
- also regardless of which system file originated from
- reinstalling dictionary/application does not help
- this does NOT happen on other US 7.1 systems

Why this occurs:

There is a bug in the Thai system's FindWord code, that the speller uses to find words. For the Thai version of ClarisWorks 1.0, completed just recently, the engineers had to write their own FindWord procedure to get around the bug.

The Thai characters that you are seeing in the menus and splash screen are high ascii characters that have a different representation in a Thai font than they do in a US (Roman) font. The font of a menu or dialog item in ClarisWorks running on a Thai system is not Chicago, but some Thai font that looks like Chicago. Similarly, items in the splash screen are not displayed in Geneva or Helvetica, but some Thai font. All high ascii characters, such as (É ª ¨) etc. will be displayed differently. Also, these high ascii characters can be part of a two-byte character and that's when things really look bad.

Solution:

Use a US system.
Most of our applications have to be reengineered to work on two-byte systems such as Thai, Japanese, Korean, Chinese etc. We don't certify any of our US or localized applications as compatible with such systems. ClarisWorks 2.0 TH will be released soon, so if the guy wants full functionality from a ClarisWorks application on a Thai system, he's going to have to get this version.

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Using Outlines in Other Programs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Outliner available in Claris Works and ClarisImpact does not copy the labels (bullets, numbers, etc.) when copying and pasting text. All that will be copied is the text in the Outline. You will notice if you choose Select All in the Outline that the labels will not highlight, indicating that they cannot be copied and pasted.

However, if you use a frame to create your outline, you can use Apple's Publish and Subscribe technology to Publish the frame itself and create an Edition file, or copy the frame and its contents to the Clipboard.

To create a frame that can be displayed in another application:
1. Launch Claris Works or ClarisImpact.
2. Create a text frame (In ClarisWorks) or an Outline model frame (In ClarisImpact).
3. Choose Outline View from the Outline menu (ClarisWorks, not necessary in ClarisImpact).
4. Enter the text of your outline and edit it normally.
5. Click on the graphics tool and select the frame.
6. Choose Copy or Create Publisher from the Edit menu.

If you have another application which supports Publish & Subscribe, like Microsoft Word, you can Subscribe to the Edition file if you wish to have the outline labels displayed. If you wish, you can also simply use the Paste command in order to place a PICT image of the outline into Word, or any other application which supports PICT images.
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Using Quick Time Movies in ClarisImpact Flow Charts and Org Charts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
QuickTime movies can be placed into the Positions in Organization Charts and Flow Charts. This can make your charts very effective when browsing on-screen.

For instance, you could insert a QuickTime movie of each employee into the Position representing that employee. Instead of a name, you could have a short self-descriptive movie.

You could also have a short QuickTime movie of a particular process and insert that into the Position which that process fills in a Flow Chart. Instead of simply having a picture of the process or the words "Assembly Line", you could have a short movie illustrating how the process is implemented or showing robots welding or parts being assembled.
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Connector Cannot be Moved once it is Attached to Objects

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I created two objects and connected them with the Connector Tool but I cannot move the connector so that the objects connected move together. The computer just beeps at me.

A:
It is not possible to move a connector once it is attached to two objects. Connectors will remain in position between both connected objects, but cannot be used to move the objects around. If you move an object, the connector will extend itself to remain connected to the object in its new location.

Solution:
It would be better to group the two objects if you want them to move together. If you group both objects and drag them to another location, the connector will move with them.

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Connector Lines Attach to First Object Drawn in Element Style

Behavior of Connectors Depends on Element Style

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
It is important to remember that the Connectors in an Organization Chart or Flow Chart base their connection intelligence on the lowest object in the Element Style. In other words, Connector lines attach to the first object drawn or the object furthest back in the Element Style. This could cause a connector to appear to attach off-center. Try this example:

1. Create a new Organization Chart or Flow Chart Element Style.
2. Draw two rectangles in the Style Editor window, and make sure they are not touching.
3. Put in at least one field.
4. Apply this Element Style to an Organization Chart or Flow Chart element and notice that the connector attaches to the first object drawn.
5. Edit the Element Style and move the second object to the back and watch the connector now use this object as a guide for connecting.

Normally, objects will be superimposed on top of each other, so this is not a real-world example. It does illustrate the way that connectors and elements work together, and the logic behind connector behavior.
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Demo Disk and XTND issues after Install Full Version

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The demo disk for ClarisImpact installs the Claris XTND System and several translators into the ClarisImpact demo folder. This could cause issues if the customer eventually purchases the product since that copy of the Claris XTND System and the translators will still be on the computer.

Possible symptoms:

1. "XTND Not Found" message when try ing to translate.

2. The full translator list may not be available but everything seems to be installed correctly.

Solution:
The Read Me file that ships with the Demo disk mentions that all files that came with the demo disk must be removed from your hard drive before installing the full version. This should avoid most XTND issues.

ClarisImpact Demo Installs:
Claris XTND System version 1.3.6
Excel 3.0 translator version 1.0
Word 4-5 translator version 1.0v3.
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Printing Multiple Envelopes In ClarisWorks (DR, DB)

An advanced technique for effectively printing multiple envelopes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The easiest way to print multiple envelopes in ClarisWorks is to create a database to hold the name/address/mailing information, and a drawing document formatted for printing envelopes. If you use the Mail Merge feature to combine your names and addresses with the drawing document, you can easily and efficiently print your database on envelopes.

Follow this procedure:

1. Create a database with standard mailing fields (FirstName, LastName, Address, Address2, Company, City, State, Zip) or open your existing database file.
2. Create a Drawing (Graphics) document.
3. Choose Page Setup from the File Menu and choose an Envelope paper format. (If you do not have an Envelope format that you can choose, this technique will not work.)
4. Choose the landscape orientation.
5. Click Ok. When you get back to your document, you will see that the page looks like an envelope.
6. Click on the Text tool at the top of the toolbar, click in the top left corner of the page, and type your return address.
7. Click on the drawing tool (the pointer) at the top left corner of the toolbar, then click on the Text tool again.

8. Click in the center of the page and choose Mail Merge.
9. Choose your database file from the list.
10. Place your mail merge fields.
11. When you are finished placing the mail merge fields, resize the text frame in your drawing document so that the fields appear the way that you wish to print them. When you wish to print the database information on envelopes, choose Mail Merge again from the File menu and choose the Print Merge button.

Some significant advantages to this procedure are that ClarisWorks cleans up mail merges automatically, so you don't have to worry about extra space between your fields or misaligned information on the printed envelope.

Try a printout and see the results. Be sure to print on plain paper to check the placement of your text (hold an envelope over the printout to see where the text would appear on the envelope), and make any necessary adjustments in your document before printing onto real envelopes.

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Slide Show Begins with Current Slide, Not with First Slide

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you click on the slide show icon in a Presentation document style bar, the slide show will begin at the current slide, rather than the first slide.

This is a very handy feature when you are creating the slide show. You can work on a slide and quickly see how it will look in the presentation.

Command-clicking on the slide show icon will make it begin at the current slide of the show.
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Graphic, Model or Frame is cut off by Margin

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Issue:

ClarisWorks and ClarisImpact allow you to display the margins on screen so as to get a better idea what your document will look like when it prints. This can cause problems with graphics, Frames or Models. What may happen is that the picture, Frame or Model may get cut off on the top, bottom, right or left side where the object meets the margin (the Word Processing section of ClarisWorks and the Report Environment of ClarisImpact always have margins turned on but other environments require you to turn this feature on).

Solution:

Unless the graphic, Frame or Model is too large to display on the page, moving it should allow you to display the portions that are cut off. Decreasing the margins may also create enough room to display the complete object.

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Margins cannot be Hidden in Report and Presentation Documents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Page View is grayed out from the View menu while in a ClarisWorks Word Processing document, and Hide Page Breaks is grayed out from the View menu while in a ClarisImpact Report or Presentation document.

This is because the margins in the ClarisWorks Word Processing environment or the ClarisImpact Report and Presentation environments cannot be hidden. This can create a problem on small monitors. A good solution is to reduce the size of the margins until you need to print.

The Drawing environment in ClarisImpact and ClarisWorks does have the ability to hide and show the margins.
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Rotated Text Prints Jagged

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Rotated text in ClarisImpact will print bitmapped (72 dpi) in the following situations:

1. When using the Clipboard to paste to another program or the Scrapbook.
2. When using Save As... to create a PICT file.
3. When printing to a QuickDraw printer.

NOTE: In cases 1 & 2, rotated text may also print inverted (black background and white text). If the rotated text prints inverted, try using the Black & White option in the Print dialog box instead of Color/Grayscale. If you need the Color/Grayscale option turned on, you should use one of the techniques listed below.

Most QuickDraw printers do not give you a Color/Grayscale - Black & White option, so if you have a QuickDraw printer, your rotated text will always print jagged.

High resolution is retained when you:

1. Use Save As... to create an EPSF file

If you need to use rotated text from ClarisImpact or ClarisDraw in another program, you should use Save As... to save the document as an EPSF file that you can insert into the other document. This avoids using the Macintosh Clipboard, which would convert the rotated text into a 72-dpi graphic image.

2. Use a Library to store the rotated text

If you are using the Scrapbook to store commonly used graphics or text frames that were created within ClarisImpact or ClarisDraw, consider using the Library feature instead.

3. Use the Clipboard within ClarisImpact or ClarisDraw documents

ClarisImpact and ClarisDraw use an application clipboard that correctly maintains the properties of rotated text. This avoids using the Macintosh Clipboard, which would convert the rotated text into a 72-dpi graphic image.

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Gradients Printing with Large Bands to a LaserWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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PROBLEM

When I print gradients from MacDraw Pro, I get large bands instead of a smooth progression even though I am printing to a Postscript printer.

SOLUTION

You are probably using the LaserWriter 8.0 driver. Switching to the 8.1 or greater driver will solve the problem. Printing with a 7.x driver will also solve the problem.

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Connector Lines not Printing with PowerPrint

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A customer has reported that when using the GDT Software PowerPrint to print a Basic Flow Chart from a Macintosh to a Sharp JX 9500H (for IBM compatibles), the Connector Lines between Elements do not print when saving to PICT and importing to Word. The Connector Lines can be seen on screen and printed from within ClarisImpact.

Solution:
Updating to version 2.0v1 of PowerPrint solved the printing problem.
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Dates from FileMaker Place or Publish to Timeline incorrectly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Problem:
When I Place or Publish a date field(s) from a FileMaker database to a ClarisImpact Timeline the dates are not correct or do not appear at all.

Explanation:
Dates from FileMaker do not Publish into a ClarisImpact Timeline correctly. The reason could be that the dates from FileMaker do not have a leading zero in single digit months or single digit days. Dates with double digit days will Place or Publish & Subscribe correctly.

Workaround:
Use the FileMaker Date Format feature to format the date field so that it has leading zeros. When exporting or publishing make sure to use the option "Format output using current layout".

The ClarisImpact Development is aware of the problem.
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Replacing British English Dictionary With US English When Installing ClarisWorks Again (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When Installing a version of ClarisWorks over a previously installed version, the dictionary will normally be replaced automatically. However, if you are currently using the British English Dictionary and want to install from disks that contain the US English Dictionary, the dictionary will not be replaced by the installer.

To correct this problem, you can remove the Main Dictionary from the Macintosh (you may wish to make a backup copy of it in case you decide you'd like to use it later). The Main Dictionary is located inside the System Folder , within the folder named Claris.

Once the previous Main Dictionary has been removed, you may proceed with installing ClarisWorks from the installer disks Since the installer will not see the previous dictionary, it will install the new dictionary.
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Smart Quotes not Printing

Here is a quick way to get Smart Quotes to print without turning off extensions.

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If Smart Quotes do not print there are three possible reasons: an extension conflict, that the font you are using is corrupt or that the font that you are using does not support the smart quote characters.

When you are troubleshooting this kind of issue, you can approach each of the possibilities separately:

If you are using Macintosh System 7, restart your Macintosh with the Shift key held down. This allows you to restart the machine and turn off all extensions. If the issue goes away, then you know that the issue is caused by an extension conflict. If you need to use Smart Quotes, you will need to troubleshoot the extension conflict. Call Claris Technical Support.

If you do not want to spend time determining which extension is causing the issue, try turning Smart Quotes off in Preferences. Any quotation marks that you type with Smart Quotes turned off will show up as straight quotes, not "curly" quotes. Also, while in Preferences (in ClarisWorks, ClarisImpact and ClarisDraw), click on the Make Default button so that all new documents use regular quotes. In all other programs, use a Stationery document to save regular quotes as a default.

If the issue does not go away when you restart your machine with Extensions off, it is likely that you have a corrupt font or a font that does not support Smart Quotes. Try switching to another standard Macintosh font like Times or Helvetica, to see if your Smart Quotes print properly.

If switching to another font allows the Smart Quotes to print, then you know that the original font is either damaged or does not support Smart Quotes. To check for damage, remove and reinstall the font and see if that fixes the issue. To see whether or not that font supports Smart Quotes, contact the font manufacturer.

Replacing Smart Quotes with regular quotes:

The above directions describe how to use straight quotes. If you want to change the Smart Quotes you currently have, you will need to use the Find/Replace feature.

You can type a Smart Quote into the Change section of Find/Replace by using these keyboard combinations:

Option-[creates opening Smart Quotes:
Shift-option-[creates closing Smart Quotes:
Option-] creates a single opening Smart Quote:

Shift-option-] creates a single closing Smart Quote:

To Replace the Smart Quotes:

1. Choose Find/Change from the Edit menu and select Find/Change from the pop-out menu.
2. Type the opening Smart Quote into the box marked "Find."
3. Type the straight quote into the box marked "Change."
4. Click Change All. You will get a warning saying that you cannot undo the Change All command. Click Ok.
5. You will see a dialog that tells you how many instances of the Smart Quote were changed into the straight quote. Click Ok.
6. Choose Find/Change again from the Edit menu and select Find/Change from the pop-out menu.
7. Type the closing Smart Quote into the box marked "Find."
8. Type the straight quote into the box marked "Change."
9. Click Change All. You will get a warning saying that you cannot undo the Change All command. Click Ok.
10. You will see a dialog that tells you how many instances of the Smart Quote were changed into the straight quote. Click Ok.

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Timeline not Calculating Dates Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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This issue is fixed in version 1.0v3.

ClarisImpact 1.0v1 and 1.0v2 do not correctly calculate when using weeks with less than seven days. The most common example is the five-day week (excluding Saturday and Sunday). Try this example to see the issue:

1. Create a new Custom Timeline with a five-day week.
2. Change the Data Display... to show Duration and Planned Start.
3. Change the Duration of the first Task to be 1 day.
4. Change the Planned Start to February 18th, 1994 (Friday).

Notice that Task 2 calculates the Planned Start as Saturday even though you have told it to calculate based on a five-day week.

Workaround:
In the above example, change the Duration in Task 1 to be 1.01 days. The Planned Start in Task 2 will now calculate correctly. In general, add .01 to any duration where the dates are not being calculated correctly.
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XTND Bridge Translators not Changed by Preferences

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ClarisImpact allows you to modify the way that specific graphic translators operate. For example, you can set your EPSF Export translator so that the Macintosh color header information is not included, if you wish to take your EPSF files to a PC.

To modify those translator settings, choose Preferences in the Layout menu, choose the Translators preference icon, choose the translator that you wish to modify and click Set.

However, you cannot modify XTND translators that are accessed through the XTND Bridge. This Preference section only allows modification of XTND translators that ship with ClarisImpact.

DataViz is a common distributor of XTND translators that require the XTND Bridge to work with Claris applications. The telephone number for DataViz is 800-733-0030.
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Cross-Platform File Compression Compatibility using ZIPIT for Intel-Based PCs and STUFFIT for Macintosh

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File compression and archiving is a way of storing a group of files and/or directories in one file, thus saving computer storage space and reducing the amount of time it takes to transmit them over phone lines or networks. Besides the backing up of important information, this can be helpful if files are too big to fit on a diskette or by reducing the amount of online/phone charges needed to upload or download a file from an electronic service or BBS.

The industry standards for file compression are StuffIt for the Macintosh and PKZIP for DOS based machines. Since both of these utilities have shareware versions, they are readily available through most online services In most cases, so they are easy to recognize, StuffIt files have a ".SIT" extension and PKZIP files have a ".ZIP" extension at the end of their filenames .

To use and access these files, they must be decompressed. Besides compatibility on their native platforms, there are utilities available that will allow you to open and decompress a StuffIt file on a DOS machine and a ZIP file on a Macintosh, thus making file transfer between the two platforms more seamless. Two such utilities are ZIPIT for the Macintosh and UNSTUFF for DOS machines.

ZIPIT for the Macintosh
This application has a similar interface to StuffIt and is just as easy to use. To decompress a DOS PKZIP file follow these steps:

1) Launch ZIPIT by double clicking on it's icon.
2) Pull down the FILE menu and select OPEN
3) Select the ZIP file that you wish to open by double clicking on it or by highlighting it and clicking on the OPEN button in the Open/Save dialog box. The Finder dialog will only show valid PKZIP files. If the file does not show up in the Finder dialog, it is either not a ZIP file, a corrupted ZIP file, or a self-extracting ZIP file.
4) Select the file(s) from the list that you wish to extract. If the ZIP file contains multiple files and/or directories you can select them all by doing a command (Apple) A (Select All.) To extract files, pull down the ZIP menu and select EXTRACT or use command (Apple)-E
5) Another dialog box will appear asking you where you want the files extracted. Navigate the finder until you locate the desired folder. If you wish to rename selected files or changed the target folder before the files are decompressed, change the name and/or folder name of each one, using the SAVE button to go onto the next file. If renaming of files is not desired, or to speed up the decompressing process, the SAVE ALL button can be used. This will not prompt for files to be renamed and will use the name contained in the original ZIP file and copy them to the selected folder.

Note: Make sure the filename ends with .FM for FileMaker files and .CWK or .CWS for ClarisWorks files before opening them. It is necessary to open a file through the File menu of FileMaker or ClarisWorks the first time instead of double clicking it when the file comes from a PC. Afterwards, you will be able to open the file by double-clicking it from now on.

UNSTUFF for DOS
This program has a similar interface to PKZIP and is command line based. For help on using UNSTUFF and for an explanation of it's command line parameters, type UNSTUFF by itself at the DOS prompt. To open a Macintosh Stuffit file on PC follow these directions.

SYNTAX: UNSTUFF [options] [archive name[.sit]]

1) For example to "unstuff" a StuffIt file called TEST.SIT, you would type at the DOS prompt. UNSTUFF TEST.SIT This will created a subdirectory called TEST in your current directory and copy all the files contained in TEST.SIT into it. If you wish to UNSTUFF the files in the current directory without a directory being created, you would type at the DOS prompt. UNSTUFF TEST.SIT -d. Macintosh filenames allow spaces and up to 32 characters. If files that are contained in TEST.SIT do not conform to the DOS naming convention (8 characters with a 3 character extension), UNSTUFF will strip out all the spaces and truncate the filename automatically.

Example:
"This Is A Test.FM" will become: "THISISATE.ST "
"This Is Another Test.FM" will become: "THISISANO.THE"

When unstuffing FileMaker Pro files, it is a good idea to rename the file so it has an ".FM" extension so it will be easier to locate and be associated in Windows with the FileMaker application. In the above example, to rename "THISISANO.THE" to "CLARIS.FM" type the following at the DOS prompt. REN^THISISANO.THE^CLARIS.FM (^=space)

Compatibility Note: ZIPIT is compatible with files created with PKZIP 2.x. The shareware version cannot extract files that are encrypted with a password. UNSTUFF is compatible with files created with Stuffit 1.5.1 through Stuffit Deluxe 3.0.3 but will not open a file that has been encrypted or optimized. ZIPIT for Mac can expand self-extracting .EXE files but UNSTUFF for DOS cannot expand self-extracting archives created by Stuffit for Macintosh.

Versions Tested: UNSTUFF Version 1.1 + ZIPIT Version 1.2 Availability: Both utilities are available on the Claris BBS.

TA42874_CrossPlatform_File_Compression_Compatibility_using_ZIPIT_for_IntelBased_PCs_

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Claris Dictionaries do not Detect Contextual Misspellings

Claris spell checking dictionaries cannot check for context when checking for misspellings.

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This article has been archived and is no longer updated by Apple.

The spell checker shipped with the Claris product dictionaries (most recent version is 2.3) differs with proof readers and grammar checkers in that it cannot decipher the context in which the spelling error has occurred. In other words, the spell checker does not detect words with different spellings when each spelling is correct in a particular context.

Examples:

1) Past Participles vs. Present Tense
Forms of the same verb (e.g. "porte" vs "porte"), or words such as "cote" and "cote" or past participles and nouns (e.g. "carre" and "carre") are an example. These words are accepted by the spell checker in either form of spelling (with or without accents) because both forms are acceptable.

2) Words beginning with "l" apostrophe (such as "lhumanite"), when typed erroneously with no accent, are detected as spelling errors, however a suggested replacement is not displayed.
3) Words that are not in common usage but do exist.
Potage isn't in most dictionaries and isn't in the Claris Thesaurus. The definition of Potage is "Thick Soup". It's a French term and was found in the Oxford American Dictionary, in paperback form. The spell checker will not tag this word if it is a misspelling for postage.

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Information on "Fractional Character Widths" and "City-named" Fonts

When to use "Fractional Character Widths" - Using "city-named" fonts and their high resolution partners.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Geneva, along with other "city-named" fonts (New York, Monaco, Athens, San Francisco, etc.) are low-resolution fonts. They are optimized to look best when printed and/or viewed at 72 dots per inch (i.e., on a screen, or when printed to a low-resolution printer like an ImageWriter).

Non city-named fonts are usually high-resolution fonts, which don't look as good on screen, but they look good when printed to a high-resolution printer, such as a laser printer or an inkjet printer. There are "pairs" of low- and high-resolution fonts: New York is the low-resolution version of Times; Geneva is the low-resolution version of Helvetica; and Monaco is the low-resolution version of Courier. "Fractional Character Widths" is a setting which should be used when printing high-resolution fonts to a high-resolution printer. If this setting is off, then the Macintosh will assume that you are printing to a low-resolution printer, and it will space characters more broadly. This is fine for low-resolution fonts, like Geneva, as it spaces them out more appropriately, especially for on screen viewing or when printing to a low-resolution printer. But leaving Fractional Character Widths off will cause high-resolution fonts to have gaps if printed to a high-resolution printer.

Turning Fractional Character Widths on tells the Macintosh to space characters more finely when printed. This makes low-resolution fonts look bad, because they're not designed to be spaced this closely, but it vastly improves the look of high-resolution fonts when printed to a high-resolution printer.

Generally, if you're designing something to be displayed on screen, or for a low-resolution printer, it's best to choose low-resolution, or "city-named" fonts, and leave Fractional Character Widths off. But if you're printing to a laser or inkjet printer, and an occasional compressed character on screen doesn't bother you, then you should use high-resolution fonts and have Fractional Character Widths on. That's the setting most people should and do use. Note that none of this has anything to do with whether or not the font you're using is a TrueType or a bitmap font. TrueType fonts scale to any size very nicely. Geneva, New York or Monaco are not going to be spaced (kerned) as well as a high-resolution font when printed to a high-resolution printer.

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MacDraw Pro: Text Object has Extra Space

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ISSUE:
The text object on the screen has extra space between the right edge of the last character and the boundary of the text object frame.

EXPLANATION
You have probably created a text object that is Center or Right aligned and then substituted a larger font. MacDraw may not accurately recalculate the text object boundaries in this situation.

SOLUTION
Select the text object and reselect the alignment that has a check mark next to it in the Style menu. This will resize the text object's boundaries and eliminate the space.

TO REPRODUCE
* Create a new MacDraw Pro Document.
* Choose Center from the Style menu.
* Click in the document and type a few words of text.
* Hit the enter key to activate the selection handles of the text object.
* Change the size of the text object to a larger size (18 or 24). Notice that there is space between the last character and the selection handles.
* To fix the problem, reselect Center from the Style menu. Notice that the selection handles on the right move to indicate that the text object has been resized.

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Pie Charts With Only Two Segments or Sections May Print Incorrectly to Color QuickDraw Printers (SS)

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Issue:

The segments of a pie chart may split and print incorrectly to a color QuickDraw printer (such as the Apple Color Printer or the HP DeskWriter 550C). Specifically, a small arc segment of the bottom pie segment is separated from the rest of its segment and prints offset from where it should be.

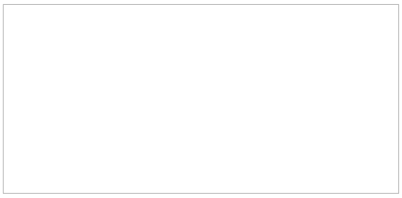
The issue seems to occur only when ALL of the following conditions are :

* The data being charted includes only two items with data (in other words, the pie chart has only two segments or sections)

* Explode slice is selected in the Series Chart Options

* The chart has been enlarged to fill the entire page (presumably in Landscape mode in Page Setup..).

ClarisWorks Development is aware of the issue. There is no known workaround at this time (other than making the chart smaller than the page or not exploding the slice).



Sample of data which will produce the error when charted as a pie chart.

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Behavior of Connectors With Grouped Objects

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This article has been archived and is no longer updated by Apple.
Connectors were not designed to be used with Grouped objects.

If you Group several objects and then try to attach a Connector (Right-angle or Straight Connector) you will have difficulty finding a good attachment point with the PointGuide. If you do find a location where the Arrow tool shows a plus sign ("+"), the Connector may not be attached to any particular object in the Group.

The best solution is to Ungroup the objects and attach the Connector to just one of the objects. Also, Grouping objects that have Connectors attached will detach the Connector.

Explanation:
The connector is connecting to the center or corners of the group. It treats the group of objects as if it were a single object.

Here's an easy way to see it.
1. Draw a diagonal line.
2. Duplicate the line, rotate it 90¡ and align the center points of the two lines so that they look like the letter "X."
3. Group the lines.
4. Now try attaching a Connector.

Published Date: Feb 18, 2012

Numbering Pages When Printing a ClarisWorks Database (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Printing page numbers when printing from a ClarisWorks database is done in a different manner than it would be in FileMaker Pro. (See below **)

Getting page numbers to automatically print on a ClarisWorks database can be accomplished as follows:

1. Choose Layout menu and make sure that Browse is checked.
2. Choose Format menu and select Insert Footer, assuming you want the page numbers at the bottom of each page. If you prefer that the page numbers appear at the top of the page, choose Insert Header instead of Insert Footer.
3. From the Edit menu choose Insert Page #.

You can format the page number any way you wish (center, etc.), including adding the word ÒPageÓ before it.

Notes:
1) The page number will print, but will not show up on screen unless you turn on Page View in the View menu.

2) The Format Menu, Insert Header or Footer command is not layout specific. In other words, using this method will resulting in page numbers printing for the entire file, on every layout.

**FileMaker Pro allows you to place a page number symbol within the Layout Footer (or Header) part. This allows you to have page numbers print only when printing from specific layouts.
Published Date: Feb 18, 2012

Cannot Change Master Slide Line Spacing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Because you cannot place your cursor in the Body or Title of the Master Slide, it is not possible to directly change the line spacing of the Body or Title in the Master Slide of a Presentation document.

If you wish to change the Master Slide line spacing, you have two options: you can choose the line spacing for the Title or Body on one of the other slides, then copy and paste it into the Master Slide, or you can manually change the Title or Body text on each slide.

To copy and paste from another slide:

1. Go to the slide which has the text formatting that you wish to appear on the Master Slide.
2. Select the Title or Body on that slide and use the Copy command to copy it to the Clipboard.
3. Switch to the Master Slide using the Slide Selector at the bottom of the screen or by choosing Edit Master Slide... from the View Menu.
4. Delete the Title or Body from the Master Slide and use the Paste command to paste in the new Master Slide Title or Body.

To change the line spacing on a single slide:

1. Select all the lines in the Title or Body that you wish to change.

2. Choose Paragraph... from the Text menu. The resulting dialog box will allow you to change the default 1.5 line spacing of the Body or the 1 line spacing of the Title.

Note that this second option overrides the Master slide formatting.

Published Date: Feb 18, 2012

Dragging Columns Does Not Insert

Instead of inserting the dragged column in the new location, ClarisImpact swaps the newly-placed column with the column in the location where it is to be placed.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
In ClarisImpact tables, you can drag on the column headers to quickly move a column to a new location. However, the column in that new location will be swapped with the column that you are dragging.

For example, if you have five columns in your table and you decide to drag column five to place it after the second column, you might expect to get a column order of 1, 2, 5, 3, 4. In fact, dragging column five to place it after the second column results in an order of 1, 2, 5, 4, 3. Columns 3 & 4 do not move over to allow column 5 to fit; columns 3 and 5 have been swapped. This also happens with a Timeline or a table attached to a Data Chart.

However, using Copy and Paste will allow you to get the results you desire. Following are the exact steps to insert rather than swap:
1. Select the entire row or column that you wish to insert elsewhere.
2. Choose Cut from the Edit menu.
3. Select the Row or Column after the one you wish to insert into (for example, to insert between columns 2 & 3 select column 3).
4. Choose Insert Cells from the Table menu.

5. Choose Paste from the Edit menu.

Quick Steps on How to drag a Column or Row:
1. Select the Table so that the gray border is showing around the edges.
2. Position your Mouse pointer next to the top edge of a Column or left edge of a Row until it turns into a down pointing or right pointing arrow.
3. Drag your pointer to where you want the Column or Row to go. You will get a visual indicator next to the mouse pointer when you are performing this action correctly.

Swapping Columns is also covered on page 6-10 of the ClarisImpact User's Guide.

Published Date: Feb 18, 2012

How to Edit a Chart Model as a Picture

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Sometimes you may want to edit charts created in ClarisImpact so that they show conceptual rather than numerical relationships between numbers. Editing Chart models as pictures in ClarisImpact requires a few extra steps, because of the link between charts and their table data. To edit a chart model as a picture, use the following steps:

1. Select the chart model.
2. Choose Separate Table from the Chart menu. (You will get a dialog box that says, "Separating the table from the Chart will make the chart values only modifiable from the table. Continue?" Click OK.)
3. Reselect the chart only.
4. Cut (or Copy) the chart.
5. Paste back into current ClarisImpact document (or other, new document).
6. Reselect chart graphic (which is now a grouped picture).
7. Go to the Arrange menu and choose Ungroup Picture. You will now be able to edit any part of the chart as a graphic object.

Note: Once you have performed this procedure, you cannot reverse it so that the chart graphic is manipulated as a chart model.
Published Date: Feb 18, 2012

Key Equivalent to Hide and Show the Tool Bar

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a hidden feature in ClarisImpact that allows you to hide and show the Tool Bar. The only way to access it is through a keyboard equivalent:

Option-Command-Tab.
Published Date: Feb 18, 2012

Video Card Vendor Phone Numbers And Addresses

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

IBM PC and compatible video card vendors

==========

Actix Systems Inc.
3060 Tasman Dr.
Santa Clara, CA 95054
Tel: 800-927-5557
408-986-1625
Fax: 408-986-1646

Advanced Integration Research Inc.
2188 Del Franco St.
San Jose, CA 95131
Tel: 800-866-1945
408-428-0800
Fax: 408-428-0950

Ahead Systems
Tel: 510-623-0900
Fax: ???
BBS: 510-623-0961

American Megatrends Inc.
6145-F Northbelt Pkwy.
Norcross, GA 30071
Tel: 800-828-9264
404-263-8181
Fax: 404-263-9381

Appian Technology Inc.
477 N. Mathilda Ave.
Sunnyvale, CA 94086
Tel: 800-727-7426
408-730-5400
Fax: 408-730-5473

ATI Technologies Inc.

33 Commerce Valley Drive East
Thornhill, Ontario ON L3T 7N6
CANADA
Tel: 416-882-2626, 416-882-2600, 905-882-2626 ???
Fax: 416-756-0720, 416-882-2620, 905-882-2620 ???
BBS: 416-764-9404
Email: 74740.667@compuserve.com

Boca Research
6413 Congress Ave.
Boca Raton, FL 3348
Tel: 407-997-6227
407-241-8088 (Tech Support)
Fax: 407-997-0918
BBS: 407-241-1601

Cardinal Technologies Inc.
1827 Freedom Rd.
Lancaster, PA 17601
USA

Tel: 717-293-3049

Fax: 717-293-3055

Chips and Technlogies
Tel: 408-434-0600

Cirrus Logic
3100 West Warren Avenue
Fremont, CA 94538
Tel: 510-623-8300
510-226-2300
Fax: 510-226-2180
BBS: 510-440-9080
415-623-8300

CRYSTAL Semiconductor Corporation

P.O. Box 17847
Austin, TX 78760
Tel: 512-445-7222
Fax: 512-445-7581

Diamond Computer Systems
1130 East Arques Avenue
Sunnyvale CA 94086
Tel: 408-736-2000 (Tech Support)
Fax: 408-730-5750
BBS: 408-730-1100

Elitegroup Computer Systems
45225 Northport Ct.
Fremont, CA 94538
Tel: 800-829-8890
510-226-7333
Fax: 510-226-7350

ELSA America Inc.
400 Oyster Point Blvd. #109,S
San Francisco, CA 94080
Tel: 800-272-3572
415-615-7799
Fax: 415-588-0113

Everex Microsystems
48431 Milmont Drive
Fremont, CA 94538
Tel: 415-683-2230 (Customer Services)
415-498-1115 (Tech Support)
BBS: 510-438-4650

Focus Information Systems Inc.
4046 Clipper Ct.
Fremont, CA 94538

Tel: 800-925-2378
510-657-2845
Fax: 510-657-4158

Genoa
75 East Trimble Rd
San Jose CA 95131
Tel: 408-432-9090 (Tech Support)
BBS: 408-943-1231

Headland Technology

Tel: 800-553-1850 (Tech Support)
415-623-7857
Fax: ???
BBS: 415-656-0503

Hercules Computer Technologies
3839 Spinnaker Ct.
Fremont, CA 94538
Tel: 800-523-0600 (Tech Support)
510-623-6050 (Tech Support)
510-623-6030 (which one of the last two is correct?)
Fax: 510-623-1112
BBS: 510-623-7449 (14400 bps)
510-623-7034 (9600 bps)
510-623-7142 (2400 bps)
+49-40-65737335 (V.32bis) [a "mailbox" in Germany with files only]
Email: 71333.2532@compuserve.com (Hercules Support, Dylan Rhodes)
Compuserve: GO HERCULES

Matrox Electronic Technology Inc.

1055 St-Regis Blvd.
Dorval, Quebec
CANADA H9P 2T4
Tel: 800-361-1408
514-685-2630
Fax: 514-685-2853

Metheus Corp.
1600 N.W. Compton Dr.
Beaverton, OR 97006
Tel: 800-638-4387
503-690-1550
Fax: 503-690-1525

Micro-Labs Inc.
204 Lost Canyon Ct.
Richardson, TX 75080
Tel: 214-234-5842
Fax: 214-234-5896

National Design Inc
Tel: 512-329-5055
800-253-8831
BBS: 512-329-6327

NCR Corporation
Tel: 316-636-8000

Nth Graphics Ltd.
11500 Metric Blvd. #210
Austin, TX 78758
Tel: 800-624-7552
512-832-1944
Fax: 512-832-5954

Number Nine Computer Corp.
18 Hartwell Ave.
Lexington, MA
Tel: 800-438-6463

617-674-0009
Fax: 617-674-2919

Oak Technologies

BBS: 510-657-9451

Orchid Technlogy
45365 Northport Loop West
Fremont, CA 94538
Tel: 800-767-2443
510-683-0323 (Tech Support)
510-683-0300
Fax: 510-490-9312
BBS: 510-683-0327

Sigma Designs Inc.
47900 Bayside Pkwy.
Fremont CA 94538
800-845-8086
510-770-0100
FAX 510-770-2640

RealTek
Tel: 800-521-2471
215-387-6055

S3 Incorporated
2933 Bunker Hill Lane, Suite 100
Santa Clara, CA 95054

2880 San Thomas Expressway
Santa Clara, CA 95051-0981
Tel: 408-986-8144
408-980-5400
Fax: 408-980-5444

Sigma Designs Inc.
47900 Bayside Pkwy.

Fremont CA 94538
Tel: 800-845-8086
510-770-0100
Fax: 510-770-2640

SPiDER Graphics Inc.
801 Ames Ave.
Milpitas, CA 95035
Tel: 408-956-1231
Fax: 408-956-1342

STB Systems Inc
Tel: 214-234-8750
BBS: 214-437-9615

Tseng Labs
Tel: 215-968-0502
BBS: 215-579-7536

Trident Microsystems Inc
Tel: 415-691-9211
BBS: 415-691-1016

VidTech Microsystems Inc.
1700 93rd Ln. N.E.
Minneapolis, MN 55449
Tel: 800-752-8033
612-780-8033
Fax: 612-780-2040

Volante Inc.
1515 Capital of Texas Hwy. South
5th Floor (?)
Austin, TX 78746
Tel: 800-253-8831
BBS: 512-329-5055
Fax: 512-329-6326

Western Digital Imaging (Paradise)
8105 Irvine Center Drive
Irvine, CA 92718
Tel: 800-832-4778 (Tech Support)
415-960-3360
714-932-4900 (Tech Support)
44-372-360387 (UK)
Fax: 712-932-6498
BBS: 714-753-1068 (9600 bps)
714-753-1234 (2400 bps)
331-69-85-3914 (France)
49-89-922006-60 (Germany)

Video Electronics Standards Association (VESA)
2150 North First Street, Suite 440
San Jose, CA 95131-2029
Ph: 408-435-0333
Fax: 408-435-8225

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About Version 1.5v3, Fixes Power Macintosh Crash

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
MacDraw Pro 1.5 v3 is identical to MacDraw Pro 1.5 v2 with the following exceptions:

- A bug has been fixed in which placing objects from libraries crashed under System 7.1.2 (the Power Macintosh operating system);

- A bug has been fixed in which "Easy Install" was unavailable under System 7.1.2. If you clicked on "Easy Install," nothing would happen. (The workaround was to go to "Custom," then select Full Install from there.)

- The "Read Me" file has been updated to include a description of changes in version 1.5.3.

There have been no other changes.
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Obtaining Version Information Of A Windows Display Driver

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Display driver software is updated just like a commercial software package such as FileMaker Pro or Microsoft Word. You can find the file name of your video driver by viewing the System.INI file, located in the Windows Directory. Scan the [Boot] section for the line, "System.DRV = <driver.drv>". The file name of your video driver will be to the right of the "=" sign.

You can then use the Windows File Manager to locate that file in your Windows\\System directory. To obtain the date of the driver, click on the file one time, then choose Properties from the File menu. In addition to the date of the file, your video driver vendor may also include the version information.
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Switching Between the LaserWriter 8.1.1 Driver and Fax/modem Software may Shift Drawing

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When reselecting the LaserWriter 8.1.1 driver in the Chooser after using fax/modem software, an open Claris CAD document may shift up and left. It seems that Claris CAD is retaining the page size from the fax/modem driver and is not allowing the margins to be reset while the program is running.

The solution is to Quit from Claris CAD, reselect the LaserWriter driver and reopen Claris CAD.

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ClarisImpact 1.0v3 Disk Configuration

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Disk 1
1) Installer Application
2) Installer Script
3) Important Instructions
4) TrueType extension
5) Main Dictionary
6) User Dictionary
7) US Thesaurus
8) ClarisImpact Color Styles.sit
a) Outline Styles
b) Table Styles
c) Table Elements
d) Chart Styles
e) Chart Elements
f) OrgChart Styles
g) OrgChart Elements
h) FlowChart Symbols
i) Timeline Styles
j) Timeline Elements
k) Calendar Styles
l) Calendar Elements
m) Overhead Slides
n) 9" SE Slides
o) 10" PowerBook Slides
p) 13" Apple RGB Screen Slides
q) 35mm Slides
9) ClarisImpact B&W Styles.sit
a) Outline Styles
b) Table Styles
c) Table Elements
d) Chart Styles
e) Chart Elements
f) OrgChart Styles
g) OrgChart Elements
h) FlowChart Symbols
i) Timeline Styles
j) Timeline Elements
k) Calendar Styles
l) Calendar Elements
m) Overhead Slides
n) 9" SE Slides
o) 10" PowerBook Slides
p) 13" Apple RGB Screen Slides
q) 35mm Slides
10) ClarisImpact Color Palette folder
a) 240 grays
b) Cyan to Blue
c) Earth Tones
d) Pastels
e) Presentation
f) Red to Yellow
g) Violet to Magenta
h) YellowGreen to GreenBlue

Disk 2
1) ClarisImpact - (68k)
2) ClarisImpact.sit.2 - (Second half of PPC)

Disk 3
1) ClarisImpact.sit.1 - (First half of PPC)

2) Read Me - ClarisArt

Disk 4
1)Claris Translators folder
a) ASCII.sit
b) CGM.sit
c) Claris XTND Bridge.sit
d) DIF.sit
e) EPSF.sit
f) GIF.sit
g) MacDraw II.sit
h) MacDraw Pro.sit
i) MacPaint.sit
j) MacWrite II.sit
k) Microsoft Excel 3-4.sit
l) Microsoft Word 3.0.sit
m) Microsoft Word 4-5.sit
n) Movie.sit
o) PICT.sit
p) RTF.sit
q) SYLK.sit
r) Text.sit
s) TIFF.sit
2) ClarisImpact Help.sit
3) Tutorial Files.sit
a) Occupancy Data Chart
b) Tutorial Library
c) Occupancy table.XL3
d) Renovation Timeline
e) Organization Chart
f) Sample Objects
g) ORG_OUTL.TXT
h) Continental Logo.EPSF
i) Finished files - folder
1) Staff Presentation-finished
2) Tutorial Library-finish
3) Occupancy Data Chart-finished
4) Renovation Timeline-finished
5) Organization Chart-finished
5) Minimal ClarisArt.sit
a) Arrows (Color)
b) Balloons (Color)
c) Business Images (Color)
d) Common Symbols (Color)
e) Computers (Color)
f) Education (Color)
g) Flags A-J (Color)
h) Flags K-Z (Color)
i) Illuminated Letters (Color)
j) Shapebursts (Color)
k) Stars (Color)
l) Trees and Shrubs (Color)

Disk 5
1) Claris XTND System
2) More ClarisArt.sit
a) Animals (B&W)
b) Appliances (B&W)
c) Architecture
d) Arrows (B&W)
e)Astrology Symbols
f) Backgrounds/QuickTime
g) Balloons (B&W)
h) Borders (Color)
i) Borders (B&W)

j) Business Forms
k) Business Images (B&W)
l) Chemistry
m) Code Flags
n) Common Symbols (B&W))
o) Computers (B&W)
p) Education (B&W)
q) Electronics - Basic Logic
r) Electronics - Digital
s) Fabric Care (B&W)
t) Flowchart Symbols - 2D
u) Flowchart Symbols -3D
v) Foods (Color)
w) Foods (B&W)
x) Furniture (B&W)
z) Furniture (Color)
aa) Globes (B&W)
ab) Globes (Color)
ac) Hands (B&W)
ad) Hands (Color)
ae) Holidays (B&W)
af) Holidays (Color)
ag) Illuminated Letters (B&W)
ah) Map Symbols (B&W)
ai) Map Symbols (Color)
aj) Meteorological Symbols
ak) Networking Symbols (B&W)
al) Networking Symbols (Color)
am)Office Furniture (B&W)
an) Pictograms (B&W)
ao) Pictograms (Color)
ap) Road Signs - USA (B&W)
aq) Road Signs - USA (Color)
ar) Shapebursts (B&W)
as) Stars (B&W)
at) Tools (B&W)
av) Tools (Color)
aw) Transportation (B&W)
ax) Trees and Shrubs (B&W)
ay) USA - 2D (B&W)
az) USA - 3D (B&W)
ba) World Maps 1
bb) World Maps 2
bc) World Maps 3
bd) World Maps 4

Disk 6
1) Fonts folder
a) BernhardMod Bd BT
b) BernhardMod BdIt BT
c) BernhardMod BT
d) BernhardMod It BT
e) Bodoni Bd BT
f) Bodoni BdIt BT
g) Bodoni BT
h)Bodoni It BT
i) CommercialPi BT
j) Futura Bd BT
k) Futura BdIt BT
l) Futura Bk BT
m) Futura BkIt BT
n) Futura Md BT
o) Futura MdIt BT
p) Impress BT
q) Kuenst480 Bd BT

r) Kuenst480 BdIt BT
s) Kuenst480 Blk BT
t) Kuenst480 BT
u) Kuenst480 It BT
v) ZapfHumnst Bd BT
w) ZapfHumnst BdIt BT
x) ZapfHumnst BT
y) ZapfHumnst It BT
z) ZapfHumnst Ult BT
aa) ZapfHumnst UltIt BT

Disk Configuration - 9 800K disks

Disk 1
1) Installer Application
2) Installer Script
3) Important Instructions
4) TrueType extension
5) Main Dictionary
6) User Dictionary
7) US Thesaurus
8) Claris XTND System
9) ClarisImpact Color Palette folder
a) 240 grays
b) Cyan to Blue
c) Earth Tones
d) Pastels
e) Presentation
f) Red to Yellow
g) Violet to Magenta
h) YellowGreen to GreenBlue

Disk 2
1) ClarisImpact.sit.1

Disk 3
1) ClarisImpact.sit.2
2) ClarisImpact Help.sit

Disk 4
1) ClarisImpact Color Styles.sit
a) Outline Styles
b) Table Styles
c) Table Elements
d) Chart Styles
e) Chart Elements
f) OrgChart Styles
g) OrgChart Elements
h) FlowChart Symbols
i) Timeline Styles
j) Timeline Elements
k) Calendar Styles
l) Calendar Elements
m) Overhead Slides
n) 9" SE Slides
o) 10" PowerBook Slides
p) 13" Apple RGB Screen Slides
q) 35mm Slides
2) ClarisImpact B&W Styles.sit
a) Outline Styles
b) Table Styles
c) Table Elements
d) Chart Styles
e) Chart Elements
f) OrgChart Styles

g) OrgChart Elements
h) FlowChart Symbols
i) Timeline Styles
j) Timeline Elements
k) Calendar Styles
l) Calendar Elements
m) Overhead Slides
n) 9" SE Slides
o) 10" PowerBook Slides
p) 13" Apple RGB Screen Slides
q) 35mm Slides

Disk 5
1) Claris Translators Folder
a) ASCII.sit
b) CGM.sit
c) Claris XTND Bridge.sit
d) DIF.sit
e) EPSF.sit
f) GIF.sit
g) MacDraw II.sit
h) MacDraw Pro.sit
i) MacPaint.sit
j) MacWrite II.sit
k) Microsoft Excel 3-4.sit
l) Microsoft Word 3.0.sit
m) Microsoft Word 4-5.sit
n) Movie.sit
o) PICT.sit
p) RTF.sit
q) SYLK.sit
r) Text.sit
s) TIFF.sit
2) Minimal ClarisArt.sit
a) Arrows (Color)
b) Balloons (Color)
c) Business Images (Color)
d) Common Symbols (Color)
e) Computers (Color)
f) Education (Color)
g) Flags A-J (Color)
h) Flags K-Z (Color)
i) Illuminated Letters (Color)
j) Shapebursts (Color)
k) Stars (Color)
l) Trees and Shrubs (Color)

Disk 6
1) Read Me - ClarisArt
2) More ClarisArt.sit
a) Animals (B&W)
b) Appliances (B&W)
c) Architecture
d) Arrows (B&W)
e)Astrology Symbols
f) Backgrounds/QuickTime
g) Balloons (B&W)
h) Borders (Color)
i) Borders (B&W)
j) Business Forms
k) Business Images (B&W)
l) Chemistry
m) Code Flags
n) Common Symbols (B&W))
o) Computers (B&W)

p) Education (B&W)
q) Electronics - Basic Logic
r) Electronics - Digital
s) Fabric Care (B&W)
t) Flowchart Symbols - 2D
u) Flowchart Symbols -3D
v) Foods (Color)
w) Foods (B&W)
x) Furniture (B&W)
z) Furniture (Color)
aa) Globes (B&W)
ab) Globes (Color)
ac) Hands (B&W)
ad) Hands (Color)
ae) Holidays (B&W)
af) Holidays (Color)
ag) Illuminated Letters (B&W)

Disk 7
1) Tutorial Files.sit
a) Occupancy Data Chart
b) Tutorial Library
c) Occupancy table.XL3
d) Renovation Timeline
e) Organization Chart
f) Sample Objects
g) ORG_OUTL.TXT
h) Continental Logo.EPSF
i) Finished files - folder
1) Staff Presentation-finished
2) Tutorial Library-finish
3) Occupancy Data Chart-finished
4) Renovation Timeline-finished
5) Organization Chart-finished
2) Even More ClarisArt.sit
a) Map Symbols (B&W)
b) Map Symbols (Color)
c) Meteorological Symbols
d) Networking Symbols (B&W)
e) Networking Symbols (Color)
f)Office Furniture (B&W)
g) Pictograms (B&W)
h) Pictograms (Color)
i) Road Signs - USA (B&W)
j) Road Signs - USA (Color)
k) Shapebursts (B&W)
l) Stars (B&W)
m) Tools (B&W)
n) Tools (Color)
o) Transportation (B&W)
p) Trees and Shrubs (B&W)
q) USA - 2D (B&W)
r) USA - 3D (B&W)
s) World Maps 1
t) World Maps 2
u) World Maps 3
v) World Maps 4

Disk 8
1) Fonts folder
a) BernhardMod Bd BT
b) BernhardMod BdIt BT
c) BernhardMod BT
d) BernhardMod It BT
e) Bodoni Bd BT

f) Bodoni BdIt BT
g) Bodoni BT
h)Bodoni It BT
i) CommercialPi BT
j) Futura Bd BT
k) Futura BdIt BT
l) Futura Bk BT
m) Futura BkIt BT
n) Futura Md BT
o) Futura MdIt BT

Disk 9
1) More Fonts folder
a) Impress BT
b) Kuenst480 Bd BT
c) Kuenst480 BdIt BT
d) Kuenst480 Blk BT
e) Kuenst480 BT
f) Kuenst480 It BT
g) ZapfHumnst Bd BT
h) ZapfHumnst BdIt BT
i) ZapfHumnst BT
j) ZapfHumnst It BT
k) ZapfHumnst Ult BT
l) ZapfHumnst UltIt BT
Published Date: Feb 18, 2012

Documentation Error: Page 2-13

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Measuring Cylinder and Molecular Structure shown on page 2-13 of the ClarisArt manual are not included in the Chemistry Library.
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Reinstalling ClarisImpact Deletes Custom Model Styles

If you ever need to re-install your ClarisImpact element or model styles, be sure to save your custom styles first.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Installer deletes any custom Element or Model Styles automatically whenever you reinstall ClarisImpact. Art added to an existing Library or new Libraries is preserved.

Here are some suggestions to work around this:

* If you do not need to reinstall Model or Element Styles, select Custom Install. Because the Custom Install places all of the files into a folder called ClarisImpact Folder in your main Hard Drive window, the custom styles will not be deleted. Click Customize in the main installation window and specify what you wish to install.

* If you need to reinstall Model Styles, just remove the Models that have custom versions from the ClarisImpact Styles folder before you install and replace them after the installation is complete.

* If one of the Model Styles has a custom Style in it (that is, if your custom Style is not the one you wish to replace), store the Model in a Library to preserve it. To do this, you will need to create a Model with your custom Style, then add it to a Library.

Advanced Workaround Technique.

If you just want to reinstall one Model Style, copy the compressed Model Styles from Disk 1 onto your hard drive and use Stuffit to decompress the file.

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ClarisDraw & Impact: Reshape Command Not Working With All Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Most shapes in ClarisDraw and ClarisImpact can be Reshaped simply by selecting the object and choosing Reshape from the Arrange menu. Some objects cannot be reshaped or reshaped with just one menu command.

Objects created with the following tools cannot be directly reshaped:

- Line Tool
The Line Tool cannot be reshaped even though the Reshape command is available when a line is selected.

- Arc Tool
The Arc Tool can be reshaped in two ways. If you select the Arc and then choose Reshape, you will be able to grab the beginning or end point and increase or decrease the amount of degrees in the arc. If you select the Arc and use the Convert to Bezigon menu command (Convert to Bezigon is only available in ClarisDraw) you will be able to reshape the the Arc by adding new points.

- Rectangle Tool
- Round Rectangle Tool
- Oval Tool
These shapes can only be reshaped in ClarisDraw, and can only be reshaped by using the Convert to Bezigon menu command and then choosing Reshape from the Arrange menu.
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Top Part of Event Text Cut Off in Calendar

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
A Calendar Model formatted with the International Model Style will hide or cut the top part of the text in the first Event added to a day.

Solution:
Update to ClarisImpact 1.0v3.

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Transferring Elements/Symbols Between Computers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you have made changes to some of your styles, and you wish to use those styles on more than one computer, you should copy your style files to the other computer so they can be used there.

Model elements and symbols are stored in folders inside the ClarisImpact folder called ClarisImpact Color Styles and/or ClarisImpact B&W Styles. These folders contain the style files for each type of model.

Note: In the following scenarios, the word 'symbols' refers to both Symbols and Elements.

Scenario 1: You have created/altered some symbols and you want to install them on a computer where the default symbols have not been changed or added to.

Solution: Copy either the appropriate symbol file (such as Timeline styles) from the style folder on your machine to the style folder on the other machine, replacing the style file. If you want to update the entire folder, you can copy the entire folder.

Scenario 2: You want to have two different sets of styles (the ones that Mary made and the ones that Mark made) on one machine.

Solution: Keep the symbols in different folders with different names. When you want to use a different folder, go to Preferences, under the Layout menu. Click on the Models icon. Now change the name in the ClarisImpact style folder box to the name of the folder you wish to use. Note: it is important that you have the style folder in the same folder as the application itself.

Scenario 3: You wish to add symbols that you have created to the symbol set on another computer. Perhaps someone else has edited their symbols, but wish to add some of yours to their symbols.

Solution: Make a model on a document that uses all of the symbols that you wish to copy. Open that document on the other computer. You can add symbols or elements by hitting the Add button on the symbols floater for each model.You may have to click the down triangle on the floater to see the Add button.

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Accessing the Internet with ClarisWorks (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There are basically three ways of connecting to the Internet:
1. A direct connection. Many corporations and universities have a dedicated line which connects them to the Internet and enables you to access the Internet via their LAN (local area network) or WAN (wide area network). Ask your IS administrator if you have this kind of access.
2. SLIP (Serial Line Internet Protocol) or PPP (Point to Point Protocol) dial-up connection to an Internet Service Provider like Netcom (800-488-2558) or Northwest Nexus (800) 539-3505. This sets up a TCP/IP connection between you and the service provider and enables you to use dedicated Internet applications like TurboGopher, WinGopher and Mosaic just as you can with Method 1.
3. Terminal access to a UNIX server connected to the Internet, via a dial-up connection to an Internet service provider such as the two listed above.

You can use ClarisWorks to access the Internet with any of the 3 types of connections above.

Methods 1 and 2
Methods 1 and 2 require additional software, namely Apple's MacTCP control panel and a TCP/IP connection tool.

TGE TCP is a freeware connection tool by Tim Endres, available in the communications software libraries of major online services.

TCPack is a connection tool that allows simultaneous TCP/IP connections using Apple's MacTCP driver and the standard access interfaces of the Communications Toolbox (CTB). TCPack supports FTP server functions, running as a background task, TELNET protocol and negotiation parameters and the Domain Name Resolver (DNR) functions. TCPack FTP implementation supports: DARPA standard TELNET protocol; directory management functions (create, delete); file/directory list functions in user or application-oriented formats; send/receive file transfers (binary, ASCII or MacBinary); and simultaneous background FTP servers.

$85 retail
Sysnet Corp.
5301 Wisconsin Ave. NW, Ste. 640
Washington, DC 20015
202-686-5515
800-683-5515
202-686-6992 (fax)

Note: Claris has not tested TGE TCP or TCPack with ClarisWorks.

To use either tool, create a new ClarisWorks Communications document, choose Connection from the Settings menu and select the TCP connection tool. Then pick the Internet server you want to access from the list. If none appear, contact your IS administrator or Internet service provider to troubleshoot your Internet connection. The Internet Starter Kit, a book by Adam Engst, is an excellent resource.

You can keep a list of several host addresses in the Phone book in ClarisWorks by changing the Type field from "PhoneNumber" to "RemoteAddress" for TCPack and setting the Number field to the Internet address. The PhoneBook Type for TGE TCP is "HostName".

For example:

Name: "Apple"
Number: "apple.com" or "130.43.2.2"
Type: "HostName"

This allows you to have a single communications document that contains addresses of all the Internet sites that you might want to connect to, with a one-step connection process via the Phone Book popup menu.

Method 3
In this case, you use ClarisWorks Communications to dial into an Internet service provider, just as you would with a BBS, but once connected, you can issue UNIX commands to access Internet servers. Many universities and colleges provide dial-in, command-line access to students and faculty for free or at a low cost.

Example Session

Once you connect to an Internet server, regardless of whether you are using Method 1,2 or 3, you will be prompted for an account name and password. After logging in, you can issue Internet commands such as mail, telnet, ftp, archie, wais, and gopher to access Internet services. ClarisWorks acts as simple terminal emulator, enabling you to type commands and see information that the host sends.

TA42898_Accessing_the_Internet_with_ClarisWorks_CM.pdf

Here is an example of what an Internet session is like using ClarisWorks:

- Dial up the Internet host as you would any BBS, using the settings the host requires.
- Once connected, type your user ID and password when prompted.
- You'll be presented with a menu of choices or in some cases just a prompt.
- Type "mail" to see if you have any mail. Once you're finished there, type "quit" to get back to the main prompt.
- Type "ftp ftp.claris.com" at the prompt. This will connect you to the Claris ftp server. Type "ls" to list the file directory. There is a "pub" directory, and you could see what is in it by typing "cd pub" to change to that directory and then "ls" to list what's in it. One of the items you'll see is "updaters" and you'll find Claris updaters in that directory.
- To download a file, type "get", a space, and the name of the file. This will download the file to the Internet host you are connected to which should happen pretty quickly. Then you need to download the file from the host to your hard drive. This takes a longer time since the file is being sent over the phone line via modem. You do this with the command "send filename protocol" where you substitute the name of the file for "filename" and the download protocol you want to use for "protocol". ClarisWorks defaults to the xmodem protocol.

The Whole Internet User's Guide & Catalog, by Ed Krol, gives specific examples of working on the Internet via command-line access and is an excellent book.

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CLARIS INTRODUCES CLARISWORKS HOME PACK

39 templates designed specifically for home computer users to manage everyday tasks using ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

SANTA CLARA, Calif. -- May 23, 1994 -- Claris Corporation today announced immediate availability of the ClarisWorks Home Pack, a collection of templates designed to help home users streamline everyday tasks using ClarisWorks and their home PCs.

The ClarisWorks Home Pack features easy to use templates for anything from balancing the family checkbook and managing a budget to planning family activities and keeping track of friends and relatives. It lets both new and experienced personal computer users benefit from the capabilities of ClarisWorks integrated or "works" software.

"ClarisWorks use is very strong among users in home, small business and education markets," said Mike Davison, director of Solutions Marketing for Claris Corporation. "With the ClarisWorks Home Pack, we are providing home computer users with an extensive collection of templates designed to optimize their use of ClarisWorks ?another example of the Claris commitment to providing truly usable software solutions."

Manage a garage sale or track investments

The ClarisWorks Home Pack includes a variety of templates for creating fliers, announcements, bulletins, certificates and awards, invitations, personal stationary, newsletters, notices and resumes. Users simply replace template text with their own information to create great-looking results.

The Home Pack also contains home finance management tools to help balance a checkbook, manage a budget, track investments and calculate loan payments. It even contains a worksheet that helps users determine how much they can afford to spend when purchasing a home.

The ClarisWorks Home Pack features an electronic address book for home PC users to organize contact information about relatives, friends, neighbors, club members and business associates. A mail merge template can automatically insert these names and addresses to create custom form letters. Home organization templates give users the ability to create calendars of family events and maintain a list of all household belongings including their value-a real asset for insurance claims.

ClarisWorks is a best-seller

ClarisWorks, the award-winning software available for Windows and Macintosh, seamlessly integrates word processing, spreadsheet, charting, database, graphics and communications environments. With record sales that topped 1.7 million units by the end of 1993, ClarisWorks is the best-seller and installed-base leader among Macintosh integrated applications.

Both ClarisWorks for Windows and ClarisWorks for Macintosh have received outstanding press reviews and won several awards. Home Office Computing awarded ClarisWorks the EditorsÕ Pick for 1993 in the Integrated Software/Windows and Macintosh categories.

Pricing and availability

ClarisWorks Home Pack is available directly from Claris for $29. The Home Pack is available for use with ClarisWorks 2.0 and higher on Macintosh systems and ClarisWorks 1.0 on Windows systems. For general information about Claris products and non-technical questions, users should call Claris customer relations at (408) 727-8227.

Claris Corporation, a leading worldwide vendor of Windows and Macintosh applications for business, education and home, is a subsidiary of Apple Computer, Inc., with headquarters in Santa Clara, Calif.

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©1994 Claris Corporation. All Rights Reserved. Claris and ClarisWorks are registered trademarks of Claris Corporation. All other product names are property of their respective owners. ClarisWorks best-seller claim is based on total purchased units (licensed copies) worldwide of integrated ("Works") software applications for the Macintosh.

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ClarisWorks 2.1 Installer Doesn‘t Always Request Disk 3 (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Question:
When I run the installer for ClarisWorks 2.1v3, it doesn't ever ask me for Disk 3. Is there a problem?

Answer:
Disks for ClarisWorks 2.1v3 include both versions of ClarisWorks (the one for a regular Macintosh and the "native" one, which is optimized for the Power Macintosh). The Installer automatically checks which type of a Macintosh it is installing onto and intelligently chooses which version of the program to install.

When installing on a regular Macintosh, all of the files required for installation are contained on Disk 1 and Disk 2. Consequently, an installation onto a non-Power Macintosh will NOT prompt you to insert Disk 3 during the install process. This is perfectly normal. The only files on Disk 3 are those used when installing on a Power Macintosh.

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Flip Command Makes Arrows Work Improperly

This problem is relatively uncommon.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you use Flip Horizontal or Flip Vertical with a vertical line which has an arrow point, the arrow point will not always work properly.

To see this happen, try these steps:

1) Create a line with an arrow at the start. Hold down the Shift key while you are dragging the line so that the line runs vertically. When creating the line, drag from bottom to top.
2) Use either the Flip Vertical or Flip Horizontal command from the Arrange Menu to flip the line. If you used Flip Vertical, then the arrow will now point straight up. If you used Flip Horizontal, then the arrow will remain pointing straight down.
3) Select the line and drag the bottom selection handle to make it shorter (dragging up).
4) The arrow head will move to the other end of the line.

Note: you can avoid this problem if you use the Rotate 90 degrees or Free Rotate commands.

This problem is fixed in ClarisImpact 1.0v3, but not in the latest version of ClarisWorks (2.1v4). To obtain the latest version of ClarisImpact or ClarisWorks, contact Claris Customer Assistance at (408) 727-8227.
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Flip Horizontal and Flip Vertical Make Text Uneditable

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Text which is transformed with the Flip Horizontal and Flip Vertical commands becomes uneditable. ClarisImpact changes the text into a picture.

However, when you use the Rotate 90 degrees or the Free Rotate commands, the text remains editable. Note: if you use the Free Rotate feature, hold down the Shift key while dragging to constrain the rotation to 45 degree increments (unless you have changed the Preference setting for Shift Constrain).
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How to Unsort a ClarisWorks Database (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Once sorted a ClarisWorks database will remain sorted. Adding new records will cause the status panel to change to "unsorted", but records entered prior to the sort will still be in sorted order.

However, you can easily unsort a ClarisWorks database and place it in a random order.

Follow this procedure:

1. Choose Define Fields from the Layout menu.
2. Define a new text field called "Unsort".
3. Click Done. (Do not type anything into the Unsort field at this time)
4. In the Browse mode, choose Sort Records from the Organize menu.
5. Sort based on the Unsort field.

Please note: The above method will randomize the order of the records. Unlike the "Unsort" feature of FileMaker Pro, this method will not return the database to the order of entry of the records.
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ClarisWorks: Pasting Text From Compton‘s Interactive Encyclopedia

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks and FileMaker Pro may encounter issues when pasting text that has been copied from Compton's Interactive Encyclopedia version 2.02VW.

When pasting into a ClarisWorks WP document, the Edit menu will appear selected and it will seem as though the text is just taking a long time to paste. Only a "force quit" will get you out of this state (Command-Option-Esc).

When pasting into a text field or layout in FileMaker Pro, an alert will appear that states, "Sorry, this operation could not be completed because you have exceeded the text block limits."

Workaround #1
If you have a copy of either TeachText or SimpleText, free text utilities from Apple Computer, Inc., paste the text into a new TeachText or SimpleText document and save. To open this new file from within ClarisWorks:

1. Choose Open from the File menu.

2. From the Document Type pop-up, choose Word Processing.

3. Select your Teachtext or SimpleText document and click Open. (The translator is able to "filter" the offending data)

There has been some success pasting the CIE text into MacWrite II or MacWrite Pro as well, it depends on whether the text that was copied from CIE contains specific hidden control characters.

Work around #2
If you don't have access to TeachText or SimpleText and ClarisWorks is your only word processor application, you can strip these hidden characters by pasting the text into a ClarisWorks Communications document.

To set up a ClarisWorks Communications document for this purpose:

1. Open a new Communications document.

2. From the Settings menu, choose Connection.

3. Select Serial Tool from the Method pop-up and click OK.

4. From the Settings menu, choose Terminal.

5. Choose TTY Tool from the Emulation pop-up. Also select these other options: Width, 132 columns; Size, 9 point; Characters, Show control characters; New line on a return; Click OK.

7. From the Session menu, choose Open connection.

8. From the Edit menu, choose Paste.

9. From the File menu, choose Save. Save this as a Text file.

This new text file can then be inserted into another document or opened through the Open dialog box. The drawback of this technique is that there will be some extraneous carriage returns due to the line feeds (one every 132 characters). These can be eliminated with the ClarisWorks Find/Change option.
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Resizing Rows and Columns Uses Small Activation Area

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact allows you to resize columns and rows by placing the cursor on a column divider in the first row of cells or a row divider in the first column of cells. When the cursor gets to this position it will change from a plus sign to an up-down arrow (for changing row height) or a left-right arrow (for changing column width) to indicate that you can now change the row or column size.

However, only the topmost portion of the first column divider and the leftmost portion of the first row divider make the cursor change from a plus sign into an up-down arrow or left-right arrow (See page 6-19 for a screen shot of the left-right arrow). The activation area is approximately 1/4" from the edge of the table frame.

The same is true for Timeline and Data Chart Models.

You can also click in a cell and choose Column Width... or Row Height... from the Table Menu to specify the row height or column width for that cell and its row or column. For example, to change the width of the first column, click in any cell in the first column and choose Column Width from the Table Menu.
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Text To Speech Only Uses Female Voice (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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This is fixed in ClarisWorks 3.0.

There is an undocumented feature in ClarisWorks 2.1 that allows an AV Macintosh to read the text typed on the screen. This capability is accessed through a Shortcut that can be installed by adding the Text-to-Speech icon (which looks like a pair of lips) to your Shortcut palette.

ClarisWorks will use the female voice regardless of what voice you have chosen through the Speech Setup Control Panel. There is no way to modify which voice ClarisWorks uses.

It has also been reported that this feature will also work on a Quadra 950 running Speech Manager 1.1 or later.
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Timeline Model Does Not Skip Holidays

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The Electronic Help in ClarisImpact 1.0 incorrectly states that Timeline Models will skip holidays when calculating dates.

ClarisImpact Timelines will skip weekends if you designate a 5 day week see article, "How to set Timelines to a 40-hour Week" or page 8-16 of the ClarisImpact User's Guide for more information) but not holidays.
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Free Rotate Not Available for Bitmap Graphics

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisImpact will not allow you to use the Free Rotate command on bitmap graphics. While the menu option for Rotate can be chosen, ClarisImpact will beep at you when you try to rotate a bitmap graphic that has been Pasted or Placed. Bitmap graphic formats include Paint and TIFF images on the Macintosh.

However, you can use Transform options on your inserted bitmap graphics. Rotate 90 degrees, Flip Horizontal and Flip Vertical all work well, if you do not need to rotate in single degree increments.

If you need to rotate a bitmap graphic in increments less than 90 degrees, rotate the bitmap in another program like ClarisDraw or BrushStrokes, then bring it back into ClarisImpact using Copy and Paste or Insert.
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Paragraph and Line Spacing In ClarisWorks and ClarisImpact

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks Word Processing documents and ClarisImpact Report documents allow you to specify exact settings for paragraph text. They both allow you to specify the line spacing (distance between lines of text, sometimes called "Leading") and paragraph spacing (distance between paragraphs). You can enter these settings into the Paragraph dialog after you choose the Paragraph... command in the Text Menu of ClarisImpact, or in the Format Menu of ClarisWorks.

In both applications, there is a big difference between "fixed" line spacing and "variable" line spacing. If you choose "Lines" as your spacing measurement, you are using a variable line spacing, and the height of each line varies automatically depending upon the size of the text or in-line graphic which is stored on that line. If you choose any other option (Inches, Points, Centimeters, Millimeters, or Picas), you are using fixed line spacing, and the height of each line will not automatically change, regardless of the size of your data. This means that if you set a fixed line spacing, and use a text size that is too large to be properly displayed, you may see the characters clipped.

Also, because both applications use .5 point (a Point is 1/72 of an Inch) as the basic unit for measuring line and paragraph spacing, it is not possible to set some fixed line spacing intervals. If you enter an invalid spacing measurement into the Paragraph format dialog, you may notice that ClarisImpact will automatically round it to the nearest valid interval after you click OK to confirm the setting.

For example, if you try to set your text to have a line spacing of .2 inch, ClarisImpact will round that to .19 inch, which is the equivalent of 13.5 points. You will only see .19 inch after you click OK and exit the dialog. (Clicking Apply does not force ClarisImpact to change the value to a valid entry, though it does allow you to see the results of the change to your document.) You can always use whole numbers for fixed line spacing, so you can enter 1 centimeter or 1 pica, even though it does not round evenly to a half point.

In addition, if you use "lines" as the measurement when setting the distance between paragraphs (either of the settings for "Space Before" or "Space After"), you are limited to whole line increments. For example, you could not set 1.5 lines before or 2.75 lines after, though you could choose 2 lines before the paragraph and 3 lines after the paragraph. To assign paragraph offset in smaller increments, you must use one of the fixed line spacing measurements. Keep in mind the paragraph above which talks about the accuracy of those fixed measurements.

You can use the following table to find a valid measurement for paragraph or line spacing:
.5 point = 1/144 inch = 0.0069 inch = 0.0017 pica = .1764 mm = 0.01764 cm
1 in = 6 pica = 25.4 mm = 2.54 cm = 72 pt
1 centimeter = 0.3937 in = 0.43 pica = 10 mm = 28.35 pt
1 millimeter = 0.0394 in = 0.04 pica = 0.1 cm = 2.84 point
1 pica = 0.1667 in = 0.0066 mm = 0.066 cm.

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Restoring the Default 256-Color Palette

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Q:
I switched the palette in Preferences to one of the 256 editable color palettes by using the Load Palette button. How can I use the original 256 editable color palette again? I tried locating this palette with the Load Palette button but it does not appear to be located on my hard disk.

A:
The default 256 editable color palette is built into ClarisWorks and ClarisImpact. In order to switch back to this default palette, follow the instructions below.

1. Open Preferences and switch the color palette from the 256 editable color palette to the Drawing and Text Colors palette and then click the OK button.
2. Open Preferences again and switch the color palette from the Drawing and Text Colors palette* to the 256 editable color palette but do not click the Load Palette button. When you click on the OK button your original 256 color palette will be back.

Additional Considerations:

If you are using a black & white Macintosh or a Macintosh with only 16 display colors, you will not see the option for changing color palettes. Change your display back to 256 colors and make the palette changes.

If you want to make the switching between palettes easier, you can use the Save button in Preferences to save the default palette as a file that can be located with the Load Palette button.

* Called "Claris 81 Color Palette" in ClarisImpact.

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Sample Data Appears In Inserted Rows and Columns

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisImpact automatically fills all inserted rows and columns with sample data, when you insert rows or columns into the table which is attached to a data chart. To generate the sample data, ClarisImpact simply duplicates the Row or Column that was selected just before invoking the Insert Cell command. If you replace the sample data with your data, the Chart will graph properly.

This only happens with the table which is attached to a Data Chart. It does not happen with the Table Model even though it might appear to be similar to a Data Chart.
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Possible Incompatibility Between ClarisWorks and Mobius Speedster 025F Accelerator Board (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A Claris customer has reported that he had a issue with the Mobius Speedster 025F Accelerator Board and was unable to launch ClarisWorks 2.1.

The board ships with a Control Panel allowing manual or automatic choice of modes in which to run the computer (Full 68040 with cache enabled, 68040 without cache, or 68030 mode).

The customer's issue was solved by contacting Mobius for an updated version of the Control Panel.

According to a technician at Mobius, the "Speedster" Control Panel version needed is 1.3.2 or greater. Mobius Accelerator owners may contact Mobius at 800-800-4334 to obtain the updated Control Panel.
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How to Make All Flow Chart Model Styles Available

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

On page 5-4 & 5-10 of the ClarisImpact User's Guide, and in the ClarisArt booklet, there are screen shots showing all of the available Flow Chart Model Styles and Symbol Sets. However, the complete set of available Styles and Symbol Sets is not automatically installed. To make the full Symbol Set available, follow the instructions below:

1. Quit ClarisImpact if it is running.
2. Locate the folder named, "Full FlowChart Style Set". This folder is automatically installed in the "ClarisImpact Color Styles" folder in the "ClarisImpact" folder. If the folder is not present, use your ClarisImpact installation disks to reinstall it.
3. The "Full FlowChart Style Set" folder contains two files with the same names as two files in your "ClarisImpact Color Styles" folder, "FlowChart Styles" and "FlowChart Symbols". Replace the files in the "ClarisImpact Color Styles" folder with the two files in the "Full FlowChart Style Set" folder.
4. Launch ClarisImpact and you will have full Flow Chart Symbol Sets and Model Styles.

WARNING: If you have added custom Symbols or Model Styles then the procedure above will delete them. Move any custom Styles or Symbols into a Library or a saved document for temporary storage so that you can copy them back after following the steps above.

NOTE: The same procedure can be done if you are using ClarisImpact B&W Styles. The black and white version of the "Full FlowChart Style Set" folder and all of the associated files is located in the "ClarisImpact B&W Styles" folder.

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Library Items Copy and Paste Improperly to Other Programs

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Two Library items in the Education Library, "Binder (Open)" and "Book (Open)", do not Copy and Paste to another program properly. If you Copy and Paste one of these Library items into a program other than ClarisImpact they will Print and Ungroup inaccurately.

If you need to use one of these Library items in another program, save the file as EPSF and import the graphic rather than using the Clipboard. Do not Save as PICT: it will have the same issues as Copy and Paste.
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Some ClarisImpact 1.0v1 Flow Chart Symbols Do Not Close Properly

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Some of the Flow Chart Symbols in ClarisImpact 1.0v1 have borders that do not close properly. For instance, the beginning and ending of the border for the "Input/Output" Symbol* do not meet to close the polygon properly. This issue is evident on screen and print.

The Flow Chart Symbols for ClarisImpact 1.0v2 have been redrawn so that all polygon borders close properly.

* The "Input/Output" Symbol shown on page 2-26 of the "Claris Art" manual is not the same as the one referred to above (this version of the "Input/Output" Symbol can be used from a Library). The version that works improperly in ClarisImpact 1.0v1 is included in the Symbols menu choice from the Flow Chart menu.
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Directly Opening A Particular File Without Using Open Dialog

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FileMaker Pro shows the Open File dialog box automatically when the program first starts. If you want to skip past this step and go right into a particular file when you start FileMaker Pro, you can do this by creating an icon for the file in Program Manager.

In Program Manager, choose New from the File menu. The Program Item, which is one of Winodws' names for icons, should already be selected. Click OK. In the Description section, type whatever description you wish. In the Command Line, type the EXACT location of the file (i.e. which directory it is located in) along with the file name EXACTLY as it appears in FileManager. For example, a FileMaker Pro file called "Billings.fm" that is in the FMPRO directory on your C drive will have an icon with these properties:

Description: My billing file
Command line: C:\\FMPRO\\FMPRO.EXE Billings.fm
Working directory: C:\\FMPRO

When you click OK, an icon should be created with the FileMaker Pro symbol. To select a different icon, click on the icon just once and choose Properties from the File menu. If you click on the Change Icon button in the Program Item Properties dialog box you can select a different icon.
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Opening Networked Databases Using AppleScript

Alternatives to using System 7 Aliases to open networked files

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FileMaker Pro offers many ways of automating the opening of documents, applications, and databases. Here is a way to open a FileMaker Pro database that is being shared over the network using ScriptMaker and a scripting tool such as AppleScript. This method allows you to open a database automatically through Apple Events just as if you had clicked on the network button in the Open dialog.

1) Create a script with ScriptMaker that opens the shared database. As an example we will call this script Open Network Database. To create the script, select the Open step, click on specify, and then click on the network button. Select the file that is being shared over the network. You will see the zone listed next to the file name when viewing the script steps.

Script name: Open Network Database
Open ["Contacts.FM (Marketing Zone)"]

2) Launch the script from a scripting utility using the Do Script event. With AppleScript you would create an applet with the following statements:

```
tell application FileMaker Pro
Do Script FileMaker Script "Open Network Database"
end tell
```

ALTERNATE METHOD- Using AppleScript.

Within AppleScript you can open databases within your current zone using the command:

```
Open file "Contacts.FM" of
zone "Marketing Zone"
```

The use of [of zone "zonename"] is optional. Opening files from another zone using this methodology does not work (for FileMaker Pro 2.1v3 or later).

As a workaround, set your network protocol to MacIPX or TCP/IP. These network protocols do not have zones.

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LaserWriter IINTX: New ROMs Avalable May 1990

There is a new version of LaserWriter NTX ROMs being rolled into production in late May. These ROMs contain an updated version of PostScript. PostScript version 51.8 allows for the following enhancements.

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- Full support of software switching between emulations and ports - It is now possible to both switch into and out of an emulation mode via software.

- Improved support of multiple SCSI disks - Up to 8 SCSI hard disk drives can now be connected to the LaserWriter NTX SCSI port. Up to 80% of the hard disk with the lowest SCSI ID is used for font caching with the remainder of that disk and all of any other connected hard disk used for downloaded fonts. Each hard disk is now formatted as a separate volume which allows a user move a disk (other than the startup disk) between systems without needing to re-format.

- Additional characters in the HP LaserJet+ emulation - Four characters have been added that had been left out of the original implementation of HP LaserJet+ emulation.

- Improved default settings for HP LaserJet+ bit map printing - Previously, bitmaps in HP LaserJet+ mode were interpreted at 7-bit thus ignoring a significantbit. The new ROMs default to 8-bit serial communications.

NOTE: These new ROMs are found in any LaserWriter NTX with a part number ending in 6004/A.

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Cell Borders Do Not Work With Tables Using "Modern" Style

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Adding a cell border in a Table Model created with the Modern Style does not appear to work. This is because the Modern Table Style was designed with white cell borders instead of black.

To change your cell border color to black:

1. Select All cells (or as many as you need to change).
2. Choose Grid Display from the Table menu.
3. Change the cell border color from white to black.

Now you should be able to see the cell borders.
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Find/Change Only Works On Current Slide In Presentation Document

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The ClarisImpact Find/Change feature can find text in a document and change it to something different. For example, you can use it to update all of the instances of someone's name, a company name, a date, a product name or whatever other text you wish to change.

This feature also works in a ClarisImpact Presentation document, but only within individual slides. If you are working in Report or Drawing documents, Find/ Change will work within the entire file.

There is no workaround at this time.
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About Version 1.5v3, Release Notes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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This version of MacDraw Pro fixes a problem with placing library objects while running on a Power Macintosh in emulation mode.

MacDraw Pro 1.5v2 Release notes (for those updating from 1.5v1)

A PICT import bug was fixed. Under certain circumstances, open polygons were closed when they were imported.

A PICT export bug was fixed. Under certain circumstances, a rounding error would cause objects to be clipped when opened in other applications.

A text entry bug was fixed. Text was lost when entering text by clicking in the document and changing Font and Size attributes through their associated dialogs.

A Gridline display bug was fixed. When running System 6.0.x with millions of colors, MacDraw Pro 1.5 displayed solid gridlines when the Screen buffer was turned off.

An Open Application (oapp) Apple event bug was fixed. A system crash occurred when sending an oapp event when MacDraw Pro 1.5 was already open and in the background.

The "Command-Option-Space" key sequence used to hide and show the Tool and Style bars, has been extended to include "Command-Option-Tab". This key sequence was added for use with system 7.1. Note that either "Command-Option-Space" or "Command-Option-Tab" will work when running systems 6.0.x or 7.0.x.

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About Version 1.5v3, Updater Read Me

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MacDraw Pro 1.5v3 Updater
(for U.S. versions only)

Overview
Thank you for investing in Claris(R) software. We hope that you are finding MacDraw Pro to be enjoyable and useful. From time to time, we produce maintenance updates of our software, primarily to correct minor defects that affect a small percentage of our customer base. We'd like to make it as convenient as possible for you to obtain these new versions and enjoy their benefits.

Updates, in contrast to upgrades, contain few changes from the previous version. Instead of distributing the full, revised application, we can provide just the files necessary to incorporate the new functionality and fixes. When you run the accompanying Updater, it will automatically combine your original MacDraw Pro 1.5v1 or MacDraw Pro 1.5v2 application with the new changes to create a new application, MacDraw Pro version 1.5v3.

This document describes the steps you take to apply the update. You may want to print it out if this is the first update you've installed. Once you have run the updater, please read the Release Notes section later in this document.

This update package consists of the "MacDraw Pro 1.5v3 Updater", an application updater for the MacDraw Pro application, and this "Updater Instructions" document.

Technical Considerations
Hard Disk Space
You'll need enough room for a copy of the original application and the new version (approximately 3 megabytes of disk space for both).

Virus Detection Software
The Updater makes several changes to the resources in MacDraw Pro. Many virus utilities consider this activity improper and may try to prevent it, and some of these utilities are not turned off by restarting while holding down the shift key. To avoid this inconvenience, disable all virus detection software before applying the update. To do so, you may have to temporarily remove the utilities from your system folder, then restart. After the program has been updated, put the utilities back in the proper location and restart. See the documentation that came with the utility for information on deinstallation.

Updater Instructions

1. Hold down your shift key and restart your Macintosh. You can lift up on the shift key when you see the message, 'Welcome to Macintosh Extensions Off.' This will help make sure that nothing on your system will conflict with the Updater. If your computer will not start up with the shift key held down, restart without holding down the shift key and go on to the next step.

2. Make a copy of your original MacDraw Pro by single clicking the application icon in the Finder and selecting Duplicate from the file menu.

3. Make a new folder and place the duplicated MacDraw Pro and a copy of the "MacDraw Pro 1.5v3 Updater" into this folder. After moving the application into the new folder you can change its name to "MacDraw Pro" from "MacDraw Pro copy"

4. Double-click the MacDraw Pro 1.5v3 Updater in the new folder. In the UpdateMaker dialog box, make sure the MacDraw Pro application in the new folder is selected in the list and click Update.

5. The update will take a few minutes. When the update is completed, a message is displayed confirming a successful installation of the new version, or an indication of what went wrong if there is a issue.

6. Verify that the update was successful by opening MacDraw Pro and create a new document. Once the application is running select "About MacDraw Pro" from the Apple menu and click the Info button in the dialog. The version number at the top of the list should be "MacDraw Pro 1.5v3* March 1994".

7. Once you have verified that the update was successful throw away the original MacDraw Pro application to avoid any confusion and restart your Macintosh without the shift key down to enable your extensions.

MacDraw Pro 1.5v3 Release notes

This version of MacDraw Pro fixes a issue with placing library objects while running on a Power Macintosh in emulation mode.

MacDraw Pro 1.5v2 Release notes (for those updating from 1.5v1)

A PICT import bug was fixed. Under certain circumstances, open polygons were closed when they were imported.

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Useful Modem Commands

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All Hayes-compatible modems have registers that govern the modem's behavior. You can modify these registers and perform a variety of other tasks with Hayes commands.

In ClarisWorks, you can issue Hayes commands by choosing Connection from the Settings menu and selecting the Serial Tool. Then choose Open Connection from the Session menu.

Here is a sampling of some of the useful Hayes commands. Press return after each command to send it to the modem. If you find a command doesn't work for your modem, consult your modem manual. Modems can differ in how they implement commands. Where you see n, substitute a number. Zero generally means off. All 0 characters below are zeros unless otherwise mentioned.

AT - If you are connected to the modem properly, it will answer "OK."
ATDT - Dial a phone number (tone)
ATDP - Dial a phone number (pulse)
ATZ - Reset modem
AT&F - Restores the modem's original factory settings.
AT&V - Produces a screen dump showing the current modem register settings.
ATEn - Local echo. Substitute1 for n to turn it on, 0 to turn it off.

AT&K0 - Disable data compression for communicating with low-speed modems that you are having issues connecting with.
AT&M0 - Disable error correction for communicating with low-speed modems that you are having issues connecting with.
AT&D0 - Force on the Data Terminal Ready (DTR) signal. Can be helpful if you experience sudden hangups during file transmissions. The usual setting is AT&D2.
ATS110=0 - Disable V.32bis. Helpful if you are having issues connecting to a picky V.32 modem which lacks the additional bis protocol.
ATMn - Modem speaker volume
ATS0=n - Sets the number of rings on which to answer in Auto Answer mode.
ATS7=n - Sets the number of seconds the modem waits for a carrier. Default is usually 60. May need to be increased for international calls or numbers that don't answer immediately.
+++ - Escape to command mode. Enables you to switch to Hayes command mode while online.
ATO - Return to online mode. That's the letter O, not a zero! If this fails, try AT01 which returns online and asks both modems to resynchronize.

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Five Ways To Speed Up Windows And Windows Programs

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One of the most frustrating situations is operating a software program that doesn't run as fast as you'd like. Anyone who's ever had to wait five seconds for a line they've typed to appear, or for a field they've dragged with the mouse to move on screen knows how uncomfortable a slow computer feels. Aside from adding more memory (RAM) to your computer, there are many ways to increase the speed of Windows that are both easier and cheaper than adding RAM. Some of these are well known, some more obscure, but if you're struggling with a pokey computer, all of them are worth a try.

1. Remove EMM386.EXE from your Config.SYS
While Windows does require Extended Memory in order to run, it does not use Expanded Memory or EMS. If most of your applications are in Windows, you can speed them up considerably by removing the EMM386 driver that provides Expanded Memory to DOS applications. This is done by removing the following line from your Config.SYS file:

DEVICE=C:\\DOS\\EMM386.EXE NOEMS

You must exit Windows and restart your computer for this change to take effect.

Of course, EMM386 may be running from a directory other than DOS, and you may have other settings after the EMM386.EXE name. However, removing EMM386.EXE presents two problems: first, you won't be able to load any DOS-level drivers high, which may cause Out of Memory errors in Windows if you don't have enough conventional memory. Second, memory management should then be done in the system.ini to accomodate network cards, etc. that load into the UMB area.

If you must run EMM386.EXE to load DOS drivers high, than you want to make sure the NOEMS setting is used. If the word RAM is there instead, a section of memory that could be used by Windows programs is taken away to provide Expanded Memory. If not enough RAM memory is available for a Windows program, Windows will provide disk space as something called Virtual Memory to make up the shortage. This will cause a tremendous slowdown of your Windows program's performance.

2. Use a Standard VGA Display Driver
While many applications require a high resolution display with thousands of colors, most people find that a standardVGA driver provides adequate display and gains speed. If you are using an 800 X 600 or 1024 X 768 driver, you may find that switching to a 640 X 480, 16-color driver will dramatically speed up your work. If you absolutely must run at higher resolutions, switching to a driver that has less colors will certainly speed things up.

To change drivers, open the Windows Setup program (usually located in the Main Window). Select Change System Settings from the Options menu, and pull down the Display list. Select the driver that says just "VGA" from the list and click on the OK button. If you already have the VGA driver on the system, click on the Current button when it appears. You must then restart Windows for the change to take effect.

3. Make Sure Windows is in Enhanced Mode
Basically, Windows 3.1 on a 386 or better machine can run in two modes; Standard and 386 Enhanced. To find out which one you are running in, select Help from the Program Manager menu and choose About Program Manager. If you see that you are in Standard Mode, click OK, exit Windows, and at the DOS prompt type reopen Windows by typing

WIN /3 <Enter>.

This will put you in Windows' 386 Enhanced Mode. If you are running Windows for Workgroups 3.11, you are already in 386 Enhanced Mode because Standard Mode was removed in that version of Windows.

4. The Windows Swap File
Windows running in 386 Enhanced Mode frees up memory by building a temporary swap file on the hard disk. Setting up a permanent swap file can greatly improve speed by preventing the constant fragmentation created by a temporary file.
To create a permanent swap file, select the Control Panel's 386 Enhanced button. Click the Virtual Memory button, then select Change. Choose the hard drive from the Drive list, then select Permanent from the Type list. Depending on the size of your hard drive, you can accept the recommended size or enter a new size. If you see the Use 32-Bit Disk Access box, make sure it's checked. Click OK, then click Restart to restart Windows.

5. Check your Load Line
The Load line in the Win.INI file automatically launches applications in Windows to run as icons. This means you may actually be loading applications that are eating up memory without knowing it.

To check this, open the WIN.INI file in the Notepad. Check the [Windows] section for a line that reads "Load =", and delete anything after the "=" that you do not need to load. Save the file and restart Windows.
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Error in Weekly Planner Template from ClarisWorks Home Pack Templates (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you open the Weekly Planner template that ships with the ClarisWorks Home Pack template set, you may have difficulty using it. Page 2-20 of the instructions for the Home Pack indicate that you should "Enter the date of the Sunday starting the week ...", but if you attempt to type a date into cell C6, you will get an error "Some cells are locked."

All that you have to do is Unprotect the cell (Choose Options menu, Unprotect cells), and you can type in the new value without a issue.

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Native Power Macintosh Applications

A listing of planned and shipping Claris applications that run in native mode on Power Macintosh computers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Product Native Since
ClarisDraw.....1.0v1
ClarisImpact.....1.0v1
Claris Organizer.....1.0v2
ClarisWorks.....2.1v3
MacWrite Pro.....1.5v3
FileMaker Pro Server...2.0v1
FileMaker Pro.....3.0v1

See the Price List article for retail and upgrade pricing.
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Underlines Extending Beyond Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing a ClarisWorks document to a DeskWriter Series printer, underlines may extend beyond text on the right side. The solution is to turn on Fractional Character Widths in Preferences.

Published Date: Feb 18, 2012

Applesoft: PEEKs, POKEs, and CALLs

To make Applesoft programs read data from memory, write data to memory, or pass control to machine language programs, programmers use Applesoft's PEEK, POKE, and CALL statements.

Here is an explanation of each statement's function.
This article has been archived and is no longer updated by Apple.
PEEK makes a program read a memory location. The format of the statement is PEEK (<memory location>) where <memory location> is a positive integer from 0 to 65535. Programmers use PEEK most commonly with a variable: X% = PEEK (2048) assigns the value located at 2048 to the integer variable X%.

POKE makes a program write a value to a memory location. The format of the statement is POKE <memory location>,<value> where <memory location> is a positive integer from 0 to 65535 and <value> is a positive integer from 0 to 255. Programmers use POKE most commonly to write data directly to memory: POKE 2048,128 assigns the value 128 to the memory location 2048.

CALL makes a program pass control to a machine language routine at some memory location. The format of the statement is CALL <memory location> where <memory location> is a positive or negative integer from -32768 to 32767 or a positive integer from 0 to 65535 (note that the signed integers from -32768 to 32767 represent exactly the same memory locations as the positive integers from 0 to 65535). Programmers use CALL most commonly used to invoke routines built into the Apple II's ROM. For example, the statement CALL -936 invokes the routine which clears the screen and homes the cursor (just like using Applesoft's HOME statement).

To change the screen display or make sounds and other special effects on the Apple II, Apple II Plus, Apple IIe, Apple IIc and Apple IIGS, Applesoft accesses various memory locations. Each particular CPU's reference manual includes a memory map where you can find the segments of memory used by text, graphics, Applesoft, the monitor and peripheral cards.

Apple-published memory locations remain the same for most members of the Apple II family; other internal locations may change. Therefore, to assure that your programs will work properly on all Apple II family computers, do not use entry points other than those printed in the Apple manuals.

Locations used to communicate with interface cards may be found in the manuals for those devices. For example, memory locations used by the Apple 80-column card are found in the 80-Column Text Card Manual and the Extended 80-Column Text Card Supplement.

Many computer and book stores sell books with listings of Applesoft, monitor ROM, DOS 3.3 and ProDOS memory locations. You may find the following publications useful:

--What's Where in the Apple by William Luebbert; Micro Ink.
--Beneath Apple DOS by Don Wirth and Pieter Lechner; Quality Software.
--Beneath Apple ProDOS by Don Wirth and Pieter Lechner; Quality Software.
--The Apple Almanac by Eric Goez and Williams Sanders; Datamost, Inc.
Published Date: Feb 18, 2012

DOS 3.3: Hiding Machine Language Routines above the File Buffers

Is it possible to position your machine language routines between DOS and its first file buffer so that they won't be overwritten by BASIC programs.

This article has been archived and is no longer updated by Apple.

It's possible to position your machine language routines between DOS and its first file buffer so that they won't be overwritten by BASIC programs.

Since $9D00 and $9D01 (48K system) point into the first, highest buffer:

1. Add the number of pages (256 byte blocks) your routine needs to the contents of $9D01.

2. Put a $00 in the address now pointed at by the contents of $9D00, $9D01.

3. Store a $00 at the address pointed at by the contents of $9D00, $9D01 plus $25.

4. Perform a JSR $A7D4 to rebuild the DOS file buffers and move the current BASIC's HIMEM down.

The first available address for your routine is the address pointed at by the contents of $9D00, $9D01 plus $2D.

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Document and Creator Codes for Claris Applications

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Macintosh operating system uses type and creator codes to identify which application created the file and to identity what type of document they are. These codes can be used by some file find utilities (such as RetrieveIt! from Claris ClearChoice) to locate files. AppleScript can use these codes to identify file types to display in dialog boxes. The following is a list of Claris Applications and their document type and creator codes.

Application	Document Type	Creator Type
MacWrite Pro	MWPd	MWPR
MacWrite II	MWII	APPL
FileMaker II	FMK4	FMK4
FileMaker Pro 2.x	FMPR	FMPR
FileMaker Pro 2 SDK run	FMPR	FMPU
FileMaker Pro 2 SDK files	FMPR	FMPR
FileMaker Pro 3.x	FMP3	FMP3
FileMaker Pro 3 SDK run	APPL	UFSR
FileMaker Pro 3 SDK files	FMP3	UFSR
ClarisWorks(WP)	CWWP	BOBO
ClarisWorks(DR)	CWDR	BOBO
ClarisWorks(PT)	CWPT	BOBO
ClarisWorks(DB)	CWDB	BOBO
ClarisWorks(SS)	CWSS	BOBO
ClarisWorks(CM)	CWCM	BOBO
ClarisDraw	dDrw	CDrw
ClarisImpact(Drw)	iDrw	CIPT
ClarisImpact(Rpt)	iRpt	CIPT
ClarisImpact(Prs)	iPrs	CIPT
ClarisImpact(Drw Stn.)	iDst	CIPT
ClarisImpact(Rpt Stn.)	iRst	CIPT
ClarisImpact(Prs Stn.)	iPst	CIPT
ClarisImpact(Library)	iLib	CIPT
ClarisImpact(Model)	iSty	CIPT
ClarisImpact(Prefs)	iPrf	CIPT
ClarisImpact(Clr Pal)	iClr	CIPT
ClarisImpact(Help)	HUH?	CIPT
MacDraw Pro	dDoc	dPro
Claris Resolve	RsWs	Rslv
MacProject Pro	MPRX	MPRP

AppleScript can use type and creator codes to identify types of documents when using the choose file command. This can be useful if one only wants files created by a specific application to be shown in a directory dialog box when using the Choose File scripting addition in AppleScript.

```
set myFile to (choose file with prompt "Select a MacWrite Pro Document..." of type
{"MWPd", "MWPR"})
tell application "MacWrite Pro1.5"
   activate
   open myFile
end tell
```

This script tells the Choose file scripting addition to bring up a directory dialog and to only show MacWrite Pro documents. Once a document has been selected, the document's path is placed in the variable "myFile". That variable is then passed to MacWrite Pro and the file is opened.

For the most current information on what SDKs Apple offers, point your web browser to:

http://developer.apple.com/sdk/

TA42932_Document_and_Creator_Codes_for_Claris_Applications.pdf

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Tray Selection And The HP 4 Printer Driver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Hewlett-Packard printer driver HPPCL5E, which supports the Laserjet 4, 4M, 4SI, and 4SI MX printers, doesnÕt save paper tray selections between Windows sessions. If you change the paper source in the printers control panel, the setting is set in Windows programs, however, once you exit and re-enter Windows the HP 4 printer driver will revert to the default Auto Select option for the paper tray. You can work around this problem by editing your WIN.INI file. Use a text editor such as Windows' Notepad to open the WIN.INI text file and then locate a section called:

[HPÊLaserJet 4/4M] or [HP LaserJet 4SI/4SI MX]

You must then manually change the tray selection to one of the selections shown below:

1 MPÊTray 5 Envelope Feeder
2 Paper Cassette 7 Auto Select
4 Manual Feed 11 Lower Cassette

For example, the HP 4 section in the WIN.INI that has these lines:

[HP LaserJet 4/4M, LPT1]
paper=1
prtcaps=-5240
prtcps2=4561
tray=1

This example sets the paper tray selection to be the MP Tray every time Windows starts. The HP 4 printer driver default for the tray= line is

tray=7

which is Auto Select.

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ClarisWorks Manual: Irregular Wrap Figure

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Page 3-40 of the ClarisWorks 2.x manual shows irregular text wrap around the sample picture file "Pegasus Logo." Because the Pegasus logo is bitmapped, ClarisWorks cannot wrap irregularly as shown in the manual.

See article "Irregular Text Wrap Around Bitmapped Graphics" for a workaround.
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EPSF Files Exported From T/Maker‘s ClickArt Collection Do Not Print to LaserWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

T/Maker has produced a series of ClickArt libraries that are bundled with a utility program called ClickArt Image Exporter. In order to create a file from these libraries that can be imported or placed into another document, you must use the ClickArt Image Exporter to convert the ClickArt file into an EPSF, PICT or AI (Adobe Illustrator '88) file. Any EPSF file created with the ClickArt Image Exporter and placed in a MacDraw Pro document will not print to a LaserWriter. When attempting to print this document to a LaserWriter with background printing active, Print Monitor will inform you that a Postscript error has occurred. The error is, 'undefinedresult', and the offending command is, 'itransform'. When printing without background printing active, the activity window will display the alert, 'A Postscript error has occurred: The error is, 'undefinedresult''. Canceling the printing at this point will prompt another alert from MacDraw Pro, "Sorry, the printer was unable to print some objects."

Workaround
Place the EPSF file into a new MacDraw Pro document. Save this document as an EPSF file. Import this new EPSF file into your original document. This will print.

T/Maker is aware of the issue.

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Alignment on Postscript Printers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Most Postscript printers have their printable regions factory aligned to a tolerance of 1/8 inch. This means that if you print a page from an application, with a line exactly 1 inch from the physical edge of the page, it may be off by as much as 1/8 inch in one direction or the other. This applies to both vertical and horizontal alignment.

This is not a problem with the Windows Postscript driver. The Windows Postscript driver does not set the position of the printable region; it uses the factory set position. If the factory set position is off, the Windows Postscript output will be off.

You can permanently adjust the position of the printable region on the page in increments of 1/300 inch.

Use the following Postscript code to adjust the position on the page of the printable region:

```
serverdict begin 0 exitserver
statusdict begin
yyy xxx setmargins
start
^D
^C
```

The "yyy" above represents the number of 1/300-inch units that you want to adjust the vertical position of the printable region. Positive numbers move the printable region downward, and negative numbers move the region upward.

The "xxx" represents the number of 1/300-inch units that you want to adjust the horizontal position. Positive moves the region to the right, and negative moves to the left.

To adjust the position, follow these steps:

1. Create a test page in your application:

a. Place a vertical line exactly 1 inch from the left edge of the page.

b. Place and a horizontal line exactly 1 inch from the top edge of the page.

c. Set both vertical and horizontal margins to 0.

2. Print the page, and measure the amount by which the lines vary from their ideal 1-inch positions.

3. Convert this measurement to 1/300-inch units. For example, 1/16 inch would be approximately 19 units.

4. Use an ASCII text editor (such as Notepad) to create a text file of the above Postscript code. Note that you create the ^D and ^C lines by using the caret character on the keyboard, not by typing CTRL+D or CTRL+C. Substitute your measurements for the the "yyy" and "xxx".

5. Copy the file to your printer. Most Postscript printers reprint their

startup pages at this point. If you receive a Postscript error printout, your printer does not support this type of operation.

Your printable region alignment is now corrected. Reprint your test page to verify this. If you overcorrected, simply repeat this process using new measurements.

The new alignment is written to your printer's nonvolatile memory and the adjustment is permanent.

From MS Knowledge Base
Updated: 1994-03-29

TA42937_Alignment_on_Postscript_Printers.pdf

Document ID:
Product: Microsoft Windows Print

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Capture File Problems (CM)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Sometimes, after using the Capture to File command during a ClarisWorks communications session, when you open the capture file after the session, you may see some strange characters in it. Another problem which can occur is that only some of the data you saw on screen was saved to the file.

Strange Characters

ClarisWorks can capture data from the port or the screen. You change this setting in Preferences. When you capture from the the port, all of the data the host sends is captured, including special characters. If you find this makes the session data unusable, try capturing from screen instead.

Missing Data

Some hosts clear the screen before filling in the next screen. When you are capturing from the screen, this results in much of the session data not being saved. To resolve this problem, click the "save screen before clearing" checkbox in Preferences.

There are some cases where this will not solve the problem, and they are usually caused by hosts that only update the portions of the screen that need changing. For example, in an online name and address database, after seeing the first record, only the data in the fields will be updated as you browse and the form won't be resent. Without the form, no capture can take place. Capturing from the port is the best solution in these cases.

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Windows 3.x: Using a Generic Postscript Driver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Under Microsoft Windows version 3.0, you can install the generic Postscript Printer driver to use your printer's Postscript capabilities. Under Windows version 3.1, you should install a printer driver that has the same name as the specific model name of your printer. If you're unsure which model that is, or are having problems with your driver, install the Apple LaserWriter IINT.

The generic Postscript Printer driver still exists for those applications that require this generic driver name to run properly with Postscript functionality. However, you should only use the generic driver as a last resort. It doesn't perform all operations as well as using the specific model for your printer. Consider the Apple LaserWriter IINT the Generic Postscript driver in Windows 3.1 and above.

With version 3.5 of the generic Postscript driver (shipped with Windows 3.1), any settings required for the print job need to be specified from Control Panel, not from within the application you are printing from.
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Resetting the Index of a ClarisWorks Database that Does Not Sort Correctly (DB)

Issues with sorting and finding in a ClarisWorks database can be frustrating and difficult to troubleshoot. But like any database, ClarisWorks stores information in an index which can be reset.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you determine that your ClarisWorks database is not sorting correctly, particularly if it's a sort that has worked correctly in the past, try the following steps:

1. Save a copy of the current file in case something goes wrong with the remaining steps.
2. Choose Define Fields... from the Layout menu .
3. Highlight the field that is not sorting correctly and change to a different type. (i.e. if field was of the type Date, select Text then click Modify)
4. Change field type back to original type.
5. Perform Sort.

Many times this will cause the index of the field to reset so that the records will sort correctly.
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No Milestones in Timeline Model

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisImpact box states: "...Manage projects using Gantt charts with customizable plan/actual task bars, milestone markers..."

ClarisImpact 1.0 does not contain a milestone marker feature, and the terms "milestone" and "Gantt" are not used in the product's electronic help. Although "Gantt" is not listed in the index, the ClarisImpact User's Guide describes Timelines beginning on page 8-2 as follows: "ClarisImpact creates simple timeline charts that are suitable for scheduling and tracking a wide range of projects. Timelines, also called Gantt charts, represent task durations as bars on a time scale."

A milestone, as described in the Claris MacProject Pro manual, marks a phase of a project. "Milestones typically mark the beginning and end of a project and any interim goals for a phase of the project or a set of tasks. They serve as visual clues for significant progress points along the way."

To create a simple milestone in ClarisImpact, it is possible to define a task with zero duration. This will appear as a small shape (diamond, circle or another shape that you might select) in the timeline, not as a line like other tasks.
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Claris Applications: Palatino Font Clipping when Printing

eWorld 1.0 (a software application for accessing eWorld, an online service from Apple) installs a different version of the Palatino font.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The eWorld 1.0 Installer disk places a TrueType Palatino font suitcase into the System during the course of the installation. Unfortunately, the font is corrupt, and the inter-character spacing is different than the spacing of the Palatino font that is replaced. This will result in text clipping in any documents that had been previously created using the system installed Palatino font. Apple Computer is aware of this problem.

The only workaround is to reinstall the old Palatino font.
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ClarisWorks: Printing White Text With A Colored Background

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Seeing through bitmapped graphics when you print them on a LaserJet 4?

If the printer driver's graphics mode is set to Raster, any objects behind your bitmap will show through. Your bitmap will also show through any objects placed on top of it. To print opaque bitmapped graphics on a LaserJet 4, open the control panel, click on setup/options. In the graphics mode box, select HP-GL/2 instead of raster. This will also improve your printing speed.

What is HP-GL/2? HP-GL/2 is a vector graphics language that basically turns your printer into a plotter. The HP-GL method of printing requires less memory on the printer and prints faster than raster. The HP-GL feature was added to the PCL language in PCL level 5, and is supported in Hewlett Packard LaserJet 4 printers.
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ClarisWorks: Changes And Fixes In The Windows 3.11 Upgrade

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Windows 3.11 does NOT include any new features. This is an update to standard Windows, and is separate from the Windows for Workgroups 3.11 software package. The Windows 3.11 upgrade fixes some driver issues and adds additional support files for Novell Netware.

The following is a list of the updated drivers in Windows 3.11:

PSON9.DRV
EPSON24.DRV
FINSTALL.DLL
FINSTALL.HLP
HPLJIV driver
HPDSKJET.DRV
HPPCL.DRV
HPPCL5E.DRV
HPPCL5E.HLP
HPPCL5E1.DLL
HPPCL5E2.DLL
HPPCL5E3.DLL
HPPCL5E4.DLL
HPPCL5E0.DRV
HPPCL5MS.DRV
L100_425.WPD
L300_471.WPD
L300_493.WPD
L500_493.WPD
L200230&.WPD
L330_52&.WPD
L630_52&.WPD
PAINTJET.DRV
PSCRIPT.DRV
PSCRIPT.HLP
UNIDRV.DLL
V7VDD.386
V7VGA.DRV

In Windows 3.11 upgrade some of the core files were updated to fix some minor problems listed below.

COMMDLG.DLL - was modified to allow Windows-based programs on diskless workstations to use the common dialog boxes provided by this DLL

GDI.EXE - was changed to help programmers using graphics calls, especially those calling the "draw rectangle" function.

KRNL386.EXE - was slightly modified to prevent problems that may occur when third-party software calls for windows to shut down before focus returns to Program Manager.

PSCRIPT.DRV and UNIDRV.DLL- were updated to eliminate a problem that occurs in Windows 3.1 when a word processor uses more than 60 fonts in a single document.

VTDA.386 - solves a timer- related problem that sometimes occurs when you start an MS-DOS-based application on a Novell NetWare network. This problem occurs a very small percentage of the time under Windows 3.1, and shows up usually as Windows crashing to a black screen with a blinking green bar in the top left corner. This problem is also referred to by Novell and Microsoft as the "Black Screen of Death".
Published Date: Feb 18, 2012

Microsoft Windows: Workgroups 3.11 Compatibility List

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This document provides a list of components that have passed the Microsoft Compatibility Test for Microsoft Windows for Workgroups version 3.1. This list is not comprehensive and is subject to change.

Products that are excluded from this list have not been tested by Microsoft, and may or may not be compatible with Windows for Workgroups. In addition, the manufacturers of these components may have updated the hardware since this list was compiled, causing products to no longer to be compatible with Microsoft Windows for Workgroups.

This list is divided into the following four sections:

- Hardware Compatibility List for Computers
- Hardware Compatibility List for Network Interface Cards (NICs)
- Hardware Compatibility List for Microsoft At Work PC FAX (AWFAX)
- Hardware Compatibility List for Remote Access Services (RAS)

HARDWARE COMPATIBILITY LIST FOR COMPUTERS

The following list is alphabetical by manufacturer.

System Name

Acer Altos 7000/FT66TY

Acer Power 425s
Acer Power 433
Acer Power 433s
Acer Power 433V
Acer Power 450d
Acer Power 466d
Acer/Altos 7000
ACTech ACTion EISA 486DX-50
ACTech ACTion EISA 486DX/2-66
ACTech ACTion ISA 486DX-33
ACTech ACTion ISA 486DX-50
ACTech ACTion ISA 486DX/2-50
ACTech ACTion ISA 486DX/2-66
ACTech ACTion ISA 486SX-25
ACTech ACTion VLB 486DX-33
ACTech ACTion VLB 486DX/2-50
ACTech ACTion VLB 486DX2-66
ACTech ACTion VLB 486DX50
ACTech ACTion VLB 486SX-25
ADI MT486 DX
ADS 486 VESA Upgradeable
Apricot LS Pro 386SX-33
Apricot XEN LS II
Apricot XEN LS II 486SX/33
Apricot XEN PC 486DX/2-66
ASEM DS486II
ASEM ECOPC
AST Bravo LC 4/33s
AST Bravo LC2 4/33
AST Bravo LC2 4/50d
AST Bravo LC2 4/66d
AST Bravo LC2 425s
AST Bravo LP 4/25s
AST Bravo LP 4/33
AST Bravo LP 4/66d

AST Premmia MTE 4/33
AST Premmia MTE 4/66d
Chaplet NBDE
Comapq ProLinea MT CDS (486DX2/66MHz)
Compaq Deskpro 3/25i
Compaq Deskpro 386/25M
Compaq Deskpro 386/33M
Compaq Deskpro 4/25is
Compaq Deskpro 4/33i
Compaq Deskpro 4/33is

Compaq Deskpro 4/66i
Compaq Deskpro 486/33M
Compaq Deskpro 486s/16M
Compaq Deskpro 486s/25M
Compaq Deskpro 486s/33M
Compaq Deskpro 5/60M
Compaq Deskpro 5/66M
Compaq Deskpro 50M
Compaq Deskpro 66M
Compaq Presario 425
Compaq Presario 625
Compaq Presario 633
Compaq Presario 833 CDS
Compaq Presario 850
Compaq Presario 850 CDS
Compaq Presario 866
Compaq ProLinea 3/25zs
Compaq ProLinea 4/25s
Compaq ProLinea 4/33
Compaq ProLinea 4/50
Compaq ProLinea 4/66
Compaq ProLinea CDS
Compaq ProLinea MT 4/33s
Compaq ProLinea MT 4/50
Compaq ProLinea MT 4/66
Compaq ProLinea MT CDS (486SX/33MHz)
Computer Sales Pro 486DX2\\66
Computer Sales Pro 486DX33
Computer Sales Pro 486DX50
Computer Sales Pro 486SX25
Daewoo CPC 2600 Desktop
Daewoo CPC 2700U Desktop
Daewoo CPC 2900 Mini Tower
Daewoo Green PC 2500
DEC PC 433dx MT
DECpc 325SL/SLC
DECpc 333sx LP
DECpc 425SL/SLC
DECpc 425sx LP
DECpc 433 ST
DECpc 433dx LP
DECpc 433dx MTE
DECpc 433sx LP
DECpc 450 ST
DECpc 450d2 LP
DECpc 450d2 MT
DECpc 452 ST

DECpc 466 ST
DECpc 466d2 MT
DECpc 466d2 MTE
DECpc 560 ST
DECpc LPv 425sx
DECpc LPv 433dx

DECpc LPv 433sx
DECpc LPv 450d2
DECpc LPv 466d2
DECpc LPv 466d2 LP
DECpc LPx 433dx
DECpc LPx 433dx
DECpc LPx 433sx
DECpc LPx 433sx
DECpc LPx 450d2
DECpc LPx 466d2
Eagle Rohan
Eagle Test
Expo Tech 321E Notebook
Expo Tech 322 Notebook
Expo Tech 386SX/3 Desktop
Expo Tech 386SX/3 Ultra Slim
Expo Tech 486 DX/2 Desktop (w/LBVGA)
Expo Tech 486DX/2 Desktop (w/VLBus)
Expo Tech 486DX/3 Desktop
Expo Tech 486DX/3 Desktop (w/LBVGA)
Expo Tech 486DX/3 Desktop (w/VLBus)
Expo Tech 486DX/3 Tower
Expo Tech 486DX/3 Ultra SLim
Expo Tech 486DX2/4 Desktop
Expo Tech 486DX2/4 Desktop (w/LBVGA)
Expo Tech 486DX2/4 Tower
Expo Tech 486DX2/4 Tower (w/VLBus)
Expo Tech 486DX2/6 Desktop
Expo Tech 486DX2/6 Tower
Expo Tech 486DX2/6 Tower (w/VLBus)
Expo Tech 486DX2/66 Deskto (w/VLBUS)
Expo Tech 486SX/3 Deskto p(w/LBVGA)
Expo Tech 486SX/3 Desktop (w/VLBus)
Expo Tech 486SX/3 Tower
Expo Tech 486SX/3 Tower (w/VLBus)
Expo Tech 486SX/3 Ultra Slim (w/LVBGA)

Expo Tech 486SX/4 Deskto (w/VLBus)
Expo Tech 486SX/4 Desktop
Expo Tech 486SX/4 Desktop (w/LBVGA)
Expo Tech 486SX/4 Tower
Expo Tech 486SX/4 Tower (w/VLBus)
Expo Tech 486SX/4 Ultra Slim(w/LBVGA)
Expo Tech LT 421 Notebook
First International Leo 486-JA
First International Leo-486 KVD
First International Leo-VAC-V
FMC LAN MACHINE
Fountain Tech UMC 486 DX2-66
Fountain Technology 486DX2/50
Fountain Technology 486DX2/66
Fountain Technology 486DX33
Fountain Technology 486DX50
Fountain Technology 486SX25
Fujitsu S-4066
Fujitsu S-366
Fujitsu S-466
GoldStar GS 425SXE
GoldStar GS 486ID66C/66Mhz
GoldStar GS466DXE
GoldStar GS466ID 25C 25Mhz
ICL C4/33B
ICL DL/33
Intercomp DIGIT 486SLC/25
Intercomp Friends 486DX/33

Intercomp Master 486DX2/66
Intercomp Planet 486DX/33
Intercomp Planet II 486 DX2/66
Intercomp Target 486DX/50
IPC Dynasty HE 486DX-33C
IPC Dynasty HE 486DX2-50C
IPC Dynasty HE 486DX2-66c
IPC Dynasty HE 486SX-25C
IPC Dynasty LE 486DX-33C
IPC Dynasty LE 486DX2-50C
IPC Dynasty LE 486DX2-66C

IPC Dynasty SE 486DX-33C
IPC Dynasty SE 486DX2-50C
IPC Dynasty SE 486DX2-66C
IPC Dynasty SE 486SX-25C
IPC Dynsty LE 486SX-25C
KT 486/33 VL-BUS
KT 486/33 VL-BUS/3S
KT 486/50 VL-BUS
Micro Byte Lyrebird 455
Mind 386DX40 ISA
Mind 486 DX-33E
Mind 486 SX-25
Mind 486DX-266 EISA
Mind 486DX250
Mind 486DX266
Mind 486DX50
Mind 486DX50 EISA
Mind 486SX25
NCR 3333-B22
Olivetti M3-30/P
Olivetti M300-15 SX 25 Mhz
Olivetti M300-30
Olivetti M4-40
Olivetti M4-46
Olivetti M4-60
Olivetti M4-64 DX33
Olivetti M4-65
Olivetti M4-82 (KPC 450)
Olivetti M400-60
Olivetti M480-10 486SX25
Olivetti M480-20AT
Olivetti M6-420
Olivetti M6-450 DX2-50Mhz
Olivetti M6-460
Olivetti M6-520
Olivetti M6-540
Olivetti M6-560
Olivetti M6-620 Pentium
Packard Bell 486DX/33
Packard Bell 1110
Packard Bell 1120
Packard Bell 1150(+)
Packard Bell 2066 Minitower (*)
Packard Bell 400DX-33
Packard Bell 400DX-33
Packard Bell 400DX2/50
Packard Bell 400DX2/66
Packard Bell 400SX-25
Packard Bell 400T
Packard Bell 410SX/25

Packard Bell 410SX/33
Packard Bell 420DX/33

Packard Bell 420DX2/66
Packard Bell 420SX/25
Packard Bell 420SX/33
Packard Bell 470
Packard Bell 486CDM(+)
Packard Bell 486SX/25
Packard Bell 486T50
Packard Bell 495
Packard Bell 515E
Packard Bell 525E
Packard Bell 545E
Packard Bell 550(*)
Packard Bell 560
Packard Bell 565E
Packard Bell Axcel 1033
Packard Bell Axcel 105
Packard Bell Axcel 1066(*)
Packard Bell Axcel 130
Packard Bell Axcel 2005(+)
Packard Bell Axcel 2015(+)
Packard Bell Axcel 2033 Minitower (*)
Packard Bell Axcel 205(8)
Packard Bell Axcel 230
Packard Bell Axcel 405
Packard Bell Axcel 405(*)
Packard Bell Axcel 405H
Packard Bell Axcel 430(*)
Packard Bell Axcel 460
Packard Bell Axcel 486A66(*)
Packard Bell Axcel 550
Packard Bell Axcel 550MT/J
Packard Bell Axcel 850(*)
Packard Bell Axcel Minitower (*)
Packard Bell Executive 486/33G
Packard Bell Executive 486/33J
Packard Bell Executive 486SX-EC
Packard Bell Force 1066(*)
Packard Bell Force 107
Packard Bell Force 110
Packard Bell Force 1135

Packard Bell Force 1137
Packard Bell Force 117
Packard Bell Force 200
Packard Bell Force 2010(+)
Packard Bell Force 2020(+)
Packard Bell Force 2040 Minitower (+)
Packard Bell Force 2233 Minitower
Packard Bell Force 2376
Packard Bell Force 2376F(*)
Packard Bell Force 2386 Minitower (*)
Packard Bell Force 250(*)
Packard Bell Force 405
Packard Bell Force 425
Packard Bell Force 486/33G
Packard Bell Force 486/33J
Packard Bell Force 486/33JW
Packard Bell Force 486CDM-1/TV(+)
Packard Bell Force 486MT50J
Packard Bell Force 486SX/25
Packard Bell Force 486SX/25G
Packard Bell Force 486SX/25W
Packard Bell Force 48825
Packard Bell Force 515S
Packard Bell Force 515S Plus

Packard Bell Force 525
Packard Bell Force 525B
Packard Bell Force 525S
Packard Bell Force 545
Packard Bell Force 545B
Packard Bell Force 545S
Packard Bell Force 565
Packard Bell Force 565
Packard Bell Force 565S
Packard Bell Force 600
Packard Bell Force 600B
Packard Bell Force 600S
Packard Bell Force 715 Minitower (*)
Packard Bell Force T66(*)

Packard Bell Legend 102 Elite
Packard Bell Legend 102H
Packard Bell Legend 1134 Elite (*)
Packard Bell Legend 1135
Packard Bell Legend 1136(*)
Packard Bell Legend 1137
Packard Bell Legend 115
Packard Bell Legend 1166(*)
Packard Bell Legend 1176(*)
Packard Bell Legend 120
Packard Bell Legend 125
Packard Bell Legend 126 Elite ((*)
Packard Bell Legend 127(*)
Packard Bell Legend 128
Packard Bell Legend 135(*)
Packard Bell Legend 135H(*)
Packard Bell Legend 140(*)
Packard Bell Legend 1900(+)
Packard Bell Legend 1910(+)
Packard Bell Legend 2000(+)
Packard Bell Legend 2001 (+)
Packard Bell Legend 2002 Elite (+)
Packard Bell Legend 2011 Supreme (+)
Packard Bell Legend 2025(+)
Packard Bell Legend 207(*)
Packard Bell Legend 2133 Minitower (*)
Packard Bell Legend 2135 Minitower (*)
Packard Bell Legend 2176 Elite MT(*)
Packard Bell Legend 2276 Minitower (*)
Packard Bell Legend 2266 Minintower (*)
Packard Bell Legend 2270 Minitower (*)
Packard Bell Legend 2300 Minitower (+)
Packard Bell Legend 233(*)

Packard Bell Legend 234 Elite (*)
Packard Bell Legend 245
Packard Bell Legend 33T Supreme Minitower (*)
Packard Bell Legend 486CDM-1/TV(+)
Packard Bell Legend 486T/50(*)
Packard Bell Legend 625
Packard Bell Legend 660
Packard Bell Legend 660 ELITE (*)
Packard Bell Legend 660H
Packard Bell Legend 66D Supreme(*)
Packard Bell Legend 66D Supreme(*)
Packard Bell Legend 66T Supreme (*)
Packard Bell Legend 670(*)
Packard Bell Legend 695 Supreme
Packard Bell Legend 700
Packard Bell Legend 700 Elite (*)

Packard Bell Legend 740(*)
Packard Bell Legend 747 Minitower (*)
Packard Bell Legend 750 SUPREME
Packard Bell Legend 760 Supreme
Packard Bell Legend 770
Packard Bell Legend 770 ELITE(*)
Packard Bell Legend 780 Supreme (*)
Packard Bell Legend 780(*)
Packard Bell Legend 790
Packard Bell Legend 800 SUPREME(*)
Packard Bell Legend 800 Supreme/50(*)
Packard Bell Legend 800+ SUPREME(*)
Packard Bell Legend 840 Minitower (*)
Packard Bell Legend 845 Minitower (*)
Packard Bell Legend 848 Minitower (*)

Packard Bell Legend 925G
Packard Bell Legend 925G Elite
Packard Bell Legend 925J
Packard Bell Legend 933G
Packard Bell Legend 933G ELITE
Packard Bell Legend 933J
Packard Bell Legend 933J ELITE
Packard Bell Legend 933J+
Packard Bell Legend 950 ELITE(*)
Packard Bell Legend 950(*)
Packard Bell Legend 950J ELITE
Packard Bell Legend M950(*)
Packard Bell Legend MT950J
Packard Bell Legend T66(*)
Packard Bell PackMate 2050(+)
Packard Bell PackMate 486/33(*)
Packard Bell PackMate 486/33G
Packard Bell PackMate 486/33J
Packard Bell PackMate 48625
Packard Bell PackMate 486SX/25G
Packard Bell PackMate 733 C MT (*()
Packard Bell PackMate X225
Packard Bell PackMate X230
Packard Bell PackMate X233
Packard Bell PackMate X240(*)
Packard Bell PackMate X250(*)
Packard Bell PackMate X250Y(*)
Packard Bell PackMate XT266(*)
Panasonic CF1000
Panasonic CF1000A
Pionex 486DX2/50
Pionex 486DX2/66
Pionex 486DX33
Pionex 486DX33
Pionex 486SX25
Quantex 486DX2/50
Quantex 486DX2/66
Quantex 486DX50
Quantex 486SX25

Reply Turbo Processor System Upgrades
Sanyo MBC 19 NC
Seanix ASI 9000 9dx266vm8I
Seanix ASI 9000 9dx50vm4I
Siemens Nixdorf PCD-4G
Siemens Nixdorf PCD-4Hsx
Siemens Nixdorf PCE-4C
Siemens Nixdorf PCE-4L
Siemens Nixdorf PCE-4LSX

Siemens Nixdorf PCE-4T
Siemens Nixdorf PCE-4T/66
Siemens Nixdorf PCE-5s
Toshiba 6600C
Toshiba T1850C
Toshiba T1900C
Toshiba T4400C
Toshiba T4500C
Toshiba T4600C
Toshiba T6400SXC
TriGem 486 DX2/66ME
TriGem 4DX2/66ML
Unidata PD466
Unisys MPI 4163
Unisys MPI 42562
Unisys PW 2 Advantage MPI 43331
Unisys PW2 Advamtage 46662
Unisys PW2 Advantage 42532
Unisys PW2 Advantage 45061
Unisys PW2 Advantage 46634
Unisys PW2 Advantage 46663
Unisys PW2 Advantage MIP 43363
Unisys PW2 Advantage MPE 56061
Unisys Unity PDI 4335
Unisys Unity PSI 3333
Unisys Unity XDE 4666
Video Tech 486SX/3 Desktop (w/LBVGA)
Video Tech Laser 386 SX/3 Desktop
Video Tech Laser 386 SX/3 Ultra Slim
Video Tech Laser 386/3 Desktop
Video Tech Laser 386/3 Tower
Video Tech Laser 386SX/3 Desktop
Video Tech Laser 386SX/3 Ultra Slim

Video Tech Laser 486 DX/3 Desktop w/LBVGA
Video Tech Laser 486 DX/3 Tower
Video Tech Laser 486 DX/6 Tower
Video Tech Laser 486 DX2/4 Desktop
Video Tech Laser 486 DX2/4 Tower
Video Tech Laser 486 DX2/6 Desktop w/ LBVGA
Video Tech Laser 486 SX/3 Desktop
Video Tech Laser 486 SX/3 Desktop w/ LBVGA
Video Tech Laser 486 SX/3 Tower
Video Tech Laser 486 SX/3 Ultra Slim
Video Tech Laser 486 SX/4 Desktop
Video Tech Laser 486 SX/4 Tower
Video Tech Laser 486DX/2 Deskto p(w/LBVGA)
Video Tech Laser 486DX/3 Desktop (w/VLBus)
Video Tech Laser 486DX/3 Tower
Video Tech Laser 486DX/3 Tower (W/VLBus)
Video Tech Laser 486DX/3 Ultra Slim (w/LBVGA)
Video Tech Laser 486DX/4 Tower (w/VLBus)
Video Tech Laser 486DX2 Deskto (w/LBVGA)
Video Tech Laser 486DX2/4 Desktop
Video Tech Laser 486DX2/4 Desktop (w/LBVGA)
Video Tech Laser 486DX2/4 Desktop (w/VLBus)
Video Tech Laser 486DX2/4 Tower
Video Tech Laser 486DX2/6 Desktop
Video Tech Laser 486DX2/6 Tower
Video Tech Laser 486DX2/6 Tower (w/VLBus)
Video Tech Laser 486DX2/66 Desktop (w/VLBus)

Video Tech Laser 486SX.3 Desktop (w/LBVGA)
Video Tech Laser 486sx.3 Tower (w/VLBus)
Video Tech Laser 486SX/3 Desktop

Video Tech Laser 486SX/3 Desktop (w/VLBus)
Video Tech Laser 486SX/3 Tower
Video Tech Laser 486SX/3 Ultra Slim (w/LBVGA)
Video Tech Laser 486SX/4 Desktop
Video Tech Laser 486SX/4 Desktop (VLBus)
Video Tech Laser 486SX/4 Desktop (w/LBVGA)
Video Tech Laser 486SX/4 Tower
Video Tech Laser 486SX/4 Tower (w/VLBus)
Video Tech Laser 486SX/4 Ultr Slim (w/LBVGA)
Video Tech Laser a486DX/3 Desktop
Video Tech Laser LT 321E Notebook
Video Tech Laser LT 421 Notebook
Video Tech Laser SX/4 Desktop w/LBVGA
Video Tech Laser LT 322 Notebook
Viglen Contender 4DX33
Viglen EXC ISA
Viglen Genie
WCWS&S Multi Media VESA 486DX
Wyse Decision 486se
Wyse Decision 486si
Wyse Series 3000i Model 350
Wyse Series 6000i Model 650
Zymos AXXESS 486DX2-66
Zymos AXXESS 486DX33

HARDWARE COMPATIBILITY LIST FOR NETWORK INTERFACE CARDS (NICs)

The following list is alphabetical by manufacturer.

Company	Network Card
Accton Technology	EtherCombo-16 (EN1640)
Accton Technology	EtherPair-16 (EN1641)
Accton Technology	EtherCoax-16 (EN1642)
Accton Technology	EtherCombo-16 (EN1650)
Accton Technology	EtherPair-16 (EN1651)
Accton Technology	EtherCoax-16 (EN1652)
Accton Technology	EtherDuo-16 (EN1656)
Allied Telesis	AT-1500T
Allied Telesis	AT-1500BT
Allied Telesis	AT-1500FT
Allied Telesis	AT-1700T
Allied Telesis	AT-1700BT
Allied Telesis	AT-1700FT
Alta Research	EtherCombo-16 T/C
AMD	AM2100
AMD	PCnet-ISA Single Chip Ethernet Controller
AMI	Series 65 EISA LAN Card
Apricot	XEN-LS 486SX-20 w/ i82592
Apricot	LS PRO w/ i82596
Apricot	LS 386SX-20 w/ i82592
Cabletron	E2010-X
Cabletron	E2112
Cabletron	E3010-X
Cabletron	E3112-X
Cabletron	T2015
Cabletron	T3015
Chips N Tech	MK561
Compaq	32-bit NetFlex Controller

Compaq	32-bit DualSpeed Token Ring
Compex	ENET16/U
Cresendo Communications	C321M
DCA	IRMATrac Token-Ring/Convertible 16/4
DEC	DEC EtherWORKS LC
DEC	DEC EtherWORKS MC
DEC	DEC EtherWORKS Turbo
DEC	DEPCA
DEC	WaveLAN AT
D-Link Systems	DE220CT
Gateway Communications	G/Ethernet 16 Combo
Hewlett-Packard	HP EtherTwist MCA Adapter (HP27246)
Hewlett-Packard	HP Ethertwist 8 TP (HP27245)
Hewlett-Packard	HP Ethertwist 16 TP (HP27247)
Hewlett-Packard	PC LAN Adapter/16+ TP (HP27247B)
Hewlett-Packard	Ethertwist EISA LAN Adapter/32 (HP27248)
Hewlett-Packard	PC LAN Adapter/16+ TL (HP27252A)
Hewlett-Packard	HP Ethertwist 8 TL (PC27250A)
IBM	Ethernet Cards
IBM	PCMCIA Ethernet Credit Card
IBM	Token Ring
IBM	Token Ring /A
IBM	Token Ring II
IBM	Token Ring 4/16
IBM	Token Ring 4/16 A
IBM	Token Ring 16/4 Adapter II
IBM	Token-Ring 16/4 LANstreamer Server Adapter/A
ICL	Etherteam 16
ICL	Etherteam 16i
Intel Corp.	EtherExpress 16
Intel Corp.	EtherExpress 16TP
Intel Corp.	EtherExpress 16 TPE
Intel Corp.	EtherExpress 16C
Intel Corp.	EtherExpress MCA
Intel Corp.	EtherExpress MCA TP
Intel Corp.	EtherExpress TPE Hub
Intel Corp.	Token Express MCA 16/4
Intel Corp.	Token Express EISA 32
Intel Corp.	TokenExpress EISA 16/4
Intel Corp.	TokenExpress ISA 16/4
Intel Corp.	Token Express 16s
Madge Networks	Smart 16/4 XT Ringnode
Madge Networks	Smart 16/4 AT Ringnode
Madge Networks	Smart 16/4 EISA Ringnode
Madge Networks	Smart 16/4 MC Ringnode
National Semiconductor	EtherNODE *16AT
National Semiconductor	AT/LANTIC EtherNODE 16*AT3
National Semiconductor	PCMCIA Ethernet
National Semiconductor	Sonic EISA (DP83932EB)
National Semiconductor	TROPIC Token Ring
NCR	StarLAN 16/4 Token-Ring MC NAU
NCR Systems BV	WaveLAN/AT
NCR Systems BV	WaveLAN/MC
Novell	NE1000
Novell	NE2000
Novell	NE2000T
Novell	NE2000 Plus
Novell	NE/2
Olicom	16 bit ISA 16/4
Olicom	16 bit EISA 16/4
Olicom	32 bit EISA Server Adapter
Olicom	16 bit MCA 16/4
Proteon	P1346

Proteon	P1347
Proteon	P1390
Proteon	P1392
Proteon	P1840
Proteon	P1892
Proteon	P1990
Proxim	RangeLAN Wireless
PureData	PDI508+
PureData	PDI516+
PureData	PDI8023-8
PureData	PDI8023-16
PureData	PDI8023+ 16CAT
PureData	PDuC8023
PureData	PDI9025-16 4
PureData	PDE9025-32 16/4
PureData	PDuC9025 16/4
PureData	PDI90211
PureData	PDuC90211
PureData	PDI7023BT
PureData	PDI7023 Combo
Racal-Datacom	Interlan AT
Racal-Datacom	NI5210
Racal-Datacom	NI6510
Racal-Datacom	InterLAN EtherBlaster
Racal-Datacom	NI9210
Standard Microsystems	PC130E
Standard Microsystems	PC130
Standard Microsystems	PC270E
Standard Microsystems	PC550W
Standard Microsystems	PC600W
Standard Microsystems	PC650WS
Standard Microsystems	Ethernet 3016
Standard Microsystems	SMC 8003EP
Standard Microsystems	SMC 8003EPC
Standard Microsystems	SMC 8003E/A
Standard Microsystems	SMC 8013EPC
Standard Microsystems	SMC 8013EWC
Standard Microsystems	SMC 8013WC
Standard Microsystems	PC9000
Thomas Conrad	TC6145
Thomas Conrad	TC6245
Thomas Conrad	TC4045
3Com Corporation	EtherLink II/16 TP (3C505-16-TP)
3Com Corporation	EtherLink III (3C509)
3Com Corporation	EtherLink III EISA (3C579)
3Com Corporation	EtherLink/MC32 (3C527)
3Com Corporation	EtherLink Plus (3C505-B)
3Com Corporation	EtherLink MC (3C523)
3Com Corporation	TokenLink III 16/4 MCA (3C629)
3Com Corporation	TokenLink III 16/4 ISA (3C619)
Tiara	10Base-T LanCard/E*AT
Tulip Computers	TNCC-16 CAT
Ungermann-Bass	NICps/2
Ungermann-Bass	NIUpc (PC2030)
Ungermann-Bass	NIUps (PC3030)
Ungermann-Bass	NIUps/EOTP (PC3035)
Ungermann-Bass	NIUpc/EOTP (PC4035)
Ungermann-Bass	PC5000
Xircom	PE-1
Xircom	PE-2
Zenith Data Systems	Z.Note 325L Notebook PC

HARDWARE COMPATIBILITY LIST FOR MICROSOFT AT WORK PC FAX (AWFAX)

The following list is divided into compatible U.S. and compatible international manufacturers, and is then alphabetical by manufacturer. Lists of incompatible U.S. and international modems follow.

Compatible U.S. Modems

Tier	Manufacturer	Model	Class	Ext/Int
1	Cardinal	14400 v32bis	1,2	E
1	GVC	FM-9648	1	E
1	GVC	FAX Modem 14400bps	2	E
1	GVC	FAX Modem 14400bps	2	I
1	GVC	FAX Modem 2400bps	1	I
1	GVC	9624Vbis	2	E
1	Hayes	Optima96+Fax96 5101AM	1	E
1	Hayes	Optima 144 +Fax144 5100AM	1	E
1	Hayes	Optima24+Fax96 4000AM	1	E
1	Intel	SatisFAXtion 400e	1	E
1	Intel	SatisFAXtion 400I	CAS	I
1	Intel	SatisFAXtion 300I	1	I
1	Intel	SatisFAXtion 200I	CAS	I
1	Practical Peripheral	PM14400FX v.32bis	1	I
1	Practical Peripheral	PM144FXMT	1	E
1	Practical Peripheral	PM144FXSA	1	E
1	Practical Peripheral	PM9600FXMT	1	E
1	Practical Peripheral	PM2400FX Mini (RC229DP)	1	E
1	Practical Peripheral	PM2400EFX	1	I
1	Practical Peripheral	PP 24/96 (PP224ATF)	1	I
1	Practical Peripheral	RC229DP (Same as Mini)	1	I
1	Supra	FAX v32bis 144	1	E
1	Supra	FAX v32bis 144	1	I
1	Supra	FAX 24/96	1	I
1	U.S. Robotics	Sportster 144	2	I
1	U.S. Robotics	Sportster 144	2	E
1	U.S. Robotics	Sportster 9600	1	E
1	U.S. Robotics	Courier Dual	1	E
1	Zoom	Pocket	1	E
1	Zoom	AFX 96 224ATF	1	E
1	Zoom	v32bis	1,2	E
2	ATI	Technology 2400et e	1	E
2	ATI	Technology 14400etc e	1	E
2	ATT	Paradyne DataPort 144	1,2	E
2	ATT	Microelectronics AK144	1	I
2	Best Data Products	1442FX14400	1,2	E
2	Best Data Products	Smart One	1,2	I
2	Boca Research, Inc.	Boca Modem 14400	1	E
2	Cirrus Logic	CL-MD 9624at/ec2	1	I
2	Compaq	224ATF	1	I
2	Computer Peripheral	ViVa 2496if	2	I
2	Computer Peripheral	ViVa 14.4/fax	1,2	E
2	Computer Peripheral	ViVa 14.4/fax	1,2	I
2	Data Race	RediCARD	1	PCMCIA
2	Data Race	ActionFAX	1	I
2	Digicom System (DSI)	Scout Plus	1	E
2	Epson	EFM144	1	PCMCIA
2	Epson	EFM96	1	PCMCIA
2	Ericsson	Semafor 2324C	1	E
2	Gateway	Telepath FM144	1	E

2	Gateway	Telepath II	1	I
2	Sierra	VoDaFax	2	I
2	Sierra	Class 1	1	I
2	TDK	Data Fax Modem	1	I
2	UDS Motorola	FasTalkFAX32BX LP II	1	E
2	UDS Motorola	V.3257	1	E
2	ZyXEL	U-1496 Plus	2	E
2.5	Macronix, Inc.	Maxfax96/144	1,2	I
2.5	Macronix, Inc.	MaxLite 144	2	E
2.5	Megahertz Corp.	144bps Pocket Fax ModemP2144	1,2	E
2.5	Megahertz Corp.	96/96 Pocket	1	E
2.5	Megahertz Corp.	XJ1144	1	PCMCIA
2.5	Megahertz Corp.	CC324FM	1	PCMCIA
2.5	MultiTech	MT1432M	2	E
2.5	MultiTech	MT932ba	2	E
2.5	MultiTech	MT224ba	2	E
2.5	Twincom Twin	144/DF	1,2	E
2.5	Twincom Twin	144/Dfi	1,2	I
3	Adtech Micro	Comm Panion 96/24	1	E
3	Adtech Micro	Data Fax 96/24	1,2	I
3	Adtech Micro	Hiper Fax 14/14	1	I
3	Adtech Micro	Comm Panion 14/14	1	E
3	Alphanetics	224ATF	1	I
3	CMS Enhancements	v.24bis/MNP5	2	E
3	E-Tech	UFOMate P1496MX	2	E
3	Everex	EV-960	2	I
3	Holmes Microsystems	Fax 'em Pocket 96	1,2	E
2	LASAT	Unique 144	1	E
3	Microcom	MicroPorte 4232bis	1	E
3	PCDigital	96/48	1	I
3	PSI Integration	COMstation One	1	I

Compatible International Modems

Country	Manufacturer	Model	Class	Type
AUS	AVTEK	MegaPlus Fax V.32bis CD930	2	Pocket
AUS	AVTEK	Mega-Date Fax CD900	1	E
AUS	Maestro	RC224FMI	1	E
AUS	Maestro	144FMFI	1	E
AUS	Netcomm	Pocket PA-PM2100BE	1	Pocket
AUS	Netcomm	PM1500PK Modem 24	1	Pocket
AUS	Netcomm	SmartModem E7F	2	E
FRA	3X	396D	1,2	E
FRA	Kortex	KX Pro 2400 Pocket	1	Pocket
FRA	Kortex	Pocket	1	Pocket
FRA	NovaFax	14400 Fax	1	Pocket
FRA	PNB	Baby-Pro TT1496	1,2	Pocket
GER	Dr. Neuhaus	Fury DNE 5005	2	PCMCIA
GER	Dr. Neuhaus	Fury DNE 1086	2	E
GER	Intel	CAS/9600	CAS	I
ITA	CDC-SPA	CDC-9623 FAX-ECE	1,2	E
ITA	CDC-SPA	CDC-9623 FAX-ICE	1,2	I
ITA	DIGICOM	SNM41PC	1	I
ITA	SYSNET	SMF 36Fax	1,2	E

SWE	Dynalink	1414VE	1,2	E
SWE	GVC	FM-144vbis	2	E
SWE	Hidem	2442 FAX	2	E
SWE	Hidem	14400/Fax	2	E
SWE	Lasat	Unique 14.4	1,2	E
SWE	Lightspeed	1414 Series	1,2	E
SWE	Motorola	UDS Fasttalk Fax 32bx-32bx	1	E
SWE	Semafor	1496A	1	E
SWE	Semafor	2324C	1	E
SWE	UCOM	Fastlink 14400	2	E
SWE	UCOM	Traveller 144		Pocket
SWE	UFOMATE	P1496MX	1,2	Pocket
SWE	U.S. Robotics	Courier V.32bis	1	E
SWE	U.S. Robotics	Sportster 14.4 Fax	1	E
SWE	U.S. Robotics	WorldPort 14.4	1	Pocket
UK	ANDEST	Roadrunner Rocket	1	Pocket
UK	DataFlex	Rapier Plus	1,2	E
UK	Intel	SatisFAXtion	CAS	I
UK	PSION-DACOM	Port. Fax PTM50F	1,2	Pocket
UK	SmartLink	Pocket Fax Modem 2400	1	Pocket
UK	SmartLink	V32.bis/Fax	2	E
UK	U.S. Robotics	WorldPort 14.4	1	Pocket

Incompatible U.S. Modems

Manufacturer	Model	Class	Ext/Int
Cardinal	MB2296SR	2	I
Macronix	MAXFAX 9624	2	I
Macronix	VOMAX 2000	2	E
Megahertz	2400 BPS Pocket Fax/Modem P224 FMV	1	E
National	Tyin 2000	2	E
Practical Peripherals	PM2400FXSA	2	E
Zoom	FX96/24	2	E
Zoom	FC96/24	2	I

Incompatible International Modems

Manufacturer	Model	Class	Ext/Int
BIT	Blitzer Mx-6	1	E
BIT	Blitzer XM124s RFAX	2	E
Cray	Comm Quantum 144	1	E
Digicomm	SNM28 SR	2	I
Dr. Neuhaus	Fury 241	2	I
ELSA	Microlink 14.4 PC	2	I
Kortex	KX PRO 2400	CAS	I
La Commande Electonique	LCE Minifax	1	E
MicroFax	Class 2 Pocket Modem	2	E
Multitech	MT932ba	2	E
Sysnet	SMF - 04FAX	1	I

HARDWARE COMPATIBILITY LIST FOR REMOTE ACCESS SERVICES (RAS)

The following list is divided into U.S. and foreign manufacturers, and is alphabetical by manufacturer.

U.S. Modems

Angia DataStart for CompaqLTE
ATI 2400 etc/e
ATI 9600 etc/e
AT&T 2224 CEO
AT&T Comsphere 3810
AT&T Comsphere 3811
AT&T Comsphere 3820
AT&T Comsphere 3830
AT&T Dataport
AT&T Paradyne PCMCIA
AT&T 4024
Bocamodem M1440
Cardinal 2400e
Cardinal 9600
Cardinal 14400
Cardinal 14400 Internal
Codex 2264
Codex 3220
Codex 3260
Codex 3261
Codex 3262
Codex 3263
Codex 3265
Codex 3260 Fast
Codex 3261 Fast
Codex 3262 Fast
Codex 3263 Fast
Codex 3265 Fast
Codex 3220 Plus
Compaq SpeedPAQ 144
CXR Telcom 1445
DataRace RediModem V.32bis
Datatrek 2424AMH
Datatrek Elite 624D
Datatrek V.32
DP Defender1000D w/HayesUltra
Digicom Scout
Digicom Scout Plus
DSI 9624LE Plus
DSI 9624E
ETech UFOMATE P1496MX
Evercom 24
Evercom 24E
Evercom 24E+
Gateway 2000 Internal Alt
Gateway 2000 Internal
Gateway 2000 Nomad 14400
GVC SM2400
GVC SM96
GVC FM14400
Hayes Compatible 1200
Hayes Compatible 2400
Hayes Compatible 9600
Hayes Pocket Modem 2400
Hayes Smartmodem 2400
Hayes Smartmodem 9600

Hayes Optima 9600
Hayes Optima 14400
Hayes Ultra 9600
Hayes Ultra 14400

Hayes V Series Smartmodem9600
Intel SatisFaxtion 100
Intel SatisFaxtion 400e
Intel 9600EX
Intel 14400EX
Macronix Maxlite Fax 9696
Macronix VOMAX 2000
Megahertz P2144 Pkt Faxmodem
Megahertz T3144 for Toshiba
Megahertz Z3144 for Zenith
Megahertz C5144 for CompaqLTE
Megahertz XJack PCMCIA
MicroCom QX 4232bis
MicroComQX 4232HS
MicroGate MG96
MicroGate MG144
MicroPorte 1042
MultiTech MultiModem 224
MultiTech MultiModem MT932
NEC 9635E Plus
NEC 14.4 Data/Fax PCMCIA
Null Modem
Octocom 8324
Octocom 8396
PDI-1000
Practical Peripherals 2400 Pkt
Practical Peripherals 2400SA
Practical Peripherals 2400MNP
Practical Peripherals 9600SA
Practical Peripherals 14400SA
Practical Peripherals 14400FX
Racal GSM w/ Hayes Ultra
Racal RMD 2412
Racal RMD 2422
Racal RMD 2412/2
Racal RMD 3221
Racal RMD 3222
Racal RMD 3226
Racal RMD 3223
Racal RMD 9632PA
Racal RMD 9642PA
SD ACM400 w/ AT&T 3820
SupraModem 2400
Supra Fax Modem 9624 Internal

Supra Fax Modem V32
Supra Fax Modem V32bis
Supra Fax Modem Plus
Telebit QBlazer
Telebit T1000
Telebit T1500
Telebit T1600
Telebit T2000
Telebit T2500
Telebit T3000
Telebit TrailBlazer Plus
Telebit WorldBlazer
Telebit WorldBlazer-Rackmount
UDS Motorola V.3225
UDS Motorola V.3227
UDS Motorola V.3229
UDS Motorola FasTalk V.32/42b
U.S. Robotics Courier Dual
U.S. Robotics Courier HST
U.S. Robotics Courier V.32bis

U.S. Robotics Sportster 2400
U.S. Robotics Sportster 9600
U.S. Robotics Sportster 14400
Ven-Tel 9600 Plus II
Ven-Tel Pocket 24 V.42bis FAX
Ven-Tel 14400 Fax
Ven-Tel 14400 Fax Internal
Western Datacom Worldcom
Zoom AFX
Zoom FX 9624V
Zoom VFX V.32bis
ZyXel U-1496
ZyXel U-1496E

International Modems

Hayes Ultra 14400 - UK
Smartlink Pocket 2400 - UK
Smartlink V32Bis/Fax - UK
Dataflex Rapier+ V32Bis - UK
Psion Dacom PDM 50F - UK
Andest Rocket - UK
Intel SatisFaxtion - UK
USR Worldport 14400 - UK
GVC SM2400 - SWE
GVC SM96 - SWE
GVC FM14400 - SWE

Hidem 14400/FAX - SWE
Hidem 2442P/FAX - SWE
LASAT Unique 144 - SWE
LIGHTFAX 1440LC - SWE
MultiTech MT932 - SWE
UCOM FASTLINK 144 - SWE
UCOM TRAVELLER 144 - SWE
UDS Motorola FasTalk V32- SWE
UFOMATE P1496MX - SWE
USR Courier V.32bis - SWE
USR Sportster 14400 - SWE
USR Worldport 14400 - SWE
DYNALINK - SWE
SBN 2314C - SWE
SEMAFOR 2324C - SWE
SEMAFOR 1496A - SWE
Avtek CD900 - AUS
Avtek CD930 - AUS
Banksia XM124/R FAXMODEM- AUS
Banksia MX-6 V.32bis - AUS
Maestro RC224FMI - AUS
Maestro 144FMEI - AUS
Netcomm Pocket Rocket PA- AUS
Netcomm Smartmodem E7F - AUS
Netcomm Pocket M/F 2400-AUS
Dr Neuhaus Fury 2403 TI - GER
Elsa MicroLink 14400 Int- GER
Hayes Optima 9600 - GER
Hayes Optima 14400 - GER
Hayes Ultra 9600 - GER
Hayes Ultra 14400 - GER
KORTEX KXPRO 9600 - FRN
KORTEX KXPRO 2400 - FRN
ARN DX - FRN
NOVA FAX NFX14400 - FRN
PNB Baby RIO 14400 - FRN

PNB AMAZONE 2400 - FRN
CXR AJ2423 - FRN
CXR AJ9636 - FRN
LCE 126P - FRN
LCE 132P - FRN
3X 396D - FRN
3X 514D - FRN
KORTEX KXPRO 14400 - FRN

KORTEX KXPOCKET 9600 - FRN
COM1 MV215 - FRN
COM1 MV219 - FRN
COM1 MV216 - FRN
COM1 MC215 - FRN
ATTEL MX 96192 - FRN
DATACONSYST DAC124 - ITA
SYSNET SMF-04 - ITA
SYSNET SMF-36 - ITA
CDC 6438 - ITA
CDC 6436 - ITA
DIGICOM SNM28 - ITA

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Windows 3.1: Must Use WinFax Pro v2.0 Or Later

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In order to use WinFax Pro with Windows 3.1 you need version 2.0 (dated 11/28/91), or later.

If you are running Windows 3.1 and FaxPro 2.0 on a 286 it may take a long time to send or receive a fax. Along with this you may encounter missing characters.

FIX: Remove all terminate and stay resident (TSR) files from your AUTOEXEC.BAT and CONFIG.SYS files. If you are running MS-DOS 5.0 you will need to add the line DOS=LOW to your CONFIG.SYS. Next you will need to open the SYSTEM.INI with a text editor and add the following line to the [Standard] section: FasterModeSwitch=1

If when you are running WinFaxPro the system hangs while you are running in 386 Enhanced mode, you will need to add the following lines to the [386Enh] section of your SYSTEM.INI file:

COMBoost Time=15
COMxProtocol=XOFF
COMxBuffi=1024
COMxAutoAssign=0

NOTE: The x after COM in the last three lines represents a valid COM port. Be sure to substitute the correct COM port number when you add the lines to the SYSTEM.INI.

There is another potential problem with version 1.0 of Berkeley Systems' After Dark screen saver. When running After Dark while using WinFaxPro, After Dark may interfere with fax transmission.

FIX: Turn off After Dark when using WinFaxPro.

Delrina also recommends that you do not run either of the two programs form the LOAD = line in the WIN.INI file.

If you are experiencing problems running at 14.4Kbps, contact Delrina about an update to fix this particular problem.

NOTE: A number of computers currently ship with OEM versions of WinFax. If this is the case with your computer, please contact the hardware manufacture concerning problems with its version of WinFaxPro. Version 4.0 can be obtained by contacting:

Delrina Corp.
6830 Via Del Oro
Suite 240
San Jose, CA 95119
(408) 363-2345

WinFax is now owned by Symatec Corporation which can be reached at 408-253-7234.
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Banyan VINES 5.52 (5): Using With Windows For Workgroups 3.11

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This article has been archived and is no longer updated by Apple.
Bulletin Number: 300
Date: 22 April 1994
Summary: NetBIOS and Windows for Workgroups
Server: All
Software Version: VINES 5.52 (5) and greater, Windows for Workgroups 3.11
Category: Windows for Workgroups, NetBIOS

***** When trying other setups, remember that Banyan DOS NetBIOS requires the use of LANA0, but can share it with VINES and perhaps other protocols.*****

Introduction

This technical bulletin describes using Banyan's DOS NetBIOS implementation with Windows for Workgroups to enable enterprise-wide file sharing.

The scenarios described in this bulletin work only with Windows for Workgroups 3.11.

Communicating over Banyan DOS NetBIOS

Banyan site-specific patch 5.53(6)-VNS-KG-1 updates Banyan's DOS NetBIOS client software. This software patch allows Windows for Workgroups to ignore the single LAN segment restriction normally imposed by other implementations of NetBIOS.

All users in a workgroup who connect to the same Banyan NetBIOS naming service can share resources as specified by Windows for Workgroups regardless of physical location. They can also share resources with machines on the same LAN segment which are only using Microsoft's NetBIOS (such as Windows NT or NTAS workstations).

Modifying your workstation configuration involves:

* Configuring the workstation's network setup
* Editing the AUTOEXEC.BAT file
* Editing the PROTOCOL.INI file

Configuring the Workstation's Network Setup

Use the Network Setup applet in the Network program group and the Network applet in the Control Panel to configure the workstation's network settings:

1. Double-click the Network Setup icon in the Network program group. The Network Setup dialog box appears.
2. Choose the Drivers button. The Network Drivers dialog box appears.
3. If the IPX/SPX transport with NetBIOS driver appears, select it. If it does not appear, proceed to Step 5.
4. Choose Remove. The IPX/SPX driver no longer appears in the list.
5. Select Banyan VINES.
6. Choose Set as Default Protocol. This sets Banyan VINES as the default protocol.
7. Choose the Close button. The Network Setup dialog box appears.
8. Choose the OK button.

Use the Network applet in the Control Panel to make sure all users who will share resources belong to the same workgroup.

At each user's workstation:
1. Double-click the Network icon in the Control Panel. The Microsoft Windows Network dialog box appears.

2. Make sure the Workgroup text box displays the correct workgroup name.

3. Choose the OK button.

To Edit the AUTOEXEC.BAT File

When you make changes through Network Setup, the workstation AUTOEXEC.BAT file may get modified and leave you with a configuration that may not work correctly.

1. Use a text editor to open the AUTOEXEC.BAT file.
2. Make sure the network commands in the AUTOEXEC.BAT file are listed in this order:

net initialize
cd <vinesdir>
ban /nc
ndisban
net start
arswait
redir <4, all>
z:\\login

where <vinesdir> is the directory containing your Banyan network software and <4, all> are the two versions you can use (either REDIR4, or REDIRALL).

3. Check that the REDIR version is the one you want. In some cases, the setup program adds REDIRALL by default.

4. Save and close the AUTOEXEC.BAT file.

To Edit the PROTOCOL.INI File

1. Open the PROTOCOL.INI file using a text editor.

2. Locate the [Network.Setup] section.

3. Set LANA0 to ban$vines, if it is not already.

4. Locate the [NETBEUI] section.

5. Change the LANABASE entry to match the LANA for ms$netbeui (usually 1) from the network.setup section. If there is no LANABASE entry, add the line:

LANABASE=1 (or the correct number for your setup)

6. Save and close the PROTOCOL.INI file.

This completes the workstation modifications. You must restart your workstation for these changes to take effect.

The next section describes a different scenario, configuring your Windows for Workgroups workstation to use the distributed features of Banyan's DOS NetBIOS implementation for applications only.

Using Banyan DOS NetBIOS

When using Banyan DOS NetBIOS with Windows for Workgroups, keep in mind:

* Banyan DOS NetBIOS must be loaded before WFW starts if you are to use it for sharing.

* The default parameters for PCNETB may not be sufficient. If you receive error messages or notice poor performance, use the following settings for the /nam and /ses settings:

/nam:32
/ses:16

* Depending on how you use the workstation, you may receive a message that NETHEAP needs to be increased. This message gives you instructions and suggests a new value for the NETHEAP setting.

When trying other setups, remember that Banyan DOS NetBIOS requires the use of LANA0, but can share it with VINES and perhaps other protocols.

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ClarisWorks: Using SoftWindows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks for Windows requires a 386 (or higher) CPU, due to the fact that it requires Windows to be running in 386 Enhanced Mode. This is not possible on 286 (and lower) machines, or on any machine which lacks a sufficient amount of RAM.

SoftWindows software from Insignia Solutions allows Macintosh users to run Windows and Windows-based programs on their Mac. However, at the present time SoftWindows emulates Windows running on a 286-class machine and therefore does not support running Windows in Enhanced Mode. Consequently, ClarisWorks for Windows will not run on a Macintosh (including Power Macintosh computers) running SoftWindows.

This will change if/when Insignia Solutions produces a version of SoftWindows which supports Enhanced Mode. In the meantime, customers can purchase ClarisWorks 2.1 for Macintosh (or the native Power Macintosh version).
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ClarisWorks: Spell Check May Check the Entire Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you have a selected record or group of records and choose Spelling - Check selection, you would expect that ClarisWorks would ignore the unselected records.

Actually, it may go to the first UNSELECTED records and start the spell check from there, including selected and unselected record(s).

The solution is to choose "Hide Unselected" from the Organize menu before beginning the spell check.

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Calculating Elapsed Time and Pay Rate (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you have a ClarisWorks database with two time fields (StartTime and EndTime) and you wish to calculate a pay rate based on the elapsed time, here are calculations to accomplish that goal:

If you don't already have the following fields defined, create them:

StartTime (time)
EndTime (time)

Now to calculate the total elapsed time, define the following field:

ElapsedTime (calculation, number result)
=TIMETOTEXT('EndTime'-'Start Time',2)

See TechInfo Brief entitled "Calculating Elapsed Time" for a full explanation.

Next assuming the hourly rate is $20 an hour, create the next field:
PayDue (Calculation, Number result)
=((HOUR('end time')+MINUTE('end time')/60)-(HOUR('start time')+MINUTE('start time')/60))*20

If hourly rate is a constant other than $20, Substitute the last number (*20) for the constant hourly amount.

To provide for a variable hourly rate (different for every record), create another field:
HourlyRate (Number)

The PayDue calculation can then be modified to:
PayDue (Calculation, Number result)

=((HOUR('end time')+MINUTE('end time')/60)-(HOUR('start time')+MINUTE('start time')/60))*HourlyRate.

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ClarisWorks:Adjusting Custom Label Layouts that Shift When Printing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When creating custom labels in a ClarisWorks database, there are four parameters or values that you must consider to ensure that labels maintain proper alignment when printing. Two parameters tune or adjust in the horizontal direction and the other two adjust in the vertical direction.

These parameters are:

*Offset - distance from the edge of the sheet to the edge of the first label
-Vertical Offset - the distance from the top edge of the label sheet to the top of the first label.
-Horizontal Offset - the distance from the left edge of the label sheet to the left edge of the first label.

*Drift - The shifting of the information in relation to the borders of successive labels, which results in the information no longer being properly aligned on the label as the printing progresses.
-Horizontal Drift - Shifting in the Horizontal direction
-Vertical Drift - Shifting in the Vertical direction.

Offset is adjusted in ClarisWorks by setting the Top and Left Margins. Only the top left label is used as a reference for adjusting offset. Using other label positions will make it difficult to properly adjust offset. Offset must be adjusted first before adjusting for drift, otherwise the drift adjustments will be improper and the labels will not align.

Vertical Drift is corrected by adjusting the height of the body. Small movements may result in significant degrees of shift since the results are additive across records. For example, when adjusting one inch labels (10 down on a sheet) a movement of 1/16 of an inch will result in the 10th label moving 5/8 of an inch.

Horizontal drift in ClarisWorks is not adjustable, but is set by accurately entering the Horizontal width of the label when creating the label layout.

Based the above information, the following steps will create a proper label layout using a minimum of steps:

I. Before creating the label layout
A. Be sure your sheet of labels contain a top margin and a left margin. Label sheets not having margins are designed for copy machines, not printers, as printers cannot print to the edge of a page

B. Using a ruler, measure the top margin; left margin; width of the label from the left edge of the label to the left edge of the next label immediately to the right; and height of the label measuring the label by measuring from the top edge of the top label to the top edge of the label below it. It is ok and proper to include any space in the label measurements. If the label in only a single label across, just use the height and width of the label for the label measurements. Do not rely on the measurements printed on the box as they may not be the ones you actually need to set up the labels.

II. Create the Layout
A. Go to Layout mode and choose Layout menu, New Layout.

B. Choose the Labels option, click OK and enter in the Avery Number for a predefined setup or your custom label measurements. Click OK

C. Double-click on the fields on the left side that you wish to be on the labels. Click on them in the order you want them to appear. This will move them to the right side and is faster and better than the Move button as you are not as likely to click the OK button by mistake. When done, click OK.

D. Position the fields as you want them to appear on the label. Slide Objects is automatically chosen for label layouts.

Use the Alignment tool to align the top edges for sliding left to occur properly. Do not allow field handles to touch each other header line, or body line, as this will result in printing issues. You can be as close as 1/72" but not actually touching.

Use the magnification tools to zoom, the size box and deselect Align to Grid to assist you with this.

TIP: the arrow keys will allow you to move the selected fields in a single direction in small increments.

III. Test the label setup
A. Create enough records, if not created already, to print a full page of labels.

B. Print a page of labels by choosing Print under the File menu and printing from page 1 to 1 on a blank sheet of paper.

C. Hold the printed paper to the light with the label paper in back of it to check alignment.

IV. Offset Analysis
A. Compare the test sheet to the label sheet and look at the top left label only.

B. If the top left label is aligned correctly both horizontally and vertically, go to the drift analysis section below.

C. If the label is out of alignment horizontally, adjust the left margin to compensate - i.e., if the field are too far left, reduce the margin

D. If the label is out of alignment vertically, adjust the top margin . Increase the margin size if the fields are too high. Reduce the margin size if the fields are printing too low.

E. Run another test print and check your results again and repeat this operation until offset is corrected.

V. Drift Analysis
A. Compare the test sheet to the label sheet and look at the bottom right label. Top labels will not assist you with this adjustment.

B. If the label is out of alignment horizontally, recheck you ruler measurements as you will have to start over and recreate a new layout to reset the horizontal width. After choosing Layout menu, New Layout and selecting Labels as the type, be careful to enter the correct width for the new label. In the resulting "Set Field Order.." dialog, you will need to place at least one field on the new label layout. However, it can then be deleted and your fields on the previous layout can be copied and pasted into the new one.

C. If the label is out of alignment vertically, correct the issue by adjusting the body line. If the fields printing are too high, increase the label height by moving the body line down a little. If the fields too low into the bottom margin, reduce the label height by moving the body line up a little.

D. Run another test print and check your results again and repeat until drift no longer occurs.

Your labels should now be properly aligned.
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Installing PowerTalk on the Power Macintosh with An Upgrade Card (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Version 2.1 of the ClarisWorks program supports sending mail using PowerTalk from Apple Computer (part of System 7 Pro).

If you are having difficulty sending mail in ClarisWorks, you may wish to try sending mail via AppleMail. If that fails also, it's possible that your PowerTalk may need to be reinstalled.

PLEASE NOTE:
It has been reported that a problem was discovered with the installer script on the PowerTalk For Power Macintosh (1.0.3) Install Me First disk, where it would not install properly on systems with Power Macintosh Upgrade Cards. This problem does not exist on the PowerTalk For Power Macintosh (1.0.2) Install Me First disk. Except for the installer script, the software contained within the 1.0.2 & 1.0.3 Install Me First disks is identical. Apple is recommending that customers use the 1.0.2 PowerTalk Install Me First disk when installing PowerTalk on Power Macintosh and Power Macintosh Upgrade Card systems.

Please contact Apple Computer or your Apple Dealer if you feel you need new PowerTalk disks.
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"The Document was not created by ClarisWorks" when Attempting to Open a Paint Document (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you try to open(by double clicking) a file that has been saved as a ClarisWorks paint document, you may receive the following error message: "This document was not created by ClarisWorks".

Solution: Check to see if Easy Open is running. To do so, Select Control Panels from the Apple menu and Double Click on Easy Open.

Description: Easy Open is a utility that comes with System 7.1P (for Performas). It is designed to provide seamless translation between many applications. There have been some reports that Easy Open is causing ClarisWorks not to recognize paint documents.
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QuickTime and the Power Macintosh Version of ClarisWorks (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Problem:

ClarisWorks recognizes that certain files are QuickTime movies, but it doesn't display the little filmstrip badge and won't play them. There is no movie info item in the Options menu.

Solution:
When using QuickTime movies in applications that have been optimized to run in "native" mode on the Power Macintosh, you must have the "QuickTime Power Plug" Extension in the System Folder, Extensions Folder. If you do not have this Extension in your Extensions folder, simply reinstall it from your Macintosh System disks.

It should be noted that a standard, as Installed, System for the Power Macintosh includes all this properly installed. The QuickTime Power Plug enabler is necessary for any native applications that want QuickTime support, but it is not necessary for non-native applications to use QuickTime.
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Ruler Settings and Alignment Issues in the ClarisWorks Paint Environment (PT)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The AutoGrid in Claris Graphics Products is an invisible grid that aligns objects when created or moved with the Mouse. The Autogrid is modifiable. This means that you can turn it on or off as well as set the grid spacing.

The MacDraw, ClarisImpact and ClarisWorks Drawing environment grids are determined by the ruler settings. The maximum value that should be used is 72 divisions per inch, since this number represents the maximum resolution of a Macintosh Monitor and the minimum distance that object movement can be accomplished, which is 1 pixel or 1/72 of an inch.

The ClarisWorks Painting Environment represents an entirely different situation. Setting the divisions in the Rulers command has absolutely no effect on the grid spacing in the Paint Environment. This is because the Paint Environment is bit mapped, or pixel based instead of vector or object based. What does effect the grid spacing is the Grid Size command under Options.

The Grid Size can be set to 2,4,18,16 and 32 pixels. This also is represented as x/72 of an inch. When reduced these fractional measurements become 36th's 18thÕs or 9thÕs of an inch. Note that the selection of a grid size of 1 pixel is not offered as this is identical to turning off the Autogrid.

For this reason the Ruler Settings in the Paint environment default to 9 divisions per inch. The means that the large divisions on the ruler represent a third of an inch not a quarter as normally expected. Setting the ruler to the standard 8th's, 16th's, or 32nd's will make it impossible to align objects to the ruler in the Paint environment when using the mouse or keyboard to create or move objects.

In a mixed Draw/Paint environment Ruler Settings become an even more important consideration. The ruler settings are defaulted by the Drawing environment to 8 divisions per inch. In this situation it will be impossible to align Paint objects to Draw Objects aligned to the ruler with the mouse or keyboard unless the ruler is set by the user to non-standard values (9th's) or the Autogrid is turned off. It should be noted that a Draw environment can't be created in the Paint Environment so having a mixed environment naturally default to a ruler setting of 9th's never occurs. If this is desired, create a blank document and save it as a stationery document.

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TIP: How to Make a 3-Column Document Fold Evenly Into a Brochure (WP,DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Scenario:
The starting point is a Word Processing or Report document in Landscape Orientation. A folded brochure/pamphlet of three columns is needed. The tricky part is how to get the brochure to fold evenly down the middle of the space between each column while retaining three equal width columns.

Solution:
It is possible to approach this brochure in two ways. EITHER determine the space between each column you desire and then set your left and right margins to half that amount, OR determine the margins first and then make the space between columns double the margins. For example, if you want 0.25" margins then set the space between columns to 0.5".

Exact steps on how to create a 3 Column Landscape brochure:
The following steps walk you through how to create a 3 column Word Processing or Report document in Landscape Orientation with 1/4" margins all the way around the document and 1/2" space between each column. These steps are best used with a PostScript LaserWriter and cover aspects specific to this type of printer. If you have a different type of printer then you may not be able to use such small margins. Check your printer manual for the minimum margins or the maximum printable area and base your margins on this information.

1. Create a new Word Processing or Report document.
2. Choose Page Setup from the File menu. Notice the section for Orientation and change the selection from the person standing up (Portrait) to the person laying on their side (Landscape). Also, click the Options button and check the option for Larger Print Area (Less Downloadable Fonts). Click the Okay button when you are done.
3. If you are in a ClarisWorks 1.0 or 2.x document, then choose Document from the Format menu and change all the margins to 0.25". Click the Okay button when you are done. If you are using a ClarisImpact Report then you will find the Document choice on the Layout menu.
4. Choose Columns from the Format menu and change the number of columns to 3. Also, change the space between columns to 0.5". Click the Okay button when you are done.

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What to Do if Blank Fields Leave Blank Space in a Mail Merge Document (WP, DB)

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When printing a ClarisWorks Mail Merge document, the program should automatically remove empty fields occurring in multiple address lines. If, for example, you place the fields on your mail merge document in this order:

Name
Address 1
Address 2
CityStateZip

And a record does not contain anything in Address 2, that record should print CityStateZip directly below Address 1 automatically.

If you don't find this to be true, the following is a method of dealing with the problem. It should be noted that this method should not be necessary under most circumstances:

Create the following field:
Full Address (Calculation, text result) =
IF(ISBLANK('Address2'), 'Address1', CONCAT('Address1', CHAR(13), 'Address2'))

This formula checks for a blank Address2 field and just outputs Address1 if Address2 is blank. If Address2 contains data, the calculation outputs Address1, a carriage return (CHAR(13) and the Address2 field. The Carriage Return will not function or display in the ClarisWorks DB layout, but it is there. It will function properly when doing the Mail Merge in the Word processor.

The field Full Address is used in the Mail Merge instead of Address1 and Address2.

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Newsletter-Draw Sample: Line Spacing and Frame Links

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In the Sample Files folder installed with the ClarisWorks 2.1v3 software, the Newsletter-Draw sample displays oddly as follows:

1) The paragraphs on the left side of each page have huge line spacing. Clicking into these text frames would display "13pt" in the line spacing, but that is not correct.

To readjust the line spacing:
a) Double-click into the first column of text on page 1.
b) Choose Select All from the Edit menu.
c) Select Paragraph from the Format menu, and change the Line Spacing units to "Lines(li)" so that it reads "1 Lines (li).
d) Click OK, then do the same steps to the first column of page 2.

2) The second column on page 1 wraps around the chart object, but continues to wrap above the object. Follow the steps above to change the line spacing in this column to 1li.

3) Columns 1 and 2 on page 1 are not linked, so text will not flow from one to the other. This can be fixed as follows:

a) Double-click into column 2 of page 1.
b) Choose Select All from the Edit menu.
c) Choose Cut from the edit menu.

d) Select the pointer (arrow) tool.
e) You should now see selection handles (small black squares) around the empty second column. Press the delete key on your keyboard to remove the empty column (do not cut the column, or you will lose the text you took out of the column).
f) Double-click into the first column, then click at the end of the text in that column.
g) With your cursor at the end of column 1, press Return once to move to a new line.
h) Select Paste from the Edit menu. You should see an "x" appear in the bottom right corner of the column. The "x" indicates that text is flowing down beyond the column.
i) Select the pointer (arrow) tool.
j) You should see a black triangle pointing out of the bottom of the column. Click that arrow once.
k) Your cursor should now be an I-beam with a small line through the upper portion of the I-beam. Click and hold your mouse in the upper left position of the second column (you will need to guess where that will be, because there is nothing to indicate where the old column was).

l) Still holding the mouse button, drag you cursor to the lower right position of the second column. When you let go of the mouse button, the remainder of column 1 text should flow into column 2.

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MacWrite Pro 1.5 vs. ClarisWorks 2.1

Here are a few things to consider if you are trying to decide between MacWrite Pro 1.5 and ClarisWorks 2.1 in meeting your word processing needs.

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ClarisWorks 2.1 integrated software offers word processing, drawing, painting, spreadsheet, database and communications capabilities. The strength of ClarisWorks is that it provides most of the tools you'll need in one application, making it quick and easy to add graphics to accent a document. It is an ideal application for PowerBook users since it offers the functionality of several programs in the size of just one.

MacWrite Pro, being a dedicated word processor, offers more powerful page layout and long-document features. While it lacks the graphic tools of ClarisWorks, it enables you to import a wider variety of graphic formats and integrate them into your documents in more flexible ways. You can create multiple sections to have different headers for each chapter, or create different numbers of columns on the same page.

Following is a list of MacWrite Pro features which the ClarisWorks 2.1 word processing environment does not offer:

Endnotes
Hide Pictures Command for speed
Merge Commands
Ability to merge to a new document

Ability to Left/Right Headers and Footers
Word Underline, Double Underline, Lowercase, Uppercase, and Small Caps styles
Larger Type (up to 500 pts vs. 255)
Find/Change character styles
Hyphenation Control
Spell as you type
Allows you to Save Selection only
Allows Page # of Total format
Option to turn off time/date updating
Page Breaks command when using Multi-Column Document
ADDit Modules
Text wrap-around irregular bitmap images
Fixed Frame Locations
Text and Sound Notes
Paragraph Style Sheets
32K Headers and Footers
Auto Save
Auto Backup
Graphic Cropping
Manual Tracking Control
Text Palette
Mouse controllable Page margins/ guides
Document Statistics
Sections
Multiple Headers and Footers
Custom character spacing.

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ClarisDraw: ATM Error Codes Converting Text to Bezigons

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When using the text-to-bezigons feature you may encounter an error when converting a PostScript Type 1 font. The message will say that Adobe Type Manager (ATM) returned an error (id=xx), where xx is the error code. Here are the codes, and what they mean:

-1 [ATM_NO_VALID_FONT]:
Cannot find proper outline font. If you receive this error code, more than likely it is because you attempted to convert text in a style such as shadow, outline, bold, etc., when that PostScript font was not installed. You may have the plain style or other styles, but ATM can only convert styles when you have the exact PostScript version installed.

-2 [ATM_CANTHAPPEN]:
ATM had an internal error. You should probably reinstall Adobe Type Manager and the font in question, restart, and try converting again. If you still cannot convert text to bezigons, try to contact Adobe and see if they have any suggestions or ask Claris Technical Support for further help.

-4 [ATM_MEMORY]:
ATM ran out of memory while converting text to bezigons.

-6 [ATM_NOT_ON]:
ATM is installed but it is currently turned off. You should switch ATM on in the ATM Control Panel.

-9 [ATM_NO_CHAR]:
There is no Outline font for one of the characters in your text block. Wherever the conversion ended is the last character that successfully converted. You should try choosing Undo, changing the next character after the end of conversion to a different font, then try Convert to Bezigons again.
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Can‘t Open Files Saved by Global Village Fax Center

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Global Village fax software can save received faxes in the following graphic file formats:

MacPaint (72 dpi)
PICT (72 dpi)
PICT (200 dpi)
PICT2 (72 dpi)
PICT2 (200 dpi)
TIFF (200 dpi)

Although Claris products which use the XTND translation system should be able to translate all these formats, in practice they can only translate the PICT2 files saved by the Global Village Fax Center application. Trying to open or insert any of the other formats will result in either a system hang (cursor stops spinning), an alert that the translator cannot read the file, or a blank document.

This seems to be due to a problem in the way Fax Center saves documents since other Macintosh applications also have problems translating these files.

So, to save a received fax in the Fax Center, choose Save As and select the PICT2 (72 dpi) or PICT2 (200 dpi) format. The 200 dpi resolution is higher quality, but imports as a very large image, so use 72 dpi option if you plan to print.
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Finding Incompatible Extensions

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Following are the steps you can take once you've confirmed that an extension is causing a issue to actually find the incompatible extension.

If you have an Extension manager control panel, use that to disable all extensions and then enable a few at a time, Restarting after each group. In this way, you can work more quickly than one at a time.

If you don't have an Extension manager, use the following method:

FOR COMPUTERS RUNNING SYSTEM 7
1) Open the System folder. Choose New Folder from the File menu. Drag the resultant new folder to the Desktop. You will not need to rename the Untitled folder. A handy place to put it is right above the Trash.
2) Open the Extensions folder. Choose View by Kind from the View menu and make the window wide enough so that you can see the Kind column. Scroll until you see files of kind "system extension." Hold down the Shift key on the keyboard in order to select several files at once and click each system extension except for ones titled System Enabler. Once selected, you can drag them to the Untitled folder.

3) Choose Restart from the Special menu and see if the issue has been resolved. (If it hasn't, one of the files in the Control Panels folder or a system extension in the System folder itself may be the issue. Add them to the Untitled folder. Close the System folder and Restart again.
4) Select several files from the Untitled folder, write down their names, and drag them onto the System folder. They will go into the proper folder. Then Restart and see if the issue has returned.
5) Continue Step 4 until the issue returns. When it does, you know that the incompatible extension is in the last group of files you added. Continue to narrow down which one it is by removing files of that group one by one until the issue is resolved again.

FOR COMPUTERS RUNNING SYSTEM 6
Follow the same steps above, except for Steps 2 and 3. In their place, open the System folder, choose View by Kind from the View menu and select all files of type "startup document" or "control panel", and drag them to the Untitled folder.

SOLUTIONS

Make sure you have the latest versions of both the extension and the application. You should contact the publishers of the extension and the application to tell them about the incompatibility and to see if they have any suggestions.

(If you have a question, post it in the message boards. The boards are located in the product folders in the Technical Support folder.)

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Finding Records with Blank Fields Without Using Match Records (DB)

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In a ClarisWorks database, it is possible to search for records that have an empty or blank field by using Match Records and the ISBLANK function. The only problem with this method is that you have to compose a formula and then hide the unselected records. This can be time consuming if you are in a rush.

Try this method for faster searching for records with blank fields:

1. Choose Find from the Layout menu or type Command-Shift-F.
2. Enter the following into the field you want to search for blanks:

<>'""

3. Check the Omit button.
(In ClarisWorks 2.1 or above, you can type an equal sign:
= and NOT click the Omit button)

4. Initiate the find by typing a Return or clicking the Find button.

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TA42965_AUX_compunixaux_Newsgroup_Archives_Now_Available_(TIL05604).pdf

A/UX: comp.unix.aux Newsgroup Archives Now Available

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Where can I get copies of the Usenet newsgroup comp.unix.aux?

This article has been archived and is no longer updated by Apple.
An A/UX patch server was set up about 2 months ago in the A/UX Technical Response group that maintains the comp.unix.aux newsgroup.

The A/UX patch server is now available to the public using the Internet Address 130.43.6.2 and the domain host name aux.support.apple.com. It can be "ftp"ed with a login name "anonymous" and any password. The comp.unix.aux newsgroup archive is under the /usr/spool/ftp/pub directory.

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ClarisDraw: Hiding Segments of a Polygon or Bezigon

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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This hidden feature in ClarisDraw allows you to change polygon or bezigon segments to a transparent fill.

1. Create a polygon or bezigon (in this example a 5-pointed star).
2. Select the star with the Arrow tool.
3. Choose Reshape from the Arrange menu.
4. Click on the end or the beginning of the segment you want to hide.
5. Press the Caps Lock key down.
6. Command-Control-Shift-Click the other end of the segment.

To show a hidden segment just repeat the steps above. If you want to hide more than one segment at a time then change step 4 so that you are Shift-Clicking multiple segments.
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Installation issues

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Issues During Installation

Most Claris applications come with an Installer which asks you to disable virus checking software before doing an installation. To temporarily disable virus checkers and other system extensions which may conflict with an installation, do the following and then try the installation again:

* Choose About this Macintosh or About the Finder from the Apple menu to find out what version of the Macintosh System you are running.

* For System 7, choose Restart from the Special menu and hold down the Shift key until you see the message "Welcome to Macintosh. Extensions Off."

* For System 6:
1) Open your system folder. Go under the File menu to 'New Folder.' Drag the resultant new folder to the Desktop. You will not need to rename the folder. A handy place to put it is right above the Trash.
2) Drag your System file and your Finder file from the System folder to the new folder.
3) Choose Restart from the Special menu.

Issues After Installation

Sometimes, after you install new software on your Macintosh computer, you experience an increased frequency of lockups, crashes, or system error messages. When this happens, you are forced to turn off the computer and restart the system. These kinds of errors are an inconvenience and can also cause you to lose work.

Most often, these issues are caused by files called Extensions or INITs that you have added to your System Folder. Use the same instructions as above to temporarily disable them. Refer to the System Crashes & Lockups article in this folder for detailed instructions on how to find out which extension is the issue.

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System Crashes & "Bugs"

The following article was taken from the Claris on-line technical library. Claris currently maintains on-line technical libraries on the following services: America Online, CompuServe and AppleLink.

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CRASH WHEN OPENING APPLICATION

If you launch your Claris application and experience a system error just after the Claris screen comes up, it's very likely that you have a corrupt font in your System. Open the System folder, then the Claris folder, and look for the Claris fonts file. Click it once to select it, choose Get Info from the File menu and lock the file. This will prevent all Claris applications that use the Claris Fonts document from scanning installed fonts during launch. If you can't find the Claris Fonts file or want more details on how to find corrupt fonts, read the Claris Fonts article in this folder. Claris Organizer does not use a Claris Font document, see below for troubleshooting.

OTHER CRASHES & ISSUES

Many software issues are caused by conflicts between applications and system extensions. These conflicts can cause crashes and unexplainable behavior. Extensions (known as INITs in System 6) are files that you place in your system folder which enhance the way your system works. If you have extensions, their icons will usually appear on screen as the computer is starting up.

The first step in troubleshooting system crashes or what appear to be bugs or incompatibilities is to disable extensions. The methods for doing this differ for System 6 and System 7, so if you don't know which version you're running, choose About this Macintosh or About the Finder from the Apple menu.

METHOD FOR COMPUTERS RUNNING SYSTEM 7

System 7 has a very handy method built right in for checking extension conflicts. If you restart the computer and hold down the shift key, files that affect the system on startup will be disabled. You should hold down the shift key until you see the message, 'Welcome to Macintosh. Extensions off.'

After that, check to see if the issue has been resolved.

METHOD FOR COMPUTERS RUNNING SYSTEM 6 OR EARLIER

In order to separate the System from the INITs, you have to place them in separate folders and restart the computer. Here are the steps:

1) Open the System Folder. Choose New Folder from the File menu. Drag the resultant new folder to the Desktop. You will not need to rename the folder. A handy place to put it is right above the Trash.

2) Drag the System file and Finder file from the System folder to the new folder.
3) Restart the computer.
4) Check to see if the issue has been resolved.

IF THE ISSUE IS RESOLVED

You've found an extension conflict. The key now is to find out which extension is incompatible. For instructions, refer to the article, Finding Incompatible Extensions, in this folder.

IF THE ISSUE STILL OCCURS

Only a few possibilities remain:

- Holding down the shift key on startup with System 7 doesn't always disable every extension. To be sure they are all disabled, follow the directions for System 6. If there is a system enabler in the Extensions folder, be sure to include that in the new folder you create.

- The Claris application is corrupt and needs to be reinstalled from the original diskettes.

- The System is corrupt. Restart your computer and insert the Disk Tools diskette to start up from the floppy. Open the System folder and throw the System and Finder files into the Trash. Rename the System folder "Old System." Then, Restart and insert the first System installer disk.

If the issue remains even after trying these things, post a message in the message board detailing your situation. The message boards are located in the product folders in the Technical Support area.

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XTND Translation Issues

Troubleshoot XTND translation issues or errors systematically. Here are some techniques for handling XTND errors.

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Claris applications are able to translate a variety of file formats using the Claris XTND System and Claris translators. These auxiliary files must be installed correctly to work. In addition, the Claris XTND System acts like an INIT or extension, and can conflict with other extensions.

If your Claris applications experience any of the following symptoms, it may be time to troubleshoot the XTND system:

* When choosing Open, Place File, Insert, Import or Save As from a Claris application, translators are not listed in the pop-up menu (MacDraw II, MacWrite II, TIFF, EPSF, etc).
* When opening a file in another format, you get the message "File not found."
* When you get error -43.
* When you use the Open command to try to translate a file, you don't see it in the Open dialog, although you can see it when you look in its folder in the Finder.
* When you are importing a graphic into FileMaker Pro and get an "out of memory" message. (In this case, skip directly to step #3 below.)

Solutions

Troubleshoot the issue systematically. The nature and severity of the XTND error determines what kind of solution is necessary. Below are six solutions you may try to trouble-shoot the issue. Each of the six solutions builds on the last, with the very last solution addressing the most severe system issue.

1. Verify that the translator files are installed properly.

There should be a Claris folder in the System folder. Within the Claris folder you need the Claris XTND System and Claris Translators folder (which holds all the individual translators). If you have ClarisWorks 1.0 you need an additional file called ClarisWorks Translators in the Claris folder. This file contains database and spreadsheet translators. If you have everything installed properly and the issue persists, go to step 2.

2. Check the System Folder and Claris application folder for duplicate copies of the Claris XTND System file and/or any translator files.

If multiple copies of the XTND System are found, delete them, then try to open or save a file. If you still can't open or save, go to step 3.

3. Quit the application, then delete the XTND Translator List file (System 6: in the Claris folder; System 7: in the Preferences folder).

Relaunch the application, choose Save As and see if the translators are listed. If the translators are not listed, go to step 4.

4. Check for a possible conflict with an INIT or extension.

Restart the computer with the shift key held down to turn off extensions in System 7. If you are using System 6, create a new folder on your hard drive, drag System, Finder and the Claris folder into it and restart the computer. Then, launch the application, choose Save As and see if the translators are listed; if not, then go to step 5.

5. Create a new folder on your hard drive at the same level as the System Folder (in the main hard drive window) [System 7 only].

Move everything, EXCEPT the Preferences Folder, from the System Folder to the Untitled Folder and restart your computer. If this solves the issue, then move any required preferences files (QuickMail, etc) from the old System Folder's Preferences Folder into the new Untitled Folder's Preferences Folder. Note: you will not be able to copy the Finder Preferences.

To clean up, after you've created the new System folder, throw away the old System Folder as well as the old Preferences Folder; then change the name of the Untitled Folder to "System Folder." If this still does not solve the issue, go on to step 6.

6. Rebuild the desktop (hold down the command and option keys while restarting the computer), then run Disk First Aid or Norton Disk Doctor.

Disk First Aid is included on your System disks. Instructions are included in your computer's owners manual.

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"Insufficient Memory" Error Message During Installation

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If you get the following error message when trying to install or run a Windows application from a floppy disk, "Insufficient memory to run this application; close one or more applications to increase available memory and try again," the likely issue is a bad floppy disk or an incorrect CMOS setup.

Despite the error message indicating a memory issue, you should first run CHKDSK on the floppy disks to check for media errors. In addition, Microsoft documents that an incorrect CMOS setup for the floppy drive will also create an insufficient memory error in Microsoft Knowledge Base+ article #Q86248. For example, you might have a 1.44MB drive configured as 720K.

Other error messages that Microsoft links to an incorrect floppy drive configuration are:

"Cannot find file <drive>:<filename> (or one of its components). Check to ensure the path and filename are correct and that all required libraries are available."
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ClarisDraw: Dimensioning Autosize Line and Guideliner

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Although ClarisDraw does not have the ability to add dimensioning to an object like most CAD programs it is possible to have the line dimensioning feature simulate object dimensioning. This feature is called Autosize Line. Combined with the Guideliner feature it is possible to easily dimension an object. Follow the steps below as an example of how to dimension one side of a rectangle.

1. Choose Guideliner from the Layout menu so that there is a check mark next to it.
2. Draw a rectangle.
3. Select the Line tool and notice that when you move your mouse near the edges of the rectangle that ClarisDraw automatically locates the edge of the object by drawing a guideline on screen.
4. Once you have located an edge then hold down the Shift key and the Mouse button and drag to the opposite edge of the rectangle until the guideline for the opposite edge appears and then let go of the Mouse button and the Shift key.
5. While the line is still selected, choose Autosize Line and Arrows at Both Ends from the Line Style Controls menu/palette.
6. If necessary, move the line away from the object so it appears more like an object dimension.

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Postscript Printers and WYSIWYG Performance - Questions And Answers

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Q. What does WYSIWYG mean?
A. WYSIWYG, an acronym for What You See Is What You Get, is a term referring to the representation on screen of what your page will look like when printed out. The printed page is represented on screen only approximately, since the available resolution in pixels or dots per inch on your monitor screen is much different than the available resolution on your printer. There are various techniques available that improve the approximation of a printed page on screen. One of the more influential pieces to WYSIWYG is font technology.

For instance, let's say you are setting up a layout in FileMaker Pro. You are printing to a postscript printer, you do not have ATM installed, and you are using the font called Helvetica from the Font selection on the Format menu.

The previous example would not give very good WYSIWYG results. Instead, you should select a TrueType font such as Arial instead of Helvetica. Helvetica, which is a printer font, won't have an accurate display on screen because Windows will substitute a different font for the text on screen. You should also edit and use the printer driver's substitution table. Otherwise you could get the Postscript version of Helvetica.

Having to choose a different font for better WYSIWYG behavior would seem to imply that FileMaker Pro is somehow compatible with some fonts and not others. That is partially true, for in fact not all fonts are created equal. TrueType fonts were designed for better WYSIWYG performance.

Q. When I Install A Postscript Printer, Aren't Fonts Installed?
A. Postscript Printers have a selection of fonts built into them, usually including the base 13 core fonts Helvetica, Times, Symbol, and Courier. Most Postscript printers come with a basic set of outline fonts permanently in ROM. After you install your printer driver, then fonts appear in your application font menus. Where do these fonts come from? The Printer driver has the font names and metrics hard coded into it. You do not have to install outline fonts to print, however, if you want to see what your printed documents will look like on screen, you do have to install the same versions of these fonts for the screen. If you don't install the screen version of an outline font, Windows substitutes the screen version of another font. For example if your printer contains the Palatino outline font and you don't install the screen version of Palatino Windows displays the Times-Roman screen font for Palatino. If you want to see what a document will look like on your printer you have to Install a screen versi
on of the font.

Q. Are Arial and Helvetica Identical?
A. These two fonts are not actually identical. Many characters differ only slightly between the two typefaces, but they do differ. For instance, the uppercase C has a downward "spur" in Helvetica, but not in Arial. The uppercase R has a curved "leg" in Helvetica, while the leg in Arial is diagonal. The finishing strokes of the lowercase a and numeral I differ between faces, and the percent sign is made up of perfect circles in one but ovals in the other.

If you format a document with a True Type font the Windows environment will automatically download the font to the laser printer, so what you see on the screen will be the same font as on the printed page. If you format a document with a printer-resident font that you have no screen font for, Windows uses a True Type screen font that most closely matches the selected printer font. The results will not be as WYSIWYG as if you had selected a Postscript font, but may be more WYSIWYG than without True Type technology. True Type fonts are not Postscript fonts. They may act differently, space differently, and appear differently. Typefaces based on different technologies can't be interchanged at will. You can mix them and match them, but be aware that a difference as small as one pixel can sometimes mean that a block of type will fit on a single line or that it will not.

Q. Will text perfectly match using the same font technology on screen and printer?
A. No, but almost, and certainly much better than it used to. Text can be several lines longer or shorter when printed to a higher resolution printer. Postscript Type 1 characters suffer from rounding errors. Each character in a Postscript typeface counts as a certain width on a line. A character at a small size, such as 10 pt., might be 7.5 pixels wide on a computer monitor. But because it is impossible for an application to give a character half a pixel, this character spacing is rounded up, giving the character a whole 8 pixels. Over the length of a line, these rounding errors can add up. When the document is printed on a Postscript printer of a different resolution, this character spacing rounds differently, which can result in different line breaks and a different layout for the whole job.

True Type tries to handle these rounding errors by giving applications more information about each character. An application can add up all the fractional pixel widths of each character on a line and then must round off only the pixel count at the end of each line, not the pixel count for each character. This theoretically results in True Type documents with a rounding error of only one pixel per line, instead of many. This however is enough to throw off the word wrap of a line also. A difference of a single pixel can mean that a word like "a" or "I" will fit at the end of one line instead of wrapping to the beginning of the next line.
Published Date: Feb 18, 2012

Macintosh: Converting Vector Data to QuickDraw Data

How many vectors is the Display Card 8/24 GC capable of handling? I am interested in high-performance CAD. I assume that this number depends on whether or not the expansion kit is installed. Will you give me the data for both versions?

This article has been archived and is no longer updated by Apple.

The Macintosh, like most desktop computer systems today, is a raster-based image system -- not a vector-based system. Vector data can be entered, but needs to be converted to a line drawing system based on cartesian coordinates for displaying on the screen. Specifically, for the Macintosh, this means that the vector data needs to be converted into QuickDraw data and then drawn with QuickDraw routines.

If you want to create your own CAD program, you need to understand both the vector system and the QuickDraw system, as well as do the conversion between the two methods. Your implementation of your vector system will determine the number of vectors handled.

On the other hand, if you want to use a commercial application, the vector limits are a specification of that commercial application. The application also converts the vector information into QuickDraw information for screen display. However, some commercial developers have bypassed QuickDraw and written directly to the Macintosh hardware. In these instances, the applications do not benefit from the accelerated QuickDraw of the new Display Card 8/24 GC. These applications also have a higher probability of breaking on newer models of the Macintosh.

The speed at which vectors are handled (as vectors) depends on the application's implementation and the speed of the CPU on which that application is run. The faster the CPU, the faster the application. The speed of the conversion from vectors to QuickDraw is also application- and CPU speed-dependent. The speed with which QuickDraw is handled is a function of the Display Card 8/24 GC and the CPU speed.

Expanding the memory of the Display Card 8/24 GC allows a larger off-screen bitmapped image to be stored directly on the video card. This speeds up the movement of images larger than the screen as they move on to and off of the screen. The expanded memory acts a holding space for the off-screen bitmapped image.

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Segment Load Failure Errors in Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If the error message "Segment Load Failure" appears during installation, the likely cause is that the Files= setting in the CONFIG.SYS file is set too low. You should edit the CONFIG.SYS file and change the number after the Files= line to a higher value.

"Segment Load Failure" errors are generated if a discarded code segment has been damaged or moved, or if Windows lacks the system resources to load a file, as in the case when there are not enough MS-DOS file handles.

Microsoft Windows loads programs into memory in segments (64K blocks of memory) marked fixed, movable, or discardable. Windows can unload discardable segments when it needs more memory for other applications. When an application needs to access a segment of code that is not in memory, Windows loads it from the hard disk. If Windows cannot load the segment for some reason, it generates a "Segment Load Failure" error.

If You Are Running Windows for Workgroups 3.11:
When you try to open or copy a file larger than 2 megabytes (MB) with Windows for Workgroups 3.11, you may receive one of the following error messages: "Segment Load Failure" or "Insufficient Memory."

These errors occur if both of the following conditions exist:

- You are using a permanent swap file without 32-bit disk access enabled. This causes paging to occur through MS-DOS.
-and-
- You are using 32-bit file access. Since 32-bit disk access is disabled, the real-mode mapper (RMM.D32) is used to provide 32-bit file services.

These errors do not occur if the permanent swap file is on a drive with 32-bit disk access enabled or if 32-bit file access is disabled.

To work around these errors do one of the following:

- If your hard disk controller is WD1003 compatible, enable 32-bit disk access, or disable 32-bit file access.

Microsoft has confirmed this to be a issue in Microsoft Windows for Workgroups version 3.11.

This size of the file needed to trigger this error is not always 2 MB. The limit is 512 multiplied by the size of the allocation unit for the drive where the target file resides. The allocation unit size is commonly 4096 bytes, thus the apparent 2 MB limit. In cases in which the allocation unit size is different, the limit is also different.
Published Date: Feb 18, 2012

Some Tips on Printing Envelopes with a StyleWriter or StyleWriter II from ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Here are some tips for printing envelopes to an Apple StyleWriter II printer:
1. Set the paper size in Page Setup... to #10 Envelope
2. Make certain the orientation icon is set to portrait (upright)
3. Choose Document from the Format menu to set the margin settings to:
Top Bottom Left Right
.29 .29 .75 .75

The two types of StyleWriters actually feed envelopes differently so it does make a difference which printer you have.

1. The StyleWriter has a slot in the back where envelopes are fed in, top first, one at a time.

2. The StyleWriter II has an adjustable feeder tray which protrudes from the top where envelopes are fed. There is a lever on the right hand side which you must switch to envelope.

Putting the envelopes in the right place is only half as important as placing them in at the right TIME. The StyleWriter will try to eject the first envelope it senses sitting the in feeder. The trick is to issue the Print command; wait for it to complain that the printer is out of paper; THEN place the envelope in the feeder (up side down) and click the Continue button or press return. This way the envelope will not be ejected until it has been addressed.
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Decimal Tab Does Not Align Numbers Properly When Printing to a Hewlett Packard DeskWriter

This issue is particularly common when some data has been underlined.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If the decimal tabs are not aligning even though the screen looks OK and all techniques have been followed for aligning decimal tabs, you might need to look at whether you are using an Hewlett Packard Deskwriter. If so, make sure their HP Fonts are installed in the correct folder in the system folder. (The HP Fonts belong in the HP Folder in the Preferences folder. Restart and rebuild desktop and all should be well.)

This issue is especially pronounced when aligning three decimal tabs underneath each other with the middle section underlined. Hewlett Packard tech support says printing with True Type Fonts does not perform well when underlining is used.
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Inserting or Opening PICT, EPSF or GIF Files with ClarisWorks on a Performa

Inserting or Opening PICT, EPSF or GIF Files with ClarisWorks on a Performa may result in the appearance of strange or garbage characters.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Opening or inserting files that are in PICT, EPSF or GIF format may result in the appearance of garbage text on a Performa. To avoid this, select Control Panels from your Apple menu at the left-hand side of your menu bar next to the File menu. Open the Performa control panel. Deselect the options, system protection and application protection. Now insert or open the file again. The correct translator should now be able to convert the file successfully.

This control panel conflicts with the Claris XTND system and translators' ability to accurately convert the file formats.

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Installation Crashing on a Power Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Due to differences in memory management between the Power Macintosh and earlier Macintosh computers, it may be necessary to increase the RAM allocation to the Installer application in order to successfully install applications on a Power Macintosh. As a general rule, try doubling the allocation listed in the Preferred size box in the Get Info window.

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Can‘t Print Multiple Copies in ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks may only print one copy of a document, even if you specify multiple copies in the Print dialog box. In the case of the Canon BJC600 driver version 2.0c, switching from color to black-and-white only printing allows you to print multiple copies. Microsoft Write, which ships with Windows, prints multiple copies fine.

Microsoft reports a similar problem with Excel 5.0 and the Hewlett Packard DeskJet 500C and 550C driver versions 3.0 and 3.1.
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GS/OS: How To Identify Version Numbers

Could you tell me if there is an easy way to determine the version of GS/OS installed on different systems?

I looked in "About the Finder", and the Control Panel DA, and I did "Get Info" on several files the in System file, but none gave me the information I need.
This article has been archived and is no longer updated by Apple.
To find the version of GS/OS and associated files installed on a particular disk, hold the space bar down during startup. This presents a text screen with the version numbers displayed.

The version number displayed at the top center of this screen correlates as follows:

On-Screen Version #	Date	GS/OS Version (as Labeled on Disk)
4.0	Aug 18 88	GS/OS 4.0
3.00 (or lower)	May 30 89	GS/OS 5.0
3.02	Dec 15 89	GS/OS 5.0.2
3.03	Aug 20 90	GS/OS 5.0.4
4.01	Mar 04 92	GS/OS 6.0

- On-screen version numbers lower than 3.00 indicate GS/OS 4.0

- ProDOS 16 displays a startup screen with "PRODOS 16" on it

- System Disk 3.2 indicates ProDOS 16 v1.6

- System Disk 3.1 indicates ProDOS 16 v1.3.

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ClarisWorks for Windows Install Fails Under OS/2

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

OS/2 can be installed on a system that already has DOS installed or can be installed as the only operating system. If you install ClarisWorks for Windows on a system that only has OS/2 installed (and did not already have DOS installed) at 98% done you will get the error message "Could not open the file named: C:\\DOS\\DOSHELP.HLP". This file exists under DOS but not under OS/2.

What the installation was doing at this point was creating the Program Manager group and the ClarisWorks icon and the CLARIS.INI. You will need to manually create the ClarisWorks icon in Program Manager by using File-New-Program Item and setting the command line to 'C:\\CLWORKS\\CLWORKS.EXE', assuming you installed ClarisWorks in the default C:\\CLWORKS directory. When you run ClarisWorks for the first time it will ask for your User Name, Company Name, and Registration Number.

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Foreign File Format on Single Sided Disks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you save a document from ClarisWorks and other programs in a generic file format like DBF, DIF, PICT, etc. onto a single sided disk ClarisWorks will not open these documents from the disk. If you copy these documents to your hard drive ClarisWorks will open the files without any problems.

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Home Pack Template Does Not Print All Records When Printing To An ImageWriter II

This is only a issue when printing to an Apple ImageWriter II.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The ClarisWorks Stationery template called Names and Addresses (DB) may not print as expected to the ImageWriter II printer. This template is part of a collection of templates that are included in the ClarisWorks Home Pack. You can find this particular file in the folder provided called Correspondence. Two of the layouts included in the Names and Addresses template are for specific paper sizes and specific types of printers.

The layout named, "Daytimer" was not designed for use with computer paper and an Apple ImageWriter II printer. When printing from this layout to an ImageWriter II with the Page Setup paper size set for Computer Paper, only the first two columns will print, preventing perhaps several records from being printed. If the desired output is to print all three columns, but not necessarily for use with a Daytimer, then change the Orientation (see Page Setup) to landscape (or wide).

The layout named, "Avery 5160" was not designed for use with computer paper and an Apple ImageWriter II printer either. In order to print mailing labels with computer paper and the ImageWriter II printer, you must have label printer paper that is specifically designed for tractor fed printers, such as Avery labels number 4022, 4065, 4143, and several other 4000-series labels from Avery.
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How to Exclude the Lowest Number in a ClarisWorks Spreadsheet

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
How do I get a SUM function in a ClarisWorks spreadsheet to exclude the lowest number in a range of numbers from the total and we don't know which cell it will be in?

Answer: After creating the SUM formula,

1) Precede the lowest number with an option space character

OR (even better)

use =SUM(C1..C20)-MIN(C1..C20).
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ClarisDraw: How to Move a Paint Image Down and Right

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
How to move a paint image down and to the right using Origin.

1) Display the Graphic Ruler and change the Zero point. The origin values are Points or Pixel values.
2) Set both Horizontal and Vertical Ruler zero points at the bottom right corner of the paint frame.
3)Select the image in the paint frame and then change the origin values.
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How to Open a Particular ClarisWorks File when Launching the Application

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In Program Manager, under File, choose Program Item (this is referring to icons). In the Description section, type whatever description you wish. In the Command Line, type the EXACT location of the file (i.e. which directory it is located in) along with the file name EXACTLY as it appears in File Manager. For example, a ClarisWorks file called "Billings.cwk" that is in the "CWORKS" directly on your C drive will have an icon with these properties:

Description: My billing file
Command line: C:\\CWORKS\\Billings.cwk
Working directory: C:\\CWORKS

To select an icon, you then proceed to click on the "change icon" button and select an icon.
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How to Tell if ClarisWorks Help is in English or French

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To make sure your version of ClarisWorks French has the help in French, check the CLWORKS.HL_ file date (or clworks.hlp stuffed name) on the disk. It must be August 25,1993. June 3rd 1993 has help in English.
These two versions have the same version number (v1).
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Missing or Duplicated Lines of Text (WP)

Sometimes, this occurs when a word processing document that was created on one computer is opened on another computer.

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In ClarisWorks word processing documents, lines of text at the bottom of a page may seem to have disappeared; or to have been duplicated, appearing at the bottom of the page and again at the top of the following page. This occurs, sometimes, when a word processing document that was created on one computer is opened on another computer. This is the result of ClarisWorks incorrectly determining the flow of text from one page to another. It can be corrected by procedures which cause the document to be repaginated. The quickest of these is to simply click on the menu bar icon to change line spacing and immediately change it back to the original setting.

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No Blinking Cursor in a Word Processing Document

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When using ClarisWorks on a CompUSA CompuDyne system, you may notice that when you open the word processor you cannot see a blinking cursor. This issue has also been reported on a Compaq Prolinea MT 4/66. You will still be able to type normally, but editing your documents later may be difficult. This is a reported issue with the CompUSA preinstalled video driver (CLGD5426/5428).

To correct the issue, complete the following steps:

1) Exit ClarisWorks completely.
2) Go to the Main window in Windows.
3) Double-Click on the Windows Setup icon.
4) Select Change System Settings from the Options menu.
5) Click on the down arrow to the right of the Display driver that is listed.
6) Scroll down the list of installed drivers and click on VGA (the one that says only VGA).
7) Click OK. (The System may tell you that the driver is currently installed and ask if you wish to use the currently installed driver or an update driver from another source).
8) Click on the Current button.

After you've chosen the driver, you must restart Windows so that the change takes effect.

After the change, ClarisWorks will display the cursor blinking properly.

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Issues Printing to Certain Canon Printers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When printing ClarisWorks documents to the following Canon printers, the following issues may be encountered:

Canon LBP 430 :

When using this printer with the 1MB memory which comes built-in, you will get an error when printing large documents (300KB or bigger in file manager) because the printer needs more memory. Upgrading the printer memory to 5MB will eliminate any issues with printing large and small ClarisWorks documents. Canon technical support is aware of this issue and has told Claris Software Quality Assurance that more memory is needed to print documents larger than 300K.

Canon BJ 600c:

When printing large pictures in ClarisWorks documents with the printer option "Screen Matched Color" selected in Print Setup, there may be some white lines going across the graphic.
To correct this issue, set the color option in the Print Setup dialog to "Print Color" from the combo box, instead of the default "Screen Matched Color".

A rotated transparent text frame with a white background will sometimes print with a light grid pattern as the background color. To correct this issue, fill the frame with white color before rotating.
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Transferring Apple II AppleWorks data to ClarisWorks for Windows

I am getting rid of my Apple II and getting an IBM compatible running Windows and I am interested in using ClarisWorks for Windows but I have a lot of data in AppleWorks that I would like to use. What am I to do?

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This article has been archived and is no longer updated by Apple.
'Cross-Works Apple II <> IBM PC File Exchange Utility' by SoftSpoken Inc. to the rescue. This utility will allow you to transfer your Apple II AppleWorks data to a IBM PC compatible by using the serial port of both computers, and will convert the information at the same time to a popular IBM application format that could be used in ClarisWorks, below is a partial list of it conversions:

AppleWorks Word Processor to Generic Word Processor
AppleWorks Spreadsheet to Lotus 1-2-3 v2.01
AppleWorks Data Base to dBASE III, III+, IV

The Generic Word Processor, Lotus, and dBASE data could then be brought into ClarisWorks for Windows and used.

(Cross-Works can translate from AppleWorks Word Processor to WordPerfect v4.2 documents; however, the WordPerfect translator in ClarisWorks requires WordPerfect v5.1 documents).

For future information please contact:
Softspoken Inc.
P.O. Box 18343
Raleigh, NC 27619
(919)870-5694

Mention of third party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Claris assumes no responsibility with regard to the performance or use of third party products.
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Ungroup Windows Metafile (*.wmf) Loses Color in ClarisWorks for Macintosh

Bringing a file from ClarisWorks 1.0 for WIndows loses color in ClarisWorks for Macintosh when saving a Windows Metafile (*.wmf) as a graphics document (*.cwk).

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This article has been archived and is no longer updated by Apple.
After running through DOS to Macintosh conversion and opening in ClarisWorks for the Macintosh the picture comes across as one grouped picture. If you ungroup this picture the color tends to be lost on 90% of the picture.

Work around: Before saving the document in Windows ungroup the entire picture and then save. When converted and opened in ClarisWorks for the Macintosh the picture will open ungrouped. The graphic can then be altered or grouped without any color loss.
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Windows Missing Rulers and Screen Items

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If a customer does not have a ruler on the screen, no typing appears, there is a thick line on the left hand screen, no margins, and no cursor but the mouse moves and old files seem "intact", try the following:

1) Change the video driver to VGA

2) See if they are using HM520 printer driver as default. If so, change the driver default. As long as the HP520 is not the default printer, this problem won't occur.
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"Unable to Quit..." Error Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When using ClarisWorks for Windows, you may sometimes receive the error message: "Unable to quit at this time. Please close all dialogs before quitting Windows." You may get this message even though there are no dialogs open. This can occur when trying to close a floating palette or a document, or when trying to exit out of ClarisWorks.

This is the result of an incompatibility between ClarisWorks and certain video drivers. It has been confirmed in the case of certain SpeedStarPRO video drivers.

Though this issue may be intermittent, the only way to consistently avoid it is to use another video driver. The most stable video driver is the VGA driver that ships with Microsoft Windows.

To change your video driver:

1. Open the Main group in Program Manager
2. Double-click on the Windows Setup icon
3. Choose Change System Settings from the Options menu
4. Click on the down arrow to the right of your current Display listing, scroll down the list of drivers and select VGA.*
5. Click the OK button
6. If the driver is already on your hard drive (which is usually the case), you will see a dialog saying: "A driver for this display is already on the system. Do you want to use the currently installed driver or install a new driver? When you see this message, click the Current button. If the driver is not already on your hard drive, you will be prompted to install it from your Windows diskettes.

7. Once you have chosen the VGA driver, you will see a dialog saying: "You need to restart Windows so that the changes you made will take effect. Do not press CTRL+ALT+DEL to restart Windows -- This will result in data loss. Restart Windows now?" When you see this message, click the Restart Windows button.

*If the VGA driver proves unacceptable, try using another driver within the driver family you were originally using, but select one that is either lower resolution and/or supports fewer colors than your original driver.

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Tips To Increase Printing Speed In Windows

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Here are three quick tips to speed up printing in Windows:

1. Set Fast Printing Direct to Port Printing
2. Set TEMP to a RAM Drive
3. Set Stacks=0,0

Here's how:
1. Fast Printing Direct To Port
In the Windows control panel under printers, highlight your printer and click connect. Check fast printing direct to port. Unselecting it you will bypass the Windows Comm driver and will print through DOS, as if you were printing to LPT1.DOS.

2. Directing temporary swap files to a RAM drive
Setting TEMP to a RAM Drive Printing speed is partly determined by the speed of the drive in which the Temp file is located. Many applications send data to the printer from a temporary file on the hard drive. Therefore, the temporary file can send its data only as fast as the hard drive can transfer data. By putting the temporary file in a RAM drive, the data transfer speed increases making printing faster. Depending on how your network is set up, printing may be fastest with just a RAM drive, just a print spooler, or both. You will need to experiment to find the combination that works best for you. If you run a shared copy of Windows and want to put your temporary files on a RAM drive, place the RAM drive on the server, not the workstation.

3. Changing The DOS Stacks setting
Setting Stacks=0,0 MS-DOS reserves some storage space -- a stack -- for interrupt-handling code for hardware interrupts. Under MS-DOS 5.0 there are nine default stacks, each 128 bytes in size. This memory space is usually empty, waiting to hold interrupt code if there is a hardware interrupt. Multiple stacks slow down the system. Stacks decrease execution speed not only because they take up memory, but also because they spend time swapping interrupt code into and out of memory each time they're used. The STACKS command, which sets the number of stacks and their size, can also disable the stacks altogether. In the CONFIG.SYS file, specify:

Stacks=0,0

This setting forces interrupts to be handled by whatever stack happens to be loaded when the interrupt occurs. Removing the MS-DOS stacks forces MS-DOS-based applications to provide their own stacks; those that do not can cause stack overflows. Verify that your MS-DOS-based applications are don't need this before removing all stacks.
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Sources for Distribution/Marketing of Education Solutions and Templates (All)

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If you are an educator and have a ClarisWorks or FileMaker Pro solution you would like to distribute, sell, or get published, here are three possible marketing sources:

Intellimation - 800-3-INTELL and ask for Developer Kit or call Becky Snyder at 805-968-1911, X306 (K-12 and/or Higher Education - they have two separate catalogs)

Teachers Idea and Info Exchange - Jim Carlisle - 402-483-6987 (K-12)

ClarisWorks Users Group - Kathleen Merritt - 313-454-1969.

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ClarisDraw: Changes Between MacDraw Pro and ClarisDraw

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New features that ClarisDraw offers over MacDraw Pro:

Drawing Tools
- Shapes palette (16 new shapes)
- Regular polygon
- Straight connector
- Angled connector

Text Handling
- Faster editing
- Linked text blocks
- Text on a path
- Text wrap
- Condense option
- Extend option
- Floating text styles palette
- Outlining

Painting/Image Editing (complete list of features)
- Spray can
- Pencil
- Brush tool
- Marquee selection
- Lasso
- Eraser
- Paint eyedropper
- Wand
- Contrast
- Brightness
- Perspective
- Shear
- Distort
- Tint
- Image size and resolution options

Intelligent Features
- Smart Shadow
- Smart Embossing
- Smart Align
- Smart Size
- Replace Clones
- Smart Gradients (gradients that rotate with objects)

Precision
- Guideliner
- PointGuide
- Show Size palette (includes object placement, size, rotation and number of vertices)

General
- Create bezigons from circles, ovals, rectangles, rounded rectangles and arcs
- Text edit without ungrouping
- Presentation effects (including automatic loop, background options, advance, fit to window, center on screen, presentation cursor)
- New slide layer access popup menu
- Drawing document page size control
- Cross platform transparency (upon release of the Windows version in late 1994 or 1995)
- Drag and drop library
- Clip art library - 12 libraries, 2,400 elements
- CGM File Import/Export

MacDraw Pro features not included with ClarisDraw:

- Extensive, professional-level color editing within a palette
- 24-bit color in drawing mode. ClarisDraw supports this in Paint mode
- Pantone palettes
- Savable patterns palette
- Text Greeking
- Small Caps text style
- Text Kerning by pairs
- Two color patterns
- Customizable Font and Pen size menus
- Mouse selection sensitivity (High-Medium-Low)

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ClarisDraw: What It Lacks with Respect to MacDraw Pro:

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
- Color editing/manipulations. MacDraw Pro could edit colors from any color palette based on RGB (Red/Green/Blue), HSL (Hue/Saturation/Lightness), CMYK (Cyan/Magenta/Yellow/Black), color range, cooler colors, warmer colors, lighter colors, darker colors, blending, and more. For an excellent overview of what these terms mean and color use in general, please see the MacDraw Pro Color Guide.

ClarisDraw can only edit colors within the 256 color palette. It uses the Apple Color Wheel, which only allows numeric color editing using RGB and HSL.

- 24-bit color. ClarisDraw supports this only in Paint mode. MacDraw Pro also included Pantone[a] palettes ?? ClarisDraw does not.

Color Lookup Table (CLUT) import of non-native files

- Image Colors Feature (ability to create a new color palette consisting of the colors in the selected image)

- Savable patterns palette

- More than 64 gradients, 62 patterns, or 256 colors in a palette. MacDraw Pro could also have FEWER colors in a palette. With ClarisDraw, it's a fixed number only: 81, 168 or 256 colors

[Note: 24-bit color, or a total of 16 million colors, are available in any document when importing a bitmapped file. The 256-color limit in a palette doesn't mean that only 256 colors are available for an image - it simply means that 256 colors are the limit within the color palette. We chose the 256 most commonly used colors for the palette; you can add/delete colors so the palette better suits your needs.]

- View palette items by Name (except library palette)

- Spell Checking Options (spell check as you type, flash menu bar instead of beep, etc.)

- Text Greeking

- Small Caps text style

- Text Kerning by pairs

- Reshaping during creation of polygons and bezigons

- Two color patterns

- User definable Favorites Bar

- Keyboard shortcuts displayed in dialogs when you hold down the Command key

- Customizable Font and Pen size menus

- Mouse Selection Sensitivity (High-Medium-Low)
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ClarisDraw: Keyboard Shortcuts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Connector Options: Command-single click on connector tool

Round-Corner Rectangle Options: Command-single click on round-corner rectangle tool

Arc Options: Command-single click on arc tool

Regular Polygon Options: Command-single click on regular polygon tool

Preferences Box: Double-click on space below tools

Layer Manager: Command-single click on layer popup

Group Editor: Command-double click on a group

Emboss Options: Command-single click on SmartEmboss button

Shadow Options: Command-single click on SmartShadow button

Select All: Double-click on paint selection rectangle

Zoom to 800 Percent Viewing (Fat Bits): Double-click on paint pencil tool

Paint Brush Options: Double-click on paint brush

Edit the Spray Pattern: Double-click on paint spray can

Erase the Entire Paint Frame: Double-click on the paint eraser tool

Colors and Gradients Dialog Box: Command-single click on any color icon

Pattern Editor: Command-single click on any patterns icon

Gradient Editor: Command-single click on the Gradients icon

Pen Size Editor: Command-single click on the pen sizes icon

Arrow Editor: Command-single click on the pen styles icon

Define Text Styles Box: Command-single click on the text styles icon

Jump to End or Beginning of Layers/Slides: Click-hold either layer/slide button

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ClarisDraw: Clones Sometimes Disappear from Layers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, placing a clone on an upper layer, selecting an object from a lower layer, then Undoing "Use Library" results in both the clone and selected object disappearing.

To reproduce:

1. Launch ClarisDraw.
2. Draw an object on Layer 1.
3. Create a New Layer.
4. Open any library, then drag a clone from it on Layer 2.
5. Option-click on the object from Layer 1 to select it.
6. Undo Use Library.

Notice that both clone and the selected object have disappeared. Choosing "Redo Use Library" brings both back.
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ClarisDraw: Color and Gradient "Open"/"Save" Dialog Boxes Grayed Out

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisDraw ships with a number of specialized 256-color palettes. These palettes can be opened from the "Colors and Gradients" dialog from the LAYOUT menu. You can also use this dialog box to save palettes that you've modified.

However, neither the "Open" nor the "Save" buttons will be available unless you currently have the 256-color palette selected.
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ClarisDraw: Color Lost when Ungrouping Text Saved as PICT

In ClarisDraw 1.0 software, text saved as PICT then reopened looks fine, but ungrouping it causes the text color to change on the display and printed output.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0 software, text saved as PICT then reopened looks fine, but ungrouping it causes the text color to change on the display and printed output. This happens with any palette other than the 81 or standard 256 color palettes (note that ClarisDraw uses the 168-color palette by default).

To see this occur follow the :

1. Launch ClarisDraw.
2. Draw a cylinder about 2.5" by 3".
3. Type a line of 36 point text, make the text purple, use the Palatino font.
4. Select all and choose Bind Text to Object.
5. Save as PICT.
6. Open the PICT. (Notice the color looks correct.)
7. Print (to compare) to a color LaserWriter printer and a color QuickDraw printer, such as a color DeskWriter.
8. Ungroup the PICT.

Notice the text color has changed dramatically. The work around is to change the pallette to either an 81 color pallette or a 256 color pallette. This can be accomplished by going to the Layout menu and choosing Colors and Gradients, and then selecting one of the other pallettes. The Claris graphics development team is aware of the issue.
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Crash After Choosing "Revert to Saved"

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, when you have a default document open, then choose ÒRevert to SavedÓ in another document that has a Custom Color Palette loaded and open, your machine will get a bus error.

To reproduce:

1. Launch ClarisDraw
2. Create a new document
3. Open the Colors and Gradients dialog. Click 256 colors, then click ÒOpenÓ and load one of the extra Color Palettes that ship with ClarisDraw
4. Create a rectangle, tear off the Fill Color palette, and fill the rectangle with a color.
5. Create a paint frame.
6. Save the document, move the rectangle, and then choose ÒRevert to SavedÓ from the FILE menu.

Your machine will crash.

The Claris graphics development team is aware of this issue.
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Crashing When Opening a ClarisImpact Library (PowerMacintosh Only)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisDraw 1.0 may crash when you open a ClarisImpact Library with a rotated Bar Chart, Table or Timeline.

To reproduce:

1.Launch ClarisImpact 1.0v3.
2.Create a new library, add a custom rotated Bar Chart (or Timeline or Table), Save.
3.Launch ClarisDraw (PowerMacintosh version).
4.Open the saved Library.

The machine will crash. Note: Libraries with other rotated objects, like Calendar and Outline, work fine. This problem does not occur with the 680X0 version of ClarisDraw.

The Claris graphics development team is aware of the issue.
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Crashing When Opening MacDraw Pro Libraries in ClarisDraw

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This problem is fixed in ClarisDraw 1.0v2.

With ClarisDraw 1.0v1, if you try to open a MacDraw Pro library as a regular document, when no document window is open in ClarisDraw, your machine will crash.

To reproduce:

1. Launch ClarisDraw.
2. Close the new document (if any).
3. Open any MacDraw Pro library via the open dialog (open it as if it were a regular document - not a library).

The library will open, and your machine will hang.
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Macintosh: Serial Port Data Transmission Rate Limit

The SerReset function only lets me set the serial port speed to 57,600 baud. How can I set the serial port to support 203.4Kb?

This article has been archived and is no longer updated by Apple.
The maximum nominal data transmission rate that you can select through the Macintosh Toolbox is 57,600 baud. This is the maximum rate that the Macintosh II computer can maintain for transmission of serial data, when the SCC port is operating in an asynchronous, interrupt-driven fashion, timed by the 3.672-MHz clock.

AppleTalk operates at a nominal data transmission rate of 230.4Kb. This higher rate is possible because AppleTalk communications are not interrupt-driven. During AppleTalk communications, the AppleTalk Driver has complete control of the computer. Although AppleTalk uses a synchronous communication protocol, the AppleTalk Driver runs the SCC chip in asynchronous mode, timed by the 3.672-MHz clock.

The maximum possible transmission rate for serial data ranges from approximately 500 Kbaud on the earlier Macintosh computers and the Macintosh Classic to 900 Kbaud on the modular Macintosh II family. To achieve such data transmission rates, the SCC would have to be operated in synchronous mode timed by an external clock, and the serial driver would have to have complete, uninterrupted control of the computer.

The transmit-data and receive-data lines of the Macintosh II serial interface conform to the EIA standard RS-422, which differs from the more commonly used RS-232-C standard in that, whereas an RS-232-C transmitter modulates a signal with respect to a common ground, an RS-422 transmitter modulates the signal against an inverted copy of the same signal (to generate a differential signal).

The RS-232-C receiver senses whether the received signal is sufficiently negative with respect to ground to be a logical 1. The RS-422 receiver, on the other hand, senses which line is more negative than the other. An RS-422 signal is, therefore, more immune to noise and interference and degrades less over a distance than an RS-232-C signal.

If you ground the positive side of each RS-422 receiver and leave the positive side of each transmitter unconnected, you've converted to EIA standard RS-423. You can use this to communicate with most RS-232-C devices over distances up to approximately 50 feet.

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Editing Gradient Colors in Paint Mode DoesnÕt Work Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, when working with a paint frame that has a color depth of thousands or millions of colors, if you try to edit the colors in a gradient you will get unpredictable results.

To reproduce:

1. Launch ClarisDraw. You must begin with the 168-color palette as default
2. Draw a paint frame. Change the paint frame setting to "Thousands" in the Resolution and Depth dialog box.
3. Tear off the gradient palette.
4. Double-click a gradient.
5. Edit the colors.

You will see that, as you choose different colors, the gradient doesn't always use the correct ones.

The Claris graphics development team is aware of this issue.
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Editing Palette Colors DoesnÕt Work Properly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, if you try to edit colors in paint mode with the paint frame set to a color depth of thousands or millions of colors, you will see the wrong color in the editor. It also corrupts the 168-color palette after exiting paint mode (colors show up as black).

To reproduce:

1. Launch ClarisDraw.
2. Create a paint frame and tear off the fill color palette.
3. Select Resolution & Depth, select thousands or millions, and click OK.
4. Double-click a color in the middle of the palette.

Notice the color previewed is not the color you double-clicked.

5. Change its hue and brightness dramatically. Click OK.
6. Press Enter to exit paint mode.

Notice the color palette is corrupted and shows 256 colors even though the palette should still be the default 168.

The Claris graphics development team is aware of the issue.
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Flipped Text Does Not Export to MacDraw Pro Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, saving flipped text to MacDraw Pro format will cause flip information to be lost in the saved MacDraw Pro file. Horizontal text will become unflipped, while vertical is rotated by 180 degrees.

To reproduce:

1. Launch ClarisDraw.
2. Set font size to 24 point.
3. Create a text object: "This is some text."
4. Duplicate text object twice.
5. Flip horizontal one of the duplicates, flip vertical the other duplicate.
6. Save as MacDraw Pro.
7. Either open the file in MacDraw Pro, or open it back into ClarisDraw.

You will see that the horizontally flipped object has lost its flip, and the vertically flipped object is rotated 180 degrees.
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Gradient Palette Not Updated (PowerMacintosh Only)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
With the PowerMacintosh version of ClarisDraw 1.0, when a gradient palette file is left open in one document, the gradient palette is not updated if opened simultaneously in another document.

To reproduce:

1. Launch ClarisDraw
2. Tear off the gradient palette, and leave it near the bottom of the screen
3. Draw a rectangle and fill it with a spectrum gradient
4. Double-click the eyedropper and click on the object
5. Click each gradient in the top row of the palette (applying this gradient to each)
6. Save the palette
7. Open a new document
8. Open the saved gradient palette.

Notice the open palette isn't updated, unless it's under the Open dialog. Collapsing and uncollapsing refreshes it.
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How To Determine Where Text Binding Starts

Determining the position where bound text will begin to wrap around an object.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, the "Bind Text Options" dialog box contains a setting for choosing the origin point at which text will begin binding to that object. This setting is referred to as the "Starting Point - percentage along path," and is a value in the range 0 through 100 percent. Settings of zero and 100 are equivalent.

So what is zero percent and what is 100 percent? How does ClarisDraw use these values to determine where text will begin binding on any particular object? The answer is, it depends on the object.

Assuming you have the Starting Point set to zero, and "outside path" selected, the text starts:

* Line: at the place you began drawing the line, flowing in the direction you drew the line.
* Rectangle: upper left corner
* Oval: the "nine o'clock" position (Figure 3).
* Arc: think of the arc as a portion of a clock face. Using that analogy, the starting point will be the counter-clockwise-most point on the arc
* Polygon: if drawn clockwise, the starting point will be the first point that is drawn. If drawn counterclockwise, the starting point will also be the first point drawn, but the text will flow inside the polygon. This is because of the way Apple's QuickDraw routines define objects. A good rule of thumb is: the text will flow in the same direction in which you drew the polygon.
* Regular polygon: depends on the number of sides of the regular polygon being drawn. If the regular polygon has an odd number of sides, the starting point is the top of the polygon; if it has an even number of sides, then the starting point of bound text is the "three o'clock" position.
* Bezigon: same as for polygons
* Shapes palette: depends on the shape being drawn. Generally, the starting point is either the "nine o'clock" position, or the upper left of the object.

You cannot bind text to connectors, though you could create a polygon that follows the connector path and bind text to that object.

The above starting points also hold true if "inside path" is selected, except that the text is bound to the inside of the object, and flows in the opposite direction (as it must: the bottom of the text is always the portion that is bound to the object). The exceptions to this are the polygon and Bezigon tools, as noted in their descriptions.

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Layers Versus Slides

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In ClarisDraw, layers and slides are different names for what is essentially the same thing.

When creating a drawing, layers can be used in a way very similar to clear plastic overlays in a book or drawing. There is the bottom layer, which is always opaque and which all the other layers build on. Subsequent layers sit "on top" of the bottom layer; they can be set to be either transparent, so all layers beneath show through, or opaque, so lower layers are concealed. Layers can also be hidden, so that their contents can be concealed until needed. Finally, layers can (and should) be renamed; by default, ClarisDraw gives new layers the sequential names "Layer 1, Layer 2," and so forth. The popup layer control at the bottom of the screen shows the document's layers, and renaming each layer with a descriptive name makes navigating through layers much quicker and easier.

The popup layer control lists layers from top to bottom, with the bottom-most layer listed in the bottom of the popup-just as layered sheets of paper would be in real life. The "Layer Manager" allows you to adjust layer names, stacking order, and whether the layers are transparent, opaque or hidden. Transparent, non-hidden layers are the default.

Slides are analogous to layers, except that slides are always opaque. Slides also use a Master Slide, which can be thought of as a visual template for all other slides. For example, if you wanted to have a company logo on all of your slides, rather than placing it in the exact same place on every slide, simply place the logo on the Master Slide; it will then appear on each slide.

If you have created a number of layers in layer mode, switching to "Slide" mode will cause those layers to be treated as slides. The opposite is also true: if you created a number of slides in slide mode, switching to "Layer" mode will cause those slides to be treated as layers.

There are some other differences when your document is in "Slide" mode. The "Start Slide Show" icon appears in the upper-right of the document; you can use this icon to start your slide show. At the bottom of the screen, the slides popup menu displays all the slides, but it shows them in a stacking order opposite to that of the layer mode: the first slide is on top, while the last slide is on the bottom. Also, the "Layer Manager" becomes the "Slide Manager" in slide mode. Its functioning is otherwise the same.

When in Slide mode, the "Document Size" dialog, from the Layout menu, no longer assumes you are printing your document and provides printing-related document size options; instead, it allows you to tailor your document's size to a screen (or other output device) presentation.

When you are in layer mode, ClarisDraw "names" all newly-created layers "Layer 1, Layer 2 ... Layer n." When in slide mode, ClarisDraw uses the name "Slide 1, Slide 2 ... Slide n". These are merely names, and donÕt imply that there are issues using "layers" in slide mode or "slides" in layer mode. ClarisDraw has to name the layer/slide something, so it uses this default naming scheme.

Other slide show options, such as transition effects, QuickTime movie handling, and background and border colors are set in the "Slide Show" dialog box.

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Locked Objects from ClarisImpact Presentations Don‘t Import

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, opening a ClarisImpact presentation document doesn't import locked items on the Master Slide.

To reproduce:

1. Launch ClarisImpact (Presentation).
2. Switch to Master Slide, create a star and lock it.
3. Save the document and quit.
4. Launch ClarisDraw.
5. Select "Open" from the FILE menu and open the document just saved.

Notice the locked star was not imported. The Claris graphics development team is aware of this issue.
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Objects Bound to Text do not Print on the Hewlett Packard DeskWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, text bound to an object, saved as PICT, then reopened and printed to a DeskWriter, results in only the text printing.

To reproduce:

1. Launch ClarisDraw.
2. Draw a cylinder about 2.5" by 3".
3. Type a line of 36 pt text, make the text pink and use any font.
4. Select all and choose Bind Text to Object.
5. Save as PICT.
6. Open the PICT.
7. Print to a color DeskWriter.

Notice that only the text printed. The cylinder did not print.

Workarounds:

* Ungrouping first, then printing (but then the text color will change - this is another issue)
* Print to an Apple StyleWriter Pro.

The Claris graphics development team is aware of the issue.
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Objects Shift After Resizing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In ClarisDraw 1.0, resizing a paint frame, PICT, or EPSF object with any pen width greater than hairline causes the object to shift location relative to the pen width.

Note that virtually every object that is created by the ClarisDraw graphics tools will be a PICT object, so this problem can occur with lines, circles, rectangles and the like.

Here's one way to reproduce the problem:

1. Launch ClarisDraw.
2. Select "Show Object Info" from the VIEW menu
3. Create a 1" square paint frame aligned with the grid lines.
4. Exit paint mode and give the frame a 6 point pen.
5. Resize the frame larger or smaller using the lower right handle.

Notice the upper and left locations have shifted according to the Object Info palette.

Another issue is when resizing (reducing) multiple selected objects (or a group) of an amount greater than 20%, significant shifting of the objects may occur causing the selected object(s) to become dramatically out of alignment. Executing the following steps will significantly reduce this shift.

* If the object(s) are grouped, continually Ungroup the object(s) until the Ungroup command becomes grayed out - i.e.. the object(s) are completely ungrouped.
* Select the desired objects to be resized, if not already selected. ALL the objects must be completely ungrouped.
* Choose the Rulers command (under Layout) and set the divisions/inch to 288.
* Under the Arrange menu, choose Align to Grid. Align to both upper left, lower right, and center, in that order.
* Using the Group command, create a single group from the selected objects
* Resize the group. Movement should be minimal.

You may now ungroup and/or regroup the objects.

The Claris graphics development team is aware of this issue.

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Opening MacDraw Pro Library Files with ClarisDraw

The library, as well as any object names, can be converted, but grouped objects lose their object names.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

ClarisDraw can open MacDraw Pro Library files directly. To do this, select "Open Library" from the File-menu. The library, as well as any object names, can be converted, but grouped objects lose their object names. You must rename grouped objects in a converted library.

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DOS 3.3: Auto-run with a machine language program

When DOS is booted, it runs the program that was in memory when the diskette was initialized, unless you change DOS to BRUNs the Hello file instead.
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In a 48K Apple change the byte at $9E42 from $06 to $34. The following sequence of commands creates a disk that BRUNs Hello when it is next booted.

After putting a blank diskette into the drive:

1. Call -151
2. 9E42:34
3. 3D0G
4. init Hello
5. delete Hello
6. BLOAD the binary program from another diskette
7. BSAVE Hello on the new diskette

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Applesoft BASIC: How To Launch From Aristotle

I need to place an option in the Aristotle menu to run an Applesoft BASIC program.

I can get Applesoft BASIC up and running, but cannot seem to get a program to load. Is there any way to start an Applesoft BASIC program from Aristotle?
This article has been archived and is no longer updated by Apple.
On the server, create a folder that contains the Applesoft program and BASIC.System. Rename the Applesoft program to STARTUP:

In the Aristotle Management program, add the program to the class list. The Title of the program can be any name that is appropriate -- it is used only for the Display menu. Set the path to:

/{servername}/{foldername}/{any other foldernames}/BASIC.SYSTEM

Set the Prefix to the Applesoft program's pathname. BASIC.System looks for a program with the name STARTUP in the current folder (subdirectory). If BASIC.System finds the program, it launches it.

The next issue is how to get back to Aristotle. The BYE command will not return the user to Aristotle. Since BASIC.System was the launching program, the BYE command attempts to run BASIC.System. Some method is needed to launch Aristotle again. The following method requires some programming, but does provide a way to get back to the Aristotle menu.

This example assumes that the Aristotle folder is located at the server volume root level with a pathname:

/{servername}/ARISTOTLE/MENU.D/DISPLAY

The example finds the servername and places where {servername} appears in the above pathname.

```
9900 D$=CHR$(4)
9910 PRINT D$;"PREFIX"
9920 INPUT PR$
9930 FOR I = 1 TO LEN(PR$)
9940 IF MID$ (PR$, 1+I,1) = "/" THEN 9990
9950 RT$=RT$+MID$(PR$1+I,1)
9960 NEXT I
9990 PRINT D$;"-/";RT$;"/ARISTOTLE/MENU.D/DISPLAY"
```

The following is a STARTDISCUSS9900 - Set D$ to Control-D.
9910 - Request the current PREFIX.
9920 - Put the current PREFIX into PR$.
9930 - Start loop to extract the servername from the PREFIX.
9940 - Skip the first character of PREFIX (/) and look for the second slash.
When the second slash is found, jump to 9990
9950 - Put all the characters up to the second slash into the variable RT$.
9990 - Run the Aristotle menu display program.

This code can be used as a stand-alone program, or the lines can be added to the Applesoft program.

- If used as a stand-alone program, place it in the same folder as the Applesoft program. After quitting the Aristotle-launched Applesoft program, the student needs to type:

RUN {name of program}

- If added to the Applesoft program, these lines need to be the very last lines that are executed in the BASIC program. Remember, the line numbers need to be appropriate for the program to which they are added.
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Opening Paint Documents in ClarisDraw

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The best way to bring paint (or other bitmapped) documents into ClarisDraw for editing is by using either the "Open" or "Place File" choices from the FILE menu. Once the picture is in the document, select it, and choose "Ungroup Picture" from the ARRANGE menu. You can then double-click on the image to edit it in a paint frame.

This method retains the image's original resolution and bit depth. However, it can also change the image in some ways, such as modifying the image's size, color, or angle of rotation. If you ungroup the picture and then aren't happy with the results, immediately select "Undo" from the EDIT menu, before performing any other operation. The "ungroup" action will be undone.
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"This Document has been updated while you worked on it" Message

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Q: MacDraw Pro says that my document has been updated while I was working on it. What does that mean?

A: This is a feature of the product. MacDraw Pro allows you to open more than one copy of a document so that you can edit different versions, or so more than one person on a network can edit the file at once.

If two copies of a file are open, changes are made to one file, then it is saved and closed, as soon as you try to save the other file you will see this alert:

This document has been updated while you worked on it. Do you still want to save your changes?

You are given the option of saving your changes to the current file, performing a "Save As" so that you can save your changes to different file, or canceling the save altogether.

ClarisDraw does not offer this feature.
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Print Range Selection Ignored When Printing Slide Presentation Handouts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When printing a range of slides with "Print Both" slides and handouts option selected, the print range is ignored for handouts.

To reproduce:

* Open a new ClarisDraw document or a new ClarisImpact presentation document.
* Create three slides with objects on each.
* Open the Print dialog.
* Print pages 1 to 2 and select "Both" from the Slides/Handouts options.

Result: Slides 1 and 2 are printed as slides, but all three are printed as handouts. The workaround is to print slides and handouts separately.

The Claris graphics development team is aware of this issue.
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Rotated, Colored Text Prints Black

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Under some conditions, ClarisDraw will print rotated, colored text in black when you're printing to a printer using a 7.x driver. This is most noticeable when you've created a document that uses grayscales.

To reproduce:

* Launch ClarisDraw
* Create a short caption text object and duplicate it four times
* Assign a different text color to each object
* Select All and Duplicate
* Move the duplicates aside and rotate them slightly
* Print to a laser printer or color printer with the 7.1.x driver.

The rotated, colored text prints black. Note that white rotated text prints correctly (in front of a colored background, of course)

Workarounds:

* Print using a 8.1 driver
* Print using a QuickDraw printer

The Claris graphics development team is aware of the issue.
Published Date: Feb 18, 2012

Screen Turns Entirely Black (68000 Macintoshes Only)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
With ClarisDraw running on a 68000-based machine (Macintosh Plus, SE, Classic, Portable or PowerBook 100), if you open one of ClarisDraw's additional 256 color palettes, the screen will turn entirely black. Closing and reopening the document brings the document back.

To reproduce this:

1. Do an Easy Install on a 68000-based machine
2. Launch ClarisDraw
3. Select the Colors & Gradients dialog from the Layout menu, choose 256 colors, and open one of the color palettes. Select either Preserve or Adjust colors.

You will see a cross line is drawn on the dialog box, and then the whole screen turns black. This in no way affects the integrity of the document - it is a display issue only. Again, closing and reopening the document fixes the problem.

Since 68000-based machines cannot make use of the additional color palettes in ClarisDraw, there is no point to opening them, or even having them installed on the machine. The best thing to do is delete the Color Palettes folder from the ClarisDraw folder - there is no need for it.

The Claris graphics development team is aware of this issue.

Published Date: Feb 18, 2012

Text Converted to Bezigons Pastes Incorrectly into Deneba Canvas

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, text converted to bezigons, then copied into a Canvas document via the clipboard, pastes with many of the characters as black filled rectangles.

To reproduce:

1. Launch ClarisDraw
2. Create some text, then convert the text to bezigons
3. Copy the text
4. Launch Canvas version 3.5
5. Paste

Notice that many of the characters are black filled rectangles (mostly the ones with holes).

Workaround:

Select the converted bezigon text, then set the pen color to black, the fill to white, and the pen width to one point.

Published Date: Feb 18, 2012

Text With Gradients Pastes Incorrectly Into Aldus Freehand

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0, text converted to bezigons, then filled with a gradient, pastes into Freehand with the gradient spilling beyond the bounds of the text.

To reproduce:

1. Launch ClarisDraw.
2. Create some text, then convert the text to bezigons.
3. Fill the converted text with a gradient.
3. Copy the text.
4. Launch Freehand
5. Paste.

Notice that the gradient fill spills beyond the bounds of the text. The Claris graphics development team is aware of this issue.
Published Date: Feb 18, 2012

What do "Preserve" and "Adjust" Colors Mean?

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If you already have objects in your document, have been using either the 81- or 168-color palettes, and you change to the 256-color palette in the Colors & Gradients dialog box, you will see a dialog box advising you that the colors may change. You're also asked to choose between "Preserve colors" or "Adjust colors".

What does this mean? When you change palettes, there is a possibility that the palette you're changing to (the 256-color palette) might not have the exact color or colors you've chosen from the palette you had been using. So ClarisDraw gives you a choice: either preserve the colors you've selected by remapping them into the 256-color palette, or change the colors to the closest available match already in the 256-color palette.

If you choose "Preserve colors," then ClarisDraw will first extract the colors you've already used in your document. It will then replace colors in the 256-color palette with the shades you've used. It will replace colors starting in the lower-right corner of the palette and work left and up. The colors that were originally in the 256-color palette will be permanently replaced with the new colors from your document.

If you select "Adjust Colors," ClarisDraw will go through the 256-color palette, find colors as close as possible to the ones you've already selected, and use them to fill the objects in your document.

Since there is color overlap between the three palettes, there is a possibility that the colors in your document might not change at all, regardless of which option you choose.

The options to preserve or adjust the colors are only available with the 256-color palette, because it is the only palette that is editable. If you switch from the 256-color palette to either the 81 or the 168-color palettes, you will only received a dialog telling you the colors "may be changed."

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Why Is the ClarisDraw Manual so Thin?

The ClarisDraw manual is significantly less bulky than the MacDraw Pro manual. Why is that, and what are the advantages and disadvantages?

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ClarisDraw is the first Claris product to follow a new concept in documentation. Many customers told us that the typical product manual did not suit their needs, and therefore, they did not tend to use it. They wanted specific solutions to specific problems, while many user guides simply detailed each feature.

At the same time, it became clear that printed materials were getting more and more expensive to produce. Since some customers weren't using the printed documents that came with our products, Claris formulated a new approach.

Our research found that many customers are very happy with a versatile, well-designed electronic help system, especially when it is combined with a printed manual that is solutions-oriented rather than feature oriented.

For ClarisDraw 1.0, Claris implemented this new system of documentation. The ClarisDraw 1.0 User's Guide is significantly smaller than the one that shipped with its predecessor, MacDraw Pro; but by comparison, the ClarisDraw manual goes to much greater lengths to describe HOW to do things as opposed to simply reciting features.

What is not as readily apparent when you open the box, though, is the fact that the on-screen help that ships with ClarisDraw is dramatically different from the on-screen help that shipped with MacDraw Pro. The new on-screen help that ClarisDraw uses features interactive definitions (click on certain words and definitions appear on-screen); search by topic or article text; the ability to "retrace your steps" while looking at articles; the ability to view a table of contents or topics alphabetically; note-taking capability; and much more. You can also easily print any portion of the on-screen help that you want.

So we changed the way the User's Guide provide information, and we dedicated more resources to the on-screen help. While the manual details procedures, it frequently refers you to the on-screen help for specifics. The on-screen help is designed to be the place that you go for explanations of specific features; it is more comprehensive than the User's Guide. The User's Guide, however, does provide an excellent overall view of the product. The on-screen help and the User's Guide complement each other to provide you with the most assistance possible, obtained as easily as possible.

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A Glossary of ClarisWorks Database Terms (DB)

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Record:

Each "card" in a database file is a "record". In a name and address database, each "record" contains information about one person. In a database of audio CDs, each record contains information about one CD.

Field:

The information you store in a database record is organized in categories. Each category is called a "field." For example, in a name and address database, you would put a person's last name in a LAST NAME field, his or her telephone number in a PHONE field, and so on.

Entry:

The data you store in one field in a record. The name "W.T. Southern" could be an entry in the AUTHOR field; the characters "12" could be an entry in the PAGE field.

File:

All the records taken together comprise a "database file." You create the database file when you save your database to disk. Some database applications save two files - one file that stores the structure of the database and another file for the data. ClarisWorks stores one database file that contains both types of information.

ClarisWorks Field Types

Field Type:

The field type determines the kind of data you can store in a field and what you can do with that data. ClarisWorks lets you define six types of fields. Here is a brief profile of each:

Text field:

Accepts any characters you can type at the keyboard. You usually store words and phrases in text fields, but you can store codes, social security numbers (which contain numbers and hyphens), and any mix of characters in these fields. You can enter more data into a text field than can appear on screen; later, you can manage that problem by changing the layout.

Number field:

Accepts any valid number and lets you use those numbers in calculations and numerical sorts.

Date field:

Accepts any valid date entered as text (for example, May 1) or as complete or incomplete numbers (as in 5/1/92 or 5/1). ClarisWorks inserts the current year if you omit the year. ClarisWorks displays all dates in the format MM/DD/YY and can sort dates chronologically. The program warns you if you enter an invalid date such as "4/31/92" or "Ma 1."

Time field:

Accepts any valid time entered as numbers on a 24-hour clock (for example, 16:00 represents 4 P.M.). ClarisWorks can sort time entries chronologically. The program warns you if you make an invalid entry.

Calculation field:

Accepts formulas that manipulate data in other fields. The calculated result appears in each record. The results can be a number, a date, a time, or text. For example, you can create a Calculation field that automatically calculates a student's average from a set of test scores, the number of days between two dates, or the final price of an item for sale.

Summary field:

Accepts formulas that perform calculations on a set of records in your database. You can use a summary field to calculate the average score of a group of students or to determine the total sales by a group of salespeople.

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HyperCard: Global/Local Variables

Is there a way within HyperCard to retrieve and/or set a local variable for handler "xyz" from handler "abc"?

I don't want to make everything a global variable and have them initialized as the stack is opened.

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What you want to do is not possible. However, there are a number of ways to "fake" global-local variables.

You could create one global variable (in this example, "holdEm") containing many items.

For example:

put "1,5.67,fred,in,0,,rain" into holdEm

stores seven items in the variable named holdEm. To avoid a lot of messy initialization, the information in the variable could be saved in a field:

put holdEm into field storeVars

and restored to the variable when the stack opens:

put line 1 of field storeVars into holdEm

This is much faster than seven put statements.

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ClarisWorks Tip: Use the "Copy Table" Command (CM,SS)

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The communications environment offers a Copy Table Command that automatically copies and pastes tables from a communications document into a spreadsheet. That makes it easy to copy stock information and other tabular data received from your on-line service into any ClarisWorks document.

Follow these steps to copy tabular data you captured from a bulletin board service into a spreadsheet:

1. Click and drag to highlight the information in the communications document on your screen.

2. Choose "Copy Table" from the Edit Menu.

3. Create a new spreadsheet or switch to an existing spreadsheet template.

4. Click in the cell where you want the first piece of tabular data to appear.

5. Choose "Paste" from the Edit Menu. ClarisWorks will paste each piece of data into a separate cell.

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Classifications of Clip-Art (All)

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Classifications of Clip-Art

You can classify electronic clip-art into three categories depending on the type of program used to create the image.

Paint:

Paint programs provide tools such as paint brushes, air brushes, and pencils you use to "paint" on your Macintosh screen as you would on paper. Paint documents are "bit mapped", which means that each pixel or "bit" is defined on a "map" of the page. Paint programs give you complete control over each pixel in the image you create; the resulting images often include fine details reminiscent of antique etchings. An example of a bitmapped image produced with a Paint program appears in Figure 1.

Draw:

Draw programs, such as the Graphics module in ClarisWorks, produce "object-oriented" art. These programs create images by layering "objects" defined by mathematical equations, such as circles, squares, lines, and blocks of text. Although you can produce complex images using shading and patterns with a Draw program, most Draw images look like the line drawing example in Figure 2.

Bezier

Draw: Bezier Draw programs produce "Bezier object" art which contains objects drawn with Bezier curves. (A Bezier curve is a line defined as a series of points, each of which have zero to two control points or handles.) The complex mathematical formulas supported by Bezier Draw programs let you define more complex shapes than those you can create with simple Draw applications. The most common Bezier Draw images are sophisticated line drawings with shading, patterns, and colors like the example in Figure 3.

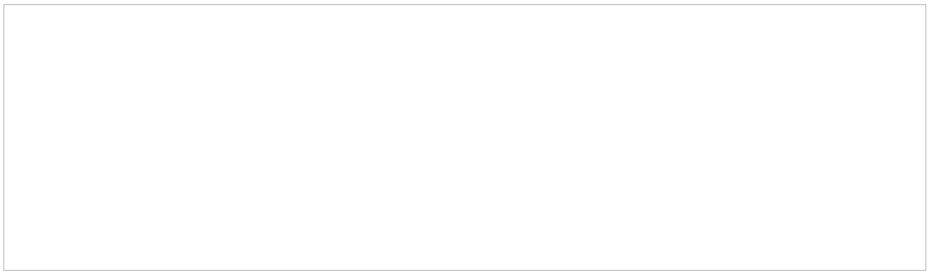

Figure 1.
Paint Clip-Art

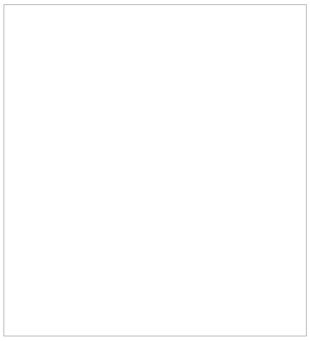

Figure 2.
Draw Clip-Art

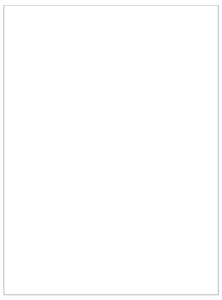

Figure 3.
Bezier Object

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Creating a Simple Macro in ClarisWorks - A Tutorial (All)

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Applications for macros become more obvious once you start to use them, so let's create our first macro. This macro will teach ClarisWorks how to type your name with a single keystroke. The process involves telling ClarisWorks to capture your keystrokes and assigning a key combination to the keystrokes it memorizes. Then ClarisWorks will repeat the keystrokes when you type the keys you specified.

Follow these steps to create the macro:

1. Go to the File Menu and select "New." Indicate that you want to create a new word processor document.

2. Go to the File Menu, press the mouse button, and move the cursor down until it is over "Macros." The Macro Menu will appear to the right (see Figure 1). Select "Record Macro." (Alternatively, you can issue a Command-Shift-J to start to record the macro.) ClarisWorks will display the Record Macro Dialog Box that appears in Figure 2.

3. Use the Record Macro Dialog Box to (a) define the keys you will press to invoke (or "run") the macro, and (b) assign a name to the macro.

Put the cursor in the box to the right of "Option + Command + Key" and type a lower case "n" (for "Name"). You should assign your macros to lowercase characters. Otherwise you will need to press four keys to launch your macros.

Press the Tab Key and enter "My Name" as the name for the macro. Then press the Return Key.

4. The flashing microphone icon in the upper left-hand corner of the screen indicates that you are recording a macro. Now you will enter the text you want ClarisWorks to type when you enter an Option-Command-n.

Type your name. If you make a mistake, use the Delete Key to erase the error and retype the correct keystrokes. Although ClarisWorks will memorize the wrong keystrokes and your presses of the Delete Key, the macro runs so quickly that you needn't be concerned about the extra keystrokes.

5. Stop recording the macro by issuing a Command-Shift-J or by going to the Macros Menu and selecting "Stop Recording" from the Macro Menu. The flashing microphone icon will disappear.

Now test the macro. Put the cursor anywhere in a document and press Option-Command-n. ClarisWorks will type your name.

Figure 1.

Macros Menu

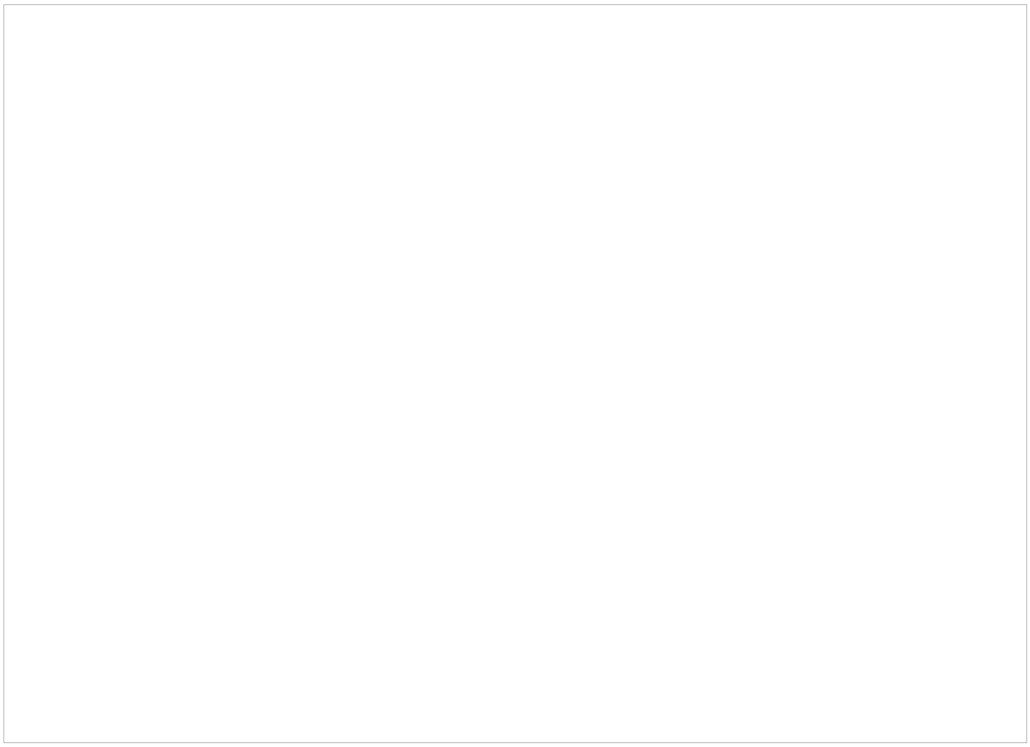

Figure 2.
Record Macro Dialog Box

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Editing ClarisWorks Macros (All)

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Although ClarisWorks makes it easy to create macros, it does not let you modify your macros. To change a macro, you must delete the original and create a new macro.

Follow these steps to delete a macro:

1. Go to the Macros Menu and select "Edit Macros".

2. ClarisWorks will display the Edit Macro dialog box. Click on the macro you want to delete, click on the Delete Button and click on "OK" to confirm the deletion.

You can delete more than one macro in a single operation by holding down the Shift Key while you highlight the macros you want to delete.

ClarisWorks does lets you change the name and/or Option-Command-key combination that invokes your macros. Just select "Edit Macros" from the Macros Menu, highlight the macro(s) you want to rename and change the entries.

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Finding Empty Database Fields in ClarisWorks (DB)

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Q. I miss the AppleWorks database option that lets me select fields that are blank or not blank. Is there some way to do this in ClarisWorks?

A. You can use the Match Command to select records with blank or non-blank fields. The following example demonstrates how to search for records with a blank entry in the PHONE field:

1. Go to the Organize Menu and select "Match Records" (or press Command-M).

2. Scroll down the Function Window to display the ISBLANK function and click on that function. Then double-click on the word "value" displayed in the Formula Window, and click on PHONE in the Fields Window.

Alternatively, you can type the formula ISBLANK('PHONE') into the Formula Window.

3. Click on "OK" to select all the records with blank PHONE fields.

4. Choose "Hide Unselected" from the Organize Menu to display the selected records.

To find all non-blank records, just follow steps 1-3 above, and choose "Hide Selected" from the Organize Menu.

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How to Add Selected AppleWorks Data to a ClarisWorks Database (DB)

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This article describes how to add selected AppleWorks records to an existing ClarisWorks database, even if the two files have dissimilar fields. You will need a 3.5-inch disk drive connected to your Apple II computer to accomplish this transfer.

Transferring the data is a four-stage process:

1. "Print" the AppleWorks database as a DIF file on your Apple II.

2. Use Apple File Exchange to transfer the file to your Macintosh.

3. Use the file to create a new ClarisWorks spreadsheet and rearrange the data in the spreadsheet.

4. Paste the data into your ClarisWorks database.

Step-by-Step Tutorial

This tutorial takes you step-by-step through the process of transferring name and address information from an AppleWorks file into an existing ClarisWorks database. You can generalize these procedures to any other files. We will assume that you know how to use both AppleWorks and ClarisWorks.

Follow these steps:

1. Create AppleWorks and ClarisWorks database files with the same categories and fields. Define the ClarisWorks fields as "Text."

2. Enter four sample records into each file. Enter different data in each record.

Now you will prepare a ProDOS DIF file you can import into ClarisWorks. Continue as follows:

3. With AppleWorks: Issue an Apple-P and prepare a tables format report that includes the categories you want to transfer into ClarisWorks. Rearrange the categories so they match the order of the fields in the ClarisWorks database. (That is, switch the positions of the LNAME and FNAME categories.) Do not worry about the missing ADDRESS2 category; you will create blank entries after you transfer the data into ClarisWorks.

4. Issue an Apple-R command and select the records you want to transfer into ClarisWorks. In this example, select all records where the LNAME category "is not blank."

5. Issue another Apple-P command and "print" the report as a DIF file on a 3.5-inch disk. (To save the file in DIF format, select the last choice on the Print the Report Menu and enter the pathname /DISKNAME/TEMP where you replace "DISKNAME" with the name assigned to your data disk.)

6. Launch Apple File Exchange on the Macintosh.

7. Insert the ProDOS disk in the Macintosh drive, pull down the ProDOS to Mac Menu and de-select "AppleWorks to Microsoft Works" (see Figure 1).

8. Click on the file TEMP in the Apple File Exchange window and then click on Translate (see Figure 2). That will save your AppleWorks file on the Macintosh drive.

9. Select "Quit" from the File Menu (or press Command-Q) to quit Apple File Exchange. Remove your ProDOS disk from the Macintosh drive.

10. Return to ClarisWorks and select "Open" from the File Menu (or press Command-O) to indicate that you want to open an existing file.

11. Click on the Import Options Lever and then click on the Spreadsheet Button (see Figure 4). Navigate to the TEMP file, highlight that file, and click on "Open." ClarisWorks will create a new spreadsheet with the data from each AppleWorks record in a separate row. Your screen will look

like the example in Figure 3.

Now you will insert blank entries that will appear in the ADDRESS2 field in your ClarisWorks database. You want that blank to appear in the fourth field in each record, which corresponds to column D in the spreadsheet. Continue as follows:

12. Select all the entries in column D by clicking on the letter "D" at the top of that column.

13. Select "Insert Cells..." from the Calculate Menu (or press Shift-Command-I). ClarisWorks will insert an empty column of cells in column D and will shift all the remaining data one column to the right.

Now you will transfer the data from the spreadsheet into the database. Continue as follows:

14. Choose "Select All" and then "Cut" from the Edit Menu (or press Command-A and then Command-X).

15. Select the name and address database from the View Menu.

16. Choose "Paste" from the Edit Menu (or press Command-V).

17. Press Command-S to save your work.

That does it; the new records are now in your ClarisWorks database file.

We suggest that you explore the ability of ClarisWorks to transfer data between the program's database and spreadsheet environments. ClarisWorks' ability to transfer data between these environments lets you use the program's spreadsheet module to reorganize the data in your database records.

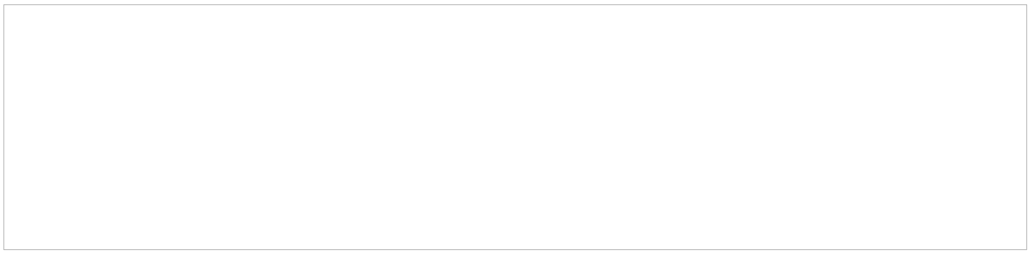

Figure 1.

Figure 2.

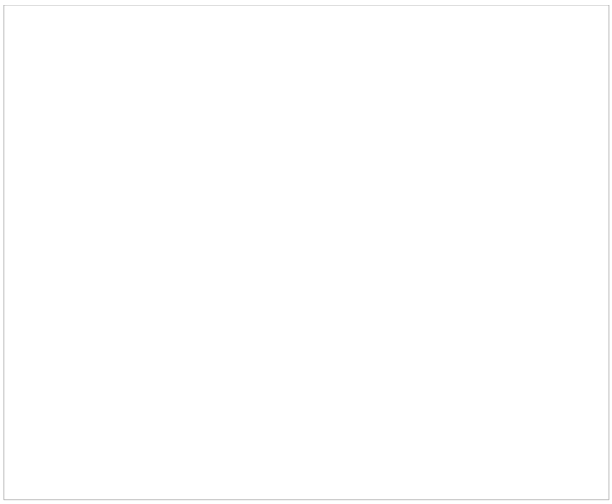

Figure 3.

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How to Combine Multiple-Cell Labels (SS)

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Importing AppleWorks spreadsheets into ClarisWorks is easy. However, your imported spreadsheet will need some work before you can use it in ClarisWorks. Part of the problem is the different ways AppleWorks and ClarisWorks handle long labels.

AppleWorks divides long text entries into separate cells. Thus, AppleWorks users who change column widths must retype their multi-column labels.

ClarisWorks stores long labels in a single cell and displays the label across multiple cells if the adjacent cells are empty. That lets you change column widths and fonts without segmenting the label.

However, the differences between the two programs causes a problem when you import an AppleWorks spreadsheet into ClarisWorks. AppleWorks exports the text as a series of separate labels in adjacent cells (see Figure 1). Any changes you make to the format of those cells in ClarisWorks result in missing characters or extra spaces between columns.

If you only have a few long labels, you can re-type the multiple cell labels in ClarisWorks and then blank the remaining cells. However, that is time-consuming and can result in typing errors.

Here are two workarounds that can save you time and effort:

Strategy #1: Successive Cuts and Pastes

The first approach has you cut and paste the contents of each cell. Refer to Figure 1 as you do the following:

1. Click on Cell B1, the cell to the right of the first label cell.

2. Go to the Edit Menu and select "Cut" (or press Command-X) to cut the contents of the cell to the clipboard.

3. Click on the first label cell (that is, cell A1).

4. Go to the Data Entry Bar and click at the end of the text.

5. Paste the text from the clipboard by selecting "Paste" from the Edit Menu (or press Command-V). You screen should now look like the example in Figure 2.

6. Repeat steps #1-5 for cells C1 through E1.

Strategy #2: Deleting Tabs

In the second approach, you cut the contents of the range of cells, from A1 through E1, and edit them in the word processor. Follow these steps:

1. Click on cell A1 and drag the cursor to select the range of cells through E1.

2. Press Command-X to cut the contents of the range of cells to the clipboard.

3. Press Command-N to create a new file, and click on "OK" to create a "Word Processor" document.

4. Press Command-V to paste the contents of cells A1-E1 from the clipboard into the word processor file.

5. Press Command-F to call up the Find/Change Window.

6. With the cursor in the Find Box, press Command-Tab to enter a tab. ClarisWorks will display "\\t" in the Find Box (see Figure 3).

7. Press the Tab Key to go to the Change Box.

8. Press the Delete Key; nothing will appear in the Change Box.

9. Click on the Change All Button. ClarisWorks will delete all the tabs.

10. Click and drag across the reassembled text to select it, and press Command-X to cut it to the clipboard.

11. Go to the View Menu and select the spreadsheet document to return to it.

12. Click on cell A1 to select it. Then press Command-V to paste the contents of the clipboard into cell A1.

13. Repeat these steps for each multi-cell label. You can create a ClarisWorks macro that automates this process (see the sidebar).

Cell A1 now contains the entire text string. Adjusting the width of columns B through E or changing fonts will not inadvertently delete characters or insert blank space into the label.

Figure 1.

Figure 2.

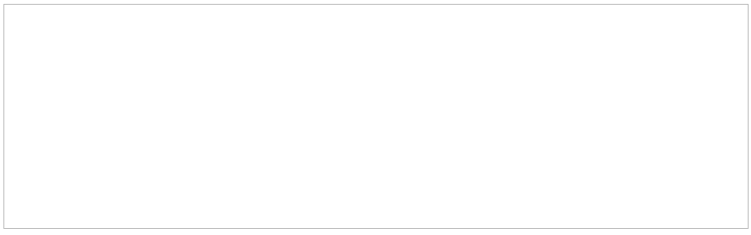

Figure 3.

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How to Display More Columns in a ClarisWorks Database

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This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Q: As a former AppleWorks user, I like to examine my data in a tables format. ClarisWorks lets me display my data in columns, but does not let me scroll all the way across the fields. Is there some way to do this?

A: Viewing your data in columnar format is convenient. As you discovered, ClarisWorks lets you set up a columnar display of your data.

To get a columnar display, choose New Layout from the Layout Menu, and select Columnar Report. Then choose the fields you want to appear in the display by moving them into the Field Order list and click on Move.

The trick to setting up a wide set of columns is to tell ClarisWorks to format the layout to fit on a wide sheet of paper. To do that, go to the File Menu, select Page Setup and then select the Landscape (horizontal) orientation for printing. Now the horizontal scroll bar will become active and you can scroll to the right to display the remaining columns.

If you still can't get all your columns in the layout, go back to the Page Setup in the File menu and tell ClarisWorks that you want to print in landscape mode on US Legal paper. Since US Legal paper is 14 inches long, reports formatted to print in landscape mode on legal paper let you scroll left and right over almost a 14-inch area.

Note: ClarisWorks applies your current page setup to all your existing layouts. When you switch to landscape mode, some layouts will appear cut off at the bottom when you do a Page View. However, your layouts are still intact and will be correct when you reset the page orientation to vertical.

You can remind yourself of the correct page setup for each layout by adding the suffix ".HRZ" to the name of any horizontal layout and ".VRT" to vertical layouts. That will help you remember to go to the Page Setup Window and change the orientation of the "paper" on your screen.

Note: ClarisWorks 4.0 can do this simply by choosing List from the Layout menu.

Too much space between graphics and wrapped text
If there is too much white space between a graphic and text wrapped around it in your word processing document, you may need to change your paragraph line spacing units. Choose Paragraph from the Format menu. A dialog box appears that allows you to modify paragraph spacing attributes for the currently selected paragraph(s). In the pop-up menu next to the Line Spacing setting, the default unit for adjusting line spacing is "li" (lines). Using any other units, such as points or inches, for setting line spacing will result in a large amount of white space between graphics and the wrapped text.

Solution
Set the Line Spacing units back to lines in the Paragraph dialog box. You can still flexibly change line spacing by specifying 1.5 lines, 2.0 lines, 2.5 lines, etc.; however, the smallest fraction of a line you can specify is a half (0.5) line.

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How to Use Calculated Fields (DB)

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The ability to manage calculations in ClarisWorks database fields adds significant power to the program. Once you master the concepts behind these calculations, you can tell ClarisWorks to automatically perform any operation you specify and store the result in a database record or print the results on any page in a database document.

How ClarisWorks Operates

Calculated fields contain three components:

1. The formula you enter into ClarisWorks,

2. The format you specify for your output, and

3. The data that ClarisWorks displays in the field.

ClarisWorks stores the formula and format, but not the results of the calculations. Instead, it performs the calculations each time you display or print the calculated field.

Types of Functions

Although we generally think of "calculations" as related to numbers, ClarisWorks can "calculate" numbers, dates, times, or text. The output you get depends on the "operation" or "function" you specify. For example, "AVERAGE" is an arithmetic function that generates the average of the values or field references within parentheses after the word AVERAGE.

"TEXTTODATE" is a date function that converts the current date into a numeric value that you can use in numerical calculations.

"PROPER" is a text function that capitalizes the first character in every word involved in the "calculations."

ClarisWorks offers eight different categories of functions: business and financial, date and time, information, logical, numeric, statistical, text, and trigonometric functions; 100 different database and spreadsheet functions in all.

Complete descriptions and sample applications of these functions appear in Appendix A in the ClarisWorks documentation and in the on-line help system available within ClarisWorks.

Types of Calculated Fields

The ClarisWorks database environment lets you use these functions in two different types of calculated fields:

1. "Record Calculation Fields", which display the results of the calculation within each database record. ClarisWorks calls these "Calculation Fields."

2. "Summary Calculation Fields", which perform calculations across records. ClarisWorks calls these "Summary Fields."

You would use a Calculation Field to count the number of days between a client's last payment and the current date. That is the type of information you want to display in the client's record.

You would also use a Calculation Field to determine a student's average test grade. Again, you would display that information in each student's record.

You would use a Summary Field to count the number of sales people on your staff or to determine their average sales. These numbers would appear in a summary area at the end of a report and not in an individual record.

Figure 1 depicts a database layout that lists the grades for some of the students in a class. The "Average Grade" field in Figure 1 is a Calculation Field that computes each student's average grade during the marking period and displays that grade as part of each student's record. The formula for the Average Grade is AVERAGE('TEST.1','TEST.2', 'TEST.3','TEST.4').

The "Student Count" and "Student Average" fields are Summary Fields that appear in the Grand Summary segment of the report. The formulas that perform the calculations are COUNT('FNAME') and AVERAGE('AVERAGE GRADE') respectively.

As you can see from these examples, both types of fields use the same formulas and functions. You "tell" ClarisWorks whether to calculate within records or across records when you define the field (see Figure 2). When you check "Calculation" as a field type, ClarisWorks calculates within each record. Check "Summary" as a field type and ClarisWorks calculates across records.

The Elements of Calculated Fields

You must specify a formula for every calculated field; each formula includes some combination of the following four elements:

1. Other database fields that you enclose in single quotes in the formula. For example, a Total Sales field might contain the formula 'Region1 Sales'+ 'Region2 Sales'+'Region3 Sales'.

2. A built-in ClarisWorks function, such as SUM( ), TEXTTODATE, or UPPER( ). For example, the formula SUM('SALARY','COMMISSION','OTHER') in a Calculation Field will compute the total earnings of every employee. ClarisWorks will store that total within each record.

The formula AVERAGE('WEIGHT') in a Summary Field will compute the average weight of all the "unhidden" individuals.

3. Data that you type in the formula. This can be numeric data such as the "12" in the formula 'Monthly Income' * 12 or text constants that you enclose in double quotes (to differentiate between the text and field names), as in the formula "Dear " & 'LNAME'. (This formula lets you create a new field that combines data from other fields in the record.)

4. Operators, which indicate the type of calculation you want to perform. The ClarisWorks manual lists the operators you can use in formulas within ClarisWorks database documents.

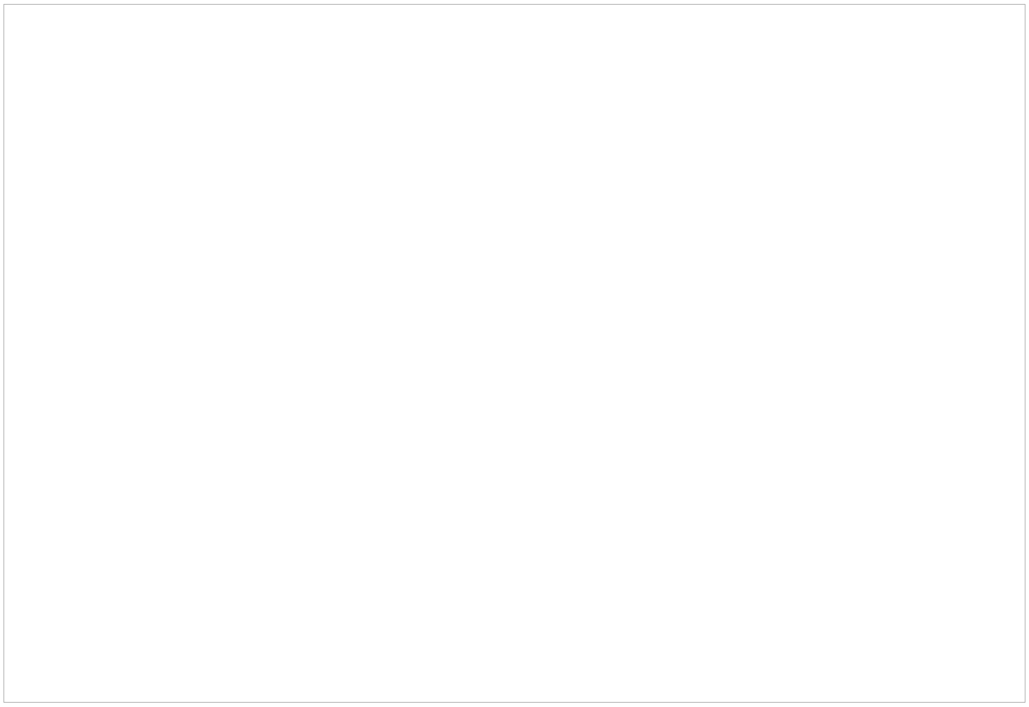

Figure 1.

Figure 2.

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Inserted Date Does Not Save with Document (All)

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This article has been archived and is no longer updated by Apple.

Q. I use the Insert Date function to automatically insert dates in my letters. But ClarisWorks doesn't save the date with the rest of the letter. As a result, I cannot look at the document on the screen and determine when I originally wrote the letter.

Why doesn't ClarisWorks and ClarisImpact save my dates?

A. As you discovered, the "Insert Date" feature puts a command, not the actual date, in your document. The command tells ClarisWorks and ClarisImpact to check the clock in your Macintosh and display the current date on the screen and print the current date in the document. However, despite its name, the Insert Date command does not actually insert the date in the document.

The Insert Date command makes it easy to prepare documents that serve as templates; ClarisWorks and ClarisImpact automatically insert the current date in the document when you print a copy for a new recipient.

However, this same feature works against you when you prepare a letter that you want to store on a disk. Although ClarisWorks and ClarisImpact will insert the correct date when you print the letter, the program does not store the date in the electronic copy of the letter.

Of course, your Macintosh does record the date that you originally created the letter. You can display the "creation date" of the file by going to the Finder, navigating to the file that contains the letter, and issuing a Command-I (or by selecting "Get Info" from the File Menu). The Get Info box that appears on your screen includes the creation date and an area that you can use to store notes about the document.

PLEASE NOTE: Holding down the Option key as you choose "Insert Date" will cause the date to save as of the date it was entered.

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Printing on the ImageWriter in "Faster" and "Best" modes. (All)

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This article has been archived and is no longer updated by Apple.
This is fixed in ClarisWorks 1.0v2

Q: I don't see any difference between the ClarisWorks documents I print on my ImageWriter in "Faster" and "Best" modes. Shouldn't documents printed in the Best mode look significantly better than those printed in Faster mode?

A: Certainly there should be a difference in your output, but version 1.0 of ClarisWorks could only produce "Faster" and "Draft" quality, not "Best" quality output on an ImageWriter. In addition, any other application you run after printing from ClarisWorks may behave in the same way until you restart the computer or change printers in the Chooser.

We resolved this problem with the release of ClarisWorks 1.0v2, which lets you print "Best" or "Draft" quality output (but not "Faster" output) on the ImageWriter. We're working on offering all three levels of output in future versions of ClarisWorks. [Ed: "Best" quality printing is more attractive than "Faster" quality. However, "Best" quality requires two passes of the printhead to print each line and is much slower than "Faster" quality output.
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Problems with the Fill and Paint Tools (All)

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This article has been archived and is no longer updated by Apple.

Q. I can't get the Sample Box to the right of the Fill icon and Pen icon to work properly. I draw an object and select the fill pattern I want. The object fills correctly, but the fill pattern I selected does not appear in the Sample Box to the right of the Fill icon.

A. The Sample Box to the right of the Fill and Pen icons shows you the pattern that will appear in your next object. Follow these steps to see how they work:

1. Create a new graphics document and note that the Fill icon's Sample Box appears blank but is really white. The next object you draw will fill with white.

2. Click on the rectangle tool, and draw a rectangle. Note that the grid disappears behind the object because the object is filled with white.

3. Select "Black" from the Fill Palette. Note that the object now fills with black. However, the Sample Box remains white because ClarisWorks will fill the next object with white. To demonstrate that, click on the rectangle tool and draw another rectangle.

4. Click anywhere on the blank graphics page to de-select all the objects on the page. Now select any pattern from the Fill Palette. The Sample Box now shows that pattern, indicating that ClarisWorks will fill the next object with the pattern you selected.

5. Click on the Rectangle Tool and draw a rectangle. ClarisWorks will fill that rectangle with the pattern displayed in the Sample Box.

It takes a while to get accustomed to using the Sample Box correctly. However, once you understand how it works, you can appreciate the convenience of this feature which lets you change the pattern in any object without changing the pattern that will appear in all future objects.

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Shortcut to Enter Page Break in ClarisWorks (WP)

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This article has been archived and is no longer updated by Apple.

Q. Is there a keyboard shortcut for inserting a page break in a ClarisWorks Word Processing document or a ClarisImpact Report document?

A. You can insert a page break in a word processor document by going to the Format Menu and selecting "Insert Break" - a process that is cumbersome and too slow for most of us (for ClarisImpact choose Insert Break from the Text menu).

Fortunately, there is a keystroke shortcut: Just press the Enter Key on the numeric keypad. ClarisWorks nd ClarisImpact will insert a page break below the text you were typing and will put the cursor on the new page. To delete the page break, put the insert cursor in front of the first character on the new page and press the Delete Key.

Note that the page break feature does not work when preparing spreadsheet, database, or graphics documents. In these cases, the Enter Key activates a cell, enters a database record, or completes a text entry, respectively.

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Calculating Margin and Markup (All)

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In accounting, there is a distinction made between "margin" and "markup."

Basically, "markup" is the amount of increase in price over cost. If your cost is $1.00, and the retail price is $1.20, the markup is $0.20, or 20%.

To generate that markup, you can easily find your sale price by adding the amount of the original cost to the amount of the markup with the following formula:

=Cost + (Cost * Markup Percentage)

Because you are providing the percentage markup, you specify the profit margin. In this example, the profit margin is $0.20 (the profit), which is 1/5 (20%) of the the retail price of $1.20.

However, "profit margin" is a fixed percentage profit, based on the final sale price. If your cost is $1.00, and you specify that you must have a final margin of 20%, you must make sure that the cost is 80% of the final price. $1.00 is 80% of 1.25, which retains the 20% profit margin. (For example, if you have a sale price of $1.20 and a cost of $1.00, the profit "margin" is only 17%, because your final sale price is $1.20 and your profit is only $0.20. $0.20/$1.20 = .166 or 17%.)

The formula that you would use to calculate the required sale price, to preserve a margin based on the final cost is:

=Cost/(1-Margin Percentage)

Alternately, the formula you would use to calculate the margin, based on a final cost is:

=1-(Cost/Selling Price)

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Cursor is Displayed Ahead of Inserted Text (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Cases have been seen where the cursor is ahead of the text being typed. So far, this has only been seen with the Helvetica font in system 7.1 and 7.5.

Symptom: You are typing in a document, and your cursor is several spaces ahead of you. This can be seen anywhere the font is used.

Here are some options to fix the problem:

* Open the Fonts folder, which is inside the System Folder. Drag the problem font suitcase out of the System Folder. Then open that font suitcase and place its contents back in the Fonts folder. This will leave the individual fonts loose in the Fonts folder. In most cases, that fixes the problem. Quit your applications, then open a document again to test the results.

* If the first option does not work, first verify you have an original, undamaged copy of the problem font on floppy disk. Move the individual problem fonts out of your Fonts folder, and into the trash. Empty the trash to delete them. Then drag the good copy of the problem font suitcase from original floppy disks to the Fonts folder.

*Turning on the Fractional Character Width preference can reduce or eliminate the problem, but may not solve it.

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MAX Number of Users Message When Using International (Non-US) Versions of ClarisWorks (All)

You must install international versions of ClarisWorks with a separate set of installer disks (not with the same set of installer disks) for each installation on the network.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Q. I am getting a dialog box stating "The maximum number of licensed users are currently using this copy of ClarisWorks," throughout the use of my ClarisWorks program. The dialog box appears on some terminals only some of the time. Each terminal has a copy of ClarisWorks which was installed separately on my network. What is the problem?

A. The only conditions under which you get this message are:

* The same installer disk was used to install different copies of the software (effectively meaning that the system then regards them as the same copy of ClarisWorks). You must install ClarisWorks with a separate set of installer disks (not with the same set of installer disks) for each installation on the network.

* Any serialized version of ClarisWorks running on a machine which is also a network router will fail to launch.
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System Software 6.0.5: ADB Problems and Workarounds

This article contains information about compatibility problems between System Software 6.0.5 and some Apple Desktop Bus (AAD)B devices.
This article has been archived and is no longer updated by Apple.
Apple made some significant changes to the code handling ADB devices in System Software 6.0.5 (see Macintosh Technical Note 206, "Space Aliens Ate My Mouse"). Because of these changes, certain ADB peripherals don't operate properly.

So far, we've seen the following:

- A+ Optical Mouse: very jerky, inconsistent movement. According to someone on Usenet, Mouse Systems has acknowledged it as a hardware bug in the mouse that did not show up in System Software releases before System Software 6.0.5.
- The Abaton trackball causes the system to freeze, either during startup or later. It may work for a while, or it may just hang the system.
- The Kensington Turbo Mouse ADB also causes the system to freeze. Kensington has released an INIT that fixes this problem. Contact Kensington for a copy of this INIT.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

About Version 2.1v4 Macintosh Updater, Read Me

If you already have 2.1v3, and to not print to an ImageWriter, you will obtain no advantage from installing the updater. The 2.1v4 upddater should not be used on Power Macintosh versions of ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Using your Claris Software Express Updater - ClarisWorks 2.1v4

This document describes the steps you must take to update your current ClarisWorks software to 2.1v4. You may want to print these instructions so that you can refer to them later. This updater will not update Apple Power Macintosh versions of ClarisWorks and is intended only for use with ClarisWorks for Macintosh 68K computers.

IMPORTANT
There are two different updaters. The correct one to use depends on the version of ClarisWorks you are currently using. If you have ClarisWorks 2.0, you should use the "ClarisWorks 2.0v1-->2.1v4" updater. If you have ClarisWorks 2.1v1, 2.1v2, or 2.1v3 use the "ClarisWorks 2.1v1/v2/v3-->2.1v4" updater. To determine which version of ClarisWorks you have, open any ClarisWorks document and choose "About ClarisWorks..." from the Apple menu (in the upper left hand corner of your screen).

Troubleshooting Tips
The updater makes several changes to the resources in ClarisWorks. Many anti-virus utilities consider this activity improper and may try to prevent it. To avoid this inconvenience, disable all virus detection software and restart your Macintosh before applying the update.

If you experience an error while running an updater, restart your computer with the System Extensions turned off. To do this under System 7, press the Shift key while restarting and continue to hold it down until you see the message "Welcome to Macintosh. Extensions off." If this does not correct the problem, double check to make sure you are running the appropriate updater.

If you are going to update from 2.1v1, 2.1v2, or 2.1v3, skip ahead to the section labeled "How to update ClarisWorks 2.1v1, 2.1v2 or 2.1v3 (ClarisWorks 2.1v1/v2/v3-->2.1v4)". If you are updating from 2.0, begin here.

How to update ClarisWorks 2.0 to 2.1v4 (ClarisWorks 2.0v1-->2.1v4):

New Features
ClarisWorks 2.1 has many enhancements and new features, including support for, PowerTalk (electronic mail provided with System 7 Pro), automatic hyphenation, Excel 4.0 import and export, and ClarisWorks 1.0 Word Processing export.

Overview
The accompanying installer software will install all of the files that are either new or changed since ClarisWorks 2.0, as well as, the software needed to update your current copy of the ClarisWorks 2.0 application to the latest version, 2.1v4. The updater contains a listing of changes that have been made. When you run it, your original ClarisWorks 2.0 is combined with the list of changes and is replaced with version 2.1v4.

System Requirements
If you are using System 6 you will need 2 Mb of RAM memory to perform the update. If you are using System 7 you will need 3 Mb of RAM.

Hard Disk Space
You will need approximately 2 Mb of free disk space to install and use the updater.

How the Update Works
Updating from ClarisWorks version 2.0 to 2.1v4 is a two step process. In Part I, you install the ClarisWorks 2.1v4 Updater and other necessary files. In Part II, you update the application file.

Part I - Installing the Updater

1. Double-click the ClarisWorks 2.0v1-->2.1v4 icon.
2. Click Continue.
3. Read the license agreement using the scroll arrows.
4. If you agree with the terms, click Agree to proceed with the installation.
5. Once the installation has succeeded, click OK and continue on to Part II.

The installer will have created a folder named "ClarisWorks 2.1v4 Update" on your startup disk and placed the ClarisWorks 2.1v4 Updater within it.

How the Updater Works
The updater will modify your current copy of ClarisWorks. This update will only work with ClarisWorks 2.0. You cannot update the same copy twice.

Part II - Updating the Application

1. Quit ClarisWorks, if you are using it.
2. Double-click the ClarisWorks 2.1v4 Update folder icon to open it.
3. Double-click the ClarisWorks 2.1v4 Updater to open it.
4. The updater will search for ClarisWorks. If the updater fails to find it, locate and select the copy of ClarisWorks 2.0 to be updated.
5. Click Update.
6. The update should take less than five minutes. You will see a message confirming successful installation of the new version, or an indication of what went wrong.

Congratulations, you have successfully updated to 2.1v4!

The ClarisWorks 2.1v4 Update folder also contains files named "New Features Guide" and "READ ME." Use them to take advantage of your new version of ClarisWorks.

NOTE TO MODEM USERS
A new version (1.5) of the Apple Modem Tool has been provided with your updated version of ClarisWorks. This version adds support for Apple's Newton MessagePad and includes diagrams of various modem cables. Apple has removed the listing of initialization strings for all non-Apple modems. The updater will not remove your existing Apple Modem Tool, but installs the new one alongside it in your System's Extensions folder (in the Communications Folder under System 6).

In a Communications document, you will now see both "Apple Modem Tool" and "Apple Modem Tool 1.5" in the list of available methods in the Connections Settings dialog box. Please note that if you are currently using an initialization string for a non-Apple modem, this string will be lost if you switch to the 1.5 version. For additional information on the Apple Modem Tool, please contact Apple Computer Technical Support at 1-800-SOS-APPL.

Files Installed by ClarisWorks 2.0v1-->2.1v4:

```
[ClarisWorks 2.1v4 Update]

ClarisWorks 2.1v4 Updater
New Features Guide
READ ME

[System Folder]
[Claris]
 [Claris Translators]
  AppleWorks
  ASCII
   ClarisWorks 1.0 Text
   DIF
   Microsoft Excel 3-4
   Microsoft Word 4-5
   SYLK
   ClarisWorks Labels
   US English - Hyphenation
[Extensions]
  Apple Modem Tool 1.5
```

Note: All installation must take place on the active system disk.

How to update ClarisWorks 2.1v1, 2.1v2 or 2.1v3 (ClarisWorks 2.1v1/v2/v3-->2.1v4):

Improvements
ClarisWorks 2.1v4 has several improvements over earlier versions of 2.1. A problem relating to printing unfilled polygons, bezigons, and freehand objects on Hewlett-Packard DeskWriter printers has been corrected. The "Better Text" and "Better Graphics" options have been restored to the Print dialog box when printing to an ImageWriter printer. Also, an alert message which sometimes inappropriately warns that a document uses fonts not installed in the system has been removed.

TA43050_About_Version_v_Macintosh_Updater_Read_Me.pdf

Overview
The updater contains a listing of changes that have been made between earlier versions of ClarisWorks 2.1 and 2.1v4. When you run it, your original ClarisWorks 2.1v1, 2.1v2, or 2.1v3 is combined with the list of changes and is replaced with version 2.1v4.

System Requirements
If you are using System 6 you will need 2 Mb of RAM memory to perform the update. If you are using System 7 you will need 3 Mb of RAM.

Hard Disk Space
You will need approximately 1 Mb of free disk space to use the updater.

How the Updater Works
The updater will modify your current copy of ClarisWorks. This update will only work with ClarisWorks 2.1v1, 2.1v2, or 2.1v3. You cannot update the same copy twice.

1. Quit ClarisWorks, if you are using it.
2. Copy the "ClarisWorks 2.1v1/v2/v3-->2.1v4" file into the same folder on your hard disk as your ClarisWorks application.
3. Double-click the ClarisWorks 2.1v1/v2/3-->2.1v4 updater to open it.
4. The updater will search for ClarisWorks. If the updater fails to find it, locate and select the copy of ClarisWorks 2.1 to be updated.
5. Click Update.
6. The update should take less than five minutes. You will see a message confirming successful installation of the new version, or an indication of what went wrong.

Congratulations, you have successfully updated to 2.1v4!

Questions?
Contact Technical Support at:
Claris Corporation
Technical Support MS-C12
5201 Patrick Henry Drive
P.O. Box 58168
Santa Clara, California 95052-8168

Technical Support for Macintosh Applications: 408-727-9054

Hours: Monday - Thursday, 6 AM to 6 PM & Friday: 6 AM to 2 PM (Pacific Time).

24-Hour Online Services
AppleLink: 3rd parties: Claris Folder
America Online: Keyword CLARIS
CompuServe: Go CLARIS
Claris BBS: (408) 987-7421 Settings: 8/N/1

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AppleWorks 4.0 Word Processing Translation (WP)

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According to Quality Computers, who makes AppleWorks 4.0, Version 4.0 Word Processing documents have the same file format as AppleWorks 3.0.

This means that converting AppleWorks 4.0 files into ClarisWorks files should be no problem using the regular AppleWorks translator (provided with ClarisWorks), along with Apple File Exchange, or PC Exchange 2.0 which now handles ProDOS as well. PC Exchange 2.0 ships with system 7.5.
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Decimal Differences When Showing Percent (%) in Slice of Pie Chart (SS)

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There appears to be a problem with controlling the percentage shown in a Pie Chart.

For example, in either a ClarisWorks document or a ClarisImpact document, make a Pie Chart of the following data:

Apples 30
Oranges 40
Peaches 30

In the chart options, under Series, choose the option of Show Value, % in Slice (ClarisImpact) or Display Label Data, & in Slice (ClarisWorks).

Notice that the resulting chart shows 30.0% in some slices, but 40% (no decimal point) in the other. This is reproduceable in versions of ClarisWorks from 1.x through and including 2.1v3 and in ClarisImpact through 1.0v3. Claris development is aware of the problem.
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ClarisWorks 2.0: The View from Publish & Subscribe

Support for Publish & Subscribe feature gives the desktop publisher more options and flexibility.

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ClarisWorks 2.0 provides you with features and options you need to create high-quality documents. This article examines solutions that use ClarisWorks Publish & Subscribe as well as its most versatile feature: Frames.

Publish & Subscribe

Publish & Subscribe is designed to make it easier to share information with other documents and applications. You must be running Apple System 7 in order to take full advantage of Publish & Subscribe, but if you are currently running System 6, you can use the shared data but you cannot send and automatically receive updates, as you can with System 7.

Publish & Subscribe is "live" copying and pasting of information from one document or application to another, so that when you change information in one place, it automatically changes in the other. When you use Publish & Subscribe, the information is in three places: The publisher, the edition, and the subscriber. The original source document publishes an edition file of the selected data, and the secondary document subscribes to the edition file - "pasting" the published data into the document that subscribed to it. The link is maintained even if any of the files involved are moved, renamed, or closed.

Key features of P&S

You have the ability to publish or subscribe files over a network. The source files can actually be located on several different Macs, and the subscribers will update automatically whenever a publisher "saves" a change in the published document. Because publishers and subscribers are linked by the edition file, the link is maintained whether the files are renamed, moved or closed. This has some useful implications as far as usage goes. These are as follows. Using P&S saves disk space. An edition file is created with only selected data, not necessarily the entire file. This means that you can subscribe to a chart created with a relatively large spreadsheet, without having to subscribe to the entire spreadsheet file. Several subscribers can subscribe to the same edition. P&S thereby transparently supports workgroup production of documents.

If an application can publish an edition, then any other application that can subscribe can use it.

P&S has some usage limitations that may effect the planning of your document design and production. P&S will not

* Modify or edit subscriber data beyond formatting.
* Do irregular text wrap.
* Adjust network access to avoid network traffic or slow processing.
* Publish or subscribe to any graphic format other than PICT.

When to use P&S

Imagine you want to publish a weekly newsletter that consists of some articles, a chart, and pictures. You decide to use P&S, knowing that the creation of the elements of the newsletter can be delegated, so you inform the perspective sources of the articles, chart, and photos to publish edition files of their work and save them to a convenient location on your network (like a local server or a shared folder). You can simply open a new document and subscribe to those editions: With a little formatting, you have a newsletter.

When to use frames

While Publish & Subscribe provides a means to bring together data from various applications or documents, frames allow you to produce complex documents from within the same application. Use Frames to generate your entire newsletter. Frames allow you to integrate or combine different ClarisWorks application environments in a single document. Scan photos and insert graphics files into your document. In the same document, you create a spreadsheet frame and produce charts. Create text frames - taking advantage of the outline feature to organize ideas for articles. Within the same document, create a paint frame to produce a logo for your new publication.

You can move, resize, and change the appearance of frames. By clicking into a frame, you enter its application environment, and have access to the tools and commands in that environment. When you save a document that contains one or more frames, ClarisWorks stores each frame and its contents as part of that document.

The integration between word processing, database, spreadsheet, drawing, painting and communications environments is the power of using frames. This integration allows you to have complete control from within any ClarisWorks document over formatting the contents of frames. Elements such as irregular text wrapping in a drawing frame, combined with spreadsheet data in a spreadsheet frame can each be edited from the same document. In addition, frames themselves can be published to other documents entirely or in part.

Can P&S and Frames Be Used Simultaneously?

Returning to the newsletter example, once you create a single newsletter document, you discover that a new, larger document needs to be

produced at a different location. This other larger document requires some or all of the same data of the original newsletter. The original newsletter was produced entirely with frames, but now you publish editions of several sections of the newsletter in the larger document. The larger document may consist of frames as well as subscribers generated by several different documents.

When an edition file needs updating but the person who created it is unavailable, you can subscribe to an edition file of text, for example. You can then select the text, copy it, and paste it into a text frame. You can edit or update this selected text from within its frame.

Using Publish & Subscribe in combination with frames allows you to combine features of each to get the most out of ClarisWorks. Frames, for example, are geared toward the single user, whose entire document production may occur right on the single desktop. Use only frames in your document production when you are creating documents whose basis is a "snap shot" or time slice of data that does not need to be updated. This data can be drawings or pictures, like a map, that change little or not at all over time. Use Publish and Subscribe in combination with frames for tasks that involve dynamic (changing) data to open up your document production and organization to an environment where information may be shared, managed, and updated in workgroup situations or other situations that require you to use a separate data source in whole or in part.

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-40 Error Opening WinWord 2.0 Files Saved From WinWord 6.0

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If you create a document in the WinWord 6.0 application and use the Save As command to save the file in the WinWord 2.0 format, the ClarisWorks WinWord translator will generate a -40 error when trying to open the file.

This only occurs if you save a WinWord 2.0 file from WinWord 6.0. If the original document is created in WinWord 2.0, it will be translate correctly into ClarisWorks 2.1. Also, if a document is created in WinWord 6.0, saved in WinWord 2.0 format, opened into the WinWord 2.0 application and saved, it will convert properly into ClarisWorks 2.1.

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ClarisDraw: Cannot Align Across Layers

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Q. Can ClarisDraw 1.0 align objects over several layers?

A. No. This is a design limitation in the current version of ClarisDraw.

There is no direct workaround at this time.

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Chart is Obscured by Legend or Title

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If you are using ClarisImpact 1.0, and find that your chart legend is covering part of your chart information, try the following:

With your chart frame selected (there will be small, black, square selection handles on each corner) choose Legend & Title... from the Chart menu. In the Show Legend portion of the window that appears, make sure that both Overlay Hor. and Overlay Ver. are not checked. If they are both checked, the chart will stretch to be as wide and tall as possible in its window, and the legend may overlap part of the chart information.

This is also true for the Title.
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ClarisImpact: STR 128 Error with Updater

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The ClarisImpact Updaters were developed to bring previous versions of ClarisImpact up to the current version. The updater will currently function only with United States, single-use versions of the software. Site Licensed customers must receive a new disk set to update their licensees.

When running the ClarisImpact 1.0v2 or 1.0v3 Updater, the following error message may be seen: "Could not update ClarisImpact because it is not the file that this updater was designed for - the STR 128 is different". This message could be in error.

If you are running a U.S. single-use ClarisImpact, do the following: Run the ClarisImpact Installer, and select the "Customize" button. Select the "ClarisImpact Application" custom install option, then click "Install." When installation is complete, run the updater on the newly installed version.

STR 128 contains the current styles directory name. The only way this resource gets changed is when the "ClarisImpact w/B&W Styles " custom installer option is used. Installing a new application installs ClarisImpact with the default resource string "ClarisImpact Color Styles" which is the string expected by the updater.

Note: This is the same for both the 1.0v2 and 1.0v3 updaters.

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Creating a Dashed Polygon

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ClarisDraw can apply dashes only to a line. Following are the steps to create a dashed polygon. Please note that an object created with this workaround cannot easily be filled with a color or pattern.

1. Double-click on the Line tool so that it is locked (it will turn a darker gray when locked).

2. Choose Guideliner in the Layout menu so that it has a checkmark next to it.

3. Draw the first side of your polygon.

4. When drawing subsequent sides of your polygon allow the Guideliner to locate the end of the previous side (indicated by a plus sign) so you can connect the sides easily.

5. When all of the sides are done, select all the lines (drawing a selection rectangle around the lines instead of using the Shift key will be easiest).

Note: When selection handles overlap, they disappear. In this example, when all the lines are selected none of the selection handles will show.

If you do not need to fill the polygon with a color or pattern, use this step:

6. With the lines selected, choose dashed from the Line Styles menu (located on the horizontal tool bar) and choose Group from the Arrange menu.

You will be able to resize and change the pen color of the object you have just created, but you will not be able to fill it with a color or pattern.

If you need to fill the polygon with a color, use these steps:

1. With the lines selected, choose Copy from the Edit menu, create a Paint Frame large enough to contain the object and Paste. You will see your object in the Paint Frame.

2. While still in the Paint Frame, fill the inside of the polygon with the color you want and fill the rest of the Paint Frame outside the polygon with black. Now change the black to white. (This step is used to eliminate the Pen color of the object while creating a Fill color.)

3. Click to select the Paint Frame with the Arrow tool and choose a transparent Fill and Pen color so that the Frame border and background disappear.

4. Move the Paint Frame to behind the polygon that you first drew by using the Move to Back command from the Arrange menu. Next, move the Paint Frame so it is directly underneath the drawn version of your Polygon (the Arrow keys on the keyboard allow you to move the object in small increments for precise alignment).

5. Select your drawn lines, choose dashed from the Line Styles menu (located on the horizontal tool bar) and choose Group from the Arrange menu.

6. Select the Paint Frame and the drawn objects and group them.

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ClarisImpact: Documentation Error Notes

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Page 13-5 of the ClarisImpact User's Guide states that it is possible to change the "border, color, and fill, and add a drop shadow using the tools on the style bar" while a Note is selected.

However, changing these attributes for a Note is not possible. When attempting to change one of these attributes in the manner described ClarisImpact will simply beep at you.

You can change the size and text color of a note.

The Publications Department is aware of the the issue.
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ClarisDraw 1.0: Opening CGM Files

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ClarisDraw 1.0 ships with a CGM filter. CGM is a file format commonly used on Windows machines. If you need to open a CGM file, be aware that ClarisDraw will not be able to open the file based solely on the file's three-digit extension - you will need to edit the file's file type code manually using Norton Utilities, ResEdit, or some other utility. The file type for a CGM file should be "CGMF".

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ClarisDraw 1.0v1: Pasted Polygons and Bezigons Do Not Print

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Polygons and bezigons drawn in ClarisDraw 1.0v1, then copied and pasted to Microsoft Word, do not Preview or Print when you are using the HP DeskWriter 5.0 driver.

This has been fixed in ClarisDraw 1.0v2.

The best workaround is to use Save As... to save your ClarisDraw file in the PICT or EPSF format, then use the Microsoft Word Insert Picture command to place that picture in the desired location in your Word document.

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ClarisImpact 1.0v4: "Font not Installed in System" Message

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There is a difference between the fonts which are installed with ClarisImpact 1.0v3 or earlier, and those which are installed with ClarisImpact 1.0v4.

If you have previously installed ClarisImpact 1.0v3, and update the application to 1.0v4 (via updater or through a custom installation), but do not update the fonts which are installed, your documents will use the 1.0v3 font information without any problem. When you open and save the files, using the 1.0v3 font information, in ClarisImpact 1.0v4, the files are assigned to those fonts.

However, if you then replace the ClarisImpact 1.0v3 fonts with the newer ClarisImpact 1.0v4 fonts, the files do not convert the font information to the new fonts. Basically, the document will continue to try to address the old font information.

What will happen on your machine? ClarisImpact will react as though you have a font in your document that is not currently installed in your system. You will see a "Font not Installed in System" alert when you open your old documents, and the fonts in those documents will display and print in Geneva.

Fortunately, there is an easy workaround. Open and save the files in 1.0v3, and then open them in 1.0v4. The font conversion will then work properly. Note that any new files that were created in 1.0v4 with the 1.0v4 fonts would work perfectly.

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ClarisImpact: Communication Ideas & Tips

With the ClarisImpact intelligent tools, your visual communication gets a productivity boost with professional-looking results. Here's an overview and some tips.

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When I first saw it, my eyes bugged out. I knew that I had to get this product. I didn't even know what it was called, but I just knew that I had to have it. Watching the ClarisImpact software demonstration made me think of all those times I struggled to get my point across graphically, using charts, slides and clip art. Since the inception of the Apple Macintosh ten years ago, we have all been communicating graphically, mixing fonts and typefaces, drawing boxes and lines on a page. Never before has it ever been this easy to communicate visually. But as easy as the Macintosh has been all these years, creating visually compelling documents has still required some kind of know-how or talent. The sad truth is that even if you had a state-of-the art machine, top-of-the-line software, you could still create documents or reports that nobody cared about. Good visual communication and presentation will always depend on a four basic elements, according to the author of Looking Good in Print, Roger C. Parker:

* a willingness to experiment
* confidence in your perceptions
* recognizing that effective design is a process, not an event
* devotion to detail

These four elements are deceptively simple. I am not a visual artist; but I, like most people, do know what I like-that just about sums up my sense of design. After that, I'm a little at sea, and don't exactly trust my perceptions enough to experiment. But ClarisImpact makes all that goes into creating effective design different and fun.

The content of your message vs. the way it looks

Previously, good design was in the realm of professional designers, neither hardware nor software dependent. But, now, with a tool like ClarisImpact to get you started, you can build your confidence in your own sense of good design, and produce visually compelling documents right away. ClarisImpact is based on the concept of object models of visual communication and the elements associated with these models. For example, the models that are available to you from the ClarisImpact report, drawing and presentation documents are outlines, tables, data charts, organization charts, flow charts, calendars and time lines. To help you with your creations, ClarisImpact comes with predefined model styles that reflect a devotion to detail, confidence and consistency in design that was all taken care of in advance by professional designers. You don't have to think about these design elements, unless you would like to create your own styles later on, which ClarisImpact also allows you to do for each model. But at the onset, you can't go wrong for trying your hand at creating a calendar, organization chart or time line. Your first ventures into the ClarisImpact design environment get results right away, so you can easily concentrate on getting your message across.

ClarisImpact in action

ClarisImpact has three types of documents, a powerful drawing type, a word processor, which is very similar to the word processor in the popular program ClarisWorks integrated software environment, and a presentation type. Each type of document has powerful new features; and, as with all Claris products, they have the clear interface that makes for an easy learning curve.

The new ClarisImpact intelligent tools, called models, make the creation of certain kinds of graphics very easy. For example, as shown in Figure 1, bar charts can be edited, created and presented in a variety of styles-without leaving the charting environment. The chart in Figure 1 shows data that has been entered into a ClarisImpact table. The table and chart are intelligently linked: you can create and store your own styles or use any of the twelve preset styles of data charts that ship with ClarisImpact, so that you can format and present the data according to your presentation needs. In addition, if you would like to separate the data table and generate additional charts from the same tabular data, you choose Separate Table from the Chart menu. If you need to edit the table values, there is no need to leave the chart format to go to the table; you can click on the element that needs to be changed and start entering the new data right away, right in chart mode. The table is linked to the chart in such a way that you can choose to hide or show the table.

Similarly, if you wanted to draw an organizational chart, before ClarisImpact, you either had to draw it in a drawing program, which could take hours, or you could buy and learn a program that did nothing but organization charts.

With the ClarisImpact OrgChart tool, you can select from many styles, such as the Basic, Informal or International styles, or you can make your own. Once you have selected the style, the chart is made for you and all you have to do is type in the names and positions. Adding or deleting positions can be done with a single click, and the ClarisImpact drag and drop technology allows you to reposition individuals or reorganize entire branches very quickly: simply select the branch of the organization chart, drag it to its new location and release the mouse. It couldn't be much easier.

Along with this ease of use comes tremendous flexibility. You can create your own styles for the organization chart or for each position within the chart. You can use the drawing tools to draw them, or you can use any of the thousands of pieces of Claris Clip Art that is included with the program-you can even make each position in that organization chart a QuickTime movie of the person represented!

Lest you think that ClarisImpact is a program strictly for drawing Organization Charts and presenting tabular data, you should know that there are four other models: Outlines, Flow Charts, Tables, Timelines and Calendars. When you create one of these models, you can rely on the appropriate menu to appear always in the same position in your menu bar no matter what kind of model you are editing, so you don't have to think about the organization of your menus and commands.

Each of these models comes with similar Model Styles, so when you find the one that you like, you can use that same style in each type of model that you create, giving your documents a uniform, professionally designed look. Of course, if you are creatively inclined, you can make your own matching style for each model. Smartness is built into ClarisImpact, in its editability and drawing features. There are smart Connectors (lines that stay "attached" to objects no matter where you move them), a PointGuide tool, which finds points on an object automatically, SmartAlign tool, which keeps objects aligned when you move any one of them, the ability to edit objects in a group without ungrouping, and special Shape tools, which draw tools like stars, arrows, boxes and speech balloons.

In addition, there are features such as Text Styles; editable Drop Shadows, colors and gradients; Bezigons (for drawing shapes with precise connected curves); zooming up to 3200% in hundredth of a percent increments; Claris XTND translator technology; 256 text colors; and regular and irregular text wrap around objects. Each of these features, along with the seven kinds of models, is available in the drawing, word processing and presentation documents.

Because each of the ClarisImpact models is so adaptable, there is no limit to what you can do with each type of document. For example, educators who take great pains to produce calendars, can produce sophisticated results in a matter of minutes, such as that in Figure 2, which takes advantage of the various element styles available for calendar models. Educators will also want to use its integration of tables and charts into the word processor to write grant proposals, lesson plans and reports whose designs can easily transfer for use in educational materials or tests. ClarisImpact is great for writing tutorials. Use the presentation type document to make presentations that outline and step through a procedure, with QuickTime movies or charts that illustrate each step or procedure. You can set up a presentation to advance slides automatically, or set it up to advance slides manually. ClarisImpact presentations can build each item of an outline progressively, adding clarity and effect for each item.

Building on the idea of an automated presentation, a creative use for ClarisImpact presentations is the informational kiosk. The idea is to have a ready-made presentation, which sits on the hard drive of your machine. You put the machine somewhere where numbers of people can view your presentation, which you set to loop continuously. After starting up your presentation, you remove the input devices, the mouse and keyboard, so that your machine is merely a monitor displaying information. When you want to remove the kiosk or change the display, just plug the mouse and keyboard back in and make your changes.

Like other Claris products, the ClarisImpact tools will help you solve day-to-day puzzles that present themselves as opportunities to test, not just your tools, but your creativity as well. ClarisImpact will also help you make the best use of your investment in your Macintosh computer, whose future began with desktop publishing. The standards for visual communication have never been the same since. In the same vein, color printers are coming down in price. This too will affect the way you think about visual communication. People will now expect to see color or pictures in your documents and presentations. Rise to the occasion with impact.

TIPS

Creating and saving model styles
A model style holds format options for an entire modelÑthe associated chart type, element colors, text settings, layout-so that related information gets presented in one style, remaining consistent and logically organized. Model styles are stored in a separate file, so that you can create your own model styles or modify and rename or delete the model styles that come with ClarisImpact. The rule of thumb to remember is dialog boxes: changes made to a model within a dialog box are saved with the model style. For example, if you select a Connector in your organization chart model, then click the pen color icon, that change will not be saved. But if you go to the Connectors... menu from Connector Settings, a dialog box will appear and when you make your changes there, the changes will be saved with the model style.

To add a Model Style after having created a model you would like to use again:

1. Select the model.
2. Go to the Model Menu and select model styles. Click the Add button. This will create a Model Style.

ClarisImpact keyboard and mouse combinations
Other keyboard and mouse combinations are covered in the Quick Reference card included with your software. Try these shortcuts:

* Hold down the Shift key while clicking on an object and the object(s) previously selected will remain selected.

* Hold down the Command key while dragging an object and the outline of the object will be more accurately represented.

* Hold down the Option key while dragging an object and the object will be duplicated.

* Holding down the Shift key while resizing an object allows proportional resizing.

* Holding down the Option key while resizing an object will resize all sides at once. When drawing, an object will draw from its center (the exception is stop sign tool).

* Hold down the Shift and Option keys while resizing an object and all sides of the object will be resized proportionately. You can also use this keyboard combination when drawing an object.

Figure 1: Charting options for a table that you can show or hide. Once you create the table, you have a variety of charting options and powerful editing capabilities. Clicking on the "crossed-out" icon at the bottom of the table will hide the table.

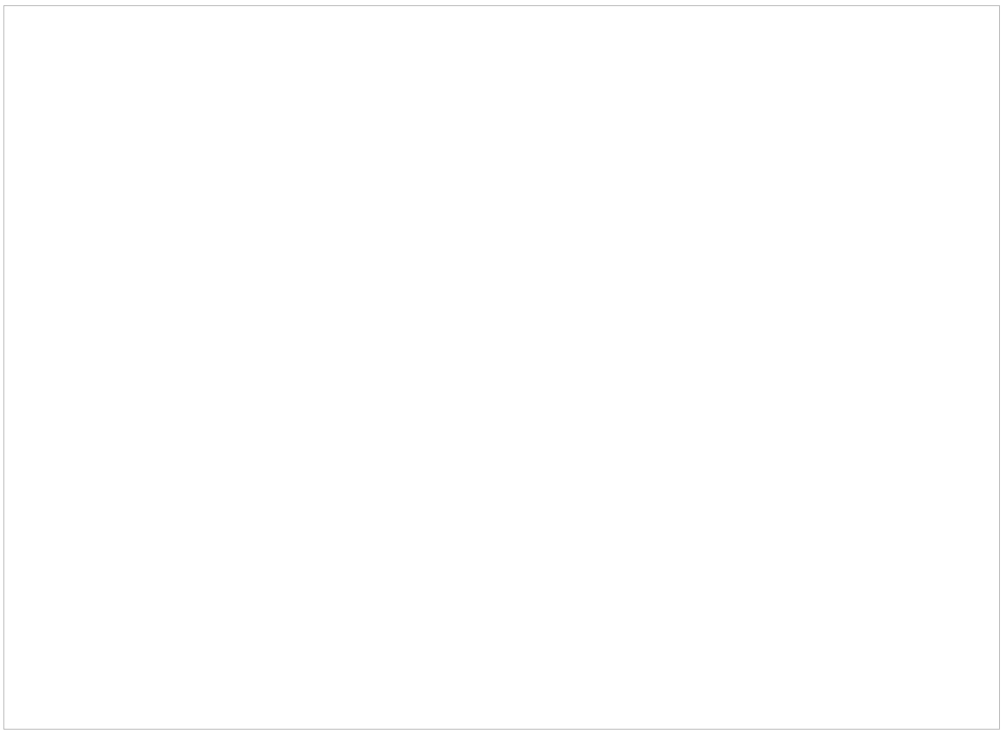

Figure 2: Element styles are used to set the individual parts of models. Above, a calendar model has an element style applied to two of its days to accent the vacation banner, a marker that spans several days.

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Resizing Groups of Rotated Polygons Can Cause Unexpected Results

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you group rectangles or regular polygons that have been rotated, then resize the group, the objects in the group may appear to resize in unexpected ways. This is because the program stores data about objects in their non-rotated state.

To see this easily, create two groups of rectangles. For group 1, create a rectangle 1x3 inches and another 3x1 inches (one short and fat, the other tall and skinny), select the two rectangles, and choose Group from the Arrange menu. For group 2, create a rectangle 1x3 inches. With the rectangle selected, choose Duplicate from the Edit menu. Choose Rotate from the Arrange menu and rotate the second rectangle 90 degrees. Align the bottom edge of the two rectangles, select them both , and choose Group from the Arrange menu. The goal is to have two groups that look identical, but only one which contains a rotated object.

Click on group 1 and expand it to be twice as tall. Both objects in the group should expand vertically, becoming twice as tall as they were originally. Now select group 2 and do the same procedure. Notice that the rotated object expands along the axis that was vertical before it was rotated. That is, it gets wider rather than taller.

In order to have rotated regular polygons resize properly, you must get the program to recognize their rotated position as their original position. To do this, follow the procedure below for the program you are using.

For Claris CAD

1) Select the group containing the rotated polygons and choose Ungroup from the Arrange menu.

For each polygon..

2) Select the polygon
3) Choose Unjoin from the Arrange menu
4) Immediately choose Join from the Arrange menu

After doing this to each rotated polygon, you may reselect all desired objects and regroup them.

For MacDraw II and MacDraw Pro

Save the file as PICT then reopen it. In opening the PICT file MacDraw II and MacDraw Pro will take the rotated position of all polygons as their starting orientation, and they will resize correctly.

Check the alignment of objects and text to be sure that they have not shifted when the file was saved to PICT.

Published Date: Feb 18, 2012

Objects Will Not Fit Within Document Boundaries

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you rotate an object in ClarisDraw, copy it, then paste it into ClarisCAD, ClarisCAD will generate a message that the objects will not fit within document boundaries.

The best workaround is to save your document as PICT or EPSF from ClarisDraw and use the Place File command in ClarisCAD to bring in that graphic.
Published Date: Feb 18, 2012

ClarisDraw 1.0v1: Problem Converting from MacDraw Pro

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a known problem with converting files created in MacDraw Pro into ClarisDraw 1.0v1 for the Power Macintosh. Any objects created with the polygon, bezigon or freehand tools will not print to a LaserWriter, even though they look fine on the screen. This is reproducible using LaserWriter Driver version 7.1.2 and 8.1.1 (and probably others).

This has been fixed in ClarisDraw 1.0v2. Any documents already converted from MacDraw Pro to ClarisDraw 1.0v1 for the Power Macintosh will be fixed by saving them out in MacDraw Pro format (thereby retaining any changes made) then reopening them in ClarisDraw 1.0v2 for the Power Macintosh.

Suggested workarounds for ClarisDraw 1.0v1:

1) Within ClarisDraw for the Power Macintosh, save the non-printing file as another format (MacDraw Pro or MacDraw II). Reopen the resulting MacDraw Pro/II file with ClarisDraw Native and it should print fine.

or

2) Print to a non-PostScript printer, such as a StyleWriter or DeskWriter.

or

3) Convert the MacDraw Pro files using ClarisDraw on a Macintosh other than a Power Macintosh. Once saved using ClarisDraw, the file can be opened with Native ClarisDraw on a Power Macintosh and printed successfully.

or

3) Use the Custom Installation feature to install non-native ClarisDraw onto a Power Macintosh. Use this non-native version to convert MacDraw Pro files. As in suggestion 3 above, once the files are converted and saved using the non-native version, they can be successfully printed from the PowerPC native version ClarisDraw.

Published Date: Feb 18, 2012

A Task Cannot be Printed with All Attached Notes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you create a Task, you may want to give more detail for the Task than is possible in the single line title provided in the Task dialog. While you recognize the Note as an expansion of the Task details, Claris Organizer sees Tasks and Notes as separate lists. You may print out your Notes or your Tasks, but not both together.

If you leave the title of each Task as part of the Note Title, and you make sure the date and time of the Note matches the date and time of the Task, a printed list of your Notes will be in the same order as your tasks. If you assign the category "Task/Notes" to both the tasks and notes, and find that category for both Task and Note lists, your printed lists will be relatively easy to match and read.
Published Date: Feb 18, 2012

Task List Headings Truncated

Sometimes when I print, the Task List heading seems to be truncated. What could cause this?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If a font size larger than 24 point is selected when printing a Task List, the headings may be truncated.

Follow these steps to recreate:
1. Launch Claris Organizer
2. Select Task from the Create menu
3. Press OK
4. Choose Print from the File menu and select Task List
5. Press Edit
6. Select all listed items to print
7. Ensure "Reduce to fit" and "Smart truncation" are selected
8. Type "25" in the font size field
9. Press Print - Notice headings have been truncated

Published Date: Feb 18, 2012

ClarisWorks: Converting a Database From 68K Macintosh to Power Macintosh

When moving from a non-Power Macintosh version of ClarisWorks to a Power Macintosh version, be aware of some numerical precision issues. This article describes the issues further.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

There is a problem with number and date fields of databases that have been created on a 68K Macintosh with ClarisWorks 2.x software, then opened on a PowerMacintosh running the native "Accelerated for PowerMacintosh" ClarisWorks 2.1v3 (PPC) application.

The problem has been recreated with number fields that have been defined as a pre-defined input list as well as auto-enter serial numbers.

Symptoms
One example of the problem may be something like this:

Pre-defined list on 68K Macintosh with the values defined as follows:
1
2
3
4

After opening the same file containing the above field on a PowerMacintosh using the native, "Accelerated for PowerMacintosh" version of ClarisWorks 2.1v3, the pre-defined list has been converted to:
1.96875
3.476784003707e-310
5.305232320559e-315
8.095265607109e-320

Again, similar results occur with number fields that are are formatted with the auto-enter option where incrementing by 1 will convert to incrementing by 1.96875.

The inconsistency has also been reported with date fields. When a database file was opened with ClarisWorks PPC running native, the dates in the date field had changed. When the database was opened with non-native ClarisWorks, the dates went back to normal.

Workaround
1. If you see this behavior, close the file immediately without saving changes. (Note, even if you've already saved changes, the following steps may work)
2. Install the 68K version of ClarisWorks 2.1v3 on the Power Macintosh using the installer's Custom install option.
3. Delete or avoid using the Power Macintosh version of ClarisWorks for use with databases.
4. Opening the database with the non-native, 68K version of ClarisWorks will work fine. (TIP: Keep the 68k version, or an alias thereof, on the desktop so your database files can be dragged and dropped over the non-native version of the program to open them.

Claris Engineering is aware of the problem.

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ClarisDraw: Description

The next generation of drawing software is faster and easier to use than ever before.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

New ClarisDraw software is here! The successor to the MacDraw Pro drawing environment, the best-selling Macintosh graphics application, brings new speed, clarity and intelligence to Macintosh graphics-on both Apple 680X0 Macintosh and Power Macintosh machines.

MacDraw Pro has been popular with "graphics generalists"-those whose graphics needs include the most popular business and home uses like line technical, diagrams, maps, floor plans, flyers, overhead slides, free-form graphics-because of its powerful features, which have always been easy to use. Even novice users became productive in very little time. ClarisDraw takes the "Simply powerful software" tradition one step further with performance boosts and new, intelligent features that make your drawings more dramatic, yet even quicker and easier to create.

For starters, the SmartConnector feature from ClarisDraw allows you to draw lines connecting boxes or other objects and have these lines remain perfectly connected. The SmartAlign and SmartSize features automatically maintain alignment, size and spacing between objects, even if you move or resize them.

Two more features provide one-click access to popular visual effects that used to take several steps to create. For a professional-looking drop shadow behind any object, simply click the object, then the SmartShadow button. The SmartEmbossing feature provides a dramatic embossing effect with similar ease.

ClarisDraw assists you during every phase of your drawing. The PointGuide and Guideliner tools help you draw, place, size, and move your objects correctly. PointGuide changes the appearance of the cursor to help you locate an object's corners, midpoints and centers. Guideliner provides an instantaneous "T-square" on your screen, allowing you to see how new objects-or objects being moved-relate to existing ones. There's also a floating object information palette, which gives information on any object's location, size, and angle of rotation. You can even type values directly into this palette, making high precision a snap.

ClarisDraw ships with the SmartSymbol library, a set of more than 2,400 high-resolution, professionally-designed maps, figures, symbols, engineering and architectural art, in both color and monochrome. To add a library object to your drawing, simply open the library and drag the object into your document. By using SmartSymbol objects, it's possible to have a quality, finished drawing in only minutes.

If you've duplicated library objects (called "clones") in your document, then you decide to change them, there's no need to edit each one separately. The ClarisDraw Replace Clones feature allows you to change one clone, then modify the rest based on the changes you made to the first.

Text handling is another ClarisDraw strong point. The easy-to-use Bind Text feature allows text to follow the shape of any object-no need for complicated and expensive applications to perform this special effect. Simply create the object and text, select them both, and choose "Bind Text" from a menu. And it's done. And you can easily experiment with a variety of bind text settings until you find the effect you're looking for.

The ClarisDraw Convert to Bezigons feature also adds sizzle to your drawings. With it, any object, including text, can be converted to bezigons for an almost limitless variety of special effects. For example, once converted to bezigons, a block of text (either as a group or each letter separately) can be resized, distorted or reshaped, or filled with colors, patterns or gradients.

Page layouts were a popular application for MacDraw Pro. ClarisDraw makes them even easier with several new text-handling features. You can wrap text around any object, with either regular, smoothly-justified wrapping or "irregular" wrapping. (See Figure 1.) You can also link frames so text flows from column to column and page to page. There's no longer a need to manually move text from one frame to another as it's being edited. ClarisDraw also has a Text Styles feature, allowing you easy access to frequently-used combinations of font, size, style and text color. You can name these styles, and access them with a single click from a pop up menu.

A quick tour

What's it like to see ClarisDraw in action? Let's say you have just a few graphic elements, and you want to pull them together in a way that will attract immediate attention. Starting with a new ClarisDraw document, use the text tool to drag out a couple of linked text frames. You can easily adjust the zoom controls so you can see the entire document on your screen. Once you have the linked text frames the way you want them, select "Place File" from the File menu to import your text. Since ClarisDraw supports XTND translation technology, there are numerous word processing file formats to choose from, including the ClarisWorks, MacWrite II, Microsoft Word, T/Maker's WriteNow, and other formats.

Once the text has been placed, arrange and format it as you like-use text styles to store fonts, styles and text colors, making formatting as easy as point and click. Next, import a picture into your page layout, and set the text to wrap around it: just click on the objects and choose "Wrap Text" from the Text menu. The Alignment palette helps align the text and graphic objects precisely; the Object Info palette lets you enter precise

dimensions for every object's size and placement.

Type some more text, select it and the picture you just imported, then choose "Bind Text to Object" from the Text menu. The text instantly binds to the picture's edge. The "Bind Text Options" settings box lets you fine tune how the text binds. Finally, for a magnificent headline, type a bit more text, select it, then choose "Convert to Bezigons" from the Arrange menu. Now that the text is bezigon objects, you can move and stretch it any way you like-even apply a gradient. Check the clock: in only a few minutes, you've completed a page layout that looks professionally finished!

ClarisDraw brings a new array of drawing tools to the veteran MacDraw Pro fan. In addition, the ClarisDraw painting tools will open a new world. Creating images by painting offers an alternative when drawing tools just won't do the job. Painting is also the method of choice if you need to edit scans, photographs or other bitmapped images. ClarisDraw handles these tasks with ease-and you can incorporate the edited image into the finished document. Other full-color painting features include a customizable paintbrush and spray can, as well as transformation effects such as tint, distortion, crop, blend, shade and perspective.

For the page layout we were just working on, you could take a scanned photograph, insert it into a paint frame, and add artistic transformation effects (See Figure 2). Once the photo looks the way you want, simply copy and paste it to your layout.

Sharing files

Creating a magnificent drawing is one thing. Being able to share it is another. Because ClarisDraw supports XTND, numerous graphics formats, including MacDraw Pro, MacDraw II, ClarisImpact , EPSF, PICT, CGM, TIFF, and more, are supported for both import and export. It's a snap to open your MacDraw II or MacDraw Pro documents in ClarisDraw and save them back out in either format.

When ClarisDraw for Windows ships in 1995, both Macintosh and Windows versions will have the same file format. Sharing graphics files between Macintosh and Windows machines will never be a headache again! Even more importantly, since both versions will be identical, businesses will only have to support one product. That's no small point-support is a far bigger cost for businesses than the actual unit cost of software, so the potential for savings is considerable.

ClarisDraw is a worthy successor to MacDraw Pro; its new features, speed and usability make it the software of choice for those who need to get their graphics done quickly, easily and professionally.

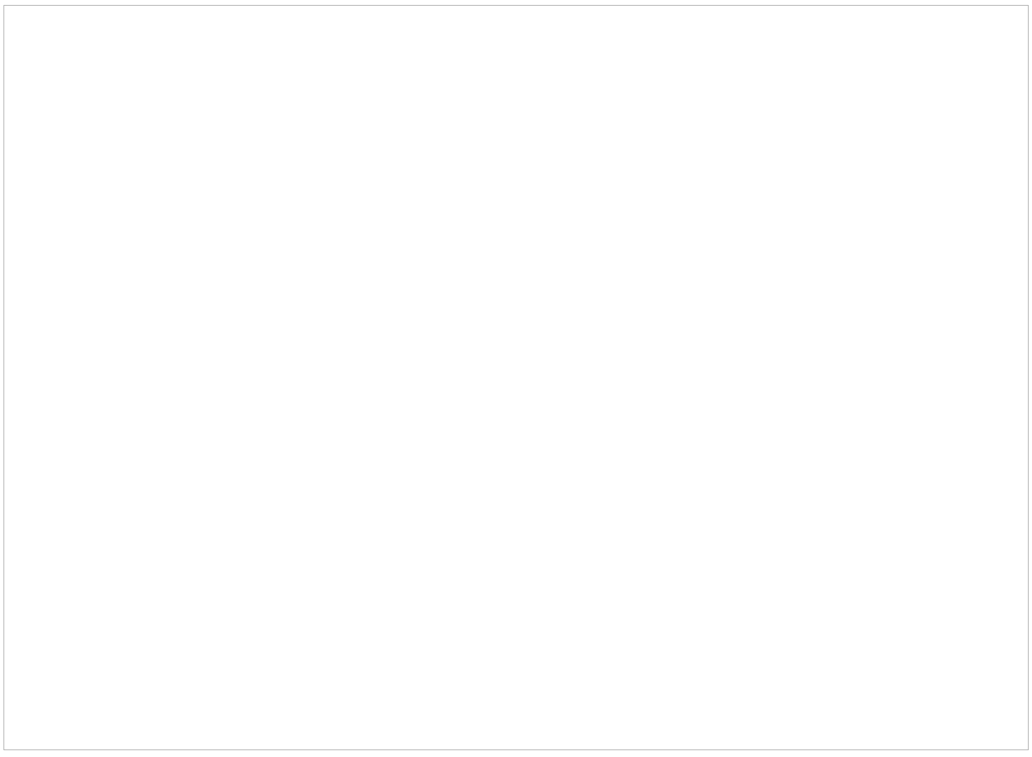

Figure 1. The ClarisDraw feature you wonder how you ever lived without-Text on a curve!

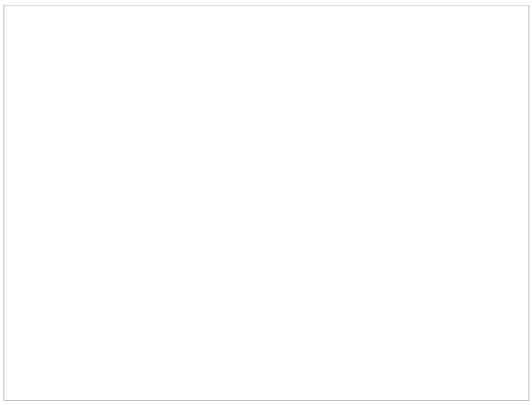

Figure 2. Experiment with features such as painting and superior text handling to create unforgettable results.

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ClarisWorks: Gas Mileage in a Spreadsheet

This article contains a ClarisWorks spreadsheet solution for your everyday needs of tracking a car's gas mileage.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

What was ClarisWorks software designed to do? It wasn't exactly meant to perform a single task. For example, let's say you want to track the gas mileage of your T-Bird. Suppose you have a budget for gasoline, and you want to make sure you're maximizing the miles you get per gallon. How could ClarisWorks help you do this?

Consider using the ClarisWorks spreadsheet. Here's what it might look like once you've collected some data. (See Figure 1.)

The basic design

In row one, whose entries are in bold text, you keep track of totals-how much money have you spent on gas, how many gallons, how many miles did you drive for your money, over how many days.

Row two of this spreadsheet displays your averages, the average cost of a full tank, the average gallons you get for a full tank, the miles, the miles per gallon, as well as the average cents you paid per mile, the average dollars you paid per gallon, and the average dollars paid per day for gas.

In row three, the headings of the collected data are displayed. Putting the headings here lets them serve as headings for totals and averages, above, and for data, below, at the same time.

In addition to the totals and averages generated in rows one and two, rows five and on show you the daily breakdown of the data you collect. You can see the miles that you drove between full tanks, the days between filling up, the daily miles per gallon, etc.

Set up

Once you've outlined the basic design of your spreadsheet, it's time to make it work. To set up the spreadsheet in this example, follow these steps.

Set up the totals and averages first.

1. Open ClarisWorks and create a spreadsheet document. Under the Views menu, choose Show Tools.

2. Go to the cell where you want your first total, the total of money paid for gas, to display. In Figure 2, which displays the row and column headings of this spreadsheet, the cell reference is C1 and the value it contains in the example is $159.

3. Enter the following formula:

=SUM(C4..C38)

The rest of the formulas are created in the same way. In particular, for averages and totals, the formulas are (Note: For clarity, annotations appear in brackets [] and are not part of the formula you type in a cell):

Totals:
E1=SUM(E4..E38) [Total gallons]
G1=SUM(G4..G38) [Total miles]
H1=SUM(H4..H38) [Total days]

Averages:
C2=IF(C5<1,"", AVERAGE(C5..C38))
[Average amount paid per full tank]

E2=IF(C5<1.'"', AVERAGE(E5..E38))
[Average gallons per visit]

G2=AVERAGE(G5..G38)
[Average miles per tank]

H2=AVERAGE(H6..H38)
[Average days between visits]

J2=AVERAGE(J6..J38)
[Average cents per mile]

K2=AVERAGE(K5..K38)
[Average dollars spent per day]

L2=AVERAGE(L6..L38)
[Average dollars per gallon]

Formatting
To make the calculated values display appropriately, as dates or currency or decimal numbers, highlight the cells that are to display calculated results. For example, for the cells that hold the date values, highlight the column of cells starting at B4, then select the Format menu and choose Number. In the dialog box that appears, make your selections for Date values. Do the same for the values that are to display currency and decimals, selecting the appropriate options in the Numeric dialog box.

The fun stuff
This ClarisWorks solution makes use of some tricks pointed out in Figure 2. Of note are:

* The gutter to the left of the general display. To create this gutter, "begin" your spreadsheet and the related formulas at column B, not A. Then reduce the column width of A.

* "Floating" text block. Add a "floating" text block by selecting the "A" tool and drawing a text box.

* Gradient in Header. Add a Header to your spreadsheet, then draw a rectangle with a gradient fill, cut it and paste it as an in-line graphic in the Header text. Align text and gradient by setting text to Superscript style.

* Em dash. Use an em dash (Option-shift-dash) to help you format your data and to prevent the display of irrelevant information, such as premature "miles per gallon" information, which depends on previous values to calculate.

* Colored cell borders. Add emphasis to a cell, through a colored border by selecting the "Rectangle" tool and holding down the Option key as you draw a rectangle. (The rectangle must have a transparent fill pattern.)

The advanced stuff
The heart of the solution is daily tabulations, indicated by those cells that have been formatted to have no borders (starting at G5). Note the calculations are spelled out in Figure 2 above. After you fill out your spreadsheet with these formulas, you may notice that what they all have in common is a test for a value (in this case, a date) that is greater than one in either B5 or B6, which represent your first and second visits to the gas station. To get the formulas to apply to all the days you fill your tank, you'll want to follow these steps for each column, G, H, I, J, K, and L:

1. Highlight the column of cells starting at G5 through G38.

2. Go to the Calculate menu and choose Fill Down.

The value for G6 (the miles covered between visits) can now calculate for each visit to the gas station. Do the same for the columns starting at H5, I6, J6, K6, and L5.

Your spreadsheet is ready to hit the pavement! Print out an empty version and record your data at the gas pump each time you fill your tank.

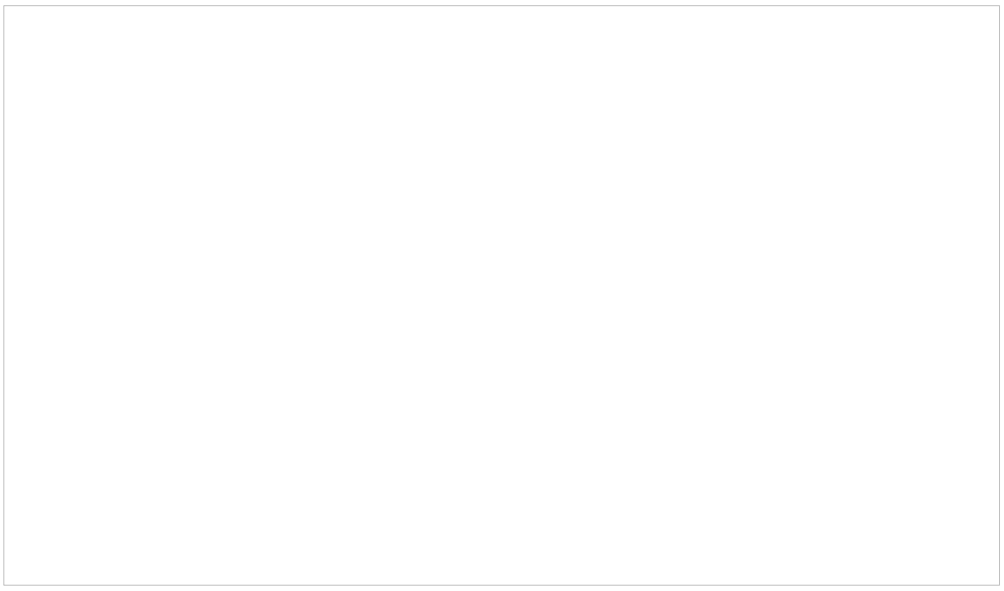

Figure 1. Track miles with a ClarisWorks spreadsheet. Collect data manually, then enter it into your spreadsheet to have ClarisWorks do all the math.

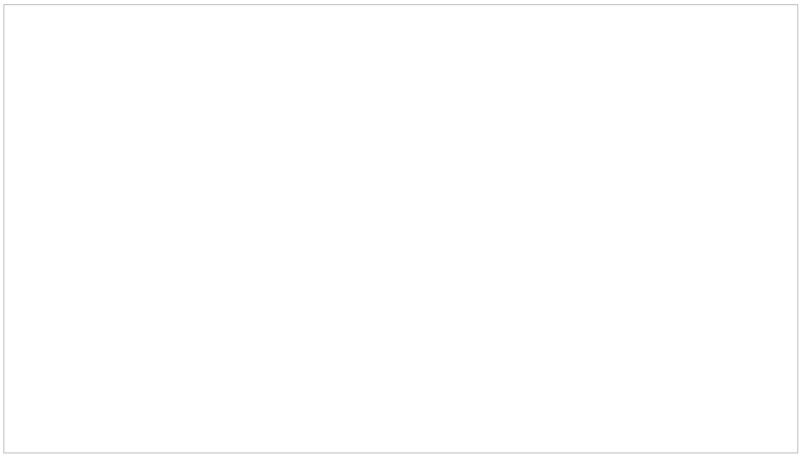

Figure 2. Behind the scenes of the ClarisWorks spreadsheet, these are the tricks that make it work.

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DOS 3.3: Interrupts (IRQ)

Interrupting the Apple's 6502 microprocessor while using DOS can be treacherous.
This article has been archived and is no longer updated by Apple.
DOS uses location $45 when converting your decimal numeric parameters to hexadecimal for its internal use. Similarly, the monitor's interrupt handler uses $45 to save the 6502 accumulator. So, if an interrupt occurs while DOS is executing a command, the numeric parameters DOS uses when it executes commands are changed. Also vulnerable is the sector length of the files listed in a catalog, since DOS also uses $45 to display this length.

Since DOS uses timing loops during its read and write operation, interrupting the Read Write Track Sector routines can kill a disk. DOS protects itself from IRQ, but has no control over NMI (nonmaskable interupt)--so don't use a NMI while using DOS.
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AppleShare PC: Checking Compatibility with the TELEX 386?

I want to install AppleShare PC on a TELEX 386, models 1285 and 7065. Will the LocalTalk PC Card work in these machines?

This article has been archived and is no longer updated by Apple.
We aren't familiar with the TELEX 386 (nor do we have documentation on it), and we don't know of anyone who has used AppleShare PC with it. However, you might check these articles in the Tech Info Library.

- "LocalTalk PC Card and PC-Compatibles: Compatibility Issues"

- "LocalTalk PC Cards and AppleShare PC: Compatible Systems"

- "AppleShare PC 2.0: Compatible Network Cards"

They discuss many of the compatibility issues of using the LocalTalk PC Card with IBM PC-clones. After reading the articles, it should become clear to someone familiar with the TELEX whether the two might be compatible and whether it is worth their time to test that configuration.

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ClarisImpact: Chart Axis Precision Different from Numeric Precision in Table

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:

The precision indicated in my Chart axis is not as precise as the numbers from my Table. I have typed in 4 columns of numbers. For example:

Label 1	Label 2	Label 3	Label 4
0.036	0.035	0.038	0.038
0.037	0.039	0.039	0.034

The chart I created from this table has a Y axis that looks like the picture below (Figure 1). Why are my numbers all 0.04?

Answer:

You need to format your cells so that the precision is greater. Select all the numbers in the Table and then choose Number Format from the Table or Chart menu. Change the Number Format to Fixed and the Precision to whatever you need (in this case, 3).

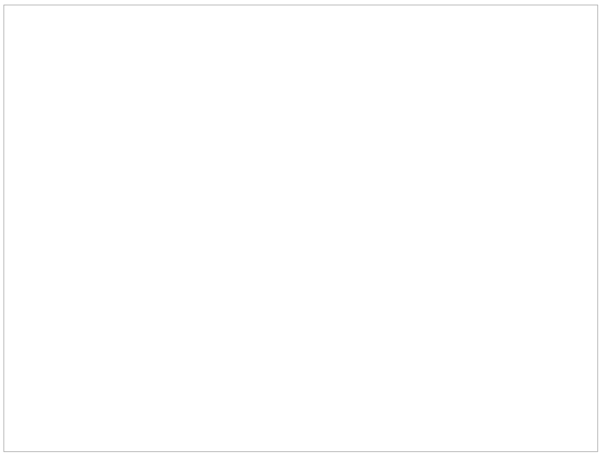

Figure 1

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ClarisDraw 1.0: Hardware Requirements

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Required Equipment:

* Apple Macintosh, Plus, Centris, Classic, LC, SE, Performa, PowerBook, II, Quadra or Power Macintosh family computer
* Hard disk drive and minimum 2 MB memory
* 4MB memory for System 7 and System 7 Pro
* 8MB memory for Power Macintosh
* System software 6.0.7 or later, System 7 or System 7 Pro

A list of specific printers which have been certified or verified as fully functional with ClarisDraw is not available. In general, any printer that is compatible with Apple print drivers and/or the above referenced Systems should work with ClarisDraw 1.0.

Since Claris no longer licenses nor provides plotter drivers, there was no plotting testing done with ClarisDraw.

There was no compatibility testing done with QuickDraw GX printer drivers.
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MacDraw Pro: PostScript Error with A la Carte EPSF Clip Art

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Files from the A la Carte clip art collection from 3G Graphics may result in a PostScript error when attempting to print. These files can be opened as MacDraw Pro documents, or placed into existing MacDraw Pro documents without problems, but cannot be printed.

Suggested workarounds:
1) After bringing the file into MacDraw Pro, save it out as an EPSF file. Bring that resulting EPSF back into MacDraw Pro and it will print without error.

2) Bring the clip art into ClarisDraw or ClarisImpact, if those are available to you. The files will print from from either of those applications.

Claris Development is aware of the problem.
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Claris Organizer: System Error 28 when Editing Fax Covers Layout (68000 Only)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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In the contact view, if you choose Print, select Fax Covers and then click Edit, a system error 28 will occur. The error only occurs on computers using the Motorola 68000 microprocessor. This includes the Macintosh Plus, Macintosh SE, Macintosh Portable, PowerBook 100, and Macintosh Classic computers.

Claris Development is aware of the problem.

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ClarisWorks: Exporting Fixed Length Fields

Fixed field length formats are commonly needed to send to the post office for bulk mailings., and for importing into other mainframe databases. Here's how to get a fixed field length format exported from ClarisWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Many types of databases require that each field have a certain number of characters in each field, usually referred to as a fixed length format. ClarisWorks databases use what is called a variable length format. To export ClarisWorks files in a fixed length format, follow the instructions below.

Explanation of Variable and Fixed Length Formats

In a variable length format database file, instead of counting the number of characters to determine where the next field begins, the program looks for a delimiting character. A tab, for example, is placed in between field values in a tab separated text file. If you have two fields, such as First Name and Last Name, here is what the program stores:

In a variable length format : Mary*Smith (where the * represents a tab)
In a fixed length format with 10 characters per field: Mary^^^^^^Smith^^^^^ (where the ^ represents a space).

Notice that there are six spaces after 'Mary' (4 characters 'M-a-r-y' plus six spaces equals ten) and five after 'Smith.' If you type in fewer characters than required by the field, the program adds spaces to make up the difference.

Most fixed length formats allow from 1 to 30 characters per field. Seldom do they allow for more characters than that. Since a variable length format does not care exactly how many characters there are in a field, the amount of text you can put in one is usually much higher. ClarisWorks , for example, allows you 510 characters in a text field .

ClarisWorks will only export variable length fields, but you can create a calculation that will translate your fields to a fixed length format. Then you export only the fixed length field. When that is imported into the database that follows a fixed length format, it will separate the information out into separate fields.

To Export Fixed Length Fields From Clarisworks:

ClarisWorks does not have a mechanism to export just one field, so you have to take a couple of extra steps:

1) Make a copy of the database. CAUTION: DO NOT FOLLOW THESE INSTRUCTIONS ON YOUR ONLY COPY OR YOU WILL LOSE THE INFORMATION IN IT.

2) Create the calculation field:
Assuming that you need the First Name and Last Name fields exported with 10 characters each, here is the calculation that you would use. It is only different from the FileMaker Pro calculation in that each field name has to have apostrophes around it.

ExportField (Calculation, text result) = Left('First Name' & "^^^^^^^^^^",10) & Left('Last Name' & "^^^^^^^^^^",10)

You will need the quotation marks. And, again, the caret (^) stands for a space.

For each additional field, add this to the end of the calculation:

& Left(Name of your field & "^^^^^^^^^^", Number of characters there are supposed to be in the field)
The number of carets (^) should equal the number of spaces needed in the field.

3) Change the type of the field from Calculation to Text.

4) Delete all of the rest of the fields from Define fields. If you have not made a copy of your database, or if you are not completely comfortable doing this, then do not attempt this. This will delete the information in your database except where it is listed in the fixed length format, and it is difficult to get it back into separate fields.

5) Go to the File menu and choose Save As and save the file as ASCII text.

Published Date: Feb 18, 2012

ClarisWorks: Printing Graphic Objects without Borders on DeskWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Graphic objects created with the Polygon, Regular Polygon, Freehand and Bezigon tools that have a transparent pen pattern do not print with a transparent border on the DeskWriter. The objects in the printout show an outline. The best work around is to change the pen color to white or the pen width to none. This will eliminate any color or line width so that your graphic objects print without borders.

Published Date: Feb 18, 2012

ClarisDraw: Gradients Print With Little "X" Marks or Imperfections

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you copy an object filled with a gradient from ClarisDraw and paste into another program such as Microsoft Word or MacWrite Pro, then print with the LaserWriter 7.0 driver, your gradient will have little "X" marks on parts of the gradient (they may look like little imperfections).

Workarounds:
1. Use the LaserWriter 8.0 driver (preferably 8.1.1 or later).
2. Save from ClarisDraw to EPSF format and then import into your other program.

Published Date: Feb 18, 2012

ClarisImpact: Presentation Text Not Centered

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The "Global" and "International" Master Slide Styles in ClarisImpact presentations are set to center the title and the body of each slide. The body, however, is set with a default left indent of .38 inches. The result is that the title and the body cannot easily be aligned.

To correct this, follow these steps:

--Global Style
1) Create a new Presentation with the Global style.
2) Switch to the Master Slide.
3) Select the Master Title block.
4) Change the font to Bodoni Bd BT.
5) In the Layout menu, turn Autogrid off.
6) Move the Master Title block to the right by pressing the right arrow on the keyboard 13 times.
7) Switch to Slide 1 and click Yes when asked to update the existing slides.

--International Style
1) Create a new Presentation with the International style.
2) Switch to the Master Slide.
3) Select the Master Title block.
4) In the Layout menu, turn Autogrid off.
5) Move the Master Title block to the right by pressing the right arrow on the keyboard 13 times.
6) Switch to Slide 1 and click Yes when asked to update the existing slides.
Published Date: Feb 18, 2012

ClarisDraw: Rotation Information in Info Palette is Blank When More Than One Object is Selected

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you select more than one object or group some objects then the Object Info palette will not display Rotation information. To view Rotation information, either select one object at a time or Ungroup the object and then select the objects one at a time.

Published Date: Feb 18, 2012

Special Characters for Languages Other Than English

If you have ever wondered where to get the special characters like the umlaut or the tilde, here is a handy little chart.

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Many people use Claris products to work in foreign languages, even though they purchased their Macintosh with a U.S. keyboard and the English language version of their System software. In order to write in other than English, you need a number of special characters. Special characters are also used in editing and desktop publishing. These characters are not a function of any individual application on a Macintosh. They are, however, a part of many Macintosh fonts. Be aware that these characters are not likely to be in all fonts. They are part of most of the standard Macintosh fonts, however. To find other characters not listed here, use the Key Caps application, found under the Apple menu. By pressing various combinations of keys, Key Caps will show you all the characters contained in a particular font.

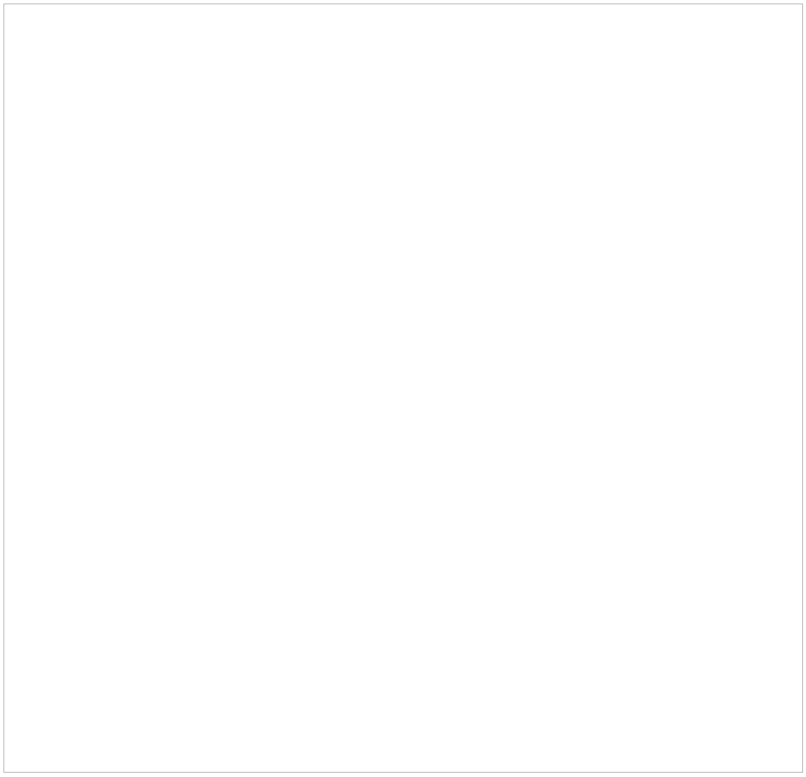

Figure 1: Commonly Used Foreign Language Characters and Symbols

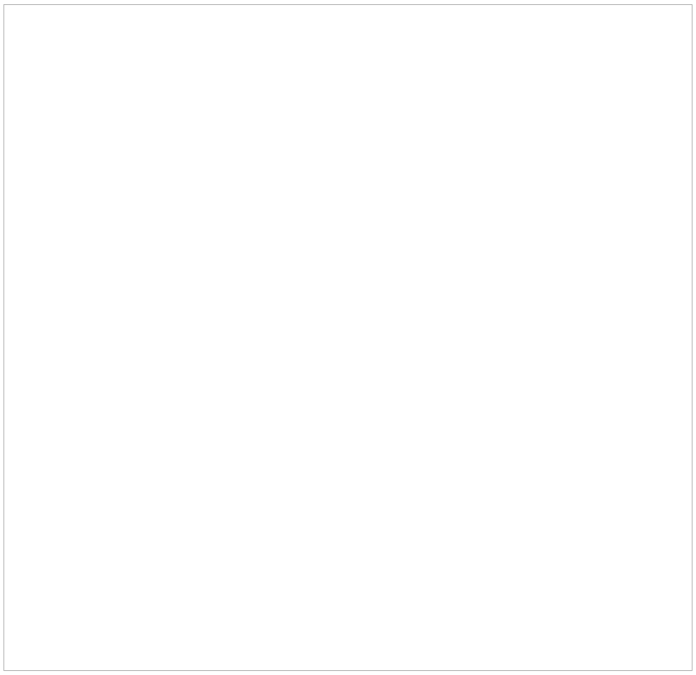

Figure 2: Other Special Characters

TA43089_Special_Characters_for_Languages_Other_Than_English.pdf

Published Date: Feb 18, 2012

ClarisDraw 1.0v1: Text Blocks Get Smaller When Converting From MacDraw Pro

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Caption Text blocks may shrink slightly when converting from MacDraw Pro to ClarisDraw 1.0v1. What this means is that the last word on a single line of text may wrap to create a second line. Try this example:

1. Open MacDraw Pro and choose the Text Tool.
2. Click your mouse once anywhere in the document.
3. Type, "Mary had a little lamb".
4. Select the Text block with the Arrow Tool and set font to Geneva.
5. Convert to ClarisDraw.

Workaround:
If you have not used layers in your MacDraw Pro document you can save to PICT format (Copy and Paste will not work nor will saving to MacDraw II format).

Caption vs. Paragraph Text Block:
A Caption Text Block is created when you click your mouse with the Text Tool. A Paragraph Text Block is created when you drag with the Text Tool. You can change a Caption into a Paragraph Text Block by selecting it with the Arrow Tool and resizing it.

This issue is resolved in ClarisDraw 1.0v2.

Published Date: Feb 18, 2012

ClarisWorks 2.1v3: Error Messages When Updating with 2.1v4 Updater

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Updating ClarisWorks 2.1v3 for Power Mac with the 2.1v4 for Macintosh updater causes an error message that the ALRT 400 resource is different.

This error occurs because ClarisWorks for Power Macintosh has not been updated to 2.1v4. The error messages Power Mac updater 2.1v4 alrt 400 resource different.

Published Date: Feb 18, 2012

ClarisWorks: Actual vs.Set Communications Speeds (14.4k baud vs 9600 baud)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Q: I cannot seem to operate at 14.4k baud. I've tried setting the baud rate at 19.2 and use XON/XOFF but that does not work, either. I spend a lot of time on Internet and various BBS and the extra speed would save money. What can I do?

A: 14.4k baud is an effective speed which is obtained by a hardware compression protocol and is strictly dependent on the modem. The actual transmission speed (through the lines) is 9600 baud.

In order for 14.4k baud to be realized, both modems (Host and Guest) must support data compression (MNP or V.42bis for example), they must support the same protocol and must have been initialized by the initialization string (see modem manufacturer) that turns on and configures the modem for that mode of operation. Otherwise transmission will take place at 9600 baud or slower.

Published Date: Feb 18, 2012

ClarisWorks: Extracting DayName from a Date Field or Cell (DB, SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q. I want to extract the DayName from a field or cell but I keep getting #ARG! or #ERROR! as the calculation result. How do I do this?
A. You can do this with a calculation in either the spreadsheet or database environments. Here is the formula for a database:

=DAYNAME(WEEKDAY('Date Field'))

Here is the formula for a Spreadsheet:

=DAYNAME(WEEKDAY(A1))
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ClarisWorks: Gradebook Template in ClarisWorks for Teachers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Chapter 3 of the ClarisWorks for Teachers book covers the usage of a template called Gradebook. The Gradebook template does not work whenever a student scores 100% in the Grade Percentage column (column D). Instead of "A+" showing as the grade "#N/A!" will be the answer.

Make a backup of your Gradebook file before starting the steps to fix your file listed below. Also, the steps below assume you have not modified the original template so make any changes to the directions as apply to your modified Gradebook file.

1. Go to the Format menu and choose Document. Change the number of columns from 40 to 41.
2. In cell AO4 enter "100" and in AO5 enter "A+".
3. In cell E7 change the cell references for AN4 to AO4 and AN5 to AO5 so that formula now reads, =LOOKUP(D7,AB4..AO4,AB5..AO5).
4. Select cell E7 through E30 and then choose Fill Down from the Calculate menu.

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ClarisWorks and ClarisImpact: Gradient PICT Objects Overlap Object Boundaries

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is a known issue when printing gradient PICT objects that have been subscribed to, converted, inserted, or placed. The issue occurs only when printing to a laser printer.

Shapes and Tools with gradients saved with PICT format will print with the gradient out of the boundaries.

To reproduce the issue:
1. On a new document draw any shape.
2. Fill it with gradient.
3. Save it as PICT format.
4. Open the saved file.
5. Print the file to a laser printer

Subscribed objects that contain gradients will also print the gradient out of the boundaries when printing to a laser printer.

1. Launch ClarisWorks or ClarisImpact and create a new draw document.
2. Select a shape tool, draw its object and fill it with a gradient.
3. Select the object and choose "Create Publisher..." from the Publishing sub menu under the Edit menu.
4. Name the file and click the Publish button.
5. Select "Subscribe To..." from the Publishing sub menu under the Edit menu.
6. Select the Edition file and click on the Subscribe button.

7. Print the document to a laser printer

Notice that the gradient extends beyond the boundaries of the object.

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ClarisDraw & MacDraw Pro: MacDraw II Files Get Larger When Imported

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When converting a MacDraw II document to ClarisDraw or MacDraw Pro the size on disk may increase dramatically. For instance, converting the MacDraw II sample document "Floor Plan #1" to ClarisDraw will increase the size on disk from 16k to 36k. On the other hand, a sample file from MacDraw Pro called "Dances of Spheres" will only increase from 36k to 40k when converted to ClarisDraw.

Explanation:
* MacDraw II only has the ability to work with 8 colors while ClarisDraw has the ability to work with 256 colors and MacDraw Pro millions of colors. The overhead for handling more colors can be significant.
* If your document has an imported picture then ClarisDraw may need to convert it to an editable Paint Frame. Again, the overhead for more capability will be represented in the file size.
* The file packing method for ClarisDraw and MacDraw Pro is different than MacDraw II. When designing the method for writing the information into a file there are tradeoffs between file size and speed. Specifically, the file size for ClarisDraw is larger but the access speed to the data in the file is faster.

* In general, MacDraw Pro and ClarisDraw are more sophisticated than MacDraw II and that is represented in the file size.

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ClarisDraw 1.0v1: Issues Opening MacDraw Pro Slides

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When opening a MacDraw Pro slide document with ClarisDraw 1.0v1, you may encounter some anomalies. For example, a landscape oriented slide document may open with a portrait orientation in ClarisDraw.

To specifically illustrate this, a sample MacDraw Pro slide show with a Document Size (from the Layout Menu) setting of 11.97 Width and 8.89 Height, opened in ClarisDraw with a width of 8.89 and a height of 6.67.

Also note that the new Slide Manager features of ClarisDraw open a document to the Master Slide, instead of to the first slide, as in MacDraw Pro. Upon conversion to ClarisDraw, use the slide navigation control at the lower left of the window to switch from Master Slide to one of the slides in your document.

If, after doing so, your slide still seems oriented incorrectly, you may need to choose Document Size from the Layout menu and enter an appropriate width and height. If necessary, choose Show Graphic Ruler from the View menu to give you guidelines on how wide and tall the page size will need to be to display your slide.

This issue is resolved with ClarisDraw 1.0v2.

Published Date: Feb 18, 2012

ClarisImpact: Service Bureaus for Professional Publishing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you need to output your ClarisImpact documents professionally, there are flyers in the ClarisImpact box for two companies that offer expert output. Check the envelope that says "Get more power from your new Claris software!" for full details.

Kinko's are known to have ClarisImpact in their stores. You may call 1-800-743-COPY for the location of the Kinko's store nearest you. Be sure to check to see if they have 35mm slide output capability, if that's the service you need.

Autographix Presentation Partners definitely offer 35mm slide output. Their brochure in the ClarisImpact box contains a listing of all locations nationwide.

Unfortunately Claris does not have the resources to maintain a complete listing of service bureaus who support Claris products. This is by no means a complete list of service bureaus that can help you. We suggest you check your local telephone directory for service bureaus in your area.

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ClarisWorks: Spreadsheet Borders Print Thicker after First Page on DeskWriter

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is resolved with ClarisWorks 4.0v1
(tested with DeskWriter 550C and DeskWriter driver 6.0)

Normally, cell borders print as hairlines to a Hewlett-Packard DeskWriter. ClarisWorks 2.1v3, 2.1v4 and version 3.0 spreadsheets will print borders as hairlines on the first page of a print job, but all subsequent pages will print with very thick border lines.

Workarounds:
1. Revert to ClarisWorks 2.1v2 or earlier or upgrade to version 4
2. Print your pages one at a time. The thicker lines only occur on the second and subsequent pages of a print job.

This printing issue has been tested with the DeskWriter driver versions 3.9, 5.0 and 6.0.
Published Date: Feb 18, 2012

PostScript: How to Set Precision Bitmap Alignment

If I create a rectangle in MacDraw and print two copies to a LaserWriter, one may measure 150mm x 200mm, and the other 151mm x 201mm. There is a variation in both dimensions. Sometimes, however, they may match perfectly. I am using the LaserWriter in a four-layer printing process and find this inconsistency very annoying.

Because the variation is in both dimensions and the age of the LaserWriter is relatively new, I believe the paper weight (which is within specification), the paper finish, and the age of the LaserWriter are unlikely to be possible causes of the problem. Can you help?

This article has been archived and is no longer updated by Apple.
The size variance described is a result of PostScript interpretation of the bitmapped image. This results from attempts to change a 72-dpi image into a 300-dpi image. This is not an exact ratio. There may be as much as a 4-percent variance in PostScript's interpretation. PostScript's attempts at correction may vary slightly during each pass.

To compensate for this difference, choose Page Setup from the File menu. On the right side of the Page Setup dialog box, there is an Options button. Click this button, and an additional dialog box appears. The fourth checkbox is labeled Precision Bitmap Alignment (4-percent reduction). Be sure this checkbox is marked. Using this option increases the printing time. However, the printouts will be consistent during each pass.

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ClarisDraw: User Guide‘s Bind Text Example is Misleading

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The Richmond University logo example on Page 7-20 of the ClarisDraw User's Guide demonstrates how to bind text to a circle. The example does not explain how to bind the text so that "Richmond" is written clockwise and "University" is written counter clockwise. Also, the figure on page 7-21 specifies inaccurate numbers for the starting point.

It is not possible to bind text to one object but have it go in two different directions. In order to achieve the results shown you will need to use two circles. Create the outside circle, duplicate it and then bind "Richmond" to one circle and "University" to the other circle. Finally, overlap the circles so they appear as one.

The starting points listed on page 7-21 are not accurate. Refer to the article titled, "How to Determine Where Text Binding Starts?" for details on starting points.
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ClarisImpact: Organization Charts and Flow Charts Do Not Print or Print Blank Pages

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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If you create an organization chart or flow chart in ClarisImpact that is wider or taller than 113 inches, you will not be able to print it. It might print some blank pages, or all of the pages may be blank.

This is a QuickDraw limitation that affects the printable area of both organization charts and flow charts.

Claris Product Development is aware of the issue.

Here are some suggested workarounds:

1) The easiest workaround is to ungroup the organization or flow chart before printing.

IMPORTANT NOTE: Once you ungroup the organization or flow chart, it will lose its links and chart characteristics. Be sure to save a copy of the chart first and ungroup the copy. Keep the original file as a grouped model so that you can do edits and updates.

To ungroup the copy, when you're working in the organization chart (or flow chart), click once outside the boundary of the model. This will select the model itself, as a grouped object (note the four selection handles). Now, choose Ungroup from the Arrange menu. You should see an alert with a warning "Once ungrouped, you will not be able to edit the model using model tools and commands. Continue?" Click Ok if you wish to ungroup the model objects and lose their special characteristics, as mentioned above.

2) Assuming you are using a default organization chart style and direction, consider changing the direction from top-down to left-to-right. Changing the direction to right-to-left will take up less space.

3) In an organization chart, change the worker layouts of the levels that take up the most space to one of the two vertical options. The easiest way to do this for a large organization chart is through level settings.

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ClarisWorks 1.0v3: Adobe Type Manager (ATM) 3.6 Incompatibilities in System 7.1

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Adobe Type Manager 3.6 used in System 7.1 is incompatible with ClarisWorks 1.0v3.

ClarisWorks cannot build the Claris Fonts file if ATM is on.

Work around:
1) Turn off ATM
2) Open ClarisWorks. A Claris Fonts file will be built.
3) Quit ClarisWorks.
4) Turn on ATM.
ClarisWorks can be used as usual.

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ClarisWorks: Error in Mortgage Maker Template

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In the Mortgage Maker (SS) template included with the ClarisWorks Home Pack, cell H19 is meant to be an entry cell for "Additional Principle Payment Per Year." This cell incorrectly contains a formula and is protected.

To fix this, click on cell H19, choose Unprotect Cells from the Options menu, then type in the desired number. If no additional payment is desired, enter a 0 (zero). Remember to choose Calculate Now to recalculate the spreadsheet.

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ClarisWorks: About Version 2.1v2 Macintosh, Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Welcome to ClarisWorks 2.1!

Thank you for choosing ClarisWorks 2.1. We're excited about this new release of ClarisWorks and we hope you will enjoy using it. This document provides some late-breaking information that couldn't be included in the printed manual.

Please read this file carefully. It contains several important tips that may give you better results or make it easier for you to use ClarisWorks. You may even wish to print this document for use after you have installed ClarisWorks.

PERFORMANCE TIP
* Adjusting ClarisWorks Memory
As with any Macintosh program, you will gain greater flexibility and performance if you increase your application memory size. This is especially true if you work in the Paint environment, work with larger documents, or work with a number of documents during the same session. Similarly, if it takes a long time to print documents, increasing the memory size may help. For more information on increasing memory size, consult the ClarisWorks Installation and New Features Guide, under adjusting memory.

NEW FEATURES AND CHANGES IN VERSION 2.1

ClarisWorks version 2.1 has a number of powerful new features, and enhancements to several existing features. The Installation and New Features Guide describes the most important changes. Additional information is outlined below.

* Balloon help is now available for the buttons in the shortcuts palette. If you are unsure of which command a button performs, choose Show Balloons from the Help menu to display the name of the button.

* The Make Custom Style shortcut now appends style information to the font and size in the Style menu.

* If you import a PICT file into a paint frame or document, ClarisWorks now matches the imported file's resolution. It will also use the color table of the original picture.

* If you set the default fill pattern to be transparent, ClarisWorks now displays the Transparent icon in the pattern indicator of the tool panel.

* New file filters have been added to ClarisWorks 2.1. A ClarisWorks 1.0 text filter has been included to simplify translation of ClarisWorks 2.0 or 2.1 files to ClarisWorks 1.0. A new filter provides support for reading and writing Excel 4.0 files.

* ClarisWorks 2.0 and 2.1 files are identical. Version 2.0 can open version 2.1 files automatically and vice versa. ClarisWorks 1.0 files can be opened in version 2.1. You will be notified when ClarisWorks 1.0 files are opened in version 2.1 and, to ensure that your ClarisWorks 1.0 files are not saved over unintentionally, a suffix "[v2.1]" will be appended to the file name. If you want to replace your ClarisWorks 1.0 files with ClarisWorks 2.x versions, you may do so easily. Simply perform a Save or Save As, remove the "[v2.1]" when defining the file name, and click "Yes" when asked if you want to "Replace existing" file.
* Discretionary hyphens included in documents created in version 2.1 will appear as box characters when the file is opened using 2.0.

SOME TIME SAVING FEATURES
* "ABOUT Stationery"
This file contains information about using and creating Stationery files with ClarisWorks 2.1. Stationery files are templates that can save you time when you create a new document such as a memo or letter. To access the "ABOUT Stationery" file, select New... from the File menu, click on the pop-up list to the right of the Stationery label, select "ABOUT Stationery", and click OK.

* "ABOUT Sample Files"
This file describes the Sample Files that are included with ClarisWorks 2.1. Some of the sample files were specifically created to be used as is-just enter your own information. Other sample files demonstrate the wide range of possibilities ClarisWorks provides. "ABOUT Sample Files" is in the Sample Files folder within the ClarisWorks 2.1 folder.

* "More About Shortcuts"
Shortcuts are timesavers that give you pushbutton access to over 150 of the most frequently performed day to day tasks. You can personalize your Shortcuts palette to include those commands that you find useful. For a complete list of the Shortcuts and brief descriptions of what they do, open "More about Shortcuts." You will find it in the Sample Files folder within the ClarisWorks 2.1 folder.

PRINTING TIP
* LaserWriter IIg/IIf Owners

If you notice that horizontal or vertical lines in your documents are not being printed correctly, you will need to make a simple adjustment to your LaserWriter's settings. To do this you will need the LaserWriter tools disk that came with your printer. Just follow these three steps:

1. Open the LaserWriter Utility application on the LaserWriter disk.
2. Under the Utilities Menu, choose Set PhotoGrade.
3. Move the slider all the way to the left towards the "More Levels of Gray" option.

Your printer has now been reconfigured with the proper settings.

COMMUNICATIONS NOTES

* Claris Kermit Tool

ClarisWorks 2.0 includes a Kermit file transfer tool for Apple's Communications Toolbox. It is automatically installed into the Extensions folder under System 7 or into the Communications Folder under System 6. This tool behaves in much the same way as the XMODEM file transfer tool. If you use System 7, you can turn on Balloon Help under the Help menu to get additional information.

* VT320 Keys

This sample document contains Shortcuts that are the equivalent of function keys found on VT220 and VT320 terminals. When you open the document you will see information on using these Shortcuts.

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ClarisWorks: About Version 2.1v3 Macintosh, Read Me

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* The Make Custom Style shortcut now appends style information to the font and size in the Style menu.

* If you import a PICT file into a paint frame or document, ClarisWorks now matches the imported file's resolution. It will also use the color table of the original picture.

* If you set the default fill pattern to be transparent, ClarisWorks now displays the Transparent icon in the pattern indicator of the tool panel.

* New file filters have been added to ClarisWorks 2.1. A ClarisWorks 1.0 text filter has been included to simplify translation of ClarisWorks 2.0 or 2.1 files to ClarisWorks 1.0. A new filter provides support for reading and writing Excel 4.0 files.

* ClarisWorks 2.0 and 2.1 files are identical. Version 2.0 can open version 2.1 files automatically and vice versa. ClarisWorks 1.0 files can be opened in version 2.1. You will be notified when ClarisWorks 1.0 files are opened in version 2.1 and, to ensure that your ClarisWorks 1.0 files are not saved over unintentionally, a suffix "[v2.1]" will be appended to the file name. If you want to replace your ClarisWorks 1.0 files with ClarisWorks 2.x versions, you may do so easily. Simply perform a Save or Save As, remove the "[v2.1]" when defining the file name, and click "Yes" when asked if you want to "Replace existing" file.

* Discretionary hyphens included in documents created in version 2.1 will appear as box characters when the file is opened using 2.0.

SOME TIME SAVING FEATURES
* "ABOUT Stationery"
This file contains information about using and creating Stationery files with ClarisWorks 2.1. Stationery files are templates that can save you time when you create a new document such as a memo or letter. To access the "ABOUT Stationery" file, select New... from the File menu, click on the pop-up list to the right of the Stationery label, select "ABOUT Stationery", and click OK.

* "ABOUT Sample Files"
This file describes the Sample Files that are included with ClarisWorks 2.1. Some of the sample files were specifically created to be used as is-just enter your own information. Other sample files demonstrate the wide range of possibilities ClarisWorks provides. "ABOUT Sample Files" is in the Sample Files folder within the ClarisWorks 2.1 folder.

* VT320 Keys
This sample document contains Shortcuts that are the equivalent of function keys found on VT220 and VT320 terminals. When you open the document you will see information on using these Shortcuts.

* "More About Shortcuts"
Shortcuts are timesavers that give you pushbutton access to over 150 of the most frequently performed day to day tasks. You can personalize

your Shortcuts palette to include those commands that you find useful. For a complete list of the Shortcuts and brief descriptions of what they do, open "More about Shortcuts." You will find it in the Sample Files folder within the ClarisWorks 2.1 folder.

PRINTING TIP
* LaserWriter IIg/IIf Owners

If you notice that horizontal or vertical lines in your documents are not being printed correctly, you will need to make a simple adjustment to your LaserWriter's settings. To do this you will need the LaserWriter tools disk that came with your printer. Just follow these three steps:
1. Open the LaserWriter Utility application on the LaserWriter disk.
2. Under the Utilities Menu, choose Set PhotoGrade.
3. Move the slider all the way to the left towards the "More Levels of Gray" option.
Your printer has now been reconfigured with the proper settings.

POWER MACINTOSH OWNERS (PowerPC-based Macs)
* If you transfer files between a Macintosh and a Power Macintosh (PowerPC-based Mac), the results of some spreadsheet or database floating point calculations may differ slightly. To display values identically on both platforms, set a fixed number of decimals using the Number Format or Field Format commands.

* When sending files with a file transfer tool which supports batch mode, such as the Claris Kermit tool, use the Send File command rather than the Send Batch command to avoid a system crash. Apple is aware of this System problem and is working on a solution.

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ClarisWorks: About Version 3.0v1 Macintosh, Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Welcome to ClarisWorks 3.0!

Thank you for choosing ClarisWorks 3.0. We're excited about this latest release of ClarisWorks and know that it will help you to be more productive and creative. This Read Me file documents some additional tips that may prove helpful when using ClarisWorks 3.0.

New Features with ClarisWorks 3.0

* Assistants

ClarisWorks now includes eight Assistants you can use in working with documents for your home, school, or office. Assistants ask you questions and then produce a document or part of a document based on your answers. Assistants also guide you on the content of your document.

Some Assistants create complete documents such as newsletters, presentations, name and address lists, envelopes, or calendars. To use an Assistant, choose New from the File menu and then click the Start With An Assistant Or Stationery button.

Several Assistants (for making a table, typing a footnote, addressing an envelope, or finding and opening a ClarisWorks document) are available when you are working within a document. To see what task Assistants are available to you in your current work environment, choose ClarisWorks Assistants from the Help menu that you can find by pulling down the Apple menu on the far left of the Menu bar.

* Cross-platform compatibility

ClarisWorks 3.0 for Macintosh has the same file format and features as ClarisWorks 3.0 for Windows. It also opens files created in ClarisWorks for Windows versions 1.0 and converts them to version 3.0. You can create a ClarisWorks document on Windows and edit it on a Macintosh computer or vice versa. Consequently, if you work with both Macintosh and Windows versions of ClarisWorks, or if you collaborate with colleagues who use ClarisWorks 3.0 for Windows, you can work without translating files or learning a different program.

Version 3.0 opens and saves files that are fully compatible with ClarisWorks versions 2.0 or 2.1, so you can use your existing 2.x files and/or share work with colleagues using version 2.x.

When you use ClarisWorks 3.0 to open ClarisWorks 1.0 files, ClarisWorks displays a message and adds [v3.0] to the file name. To replace your ClarisWorks 1.0 files with ClarisWorks 3.0 versions, choose Save or Save As from the File menu, remove [v3.0] from the file name, and click Yes when ClarisWorks asks if you want to replace the existing file. If you are converting a number of files from the 1.0 to 3.0 file format, you can access the Preferences dialog from the Edit menu and turn off the Old Version Alert and/or the [v3.0] Suffix.

Due to differences between Macintosh and Windows platforms, it is necessary to use a file transfer program such as PC Exchange, AccessPC, or a similar utility in order to transfer files via floppy disk. These utilities require that your Macintosh have a high density drive (FDHD SuperDrive). Follow the directions in the documentation of the file transfer utility program. After copying the files to or from a PC formatted disk, rename the files with DOS-compatible file names (8 characters or less) and include the .CWK extension.

After renaming your files, copy them to your computer's hard drive, if desired, and open them as you would any ClarisWorks document.

Fonts, margins, page breaks, and graphics may appear differently after being transferred from the Macintosh. You can minimize unintended consequences associated with font changes by using TrueType fonts on both platforms. Helvetica on the Macintosh converts well to Arial on Windows, and similarly Times converts well to Times New Roman. It may be necessary to change the margins and page breaks in order to restore the original page breaks. QuickTime movies will be converted to PICT images. In addition, some macros created on the Macintosh may not run as expected on Windows. In these cases, it is necessary to recreate your macros.

* Word count

To count the words in your document, choose Writing Tools from the Edit menu and then choose Word Count.

* MacWrite Pro file filter

A new MacWrite Pro file filter will allow translation of MacWrite Pro documents.

TECHNICAL TIPS

Editing Documents Created with the ClarisWorks Assistants

Some documents created using the ClarisWorks Assistants (or provided as Stationery files) contain objects that are locked or grouped to keep objects in position and prevent accidental edits. To move or edit the objects, unlock and/or ungroup them:

1. Select the object while in Draw mode. Click the Arrow tool first if necessary.
2. Choose Unlock (or Ungroup) from the Arrange menu. If an object is both locked and grouped, first unlock it and then ungroup it.

To edit the text in an object, click the Text tool and then click on the text you want to edit.

TA43108_ClarisWorks_About_Version_v_Macintosh_Read_Me.pdf

Adjusting ClarisWorks Memory

You may want to increase the amount of memory set aside for ClarisWorks if you work with Paint documents, documents longer than ten pages, or if you want to have several large documents open at the same time. Increasing the memory allocation may also reduce the time it takes to print some documents.

To increase the memory allocation for ClarisWorks:

1. If ClarisWorks is open, quit the application.
2. Open the folder that contains the ClarisWorks 3.0 application.
3. Click the ClarisWorks application icon once. (If you click the icon twice, you'll start ClarisWorks. If that happens, choose Quit from the File menu and try again.)
4. Choose Get Info from the File menu.
5. Double-click the Preferred Size box.

(If your ClarisWorks Info box does not have a Preferred Size box, double-click the Application Size or Current Size box instead.)

6. Type a larger number to increase the memory size. If your computer has less than 4 Mb of memory, try setting the memory to 1450; if your machine has 4 Mb, try 1900; and if it has 5 Mb, or more, you may want to set it to 3072 or higher. If you are using a Power Macintosh computer, we suggest adding 2048 (or more) to the current setting.
7. Close the ClarisWorks Info window.

Running the Introduction to ClarisWorks

If you attempt to run the "Introduction to ClarisWorks" file on a computer with a monitor set to Thousands or Millions of colors and you get the message, "Not enough memory to run MacroMind Player.", you have two choices. Reset your Monitors Control Panel to 256 colors, or increase the memory for the "Introduction to ClarisWorks" file using the instructions found above under "Adjusting ClarisWorks Memory".

Printing on a LaserWriter IIg/IIf

If the horizontal or vertical lines in your documents are not printing correctly, you can adjust your LaserWriter.

1. Open the LaserWriter Utility application on the LaserWriter disk tools disk that came with your printer.
2. Choose Set PhotoGrade from the Utilities Menu.
3. Move the slider all the way to the left towards the More Levels of Gray option.
4. Quit the LaserWriter Utility application.

Claris and the ClarisWorks team want to thank you for your purchase of ClarisWorks 3.0. Your support enables us to continue working to bring you better solutions for your future productivity needs.

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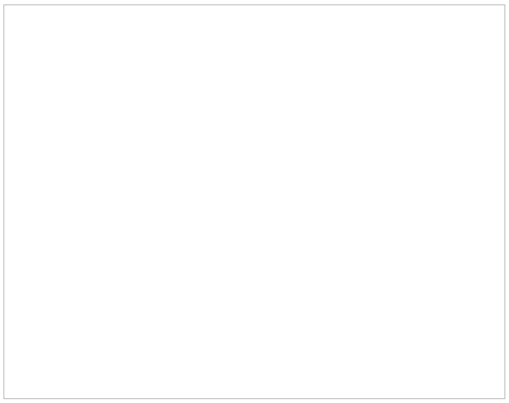
ClarisWorks: Home Pack Template "Names and Addresses" Does not Slide Properly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Home Pack Stationery template called "Names and Addresses" has a layout for Avery 5160 Labels. The fields on this layout have a vertical space between the fields so that sliding up does not work well. If a field is left blank, the fields below will appear not to slide up. The best workaround is to select each field and move it up so it is touching but not overlapping the field above. This can be best accomplished by using the arrow keys on the keyboard to move a selected field. Figure 1 shows what the layout currently looks like and Figure 2 shows what the fixed layout should look like.



Published Date: Feb 18, 2012

FaxWorks Tech Support Number

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The technical support number for SoftNet's FaxWorks is (770) 984-9958. Customers are required to pay a $25 fee for each call to SoftNet. Any question that extends beyond the realm of ClarisWorks faxing should be addressed with SoftNet technical support.

Published Date: Feb 18, 2012

ClarisWorks: Rotated PICT Prints Jagged

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
Importing or Inserting a PICT into the drawing environment and then rotating it will make it print jagged to a QuickDraw printer such as a DeskWriter or a StyleWriter.

Solution:
1. Ungroup the PICT, then immediately group it again and rotate. It will work fine now.

or

2. Use a PostScript printer.

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ClarisWorks 3.0: Apple Event Support

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is a list of the Apple Events that ClarisWorks supports.

open: Open the specified object(s)
open alias -- list of objects to open

print: Print the specified object(s)
print alias -- list of objects to print

quit: Quit application
quit

run: Sent to an application when it is double-clicked
run
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ClarisWorks: About Version 3.0 Windows, Product Fact Sheet

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Product Description:
ClarisWorks 3.0 software is the all-in-one answer for business, home and education.

ClarisWorks 3.0 dramatically enhances the award-winning 1.0 version of this integrated product. It features built-in Assistants to help users get their work done easily and produce professional results. It also adds brand new capabilities such as outlining, presentations, painting and Shortcuts, and enhances each existing environment while retaining the superior integration, small size and excellent performance of the original.

And ClarisWorks 3.0 is the exclusive integrated product to offer true cross-platform compatibility between Windows and Macintosh versions. The result is an even better value than ClarisWorks 1.0 that will appeal to a broad customer base of small business/home office, home and education users.

Target Customers:
* Small and Home Business users will find that ClarisWorks 3.0 is the only general productivity tool they'll need for creating standout letters, memos, reports, presentations, proposals, sales flyers, address books, contact lists and newsletters.

* Home users will appreciate the excellent value ClarisWorks 3.0 offers them. At the same price as ClarisWorks 1.0, users get four completely new capabilities and more than 300 enhancements to improve their productivity.
* Mobile professionals will benefit from the program's small size and speedy performance. And with its exclusive cross-platform transparency and extensive file exchange capabilities, users can easily switch between Windows and Macintosh computers, and read and save files to most other popular software programs.
* K-12 Educators will find ClarisWorks 3.0 to be an even better teaching tool with new important capabilities such as presentations, outlining, and painting, yet retaining the simplicity, superior integration and small size of ClarisWorks 1.0.
* Higher Education students, faculty and administrators will use ClarisWorks 3.0 as a one-stop productivity tool. Its new outlining, full-strength word processor and extensive charting capabilities perfectly address the expanding needs of college users.

Key Enhancements:
New Capabilities
* Claris Assistance technology helps users achieve consistently professional results. Seven Assistants include newsletter, presentation, table, envelope, footnote, name and address database, and calendar. The Assistants offer expert advice on layout, design, and content. And the technology is extensible so users can simply drop in new Assistants as Claris and selected parties deliver them.
* Complete outlining feature allows users to organize their thoughts and documents using six popular outline styles including Harvard, legal, numeric and bulleted formats.
* Presentation Slide Show with Video for Windows support. Users can create dynamic slide show presentations complete with background and border colors, and Video for Windows movies. Presentations can be either manual or auto-advance.
* Shortcuts offer push-button access to the 150 most frequently used commands such as spell checking, cell formatting or auto-summing. Just as with the menus, the icon palette automatically configures itself to the environment being used (e.g. text or spreadsheet).

* Full-color paint capabilities and 32 gradient fills allow users to add even more striking graphic effects to documents.
* Exclusive cross-platform compatibility with ClarisWorks for Macintosh gives users identical users interfaces and file formats so information can be shared transparently across operating systems.

New Word Processing Features
* Automatic text wrap around graphics creates more professional-looking brochures, flyers, newsletters and more.
* Custom text styles allow users to create, name and save frequently-used text styles for instant access.
* Individually variable column widths. Users simply click on the column controls button to automatically add columns to their layouts; then visually adjust column size by dragging the column to the preferred width.
* Show and hide invisible characters allow users to view all format commands in their documents for accuracy.
* Document statistics such as word count; Expanded spell check selection.
* Original date and time clock permanently reflect the original date and time a document was created.

Expanded Charting and Spreadsheet Capabilities
* Hi-Low-Close charts are ideal for tracking pricing trends, such as stocks, with defined beginning and end points.
* Combination charts allow users to combine chart options -- like using a line chart with a bar chart -- to illustrate contrasting data more effectively.
* Pictogram charts translate plain numeric data into compelling charts that graphically depict data.
* Unparalleled chart format customization. Users can customize any or all of their charts -- change fonts, styles, adjust orientation, title and legend placement and size, select symbols, colors, scales, patterns, 3D and more.
* Spreadsheet cell wrap. When cell wrap is applied, text automatically wraps within the cell boundaries.
* Lock Title option locks column headings in place so they remain in constant view for quick reference as users scroll through documents. This

also reduces the need for screen splitting.

New Database Features
* Automatic field entry from pop up menu. Users can save time and avoid repetitive data entry by creating a pop up list of data. This also ensures data consistency and accuracy.

* Automatic serial numbering.
* Automatic date, time, creator, and modifier stamps.
* Automatic field validation (uniqueness, within range, emptiness).
* More than 50 predefined Avery label formats make it a snap to generate labels.

Graphics Enhancements
* Color paint environment includes 18 tools and six transformation effects.
* Gradient palette adds pizzazz to presentations with 16 black and white and 16 color gradients.
* Bezigon and Polygon drawing tools make it easier than ever before to create and style curves and shapes.
* Repeat Object Placement simplifies the placement of duplicate graphics by automatically placing duplicates of graphics in equidistant sequence from the original.
* 75 piece clip art library and 7 Monotype fonts including Arial, Bodoni, Gill Sans, Klang, New Berolina, Old English and Script make it easier than ever to create professional documents.

In-Package Support Materials:
* Introductory tour
* Comprehensive on-screen help
* Users Guide
* Quick Reference Guide
* Free America Online software access kit and registration to access online support.

* FaxWorks software bundled in the box at no extra charge.

Support Services for Registered Owners:
Customer Relations
* Maintains registered customer database.
* Handles non-technical questions, i.e., registration status, etc.
* (408) 727-8227
* Phone lines staffed from 8 a.m. - 5 p.m. PST, Monday through Thursday and 8 a.m. - 2 p.m. PST, Friday.
* (800) 544-8554 for product upgrade order forms and instructions.

Technical Support
* Handles technical questions, problems with operating the software.
* Standard Technical Support is currently available free for 90 days following a user's first call. (408) 727-9004.
* Pay-As-You-Go support is available through the 800 GuideLine (800-965-9090, credit card required) and the 900 GuideLine (900-230-3000).
* Phone lines staffed from 6 a.m. - 6 p.m. PST, Monday through Thursday and from 6 a.m. - 2 p.m. PST, Friday.
* Free 24-hour Voice AnswerLine, (800) 735-7393.
* Free 24-hour Fax AnswerLine, (800) 800-8954.
* Online support is available through CompuServe Forum (Go Claris), America Online Forum (Claris), and Claris Bulletin Board (408-987-7421).

* Subscription Services are also available.

System Requirements and Compatibility:
* PC with any 386DX with 25 Mhz or higher processor.
* Requires a floppy disk drive, hard disk and 4 MB RAM. (8 MB recommended)
* VGA or better video.
* Mouse.
* MS-DOS 5.0 or later; Microsoft Windows 3.1.
* Compatible with Windows 95.

Price and Availability:
* Available in October, 1994.
* $99 suggested retail in the U.S.
* Upgrade price direct from Claris in the U.S. is $49 and will include Borland Sidekick through January 31, 1995.

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Special Characters that do not directly Map to Windows

Characters I type in ClarisWorks on the Macintosh do not always display correctly under ClarisWorks for Windows. What is happening?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The following High ASCII characters displayed in the table below show characters on the Macintosh that have no match in Windows (Figure 1). These characters do not map directly to any Windows font.

If these characters are included in a cross-platform file, they will not map correctly across to Windows. There are several work arounds for this.

* Have two layouts, one for the Windows machine, one for the Macintosh machine. On the Windows layout, create a field with the ASCII code for the character, format the field with the Symbol font, and lay it on top of the original field. (The ASCII codes for the Symbol font provided in Windows are also listed Figure 1.)

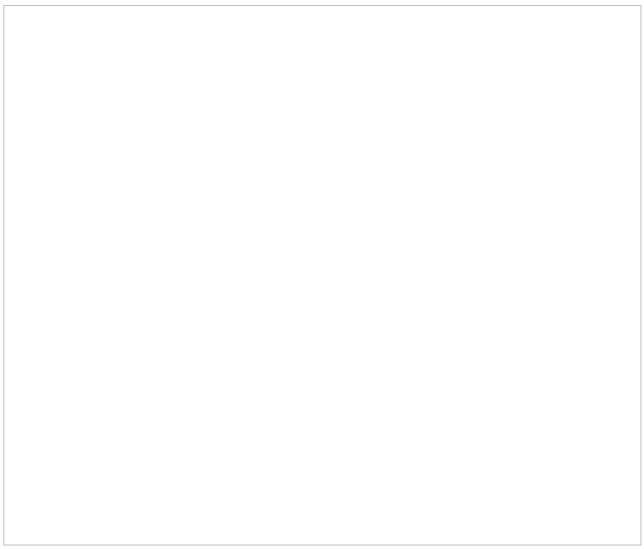

Figure 1: Special characters and the keyboard combinations to display them

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TA43117_Needed_MacintoshBased_COBOL_Product_(TIL05625).pdf

Needed: Macintosh-Based COBOL Product

Has anyone heard of MicroFocus COBOL for the Macintosh?

This article has been archived and is no longer updated by Apple.
MicroFocus removed COBOL for the Macintosh from its product line last year.
We have not heard of another Macintosh-based COBOL.

Published Date: Feb 18, 2012

ClarisWorks: Paint Documents, Memory, and Margins

If you like to paint in ClarisWorks, keep memory allocation in mind.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

When you create a new painting document in ClarisWorks 2.0 and higher, the default margins are set to one inch, with a size of 468 pixels across and 648 pixels down, a resolution of 72 dpi (dots per inch), and typically a depth of 256 colors. Pixels are the equivalent of dots. Changing the margins does not automatically change the number of pixels down or across. Use the following formula to calculate the number of pixels for a different size document:

(Number of Inches) * (72 pixels per inch)

So, for a new, untitled, letter-sized painting document, 468 pixels across by 648 pixels down equates to 6.5 inches across by 9 inches down. Now, if you want a letter-sized document with a 1/2 inch margin all around, your printable area would be 7.5 inches across and 10 inches down. To fill that page with a painting, set the size to 540 pixels across and 720 pixels down by choosing Document from the Format menu.

(7.5 inches) * (72 pixels per inch) = 540 pixels across
(10 inches) * (72 pixels per inch) = 720 pixels across

If you see an error message like "The document size has been reduced to fit the available memory," "Out of Memory," or "Not Enough Memory to Perform Operation" while you are working in an application, it doesn't necessarily mean you don't have enough memory in your computer. When you launch a Macintosh application, it requests the amount of memory set in its Get Info window. To increase an application's memory allocation:

1. Quit the Application and return to the Finder.

2. Go to the actual application program icon (not a document created in the application or the folder that contains it) and click once to select it.

3. From the File menu, choose Get Info.

4. Increase the memory in the Application Memory Size box at the bottom of the Get Info window. If you are using System 7.0, increase the Current Size. If you are using System 7.1, increase the Preferred Size. The formula for the amount of memory needed is:
(Application Memory Needed)k = (Width * Height * Pixel per inch * Number of colors)/1024

A letter size page with a .5 inch margin and 256 colors:

1350k = ((7.5 inches) * (10 inches) * (72 pixels per inch) * 256 colors))/1024

If you find that you can get the Info window open, but cannot change the memory size, double-click on the application icon and choose Quit from the File menu.

Once you find a memory allocation that works, return to the finder and choose About this Macintosh from the Apple menu. Make sure there is still some available memory. Otherwise, the System won't be able to grab more memory when it needs it.

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ClarisImpact: Beep when Trying to Make a Table Transparent

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you try to make a Table transparent and ClarisImpact just beeps at you then you probably have version 1.0v2 or earlier. This was not a feature in ClarisImpact version 1.0v1 and 1.0v2.

Version 1.0v3 of ClarisImpact allows you to make a table transparent.

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ClarisDraw: No Original MacDraw Translator

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisDraw will not import files from the original MacDraw. ClarisDraw does include a translator for MacDraw II, MacDraw Pro and PICT.

The best workaround is to use MacDraw to save your files to PICT format. Once the PICT files have been imported into ClarisDraw, you can use the Ungroup feature to separate the objects that make up the PICT.
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ClarisDraw & ClarisImpact: Not QuickDraw GX Certified

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue:

Printing to a desktop printer icon using System 7.5 and the LaserWriter GX driver from ClarisDraw 1.0v1 or ClarisImpact 1.0v1/v2. If you print a document using a desktop printer icon while the application is open, the document will print to the default printer (the printer selected in the Chooser), rather than to the printer represented by the icon. If you print using the desktop printer icon while the application is not running, the document prints to the correct printer.

ClarisDraw and ClarisImpact are not certified compatible with the QuickDraw GX printer drivers.

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ClarisImpact: Documentation Error - Table Cell Backgrounds

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The manual states on page 6-26 that it is possible to add a color, gradient or pattern to a cell. While it possible to add color, it is not possible to add a gradient or pattern to a cell.

To add a pattern or gradient you will need to make the table transparent and then draw a square filled with a gradient or pattern and position it beneath the cell or cells of the Table.
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Claris Draw: Left Margins Clipped When Printing to a Personal LaserWriter NT or NTX

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Left margins can get clipped when printing to a Personal LaserWriter NT or NTX.

To reproduce:

1. Launch ClarisDraw.
2. Choose Rectangle tool, and draw a rectangle to cover the entire page.
3. Print to a LaserWriter NTX

You will see that the left margin of the rectangle is clipped.

The Claris graphics development team is a aware of this issue.

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MacDraw Pro: Zoom Level Limitations

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The maximum zoom level in a MacDraw Pro document of one page is 3200%. However, because MacDraw Pro decreases the maximum zoom level based upon the number of pages in the drawing area, if you use the largest possible Drawing Size, the maximum Zoom level will be 400%. When you have reached the maximum zoom level, the zoom-in mountain icon will be dimmed. This is a limitation of MacDraw Pro.

The best solution is to upgrade to ClarisDraw, which does not determine the maximum Zoom level based on the size of the drawing area. In ClarisDraw, you can use any zoom level at any time.
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TokenTalk: Troubleshooting Problems

I am having problems with system bombs under the following conditions:

The environment is a Token Ring network with DOS and OS/2 workstations and approximately 12 Macintoshes on the ring. I am using Excel with MacIrma and TokenTalk installed. When the system is not on the network, the Macintosh displays a system error. If the TokenTalk software is de-installed, the Macintosh works fine, and no system bombs occur.

Software

System 6.0.3
MultiFinder
MacIrma 1.2.0
Excel 2.2
TokenTalk 2.0 (6/29/89)

Have you heard of any situations similar to this?

This article has been archived and is no longer updated by Apple.
We contacted DCA Technical Support Group, and they have not heard of this problem. They also tried to duplicate the problem for us and could not get the system to fail.

The tests were done with both MacIrma 1.2.0 and 1.2.1, on both Macintosh IIcx and Macintosh IIx systems, and TokenTalk 2.0. Both machines passed the test with either version of MacIrma.

You might have a conflict between TokenTalk and something else other than MacIrma. You may want to start with a clean System Folder to see if the problem remains. If a clean folder solves the problem, start adding INITs and see which one conflicts with TokenTalk.

Article Change History:
5 Oct 1993 - Reviewed for technical accuracy, and change format to current method.

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ClarisDraw: Not Enough System Memory To Load QuickTime Message

I sometimes receive the alert, "Not Enough System Memory To Load QuickTime" when I start ClarisDraw. What can I do?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The alert, "Not Enough System Memory To Load QuickTime" may appear when launching ClarisDraw on a Power Macintosh or a Macintosh that has an Apple PowerPC upgrade card installed.

If this occurs, check the contents of your Extensions folder in your System Folder. If the QuickTime PowerPlug is not installed, install it from the disks that came with the Power Macintosh Upgrade Card using the Custom Install option instead of Easy Install.
Published Date: Feb 18, 2012

ClarisWorks 2.1: What Goes Where When you Install?

This article shows where each file is installed by the ClarisWorks 2.1 installer.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

```
Inside the System Folder:
  Claris [folder]
     Claris Help System
     ClarisWorks Labels
     Main Dictionary
     User Dictionary
     ClarisWorks Help
     US Thesaurus
     Claris XTND System
  ClarisWorks Stationery [folder]
     ABOUT Stationery
     Business Letterhead
     Business Memo
     Business Stationery
     Fax Cover Sheet
     Internal Memorandum
     Mail Merge Letter
     Name & Address
     Name & Address-Extended
     Name & Address-Standard
     Newsletter A
     Newsletter B
     Newsletter-WP
     Personal Stationery
  Colors & Gradients [folder]
     16 Hues
     Pastel
     Rainbow
     Strange
     Vivid
  Claris Translators [folder]
    Acta 3.0
    AppleWorks DB/SS
    AppleWorks GS
    AppleWorks
    ASCII
    DBF
    DIF
    EPSF PFLT
    Excel
    GIF
    MacPaint 2.0
    MacWrite 5.0
    MacWrite II
    Microsoft Word 3.0
    Microsoft Word 4-5

Extensions [folder]
           Apple Modem Tool
           Claris Kermit Tool
           CTB Resources

           Serial Tool
           Text Tool
           TTY Tool
           TTYFont
           VT102 Tool
           VT102Font
```

XMODEM Tool

Inside the ClarisWorks folder in the Applications folder:
ClarisWorks 2.1
Tutorial [Folder]
  Artwork for Letterhead
  Employee of the Month
  Pegasus Logo
  Sales Performance
  Sample Objects
Samples [folder]
  ABOUT Sample Files
  Business Cards
  Checkbook
  Lease vs. Purchase
  Logo Ideas
  More About Shortcuts
  Mortgage Analyzer
  Name & Address-Extended
  Newsletter-Draw
  Personal Stationery-Fancy
  Presentation-Draw
  Resume A
  Resume B
  VT320 Keys

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ClarisWorks: Charting High, Low and Closing Price of Stock (SS)

Using the Hi-Low chart option to plot the high, low, and closing price of stock

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

If you follow the stock market, you may have a need to chart the high, low, and closing price of a stock. In ClarisWorks 2.X and 3.X, there is a Chart Option called Hi-Low that will allow charting of data in this style. However, the data must be set up in pairs in order for the Hi-Low to display correctly. This can be a problem when the closing price of the stock is a single value. Fortunately, you can still use the Hi-Low chart option with a little creative spreadsheet management.

Assuming that you want to plot the high, low, and closing prices of companies A, B, C, D and E, you would create a spreadsheet similar to the following (see also Figure 1).

	ColumnA	ColumnB	ColumnC	ColumnD	ColumnE
Row1		hi/low		close	
Row2	StockA	53	16	33	33
Row3	StockB	72	13	63	63
Row4	StockC	52	8	24	24
Row5	StockD	85	22	76	76
Row6	StockE	54	39	46	46

The trick here is to repeat the closing price a second time to simulate a high-low pair.

Then, select the cell range A1..E6 and choose Make Chart from the Options menu. Since the closing prices are pairs of the same number, what you will end up having on your chart is a high-low vertical line for the high and low stock prices, and a single tick line or hash mark somewhere along this vertical line for the closing price (see Figure 2).

Figure 1: Sample Spreadsheet

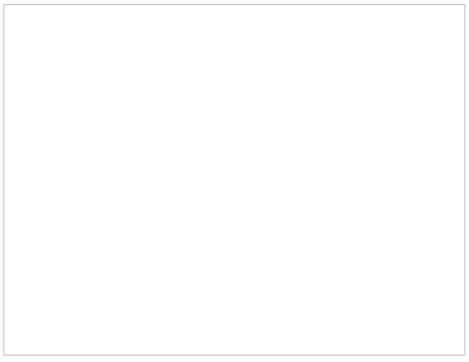

Figure 2: Sample Hi-Low Chart

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ClarisWorks: What is the Text Preview Extension?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisWorks 3.0 and 4.0 installers place an Extension called "Text Preview" in the Extensions folder in the System Folder. This small (4K) Extension allows you to see text in the "thumbnail" portion of the Open File dialog box. For example, with this Extension, you can see the first few lines of text in a file in the Open File dialog before you open it.
Published Date: Feb 18, 2012

Can‘t Save Empty Untitled Document

When I create a new ClarisWorks document I'm unable to save it right away. Why can't I create an article and start saving right away?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
You can not choose Save... from the File menu, or use command-S, in a new ClarisWorks, ClarisImpact or ClarisDraw document until you have added at least one text or graphic object to the document, or in some other way modified the document. This is true even if you have chosen Save As..., given the file a name, closed the file and opened it again. While it may be disconcerting to hit command-S and have no response, there is little reason to choose Save... for an empty, unmodified document.
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MacDraw Pro 1.5v2: EvenBetterBusError

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

A customer has reported that when EvenBetterBusError is installed it will crash MacDraw Pro 1.5v2 when the following steps are recreated:

1. Make a new document.
2. Draw a square.
3. Copy the square to the clipboard.
4. Close the document and do not save.
5. Switch to the Finder.

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ClarisWorks: "Wrap text in cell" Option in Table Assistant Doesn‘t Work

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When creating a table using the ClarisWorks Assistant technology, there is an assistant called Make Table which helps you create tables.

While creating a table, the selection that allows you to wrap text within the cells of the table does not work for the first row (the title row) in the resulting table.

There is no workaround at this time.
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ClarisWorks: Translating AppleWorks Files (All)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This requires a Macintosh with a SuperDrive, Apple's PC Exchange Control Panel, and Apple's ProDOS Extension (With System 7.5 or later the ProDOS Extension is not needed). The Claris translators and the XTND System files must be in the Claris folder in the System Folder. Once the software is properly installed, restart your machine. Then, whenever you insert an Apple II disk, the disk icon will have a "II" (Roman numeral 2) on it.

Translating these files to ClarisWorks at this point is the same as translating files from other applications. If everything is properly installed, you can then drag and drop the AppleWorks document icons on the icon for ClarisWorks. Another way would be to open up ClarisWorks and choose Open under the File menu. If you already have a file open, you can also choose Insert from the File menu.

Published Date: Feb 18, 2012

ClarisDraw: Bitmapped Graphics from MacDraw Pro or MacDraw II Lose Precision When Converted

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Some MacDraw II or MacDraw Pro documents with high-resolution bitmapped objects in them (such as 300 DPI scans) may not retain this high bitmap resolution when the file is converted to ClarisDraw format. The bitmapped image may convert at 72 DPI. This happens with only a small minority of these files. Currently, it is not known how to determine the low probability that a file will be affected.

If this occurs, the best workaround is to first save the drawing as PICT from MacDraw II or MacDraw Pro, then open that PICT file in ClarisDraw. The high resolution of the bitmapped image will be retained.

Published Date: Feb 18, 2012

ClarisWorks: Can‘t Build Custom Color Palette Automatically

Can I automatically build a custom palette in ClarisWorks based on the colors in my current document?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

No, ClarisWorks cannot build a custom 256-color palette based on the colors in a document.

ClarisWorks does allow you to choose between the Claris 81-color palette and a variety of 256-color palettes included with ClarisWorks. You can also create your own palette manually by dragging the palette windoid out into the page and double clicking colors you want to change in the palette windoid, and then going into Preferences and saving the palette.

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ClarisWorks 2.1: Cannot Create a New Database

I get a coprocessor not installed error when creating a new ClarisWorks database. I have a Color StyleWriter 2400 and was able to do this before I got the printer.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When you have the Color StyleWriter 2400 (driver 1.6) selected in the Chooser, ClarisWorks versions 2.1v1, 2.1v2 and 2.1v3 will not allow you to create a new database. If you attempt to create a new database, your computer will freeze or display a "coprocessor not installed" or other system error.

The solution is to update to ClarisWorks version 2.1v4 or later. The best solution is to upgrade to ClarisWorks 4.0, 5.0, or AppleWorks 5.x.x.

The StyleWriter 2400 was not on the list of hardware that was tested and certified to be compatible with ClarisWorks version 2.1v3 and earlier. This is because this printer (and the version 1.6 driver) were not on the market and available for testing at the time Claris shipped version 2.1v3 of ClarisWorks.

You can update to version 2.1v4 or upgrade to a higher version. Check the Apple Software Updates for the earlier updates. Check with your reseller for obtaining a newer version of ClarisWorks.

Note to Power Macintosh Owners
ClarisWorks 2.1v4 is not available in a "native" (accelerated) version. So, the 2.1v4 Updater will not update the native PowerMacintosh version of ClarisWorks 2.1v3. The best option in this situation is to upgrade to version 4.0 or 5.0, which includes a Power Macintosh version of ClarisWorks that is compatible with the Color StyleWriter 2400.

Alternatively, you can install the regular (non-accelerated) Macintosh version of ClarisWorks 2.1v3 onto your Power Macintosh, then update that with the 2.1v4 Updater. To do this, first run the ClarisWorks installer. Click the Customize button for a custom install, select "ClarisWorks for Macintosh," then click Install.

Work around
In lieu of updating, the following work around will enable you to use the ClarisWorks database, regardless of the Macintosh type:

Select a different printer in the Chooser, create a new database (or open an existing), and then reselect the Color StyleWriter. However, you will have to repeat this work around every time you wish to create a new database or open an existing one.

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ClarisDraw 1.0v1: Objects Do Not Snap Properly to a Fine Grid

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In ClarisDraw 1.0v1, specifying a very fine grid and high zoom percentage may result in objects not properly snapping to the grid when dragged with the mouse. (The objects will probably snap properly when moved with the cursor keys.) You will see this especially if you have the Object Info palette open and are watching the object's position as you move it.

ClarisDraw 1.0v2 considerably improves object placement on the grid.

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DOS 3.3: "Not Direct Command" Error

A "Not direct command" error is caused by invoking certain DOS commands from a machine language routine.
This article has been archived and is no longer updated by Apple.
When DOS receives commands, it checks to ensure the current BASIC interpreter is running in order to allow you to respond to an input statement with "Running", instead of trying to run the "Ning" file. The commands which cause these errors are listed on page 122 of the DOS manual.

The following relocatable machine language routine insures that DOS is satisfied.

```
LDA #$80
STA $33 This location must not equal $DD
STA $76 This location must not equal $FF
STA $D9 This location must be greater than $7F
RTS
```

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TA43139_AUX_Scheme_Implementation_(TIL05630).pdf

A/UX: Scheme Implementation

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Do you know of any versions of scheme that might run under A/UX 2.0?

This article has been archived and is no longer updated by Apple.
There is a very good Scheme from MIT called C-Scheme. Look in goofy:~malcolm/bin/src/scheme.tar for the bits. There is probably a more recent version, and one of the README documents should tell you where to find it.

Also, Yale T has been ported to A/UX; it's available by anonymous FTP from ai.mit.edu, among other places.

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ClarisWorks 1.0v3: Disk Contents (Macintosh) and Installation Guide

An itemized list of the disk files for ClarisWorks 1.0v3 for the Macintosh and where they will be installed on your hard drive

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

```
The ClarisWorks 1.0v3 Disk Set for the Macintosh (a total of 6 disks) contains the following items.  File
sizes of individual items are approximate.

Installer (disk)
    Claris Translators (folder)
         Acta 3.0 (8K)
         AppleWorks (28K)
         AppleWorks GS (6K)
         EPSF PFLT (4K)
         MacPaint 2.0 (4K)
         MacWrite 5.0 (16K)
         MacWrite II (20K)
         Microsoft Word 3.0 (32K)
         Microsoft Word 4.0 (36K)
         Microsoft Word PC (20K)
         Microsoft Works 1.1 (14K)
         Microsoft Works 2.0 (16K)
         PICT (2K)
         RTF (26K)
         Text (6K)
         TIFF (26K)
         WordPerfect (38K)
         WordPerfect PC 4.2 (20K)
         WordPerfect PC 5.0 (20K)
         WriteNow (32K)
         WriteNow NeXT (22K)
    Claris XTND System (38K)
    ClarisWorks Translators (100K)
    Installer (130K)
    Installer Script (40K)

References (disk)
    Dictionaries (folder)
         Main Dictionary (166K)
         US Thesaurus (152K)
         User Dictionary (2K)

    Sample Documents (folder)
         Book of the Month (22K)
         Flyer & Order Form (34K)
         Quarterly Earnings (10K)
         Sales Commission Letter (10K)
         Sales Report (26K)

Communication (disk)
    Communication Tools (folder)
         Apple Modem Tool (88K)
         Serial Tool (32K)
         Text Tool (26K)
         TTY Tool (64K)
         TTYFont (8K)
         VT102 Tool (148K)
         VT102Font (14K)
         XMODEM Tool (60K)
    CTB Resources (80K)
```

Program (disk)
- ClarisWorks (562K)
- Read Me (24K)
- Tutorial (folder)
  - Artwork for Letterhead (8K)
  - Employee of the Month (4K)
  - Newsletter (6K)
  - Pegasus Art (8K)
  - Pegasus Logo (6K)
  - Quarterly Report (6K)
  - Sales Performance (12K)
  - Sample Objects (8K)

Help (disk)
- Claris Help System (60K)
- ClarisWorks Help (628K)

HyperTour (disk)
- ClarisWorks HyperTour

When doing an Easy Install, the contents of the disk set will be installed onto the hard disk as follows:

At the root (main) level of your hard drive:
ClarisWorks (folder)
- ClarisWorks (562K)
- Read Me (24K)
- Sample Documents (folder)
  - Book of the Month (22K)
  - Flyer & Order Form (34K)
  - Quarterly Earnings (10K)
  - Sales Commission Letter (10K)
  - Sales Report (26K)
- Tutorial (folder)
  - Artwork for Letterhead (8K)
  - Employee of the Month (4K)
  - Newsletter (6K)
  - Pegasus Art (8K)
  - Pegasus Logo (6K)
  - Quarterly Report (6K)
  - Sales Performance (12K)
  - Sample Objects (8K)

Into the Extensions folder of your System folder:
- Apple Modem Tool (88K)
- Serial Tool (32K)
- Text Tool (26K)
- TTY Tool (64K)
- TTYFont (8K)
- VT102 Tool (148K)
- VT102Font (14K)
- XMODEM Tool (60K)

Into the Claris folder of your System folder:
- Claris Help System (60K)
- Claris Translators (folder)
  - Acta 3.0 (8K)
  - AppleWorks (28K)
  - AppleWorks GS (6K)
  - EPSF PFLT (4K)
  - MacPaint 2.0 (4K)
  - MacWrite 5.0 (16K)
  - MacWrite II (20K)
  - Microsoft Word 3.0 (32K)

- Microsoft Word 4.0 (36K)
- Microsoft Word PC (20K)
- Microsoft Works 1.1 (14K)
- MicroSoft Works 2.0 (16K)
- PICT (2K)
- RTF (26K)
- Text (6K)
- TIFF (26K)
- WordPerfect (38K)
- WordPerfect PC 4.2 (20K)
- WordPerfect PC 5.0 (20K)
- WriteNow (32K)
- WriteNow NeXT (22K)

- Claris XTND System (38K)
- ClarisWorks Help (628K)
- ClarisWorks Translators (100K)
- Main Dictionary (166K)
- US Thesaurus (152K)
- User Dictionary (2K)

NOTE: the Hypertour disk will not be installed by the Installer application. You must copy the file(s) to your hard drive to use it.

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ClarisWorks 2.1v3 Disk Contents (Macintosh) and Installation Guide

An itemized list of the disk files for ClarisWorks 2.1v3 for the Macintosh and where they will be installed on your hard drive

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The ClarisWorks 2.1v3 Disk Set for the Macintosh (a total of 3 disks) contains the following items. File sizes of individual items are approximate. Files ending in ".sit" indicate compressed files that will be uncompressed during the installation process.

Disk 1
Install ClarisWorks (142K)
Installer (154K)
Installer Files (folder)
ClarisWorks Labels.sit (2K)
Palettes.sit (8K)
Samples.sit (204K)
Stationery.sit (232K)
Tutorial.sit (24K)
US English - Hyphenation.sit (40K)
US Thesaurus.sit (112K)
XTND (folder)
Acta 3.0.sit (4K)
AppleWorks DB/SS.sit (8K)
AppleWorks GS.sit (4K)
AppleWorks.sit (6K)
ASCII.sit (4K)
Claris XTND System.sit (18K)
ClarisWorks 1.0 Text.sit (16K)
DBF.sit (6K)
DIF.sit (6K)
EPSF PFLT.sit (6K)
GIF.sit (4K)
MacPaint 2.0.sit (4K)

MacWrite 5.0.sit (8K)
MacWrite II.sit (8K)
Microsoft Excel 3-4.sit (22K)
Microsoft Word 3.0.sit (14K)
Microsoft Word 4-5.sit (16K)
Microsoft Word PC.sit (8K)
Microsoft Works 1.1.sit (6K)
Microsoft Works 2.0.sit (6K)
Microsoft Works DB/SS.sit (6K)
Movie.sit (2K)
PICT.sit (4K)
RTF.sit (12K)
SYLK.sit (12K)
Text.sit (2K)
TIFF.sit (16K)
WinWord.sit (24K)
WordPerfect 1.0.x.sit (10K)
WordPerfect 2.x.sit (48K)
WordPerfect PC 4.2.sit (10K)
WordPerfect PC 5.0.sit (6K)
WriteNow NeXT.sit (10K)
WriteNow.sit (12K)
READ ME (8K)

Disk 2
Claris Help System.sit (32K)
ClarisWorks Help.sit (158K)
ClarisWorks.sit (516K)

Communications (folder)
Apple Modem Tool.sit (76K)
Claris Kermit Tool.sit (32K)

CTB Resources (78K)
Serial Tool.sit (16K)
Text Tool.sit (14K)
TTY Tool.sit (34K)
TTYFont (8K)
VT102 Tool.sit (62K)
VT102Font (14K)
XMODEM Tool.sit (30K)
Main Dictionary.sit (136K)
User Dictionary (2K)

Disk 3
ClarisWorks.sit (734K)

NOTE: Disk 3 will only be used by the Installer if you are installing onto a Power Macintosh computer.

When doing an Easy Install, the contents of the disk set will be installed onto the hard disk as follows:

At the root (main) level of your hard drive:
ClarisWorks 2.1 (folder)
ClarisWorks (656K)
Sample Files (folder)
ABOUT Sample Files (44K)
Business Cards (144K)
Checkbook (76K)
Lease vs. Purchase (48K)
Logo Ideas (76K)
More About Shortcuts (64K)
Mortgage Analyzer (32K)
Name & Address-Extended
Newsletter-Draw (20K)
Personal Stationery-Fancy (8K)
Presentation-Draw (12K)
R□sum□ A (8K)

R□sum□ B (8K)
VT320 Keys (8K)
Tutorial Folder (folder)
Artwork for Letterhead (12K)
Employee of the Month (4K)
Pegasus Logo (8K)
Sales Performance (32K)
Sample Objects (16K)

Into the Extensions folder of your System folder:
Apple Modem Tool (172K)
Claris Kermit Tool (64K)
Serial Tool (36K)
Text Tool (28K)
TTY Tool (64K)
VT102 Tool (148K)
XMODEM Tool (68K)

Into the Claris folder of your System folder:
Claris Help System (60K)
Claris Translators (folder)
Acta 3.0 (8K)
AppleWorks (28K)
AppleWorks DB/SS (16K)
AppleWorks GS (8K)
ASCII (12K)

ClarisWorks 1.0 Text (36K)
DBF (12K)
DIF (12K)
EPSF PFLT (8K)
GIF (8K)
MacPaint 2.0 (8K)
MacWrite 5.0 (16K)
MacWrite II (20K)
Microsoft Excel 3-4 (60K)
Microsoft Word 3.0 (32K)
Microsoft Word 4-5 (36K)

Microsoft Word PC (20K)
Microsoft Works 1.1 (16K)
Microsoft Works 2.0 (16K)
Microsoft Works DB/SS (16K)
Movie (4K)
PICT (8K)
RTF (28K)
SYLK (24K)
Text (8K)
TIFF (32K)
WinWord (64K)
WordPerfect 1.0.x (36K)
WordPerfect 2.x (136K)
WordPerfect PC 4.2 (20K)
WordPerfect PC 5.0 (20K)
WriteNow (32K)
WriteNow NeXT (24K)

Claris XTND System (40K)
ClarisWorks Help (492K)
ClarisWorks Labels (8K)

ClarisWorks Stationery (folder)
ABOUT Stationery (48K)
Business Stationery (40K)
Fax Cover Sheet (40K)
Internal Memorandum (44K)
Mail Merge Letter (40K)
Name & Address-Standard (32K)
Newsletter-WP (20K)
Personal Stationery-Std. (8K)
Presentation-Outline (48K)
To-Do List-Outline (36K)

Colors and Gradients (folder)
16 Hues (4K)
Pastel (4K)

Rainbow (4K)
Strange (4K)
Vivid (4K)

Main Dictionary (168K)
US English - Hyphenation (88K)
US Thesaurus (152K)
User Dictionary (4K)

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ClarisWorks 3.0 Disk Contents (Macintosh) and Installation Guide

An itemized list of the disk files for ClarisWorks 3.0 for the Macintosh and where they will be installed on your hard drive

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The ClarisWorks 3.0 High Density Disk Set for the Macintosh (a total of 4 disks) contains the following items. File sizes of individual items are approximate. These are compressed files and will be uncompressed during the installation process.

Disk 1
Install ClarisWorks (1368K)
Read Me (12K)

Disk 2
Install ClarisWorks.2 (1378K)

Disk 3
Install ClarisWorks.3 (1378K)

Disk 4
Install ClarisWorks.4 (1114K)

You will need approximately 12 Mb of free space on your hard drive to do an Easy Install. When doing an Easy Install, the contents of the disk set will be installed onto the hard disk as follows:

At the root (main) level of your hard drive:
ClarisWorks 3.0 folder (folder)
ClarisWorks 3.0 (840K)
Clip Art (folder)
Airplane B&W (4K)
Alder B&W (12K)
Arrow (4-way) (4K)
Arrow (curve) (4K)
Arrow1 B&W (4K)
Arrow2 B&W (4k)
Asia B&W (16K)
Balloon (Thinking) B&W (8K)
Balloon1 (Dialog) B&W (4K)
Balloon2 (Dialog) B&W (4K)

Balloons (Party) (16K)
Bicycle B&W (4K)
Birthday Cake (16K)
Book1 (Open) B&W (8K)
Books B&W (8K)
Champagne (16K)
Christmas Tree (16K)
Coffee Cup B&W (4K)
Coin (4K)
Compass B&W (4K)
Copier B&W (4K)
Dollar Bill B&W (4K)
Dollar Symbol (4K)
Easter Egg (4K)
Envelope B&W (8K)
First Aid (4K)
Fragile B&W (8K)
Gift (8K)
Graduation Cap B&W (4K)
Hammer B&W (8K)
Hand1 B&W (4K)
Hand2 B&W (8K)

Helicopter B&W (4K)
Horse B&W (8K)
Ice Cream Cone (4K)
Information (4K)
Macintosh B&W (4K)
Man Symbol B&W (4K)
Menorah B&W (8K)
Money B&W (20K)
No Entry (4K)
No Smoking (4K)
North America B&W (16K)
North Symbol B&W (4K)
One-Way Traffic B&W (8K)
Palm Tree (8K)
Personal Computer B&W (4K)

Pliers B&W (12K)
Rabbit B&W (4K)
School Bus B&W (4K)
Scissors B&W (8K)
Shapeburst1 (4K)
Shapeburst2 B&W (8K)
Shapeburst3 (4K)
Shapeburst4 (4K)
Shapeburst5 (12K)
Shapeburst6 B&W (4K)
Skier B&W (4K)
Snowflake B&W (4K)
Snowman (4K)
Star1 B&W (4K)
Star2 (4K)
Star3 B&W (4K)
Star4 (4K)
Star5 (4K)
Stop Sign B&W (4K)
Teacher & Pupils B&W (4K)
Telephone1 (4K)
Telephone2 B&W (8K)
Two-Way Traffic B&W (4K)
United States B&W (44K)
USA Outline B&W (4K)
Woman Symbol B&W (4K)
World Outline B&W (24K)
Wreath (12K)
Wrench B&W (12K)
Introduction to ClarisWorks (1512K)
Read Me (12K)

Into the Extensions folder of your System folder:
Apple Modem Tool (168K)
Claris Kermit Tool (64K)
Serial Tool (36K)
Text Preview (4K)
Text Tool (28K)

TTY Tool (64K)
VT102 Tool (148K)
XMODEM Tool (68K)

Into the Claris folder of your System folder:
Claris Help System (188K)

Claris Translators (folder)
Acta 3.0 (8K)
AppleWorks (28K)

AppleWorks DB/SS (16K)
AppleWorks GS (8K)
ASCII (12K)
ClarisWorks 1.0 Text (36K)
DBF (12K)
DIF (12K)
EPSF PFLT (8K)
GIF (8K)
MacPaint 2.0 (8K)
MacWrite 5.0 (16K)
MacWrite II (20K)
MacWrite Pro 1.x (52K)
Microsoft Excel 3-4 (60K)
Microsoft Word 3.0 (32K)
Microsoft Word 4-5 (36K)
Microsoft Word PC (20K)
Microsoft Works 1.1 (16K)
Microsoft Works 2.0 (16K)
Microsoft Works DB/SS (16K)
Movie (4K)
PICT (8K)
RTF (28K)
SYLK (24K)
Text (8K)
TIFF (32K)
WinWord (64K)
WordPerfect 1.0.x (36K)
WordPerfect 2.x (136K)
WordPerfect PC 4.2 (20K)

WordPerfect PC 5.0 (20K)
WriteNow (32K)
WriteNow NeXT (24K)

Claris XTND System (40K)

ClarisWorks Assistants (folder)
Address List (200K)
Calendar (52K)
Envelope (32K)
Find Document (52K)
Footnote (44K)
Newsletter (476K)
Presentation (360K)
Table (24K)

ClarisWorks Help (3572K)
ClarisWorks Labels (8K)

ClarisWorks Stationery (folder)
Border (8K)
Certificate A (8K)
Certificate B (68K)
Checkbook and Ledger (72K)
Expense Report (20K)
Fax Cover Sheet (8K)
Investment Tracker (24K)
Invitation A (16K)
Invitation B (24K)
Lease vs. Purchase Analyzer (12K)
Letterhead (4K)
Memorandum (4K)
Mortgage Analyzer (32K)
Notice (8K)
Personal Stationery (8K)

Promotional Flyer (8K)
R□sum□ A (8K)
R□sum□ B (8K)
To-Do List (8K)

VT320 Keys (8K)

Colors and Gradients (folder)
16 Hues (4K)
Pastel (4K)
Rainbow (4K)
Strange (4K)
Vivid (4K)

US English - Hyphenation (92K)
US English - Spelling (168K)
US English - Thesaurus (152K)
User Dictionary (8K)

Into the Fonts folder of your System folder:
Arial MT Cn Lt (72K)
Bodoni MT Ultra Bold (44K)
Gill Sans Condensed Bold (40K)
Klang MT (44K)
New Berolina MT (48K)
Old English Text MT (84K)
Script MT Bold (52K)

NOTE: Fonts are installed into the Fonts folder only if you are using System 7.1 or later. If you are using System 7.0.1 or earlier, these fonts may be installed elsewhere in your System folder.

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How To Connect Two Flow Chart Symbols In Separate Flow Charts To Each Other

Just how do you connect two separate flow charts?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
It is possible to drag a Connector from one Flow Chart Symbol to another but only within the same Model. It is not possible to drag a Connector from a Symbol in one Flow Chart Model to a Symbol in another, separate Flow Chart Model.

A work around would be to combine the two Flow Chart Models.

1. Click into one of the Flow Chart Models so that the gray border appears around the edge and then click on any Symbol in the Flow Chart so that it has selection handles on each corner of that Symbol (make sure your cursor is not blinking in the name field).

2. Choose Select All so that all the Symbols in the Flow Chart Model are highlighted.

3. Choose Copy from the Edit menu.

4. Click into the second Flow Chart so that the gray border is showing (again, make sure your cursor is not blinking in the name field).

5. Choose Paste from the Edit menu. The first Flow Chart may paste over the second Flow Chart so you will want to drag it down or to the right (the gray border will automatically enlarge).

6. Finally, draw a Connector line between the last Symbol of the first Flow Chart and the first Symbol of the Second Flow Chart.

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Polygons, Bezigons, Freehand Objects do Not Print To Hewlett-Packard Deskwriter from MicroSoft Word

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue is fixed in ClarisDraw 1.0v2.

In ClarisDraw 1.0v1 and ClarisImpact through 1.0v4, polygons, bezigons and freehand objects will not print to a Hewlett-Packard DeskWriter printer if you copy the objects via the clipboard and paste them into MacWrite Pro, Microsoft Word, and a number of other applications. These objects also will not print if you save the document as a PICT file and import it into the applications.

The objects will print to a DeskWriter if you save the document from ClarisDraw or ClarisImpact as an EPSF file and then place it in the other application, but the quality of the objects will be poor. This is only a solution for those interested in seeing a rough idea of what their documents will look like.
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Popup Tools not Available on 68000 Machines

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
With ClarisDraw 1.0v1, "popup tools" (freehand, rounded rectangle, etc.) are not available on 68000-based machines (the Macintosh Plus, SE, Classic, Portable and PowerBook 100). The tools are actually available but you can't see them "pop out", so they appear to be nonfunctional.

This has been fixed in ClarisDraw 1.0v2.
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Regular Text Changed to White Text when Copying and Pasting

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in ClarisDraw 1.0v2.

Text that is copied along with white text to the clipboard and transferred to the system's clipboard (by going to the Finder or another Application) will be changed to white text in the original ClarisDraw document.

To see the issue:
1) Create some white text.
2) Create some text that is not white.
3) Copy both blocks of text.
4) Switch to the Finder.
5) Return to ClarisDraw.

You will not be able to change the color of the text, or make any new text that is not white.
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Opening QuickTake Images or JPEG /JFIF Compressed PICT Files

What to do if you get an error like: "QuickTime and a Photo - JPEG decompressor are needed to see this picture." when inserting

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When attempting to open or insert a PICT file, the following text appears inside the inserted frame: "QuickTime and a Photo - JPEG decompressor are needed to see this picture." This can occur in any application that supports graphics handling, including ClarisDraw, ClarisImpact, and ClarisWorks.

Images saved from the QuickTake camera and its software are, by default, compressed PICT files. There are two ways to open, insert, or place these files.

Method 1
Install QuickTime software and a JPEG decompressor extension into your system folder, then reboot the computer. You will then be able to open or insert QuickTake files. (QuickTime version 1.6 or later works and is included with System 7.1 and later; QuickTime version 1.0 does not; QuickTime version 1.5 was not tested.)

QuickTime is an option installed with System 7 software. It is a file installed in the Extensions folder inside the System Folder. If it is not there, run the Installer program on your System 7 disks. In the installation window, click the Customize button. Then scroll down, click on QuickTime, then click Install.

A JPEG decompressor called "JPEGView JFIF Preview" is included with JPEGview. JPEGview is a shareware program available from the usual shareware sources (America Online, CompuServe, user groups, etc.). Drag this file into the Extensions folder, then reboot the computer.

Method 2
Open the QuickTake images in the QuickTake software. Save as PICT (no compression) or a TIFF file. Either of these file types can be opened in ClarisDraw, ClarisImpact or ClarisWorks without QuickTime and a JPEG decompressor.

Please note, though, that the uncompressed PICT may be 10-20 times larger than the JPEG compressed PICT. This is normal.

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Assistants are Not Listed in Help Menu

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you create a new document, all of the ClarisWorks Assistants are available to you. You can also access the Assistants by selecting ClarisWorks Assistants from the Help menu.

There are times when certain Assistants may not be accessible. For example, when in Browse mode in a database file, you cannot use the Insert Footnote assistant, so it does not show up on the menu.

On a Macintosh, if you do not have a document open, the only Assistant that will be listed is Find ClarisWorks Documents. On Windows, you will get an alert which says "No Assistants available in this type of document."
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A/UX: "lint" Problem With Toolbox (9/94)

I am having problems using lint with toolbox programs. If I call lint to check programs that "include" header files from /usr/include/mac (for example, files.h), lint gives this message:

files.h(61):
**** cannot recover from this error ****

You can reproduce the error by going to /usr/lib/mac/examples/term and giving the command:

$lint -I/usr/include/mac *.c

The problem is not the include file "files.h". If you take it out, the same error happens with other includes. Can you explain?

This article has been archived and is no longer updated by Apple.
We have verified that the "**** cannot recover from this error ****" error message generated by "lint" (the C program checker) with toolbox "term" programs happen only on C programs that include the /usr/include/mac/files.h file or the "term.h" header file in the /usr/lib/mac/examples/term directory. The "lint" source reported a fatal error on the compiler and stopped the C code checking.

In later versions of A/UX, the source to "term" is no longer included in the product. Also, the "examples" directory is now in /mac/src.

Support Information Services
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Importing DIF as Text Creates Extra Records

Be sure to specify the DIF filter when importing into FileMaker Pro, especially if the DIF file was created by ClarisWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Importing a DIF file exported from ClarisWorks into FileMaker Pro without specifying the DIF import filter will create extra records when importing.

The solution is to select the DIF filter in the Import dialog in FileMaker Pro.

The issue does not occur with DIF files created in FileMaker Pro.
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Installing ClarisWorks 3.0 on a 68000 Mac with System 7.5

Some issues when installing ClarisWorks 3.0 on an older model Macintosh running System 7.5
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When attempting to install ClarisWorks 3.0v1 on a 68000 Macintosh, such as an SE or Classic (NOT the Color Classic), which is running System 7.5, you will not be able to use the Installer. Double-clicking on the Installer icon will present the erroneous message: "The software requires a 68000 coprocessor which this computer does not have". Make sure that you are double clicking on the application icon and not the Introduction to ClarisWorks 3.0 self running demo icon.

The error occurs using either the ClarisWorks 3.0v1 HD (High Density) disk set or the 800K disk set. Custom install is not an option, because you cannot get to the Installer.

This error does not occur under versions of the System prior to 7.5.

Suggested workaround:
1) Consider using System software prior to 7.5
OR
2) Install the ClarisWorks on another Macintosh, then copy the files to the 68000 computer. Pages 6 and 7 of the ClarisWorks Installation Guide give a detailed description of the files installed and their locations.
If the Macs are networked, you can copy the files to the 68000 Macintosh via the network. If not, you will need to use a compression utility (such as DiskDoubler or Stuffit) to fit the installed files onto floppies before copying them to the destination Macintosh.

Claris Development is aware of the issue, but at this time we do not know when a fix will be forthcoming.
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Trial Installers Try To Install on Installation Disk, Not Internal Hard Disk

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisImpact and ClarisDraw trial installers default to install on the installation disk and will return an error when you hit the install button.

To install them, simply click the 'Switch Disk' button until you see the name of the disk you wish to install the trials on.
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ClarisWorks 3.0v1 Clip Art May Not Print Properly to a DeskWriter (DR)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
It has been reported that some of the Clip Art which ships with ClarisWorks 3.0v1 may not print properly to a DeskWriter. For example, the Champagne clipart will print partially, but not the stems of the glasses or the color fill.

Suggested workaround:
Select the graphic and choose Ungroup (or Ungroup Picture) from the Arrange menu.

Please note that an inline graphic in a Word Processing document cannot be ungrouped. To paste a graphic on the Drawing Layer of a Word Processing document (so that it does not flow with the text, but does allow you use the Text Wrap feature and allows you to ungroup it), click on the Arrow tool in the toolbar before Copying and Pasting or Inserting the graphic.

Even after ungrouping before printing, there are still 7 clip art images that print out incorrectly:
Alder B&W, Book1 (open) B&W, Christmas Tree, Fragile B&W, Horse B&W, Palm Tree, and Shapeburst 2 B&W.

The ClarisWorks 3.0v1 clip art will not print correctly to a DeskWriter when placed into either ClarisDraw or ClarisImpact. To print ClarisWorks 3.0 clip art from these products, use the same workaround of ungrouping the graphic before printing.

These reports, which have been reproduced here are reproducible to the DeskWriter 550C and the 560C, tried with drivers 5.0 and 6.0, and also tried with ClarisWorks 2.1v3 and 3.0. Saving as PICT and allocating more memory to ClarisWorks will not affect the printing.

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Rotated Images Don‘t Preview or Print on DeskWriter using Driver 5.0 or 6.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There appears to be an incompatibility after rotating an image in MacDraw Pro, then printing to a Deskwriter using the 5.0 or 6.0 driver. To recreate, place a scanned image into a MacDraw Pro file. This was tested using a PICT file of a photograph. Choose Print and click Preview. The preview will show the image properly.

Now rotate the photograph 90 degrees and preview. The preview will appear to be blank. The report source was able to rotate the image in Adobe Photoshop, save as a PICT file and place in MacDraw Pro and print without difficulties.

This issue does not occur with ClarisDraw 1.0v2.

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About Version 3.0 Windows, Read Me

This file ships with ClarisWorks and provides important information on some new features and on issues to be aware of when using ClarisWorks.

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This article has been archived and is no longer updated by Apple.

Welcome to ClarisWorks 3.0 !

Thank you for choosing ClarisWorks 3.0. We're excited about this latest release of ClarisWorks and know that it will help you to be more productive and creative. This Read Me file documents some tips that may prove helpful when using ClarisWorks 3.0, as well as some late-breaking information. You can print this document for future reference.

Assistants

ClarisWorks now includes seven Assistants you can use in working with documents for your home, school, or office. Assistants ask you questions and then produce a document or part of a document based on your answers. Assistants also guide you on the content of your document.

Some Assistants create complete documents such as newsletters, presentations, name and address lists, envelopes, or calendars. To use an Assistant, choose New from the File menu and then click the Start With An Assistant Or Stationery button.

Some Assistants (for making a table, typing a footnote, or addressing an envelope) are available only when you are working within a specific type of document (e.g. word processing or drawing). To see what task Assistants are available to you in your current document, choose ClarisWorks Assistants from the Help menu.

Editing Documents Created with the ClarisWorks Assistants

Some documents created using the ClarisWorks Assistants (or provided as Stationery files) contain objects that are locked or grouped to keep objects in position and prevent accidental edits. To move or edit the objects, unlock and/or ungroup them:

1. Select the object while in Draw mode. Click the Arrow tool first if necessary.

2. Choose Unlock (or Ungroup) from the Arrange menu. If an object is both locked and grouped, first unlock it and then ungroup it.

To edit the text in an object, click the Text tool and then click on the text you want to edit.

Cross-platform compatibility

ClarisWorks 3.0 for Windows has the same file format and features as ClarisWorks 3.0 for Macintosh. If you work with both Windows and Macintosh versions of ClarisWorks, or if you collaborate with colleagues who use ClarisWorks 3.0 for Macintosh, you can work without translating files or learning a different program.

ClarisWorks 3.0 for Windows opens and saves files that are fully compatible with ClarisWorks for Macintosh versions 3.0, 2.1, or 2.0, so you can use existing Macintosh 2.x files and/or share work with colleagues using version 2.x. Consequently, you can create a ClarisWorks document on Windows and edit it on a Macintosh computer or vice versa.

Due to differences between Windows and Macintosh platforms, it is necessary to use a file transfer program such as PC Exchange, AccessPC, or a similar utility in order to transfer via floppy disk. These utilities require that your Macintosh have a high density drive (FDHD SuperDrive). Follow the directions in the documentation of the file transfer utility program. After copying the files to a PC formatted disk, rename the files with DOS-compatible file names (8 characters or less) and include the .CWK extension.

After renaming your files, copy them to your PC's hard drive, if desired, and open them as you would any ClarisWorks for WindowsÊdocument.

Fonts, margins, page breaks, and graphics may appear differently after being transferred from the Macintosh. You can minimize font substitution problems by using TrueType fonts on both platforms. It may be necessary to change the margins and page breaks in order to restore the original page breaks. QuickTime movies will be converted to PICT images. In addition, some macros created on the Macintosh may not run as expected on Windows. In these cases, it is necessary to recreate your macros.

Opening ClarisWorks 1.0 files

When you use ClarisWorks 3.0 to open ClarisWorks 1.0 files, ClarisWorks displays a message and adds [v3.0] to the file name. To replace your ClarisWorks 1.0 files with ClarisWorks 3.0 versions, choose Save or Save As from the File menu, click OK, then click Yes when ClarisWorks asks if you want to replace the existing file. If you do not want to save over the ClarisWorks 1.0 file, rename the file.

Importing EPSF Images

When you import or insert an EPSF (Encapsulated Postscript File) image into a ClarisWorks document, it is converted to a bitmap.

Changing your Communications Document Default

If you frequently use another communications package other then Microsoft Windows Terminal, ClarisWorks can launch the program automatically. Choose Preferences from the Edit menu and click General (on the left) to display preferences for this category. Click the Change To... button under TERMINAL.EXE and select your communications software program (an .exe file).

General Troubleshooting
The following suggestions are offered as potential solutions to the stated condition. You may want to try any or all of them.

Installing
If the installer fails, make sure that the Virtual memory is turned on and set to the Windows suggested size (see Performance below). In addition, use Custom Install to install only the files that you need. If you are not using any other Claris products, remove any existing files in the Claris directory and any CLARIS.INI file (both usually in the Windows Directory) that exists from a previous version.

Some virus checking software may interfere with the installer and prevent a complete installation. If this occurs, turn off any virus checking software before starting the installer. Turn it back on after installation is successful.

Out of Memory Error Messages
If you encounter an error message which says there is no enough memory to perform an operation, try the following:
- adjust your Virtual Memory (see Performance below)
- check the DOS CONFIG.SYS and remove any unnecessary drivers and TSRs to free up more memory in DOS
- closing other applications and ClarisWorks documents that may be running in the background

Note: On computers with 4Mb of memory you may encounter out of memory messages when using gradients, creating paint documents, or using 256 color settings.

Performance
32-bit applications such as ClarisWorks require Virtual Memory to be turned on. In order to increase the performance on computers with 8Mb of memory or less, we recommend the following:
- Setting the Virtual Memory to Permanent
- Using the suggested size for your virtual-memory setting (usually twice the size of physical memory)
- Enabling 32-bit disk access

To make these changes to your system:
1. In the Program Manager, open the Main Group, double click on Control Panel, then double-click the 386 Enhanced icon.

2. Click the Virtual Memory button, then click the Change button.

3. Select Permanent from the Type pop-up menu.

4. Click the check box next to "Use 32-Bit Disk Access"

5. Accept the above settings and the suggested size by clicking OK.

If your suggested size is less than twice your physical memory, you may need to increase your free disk space by removing unwanted files or defragmenting the hard disk (DOS 6.0 users can use DEFRAG.EXE; DOS 5.0 users may use some other utility). Defragmenting your hard drive may also increase the performance of your computer.

We also recommend that you run SMARTDRV.EXE by adding the following line to your AUTOEXEC.BAT file: C:\\DOS\\SMARTDRV.EXE. Use the SMARTDRV.EXE version 5.0 that ships with DOS 6.0 for better performance.

Opening non-ClarisWorks files
If you are unable to open or insert files created by programs for which we provide a file translator, ensure that the file filters (files with the .x32 extension) are installed. Use Custom Install to install the filters.

Printing
If you have trouble printing, try installing an updated printer driver (may be obtained from your printer manufacturer or Microsoft Corporation). For instructions on installing a driver and configuring your printer, see the Chapter on "Control Panel" in the Microsoft Windows User's Guide.

If text is getting clipped on the right margin or if graphic objects print with thin lines across them (specifically on inkjet printers such as the Canon BubbleJet BJ600C), turn off Banded Printing. To do this, choose Preferences from the Edit menu, click General, and then click Banded Printing.

If you are using a Hewlett-Packard 560c deskjet printer, we recommend using version 4.2 of the printer driver, available from Hewlett Packard or Microsoft Corporation.

Printing Patterns
ClarisWorks supplies a palette of patterns that you can apply to graphic objects. Because these patterns are 72 dots per inch, high resolution

printers do not print patterns as they appear on the screen. You might want to select patterns that are less dense than others.

Video Cards and Drivers
If you have problems with your screen displaying objects correctly, you may have a problem with your video driver. If this is the case, try changing the resolution to 640x480 or 800x600. Or, try changing the number of colors displayed (for example, 256, 16K, millions of colors). To verify that it is a video driver problem, change the video driver to Windows standard VGA and run ClarisWorks. If the problem goes away, contact the video card manufacturer for the latest version of the driver or use the driver that is included with the Windows Installation disks.

To change your video driver settings, either follow the directions for your video driver setup or use Windows Setup as follows:

1. Go to the Program Manager and open the Main Group

2. Double click on Windows Setup and make a note of the current Windows Display setting

3. Choose Change System Settings from the Options menu

4. Click in the Display box and select the appropriate setting from the scrolling list and use the current driver if prompted

If you have don't have an accelerated video card and are experiencing slow screen redraws, we recommend that you turn Offscreen Drawing on. To do this: choose Preferences from the Edit menu, click General and click Offscreen Drawing (the checkbox is checked). However, if, after making this change, the screen does not redraw properly when you move objects, turn the Offscreen Drawing option off.

Custom Color Palettes
When using certain video drivers, you may encounter display problems with documents using Custom Color Palettes. We recommend using the default Windows color palette. If you have a document that uses custom colors, turn Offscreen Drawing on (see above). We also recommend closing all the floating color and gradient palettes as well as any ClarisWorks documents running in the background.

Fonts
If your fonts do not display or scale correctly (for example clipping or overlapping), try the following:

- Make certain a valid printer driver is selected as the default and that is it NOT the Generic/Text Only driver
- Enable TrueType (see Adobe Type Manager below)
- Make certain the standard Windows fonts, such as Arial, are installed properly

To select or change the default printer:
1. Go to the Program Manager and open the Main Group

2. Double click on Control Panel, then double-click the Printers icon

3. Select a printer from the Installed Printers list and click Set As Default Printer button

4. If you do not have any printers installer, refer to your Microsoft Windows User's Guide for instructions on installing printers

To delete or reinstall standard Windows fonts consult your Microsoft Windows User's Guide.

Adobe Type Manager
If you have Adobe Type Manager installed on your computer, make sure that "Banded Printing" is checked in Preferences (see Printing above). Also ensure that TrueType fonts are enabled on your system. To do this:

1. Go to the Program Manager and open the Main Group
2. Double click on Control Panel, then double-click the Fonts icon
3. Click the TrueType button, then click Enable TrueType Fonts

Claris and the ClarisWorks team want to thank you for your purchase of ClarisWorks 3.0. Your support enables us to continue working to bring you better solutions for your future productivity needs.
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ClarisWorks 3.0 and Hewlett-Packard DeskJet Printer Driver Compatibility Information

To use ClarisWorks 3.0 with a Hewlett-Packard DeskJet printer, you will have to use a version of the printer driver that is above or below 5.0. Here's how to get one.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks 3.0v1 for Windows is not compatible with the 5.0 version of Hewlett-Packard's DeskJet printer driver. If you have this driver set as your default printer driver in the Printer Control Panel, the Print dialog box will not appear on the screen when you choose Print from the File menu and you will be completely unable to print.

There are several workarounds for this particular issue. Claris has developed a new version of ClarisWorks 3.0v2 that does get around the 5.0 drivers. It is best though to update your current printer driver with Hewlett-Packard's new driver available on the Hewlett-Packard BBS. The file name is "DJ100EN.EXE", it is in the library 1A. The same driver can be ordered via U.S. mail on 2 diskettes for $7.95 and requesting part number DJ100EN.

The modem service is provided to Hewlett-Packard's customers to allow improved access to drivers and utilities for Hewlett-Packard personal computer and peripheral products. This is a download service only. Interactive messaging and technical support are not available through this service.

Some common printer driver file names as of 5/95 are:

L4WIN3.EXE --- LJ4 Family Driver 31.v1.50 for Windows 3.1. This driver supports the entire LaserJet 4 family of printers including the 4V/4MV. This is the 31.v1.35 driver with added support for the LaserJet 4V and 4MV printers. Similar drivers are also available in German, Spanish, and French versions. Last updated on 7/94

L4W31PS.EXE --- Postscript v2.1.1 Driver for Windows 3.1. This driver supports the entire LaserJet 4 family including the Color LaserJet and LaserJet 4V/4MV. This driver replaces all previous versions of the v2.1.1 LaserJet 4 Postscript driver for Windows 3.1. Similar drivers are also available in German, Spanish, and French versions. Last updated on 9/94

DJ100EN.EXE --- DeskJet 500 Series v6.1 for Windows 3.1. This driver supports the 500, 510, 520, 540, 500C, 550C, and 560C printers in Microsoft Windows 3.1. The DeskJet and DeskJet Plus ARE NOT supported by this driver. If you have one of the two above mentioned printers you should use the 4.1 version of the driver. Similar drivers are also available in German, Spanish, and French versions. Last updated on 5/95

D5WN31.EXE --- DeskJet 500 Series v4.1 driver for Windows 3.1. This driver supports the DeskJet, DeskJet PLUS, 500, 510, 520, 500C, 550C, and 560C printers in Microsoft Windows 3.1. Last updated on 5/94 (version probably frozen due to release of 5.x driver, but can be used if a Windows application is not compatible with the 5.x driver if you have a DeskJet or DeskJet Plus.)

All these drivers are self extracting archives and contain README files with installation information.
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Claris Ships ClarisWorks Small Business Solutions Pack

NO LONGER AVAILABLE
41 ClarisWorks templates guide small businesses in managing everyday business tasks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

MACWORLD EXPO, San Francisco -- January 4, 1995 -- Claris Corporation today announced that the ClarisWorks Small Business Solutions Pack is now available directly from Claris. The ClarisWorks Small Business Solutions Pack is a collection of 41 professionally designed, easy-to-use templates created to help small businesses streamline everyday tasks using ClarisWorks.

Available for both Windows and Macintosh computers, the ClarisWorks Small Business Solutions Pack features everything small business users need to manage and promote their business, including finances and office administration. It lets both new and experienced personal computer users benefit from the capabilities of ClarisWorks integrated or "works" software.

"The ClarisWorks Small Business Solutions Pack is part of the Claris strategy to offer solutions for key market segments in addition to its award-winning line of productivity software," said Maria Patitucci, small business solutions manager for Claris Corporation. "ClarisWorks Small Business Solutions Pack is an ideal product for millions of small business owners in the U.S., helping them become more productive and allowing them to better focus on their business."

The ClarisWorks Small Business Solutions Pack focuses on tasks such as creating a business plan, managing finances, generating job applications, timesheets, office supply forms, stationary, business cards, invoices, advertisements, and more. This complete collection of specialized templates is designed to produce professional results and work seamlessly with ClarisWorks.

ClarisWorks 3.0: The best all-in-one integrated software

ClarisWorks, the award-winning all-in-one software available for Windows and Macintosh, seamlessly integrates word processing, spreadsheet, charting, database, and graphics capabilities. Version 3.0, introduced in October, takes the lead as the best all-in-one software on Windows and Macintosh with feature enhancements that make it the ideal productivity solution for small business, home or education users.

Pricing and availability

The ClarisWorks Small Business Solutions Pack is available directly from Claris for $29 and works with ClarisWorks 2.0 and higher on versions of ClarisWorks for Macintosh, and ClarisWorks 3.0 and higher on versions of ClarisWorks for Windows. For general information about Claris products and non-technical questions, users should call Claris customer relations at (408) 727-8227 OR (800) 3CLARIS.

Claris Corporation, a leading worldwide vendor of Windows and Macintosh applications for business, education and home, is a subsidiary of Apple Computer, Inc., with headquarters in Santa Clara, Calif.

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"Out of Disk Space" Error When Installing ClarisWorks 3.0 For Windows

What the "Out of Disk Space" error message may really mean if you get it while installing ClarisWorks 3.0.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

During installation of ClarisWorks for Windows 3.0, it is possible to receive the following error message: "Unable to copy Claris Installer to temporary location due to lack of disk space."

This error is not related to available hard drive space. It can be generated in any of the following situations:

1. You are running some form of anti-virus software that is resident in memory. VSAFE, which ships with the latest version of DOS, is one of the many anti-virus utilities that could conflict with the ClarisWorks install program. Claris recommends that you temporarily disable all anti-virus software before installing any Claris application. To check and disable anti-virus software, do the following:

a.) Check your CONFIG.SYS and AUTOEXEC.BAT files for programs that look like they could be anti-virus software. Some common ones are VSAFE, BOOTSAFE, and NAV. If you find any lines resembling these in the CONFIG.SYS file, you can prevent them from loading by typing REM^ at the beginning of the line on which they appear. [For clarity, a caret (^) is used in this example to represent a space.] When your system is rebooted, lines with REM^ in front of them are ignored and not loaded by your system. If you use MSDOS 6.0, you can hold down the F8 function key to step through the CONFIG.SYS file line by line and selectively load what you want. If you use MSDOS 6.2, you can hold down the F8 function key to step through the CONFIG.SYS and AUTOEXEC.BAT files line by line and selectively load what you want.

b.) Check to see if any anti-virus software is loaded at the Windows level. The two most common places in which anti-virus software could be loaded are the STARTUP group and the WIN.INI file. If you find an anti-virus software icon in your Windows STARTUP group, temporarily remove it from the STARTUP group and place it in another Program Group. The next time you start up Windows, the anti-virus software will not be loaded.

c.) To check your WIN.INI, open this file (located in the Windows directory on your hard disk) up in any text editor and look to see if you have any virus software listed on either the RUN= line or the LOAD= line. If you find a reference to anti-virus software on either line, the entire line can be temporarily disabled by placing a semicolon (;) in front of it. The next time you start up Windows, it will ignore any line that begins with a semicolon.

Once ClarisWorks is installed correctly, all anti-virus software can be re-enabled simply by removing the semi colon added in the steps above, since the conflict does not occur during normal operation.

2. Another situation where you may get the "Out of Disk Space" error when installing ClarisWorks 3.0 is when the memory configuration isnÕt optimized correctly. This can occur if device drivers and other memory resident programs are loaded into lower memory areas. This can be easily checked and corrected by running MEMMAKER (if you use MSDOS 6.0), OPTIMIZE (for QEMM users) or the equivalent for the memory manager being used. This will load many device drivers into upper memory and free up more conventional memory.

3. This error can also occur if the installer has issues creating / copying the temporary directory used during the installation process to your hard drive. To check this, get to the point where the error dialog box is displayed, then ALT+TAB to the Windows File Manager and see if the C:\\~MSSTFQF.T directory exists at this point. If it doesn't exist, there is some fundamental issue in creating the directory on that drive. If it doesn't exist, you can manually create it and rerun the install program.

4 . USE THIS AS A LAST RESORT -- Make a directory called CW30 off the root directory of your hard drive and within the CW30 directory create directories for each floppy in the installation set (i.e. DISK1, DISK2, DISK3, etc.). Copy in DOS (using XCOPY with the /S parameter is recommended) the relative floppy contents into each directory. Switch to the DISK2 directory and type: "APPSETUP C:\\CW30", but don't include the quotes. This should initialize the installer without copying files to the C:\\~MSSTFQF.T directory.

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Self-running DEMO Works Properly only on 13" or Larger Monitors, or on a PowerBook with At Least 640X480 Pixels

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This article has been archived and is no longer updated by Apple.
In addition to the regular ClarisWorks 3.0 application, there are also a trial version and a self-running DEMO. The trial version is a regular version of the application without the ability to save documents. The DEMO is an animated tour describing and illustrating the main features of the program.

The self-running demo of ClarisWorks 3.0 was designed to work on monitors 13" or larger. It will also run on those PowerBook computers with monitors which are at least 640 x 480 pixels. When run on displays smaller than this, the DEMO window appears at the bottom of the screen. There is no way to correct this issue.

The trial version of ClarisWorks 3.0 will run properly on any Macintosh.
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"Cannot Write to Hyphenation Dictionary" Error

Something to be aware of if you use international dictionaries with MacWrite Pro 1.5v3 or ClarisWorks 3.0 on a Power Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Issue: When attempting to use a non-U.S. dictionary in ClarisWorks 3.0 or MacWrite Pro 1.X, the following error message comes up:

"Cannot write to hyphenation dictionary, file is an unknown version or is damaged."

In fact, the issue is not related to hyphenation files.

This issue is specific to the Power Macintosh computers (PPC) and applies to English applications (U.S. and U.K.) using non-English dictionaries.

Solution: Trash the Claris Spelling Enabler (The Claris Spelling Enabler provides faster spell checking for English dictionaries on Power Macintosh computers. It's a Power Mac native version of the spell checking engine normally found in the individual dictionaries.) To remove the Claris Spelling Enabler, open the Claris folder within your System Folder and drag the file named "Claris Spelling Enabler" to the Trash.

The following has been included with the shipping materials of the International Dictionaries:

Note to Power Macintosh users:

When used with US and British versions of ClarisWorks 3.0v1, the enclosed dictionary is not compatible with the Claris Spelling Enabler. (The Claris Spelling Enabler provides faster spellchecking for English dictionaries.) To use this dictionary with ClarisWorks 3.0v1 you must first remove the Claris Spelling Enabler from your Claris folder.

To remove the Claris Spelling Enabler, open the Claris folder within your System Folder and drag the file named "Claris Spelling Enabler" to the Trash.
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Assistant Shortcut Icons are Garbled

Several customers have reported that their Assistant shortcut icons appear garbled in the shortcut palette and in the Edit Shortcuts dialog.

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Several customers have reported that their Assistant Shortcut icons appear garbled in the shortcut palette and in the Edit Shortcuts dialog. The Assistant Shortcut icons are stored in each Assistant file in the Claris folder as a resource. The other shortcut icons are stored as resources in the ClarisWorks application file. None of these icons is editable within ClarisWorks.

If the Assistant Shortcut icons are garbled, the solution is to replace them by running the ClarisWorks Installer, clicking Customize and installing only the Assistants. One of your System Extensions may have conflicted with the ClarisWorks installer, causing the corruption when you first installed. Be sure to disable Extensions when you reinstall by restarting your Macintosh with the Shift key held down until you see the message "Welcome to Macintosh. Extensions Off."

Another reason for the corruption may be disk compression software. If the issue persists even after reinstalling, disable disk compression software or specify that the Claris folder not be compressed.
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Box Characters Printing That Don‘t Show on Screen

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Box characters print that don't appear on screen. This can happen if you type the forward delete key on the extended keyboard, which is below the Help key. MacDraw II does not support the forward delete key. If you type the forward delete key, instead of deleting the key in front of the cursor, MacDraw II adds the ASCII character for the forward delete key to the text block. This character does not add any space and does not show up on screen. To delete these characters, click in the word to the right of the characters. Press the left arrow (cursor) key so that the cursor is just to the left of the word. Then press the regular delete key until the characters are gone.

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A Visual Guide to Installing ClarisWorks 3.0 for Macintosh

If you have never installed your ClarisWorks 3.0 software before, here is a step-by-step guideline.

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PART ONE: PREPARING TO INSTALL

1. Are you familiar with using your mouse to click, double-click, and drag things around on your screen?
If you need more information about using your mouse, working with disks, or making copies of documents and disks, see the documentation that came with your Macintosh (The User's Guide for the Performa is shown in Figure 1). If you are familiar with these procedures, continue.

2. What kind of machine do you have?
ClarisWorks will run on a Macintosh Plus or later model Macintosh. This includes the Macintosh Performas, PowerBooks, and all Power Macintosh computers.

Is your machine on the following list?
Macintosh Plus
Macintosh SE
Macintosh II
Macintosh IIx
Macintosh SE/30
Macintosh IIcx

Some versions of the above machines cannot use High Density (1.4 Megabyte) disks. (See Figure 2.) You may need to get ClarisWorks on 800k disks. Call 1-800-3-CLARIS to get these disks.

3. Do you have a hard disk with enough free space?
ClarisWorks needs an internal or external hard disk in order to run properly.

A complete installation of ClarisWorks 3.0 requires about 11 megabytes of free space. This includes the application, Assistants, the Introduction to ClarisWorks, on screen help, stationery files, clip art, spell-checking, thesaurus, hyphenation, import and export translators, and communications tools. If you don't have enough space, you'll need to remove some files from your hard disk in order to create enough space.

4. Are you upgrading from a previous version of ClarisWorks?
If you are upgrading from a previous version of ClarisWorks, skip to Part Two.

5. Are you on a network?
Contact your network administrator to see if you have the proper hardware and System software.

6. Which System software version do you have?
A. Go to the first item listed under your Apple menu. It should say, "About this Macintosh" or "About the Finder." (See Figure 3.)

B. Choose that item. You'll then see a window which says "System Software" followed by a number. (See Figure 4.) This number is the version of the System software your Macintosh is using. ClarisWorks needs System 6.05 or greater.

C. If you have System 7.0 or 7.0.1, we recommend that you install System 7 tune-up, version 1.1.1. System 7 tune-up is available from Apple Computer, Inc. If you see "7.0¥" or "7.0.1¥" the Tune-up has already been installed.

D. If you have System software that is earlier than 6.0.5, you'll need to install a more recent version. System software is available from Apple Computer, Inc. or many authorized Apple dealers.

7. How much memory (RAM) do you have installed?
Go back to the first item listed under your Apple menu, as shown in the graphic above. Look at the number next to, " Largest Unused Block." This is the amount of memory available above and beyond what the System requires.

If you have a version of System 6 (6.0.5 through 6.0.8), you'll need at least 1 megabyte of total memory (1 megabyte is equal to 1,024 bytes.). If the largest unused block says that you have less than 800k of memory available, you can increase the amount available to ClarisWorks by turning off MultiFinder. Go to the Special menu and choose Set Startup. If MultiFinder is selected, click Finder only and restart your computer before installing ClarisWorks.

If you have any version of System 7, you'll need at least 2 megabytes (2,048 bytes) of total memory and at least 800k in the largest unused block of memory.

If you have less than the recommended memory, you'll need to have more installed or your System software reconfigured. Contact your local authorized Apple service dealer to add memory to your machine. If you're not sure how to reconfigure your System folder (removing excess fonts, etc., check with your service dealer, as well.

8. Register your software.
Please take time to complete and mail the postage paid product registration card, or call (800) 325-2747 to register by phone. For information about customer support, refer to the Claris Support Portfolio Service Directory included in the product package.

9. Make back up copies of your disks.
Lock your ClarisWorks disks by sliding the locking tab on each disk so that the hole is open. Then make copies of these disks before installation. Make sure that you name the disk copies with the same names as the originals. The Installer won't recognize the disks if they have different names. After making the backup copies, store the originals in a safe place. Lock the copies and use them for installation.

10. Turn off virus protection.
If you have virus protection software on your Macintosh, turn it off before installing. You can turn it back on after you're done installing. Check your virus protection software's documentation for instructions.

PART TWO: INSTALLING CLARISWORKS

Easy (complete) installation is recommended. This will install the entire ClarisWorks package.

1. Insert Disk 1 into the floppy (3.5 inch) disk drive on your computer.
The icon for the disk will appear on your screen. (See Figure 5.) Double-click on the disk icon to see the contents of the disk.

2. In the window for Disk 1, double click on the "Install ClarisWorks" icon. (See Figure 6.)

3. In a few seconds, you'll see the ClarisWorks Installer welcome screen. (See Figure 7.) Click on the OK button.

4. You'll then see the Install ClarisWorks window. (See Figure 8.)
This window has buttons on it which allow you to do a number of things. It will default to Easy Install, and the hard disk which has your System folder on it. This means that it will do a complete installation on your main hard disk unless you tell it to do something else.

If these settings are not what you want, you can click the Easy Install button and do a custom installation, installing only what you want. If you want the Installer to install ClarisWorks on another hard drive, click the Switch Disk button. If you want the Installer to install ClarisWorks in a particular folder, click on the pop-up menu.

When the settings are ok, click on the Install button. The Installer will tell you what it's doing and will ask you for each disk it needs.

5. After all the files are installed, the Installer will tell you that the Installation was successful.

6. Click on Restart. The ClarisWorks application is now on your hard disk in the ClarisWorks 3.0 Folder.

7. Double click on the icon for ClarisWorks 3.0 (it's in the ClarisWorks 3.0 folder).
When you launch it the first time, you should enter your name, the name of your company and your serial number from your registration card.

8. You can now safely remove the old version of the application, ClarisWorks 1 or 2.
Drag the icon for the old application into the Trash and empty it. Now, whenever you double click on a file, ClarisWorks 3.0 will open it. If you get a message which says that you don't have enough access privileges to throw away the old version, you have Applications folder protection on. Go to Control Panels under the Apple menu. If you're on a Performa, you may have to turn off this option in the Performa control panel. On other Macs, it's turned off in the General Controls control panel. (See Figure 9.)

9. If you are using the Launcher, there's one more additional step.
Open up the ClarisWorks 3.0 folder and click once on the icon for the application ClarisWorks 3.0 to highlight it (If you click twice, ClarisWorks will launch). Go under the File menu and choose Make Alias. You'll then see a file named ClarisWorks 3.0 alias. Place this alias file in your Launcher items folder in your System folder. If there's an alias file for an earlier version of ClarisWorks in the Launcher Items folder, trash it. Now, ClarisWorks 3.0 will appear in the Launcher. (See Figure 10.)

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Macintosh: No Interface to IBM WheelWriter

I am looking for a Macintosh interface for IBM WheelWriter V, VI, or X? Is one available?

This article has been archived and is no longer updated by Apple.

We are not aware of an interface or driver for the Macintosh that supports any of the IBM WheelWriter typewriter/printers.

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Introduction Will Not Launch on Black and White Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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The Introduction to ClarisWorks may not launch on a black and white Macintosh if you first install it on a color Macintosh and then drag copy it to the black and white Macintosh. The ClarisWorks Installer is intelligent and determines what kind of Macintosh you are installing onto so as to install the version of the Introduction that matches your screen.

The error message you will get is, "Wrong color resolution: Syncronicity: Desktop Folder: Claris_Cwks Preview: Cwks Intro_Final: Cwks".

The solution is to use your original ClarisWorks diskettes to install the correct version of the Introduction to ClarisWorks.

Black and White Macintosh computers include the Macintosh Plus and Macintosh SE.
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Take a Look at ClarisWorks 3.0 Assistants

Are you new to computers? Are you interested in getting your work done in a snap? If so, the changes and enhancements in the ClarisWorks 3.0 integrated software package may be for you!

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In focusing on providing easier access to the already powerful features of ClarisWorks, Claris has concentrated on making complex tasks easier to accomplish in the latest version of the software package. Claris has made all of the concepts and tools of ClarisWorks easier to learn and master.

The most significant advancement is the addition of "Assistants." The new Assistants feature guides you through the creation of certain types of complex documents as well as the performance of certain tasks by asking you questions that walk you through the process. Assistants allow you to concentrate on what you want to accomplish without having to master all the tools necessary to generate your desired results. In some cases, an Assistant can also supply "hints and tips" which give expert advice on how best to get your ideas across.

Within a ClarisWorks document, there are Assistants to help you create a table, insert a footnote, or address an envelope (known as "task Assistants"). They are accessed through the Help menu on Windows, and the Question Mark Icon (called "Guide Menu" under System 7.5) on Macintosh computers.

There are eight Assistants for the Macintosh and seven for
Windows:

- Name & Address List
- Calendar
- Newsletter
- Presentation
- Address Envelope, document creator and task assistant
- Insert Footnote
- Make Table
- Find ClarisWorks Documents, Macintosh only

As you can see, the idea behind the Assistants is to help you be more productive by allowing you to concentrate on what you want to do without having to invest a lot of time and energy in learning features and tools. Gone are the days of having to wrestle with document structure and design considerations.

The software architecture behind the Assistants, called Claris Assistance Technology, is extensible. As additional Assistants become available through Claris, and (over time) through selected third parties, they can be easily added to the Assistants library by you: therefore, to take advantage of new Assistants, you do not need to purchase new versions of ClarisWorks, as there is no need to modify the application itself to accommodate new Assistants.

Assistants at work
Let us look at an example. In business, organizations, and education, people often need to keep their customers informed of new developments, stay in touch with their membership, or provide a forum for the exchange of ideas and information. To do this, people frequently spend a great deal of time in the drafting and design of newsletters. ClarisWorks provides a Newsletter Assistant to guide you through the creation of just such a document.

Assistants of this type are accessed through the New Document dialog by clicking on the "Start with an Assistant or Stationery" button.

Once you select the Assistant you want, the interview process begins. The Newsletter Assistant starts by asking you what your goal is. Are you trying to provide instruction, or do you need to present a variety of news and general
information?

The Assistant responds intelligently to the answers you give and provides "tip text" which explains the different options, showing you how selecting a particular option impacts the design of the document. In our newsletter example, you can create either an instructional newsletter or a general information newsletter. The distinction here is that the instructional newsletter allows for long, in-depth articles placed sequentially from one page to another; while the design of the general information newsletter allows you to cover a variety of topics in a concise fashion.

Having received your answers to its questions, the Newsletter Assistant proceeds to ask what paper size and format style to use, offering choices ranging from "business" to "post modern." Each Assistant screen has a thumbnail (a small, icon-sized image) of the document created which changes in appearance, providing visual feedback to reflect the options you have selected.

Next, the Newsletter Assistant poses some practical questions, such as what title to give the newsletter, how to format the date and issue and/or volume #, and how many pages you want your newsletter to be. The process of answering the Newsletter Assistant's questions is the process of

building your newsletter.

The ClarisWorks Assistants have a consistent interface throughout. For example, an Assistant's questions are always found at the top of the dialog box or screen, and the multiple-choice-like responses, as well as the thumbnail, are always found towards the middle of the screen along with the tip text identified by an artful exclamation point.

At this point in our newsletter example, the Assistant goes on to inquire about some style considerations. Do you want a table of contents on the first page? How about a
highlighted editorial column? Are you planning to mail this newsletter, and, if so, will you want to set aside one-third or one-half of the back page for the mailing label?

To help you add visual impact to your newsletter or other documents whether created with the help of an Assistant or not. ClarisWorks 3.0 ships with lots of "content" in the form of over 70 pieces of clip art, and seven fonts licensed from Monotype Corporation. If you are a "non-artist" type, these can be used to help you create professional-looking flyers, presentations, newsletters, and other types of documents with ease.

Finally, the Assistant offers a separate "Hints and Tips" document that you can print out with your finished newsletter. This Hints and Tips document provides expert advice on how to write and structure the articles in your newsletter. It can be created once and saved or printed for future reference.

The ClarisWorks Assistants can help you create other documents as well. Not only can Assistants help you get your work done, but Assistants can also help you get acquainted with ClarisWorks features. Other Assistants can help you perform tasks like inserting a footnote, creating a table or (on the Macintosh version only) finding your files. As Assistance technology grows, "getting up to speed" on your computer can take less time and be more fun.
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Finding in Multiple Fields; Complex Finds

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The Find command in Claris Organizer 1.0 allows you to specify only a single value in a single field for finding. If you need to specify criteria in multiple fields, or search for several criteria in a single field, define a Custom View. For more information, search for the keyword "Custom View" in the onscreen help.

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Image Editing with ClarisDraw

You can do it, and more easily than you might think, by editing images in a ClarisDraw paint frame! All you need are two pictures, and you are all set.

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Want a picture of yourself standing atop Mount Everest? How about an image of a friend standing with George Washington? Want to put a moustache on the Mona Lisa?

Welcome to the world of image editing: the process of taking an existing "bitmapped" image and changing it. Image editing can provide impressive results. Many images you see in advertisements are edited in this way. It's not only a way to get some unlikely image, such as Abraham Lincoln standing next to a freeway, but it's also a way to enhance an existing image. You could eliminate a confusing background, for example, or brighten a cloudy sky.

Ever want to put someone on the moon? Follow the steps outlined here to take two pictures, one of a man and another of a moonscape, and combine them to form a new picture. By following this general procedure, you will be able to do similar edits for other bitmapped images.

The bit-mapped image

Bitmapped images are those which are made up of tiny dots, very much like the way photographs are printed in newspapers. Paint programs create bitmapped images, and scanning software can generally provide you with a file in this format as well. You can also get good bitmapped images from photo CD's. The ClarisDraw paint tools allow you to color, add, delete, and rearrange these dots in an infinite number of ways so that you can change the image in almost any way you want.

Not sure you are dealing with a bitmapped image? Here is a simple test: when placing an image into ClarisDraw, if you have a bitmapped image, you can you zoom in and see a pattern of dots or bits. You can compare this to an object-oriented graphic, which is made up of individual, mathematically defined objects as opposed to bits. Such an image, an EPS for example, won't display as a pattern of bits.

Finding the right image

A photo CD can be a good source for images, as can pictures available via various online services. If you have got an actual photograph or other picture you'd like to work with, then you'll need to scan the image. You can then save it as either a TIFF file or PICT; ClarisDraw supports either format.

You can also work with GIF files, such as those you download from an online service, but here are a few caveats: ClarisDraw can open only GIF files of the format 87a. The only way you'll know if your GIF file is this format or not is by attempting to open it. If you get a message that says, "The document file name "" is a version that is not compatible with the translator GIF" then your GIF file is not format 87a. You'll need to find a GIF utility to open this file and save it in some other format, such as PICT. There are many shareware GIF viewing utilities available on the online services.

Prepare for takeoff

Once you've got the images ready to go, you'll need to prepare ClarisDraw for your files. Working with bitmaps, as with any paint file, takes a lot of RAM. You'll probably need to allocate more RAM to ClarisDraw, as its default RAM allocation might not be enough. To do this, quit ClarisDraw, then click on the ClarisDraw icon and select Get Info from the File menu. Change the Preferred memory size to 3,000 for now. (For more information on doing this, see your Macintosh User's Guide.) If at any point you get any error message telling you there isn't enough memory to do what you want to do, then you'll need to increase the memory allocation for ClarisDraw even higher. As a general rule, to edit a single image, you'll need a memory allocation of at least 3000 K. If you are editing multiple images in a single document, as the steps here do, you'll need to allocate more memory to ClarisDraw.

Put a man on the moon

Once you've made any necessary adjustments to the memory allocation of ClarisDraw, you're ready to go. Here are the steps.

1. Open a new document in ClarisDraw.

2. Select Place File.... from the File menu. When prompted, select the file you'd like to edit. You'll see it open on your screen. If you'll be editing several pictures, you can select "Place File..." again and select your second picture and follow the instructions below.

3. Click your images one at a time and choose "Ungroup Picture" from the Arrange menu for each. You can now click an image once more and the paint tools will appear on the left side of the screen. You're ready to edit!

Steps 4-6 focus on creating the picture.

4. Use the zoom controls to see the image of the man better. This helps in making a more precise selection.

5. Using the lasso tool, select the image of the man by carefully outlining the exact shape of his image.

6. Choose Copy from the Edit menu to copy your selection to the Clipboard.

7. Bring the landscape of the moon into view, so that you can click on the region where the image on the Clipboard will "land."

8. Choose Paste from the Edit menu.

Note that at this point, the pasted image, in this case the man's image, is still selected. This means you can move it, or make changes to it (see notes below). If you'd like to have multiple copies of the man, for example, here is a shortcut you can try: Hold down the Option key as you drag the selected area. A copy of the selected area appears and you can drag this copy to another location.

Note: Once you click anywhere outside of the selected image, it becomes unselected, and it will be much more difficult to select again.

Making selections

In the example above, the lasso tool is used to select the image of the man. This is just one of the two ways to select portions, or regions, of your image. The other way is to use the selection rectangle, which, as its name implies, lets you select a rectangular-shaped portion of your drawing. Using this tool will select your object and any white (blank) space around it. If you want the white or blank space around the selection to be ignored, hold down the Command key as you draw a selection rectangle around the image or portion of the image you want. Using the Command key in this manner makes the selection rectangle "shrink" to the size and shape of the image you are drawing it around. Be sure to keep the Command key down until the selection box shrinks. Note: This command works only for selecting images sitting alone on white space.

Edit an image

Remember, you are working with tiny pixels of color here. Everything that you do revolves around editing these dots. You can basically do four things: move dots, delete dots, add dots, or change their color. In the above steps, the focus is on basically moving dots from one place to another. The other three things that can be done, deleting dots, adding dots, or changing their color are reserved for doctoring an image, improving the color or cleaning up the "noise" that may have come over when you copied, pasted or moved dots around. Doing any of these three things can make a world of difference in the image.

Image-editing tools

There are lots of other ways you can edit images or selected areas of images: you can use the resize, shear, distort or perspective tools to give your image a whole new look. To use these tools, make your image selection and select any of the above tools from the Paint menu. You can lighten or darken your image; you can blend its colors; you can change the location of an object. Give each effect a try, if you don't like what you see, immediately select "Undo" (Command-Z) from the Edit menu, and your image reverts to the way it was before you applied the effect.

Don't forget the painting tools

ClarisDraw also provides painting tools with which you can edit your image. They include the Pencil, for drawing lines one-pixel wide; the brush, for painting your image with color; the paint bucket, for filling in large areas; the spray can, for "spraying" wide areas with diffuse color; and the Eraser, for changing anything you've done back to white. Note that double-clicking the paintbrush and spray can tools provide you with options as to how they'll work. Double-clicking the pencil zooms your drawing to 800%, very handy for closeup work.

Two other tools help you manage colors. The magic wand tool allows you to select objects by color, which is helpful for selecting oddly-shaped or hard-to-select objects. The eyedropper tool lets you click on a color and have that color selected in the color palette, helpful for finding a color so you can edit it. To edit a color, double-click that color from the color palette.

Try a little experimentation with the paint tools. You can impress your friends with edited images that look almost perfect. It is up to you!

Tips

After diving into the world of image editing, you may want to keep a few things in mind:

- Any images that use paint frames will require more RAM for editing (and more disk space for storage).

- When pasting one image into another, you may have incompatible color palettes. There is no easy way within ClarisDraw to resolve this. The best thing to do is print the images, then scan them yourself. This will give both images consistent color palettes. Keep in mind, however, that this technique may cause a loss in fidelity.

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No Beep when Closing a Document Window

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When closing a document window that hasn't been saved, ClarisWorks 3.0 displays the usual alert, but does not beep.

Exact steps to reproduce:
1) Open any ClarisWorks 3.0 document or new document.
2) Add some text, drawing or table.
3) Click the close box in the upper left corner of doc window.
4) You will get a dialog box asking you to save changes but there will be no audible warning tone.
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Reordering Shortcut Icons

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Question:
Is there a way to move icons within the shortcut palettes in ClarisWorks?

Answer:
Hold down Command-Option when clicking in the Shortcuts palette. This allows you drag the outline of a button around so that you can reorder the palette.

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ClarisWorks 3.0 New Features

Besides Assistant technology, ClarisWorks 3.0 comes with new features that once again redefine it as the leader in the integrated software category.

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New tools to help you "get up to speed"

Among the new tools is the on-screen tour called "Introduction to ClarisWorks," a self-paced "movie" created in Director from MacroMedia. The movie gives you an overview of the features and concepts of each of the different environments of ClarisWorks, explaining the types of operations that can be performed and providing many demonstrations, a very useful tool for beginners or for people interested in learning more about a particular environment or module, such as the spreadsheet or drawing module.

Because the tour is organized in a modular format (one section for each environment) it makes it easy to learn about ClarisWorks at your own pace. You can view the section on spreadsheets, then quit the tour to get hands-on practice with what you have learned. When you are ready, return to the Introduction and start in on another module. For those completely unfamiliar with the program the tour can be accessed directly through the new Welcome dialog box, the first thing you will see on the screen after launching ClarisWorks. When you find you need a little help, the Introduction is available through the Question Mark icon (Macintosh) and Help menu (Windows).

Share Macintosh and Windows files

While both the Macintosh and Windows versions include the exciting new ease-of-use enhancements, the Windows version is also a major overhaul of the 1.0 version, adding hundreds of new features. Another increasingly important usability factor in today's heterogeneous computing environment is the ability to share files seamlessly between Macintosh and Windows-based computers. Since the 3.0 version on both platforms share an identical file format, file sharing between users of 2.0 and higher or 3.0 on Macintosh, and 3.0 on Windows is easy.

New on-screen help

To make the computing experience easier on all levels, Claris has completely revamped the on-screen help. The Help system has been greatly expanded and improved to provide you with step-by-step instructions for the operations you are trying to perform, without the need to leave the computer screen. Many hints and tips are also included, as well as a special Troubleshooting section. "Topics A to Z," a new entry under the Help menu, provides another way to get right to the information you are looking for.

New manual

To complement the on-screen help, the printed manual has been wholly redesigned to serve as a companion to the on-screen help. The manual addresses concepts and gives many examples of the types of things that can be done in ClarisWorks. It then points you to the exact section in the on-screen help that has the instructions for accomplishing that particular task. The new ? icon tells you when and where to consult the on-screen help for an in-depth explanation.

Other accessibility enhancements

In addition to making ClarisWorks easier to use and easier to learn, we have made it easier to keep track of information for a particular document, such as its author and version number, by using the Document Summary Info command (found under the File menu). While this is very useful, the most powerful application of this command is when it is used in conjunction with stationery documents. The New document dialog box now provides ready access to all of our pre-created stationery files and groups them into convenient categories (General, Home, and Small Business). Using the Document Summary Info command enables you to assign a category to a file before saving it as stationery. This way, your own stationery file will be listed under the pre-existing category you choose, or under a new category which you create, available directly from the New document dialog box.

Document statistics

The new "Word Count..."command, accessed under the Writing Tools submenu of the Edit menu, will tell you how many characters, words, lines, paragraphs, and pages there are in your document.

More customization options

New items in the Preferences menu allow you to customize ClarisWorks commands and functions, such as the function of the arrow and Enter keys in spreadsheets. These new controls, for example, also let you determine which dialog box displays at startup, which fonts display in the font menu, and which alerts come up when opening files created in previous versions.

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Error When Creating Database Document

If you own a Performa 630 CD or 637 CD, a corrupt System file may cause the ClarisWorks database to crash.

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This article has been archived and is no longer updated by Apple.

Issue:
I have a Performa 630CD or 637CD computer and when I try to create a database in ClarisWorks I keep getting a Type 3 error or a Type 1 error. I can create any other document including Word Processing, Drawing, Painting, Spreadsheet, and Communications. Restarting with the Shift key down, Rebuilding the Desktop file, and resetting PRAM (Parameter RAM) all fail to help.

Solution:
Reinstall the System File or use the Performa CD to restore System software and restore only the System file. Then reboot (restart) the computer.

NOTE: If using the CD-ROM, restart from the CD-ROM before reinstalling the system file.

Why:
The System file on the Performa 630 CD or 637 CD computers may be corrupt.
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ClarisWorks 3.0 Compatibility List

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Below is a list of CPUs, Video Drivers, and Printers which are certified as compatible with ClarisWorks 3.0 for Windows:

CPUs

ALR (486/66)
Ambra (486/66)
AST Premium 386/33
Compaq 325 LTE (386/25)
Compaq Deskpro 386/25e
Compaq Deskpro 386/33
Compaq ProLinea (486/66)
Compaq DeskPro XE (560)
Dell 325 (386/25)
Dell 433 DE (486/33)
DELL 466ME (486/66)
Dell 466MX (486/66)
Dell 486 D50 (486/50)
Dell 486 P50 (486/50)
Dell 486 PE (Pentium/60)
Dell 486 XPS (Pentium/60)
Dell P25 (486/25)
Everex Tempo (386/25)
Gateway 2000 (386/20)
Gateway 2000 (486/33)
Gateway 2000(Pentium/60)
IBM PS/2 model 70 (386/25)
IBM PS/2 model 95 (486/33)
IBM PS/2 w/SLC (386/20)
IBM Thinkpad (486/33)
IBM ValuePoint (100/DX4)
NEC Powermate 33i (486/33)
NEC Prospeed 486 SX/C (486/20)
Packard Bell Force (486/33)
Tandy 4025 LX (386/25)
Tandy 4033 LX (386/33)
Toshiba 3200 SXC (386/20)
Toshiba 5200 (386/20)
Toshiba T2200SX (386/20)
Toshiba T4600DXC (486/50)
Toshiba T6400DXC (486/33)

Video Cards

#9-#9GXE
#9GXE64
ATI Technologies Graphics Ultra +2MB
ATI Ultra 1.MB
ATI VGA Wonder XL241MB
Boca Research Basic VGA
Cirrus logic display with chip GD5422
Diamond Speedstar Pro SVGA
Diamond Speedstar Pro VLB
Diamond Stealth 24VLB
Diamond Viper VLB SuperVGA
Genoa Phantom 32i
Genoa Windows VGA 24
GUI Accelerator
Headland Tech SVGA
Hercules Dynamite

Hercules Dynamite Pro 2MB
Hercules Graphite
Horizon
IBM XGA
Mach 32 onboard Ambra
Matrox
Miro Crystal 10SD
Oak OTIVGA
Orchid Farenhite 1280
Orchid Hercules Dynamite VL Pro
Orchid Kelvin 64
Orchid Pro Designer II
Paradise/Western Digital VGA Plus
PowerGraph X-24
Spider 256 Cache
Spider VLB/PLUS
Trident VGA
STB Horizon VL
STB Pegasus
Video 7 V7 Vram
Vortex-VL
XGA

Printers

Apple LaserWriter 630
Apple LaserWriter NTX
Canon BJ10e
Canon BJ200e
Canon BJC 600
Canon LBP430
EPSON EPL 7000
EPSON LQ570
EPSON STYLUS 800
HP DeskJet 500c
HP DeskJet 560c
HP LaserJet 4/4M
HP LaserJet 4si/Mx
HP LaserJet IIID
HP LaserJet IIP
HP ThinkJet
IBM Laser Printer Lexmark

Lexmark 4076 IBM Execjet IIc
Lexmark Winwriter 100
Lexmark WinWriter 200
NEC Print writer P6300
Panasonic P1123
QMS P 815
TI Microlaser 600

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Display Card 8/24GC: Third-Party Monitor Support

Will Apple's new video cards, specifically the Macintosh Display Card 8/24GC, support third-party monitors? I am particularly interested in RasterOps and SuperMac 19-inch monitors.

This article has been archived and is no longer updated by Apple.

The Macintosh Display Card 8/24GC supports any display that meets one of the following specifications:

Sense pins 10	7	4	Display	Pixels	Hor x Vert Clock	Dot Refrsh	Vert Refrsh	Horiz
0	0	1	Apple Portrait Display	640 x 870	57.2832	75	68.9	
0	1	1	Apple Two-Page Monitor	1152 x 870	100	75	68.7	
1	1	0	12" Apple Monochrome Monitor	640 x 480	30.24	66.7	35.0	
1	1	0	13" AppleColor RGB Monitor	640 x 480	30.24	66.7	35.0	

0 - Grounded 1 - Not Connected

Note that sense pins 4, 7, and 10 are referred to as SENSE0, SENSE1, and SENSE2 in pinout tables for the video connectors.

None of the RasterOps or SuperMac 19-inch displays meets the above specifications. Based on this, we do not think that they will work properly.

Here are the pinouts for the Macintosh Display Card 8-24 GC:

Pin	Description
1	Red Video Ground
2	Red Video
3	Composite Sync
4	SENSE0
5	Green Video
6	Green Video Ground
7	SENSE1
8	Not Connected
9	Blue Video
10	SENSE2
11	Composite Sync and Vertical Sync Ground
12	Vertical Sync
13	Blue Video Ground
14	Horizontal Sync Ground
15	Horizontal Sync
Shell	Chassis Ground

SuperMac has announced two new monitors that work with the new Apple video cards: the "Color Two-Page Display" and the "Platinum Two-Page Display."

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ClarisWorks Cross-Platform Considerations

ClarisWorks 2.0 and 2.1 share the same file format as ClarisWorks 3.0. As a result, any document created by ClarisWorks 2.0, 2.1, or 3.0 on the Macintosh can be used by ClarisWorks 3.0 for Windows.

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ClarisWorks 3.0 has the same user interface and file format across Macintosh and Windows platforms. This cross-platform compatibility means that sharing files between Macintosh or Windows versions is transparent and readily accomplished without the use of translation software. There are, however, a few rules to keep in mind.

MSDOS file name conventions.
When using ClarisWorks files cross-platform from Macintosh to Windows, files should have a name of no more than eight characters with a .CWK extension. This "eight dot three" requirement is an MSDOS naming convention.

For example, a Macintosh ClarisWorks 3.0 document, could be named, ClarisWorks Sample, but it would not appear in the Open File dialog box in ClarisWorks 3.0 for Windows unless you chose Show All Files as the file type. The file itself would have a truncated name, with an exclamation mark and the first seven characters becoming the file name, and the next three becoming the extension (e.g., !clarisw.ork). While this strangely named file can be opened in ClarisWorks 3.0 for Windows, a better file name on both computers would be "CWSAMPLE.CWK," which can be opened by either platform.

Paint document sizes.
A large paint document created in ClarisWorks 3.0 for Windows may be opened in ClarisWorks 3.0 for the Macintosh provided that the memory allocation is increased. The instructions for how to increase the application memory size can be found in the ClarisWorks Installation Guide (Macintosh).

On a Windows computer, the default size of a Paint document is 468 pixels by 324 pixels (6.5" wide by 4.5" high). On a Macintosh, the default size of a Paint document opened under the default memory allocation to ClarisWorks opens up to 4.5" by 4.5". These sizes can be changed in either platform by choosing Document from under the Format menu and filling out the desired size information in either platform.

Font transfer issues.
A document created on a Windows computer using particular fonts, sizes and styles may not convert to the Macintosh exactly. As an example, Times New Roman under Windows should convert to Times on a Macintosh. The style and size convert properly, but the Macintosh will not retain the Times font name. When moving a document from Windows to Macintosh, only fonts with exactly the same name on each platform (i.e., Helvetica), will be recognized by the Macintosh with any consistency. There is a little more flexibility when moving a document from Macintosh to Windows.

Windows font substitutions are handled by a section of the WIN.INI file called [FontSubstitutes]. One of the default settings is "Times=Times New Roman." The WIN.INI file can be edited to achieve whatever substitution you want. A document created on the Macintosh with Times will convert properly to Times New Roman on a Windows machine assuming the Font Substitution is set in the WIN.INI file.

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WIN32s Error 193 When Installing ClarisWorks 3.0

What to do if you get a Win32s error while installing ClarisWorks 3.0.

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In some cases, the installation process is aborted after the installer restarts Windows at the point when the WIN32s is installed. An alert box shows the error: WIN32s-Error [pathname]\\MS·STF.dll: Invalid format. The path name describes where the file is located on your disk. This location could be the C:\\WINDOWS\\SYSTEM directory or a directory whose name begins with a tilde character (~). After you click OK at the alert dialog, you get a second alert message: Cannot startup ClarisInstaller-Error 193.

The solution to the above issue is to locate and delete the following six files from your hard drive:

mscomstf.dll
mscuistf.dll
msdetstf.dll
msinsstf.dll
msshlstf.dll
msuilstf.dll

If these files are not in the above directory, you can locate them by using the Search command in Windows File Manager, searching for ms*stf.dll .

Where ms*stf.dll files come from.
These files are used by the Microsoft installer, which many software vendors, including Claris, use to install Windows applications. A properly engineered installer copies these files to your hard disk during the installation process, then removes them when installation is complete. Some installers leave these files on your hard disk, resulting in a conflict with subsequent installations.

Note: This is fixed in ClarisWorks 3.0v2.

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Entering Internet Addresses into Contacts

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Symbols such as @ (at sign) and _ (underscore) cannot be entered into the Phone Number field of a Contact. The best alternative for entering Internet addresses on a Contact is to use one of the Custom fields.

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How To Print Rolodex Cards

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Claris Organizer does not have a pre-entered format for Rolodex cards. You can create a label layout to print to Avery 5385/Rolodex cards.

Here are the steps to creating the label for Avery 5385/Rolodex Cards:
1. Select Print from the File Menu and click on Labels or press L.

2. Click and hold the mouse on Avery 5160. Drag to the bottom of the menu and select Create New Layout.

3. Type in the Following Measurements
Row: 4
Col: 2
Width: 4
Height: 2.166
Top: 1.167
Bottom 1.167
Left: .25
Right: .25
Top, Bottom, Left, and Right should be set for .1

4. Press Save and Name this label Rolodex Cards or Avery 5385.

5. You may want to create your own Text layout for the Rolodex Cards. Click on Business and select Create new Layout. You can pick your fields here and save.
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Importing Tables from Microsoft Word

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Question:
I have my contacts in a table in Microsoft Word, and would like to put them into Claris Organizer.

Answer:
In order to import your tables from Microsoft Word, you will need to convert the tables to text only (Tab-Seperated format). Here are the instructions on how to do this:

Converting a Table to Text in Microsoft Word:
1. You can convert the table in Microsoft Word to regular tab-separated text. Once converted, you can copy/paste into a Claris application's document. For instructions, go to the Microsoft Word online help; scroll down to the Tables topic; select the subtopic Converting a Table to Text.
2. After converting the table to text, set tabs in the ruler to align each column. Then copy/paste the document to the Claris application's document.
Note: to preserve the original Word document with tables, either close the Word document without saving, or Save As with a different file name.
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Printing Daily Graphical Calendar

Daily Graphical Calendar will not change its scale.

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Claris Organizer does not look at the work hours specified in your preferences when printing the Daily Graphical Calendar. The first time interval that prints is always at 8 am. For example, if you change your work hours in Preferences to 7 am, then set an appointment for 7 am, this appointment will be listed in the Early section at the top of the page.

The Daily Graphical places all appointments before 8 am in the Early section and all appointments after 11 pm in the Eve section.
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ClarisWorks On-Line Trial Software

There is an on-line trial software available for ClarisWorks 3.0. Listed below are the files you need and a copy of the README file.

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The ClarisWorks 3.0 On-line trial software is two separate self-extracting PKZIP files; CLW3DEM1.EXE and CLW3DEM2.EXE.

CLW1DEM1.EXE contains:

CW3DEMO1.EXE - Self Extracting PKZIP files containing the files for Disk 1
INSTALL.BAT - Installation batch file
README.TXT - Text file containing instructions for the install.

CLW1DEM2.EXE contains:

CW3DEMO2.EXE - Self Extracting PKZIP files containing the files for Disk 2
README.TXT - Text file containing instructions for the install.

Listed below is the README.TXT file:

Thank you for downloading the ClarisWorks 3.0 Trial Software!

MINIMUM REQUIREMENTS

PC with 386 or higher processor (486 Recommended)
Microsoft Windows 3.1 or Later; MS-DOS 5.0 or Later
Hard disk Drive and 4MB RAM (8MB Recommended)
One 3.5" floppy disk
VGA or better video
Mouse

INSTALLATION

In order to install the trial software, follow these steps:

1. Change directory to your root directory by typing:

CD\\

2. Create a temporary directory off of your root directory by typing:

MD TEMP

3. Copy both of the downloaded files, CLW3DEM1.EXE and CLW3DEM2.EXE
into the same directory using the copy command. Example:

COPY CLW3DEM*.EXE C:\\TEMP

4. Type INSTALL

After the installation has been completed, you may delete the TEMP directory
from your system, along with the files contained within it.

The installer will require approximately. 6 megabytes of free hard disk space to
run and install the software. The actual trial takes up 3 megabytes of hard
disk space.

FLOPPY DISK INSTALLATION

If you do not have enough free hard disk space, you can install the software from a floppy drive instead of the hard drive, by typing the letter for your 3.5" drive after the install command. Example:

INSTALL A:

You will need two blank High Density (1.44MB) 3.5" diskettes to install the software from floppy diskettes. The trial cannot be installed from 5.25" diskettes. You may use the set of floppy diskettes to install the trial on as many systems as you wish. Just run the SETUP.EXE on the first disk from

Windows to begin the setup.

REMOVING THE TRIAL

If you wish to remove the trial from your system after it has been installed, follow these steps:

1. Remove the following line from the [386Enh] section in the SYSTEM.INI file:

device=<WINDOWS>\\<SYSTEM>\\win32s\\w32s.386

where <WINDOWS> and <SYSTEM> are where the Windows and System directories are, respectively.

2. Modify the following line from the [BOOT] section in the SYSTEM.INI file:

drivers=mmsystem.dll winmm16.dll

to the following (remove winmm16.dll):

drivers=mmsystem.dll

3. Delete the following files from the <WINDOWS>\\<SYSTEM> subdirectory or from the SYSTEM directory in network installations:

W32SYS.DLL
WIN32S16.DLL
WIN32S.INI

4. Delete all the files in the <WINDOWS>\\<SYSTEM>\\WIN32S subdirectory or the <SYSTEM>\\WIN32S subdirectory in network installations. Then delete subdirectory itself.

NOTE: <WINDOWS> refers to the windows installation directory. On a networked Windows installation, the system directory may be located on a

remote share. If you are only removing Win32s from your machine, then you do not need to remove the shared files (in <SYSTEM> and <SYSTEM>\\WIN32S). Before removing these files from the network share, make sure that all users that use Win32s have removed the references to Win32s from the SYSTEM.INI file.

5. Delete the CW3TRIAL directory located in your root directory.

If you have any problems with this Trial, you can contact CLARIS Technical Support.

Listed Below is the INSTALL.BAT File:

```
@Echo off
If not exist cw3demo1.exe goto NODISK1
If not exist cw3demo2.exe goto NODISK2
If "%1"=="A" goto ADRIVE
If "%1"=="A:" goto ADRIVE
If "%1"=="a" goto ADRIVE
If "%1"=="a:" goto ADRIVE
If "%1"=="B" goto BDRIVE
If "%1"=="B:" goto BDRIVE
If "%1"=="b" goto BDRIVE
If "%1"=="b:" goto BDRIVE
If "%1"=="" goto NOARG
If "%1"=="C" goto NOARG
If "%1"=="C:" goto NOARG
If "%1"=="c" goto NOARG
If "%1"=="c:" goto NOARG
goto end
;
;**** Install from Drive A ****

;
:ADRIVE
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - Please insert a blank formatted disk into Drive A for Disk 1: -
Echo - -
Echo ----------------------------------------------------------------
pause
cw3demo1.exe -d A:
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - Please insert a blank formatted disk into Drive A for Disk 2: -
Echo - -
Echo ----------------------------------------------------------------
pause
cw3demo2.exe -d A:
a:
cd disk1
goto COMPLETE
;
;**** Install from Drive B ****
;
:BDRIVE
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - Please insert a blank formatted disk into Drive B for Disk 1: -

Echo - -
Echo ----------------------------------------------------------------
pause
cw3demo1.exe -d B:
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - Please insert a blank formatted disk into Drive B for Disk 2: -
Echo - -
Echo ----------------------------------------------------------------
pause
cw3demo2.exe -d B:
b:
cd disk1
```

```
goto COMPLETE
;
;**** Install from Hard Drive ****
;
:NOARG
cw3demo1.exe -d
cw3demo2.exe -d
cd disk1
goto COMPLETE
;
; **** Files not located in Directory ****
;
:NODISK1
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - The file CW3DEMO1.EXE is not located in this directory. Please -
Echo - copy the file to this directory and run INSTALL again. -

Echo - -
Echo ----------------------------------------------------------------
goto END
:NODISK2
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - The file CW3DEMO2.EXE is not located in this directory. Please -
Echo - copy the file to this directory and run INSTALL again. -
Echo - -
Echo ----------------------------------------------------------------
goto END
;
; **** Install Complete ****
;
:COMPLETE
cls
echo ************* Installation is complete *************
Echo
Echo The installer will now attempt to run the SETUP.EXE
Echo in Windows. If Windows is already running, press
Echo CTRL-C now to quit the installer and run the SETUP.EXE
Echo manually by double-clicking on it from the File Manager.
pause
cls
echo Running Setup.EXE in Windows
echo
win setup.exe
:end
```

Listed below are the files on Disk #2

Directory of A:\\DISK2

```
. <DIR> 01-19-95 11:31a
.. <DIR> 01-19-95 11:31a
ADDRLIST AS_ 79,689 10-10-94 12:32a
AVI X3_ 7,255 10-13-94 10:41a
BEGIN CW_ 18,999 11-29-94 12:48p
BMP X3_ 4,721 09-01-94 6:40p
CLRSCT32 DL_ 58,535 11-11-94 1:50p
CLW16 DL_ 4,840 09-15-94 4:36p
CLWORKS EX_ 863,836 11-21-94 3:32p
```

```
CLWORKS LB_ 1,401 09-05-94 6:44p
CLWORKS MA_ 304 11-29-94 1:52p
CLWORKS PR_ 236 11-03-94 1:48p
CLWORKS RS_ 109,146 11-23-94 10:31a
DBF X3_ 21,260 10-13-94 10:38a
DLGFONT FO_ 11,335 04-08-93 2:00a
EPS X3_ 18,318 09-01-94 6:46p
FINALNWS CW_ 10,170 11-08-94 3:52p
FONT MA_ 526 02-18-93 11:04a
INSERT DO_ 2,134 11-08-94 1:38p
REMOVE WR_ 2,403 11-28-94 5:27p
STARTNWS CW_ 6,360 10-19-94 5:16p

TABLE AS_ 20,922 10-10-94 12:32a
TEXT X3_ 7,934 10-13-94 10:40a
TODOLIST CW_ 5,387 11-08-94 3:44p
WMF X3_ 141,011 10-12-94 9:56a
XTND32 DL_ 17,544 11-11-94 2:00p
26 file(s) 1,414,266 bytes
62,621,696 bytes free
```

Published Date: Feb 18, 2012

Failed Installation Caused by LaserMaster Driver

There is a known incompatibility with the installation of Microsoft's Win32s subsystem and the LaserMaster printer driver.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The LaserMaster printer driver causes the installation of ClarisWorks 3.0 to fail when copying the file WINSPOOL.DRV from Install Disk 1. The solution is to remove the LaserMaster printer driver from your System temporarily and install ClarisWorks. Once ClarisWorks has been installed successfully, the printer and its drivers can be re-enabled.

To temporarily remove the LaserMaster printer driver from your System, do the following:

1. Remove Fast Release and/or Win Print from the Windows start-up group by dragging them into another group (such as Main or Accessories). This technique prevents them from loading during Start-up.

If neither is located in the start-up Group, they may be in the SYSTEM.INI file. Use the following technique to suppress them.
2. Open the SYSTEM.INI file with a text editor (such as NotePad) or with SYSEDIT and edit the appropriate lines for three device drivers in the 386 Enhanced section [386ENH]:

device=lmmi.386
device=lmcap.386
device=lmharold.386

A semicolon (;) should be placed such that it is the first character on each of the above three lines. This instructs Windows to skip the line when processing the

SYSTEM.INI file. Once the semicolons are in place, save the changes to the SYSTEM.INI file.
3. Restart Windows.
When Windows comes back up, follow the directions for installing ClarisWorks 3.0. When the installation of ClarisWorks is complete, the printer can be re-enabled by putting the Fast Release and Win Print files back into the start-up group and removing the three semicolons from the appropriate lines in the SYSTEM.INI file. Be sure you restart Windows for your changes to take effect.

Note: According to LaserMaster Technical Support, it is not necessary to remove the printer driver from the
Printer section of the Windows Control Panel.

This solution should work with all of LaserMaster printers
WinPrinter and WinJet printers including: WinPrinter 1000, WinPrinter 600XL, WinJet 800, WinJet 1200, and WinJet 1200 Plus.

Published Date: Feb 18, 2012

Time Segment Codes for ClarisWorks 3.0 on Video (Macintosh)

An itemized list of the time codes for the topics taught on the video

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

ClarisWorks 3.0 on Video
This self-paced video is designed for people who enjoy learning from an expert, but canÕt attend a training class. The video is approximately 90 minutes long, and will give you a guided tour of the software application. The video is led by a Claris training professional, who understands what you need to know to use your software.

The following are the Time Segment Headings and start codes for the ClarisWorks 3.0 (Macintosh) video:

Creating a Memo with a Chart
00:02:51 - Open a Word Processing document
00:03:28 - Create a Header and Insert Letterhead
00:04:48 - Define Paragraph Styles
00:06:19 - Place Ruler Settings
00:11:50 - Create Stationery document
00:16:08 - Apply Paragraph Spacing
00:16:37 - Insert Footnote with ClarisWorks Assistance
00:19:35 - Add a Spreadsheet to create a Bar Chart
00:24:05 - Enhance Bar Chart
00:27:58 - Add Footer
00:28:41 - Check Spelling and Word Count
00:31:46 - Create personalized letterhead

Creating Mailing Labels and Using Mail Merge
00:35:50 - Open a Database document
00:36:33 - Define Fields for a customerÕs database
00:38:20 - Create new Records
00:40:47 - Insert customer information from another data source
00:46:06 - Design a Label Layout
00:56:33 - Sort and Match Records in a database
00:58:26 - Create a Form Letter, Insert Fields and Print Merge

Creating a Slide Show
01:06:09 - Open a Drawing document
01:07:04 - Create Master Page for slides
01:07:23 - Design a logo using the Drawing Tools
01:08:15 - Apply Color and Gradient to objects
01:13:08 - Work with Text
01:17:39 - Add a QuickTime Movie
01:22:16 - Insert a Paint Image
01:23:08 - Work with Paint Commands and Tools to transform bitmap image
01:31:25 - Set up and run Slide Show

Pricing
ClarisWorks 3.0 on Video (Macintosh); Order #: 200034U SRP/ESRP: $39
Note: SRP stands for suggested retail price and ESRP stands for education suggested retail price.
Published Date: Feb 18, 2012

Time Segment Codes for ClarisWorks 3.0 on Video (Windows)

An itemized list of the time codes for the topics taught on the video

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

ClarisWorks 3.0 on Video

This self-paced video is designed for people who enjoy learning from an expert, but canÕt attend a training class. The video is approximately 90 minutes long, and will give you a guided tour of the software application. The video is led by a Claris training professional, who understands what you need to know to use your software.

The following are the Time Segment Headings and start codes for the ClarisWorks 3.0 (Windows) video:

Creating a Memo with a Chart
00:02:55 - Open a Word Processing document
00:03:44 - Create a Header and Insert Letterhead
00:04:47 - Define Paragraph Styles
00:06:04 - Place Ruler Settings
00:11:05 - Create Stationery document
00:14:11 - Apply Paragraph Spacing
00:14:41 - Insert Footnote with ClarisWorks Assistance
00:17:19 - Add a Spreadsheet to create a Bar Chart
00:21:32 - Enhance Bar Chart
00:23:53 - Add Footer
00:24:28 - Check Spelling and Word Count
00:26:10 - Create personalized letterhead

Creating Mailing Labels and Using Mail Merge
00:31:21 - Open a Database document
00:32:04 - Define Fields for a customerÕs database
00:33:52 - Create new Records
00:36:25 - Insert customer information from another data source
00:41:30 - Design a Label Layout
00:51:57 - Sort and Match Records in a database
00:53:54 - Create a Form Letter, Insert Fields and Print Merge

Creating a Slide Show
01:00:24 - Open a Drawing document
01:01:32 - Create Master Page for slides
01:01:58 - Design a logo using the Drawing Tools
01:03:12 - Apply Color and Gradient to objects
01:07:37 - Work with Text Frames
01:13:17 - Add a .pct Image to slide
01:17:20 - Insert a Paint Image
01:18:54 - Work with Paint Commands and Tools to transform bitmap image
01:26:49 - Set up and run Slide Show

Pricing
ClarisWorks 3.0 on Video (Windows); Order #: 200035U SRP/ESRP: $39
Note: SRP stands for suggested retail price and ESRP stands for education suggested retail price.
Published Date: Feb 18, 2012

"Error Decompressing" Messages During Installation

Installation problems may be caused by a bad memory chip.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you receive the following error messages while attempting to install ClarisWorks 3.0 for Macintosh, the issue may be caused by a defective RAM memory chip:

Disk 2
Error Decompressing "Introduction to ClarisWorks", the data doesn't match.
Error Decompressing "Address List", the data doesn't match.

Disk 4
Error Decompressing "ClarisWorks Help", the data doesn't match.

This issue was reported by a customer and has not be verified by Claris. The machine used was a Power Macintosh 6100/60AV with 16 MB of memory running System 7.5.

The solution is to replace the defective memory chip.
Published Date: Feb 18, 2012

Auto-Enter Dates Cannot be Found

Dates entered using the Auto-Enter feature cannot be found using Find or Match Records unless the Date field was at the top of the layout when the record was created.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Dates entered using the Auto-Enter feature cannot be found using Find or Match Records unless the Date field was at the top of the layout when the record was created. This includes Auto-Entered Creation Dates and Modification dates.

Workarounds:
1. Use Find/Change to change all the dates that are not working correctly. You could easily automate with this process with a Shortcut Macro.
2. Verify the layout you create records from has the Date field on it and it is at the top. Consider a Macro for creating Records. This Macro could switch to a layout that has just the Date field on it, create a new record and then switch to the layout where you want to enter data.

This issue occurs with all versions of ClarisWorks including 2.0v1, 2.1v2, 2.1v3 and 2.1v4.
Published Date: Feb 18, 2012

Personal Stationery Instructions are Incorrect in ClarisWorks 3.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Personal Stationery file that ships with ClarisWorks 3.0 provides instructions in the body of the document about how to modify it to meet your needs. One of the instructions recommends using Control-Click to modify the text in the Footer this will work for Windows users, however, the key you should use with the mouse click is Command if you are using a Macintosh.

The Personal Stationery file is available from the New Document dialog under the Home Stationery category.

Published Date: Feb 18, 2012

Printing to a DeskJet 540 Does Not Work in ClarisWorks 3.0

To correct printing issues when printing to the DeskJet 540 you must install an earlier or updated version of the printer driver you have installed or update your version of ClarisWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Printing from ClarisWorks 3.0 to an Hewlett-Packard DeskJet 540 will not work. To correct this issue you can install the Hewlett-Packard DeskJet 500 driver from the Windows diskettes (so that an earlier driver version will be installed). If you have installed the Hewlett-Packard DeskJet driver and ClarisWorks still will not print, more than likely you have installed the driver that came with the DeskJet which is still the 5.0 driver. ClarisWorks 3.0 cannot print using any of the DeskJet 5.0 drivers, but will print with the earlier 4.1 and current 6.1 drivers.

NOTE: Installing the DeskJet 500 driver from your Windows diskettes will give you printing capabilities for the DeskJet 540, but it will only print in black and white.

If you do not have your original Windows diskettes there are different on-line areas where you can obtain the current version of the driver and the ClarisWorks 3.0v2 updater. On the Claris BBS (408)987-7421 go to the File menu and go to W for Windows Files, then select Drivers. This is where you will find the Hewlet-Packard DJ 6.1 drivers ready for download. Also available from the Claris BBS is the ClarisWorks 3.0v2 updater that works around the printing issues with the DeskJet series printers.

If you cannot download from a BBS, you need to contact Claris Customer Assistance for the updated version of ClarisWorks (3.0v2 a nominal shipping and handling charge will apply.)

Hewlett-Packard also has a new driver available on both their BBS and through the mail. The filename is "DJ100EN.EXE", it is in library 1A. The same driver can be obtained via U.S. mail on 2 diskettes for a nominal fee by calling and requesting part number DJ100EN.

The modem service is provided to Hewlett-Packard's customers to allow improved access to drivers and utilities for Hewlett-Packard personal computer and peripheral products. Interactive messaging and technical support are not available through this service.
Published Date: Feb 18, 2012

Published Inline Graphic Appears as Question Mark

If you try to Publish text with an inline graphic the Subscribing document will show a question mark instead of the graphic.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

If you try to Publish text with an inline graphic the Subscribing document will show a question mark instead of the graphic. To work around this, Publish the text and graphics separately. Make sure to Publish the graphics from a drawing document.

Published Date: Feb 18, 2012

Sort Macro NOT Working in ClarisWorks Database

During the recording of a Macro that Sorts a database it is necessary to click the Clear button before designating the Sort Order.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
During the recording of a Macro that Sorts a database it is necessary to click the Clear button before designating the Sort Order. Otherwise, a Sort Order from a previous Sort may conflict with your Macro such that the Macro adds to your previous Sort Order. Here are the steps to recreate this issue.

1. Create a new database with two fields (field1 and field2).
2. Record a Macro that Sorts by field1.
3. Manually Sort by field2.
4. Run your Macro and then choose Sort from the Organize menu to see what Sort the Macro Dialog box shows both fields under the Sort Order.

Published Date: Feb 18, 2012

Testing Whether a Field Has Only Number Values

How do you test that the value entered in a field really has a number and not just text? FileMaker and ClarisWorks both can do this; but it will require different formulas for each.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Testing whether a field has a number value is done differently in FileMaker than it is in ClarisWorks. What works in one will not work in the other.

In FileMaker:
To find out if a field has only a numerical value entered can be done with the Length, TextToNum, and NumToText functions.

A calculation with an If statement would look like this:

NumberOnlyTest (Calculation, Text Result)
= If (Length (NumToText (TextToNum (TestField))) = Length (TestField) , "" , "Value has a text character in it. Please change to only numbers.")

Where TestField is the field you are testing.

In ClarisWorks:
To find out if a field has only a numerical value entered, we test if the result of the TEXTTONUM function when evaluated as a number (ISNUMBER) returns an error. If the result is an error the field does not contain a number. Example:

ISERROR(ISNUMBER(TEXTTONUM('TestField')))

Then we check for the length of the converted value being the same length as the original value. Example:

TEXTTONUM(NUMTOTEXT('TestField'))<>'TestField'

Then, putting both of these together inside a nested If statement would look like this:

NumberOnlyTest (Calculation, Text Result)
= IF(ISERROR(ISNUMBER(TEXTTONUM('TestField'))),"Value contains a non-numeric character",
IF(TEXTTONUM(NUMTOTEXT('TestField'))<>'TestField',"Value contains a non-numeric character",""))

When the TEXTTONUM function does not produce a number then the ISNUMBER function produces an error, which flags the value as not being a number. If there is both number and non-number data in the field, the comparison test flags the field as having a non-number character in it.

NOTE: The two tests must be done sequentially (i.e., in a nested fashion) as the ISERROR function will not work with an OR conjunction when used inside an IF test.

Published Date: Feb 18, 2012

Delete Record and Find Again Have Same Key Equivalent

ClarisWorks 3.0 includes a new command for Delete Record in the Edit menu of the Database environment. Its key equivalent is Command-E, which is also the command key equivalent for Find Again.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks 3.0 includes a new command for Delete Record in the Edit menu of the Database environment. Its key equivalent is Command-E, which is also the command key equivalent for Find Again. Thus, doing a Find via the Find/Change command in the Edit menu, clicking in the main window, and then pressing Command-E (Macintosh) or Ctrl-E (Windows) to Find Again will actually delete the current record instead of Finding the next occurrence. ClarisWorks does not warn you when deleting records.

Claris engineering is aware of this issue.

Until this is corrected, the current solution is to manually select Find Again from the Find/Change option under the Edit menu. Using the key equivalent will delete the current record consistently.
Published Date: Feb 18, 2012

How to Uninstall WIN32s From Your System

This is a rundown of how to uninstall WIN32s. There is no uninstall utility, and there is more to it than simply deleting the WIN32s sub-directory.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Removing the WIN32s from your system requires more than just deleting the win32s sub-directory. To completely remove WIN32s from a system, follow these guidelines:

1. Modify the following line from the [BOOT] section in the SYSTEM.INI
DRIVERS=MMSYSTEM.DLL WINMM16.DLL
to the following (remove WINMM16.DLL):
DRIVERS=MMSYSTEM.DLL

2. Remove the following line from the 386 Enhanced [386Enh] section of the SYSTEM.INI file:
device=<WINDOWS>\\<SYSTEM>\\WIN32S\\W32S.386
where <WINDOWS> and <SYSTEM> are the locations of your WINDOWS and SYSTEM directories, respectively. In a normal Windows configuration the line will read:
DEVICE=C:\\WINDOWS\\SYSTEM\\WIN32S\\W32S.386

3. Exit and restart Windows.

4. Delete the following files from the <WINDOWS>\\<SYSTEM> subdirectory or from the SYSTEM directory in network installations:
W32SYS.DLL
WIN32S16.DLL
WIN32S.INI
WINMM16.DLL

5. Delete all the files in the <WINDOWS>\\<SYSTEM>\\WIN32S subdirectory or the <SYSTEM>\\WIN32S subdirectory in network installations. Then delete the WIN32S directory itself.

The above changes will take effect the next time Windows is run.

NOTE: <WINDOWS> refers to the Windows installation directory. On a networked Windows installation, the system directory may be located on a shared remote volume. If you are removing only WIN32s from your machine, then you do not need to remove the shared files in <SYSTEM> and <SYSTEM>\\WIN32S. Before removing these files from the shared network, make sure that all users that use WIN32s have removed the references to WIN32s from the SYSTEM.INI file.

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Times entered with plus or minus keys will not go past noon.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In Claris Organizer, it is possible to change the time values in an appointment by using the plus (+) and minus (-) keys. You may use the plus key to increase the time and the minus key to decrease the time of an appointment. If these keys do not work properly for you, check the format of the time in your Date and Time control panel. If the suffix for AM or PM has been changed to only show an "A" or a "P," Claris Organizer will not go past 12:00 (noon) and will loop around to 1:00 A.

The workaround is to enter the time manually, or to change the time format to show "AM " or "PM" rather than "A" or "P" respectively.

The Date & Time Control Panel may also be set to military time.
Published Date: Feb 18, 2012

Sending Line Feeds in Communications Environment of ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

To send line feeds with your text through the communications environment of ClarisWorks, you must select the Text Tool as the method in Connection Settings.

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Transparent Pen Color on Polygons, Freehand, and Bezigon Shapes Print Black on DeskWriter Printer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing to a DeskWriter, shapes created with the Polygon, Regular Polygon, Freehand and Bezigon tool that are set to have a transparent Pen pattern will not print with a transparent border. The printout will show an outline. The best workaround is to change the Pen Color to white or the Pen width to none. This will eliminate any color or line width and you will no longer get the outline.

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Using Express Modem Tool with ClarisWorks 3.0, System 7.5, and Power Macintosh Gives Error -11

When trying to open a saved communications document on a PowerMac under System 7.5, where the Express Modem Tool was selected as the communications connection, the document will not open and will generate an error of -11.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When trying to open a saved communications document on a PowerMac under System 7.5, where the Express Modem Tool was selected as the communications connection, the document will not open and will generate an error of -11. Claris does not provide the Express Modem Tool as part of the ClarisWorks package and has not tested or certified its compatibility with ClarisWorks.

ClarisWorks 3.0 does save and open communications documents properly when using the Apple Modem Tool 1.5.3. This tool also fully supports the Express Modem. The recommended settings are as follows:

Modem: Apple Express Modem
Error Correction: Optional
Correction Type: Hardware
Baud: 19,200 if connecting to an auto baud modem otherwise match
modem speeds if 9600 or slower
Handshake: DTR&CTS
Port:Modem
Parity, Stop: Determined by connection
Published Date: Feb 18, 2012

SMB File Transfer: Using With PC-LAN Server

I use the PC-LAN program "extended services" on our PC-LAN server. Can the SMB File Transfer program work with a server in that mode, which I prefer for the advanced services and security, or must directories be shared with Macintosh computers through "base services"?
This article has been archived and is no longer updated by Apple.
The SMB File Transfer program works with:

- PC-LAN Base Version 1.2, and later (1.3, 1.31)
- PC-LAN Extended Version 1.3, 1.31
- OS/2 Extended Edition 1.1
- OS/2 LAN Server 1.1

SMB File Transfer lets you use the Extended Version's read/write/create options. Use the Netshare command to configure the PC:

```
NETSHARE shortname=d:\\ password|* /r/w/rw/wc/rwc
```

Published Date: Feb 18, 2012

Avoiding "This copy is busy. Please try again Later." error when launching ClarisWorks

The Quick Tools screen saver "QT Sunset" causes an error when launching ClarisWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you get the error message "This copy is busy. Please try again Later" when launching ClarisWorks, it is likely that you are experiencing an Extension conflict. We have found that a screen saver called "QT Sunset," part of the Quick Tools set of Extensions, causes the conflict that produces the error message.

To fix this issue you need to remove the QT Sunset Control Panel from the Control Panels folder in your System Folder and restart your Macintosh. Also, please note that all Control Panels that start with the letters "QT" may be questionable.

Simply turning off the QT Sunset Control Panel may not eliminate the conflict. The QT Sunset control panel must be taken out of the Control Panels folder completely.

This issue has also been reported using LabelSecrets from Mac Secrets.
Published Date: Feb 18, 2012

Power Macintosh Requires More RAM for Older Products

Many older programs require extra memory to run on a Power Macintosh. Here's why and how to correct it.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
An application that is not created to take advantage of the Power Macintosh processor will require more memory in order to function on the Power Macintosh.

If you have installed an application on a Power Macintosh, and it does not open as expected, check a few possibilities:

1) Is the application compatible with Apple System 7.1 or System 7.5 software?

Often, old software will be moved from an older macintosh onto a Power Macintosh. Be very careful that your software is current enough to run on any Macintosh running System 7.1 or higher software.

2) Was the application created to run on a Power Macintosh?

If a Macintosh application is called "Power PC Native," it should function without issues on any Power Macintosh. Check for INIT, Extension or Control Panel conflicts if you have added any software to your system folder. If you cannot discover a issue, contact the application's manufacturer.

3) Have you allocated more RAM for non-native products?

If you are using a System 7.1 or System 7.5 compatible product, and your product still does not open properly on a Power Macintosh, verify that it is using enough computer RAM.

To check for available RAM, first quit all open applications. Then select About this Macintosh under the Apple menu. An number labeled Largest Unused Block will show you how much memory is available beyond the system requirements. You can give your software applications up to that amount, if needed.

To adjust the RAM requirements of a product, again verify that the product is not running (look under the icon of the Application menu in the upper right corner of your screen. If the product is listed, select it from the list, then select Quit from the File menu.) Single-Click (click only once) on the application's icon on the hard drive. Then select Get Info from the File menu. The info window should show you Suggested, Minimum, and Preferred memory requirements. For non-native applications, you will want to increase the Minimum and Preferred numbers higher than the Suggested number. (I arbitrarily double the Suggested value to set the minimum, and triple the suggested value to set the preferred. For a 1000K suggested, I set the minimum to 2000 and the preferred to 3000. You may wish to try various settings to see what best suits your other memory needs.)
Published Date: Feb 18, 2012

Autosize Line Fractions Change to Decimals

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the Rulers dialog, you can set ClarisDraw to "Use Fractions When Appropriate" when displaying lengths in an autosize line. If you draw an autosize line, then resize it a few times, it may revert to decimal display. For example, instead of displaying an autosize line as 15' 2", it displays 15.17'. The workaround is to select the autosize line, then, in the Object Info window, retype the length in feet and inches. This will reset the autosize display to feet and inches. If you resize the line further, it may revert to a decimal display again, requiring the same workaround.

Test conditions:
Tested ClarisDraw 1.0v1 and 1.0v2
Ruler settings of 8" = 30ft and .25" = 1ft tested, 12 divisions per foot
Drew horizontal autosize lines
Resized with shift key down to attempt to constrain to horizontal. Resized both larger and smaller about 2 - 10 times until the issue occurred
Hardware: Quadra 800/7.1 w/System Update 3.0
Published Date: Feb 18, 2012

ClarisDraw 1.0v2 Disk Space used by Installation

This article details the space ClarisDraw requires for installation.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Installer works by copying the compressed disk files to your machine, then decompressing them and deleting the compressed versions. So you will temporarily need enough room on your hard disk for BOTH the compressed and decompressed versions, minus any redundant files that the Installer finds already on your hard disk. (Example: dictionary or translator files.) Since the actual total can vary from machine to machine, it's best to assume that the maximum amount of space will be required.

Installation Grand Total (compressed and decompressed, approximate):
==========

68K: 14.2 MB
Power Mac: 16.5 MB

Installation Disks (TOTAL of all six):
==========

```
68K:        4,608K
Power Mac:  4,596K
```

Individual Parts After Installation (in K):
==========

	68K	Power Mac
Application	1,248	3,746
ClarisArt*	2,105	2,105
Help System	2,343	2,343
Samples	457	457
Palettes	24	24
Fonts	1,200	1,200
Dictionary	336	336
XTND	1,163	1,163
TOTAL	8,876	11,374

*This figure is for the "minimal" ClarisArt, which is the default choice upon installation. The entire ClarisArt set requires 7.5 megabytes of disk space.

Published Date: Feb 18, 2012

Bitmaps: Basic Editing Concepts

ClarisDraw is unlike MacDraw Pro in that it has the capability to edit bitmap, or "paint," images. This article should help answer some basic questions about bitmaps.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

What is a Bitmap Image?

An image consisting of colored dots. Typical examples are scans (which can be saved as TIFF or PICT files) and paint documents (which are created by applications such as MacPaint or Brushstrokes). ClarisDraw works only with bitmap frames - in other words, bitmap images are only contained within a frame in the document. ClarisDraw cannot save out as a "pure" bitmap file like a paint application can.

Any bitmapped image is probably going to require that additional RAM be allocated to the application; in fact, the larger the image, or the more colors it contains, the more RAM will be required to even open the file, much less edit it. Sometimes the additional amount of RAM needed can be substantial - many megabytes. Additionally, bitmap images can require substantial amounts of disk space to store, again, depending on the number of colors in the file and the image's resolution (expressed in dpi, or dots per inch).

How To Edit a Bitmap Image in ClarisDraw

- Create a new document
- Place the bitmap in the document

- Alternatively, simply open the bitmap file
- Click the bitmap image to it is selected
- Choose "Ungroup Picture" from the ARRANGE menu
- The image is now ready for editing. Click again to activate the paint tools

You can also cut/copy/paste a paint image into a ClarisDraw paint frame. However, the "Ungroup Picture" method is superior because (1) it's easier, and (2) it retains the original bitmap's resolution. Copy/paste reduces the images resolution to 72 dpi. This may look okay on screen (which can display only 72 dpi at 100 percent magnification) but you will certainly see the difference when printing to any high resolution printer (laser or inkjet printer).

Side Issue:

Choosing "Ungroup Picture" also changes white pixels to transparent. Try this example:

- Create a simple MacPaint image; save it
- Create a new ClarisDraw document
- Draw an object
- Place the MacPaint image in the file; move it over the other object you've drawn. Notice how you cannot see what's underneath the MacPaint image
- Now click the MacPaint image and choose "Ungroup Picture" from the ARRANGE menu

- Notice that you can now see beneath the MacPaint image. The white pixels have become transparent.

Published Date: Feb 18, 2012

Calculating Elapsed Time in ClarisWorks DB

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you need to know the number of hours elapsed between two time fields in a ClarisWorks database, use the following fields (field types):

StartTime (Time)
EndTime (Time)
ElapsedTime (Calculation, number result) = (EndTime-StartTime)*24

ClarisWorks stores the time fields as a percent of a day. Midnight is 0.0, Noon is 0.5, and 6:00 PM is 0.75. If two times are subtracted, you get the percent of a day between the two times. To convert this to a number of hours, multiply by 24 hours in a day.
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Crash Printing from Help to DeskWriter Printer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks 3.0, ClarisDraw 1.0 ClarisImpact 1.0 and Claris Organizer 1.0, it is possible to print individual pages from the new help system.

However, if you're printing to a Hewlett-Packard DeskWriter printer, doing this will cause the application to quit. The help page will not print, and there is no workaround at this time. Version tested was the DeskWriter 6.0 driver, although all current DeskWriter driver versions are probably effected. The issue occurs with all models of DeskWriter printers.

The issue does not occur in ClarisWorks 4.0, which uses a different help engine.

The workaround is to make a screen shot of the page in help that you want to print, then print that. To to that, view the help page you want to print. Press command-shift-3. In the Finder, you'll see a new file called Picture1 in the hard drive window. Open this file back into ClarisWorks, then print it.
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Documents Created From Stationery Files Default to Stationery When Saved

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you choose to open your stationery documents in any way except the new document dialog box in ClarisWorks 3.0, then you will need to manually change the radio button in the Save dialog box from "Stationery" to "Document." This applies only to the first time the document is saved.

Once the stationery has been opened in any manner other than the new document dialog, then it will NOT default back to "Document" in the save dialog (even if accessed through the new document dialog) until you quit out of and restart ClarisWorks.

This includes creating new documents created from stationery from the open dialog box or an alias. This did not occur in previous versions of ClarisWorks.
Published Date: Feb 18, 2012

A/UX: Technical Questions & Answers (9/94)

I need some additional information about A/UX support for X/Open XPG3 features like Message Queues msgctl(), Semaphores, shared memory, and so on. I need details in these areas:

1 - dbx (source level debugger).

2 - X.25 connection supported by "XTI" and libraries sockets. (What is "XTI"?)

3 - Support of s-bit for owner and group.

4 - System/library calls for disk "quota".

5 - Support for GF_PATH, PF_PATH, and IN_PATH. (What are they in A/UX?)

6 - Are there public domain programs, like emacs, plot, and shar, available?

7 - What's the official name for the full screen standard editor in A/UX?

8 - Is printer spooling oriented on System V or BSD UNIX?

9 - Is there Multilevel security (DoD or Bell-La Padula with B-class certificate)?

10 - PHIGS and CGM under A/UX.

11 - Future support of System V version 4.

12 - What is the status of Oracle?

This article has been archived and is no longer updated by Apple.
First, thanks to Richard Kefs (KEFS1), Apple Technical Partner Program Manager, for some of the answers that are included in this document. Here is the information you requested:

We should be fairly close to X/Open XPG3 compliance. The generic AT&T UNIX System V Inter-Process Communication facilities, which include Message Operations, Semaphores, and Shared Memory, are supported by A/UX.

1 - dbx is not supported. CDB, the popular, powerful, source level C debugger from Third Eye Software, was available for A/UX from APDA. It may no longer be available. We suggest contacting Third Eye Software for more information.

2 - We have several X.25 solutions under A/UX (Symicron, Mark Powell, (44) 1-857-55-77), but I do not know what "XTI" is.

3 - The set UID and GID bits are supported under A/UX.

4 - It seems that the disk quota control for each individual user account is not enforced in A/UX, but the BSD file system does maintain the "low-water mark" of about 5% of free file system. In other words, users may not allocate disk space if there is less than 5% of the BSD file system space remaining.

5 - We are unsure what the GF_PATH, PF_PATH, and IN_PATH constants or environment variables referred to.

6 - emacs is available in the public domain.

7 - Both the UNIX ("vi") and the Macintosh ("Cut-and-Paste") style of

editors are supported. The Macintosh cut-and-paste text editor is called "TextEditor". A/UX supports TEXT cut-and-paste between different environments (UNIX, X Window System, and Macintosh applications), and GRAPHICS cut-and-paste between Macintosh applications.

8 - Both System V and BSD UNIX printer spoolers are supported under A/UX 3.0.

9 - Regarding the secured A/UX system, AFSG (Apple Federal Systems Group) had an unreleased version of A/UX that complied with Federal Government requirements for a Class B1 level of trust on A/UX. This version was available to government customers only. You will need to contact a Federal Systems Group sales rep for further information.

According to NCSC (National Computer Security Center), the evaluation criteria define seven levels of trust called"Classes". In increasing order of trustedness, they are: D, C1, C2, B1, B2, B3, and A1. D systems are not trusted. A1 systems are extremely resistant to compromise. C1 has "Discretionary Access Control", such as AppleShare. C2 adds Security Auditing and Control Object Reuse. B1 adds Security Labels and Mandatory Access Control. B2 adds Trusted Path, Convert Channel Control, and Modularity. B3 adds Trusted Recovery and Strict Isolation of Domains.

10 - If you are really looking for PHIGS and/or PEX (3D PHIGS/PHIGS+ Extension for X) type of features, a third-party called Prior Data Sciences in Canada may have the solution for A/UX.

Prior Data Sciences
240 Michael Cowpland Drive
Kanata, Ontario, Canada K2M 1P6
613-591-7235
Telex: 053-3356
Fax: 613-591-0343

11 - There are currently no plans to support System V.4.

12 - ORACLE7 Server for A/UX is available for use with A/UX.

Article Change History:
20 Sep 12994 - Updated and reviewed. Reformatted questions and answers.

Support Information Services
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ClarisWorks: Font Menu Appears in Chicago Font Using Type Reunion

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When using ClarisWorks 2.1v3 with Type Reunion 1.2 on a Macintosh Performa 638 running system 7.5, the font menu will appear in Chicago font rather than in all the listed typefaces.

This issue also occurs when using ClarisWorks 3.0 with Type Reunion 1.1 on a Macintosh 660AV running system 7.1.

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ClarisDraw: Gradients Do Not Retain Rotated Orientation When Exported as EPSF

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisDraw 1.0v2, when gradient-filled objects are rotated and saved as EPSF, the non-rotated direction of the gradient is saved instead of the rotated direction.

Exact steps to reproduce:
1) Draw a rectangle
2) Apply a gradient to the object
3) Rotate the object 90¡

Notice that the gradient appears accurate on the screen.
4) Save as EPSF
5) Place file back in to the same document

Notice that the gradient EPSF file still looks good.
6) Print to a LaserWriter

Notice the original gradient object (not the EPSF object) prints fine, but the EPSF object prints the gradient only with the original, unrotated angle.
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ClarisImpact: Right-Aligned Tabs Do Not Work Properly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Consecutive right-aligned tab stops do not work properly in ClarisImpact drawing document text frames. If you have two tab stops, tab to the first and enter text, then tab to the second, any text you type will be left-aligned at the first tab stop, rather than right-aligned to the second. Subsequent tab stops will be similarly incorrect.

The work around is to turn off Fractional Character Widths in Preferences.

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Too Much Space Between Graphics and Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If there is too much white space between a graphic and text wrapped around it in your word processing document, you may need to change your paragraph line spacing units. Select Paragraph... from the Format menu. A dialog box appears which allows you to modify paragraph spacing attributes for the currently selected paragraph(s). In the pop-down menu next to the Line Spacing setting, the default unit for adjusting line spacing is "li" (lines). Using any other units, such as points or inches, for setting line spacing will result in a large amount of white space between graphics and the wrapped text.

The solution is to set the Line Spacing units back to lines in the Paragraph dialog. You can still flexibly change line spacing by specifying 1.5 lines, 2.0 lines, 2.5 lines, etc., however, the smallest fraction of a line you can specify is a half (0.5) line.

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Address Book Does not Print Alphabetically

When Printing a Address Book the First names are not in Alphabetical order

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Q. Why can't I print my Address Book so the First Names always print in alphabetical order?

A. The names in the example, below appear in an order determined by last name then by creation order.

Example:

Steve Wood
Dave Wood
Robert Wood
Erica Wood
Arnold Wood

This will occur when printing either of the following print options: Contacts in List, Selected Contacts, Marked Contacts or All Contacts. They will appear correctly in the Contact List, but will not print on that order.

Claris is aware of the issue. There is currently no work around.
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How to Print Double Sided to StyleWriter Printers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following instructions will help you in printing any of the double sided options out of Claris Organizer to any printer in the StyleWriter family.

The best way to perform a print test is to select or mark enough contacts, usually 20 -25, to cover two double sided pages. This will equal four pages in preview.

Once you have selected or marked you contacts go to the File menu and select Print. Then double click on Address Book icon. On the next screen in the For pop-up menu select either Marked Contacts or Selected Contacts. Click on Edit button, to make the options window appear.

In the options window select the Following:
1) In the Book pop-up menu select 5.5 x 8.5 (Organizer 2/Page).
2) In the Output pop-up menu select Double-Sided
3) In the List By pop-up menu select Name & Company
4) In the Fields pop-up menu Check put a check mark next to all the fields.
5) Leave Font, Size, and Style at default.
6) Put a Check Mark in Cut Holes, Last Name First, and Holes
7) In the Holes pop-up menu select 6 holes.
8) Click on the Save button

Now click on Setup and change your page orientation to Landscape (The icon, that shows person on their side). Also make sure you have US Letter selected for you paper size.
Click OK.
Click Save.

For this first test print job, you'll want to make sure the total number of pages is four. To do this click on the Preview button. If you have less then four pages or more then four pages. Go back to the Contact List and select or mark more or fewer Contacts. Then go back to preview and see how many pages you have. Once you have four pages, follow the printing instructions and diagram below for printing the address book. Then, reset the paper, and print the second side of the paper. (see Diagram below)

Printing:
When the StyleWriter prints, all of the pages are face-up, and page one is on the bottom. To print the back side of the pages in your address book. You must take the stack out of the output tray and flip it over length wise. This means you take the edge farthest away from the printer and put it at the top of the input tray (See Diagram below). Do not change the order of the paper. Page one should be at the top of the order and at the top of the input tray.

TA43219_How_to_Print_Double_Sided_to_StyleWriter_Printers.pdf

Note: Claris Organizer 1.0v2 fixes the off setting issue when printing double sided from a StyleWriter family printer. This test done with Claris Organizer 1.0v2.

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Troubleshooting Lost Network Connections in Windows for Workgroups

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Windows for Workgroups may sometimes lose or drop network connections. This issue is most likely to occur if one of the following conditions exists:

1. You are running a network installation (SETUP /N) of Windows for Workgroups.
NOTE: Microsoft does not recommend running Windows for Workgroups from a network installation (SETUP /N) because doing so is a common stress condition that can cause a loss of network connections.

If a system is run this way, store data and applications on a client or server that does NOT contain the shared Windows directory (created with SETUP/A); this appears to reduce the frequency of the issue.

2. Several people in a workgroup are running the same application from a server.
NOTE: Network connections also can be lost when many people run the same application from a server (for example, 10 clients use the same installation of FileMaker Pro). Windows-based applications generally report segment load failures when the network connection is lost. If network connections are lost or dropped, the system or application may stop responding(hang), or the network installation of Windows for Workgroups may become corrupted.

If you lose your Windows for Workgroups connections, immediately save all open data files to backup files on your local drive or a remote Drive where you still have a valid connection.

Why it happens?

Loss of network connections can occur when you use any version of the redirector, but the basic redirector, invoked by using the "NET START BASIC" command, is most likely to have this issue. The issue seems to be caused by a timing issue in the NetBEUI protocol. It may also be related to the network buffer size because it occurs when data is being sent over the wire.

Other factors that can cause connection issues include the following:
- Network cards: Some network cards are more prone to these issues than others.
- Machine speed: The slower the machine, the more likely that its network connections may be lost.
This issue usually originates with the server but affects clients only.

Troubleshooting

The following steps may help prevent this issue:
- Increase FILES= to 128 or higher in the CONFIG.SYS file.
- Increase FCBS= to 25 or higher in the CONFIG.SYS file.
- Increase Sessions= to 32 or higher in the PROTOCOL.INI file.
- Set NCBS= to 64 in the PROTOCOL.INI file.
- Set NetHeapSize= to 52 in the [386Enh] section of the SYSTEM.INI file.
- Set TimerCriticalSection= to 10000 or higher in the [386Enh] section of the SYSTEM.INI file.
- If you are using a network installation of Windows (Setup /N) set maintainserverlist= to NO in the [network] section of the SYSTEM.INI file.
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LaserWriter 2.0 ROM: Changes to Data Rates for Serial I/O

This article has been archived and is no longer updated by Apple.

In general, the information here supersedes corresponding material in Appendix D of the PostScript Language Reference Manual (copyright 1985, Adobe Systems Inc., Addison-Wesley Publishing Co., ISBN 0-201-10179-3); you should refer there for further information.

The LaserWriter's serial communication capability has been enhanced. The maximum baud rate has been increased from 9600 to 57600 bits per second.

While the default mode of operation of the LaserWriter's serial I/O remains the same as the original LaserWriter, the new capabilities must be explicitly enabled if desired. This is accomplished by executing 'setsccbatch' or 'setsccinteractive' operators as described in the PostScript Language Reference Manual.

The baud operand of 'setsccbatch' or 'setsccinteractive' may now be any positive integer less than 100000. The hardware can acheive only certain baud rates; other values will be rounded to the nearest achievable one. Above 9600 baud, the achievable rates are:

10473, 11520, 12800, 14400, 16457, 19200, 23040, 28800, 38400, and 57600.

Of these,19200 is the most likely to be supported by the host operating systems.

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Using Word Services In ClarisWorks 3.0

How to access Word Services in ClarisWorks 3.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Word Services is an undocumented feature that allows you to take advantage of the System 7 Word Services feature. If a dictionary product supports System 7 Word Services then you can use it to spell check a ClarisWorks document (instead of the standard dictionary that ships with ClarisWorks).

This feature can be accessed by holding down the Option key and choosing Writing Tools from the Edit menu. The Word Services command will appear at the bottom of the Writing Tools sub menu. This will allow you to use additional dictionaries that support the Word Services feature incorporated in System 7.0, 7.1 or later versions of system software.

Claris tested the functionality of this feature with the Spells Well dictionary.

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Filters Supported in ClarisWorks J

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In addition to those filters shipped with the US version, ClarisWorks2.0J also provides WP filters for :
EGWORD 3.0 and 4.2
Ichitaro 3.0
RTF and Text
(all of these handle 2byte text)

Graphics filters are the same. SS filters also are the same as the US, with SYLK and Excel handling 2byte text best.
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ClarisWorks: Formats Supported by ClarisWorks Japanese

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Formats supported by ClarisWorks Japanese

ClarisWorks 2.0v2 is the latest shipping Japanese version as of February 15,1995 and it supports imports of the following formats:

ASCII text
DBF
DIF
MSWorks 2.0 BD
SYLK (in the database environment)

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Importing Desk Gallery Images and Using the Kudo Image Browser

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Desk Gallery is a collection of 30,000 clip art images for use with products such as ClarisWorks. It includes a product called the Kudo Image Browser. In order to use some of the images in this collection, the Kudo Image Browser must be properly installed because it updates the XTND TIFF file translator. Some of their graphics are in the TIFF file format and are compressed using LZW compression. These files need this updated translator in order to be imported.

They have also found that some of their images are too large to import into a ClarisWorks paint document, regardless of how much memory is allocated to the application. These images can be successfully inserted into a word processing document, however.

It is also recommended that the memory allocation for any application be increased to accommodate these sometimes large and complex graphics.

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Which File am I in?

In Claris Organizer how can I tell which file I am currently working in?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
You can find out the name of the file you are working in by displaying the wide palette under the Window menu. The title of the wide palette is the name of your file (See Figure 1 below for an example).

Figure 1

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Banyan Vines File Service Commands

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following are a few of the File Service commands that can be used on a DOS workstation attached to a Banyan VINES file server:

PCCOPY: Copies vines system files to a workstation diskette of fixed disk. Vines system file include PC Configuration software and/or LAN drivers, LAN Driver diagnostic, and Redirector.
Syntax: PCCOPY.

SET ATTRB: Displays or changes attributes of one or more files or directories.
Syntax: SETATTRB [+/- attribute] [DOS filename] [/view:file-system] [/show]
attributes: ro: read only, nd: no delete, hi: hidden, sy: system, ar: archive, eo:execute only, sh: sharing, nr: no rename.
example: setattr +ro +nr contact.fm

SETDRIVE: Assigns network drives to network file volumes and maps a drive to a specific path.
Syntax: SETDRIVE [d: service-name] [/root:dir1\\dir2\\dirn] [d /x] [/L] [/status]
d: drive, root: map specific pathname as the root directory, x: delete mapping, L: list the current drives,
example: setdrive f: Òfs_apps@fmpro@sqaÓ /r:\\fmpro.

VCOPY: Copies files and directories with associated Macintosh long file names, resource forks and desktop information.

Syntax: VCOPY [source pathname] [destination pathname] [/a][/e][/o][/p][/s]
a: copies access rights, e: copies all empty directories, o: to overwrite existing objects without prompting, p: prompts with a source file name, s: copies all sub-directories.
example: vcopy *.exe a:\\ /a

VDIR: List the name of directories and files in a directory, including short names (DOS) and long names (Mac).
Syntax: VDIR [dos pathname] [/view: file-system] [size] [/time:ttype] [/pause][/menu]
example: vdir g: /v: m.

VRENAME: Rename files and directories.
Syntax: vrename [dos pathname] [new name] [/view: file system]
example: VRENAME \\hwood product /view:m

Note: For a more detailed explanation of these command refer to VINES Command Reference.

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ClarisWorks: Controlling Startup Options

How to control the Welcome Screen and Startup Options.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

When starting up ClarisWorks 3.0 for the first time, you will see a "Welcome Screen" which offers you three choices:

- Show me an on screen tour of ClarisWorks
- Create a new document
- Open an existing document

There is also a checkbox at the bottom of the screen which offers you the option to bypass the Welcome screen in the future, and go directly to creating new documents at startup.

On a Windows computer
If you have checked the box to suppress the Welcome screen and decide later that you would like to restore it, you can do this by deleting the CLWORKS.PRF file.

1. Save any open ClarisWorks files and exit the application.

2. Use the Windows FileManager or DOS to locate the CLARIS directory. If you used the default settings when installing ClarisWorks (or if ClarisWorks came pre-installed on your computer), the CLARIS directory will be located inside your Windows directory.

3. Delete the CLWORKS.PRF file located within the CLARIS directory. [NOTE: This will undo any changes you have made to the default application preferences.]

4. Restart ClarisWorks to see the Welcome screen.

On a Macintosh computer
ClarisWorks 3.0 for Macintosh has several startup options. To restore the Welcome screen, or to choose whether to have ClarisWorks create new documents, open existing documents, or do nothing at startup:

1. Choose Preferences under the Edit menu.

2. Select the General category on the left side of the dialog box.

3. Under the options for "On startup, show" (in the lower-right corner) choose the desired option.

4. Click on the Make Default button and then on the OK button.

5. Quit and restart ClarisWorks to see the new startup setting.

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Creating a Column of Times Incrementing by 5 Minutes Per Cell (SS)

Here are step by step instructions for a method to create a spreadsheet where the first column will contain times that will appear in 5 minute increments beginning at 8:00 AM.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
To create the column of times, follow the steps below in a Spread Sheet document:

1) Click on your column heading to select the whole column.

2) From the Format menu select Number and click on the time format that you want to display.

3) In the first cell of the column type in "=TIME(8,0,0)" (This will set the time to 8:00 AM)

4) In the next cell down* type "=A1+TEXTTOTIME(0.5)" *Note that A1 is the cell that was used as the first cell in the time column.

5) Now click into the second cell (A2) and drag your mouse down as far as you need to accommodate all of your times.

6) From the Calculate menu select Fill Down.

Now you have times beginning at 8:00 AM and incrementing five minutes in each cell.
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ClarisWorks: Recording a Macro to Insert the Current Date

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Currently there is no feature for inserting the current date into a spreadsheet. It is, however, quite easy to create a Macro to accomplish this task (if you don't want to just type it in).

Use the following steps:

1) Select Record Macro from the File menu under Shortcuts

2) Click on Record in the Record Macro dialog (If you wish to use this Macro again give it a name, such as Today's Date)

3) Click into the cell you wish the date to appear in and type:

=NOW()

4) Hit enter on your keyboard (NOT return)

5) Choose Copy from the Edit menu

6) Choose Paste Special From the Edit menu, check box for "values only"

7) Choose Number from the Format menu and select the date formatting you wish to have appear

8) Select Stop Recording from the File menu under Shortcuts

You will now see today's date showing in that cell. If you have selected a formatting that spells out the month name, you may get ######## in your cell. If you do simply widen your column to see the date.

If you wish for this date to be placed in another cell of the spreadsheet, click into the field you want it to appear in and the select Play Macro from the File menu under shortcuts, and select the name of the macro you just created, it will place the current date in whichever cell you run the macro from, and it will appear in the format you chose when you recorded the macro.

NOTE: After choosing Record Macro, do not choose a different cell to work with of Claris Works will record that movement in the Macro.

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ClarisWorks: Global Village Teleport Gold II Modem Setup

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following information has been acquired from Global Village Technical Support. For further information please contact Global Village.

When using the Teleport Gold II or Teleport Gold II fax modem on a Performa , try the following setup with ClarisWorks Macintosh:

1- If using the Apple Modem Tool, set the setup (initialization) string to AT&F1
Set the handshaking to "CTS only"

2- Alternatively, try using the serial tool. When doing this, you can set the handshaking to CTS only, but you'll have to enter the initialization string and phone number as an AT command.
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Poor Performance when Choosing ‘Open‘, Save, or ‘Save As‘

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ISSUE

When selecting Open, Save, or Save As the dialog box takes longer than normally expected to appear.

EXPLANATION

When you have installed the DataViz MacLink translators, MacLink does not save a list of available translators and their locations. Therefore, each time a command is received to use the MacLink Plus Bridge, a list is built on the fly.

SOLUTION

If you remove the MacLinkPlus Bridge from the Claris Translator folder, you may notice an increase in the opening of these dialog boxes.

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ClarisWorks: Sorting the Rows of a Word Processing Document

A step-by-step guide of how to use a spreadsheet to sort rows or a word processing document.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

While there is no Sort command built into the word processing environment of ClarisWorks, it is easy to use a temporary spreadsheet document to sort the lines and return them to the word processing document.

NOTES: Before using this or any technique where you are replacing your work, save a copy of your original document.

Limitations of this technique: This procedure actually sorts paragraphs. Each row, or item to be sorted must be followed by a return.

You can have no more than 255 characters in any paragraph. Characters after the 255th will be truncated (cut off!) when you paste to the spreadsheet.

You will lose the font and any formatting of the text (bold, italic, etc,) and will have to reset it for the text that you sort.

To sort the lines of a word processing document:

1) Highlight the rows you wish to sort.

2) Go under the Edit menu and select Copy (command-C).

3) Go under the File menu to New. Make a new Spreadsheet document.

4) Go under the Edit menu and select Paste (command-V).
The text will paste beginning at the first cell, and it will remain selected. It is important that you do not click anywhere on the spreadsheet document, as this will deselect the text.

5) Go under the Calculation menu to sort (command-J).
Do not change any of the defaults unless you wish to change the way it sorts. If you wish it sort in descending order (c-b-a instead of a-b-c), click the descending icon for the first sort key.

6) Hit OK.
The text will still be selected. Check to make sure that the text is now sorted.

7) Make sure the text is selected. Go under the Edit menu to Copy.

8) Close the spreadsheet document. You do not need to save it.

9) Returning to the word processing document, the original text should still be selected. Go under the Edit menu to Paste.
The original text will be replaced by the sorted text.

10) Make any font or format changes you wish.

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ClarisWorks: "No Terminal Tools Available" Error

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you are opening a Communications document and get the message "No Terminal tools are available. The document will not be opened."

Verify the following:

There is a VT102, Apple Modem Tool, and Serial Tool, in the Extensions folder, of the System folder of the startup drive. And, there is also a VT320 Keys stationary file in the Stationary folder inside the Claris folder.

This error will occur if any of these files are missing.
Published Date: Feb 18, 2012

Calculation Results Incorrect by a Very Small Amount

Issues encountered when using the Round Function when the utility application, MacTools TrashBack, is also installed.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

MacTools Trashback, a utility included with MacTools Pro 4.0, has been reported to affect calculations in FileMaker Pro and ClarisWorks. For example, the formula =0 returns a zero. The formula =ROUND(0,2) should also give a result of zero. With MacTools Trashback installed, this calculation produces .010000000000001.

MacTools Development is aware of the issue and has reportedly fixed it in the latest version.

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Can‘t Open Document Stored on Novell Server

"File is locked" error message when opening a file from a read only volume

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisDraw 1.0v2 documents stored in a read-only volume on a Novell server cannot be opened.

When you attempt to open the document, you'll get an error message, indicating that the "File is locked." Changing the access privileges to allow write access will allow the document to be opened. There is no other workaround.

ClarisWorks and ClarisImpact files may be similarly affected.

This issue does not occur on an AppleShare server.
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Opening MacDraw II or ClarisCAD Libraries

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You can open your MacDraw II or Claris CAD libraries with the ClarisDraw 1.0 application.

1. First, if you are working with Claris CAD, you must save your drawing as a MacDraw II file.
2. Launch ClarisDraw.
3. From the File menu, choose Open....
4. Select the MacDraw II file that contains the library.
5. Click Yes to save the file and name converted the library.

If you want to open the MacDraw II drawing as a regular ClarisDraw file, not as a library, then open a new ClarisDraw file, then use Place File... (under the File menu) to insert the MacDraw II drawing into your ClarisDraw document.
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Converting MacWrite II Document With Inserted Variable Dates

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When converting a MacWrite II document that has a date variable inserted, regardless of the the preference setting of the MacWrite II document, the date will update with the current date that is on the system.

The MacWrite II translator seems to ignore the preference setting for "Never Update" embedded in the MacWrite II document.

This is is an issue if you wish to refer back to the date. The only work around at this time is to open the document in MacWrite II and copy it then paste it into ClarisWorks.
Published Date: Feb 18, 2012

ClarisWorks: Text not printing to LaserJet Printer

What to do if your text is not printing from ClarisWorks for Windows using an HP LaserJet printer.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

If you are trying to print a document from ClarisWorks for Windows to a Hewlett-Packard LaserJet printer, and you do not get a printout, the issue may be related to your printer driver or the text fill. If you are using the Universal 3.1.4 Printer driver, or you are using colored text that is a light shade (50% fill), your text will not print. To fix this, use the latest Hewlett-Packard driver, or choose a darker color for the text.

For more information about where to obtain the latest printer drivers, you can contact Hewlett-Packard.

Published Date: Feb 18, 2012

ClarisWorks: Using the Macro Wait Command When Recording Communications Macros

Tips for using the Macro Wait command, and reasons why it may be unreliable

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The use of the Macro Wait command when recording Macros for Communication documents can in some cases be unreliable. If you are having problems using this command it may be due to one of the following:

- The Macro Wait command may only be issued once per Macro. Using the command two or more times in a single macro may cause it to not work at all.

- Its operation is not consistent among the various versions of ClarisWorks

- The command must be issued and the Macro must be in the wait state BEFORE the host sends the string that the Macro Wait command is waiting for.

- The command "sees" invisible characters and may appear not to recognize the desired text, when in fact, the text contains characters that are not visible.

- The wait string is not editable. If the string is not correct, the entire Macro must be rerecorded.

Due to these limitations, it is recommended that the use Macro Wait command NOT be generally attempted. Its use should be reserved for those who have an in-depth understanding of communications, understand its limitations, and who are willing to experiment.

An alternative is to check the "Play Pauses" box when recording Macros for communications. While slower, this is a significantly more reliable and productive way to record Macros for communications. The following steps are recommended as a consistently productive method of recording Macros for communications.

- Run through the procedure you wish to record manually, without recording, preferably several times, so that you see and understand all the messages, paths and options that may occur during the sequence.

- Take out a sheet of paper and divide it into two halves with a line down the middle. Use the left side to write down what you enter when you are responding to the host. Use the right side to list the messages sent by the host. In doing this you are creating a script.

- When you are sure the script is correct, Start recording the Macro with "Play Pauses" checked and follow the script exactly as quickly as you can. Then stop recording.

You now have a Macro that should work efficiently, correctly and reliably.
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ClarisWorks: About Version 3.0v2 Windows - Read Me

The complete Read Me File for ClarisWorks 3.0v2 - Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
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ClarisWorks: Edit Menu Commands Affected by Moire Screen Saver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you are running the Moire Screen Saver,you may encounter an incompatibility issue when the screen saver engages. While entering records in a ClarisWorks Database, if the Moire screen saver engages, the Edit Menu commands sometimes change to what they would be in Layout mode. While in this situation, the keyboard commands for "Layout" or "Browse" do not work. They must be selected from the Menu. Choosing Layout and then Browse from the Layout menu usually returns the proper Browse Edit Menu, but sometimes the file must be Closed and reopened to access the "New Record" command. This issue most often occurs after a short pause ,a minute or so, when entering data. Allowing or forcing the "Moire" screen saver to engage always produces the issue.

The solution is to remove Moire from the control panels folder.

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CLarisWorks: Troubleshooting Reference in Manual‘s Index is Incorrect

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The ClarisWorks 3.0 User's Guide (part number U02600-012B) Index refers to the Electronic Help for information about Troubleshooting. It states to look in Topics A-Z. The Troubleshooting is actually found in the Electronic Help under the section called ClarisWorks Help Contents. The keyword list also has an entry for "troubleshooting".

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ClarisWorks: About Version 3.0v2 for Windows, Release Notes (Fixes)

Fixes implemented in the 3.0v2 update

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The 3.0v2 update to ClarisWorks for Windows 3.0 remedies many problems that you may have been experiencing. This revision addresses the following:

Performance
- Faster launching (up to 30% faster) for CPUs with 4 MB of RAM
- Faster typing and tabbing speed in the database

Display
- Cursor is now visible on CPUs with the Cirrus Logic video cards
- Documents imported from ClarisWorks 1.0 now display fonts accurately
- Line spacing in documents no longer change when you reopen a document

Import/Export Filters
- Fixes Word for Windows 2.0, WordPerfect 6.x, DBF and WKS filters
For WordPerfect 6.2 files, corrects certain types of international character and margin errors.
--For Word for Windows 2.0, can now import documents with hanging indents.
For .DBF files, imports without omitting any data.
For .WKS files, dates are imported correctly.

Spelling and Hyphenation
- Hyphenates more accurately
- Spelling dictionary no longer flags repeated words

Miscellaneous
- Now works properly with Hewlett Packard DeskJet 5.0 driver, when it is set as the default printer
- Monotype fonts are now installed properly
- A Program Icon for the Introduction to ClarisWorks is now added. On 4 MB CPUs, we recommend that you run the tour from the Program Manager and not from within ClarisWorks. To run the tour, double-click the icon.

In general, if you have a computer with 4MB of RAM, you may still face occasional out of memory messages because most of the memory is required to run your operating system and little is left for ClarisWorks. To optimize your system, please follow these steps:

1.Turn on Virtual Memory and make sure it is set to Permanent.
2.Ensure that Virtual Memory is set at 11,700 or higher.
3.Turn on 32-bit Disk Access (this step is NOT recommended for laptops running on battery power).
4.Defragment your hard disk using a third party utility or the utility provided with DOS 6.x.

Consult the READ ME file (General Troubleshooting section) for full details on optimizing your memory.
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Creating a Macro to Paste From Last Record

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
FileMaker Pro and AppleWorks can both Paste from the Last Record making data entry much easier. ClarisWorks does not have a feature for accomplishing this task but a Macro can be made to simulate this feature. In fact, this Macro is exceptionally fast with very little screen interruption. Here are the steps:

1. Open your database and create a new record.
2. Put your cursor into any blank field on that new record.
3. Choose Record Macro from the Shortcut submenu under the File menu.
4. Hold down the Command and Shift keys and type the Return key once (this moves you to the previous record).
5. Choose Select All from the Edit menu.
6. Choose Copy from the Edit menu.
7. Hold down the Command key and type the Return key once.
8. Choose Stop Recording from the Shortcut submenu under the File menu (this moves you to the next record).

Make sure to assign a keyboard equivalent to the Macro so it is easy to initiate.
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NetWare Workstation Drivers and Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Problems running FileMaker Pro with Novell NetWare are often attributed to the incorrect installation of workstation drivers. If all of the drivers that work together are not updated together, you may get a network connection but not necessarily all of the support needed for record locking, file locking or transmission of(broadcasting) a hosted FileMaker Pro file.

FileMaker Pro works with all versions of the updated drivers provided they are ALL updated together. When Novell makes an update available, there are many files included. All of the files used in the system should be updated at the same time. The README files included with each update explain this in more detail.

FileMaker requires IPX/SPX v3.10 and Netx v3.26 or above. However, more recent drivers are available.

In the past, the Workstation drivers were updated in files on the Novell forum of CompuServe called NetWire. They were called DOSUPX.EXE and WINUPX.EXE. These files will soon be removed from NetWire if they aren't already.

The new naming convention for updates is VLMUPX.EXE, NET33X.EXE, and WINDRX.EXE (where X represents the update level).

The contents of these files are outlined below.

NET33X.EXE contains the following files:

```
NETX.EXE            78749     05-24-94       8:53a
EMSNETX.EXE         90605     05-24-94       8:55a
XMSNETX.EXE         87273     05-24-94       8:57a
\\NETXWIN\\
NETWARE.DRV        126256     02-23-94       9:53a
NETWARE.HLP         34348     02-12-92       3:12p
```

The Net33x.exe file includes the NetWare driver set v2.02 for workstations using NETX and Windows 3.0 or 3.1. Note: DO NOT MIX THESE FILES ON WORKSTATIONS USING THE NETWARE DOS REQUESTER (VLMs). No further development is being made on: NETX.EXE, EMSNETX.EXE and XMSNETX.EXE. The latest updates and future development to workstation drivers will be to the VLM drivers. To get the latest info on the client requester download VLMUPx.EXE , (where x stands for the latest rev).

WINDR1.EXE contains the following files:

```
NWPOPUP.EXE       4,592      10-28-93       8:06a

\\VLMDRVS\\
1252_UNI.001        727      05-31-94      12:39p
UNI_1252.001      2,264      05-31-94      12:39p

UNI_COL.001       1,752      04-04-94      12:22p
UNI_MON.001       4,312      04-04-94      12:22p
437_UNI.001         727      04-04-94      12:22p
UNI_437.001       2,904      04-04-94      12:22p
UNI_850.001       2,776      04-04-94      12:22p
850_UNI.001         727      04-04-94      12:22p
NWUSER.EXE        5,072      10-28-93       8:12a
NETWARE.HLP     419,701      08-29-94       1:15p
NETWARE.DRV     165,456      09-22-94      11:22a

\\NTSWD\\
NTSWD.EXE       109,056      10-06-94       1:32p
NTSWD.TXT         4,814      10-04-94      10:58p

\\READMES\\
WINVLM.TXT       13,026      09-15-94       5:00p
VLMWIN.TXT        2,369      10-01-94       2:37p

\\STANDARD\\
TBMI2.COM        24,973      01-06-94      11:55a
TASKID.COM        7,539      01-22-93      10:47a
```

```
TBMI2.MSG          3,315      11-10-93       8:42a
TASKID.MSG         1,654      01-22-93      10:47a
\\VXDS\\
VIPX.386          23,855      05-23-94       9:51a
VIPX.DOC          40,790      06-09-94       9:57a

DEADLOCK.TXT      20,899      09-15-94       4:49p
VPICDA.386        11,063      01-30-94      10:58a
VNETWARE.386      15,645      08-17-94       3:38p
```

WinDRx.exe contains updated Windows Driver files for workstations using either VLMs or NETX. This file includes NETWARE.DRV v3.03 pre-release for workstations using the VLMÕs with Windows 3.0 or 3.1. NETWARE.DRV v2.02 and its HLP file are version specific for NETX and are available in Net33X.EXE.

***IMPORTANT NOTE: The updated VIPX.386 v1.19 included in this file, needs to be used with LSL.COM v2.12, and IPXODI.COM v3.00 from VLMUP1.EXE. It must not be mixed with any other versions of the related files.

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VLMUP1.EXE contains the following files:

```
ODIINFO.DOC        24499      12-09-92       2:43p

\\ODIDRV\\
NE2.COM            22147      10-14-94      10:03p
NE2.INS              250      05-31-94       1:54p
DOSNP.EXE          10579      01-24-94       9:19a
INT2F.COM            640      07-28-88      11:48a
PCN2L.COM          21294      04-28-93       1:12p

ROUTE.COM           4897      03-15-94       9:02a
TOKEN.COM          27381      04-12-93       6:27p
LANSUP.COM         23224      08-31-94       9:10a
NE2_32.COM         21836      10-14-94      10:06p
NE2_32.INS           258      06-22-94       2:36p
NE1000.COM         21646      10-14-94      10:00p
NE1000.INS           502      03-15-94       9:08a
NE2000.COM         23023      10-14-94      10:02p
NE2000.INS           623      03-15-94       8:59a
NE2100.COM         31059      10-14-94      10:07p
NE2100.INS           558      03-14-94      11:35a
NE3200.COM         28422      10-14-94      10:09p
NE3200.INS           376      03-14-94       3:02p
RPLFIX.COM          1838      06-30-93      10:56p
RPLFIX.TXT          2255      02-21-91       2:47p
RPLODI.COM          1652      03-21-91       2:24p
TRXNET.COM         20670      09-22-94       7:32p
TRXNET.INS           517      06-22-92       4:07p
NE1500T.COM        31061      10-14-94      10:07p
NE1500T.INS          564      03-14-94      11:35a

NETBIOS.EXE        24402      11-19-93      11:05a
NTR2000.COM        26689      09-22-94       5:55p
NTR2000.INS          534      07-19-94       4:43p
ODINSUP.COM        34298      08-01-94       5:18p
ODINSUP.DOC        44764      10-04-94       2:24p

\\VLMS\\
FIO.VLM            18186      09-22-94      12:05p
LSL.COM            18309      09-22-94       7:48p
LSL.MSG             3571      08-16-94       9:21a
NDS.VLM             8508      09-22-94      12:04p
NMR.VLM             9858      09-22-94      12:04p
NWP.VLM             6636      09-22-94      12:04p
PNW.VLM            10099      09-22-94      12:05p
RSA.VLM            19560      09-22-94      12:05p
VLM.EXE            37061      09-22-94      12:03p
AUTO.VLM            4527      09-22-94      12:04p
```

```
BIND.VLM          4688      09-22-94     12:04p
CONN.VLM         10841      09-22-94     12:03p
NETX.VLM         16818      09-22-94     12:05p
TRAN.VLM          1553      09-22-94     12:04p
PRINT.VLM         7989      09-22-94     12:05p

REDIR.VLM        14705      09-22-94     12:05p
IPXNCP.VLM       10043      09-22-94     12:03p
IPXODI.COM       39321      09-15-94      4:02p
IPXODI.MSG        4089      09-15-94      4:02p
NETCFG.TXT       13321      09-29-94      7:19a
PACKET.SIG        3720      01-20-94     10:31a
GENERAL.VLM       4533      09-22-94     12:05p
DOSRQSTR.MSG      9450      09-14-94      3:16p
RXMONSTK.COM     11383      09-22-94      7:39p
RXMONSTK.MSG      2542      09-21-94      8:14a
SECURITY.VLM      7986      09-22-94     12:04p
```

VLMUp1.exe contains all the updated DOS client files for use with VLMÕs or Netx. It contains v1.20 of the NetWare DOS Requester (VLMs), Netbios, DOS client files, and MLID drivers. This is an update to the NetWare Client for DOS and Windows that ships with NetWare v3.12 and v4.x (they will also work with NetWare 3.11).

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ClarisWorks: How To Create Legal / Pleading Paper

A step-by-step technique that allows you to create pleading paper

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
To create a document that has the numbers 1-28 on the left, followed by a vertical line, etc -- pleading paper, follow the instructions below:

1) Decrease the Left Margin setting by half an inch by selecting Document from the Format menu .
2) Set the Sailboat (left indent marker) half an inch to the right.
3) In the gutter now created, Option drag (Windows - ALT + drag) out a text frame and type in numbers from 1 to 28.
(use more or less numbers and extend frame for additional pages as needed)
4) Choose Select All from the Edit Menu
5) Select Paragraph... from the Format menu and set the Line Spacing to Points.
6) Fine tune the spacing between numbers to match typical text by clicking on the Increase or Decrease Spacing Controls in the lower center of the Ruler.
7) Select Show Tools (if they're not showing) from the View menu, and draw a vertical line to the right of your numbers.
8) Finally for repeated use, Save the file as a Stationery document.
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ClarisWorks: Using The "Find" Assistant

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The "Find" Assistant included with ClarisWorks 3.0 for Macintosh can only search on the startup or boot volume. It will not search a second hard drive or a floppy disk. There is no current workaround.

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ClarisWorks: Hanging During Installation, Hanging After Launching Application, or Difficulties Launching

An incompatibility could arise between certain versions of S3 based video drivers and ClarisWorks for Windows 3.0.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Some common symptoms of this incompatibility are:

- Installation hanging on ClarisWorks diskette #2. This usually occurs right after choosing what type of installation to perform (Full, Minimum, or Custom.) The install program will then appear to continue by redrawing portions of the screen with colored rectangles (white and blue) but eventually hang.

- Double clicking on the ClarisWorks application icon from Program Manager or trying to launch ClarisWorks from the File Manager. In the case of the Program Manager, double clicking on the icon doesn't do anything. Launching from the File Manager will bring up the ClarisWorks splash screen but the system will hang there.

SOLUTIONS:
- Try excluding the range of memory for the video card. Most high end accelerator cards normally take up the memory range from A000-C7FF (these are zeros and not the letter 'O'). Typically an memory manager exclude statement looks something like this.

device=c:\\dos\\emm386.exe noems x=A000-C7FF

- Try switching to the Windows VGA driver. If this works, contact the manufacturer of your video card and see if an updated driver is available for your card.

This issue has been encountered when using the following drivers...
- S3 2.21 800x600 256 color SF (small font)
- Stealth 24 (version unknown)

Published Date: Feb 18, 2012

ClarisWorks: Changing Location of Claris Directory During Installation

What to do if the ClarisWorks installer does not allow you to change the location of the CLARIS directory

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Changing Location of Claris Directory when installing ClarisWorks 3.0 If the option for changing the location of the CLARIS directory during installation of ClarisWorks 3.0 is either not available or is grayed out, it is possible that the installer is detecting another copy of ClarisWorks on the system. A typical scenario might be a network administrator setting up ClarisWorks to run off of a network server or drive.

If a previous version of ClarisWorks (or other Claris application) has been installed on the machine where the network installation is taking place, the install program will detect the presence of the existing CLARIS directory and not allow you to change it's location. The workaround to this is to delete or move your CLARIS directory so that the install program doesn't detect it.

After doing this, the install program will add a "Claris Directory" option to the bottom of the custom install dialog box which will allow you to specify another location for the CLARIS directory.

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Faster Mode Not Available on ImageWriter

Faster mode printing is not available in Claris Organizer 1.0v2 on an ImageWriter.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When printing to an ImageWriter I or ImageWriter II with Claris Organizer 1.0v2, the "Faster" mode is not available. It was available in version 1.0v1.

There is currently no workaround for this issue as disks for 1.0v1 are no longer available as replacements.
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ClarisWorks: Partial Screen Display During Installation

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A Windows utility called WinProbe may interfere with the installation of ClarisWorks 3.0v2. WinProbe is a utility that displays detailed information about the computer's system configuration. Having WinProbe installed on your system may cause the ClarisWorks Installation to display partial screens, making the program impossible to install.

To remedy the issue, you want to remove the Resource Optimizer component of WinProbe from your Win.INI file so it will not interfere with the ClarisWorks installer.

To make these edits do the following:

1) From the Program Manager choose Run from the File menu
2) In the Run dialog in the command line type: sysedit
3) Click OK (this will bring up your system configuration editor)
4) Click on the tile bar of the window that says- C:\\WINDOWS\\WIN.INI
5) Locate the line that says LOAD=
6) Delete "optmod.exe" from this line (this can be added back after ClarisWorks is installed)
7) Choose Save from the File menu and then Exit
8) Make sure all your applications are closed in Windows and then exit Windows.
9) Restart Windows and run the ClarisWorks installation again.

Note: This issue does not occur with ClarisWorks 3.0v1.
Published Date: Feb 18, 2012

ClarisWorks: WordPerfect 2.x Translator Issue

Issues using the WordPerfect translator with ClarisWorks 3.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
There are issues related to the WordPerfect 2.x translator and accented characters. They are translated as underlined spaces "_" in WordPerfect 2.1 Macintosh. This occurs in BOTH directions, between ClarisWorks 3.0 and WordPerfect.

Work around:
Save the document as Microsoft Word format or any other format that WordPerfect supports.
Published Date: Feb 18, 2012

File Size does not Decrease when Contacts are Deleted.

What happens to Claris Organizer files sizes when contacts are deleted?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Question:
What happens to the file size when contacts are deleted?

Answer number one:
It is normal for Claris Organizer to fluctuate file size a little bit, even when deleting. The space freed up by the deleted contacts will be reused the next time you save after modifying the file, and space at the end of your file will be truncated. This system is set up so that you never corrupt your data in the event of a system crash or power failure while saving a file. Also, by reusing space in the existing file, saves are faster than having to recopy the entire file every time.

The more technical answer:
When contacts are deleted, each of the blocks containing one of these contacts is marked as a modified block. On a save, all modified blocks must be rewritten to the data file before the old blocks in the file are deleted. This is so that if a crash occurs in the middle of the save operation, the existing data is not corrupted. The next time a save occurs, however, the old block images are reused based on a best fit algorithm. This system makes saving time faster because we do not need to rewrite the entire file every time you save: only the modified blocks. The end of file marker is truncated whenever possible.
Published Date: Feb 18, 2012

Display Card 8/24GC: Using with Sony Monitors

I want to use the Sony MultiScan CPD-1304 monitor with the new Display Card 8/24GC. Will this work?

This article has been archived and is no longer updated by Apple.
If the CPD-1304 monitor works with the Macintosh High-Resolution Video Card (the current 8-bit display card), there won't be any problem with the Display Card 8/24GC signals driving the Sony CPD-1304. (We could not verify that the CPD-1304 monitor works with the Macintosh High-Resolution Video Card, but we do know that Sony's CPD-1302 monitor works with that card.) However, you will need to use a different cable to connect the two devices because the cards have different connectors.

An issue with regard to the cable concerns the sense pins, which tell the card what type of monitor is attached. For the Sony CPD-1302 monitor, the sense pins should be configured as below, where 0 = Ground and 1 = Not Ground. To ground a sense pin, tie it to the C&VSYNC.GND signal.

Sense pins			Hor x Vert Dot	Vert
10	7	4	Display Pixels	Clock Refresh
1	1	0	12" Monochrome Monitor 640 x 480	30.24 66.7
			13" Color Monitor	

Here are the pinouts for the Macintosh Display Card 8/24GC:

Pin	Signal	Description
1	RED.GND	Red Video Ground
2	RED.VID	Red Video
3	CYSNC~	Composite Sync
4	MON.ID1	Monitor ID, Bit 1 (also known as SENSE0)
5	GRN.VID	Green Video
6	GRN.GND	Green Video Ground
7	MON.ID2	Monitor ID, Bit 2 (also known as SENSE1)
8	nc	(no connection)
9	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3 (also known as SENSE2)
11	C&VSYNC.GND	CSYNC & VSYNC Ground
12	VSYNC~	Vertical Sync
13	BLU.GND	Blue Video Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC~	Horizontal Sync
Shell	CHASSIS.GND	Chassis Ground

Published Date: Feb 18, 2012

ClarisWorks 3.0: Datasheet

ClarisWorks - The all-in-one answer for business, home and education

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

What makes ClarisWorks software your best all-in-one answer for business, home and education? First, it does everything you do-easily. Like letters, memos, reports, budgets, presentations, proposals, flyers, mailing labels, contact lists, newsletters-and virtually anything else.

Second, the word processing, spreadsheet, database and graphics functions in ClarisWorks are completely integrated-so you learn just one program, not half a dozen separate ones. You'll also appreciate the way it works-from its consistent menus to the effortless way you combine words, graphics, tables, images and even video on a single page.

Third, ClarisWorks steps in to help get your documents done fast. ClarisWorks Assistants guide you through complex tasks and even provide expert advice on document layout and design. And 150 push-button Shortcuts reduce common operations to a single click.

And then there's its extraordinary lean, compact design. Built for lightning fast speed, ClarisWorks conserves precious disk space and battery life-perfect for laptops.

Features and Benefits

One Powerful Application for All Your Documents

- All-in-one Integration - Access word processing, outlining, spreadsheet, charting, presentation, graphics, and paint tools all on a single page.
- Shortcuts - Speed through your work with instant push-button access to 150 of the most common operations.
- WYSIWYG Display - Always "What You See Is What You Get"-from the screen to the printed page. View and edit documents while you work; no separate modes or windows needed to preview headers, footers, or footnotes.
- Share Files - Open either Macintosh or Windows ClarisWorks documents instantly- without translation. Easily share files with popular Macintosh, Microsoft Windows, and DOS programs.
- Slide Show Presentations - Create and deliver professional slide show presentations on screen with master background and movies.
- Fonts and Clip Art - Produce attention-grabbing documents by using seven bundled fonts and 75 clip art images.
- Ultra-compact and Speedy - Minimal disk and memory requirements make ClarisWorks perfect for even modestly configured and notebook computers.
- Communications - Use integrated communications environment for Macintosh or Windows Terminal Accessory support to connect with online services or the Internet.

Complete Word Processing for Professional-looking Results

- Versatile Formatting - Customize tabs, margins, indents, line spacing, automatic hyphenation, and justification. Use type faces, styles, sizes, headers, and footers for the appropriate look.
- Multiple Columns - Size columns on screen to fit your exact needs-with full access to rulers and tabs. Even create different size columns on the same page.
- Text Wrap - Flow text automatically around any graphic or chart on the page for a sharp, polished look.
- Writing Tools - Access all the information you need to write correctly with 110,000 word spell checker, 660,000 word thesaurus, and word counter.
- Outlining - Organize documents quickly with six predefined outline styles, or create your own.
- Mail-merge with Database - Personalize form letters and mailings directly from your database.
- Automatic Footnotes - Create perfect footnotes. The Footnote Assistant prompts you for needed information and formats footnotes perfectly.

Spreadsheet and Charting Tools Bring Numbers to Life

- 100 Built-in Functions - Analyze your data using the built-in mathematical, statistical, financial, date, time, logic, and text functions.
- Dazzling Charts - Communicate information more effectively using 12 chart types, including bar, pie, line and hi-low close charts. Change fonts and adjust orientation, size, colors, patterns, 3D effects, and more to illustrate your point.
- Instant Tables - Use the Table Assistant to create a table in any ClarisWorks document, formatted to your exact specifications.
- Spreadsheets - Add spreadsheets of any size to your documents on command and position them exactly where you want them.

Colorful Graphics Highlight Your Message

- Comprehensive Graphics Tools
- Create graphics instantly with tools for lines, rectangles, ovals, and more.
- Select from 100 fill patterns and up to 256 colors.
- Smooth and reshape curves and shapes with the bezigon tool for precise graphics.

- Gradient Fills - Add pizzazz to your documents, using 16 black & white or 16 color gradient patterns.
- Full Color Painting - Edit scanned images and add vibrant color effects with special paintbrush, paint bucket, and spray can tools.

Database to Easily Access and Manage Your Data

- Versatile Search and Sort Functions - Select, group, and identify the data you need by specifying search parameters. Quickly organize information with automatic sorting.
- Mailing Labels - Generate labels effortlessly with over 50 predefined Avery formats.
- Visual Reports - Lay out your data on screen exactly the way you want it to appear.
- Automatic Field Entry and Verification - Avoid repetitive data entry and ensure field consistency and accuracy by creating pop-up lists of data.

Get Started Easily and Quickly

- ClarisWorks Assistants - Have expert Assistants quickly step you through design and layout tasks like formatting footnotes, printing envelopes-even creating presentations.
- On-Screen Introductory Tour - Receive a brief introduction to many ClarisWorks capabilities. Get basic instruction so you can get started without reading a single manual.
- Templates - Get started quickly. Claris includes ready-to-go documents that you can use as is or customize to meet specific needs.
- On-screen Help - Receive on-screen answers to your questions without having to refer to the manuals.

ClarisWorks Does It All!

Isn't it about time you had all the tools you need for your everyday projects in one place? Whatever you need to do, ClarisWorks has everything you need to get it done. Word processing. Spreadsheet. Charting. Graphics. Database. Painting. Instead of buying separate applications, ClarisWorks provides it all in one. So you're assured of tools that work together to tackle complicated jobs in record time. And nobody makes it easier or more affordable.

For more information and the location of a Claris reseller near you.

Specifications For Macintosh

File Formats Supported

Word Processing - Acta 3.0, AppleWorks 2.0-3.0, AppleWorks GS, ClarisWorks 1.0-2.1 text, MacWrite®, MacWrite II, MacWrite Pro, MS-Word 3.0, 4.0, 5.1, MS-Word PC, MS-Works 1.0-2.0, MS-Write, WordPerfect 1.0-1.02, WordPerfect 4.2-5.0 PC, WriteNow 1.0-2.2, WriteNow NeXT

Spreadsheet - MS-Works 2.0 SS, MS-Excel 3.0, 4.0, SYLK, DIF, DBF, AppleWorks SS, ASCII Text

Database - MS-Works 2.0 DB, DIF, DBF, SYLK, AppleWorks DB, ASCII Text

Graphics - EPSF, GIF, MacPaint 2.0, PICT, PICT 2, Apple QuickTime Movie, TIFF

Required Equipment

- Any Apple 68000 including Macintosh Plus, Centris, Classic, LC, SE, Performa, PowerBook, II, Quadra or Power Macintosh family computer
- Hard disk drive and 1 MB RAM minimum
- 2 MB RAM required for System 7 and communications environments
- System software 6.0.5 or later, or System 7 or later

Printer Support

- Apple LaserWriter, Personal LaserWriter, and ImageWriter families, and Apple StyleWriter
- Hewlett-Packard LaserJet, DeskWriter, and PaintWriter families
- A wide variety of other Macintosh-compatible, third-party printers

Specifications for Windows

File Formats Supported

Word Processing - DOS Text (*.TXT), Rich Text Format (*.RTF), Microsoft Word for DOS 5.5, Microsoft Word for Windows 2.0, 6.0, WordPerfect for DOS 5.1, WordPerfect for Windows 5.1, 6.0

Spreadsheet - Microsoft Excel 3.0, Lotus 1-2-3 (*.WKS and *.WK3), SYLK (*.SLK), DIF (*.DIF), Text/ASCII (*.TXT)

Database - Borland dBASE (*.DBF), SYLK (*.SLK), DIF (*.DIF), Text/ASCII (*.TXT)

Graphics - Aldus/Windows Metafile (*.WMF) 3.0 or 3.1, Computer Graphics Metafile (*.CGM), Encapsulated Postscript (*.EPS), Macintosh PICT (*.PCT), TIFF (*.TIF), Windows Bitmap 3.1 (*.BMP), Zsoft Paintbrush (*.PCX)

Required Equipment

- PC with 386DX/25 Mhz or higher processor
- Microsoft Windows 3.1 or later; MS DOS 5.0 or later
- One hard disk, one 3.5" floppy disk
- 4 MB RAM (8 MB recommended)
- VGA or better video
- Mouse

Printer Support

- PostScript printer such as Apple LaserWriter and IBM LaserPrinters
- Hewlett-Packard LaserJet, PaintJet and DeskJet Series
- A wide variety of other Windows-compatible printers

Published Date: Feb 18, 2012

Read Me File does not Read Properly in Simple Text 1.0

The Read Me file for Claris Organizer 1.0v2 must be read in TeachText or SimpleText 1.2.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The graphics in the Read Me file that comes with Claris Organizer 1.0v2 do not align correctly with SimpleText 1.0.

To recreate:
1) Open Read Me file in SimpleText 1.0.
2) Scroll down to end of file.

The last graphic and the next to last graphic are off center or missing.

Workaround:
Use TeachText or a later version of SimpleText like 1.2.
Published Date: Feb 18, 2012

ClarisWorks 3.0 for Windows: About Version Trial Software, Read Me (Online version)

These instructions are included as a Read Me file in the ClarisWorks 3.0 Trial Software package available on Claris Online Forums.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Thank you for downloading the ClarisWorks 3.0 Trial Software!

***** MINIMUM REQUIREMENTS *****
PC with 386 or higher processor (486 Recommended)
Microsoft Windows 3.1 or Later; MS-DOS 5.0 or Later
Hard disk Drive and 4MB RAM (8MB Recommended)
One 3.5" floppy disk
VGA or better video
Mouse

***** INSTALLATION *****

In order to install the trial software, follow these steps:

1. Change directory to your root directory by typing:

CD\\

2. Create a temporary directory off of your root directory by typing:

MD TEMP

3. Copy both of the downloaded files, CLW3DEM1.EXE and CLW3DEM2.EXE into the same directory using the copy command. Example:

COPY CLW3DEM*.EXE C:\\TEMP

4. Type INSTALL

After the installation has been completed, you may delete the TEMP directory from your system, along with the files contained within it.

The installer will require approx. 6 megabytes of free hard disk space to run and install the software. The actual trial takes up 3 megabytes of hard disk space.

***** FLOPPY DISK INSTALLATION *****

If you do not have enough free hard disk space, you can install the software from a floppy drive instead of the hard drive, by typing the letter for your 3.5" drive after the install command. Example:

INSTALL A:

You will need two blank High Density (1.44MB) 3.5" diskettes to install the software from floppy diskettes. The trial cannot be installed from 5.25" diskettes. You may use the set of floppy diskettes to install the trial on as many systems as you wish. Just run the SETUP.EXE on the first disk from Windows to begin the setup.

***** REMOVING THE TRIAL *****

If you wish to remove the trial from your system after it has been installed, follow these steps:

1. Remove the following line from the [386Enh] section in the
SYSTEM.INI file:

device=<WINDOWS>\\<SYSTEM>\\win32s\\w32s.386

where <WINDOWS> and <SYSTEM> are where the Windows and System
directories are, respectively.

2. Modify the following line from the [BOOT] section in the
SYSTEM.INI file:

drivers=mmsystem.dll winmm16.dll

to the following (remove winmm16.dll):

drivers=mmsystem.dll

3. Delete the following files from the <WINDOWS>\\<SYSTEM> subdirectory or
from the SYSTEM directory in network installations:

W32SYS.DLL
WIN32S16.DLL
WIN32S.INI

4. Delete all the files in the <WINDOWS>\\<SYSTEM>\\WIN32S subdirectory
or the <SYSTEM>\\WIN32S subdirectory in network installations.
Then delete subdirectory itself.

NOTE: <WINDOWS> refers to the windows installation directory. On a
networked Windows installation, the system directory may be located on a
remote share. If you are only removing Win32s from your machine, then you
do not need to remove the shared files (in <SYSTEM> and <SYSTEM>\\WIN32S).
Before removing these files from the network share, make sure that all
users that use Win32s have removed the references to Win32s from the
SYSTEM.INI file.

5. Delete the CW3TRIAL directory located in your root directory.

If you have any problems with this Trial, you can contact CLARIS Technical
Support at (408) 727-9004 or post a message in the ClarisWorks section of

the CLARIS Windows forum.

```
*****************************************
******** INSTALL.BAT *******
*****************************************
@Echo off
If not exist cw3demo1.exe goto NODISK1
If not exist cw3demo2.exe goto NODISK2
If "%1"=="A" goto ADRIVE
If "%1"=="A:" goto ADRIVE
If "%1"=="a" goto ADRIVE
If "%1"=="a:" goto ADRIVE
If "%1"=="B" goto BDRIVE
If "%1"=="B:" goto BDRIVE
If "%1"=="b" goto BDRIVE
If "%1"=="b:" goto BDRIVE
If "%1"=="" goto NOARG
If "%1"=="C" goto NOARG
If "%1"=="C:" goto NOARG
If "%1"=="c" goto NOARG
If "%1"=="c:" goto NOARG
goto end
;
```

```
;**** Install from Drive A ****
;
:ADRIVE
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - Please insert a blank formatted disk into Drive A for Disk 1: -
Echo - -
Echo ----------------------------------------------------------------
pause
cw3demo1.exe -d A:
cls
Echo ----------------------------------------------------------------

Echo - -
Echo - Please insert a blank formatted disk into Drive A for Disk 2: -
Echo - -
Echo ----------------------------------------------------------------
pause
cw3demo2.exe -d A:
a:
cd disk1
goto COMPLETE
;
;**** Install from Drive B ****
;
:BDRIVE
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - Please insert a blank formatted disk into Drive B for Disk 1: -
Echo - -
Echo ----------------------------------------------------------------
pause
cw3demo1.exe -d B:
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - Please insert a blank formatted disk into Drive B for Disk 2: -
Echo - -

Echo ----------------------------------------------------------------
pause
cw3demo2.exe -d B:
b:
cd disk1
goto COMPLETE
;
;**** Install from Hard Drive ****
;
:NOARG
cw3demo1.exe -d
cw3demo2.exe -d
cd disk1
goto COMPLETE
;
; **** Files not located in Directory ****
;
:NODISK1
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - The file CW3DEMO1.EXE is not located in this directory. Please -
Echo - copy the file to this directory and run INSTALL again. -
Echo - -
```

```
Echo ----------------------------------------------------------------
goto END
:NODISK2
cls
Echo ----------------------------------------------------------------
Echo - -
Echo - The file CW3DEMO2.EXE is not located in this directory. Please -
Echo - copy the file to this directory and run INSTALL again. -
Echo - -

Echo ----------------------------------------------------------------
goto END
;
; **** Install Complete ****
;
:COMPLETE
cls
echo ************* Installation is complete *************
Echo
Echo The installer will now attempt to run the SETUP.EXE
Echo in Windows. If Windows is already running, press
Echo CTRL-C now to quit the installer and run the SETUP.EXE
Echo manually by double-clicking on it from the File Manager.
pause
cls
echo Running Setup.EXE in Windows
echo
win setup.exe
:end

****************************************
****** FILES ON DISK #1 *******
****************************************

Directory of A:\\DISK1

.            <DIR>         01-19-95  11:31a
..           <DIR>         01-19-95  11:31a
32SINST  EXE        24,624 06-06-94   4:14a
32SINST  INF         9,866 11-29-94   4:52p
32SINST  IN_         2,083 06-07-94   6:13a
32SINST  LST           629 08-11-94  10:37a
32SINST  MST        11,706 11-16-94   1:02p
CARDS    DL_        44,963 06-06-94   4:14a
COMDLG32 DL_         1,703 06-06-94   4:14a

CRTDLL   DL_        98,830 06-06-94   4:14a
CTYPE    NL_         2,503 06-06-94   4:14a
ENVELOPE AS_        23,076 10-10-94   6:28p
FREECELL EX_        24,458 06-06-94   4:14a
FREECELL HL_        12,844 06-06-94   4:14a
INIUPD   DLL        12,288 06-06-94   4:14a
INSTALL  WRI         8,448 11-28-94  10:18p
LOCALE   NL_        15,872 06-06-94   4:14a
LZ32     DL_         1,660 06-06-94   4:14a
L_INTL   NL_           953 06-06-94   4:14a
MPR      DL_         1,869 06-06-94   4:14a
MSCOMSTF DLL        74,528 06-06-94   4:14a
MSCUISTF DLL        21,664 06-06-94   4:14a
MSDETECT INC        22,097 06-06-94   4:14a
MSDETSTF DLL        24,544 06-06-94   4:14a
MSINSSTF DLL        65,440 06-06-94   4:14a
MSSHLSTF DLL        14,928 06-06-94   4:14a
MSUILSTF DLL         6,144 06-06-94   4:14a
NETAPI32 DL_         3,743 06-06-94   4:14a
```

```
NTMSG    DL_        23,628 06-06-94   4:14a
OLECLI   DL_        45,404 06-06-94   4:14a
OLECLI32 DL_         6,742 06-06-94   4:14a
OLESVR32 DL_         3,549 06-06-94   4:14a
P_037    NL_           938 06-06-94   4:14a

P_10000  NL_         1,321 06-06-94   4:14a
P_10001  NL_        51,570 06-06-94   4:14a
P_10006  NL_         1,253 06-06-94   4:14a
P_10007  NL_         1,242 06-06-94   4:14a
P_10029  NL_         1,324 06-06-94   4:14a
P_10081  NL_         1,440 06-06-94   4:14a
P_1026   NL_           981 06-06-94   4:14a
P_1250   NL_         1,902 06-06-94   4:14a
P_1251   NL_         1,571 06-06-94   4:14a
P_1252   NL_         1,898 06-06-94   4:14a
P_1253   NL_         1,565 06-06-94   4:14a
P_1254   NL_         1,875 06-06-94   4:14a
P_437    NL_         2,075 06-06-94   4:14a
P_500    NL_           941 06-06-94   4:14a
P_737    NL_         1,506 06-06-94   4:14a
P_850    NL_         2,065 06-06-94   4:14a
P_852    NL_         2,064 06-06-94   4:14a
P_855    NL_         1,722 06-06-94   4:14a
P_857    NL_         2,017 06-06-94   4:14a
P_860    NL_         2,075 06-06-94   4:14a
P_861    NL_         2,071 06-06-94   4:14a
P_863    NL_         2,070 06-06-94   4:14a
P_865    NL_         2,071 06-06-94   4:14a
P_866    NL_         1,731 06-06-94   4:14a

P_869    NL_         1,733 06-06-94   4:14a
P_875    NL_         1,020 06-06-94   4:14a
P_932    NL_        51,435 06-06-94   4:14a
P_936    NL_        44,862 06-06-94   4:14a
REMOVE   WRI         5,248 11-28-94   5:27p
SCK16THK DL_         4,605 06-06-94   4:14a
SETUP    EXE        10,896 11-14-94  12:13p
SETUPAPI INC        55,620 06-06-94   4:14a
SHELL32  DL_         1,732 06-06-94   4:14a
SORTKEY  NL_       111,622 06-06-94   4:14a
SORTTBLS NL_         2,068 06-06-94   4:14a
UNICODE  NL_         6,538 06-06-94   4:14a
VERSION  DL_         1,449 06-06-94   4:14a
W32S     38_        21,469 06-06-94   4:14a
W32SCOMB DL_       100,716 06-06-94   4:14a
W32SKRNL DL_        47,033 06-06-94   4:14a
W32SYS   DL_         7,969 06-06-94   4:14a
WIN32S   EX_           264 06-06-94   4:14a
WIN32S16 DL_        74,778 06-06-94   4:14a
WINMM    DL_        24,437 06-06-94   4:14a
WINMM16  DL_        11,710 06-06-94   4:14a
WINSPOOL DR_         2,227 06-06-94   4:14a
WORDWIN  X3_        37,919 09-14-94  12:50a
WSOCK32  DL_         4,179 06-06-94   4:14a

XTNDTRAN L3_           891 11-22-94   6:45a
_MSSETUP EXE         9,813 06-06-94   4:14a
_MSTEST  EXE        89,504 06-06-94   4:14a
      84 file(s)      1,433,811 bytes
```

****

****** FILES ON DISK #2 *******

****

Directory of A:\\DISK2

```
.           <DIR>         01-19-95  11:31a
..          <DIR>         01-19-95  11:31a
ADDRLIST AS_        79,689 10-10-94  12:32a
AVI      X3_         7,255 10-13-94  10:41a
BEGIN    CW_        18,999 11-29-94  12:48p
BMP      X3_         4,721 09-01-94   6:40p
CLRSCT32 DL_        58,535 11-11-94   1:50p
CLW16    DL_         4,840 09-15-94   4:36p
CLWORKS  EX_       863,836 11-21-94   3:32p
CLWORKS  LB_         1,401 09-05-94   6:44p
CLWORKS  MA_           304 11-29-94   1:52p
CLWORKS  PR_           236 11-03-94   1:48p
CLWORKS  RS_       109,146 11-23-94  10:31a
DBF      X3_        21,260 10-13-94  10:38a
DLGFONT  FO_        11,335 04-08-93   2:00a
EPS      X3_        18,318 09-01-94   6:46p

FINALNWS CW_        10,170 11-08-94   3:52p
FONT     MA_           526 02-18-93  11:04a
INSERT   DO_         2,134 11-08-94   1:38p
REMOVE   WR_         2,403 11-28-94   5:27p
STARTNWS CW_         6,360 10-19-94   5:16p
TABLE    AS_        20,922 10-10-94  12:32a
TEXT     X3_         7,934 10-13-94  10:40a
TODOLIST CW_         5,387 11-08-94   3:44p
WMF      X3_       141,011 10-12-94   9:56a
XTND32   DL_        17,544 11-11-94   2:00p
      26 file(s)      1,414,266 bytes
```

Published Date: Feb 18, 2012

Picking Up The Tab

First you type, then you boss your text around.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The Macintosh was the first desktop computer which could print out what you see on the screen. Older computers would simply display the text, no matter what font (if, indeed you could use more than one font) in a display which looked like a typewriter and had codes for things like centering and boldface. The Macintosh was the first computer to have a display that showed you what the page actually looked like as you were working on a document. This is called WYSIWYG (pronounced, wiz-zee-wig). It stands for what you see is what you get. As wonderful as WYSIWYG is, however, it also has its price.

Printout vs. screen

Since the Mac was invented, printers have become a lot better. The original ImageWriter could print at a resolution of 72 dots per inch. The original Mac screens were 72 dots per inch. That worked fine. Most of the current printers, including the Apple StyleWriter and LaserWriter, print at a much higher resolution. This produces text which looks similar to that which is printed in a magazine or a book. Screens are still usually about 72 dots per inch. That also means that text on the screen no longer exactly matches what the printer can print. It is close, but not exact. However, when text does not appear on a paper printout the way you want it, it may not be solely because screen and printer resolutions do not match. That is where the finer points of word processing come in.

When you type text in a word processor like MacWrite or the ClarisWorks word processing environment, text automatically wraps at the end of a line. You do not have to hit the return key to have your text flow to the next line, unless you want to put text on separate lines. The text you type is automatically contained within the margins. This feature is known as text wrap. Sometimes, you want to bypass text wrap to create special effects in your documents. For example, in the flyer announcement illustrated in Figure 1, you would want specific words on specific lines, with the whole thing centered between the right and left margins of the page.

To center text, you first type each line, hitting return at the place where you want each line to end. Then you select (also known as highlight) the text. Lastly, you have to tell the application to center the text between the right and left margins of the page. To do this, while the text is selected, click on the center alignment tool in the ruler. (See Figures 1 and 2.)

The centering text example above illustrates all the basic things that need to happen when you are formatting your text in a word processing environment. First you type, then you boss your text around.

To get really fancy, you have tabs. Once you get acquainted with these, you can really boss your text around.

Why computers replaced typewriters

To format documents on an old manual typewriter, you would slide the tab markers into place on the machine itself, and each time you typed a carriage return, the little bell would ding, then when you hit the tab key, the carriage would go to that spot where you set the tab marker. On your computer, tabs are a little more powerful. You have four kinds of tab, instead of just one. In fact, without being aware of tabs, you may even be tempted to use multiple spaces to simulate those neat and tidy tabs of the typewriter. The issue with using spaces instead of tabs to align text is that spaces and character sizes are not always uniform for most fonts or typefaces. You will want to stick with tabs to create uniform alignment in your word processing documents.

Tabs vs. spaces

It is important to understand the difference between using tabs and spaces to format documents. On an old manual typewriter, each character takes up the same space. The letter "i" takes up the same space across the page as the letter "w" would. On your computer, through the use of fonts, characters on the screen are more professionally spaced, the way that they would appear in a book or magazine. This is referred to as proportional spacing. This means that letters are automatically spaced on a page in proportion to the particular character. Therefore, an "i" gets less horizontal space than a "w" would. Take a close look at the word shown below and notice that each character gets a different amount of space.

If you used spaces to align text blocks typed in the same typeface, things might look close-to-aligned using spaces on the screen, but when they print, they will be out of alignment. (See Figure 3.) How does this relate to tabs? Well, if you use spaces to format a page, the spaces would not be equal to a particular number of characters. Five spaces does not automatically equal five characters because the characters are different widths. Also, because of variation in font size and style, changing the font may not improve alignment. Therefore, if you want to align something on a page, use tabs or the alignment tools, not spaces typed with the space bar. Tabs are a fixed distance from the margin and the alignment tools format the text as a block, regardless of the font. (See Figure 3a.)

As with most things, there are exceptions to this. Two standard fonts, Courier and Monaco, ship with the Macintosh computer. They are what is known as monospaced fonts. They behave exactly like text produced on a typewriter. Each character is exactly the same width. A space is exactly the same width as one character. Here is the same word we used earlier displayed this time in the Courier font. Notice how each character takes up the same amount of horizontal space.

Because these fonts are monospaced, they tend to look unattractive when printed. However, the advantage to using a monospaced font is that it

lets you use spaces to align your text, because all characters take up the same amount of space. In other words, with a monospaced font, a row of 12 periods measures the same amount of space as 12 capital W's. You cannot get the same result with proportionally spaced fonts, such as Times.

Tabs to the rescue

Tabs can apply to just one line or they can apply to the whole document. Once you learn the basics about tabs, You will never again be tempted to use spaces to format your text in your word processor.

There are four different kinds of tabs available to you in MacWrite Pro and ClarisWorks. These tools are located in the upper left hand corner of your screen. They are the four triangles below the ruler. The tab symbols are shown in Figure 3b.

When setting tabs in ClarisWorks 2.0 or later and MacWrite Pro, you can use the Show Invisibles command to show exactly where the tabs and spaces are placed in a document. Tabs appear as non-printing arrows that point to the right and spaces appear as non-printing dots. To show these invisibles, hold down the Command key and hit the semi-colon. To turn this off, hold down the Command key and type a semi-colon again. The great thing about all of this is that it allows documents to have multiple tab settings within a document, so that you can have a table or a specially formatted section for emphasis in special areas of your document. (See Figures 4 through 7.)

The Left Align Tab

The Left Align tab tool is used to align the left sides of the lines in a text block. The heavy black bar on the triangle is on the left side. By default, each new document opens with Left Tabs preset at half-inch increments (they do not appear on the Ruler Bar). Figure 4 shows an example of text aligning at a tab set to 1.75 inches in MacWrite Pro.

The Center Align Tab

The Center Align tab tool is for centering the block of text you type at the center marked by this tool. Figure 5 shows how text blocks of varying lengths are centered using this tab.

The Right Align Tab

The Right Align tab takes the blocks of text you type and aligns them on their right edges. Figure 6 shows an example of Right tabs in action.

The Align On Tab

The Align On tab is used in conjunction with a character you specify (typically a decimal point). When you use this tab, you can align a block of text you type so that it aligns at a specified character where you placed the tab on the Ruler Bar. This is most often used with listings of currency or numbers with decimal values. Figure 7 shows an example of currency figures that align at a decimal point that corresponds to the Align On tab triangle set at two inches from the left margin.

Setting tabs

Remember, you first have to select the text you want to work with, then choose the tab you want. If you want to apply a custom tab setup to a block of text, highlight the text first, then place the tabs in the ruler. To place the tabs, simply click and drag one of these tab triangles and place it along the Ruler Bar where you want your text to align. If you set the tabs before highlighting a block of text, the computer will think that everything after the tab setting should be set this new way. It would not change the existing parts of the document unless you tell it to do so by highlighting the text first, then setting your tab.

Do not forget that you can update tab positions by highlighting the appropriate text and moving a little triangle tab marker icon along the Ruler Bar.

Getting fancy with tabs

Now that you know more about tabs, there are some fancy things you may want to try with your new tab knowledge.

Create a tab leader

Tab leaders are fill characters between tabs. You have probably seen tab leaders in a table of contents section in a book, where you have a topic, then a page number, with a dotted line between the two. (See Figure 8.) Note: To create a table of contents in a MacWrite Pro document, you can use the Table of Contents feature instead of tabs.

To create a tab leader in either MacWrite Pro or ClarisWorks, follow these steps:

1. In your document, set your tabs using the above techniques. In the example, a Left Tab is used.
2. Select the block of text that contains tabs.
3. Double-click on the tab icon indicated for that block of text. (In Figure 8, the tab is set to seven inches.)
4. In the Tab dialog box that appears, select the fill character. (See Figure 9.) The text that has tabs will now have tab leaders as shown in Figure 8.

The same steps can be used in MacWrite Pro, but the Tab dialog box is different in that you can specify any tab fill character. (See Figure 10.)

Bossing your text around

Formatting your text with tabs, you are on your way to having great looking documents. Simple alignment tasks can be achieved using the four kinds of tabs that are available in MacWrite Pro and ClarisWorks. Have fun bossing your text around!

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ClarisDraw 1.0 Datasheet

The versatile new Macintosh drawing standard

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Are you looking for a drawing program versatile and smart enough to speed you through all your different graphics tasks? Introducing ClarisDraw™ software the innovative, new version of MacDraw* that lets you quickly and easily produce everything from simple maps and diagrams to free-form drawings and complex space plans. Its unequaled breadth of drawing, painting and presentation tools makes it easy to create virtually any graphic you can visualize. And thanks to its intuitive design and revolutionary graphics intelligence, you do not have to be a graphics expert to get the great looking results you want.

ClarisDraw makes it easy to master any graphic task, offering all the advanced drawing tools you need to create compelling, professional-quality graphics. But that is just the beginning. You also get a wealth of powerful painting and image editing tools, advanced text handling, and presentation capabilities. And floating palettes give you one-click access to dramatic effects like shadows, embossing, colors, gradients, and fill patterns.

Best of all, ClarisDraw has intelligent features that help you quickly produce sensational, accurate results. Its smart graphics tools eliminate the guesswork of traditional graphics programs automatically maintaining alignment, size and connections between objects. The PointGuide™ and Guideliner™ features ensure precise results. And the drag-and-drop professional library puts thousands of high-resolution pictures, maps and design elements at your fingertips.

ClarisDraw also maximizes your productivity by offering seamless graphics compatibility with industry standard file formats including MacDraw II and MacDraw Pro. And its underlying Claris Graphics Engine allows you to transparently share files with the new ClarisImpact™ software for Macintosh and Windows.

Turn to the versatile new standard for fast, flexible and precise Macintosh graphics.
Breakthrough graphics intelligence and integrated drawing, painting, image editing and presentation tools save you time and effort creating professional-quality signs, maps, diagrams, free-form drawings, brochures, flyers and more.

Create powerful presentations in any format.
Communicate your work clearly with slides, handouts, or overhead transparencies. QuickTime movies and special transition effects even let you create stunning on-screen slide shows that get your points across with impact.

Work smart and ensure accuracy.
Produce complex technical diagrams and space plans quickly and precisely with intelligent drawing tools like SmartAlign and PointGuide. Drag-and-drop SmartSymbol libraries of maps, elements and architectural art guarantee that creating graphics from scratch has never been easier.

Master any graphics task.
Beziers, polygons and other powerful tools let you create even the most elaborate drawing. Add your choice of colors, fills, gradients and shadows for dramatic results.

Produce sophisticated layouts in minutes.
Full color painting, image editing effects and advanced text handling features, including linked frames and text wrap, let you produce dazzling posters, flyers and brochures without the help of a designer.

Powerful New Features Include
- Comprehensive drawing tools, colors, fills, shadows and gradients to handle any drawing task
- Full color painting and dazzling image editing effects to enhance drawings and scanned images
- Built-in presentation capability, including Apple QuickTime support and special transition effects, for eye-catching slide shows
- Advanced text handling, to ensure professional layouts for flyers, posters and more
- Drag-and-drop SmartSymbol™ library feature to speed graphics creation
- PointGuide™ and Guideliner™ features guarantee pinpoint accuracy
- Shapes tool to quickly and easily create arrows, plus signs and other common objects of any size or direction
- SmartAlign™, SmartConnector™ and SmartSize™ features to automatically maintain relative object size, alignment and connections
- Industry-standard file format support that provides seamless graphics exchange with other applications
- Microsoft Windows version available in the future

Features and Benefits

ClarisDraw Has The Versatility to Handle Any Task

Comprehensive Drawing Tools
Create professional-looking graphics with tools for lines, rectangles, ovals, arcs, customizable regular polygons, beziers,

notes, and more.

Floating Palettes
Quickly access 64 customizable fill patterns, 64 gradient fills, 256 colors and your choice of line patterns and widths using palettes you can place anywhere on screen.

SmartSymbol Library
Quickly produce compelling graphics with thousands of professionally-designed, high-resolution maps, figures, form elements and architectural art. Just drag and drop elements onto the page.

Full Color Painting
Produce dazzling 24-bit paint images with millions of colors using paintbrush, bucket, spray can and other tools.

Image Editing Effects
Edit paint objects and scanned images for stunning graphic effects using tint, darkness, blend, distortion, shearing, and perspective.

Text to Curve and Object Binding
Achieve dramatic visual results with text curved or bound to any object you specify.

Presentation Special Effects
Create and deliver eye-catching presentations using transition effects including fades, loops, automatic advance, and background colors.

QuickTime Support
Give your presentations greater impact with QuickTime video and sound clips.

Outlines
Add lists and bullet points to any drawing or presentation with built-in outlining.

Linked Text Frames
Speed the layout of flyers and signs by automatically flowing text across frames placed anywhere on the page.

Text Wrap
Wrap text automatically around any graphic shape to produce posters and brochures that get noticed.

Text Styles
Save frequently-used text styles with font, size, and other settings you specify.

Smart Tools Take the Guesswork Out of Drawing
SmartSymbol Manager
Save time and effort using drag-and-drop objects from the included libraries or those you create. Cloned objects can be automatically updated when you change the original.

Shapes Tool
Instantly place arrows, symbols and other eye-grabbing objects of any size or direction anywhere in your drawing.

SmartSize
Automatically maintain the height and width of all specified objects, and instantly update all objects by resizing just one.

SmartAlign
Automatically maintain alignment and spacing (top, bottom, center, left or right)
of graphic objects and text even as they
are moved.

SmartConnector
Create straight or angled lines that stay permanently connected to objects, even when the objects are moved.

SmartShadows
Add depth to any object by applying customizable shadowing effects.

SmartEmbossing
Add a dazzling embossed effect to objects and text with a click of the mouse.

Precision Ensures the Highest Quality Results

PointGuide and Guideliner

Instantly locate mid-points, end-points and object centers to ensure precision placement of lines and objects.

Direct Object Size Editing
View and edit object dimensions, length and angle of rotation for flawless drawing precision.

Precision at Any Scale
Ensure your drawings match high-resolution printed output exactly with precision zooming, object scaling and rotation, and accuracy of over 2300 dpi.

Flexible Document Configuration
Tackle even the most complex drawings with unlimited layers and document sizes as large as 100" by 100."

Full Compatibility for Seamless Graphics Exchange

Robust Graphics Import/Export
Exchange graphics with other users and programs via industry standard graphics file formats, including EPS, CGM, PICT, MacDraw II, MacDraw Pro, and MacPaint*.

Claris Graphics Engine
Maximize your graphics investment by sharing files directly with ClarisImpact.

Printer Support
- Apple LaserWriter, Personal LaserWriter, and ImageWriter families, and Apple StyleWriter
- Hewlett-Packard LaserJet, DeskWriter, and PaintWriter families
- A wide variety of other Macintosh-compatible, third-party printers

Graphics File Formats Supported
- EPSF
- TIFF
- PICT and PICT2
- CGM
- MacDraw II, MacDraw Pro
- MacPaint
- QuickTime Movie

Also from Claris, ClarisImpact!
From timelines and calendars to flow charts and organizational charts, ClarisImpact™ lets you breeze through the structured business graphics you need to create, update and present most. ClarisImpact the complete business graphics manager.

Required Equipment
- Apple Macintosh Plus, Centris, Classic, LC, SE, Performa, PowerBook, II or Quadra family computer
- Hard disk drive and 2 MB memory
- 4 MB required for Apple System 7 and System 7 Pro
- System software 6.0.7 or later, System 7 or System 7 Pro
- Apple System 7 required for Publish and Subscribe, Apple Balloon Help and other System 7 features

Claris* is a leading worldwide vendor of Macintosh and Windows software. With all Claris applications you get the high-quality support and documentation you deserve.

For more information and the location of a Claris reseller near you.

Claris Corporation
5201 Patrick Henry Drive
Box 58168
Santa Clara, CA 95052-8168

Claris Canada, Inc.
3 Church Street, Suite 402
Toronto, Ontario
M5E 1M2

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ClarisImpact 1.0 Datasheet

The complete business graphics manager.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Now there is an entirely new way to create and manage business graphics. In a single intuitive program, ClarisImpact®software seamlessly integrates a broad spectrum of pre-designed business charting and diagraming tools, revolutionary editing capabilities, and full word processing and presentation features. This unique combination makes it easy to create, edit and customize professional-looking organization, data, flow, timeline and table charts in a fraction of the time required with traditional approaches.

Everything You Need to Get the Job Done

- Design dazzling graphics, reports, presentations and drawings without expert assistance.
- Create business charts and graphs automatically with pre-designed chart models for org charts, flow charts, data charts, timelines, calendars, and more.
- Choose from comprehensive, professionally-designed style options to instantly create the look you want.
- Edit Smart graphics and text directly in your final documents so you do not lose detail or resolution.
- Produce finished reports and slide shows with built-in word processing and presentation capabilities.
- Import and export information created in popular graphics, charting and word processing programs.
- Microsoft Windows version available in the future.

No other program makes it so easy to create business graphics. Instead of starting from scratch, you simply select the diagram model you need and enter the information. Then ClarisImpact automatically creates the entire graphic with the pre-designed style of your choice! So now you do not have to be a graphic designer to get great looking graphics.

Editing is fast and efficient, thanks to the intelligence built into every graphic. When you need to move, resize, or change an object, ClarisImpact automatically adjusts the proper alignment, spacing and connections. If you want to change the graphic look of an entire chart or individual chart element, you simply select a new look from a list of pre-defined, customizable style options. And because ClarisImpact includes a full set of drawing tools, you can always manage even the smallest graphic detail.

When it is time to communicate these graphics, only ClarisImpact provides fully integrated word processing and presentation capabilities. So you can edit graphics directly in your final presentation or word processing documents, and save time not having to move graphics and data between multiple applications.

ClarisImpact it is the only program you will ever need to create and communicate high-impact business graphics from start to finish.

Features and Benefits

All-In-One Business Graphics Solution

Automatic Graphic Creation
Instantly create perfectly-aligned and proportioned business graphics using any of 7 basic models available in ClarisImpact.

Complete Charting and Graphics Capabilities
Eliminate the need for multiple business graphics utilities. Each model has the capabilities found in dedicated applications.

Pre-defined Styles
Create your own look or select from an extensive collection of pre-defined styles to give all your business graphics a unified, professional presence.

Organization Chart Model Reflects Your Business Structure

Organization Chart Tools
Enter names, titles and other relevant information to create professional-looking organization charts in seconds.

Fast Reorganization
Reflect changes to your organization by simply adding and deleting boxes, or clicking and dragging from one location to another connections and alignment are automatically updated.

Extensive Format Options
Exercise complete format control, including orientation, distribution and spacing of management, peers, and subordinates.

Timeline and Calendar Models Manage Projects and Time

Standard Timeline Features
Create Gantt charts or timelines to track project start and completion dates, durations, milestones, dependencies, critical paths, etc.

Customizable Timelines
Customize timelines, enhancing bars and milestone markers with color, shades and size options, or with symbols and images.

Timeline Task Reorganization
Simply click and drag to reorganize tasks all data and graphics adjust automatically.

Monthly or Yearly Calendars
Create and combine calendars to show events from personal travel to group meetings.

Unique Calendar Design Options
Produce eye-catching calendars with day and text styles like banners and symbols to show special days.

Outline Model Helps Organize and Present Ideas

Complete Style Selection
Organize ideas with any of 12 outline styles including bullet and check box. Set text style, labels and indents by levels.

Easy Outline Editing Features
Change outline sequence by simply clicking and dragging text.

Data Chart and Table Models Compare Your Data

Multiple Data Chart Types
Access a complete selection of data charts: bar, line, scatter, hi-lo, pie, pictograms, and more even mix chart types in a single graph or add 3D and shadow effects.

Quick and Easy Table Creation
Turn comparative text and numeric data into eye-catching tables. Customize grid lines, formatting and justification even automatic cell width and height control.

Row and Column Reordering
Simply click and drag rows or columns to reorder data.

Full Display Control
Customize axes, legend, line styles and data display to emphasize information even set numerical display for percent, decimal, currency and more.

Data Import Support
Save time by importing data from your favorite spreadsheet or database program.

Chart Model Lets You Picture Any Process

Comprehensive Flow Chart Capabilities
Simply point and click to chart the steps of any process, resulting in a clean, crisp flow chart that is easy to follow.

Standard Symbols
Use ANSI-standard process and flow chart symbols and computer network symbols provided, or customize and create your own.

Connector Options
Add emphasis to your diagram by applying different spacing, direction, or color to key connectors.

Built-in Graphics Intelligence Always Available

Smart Graphics
Automatically retain element alignment, spacing, and proportions when editing or scaling charts and graphics.

Smart Line Routing
Maintain connections between elements even when they move! SmartConnector[a] lines automatically route around other elements to ensure clear presentation.

Flexible Data Entry

TA43266_ClarisImpact_Datasheet.pdf

Enter or import information into data tables that transform into professional-looking charts with one click.

Easy Editing
Edit text and values directly on charts or through data tables for quick, clean revisions to your document. Edits are instantly reflected so your work is always current.

Produce business graphics in a wide variety of sizes, shapes and formats.
From impressive overheads and slides to professional reports and documents, to crisp single-page timelines, calendars and wall charts, ClarisImpact lets you deliver your message in the format that will get it noticed.

Share valuable information from other programs, producing results that get noticed!
Read and write data, text and graphics from business applications such as MacWrite*, MacDraw*, FileMaker*, Microsoft Word, Microsoft Excel, and many popular charting programs.

Custom design your documents with a wealth of drawing tools and graphics.
Personalize documents down to the last detail like adding a company logo or creating a department identity using the integrated graphic tools. The clip art library contains thousands of professionally-designed symbols, graphics and high-impact artwork simply drag and drop art into position.

Presentations that are sure to make an impression!
Create powerful online presentations including transition effects, QuickTime movies and multimedia support, and automatic sequential builds. Complete formatting control ensures that all titles, text and graphics placement are consistent throughout your presentation.

Create visually appealing reports in a snap!
With complete word processing capabilities built-in, you do not need any other product to create professional-looking documents. Specify margins, columns, tabs, spacing, and more even enjoy text wrap, footnotes, and spell checking.

Printer Support
- Apple LaserWriter, Personal LaserWriter, and ImageWriter families, and Apple StyleWriter
- Hewlett-Packard LaserJet, DeskWriter, and PaintWriter families
- A wide variety of other Macintosh-compatible, third-party printers

File Format Support
- EPSF (import & export)
- TIFF (import)
- PICT and PICT2 (import & export)
- CGM (import & export)
- MacDraw II, MacDraw Pro (import & export)
- MacPaint* (import)
- QuickTime Movie (import)
- DIF (import)
- GIF (import)
- Microsoft Excel 3.0 (import)
- MacWrite II (import)
- Microsoft Word 3.0, 4.0, 5.0 (import & export)
- RTF (import & export)
- SYLK (import)
- ClarisWorks 1.0, 2.0 word processing and drawing (import)

Also from Claris, ClarisDraw!
Now you can quickly produce everything from simple free-form drawings to complex diagrams with ClarisDraw[a] software. It offers a breadth of drawing, painting and presentation tools that makes it easy to create virtually any graphic you can visualize. ClarisDraw the new Macintosh graphics standard.

Required Equipment
- Apple Macintosh Plus, Centris, Classic, LC, SE, Performa, PowerBook, II, Quadra family computer or Power Macintosh
- Hard disk drive and 2 MB memory
- 4 MB required for System 7
- 8 MB required for Power Macintosh
- System software 6.0.7 or later, System 7, or
System 7 Pro

For more information and the location of a Claris reseller near you.

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New Documents Display "Page Setup" Alert When Printing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Every time a new document is sent to print the message "You have changed your current printer Please choose"Page Setup", but this is a new document and it seems curious that this message would come up.

Reason: The "OPTIONS" file for this application was set while another printer was chosen.

To fix this, create a new document go to page setup and set it for the new, current printer then save the document as a Options/Stationery document as per the instructions for your program.
If looking for this information in your manual, look under Stationery-default in the Index.
Published Date: Feb 18, 2012

Amiga Graphics: Transferring them to the Macintosh (5/94)

A customer wants to transfer DigiPaint (HAM format) and Professional Draw (some type of encapsulated PostScript) files from an Amiga 2500 series computer to the Macintosh (I don't think they care what format). Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
There are a few possibilities that they can investigate. The first is the encapsulated PostScript route. If they can generate these files, there are a number of applications on the Macintosh that can read these files, including Illustrator, FreeHand, and a shareware product called Vision Lab. From these, you can generate PICT files. If they want to use bitmap graphics, DeBabelizer or Adobe PhotoShop on the Macintosh can translate HAM and Amiga IFF graphic files.

On the Amiga, you can use any of programs that store files in either GIF or JPEG. A few of these Utilities are V-Lab, Image-FX, and Art Department. You could then use an application on the Macintosh, such as the shareware programs Giffer, or JPEGView to generate PICT files.

Article Change History:
9 May 1994 - Updated article to include new utilities on both the Amiga and Macintosh.

Support Information Services
Published Date: Feb 18, 2012

New and Better Help Systems

New and better help is always a click away. Claris Organizer, ClarisWorks 3.0, ClarisDraw and ClarisImpact usher in new help systems.

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Until 1994, Claris products shipped with simple black & white, HyperCard-based help systems. The help screen was sized for small monitors, and could not be expanded. The majority of information about a product was contained in the bulky manuals. Onscreen help was available as a reference, but it wasn't meant to be used in place of the manual. Fortunately, those days are over, and new, improved help systems are here to stay.

The dawn of a new help system

Claris products shipping since 1994 include a new help environment with enhanced features for ease-of-use. Product information is now primarily onscreen, and the manual has been established as a smaller reference.

Opening the new help system, you will notice two differences from older help systems:

- Information is written as full pages of text, rather than as a fixed window size. The help window can be resized, so that the text flows into the available space.

- Headings and topics are displayed in blue text and underlined for identifying key words easily.

The help window

Figure 1 shows the new help window displaying the topic "Shearing an image." The window can be stretched wider and taller, if desired, using the Zoom and Size boxes. On large screens, you can show your document plus the help scrUntil 1994, Claris products shipped with simple black & white, HyperCard-based help systems. The help screen was sized for small monitors, and could not be expanded. The majority of information about a product was contained in the bulky manuals. Onscreen help was available as a reference, but it wasn't meant to be used in place of the manual. Fortunately, those days are over, and new, improved help systems are here to stay.

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- Headings and topics are displayed in blue text and underlined for identifying key words easily.

The help window

Figure 1 shows the new help window displaying the topic "Shearing an image." The window can be stretched wider and taller, if desired, using the Zoom and Size boxes. On large screens, you can show your document plus the help screen at the same time without overlapping the windows. This is a great benefit in that you will not need to print the steps or write them down in order to follow them.

When reading about a topic, you can easily pick out words that are further explained elsewhere in the help. By clicking on a word with a dotted underline and holding down the mouse button, you can expand a description balloon about that word. By clicking on a bold word with a solid underline, you can advance to help on that specific topic. In Figure 1, for example, you could quickly move to the related topics: "Adding perspective," "Distorting an image," and "Selecting an image." The help system makes this easy by supplying special links to other topics.

[See Figure 2 for a sample of the Help System icons. * Ed.]

- Contents button

The Contents screen is a good starting point while you are learning to use the software. You can find overviews of the product's features, and learn how to navigate the help
window.

The Contents portion of the onscreen help is reached in various ways:

- Selecting Contents from the help menu in ClarisWorks 3.0 or in the ClarisDraw application
- Clicking the Contents button within the help screen for all four programs
- Selecting "Help..." under the Apple menu in ClarisImpact, ClarisWorks 3.0, or Claris Organizer

Once you are viewing the Contents screen, all four products offer a choice to see "How to Use Help" (for ClarisImpact, this is called "About Help"). In the contents screen of all but Claris Organizer, you can also jump to a Glossary of terms, a listing of Keyboard Shortcuts, or tips on troubleshooting.

- Keyword button
The Keyword button allows you to see an alphabetical index of terms and topics. This feature is invaluable if you do not know the term used to describe a feature. For example, you may know you want to create some default settings in all future ClarisWorks 3.0 documents, but you don't know the term the program uses. Searching through Keywords, you will come across "defaults." This generates a list of topics including "Save document formatting." After clicking on that topic, you can read the topic and check for related information. One of the underlined titles for further reading is "Create stationery for all new documents." Clicking that title brings you to step-by-step directions for setting up default documents.

- Searching for Words
Using the Search for Help On... in ClarisWorks 3.0, or the magnifying glass search button in any product, you can search by specific words. The help window displays the search results as a list of topics whose text contains your search word. When you click an underlined topic, instances of the term you searched for will be highlighted in the text of that topic. This will draw your attention to paragraphs
relevant to your search.

- Taking notes
As you read the help listing for a subject, you may find that you have your own notes to add. Clicking the note button opens a screen for your personal notes. You can take notes only within topics, so the Notes button is unavailable when viewing lists such as the Keyword list.

When you add a note, a new icon will appear to remind you a note is present in the specific topic.

The "pencil" icon appears next to a topic name to indicate that a personal note is added.

To delete your notes on a topic, click the pencil button to reveal your notes, then delete the text of your note; the pencil icon disappears, indicating that there are no more personal notes for this topic.

- Sharing your notes with others
Your notes are stored in your System Folder. You can display your notes on a colleague's computer by copying the notes file to your colleague's System Folder. Follow these steps on the Macintosh:

1. Copy your Help.note file to a diskette. This file is called ClarisDraw Help.note for ClarisDraw, ClarisWorks Help.note for ClarisWorks 3.0 etc. It is found in your System Folder, inside the folder called Claris.
2. Ask your colleague if any personal notes have been added. If saving personal notes is desired, place your colleague's Help.note file onto another diskette. Notes can be restored any time by placing this note file back in the Claris folder.
3. Copy your notes file from your diskette into your colleague's Claris folder.

The next time your colleague launches the program, there will be full access to your notes. This is useful for annotating instructions for colleagues who aren't as familiar with the programs.

- Topics A-Z button
Clicking on the Topics A-Z button takes you to a view of the alphabet. Here, you can click on a letter to see an alphabetical listing of the help topics that start with that letter. This is similar to browsing the index of a book. However, the difference here is that you can click on a topic to see information about it instantly. When you already know the title of a topic, this can help you quickly move to that topic. The list can also be browsed for items of interest.

The Topics A-Z button can be found on the Contents screen and on the How to Use Help screen in ClarisWorks 3.0 and ClarisDraw. In Claris Organizer, the Topics A-Z button is on the Claris Organizer Basics screen, plus the opening screen. There is no Topics A-Z button in ClarisImpact.

- Return to previous topic
As you are reading about topics, you may decide you landed in a subject in which you're not interested. You can quickly return to the list or topic you saw last by clicking the Previous Topic button.

- Navigation buttons
If you advance to a topic and a navigation button is available (not grayed out), you can scan forward or backward through related topics. This will save the time of returning to a previous topic in order to select another underlined topic.

Help is always a click away

With the development of this new help system, Claris has provided a powerful new tool to assist you in becoming more productive with your Claris products. The resizeable window allows you to size the help screen so that it is comfortable for you. The different ways of searching for information help you streamline the process of moving from related topic to related topic. And, best of all, you can now enter your own notes about a topic right in the Help system itself!

Help Screen Differences in ClarisWorks for Windows.

The Claris Help system for ClarisWorks for Windows operates almost the same as for Macintosh. The new and enhanced features that make the Help system more user-friendly and intuitive assist you in becoming more productive. The few differences are listed below.

- Contents

By choosing Contents from the Help menu you get a general listing of ClarisWorks topics which are available for browsing. When your cursor touches one of the topics (titled in green), it becomes a "pointer." By clicking once on a topic with the pointer it will bring you to more de-tailed information about the selected subject.

- Search for help by topic or key word

When you are not sure what topic to look up, choose "Search for Help on..." under the Help menu. In the resulting Help window that appears, you get a list of all the different topics that have associations with the word you typed in the first search screen. Scan the items in this list and double-click on a topic to find the set of step-by-step instructions associated with the task. If you need additional related information, you can choose from any of the related topics listed at the end of the instructions. Any word highlighted in green letters can be clicked on to get a brief, more descriptive explanation of that highlighted word or term.

- Annotate (Taking Notes)

As in the Macintosh version of the Help system, you can "take notes" at just about any time while you are in the help system. Click on Edit from the ClarisWorks Help menu bar and select Annotate to access the note system. Unfortunately, the notes system is not available when searching for Keywords. However, if notes already exist or when they are added, an icon in the shape of a small green paper clip will appear as the first character at the beginning of the topic's paragraph to indicate that there are notes for that specific topic.
To delete a note, simply click on Edit, Annotate, and highlight the portion of the text to be deleted then click on Delete, then OK. The entire contents of your notes can be deleted by clicking directly on delete and then OK.

- Back

The Back button is similar to the Return to Previous Topic button in the Macintosh version. You can click on the Back button to bring you backward one screen at a time.

- Bookmark

One feature not available in the Macintosh version of the Help system is the Bookmark (click Bookmark from the ClarisWorks Help menu bar). It can be a very useful tool. For example, it enables you to go directly to a particular screen that contains step-by-step directions on how to perform a fairly complex procedure that you may use frequently. Or, perhaps you may choose to set a bookmark for a screen you refer to often, thereby saving yourself the need to click through five submenus in order to get to it. Bookmarks can be created almost anywhere in the help window, except when in the Searching on Keywords Help screen. To create a Bookmark from any other help screen, you just click on Bookmark from the menu bar, choose Define, type a Bookmark name that will help you remember the place you want to keep. "Printing Labels," for example, may be a good name for a Bookmark. Click OK to save the Bookmark name. The Bookmark is then saved and added to the list in alphabetical order.

To recall your Bookmark, click on Bookmark from the menu bar, and all your bookmarks appear in chronological order with the most recent one added being listed at the bottom of the drop-down list. To delete a Bookmark name, click on Bookmark, select define, highlight the Bookmark name that you want to delete by clicking once on the name from the list, click on the Delete button, and click OK when finished.
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To recall your Bookmark, click on Bookmark from the menu bar, and all your bookmarks appear in chronological order with the most recent one added being listed at the bottom of the drop-down list. To delete a Bookmark name, click on Bookmark, select define, highlight the Bookmark name that you want to delete by clicking once on the name from the list, click on the Delete button, and click OK when finished.
Published Date: Feb 18, 2012

Tabs Skipped After Hanging Indent

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisDraw has a issue with tabs following hanging indents in a text frame that do not have some text entered at the tab. To reproduce the issue, follow these steps:

1. Turn on Text Ruler
2. Create a text frame that extends from 1" to 7.5".
3. Hold down the option key and move the right margin indicator (the sideways triangle on the left side of the ruler) to the 2" marker.
4. Place a left align tab at 2.25".
5. Place a right align tab at 7.25".
6. Press the tab key and type in the number 1.
7. Press the tab key and type in "SomeText"
8. Press the tab key and type in "RightSide"
9. Press the return key.

We are now on the second line of your text frame. We want to add some more descriptive text below "SomeText" without putting in a new line number.

10. Press the tab key. This takes you to the hanging indent.
11. Press the tab key again. Gee, what happened to the cursor?

The cursor has jumped to the right align tab on the right side of the page. Please note that the type of tab is not important, it just skips the first tab after the hanging indent.

The workaround is to enter a <space> after pressing the tab key to get to the hanging indent in step 10.

This issue does not occur in ClarisImpact or ClarisWorks.
Published Date: Feb 18, 2012

Paint Frames and Text Rotate When You Edit Them

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ClarisDraw allows you to rotate most objects, including text and paint frames. However, the moment you double-click either of these types of objects to edit them, the will immediately snap to zero rotation - in other words, they revert while being edited to the rotation they had when you first created them. For text, that would be completely horizontal; for paint frames, that would be whatever rotation the paint frame had when it was created or placed in the document.

This feature is not "switchable" - it is always in effect. This can cause an issue if the orientation that makes it easiest to edit the image is different from the image's original orientation, or if you are working with scanned images, whose original orientation may not be straight up and down: every time you double-click to edit the image, it will rotate to its original orientation. For that reason, it's much better to start out right by scanning the image with the orientation set to the one you will ultimately want in your finished document.

Published Date: Feb 18, 2012

Claris Announces ClarisWorks 4.0 For Macintosh And Windows

Powerful word processing and database features, time-saving automation, and ease-of-use enhance upgrade of best-selling Macintosh application

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SANTA CLARA, Calif. May 30, 1995 Claris Corporation, a leading worldwide vendor of Windows and Macintosh software for business, education and home, today announced ClarisWorks 4.0, the smartest, all-in-one program for Windows and Macintosh.

The best-selling Macintosh application, with almost four million users worldwide, ClarisWorks combines a powerful, all-in-one design with expert assistance and time-saving automation features in a single, easy-to-use program. From powerful new word processing capabilities like sections and stylesheets to enhanced database reporting, ClarisWorks 4.0 has the most robust set of features among all other Works programs. And new time-saving automation features such as the ExpressStyle, FastReport, or ReadyArt Libraries, will make ClarisWorks 4.0 users more productive than ever.

"ClarisWorks 4.0 builds on its unsurpassed customer satisfaction, superior integration, and compact, high-performance design to offer customers the most complete combination of award-winning, ease-of-use and robust feature set in its category," said Guerrino de Luca, president of Claris. "With its enhanced, ready-to-use feature set, expert assistance, and time-saving automation tools, ClarisWorks 4.0 is the best software value for Windows and Macintosh users at work, in school, at home, or on the road."

The newest version of this full-featured word-processer, spreadsheet, database, graphics, and presentation, productivity tool adds over 100 new features while still providing excellent performance and retaining an exceptionally compact size (1MB application size, 14MB for full installation one fifth the size of Microsoft Office on a 68K Macintosh.) And it is the only Works program with 100 percent compatible Windows and Macintosh versions.

Powerful Word Processing Capabilities

To speed the formatting and layout of longer documents common in higher education and business settings, ClarisWorks 4.0 adds a host of new word processing capabilities. Leading these is the new ExpressStyle feature that introduces a unique, universal stylesheet metaphor that provides users with the ability to instantly format virtually anything - text, paragraphs, graphics, outlines, and table styles. The floating ExpressStyle palette can be used from within any of the environments so users can easily create and edit styles without navigating cumbersome dialogs or new modes. With the ExpressStyle feature users can choose from several pre-defined styles or create their own custom styles, even share them with other documents and users in an organization.

For formatting more complex documents like reports and theses, ClarisWorks 4.0 now includes section formatting options which allow users to divide a document into separate sections of any length. Users can specify a different number of columns as well as variable column formatting, page numbering and more in each section. Section support also lets users create multiple headers and footers in a document as well as specify whether they appear on left-or-right-facing pages, or both. A new End Notes command automatically places all footnotes at the end of a document, rather than only at the bottom of each page.

Other ClarisWorks 4.0 word processing enhancements include fully integrated outlining within word processing , so users can instantly create and format an outline of any length in a document no separate "mode" is required. The text ruler itself improves usability, with pop-up access to paragraph and outline styles. New font styles superior, inferior and double underline, and Shortcut buttons for uppercase and lowercase add even more options. And ClarisWorks 4.0 now includes a Mail Merge Preview that shows users how database information looks in a merged document before printing.

Beefed-Up Database Features

Major enhancements in the ClarisWorks database help users quickly create databases, view and organize information, and produce reports. The new FastReport feature speeds data navigation and reporting, allowing users to create and save custom searches, sorts, and reports, even printing them automatically. And new buttons in the database tool area provide instant access to all of the layouts, searches, sorts and reports already defined.

ClarisWorks 4.0 adds new power and accessibility to its database with a spreadsheet-like List View, so users can read data in a simple row and column format. List View also makes it easy to manipulate data with columns that can be expanded in size or moved wherever needed. New field types speed database definition and data entry including a smart name field (which allows entry of first and last name in a single field and automatically sorts by the first letter of the last name), as well as radio buttons, check boxes, pop-up menus, record information and pre-defined value fields.

Spreadsheet and graphics enhancements include a spreadsheet Fill Special feature, providing the ability to automatically fill out spreadsheet headings in sequences of month, day, year, and quarter, as well as the ability to create cell-shading by colors and patterns. ClarisWorks 4.0 also provides free rotation capability of any object by one degree increments.

Expert Assistance and Time-Saving Automation

In addition to the new ExpressStyle and FastReport capabilities, ClarisWorks 4.0 provides expert assistance, time-saving automation and enhanced usability. Eleven ClarisWorks Assistants (three new to version 4.0) offer step-by-step guidance and expert advice on layout, design and content or help with complex tasks. The new Mail Label Assistant allows users to select from more than 50 pre-defined Avery mailing label formats, choose exactly which information and in what order to include it on the label, and have the data automatically sized to fit the label. The new Home Finance Assistant calculates net worth or even the right size mortgage or car loan based on salary input and other variables such as interest rate. And the new Certificate Assistant steps users through the process of creating awards and recognition certificates with professional-looking graphic borders, suggested text, and a designated place for a seal.

The new ReadyArt Libraries allow users to store and organize hundreds of frequently-used clip art images, including the 500 pieces of clip art that are included with ClarisWorks 4.0. Users can easily add artwork to any document by simply dragging and dropping images from the library palette or create custom art such as business logos. The ReadyArt Libraries store art as well as text, such as company taglines, and users can easily sort items alphabetically, store different categories in separate libraries, or find an item by searching for it by name.

Other usability enhancements include Automatic Balloons identifying the function of each Shortcut, and a customizable Shortcut palette that can display the name or enlarge the size of buttons. Over 30 templates for home, school and business use are also included.

Internet Authoring with HTML Translator

ClarisWorks 4.0 offers users an easy way to create and read World Wide Web documents, with a built-in HTML (Hypertext mark-Up Language) translator. With ClarisWorks 4.0, authoring a home-page on the Web is easy: simply create the document in the ClarisWorks word processor, assign text styles or hypertext links with a single-click, and then save out as HTML using the built-in translator. The ClarisWorks-created document can be viewed on the Net using any popular web browser such as NetScape or NCSA Mosaic.

Unique Cross-Platform Compatibility

Alone among all-in-one packages, ClarisWorks 4.0 delivers cross-platform compatibility for Windows and Macintosh. With the delivery of version 4.0 for Windows this fall, ClarisWorks will provide the same interface and file format for each platform. ClarisWorks 4.0 for Windows is Windows 95 ready, a full 32-bit application with Windows 95 look and feel, status bar, long-format file naming, and right mouse button support.

Macintosh users will be able to take advantage of System 7.5 capabilities including AppleScript, AppleEvents, PowerTalk, and QuickTime. ClarisWorks 4.0 is also WorldScript ready, supporting Apple Language Kits, enabling customers to integrate 2-byte characters and therefore Chinese, Korean and Japanese text into their multi-lingual documents.

The Compact, Fast and Friendly Office Alternative

With its powerful new word processing and database features, superior usability, compact design and high performance, ClarisWorks 4.0 represents a real alternative to the Microsoft Office for many users in business, education and home settings. While adding over 100 new features, ClarisWorks 4.0 maintains its significant size and performance advantage over both Microsoft Works and Office, especially on the Macintosh. (See also Figure 1.)

	ClarisWorks 4.0	MS Works 4.0	MS Office 4.0
Launch	7.5 sec	8.1 sec	13.9 sec (Word)
Create/Activate Spreadsheet in Word Processor	< 1 sec	3.1 sec	26.2 sec
Text wrap around graphic	< 1 sec	1.9 sec	11.6 sec
Scrolling (10 pg. document with table, chart, graphic)	6.2 sec	14.0 sec	56.2 sec
Document size (1 pg. letter with chart & table)	33K	50K	66K

*All tests performed on a Macintosh Quadra 660AV with 8MB RAM.

System Requirements

ClarisWorks 4.0 for Macintosh requires a Macintosh or Power PC-compatible computer running System 7 or higher with a 68020 or higher processor, a hard disk drive and 4 MB of RAM. ClarisWorks 4.0 for Windows requires a compatible PC with a 386 or higher processor, a hard disk drive, and 8 MB of RAM, VGA or better video, and Microsoft Windows 95.

Pricing and Availability

ClarisWorks 4.0 for Macintosh and Power Macintosh will be available in June for a suggested retail price of $129. ClarisWorks 4.0 for Windows will be available this fall for a suggested retail price of $99. Current users of either ClarisWorks for Macintosh or Windows can upgrade for $49.
Published Date: Feb 18, 2012

Chart Range Cannot be Changed

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This article has been archived and is no longer updated by Apple.
ClarisImpact uses the Data Chart Tool to create a chart connected to its data. This connection allows you to change data without clicking into the data table. For example, click on a bar in a bar chart, and then type a new number to change the bar. Although you clicked on a bar, the number in the data table changes.

This is a useful feature, but it creates a limitation: your chart must show all of the data in the table. If you wanted your table to show four columns of information, but you only wanted three columns charted, you would see this limitation:

In the Chart menu, select Range....
Or double-click the chart, and select the Range tab.
In the Range window, you may expect to be able to specify three columns instead of four, but the Range is fixed, unchangeable.

The solution is to separate the chart from the data. You will lose the connection between the data points and the chart elements (the click-on-a-bar example, above), but you can then specify a different chart range. You can still update the chart by changing numbers in the data table, but clicking on a chart element will not select the data cell automatically.
Published Date: Feb 18, 2012

Reference Files Used by Claris Applications

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Listed are the relationships between Claris Macintosh applications and Claris reference files. Version numbers have been cited only where necessary, and information is arranged by reference file type, then application name:

Main Dictionary
MacDraw II, MacDraw Pro; MacProject Pro; Claris Resolve; ClarisImpact, ClarisDraw; FileMaker Pro, FileMaker Pro SDK; MacWrite II, MacWrite Pro; ClarisWorks.

Thesaurus
MacWrite Pro; ClarisWorks 1.0 and above; ClarisImpact, ClarisDraw

Hyphenation
MacWrite Pro; ClarisWorks 2.1 and above.

Note:
1) FileMaker II and MacProject II do not support spell checking, autohyphenation, or thesaurus
2) MacWrite II also supports autohyphenation, but requires the original MacWrite II hyphenation file for this purpose. MacWrite II will not recognize or load the new standalone hyphenation files.
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Claris Offers Aggressive Promotional Bundle For ClarisDraw

ClarisDraw Value Pack for $199 in limited time offer -- comes bundled with ClarisImpact

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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SANTA CLARA, CALIF. -- May 8, 1995 -- In a move designed to offer tremendous value and expand the appeal of general purpose drawing software, Claris Corp. today announced the ClarisDraw Value Pack, a new promotional bundle featuring its flagship drawing program and its award-winning charting and diagraming program, ClarisImpact.

The ClarisDraw Value Pack has a promotional price of $199, compared to ClarisDraw's suggested retail price (SRP) of $399. The promotion is in effect immediately and runs through September 30, 1995.

"This pricing move is right on for ClarisDraw," said Chris LeTocq, president of industry analyst firm SoftTracks. "It puts Claris in an even stronger leadership position in the Mac drawing market. The addition of charting and diagraming capabilities from ClarisImpact offers users a compelling business graphics solution," he added.

"We've talked to our ClarisDraw customers, and they have told us they want the ability to do charting and diagraming, as well as freeform graphics, so we're responding with the ClarisDraw Value Pack," said Michael Sanabria, ClarisDraw product manager. "We are also reaching out to new buyers who may be considering higher priced and more difficult illustration applications as a way to further grow the draw category."

ClarisImpact has a current suggested promotional price of $149. Now users buying the best general drawing program in ClarisDraw can also easily create compelling business charts and diagrams with ClarisImpact.

ClarisImpact, which will be offered on CD-ROM in the box, offers users a fast and easy way to create organizational and flow charts, network diagrams, time lines, calendars and a variety of other business graphics.

About ClarisDraw

ClarisDraw provides all the drawing tools needed to create freeform art, technical illustrations, process diagrams, space planning, light desktop publishing, and can easily master virtually any graphics task. ClarisDraw's features include intelligent alignment and connection capabilities, color painting and image editing, advanced text effects, drag and drop clip art libraries, over 2,400 high quality pieces of clip art, and full compatibility with the upcoming Windows release due later this year. ClarisDraw is the ideal product for the non-artist in business and engineering who needs a versatile, reliable and easy to use graphics product.

ClarisDraw for Macintosh and Power Macintosh has won raves from users and trade magazine reviews since shipping in August of 1994. ClarisDraw's performance has sustained the dominant position Claris has in the Macintosh drawing market created with the MacDraw family of general drawing programs.

About ClarisImpact

ClarisImpact for Macintosh and Power Macintosh is the award-winning business charting and diagraming application for users interested in easily creating organizational and flow charts, network diagrams, data charts, project time lines, calendars and other business graphics.

Its intuitive interface and ability to help the non artist quickly create business graphics that look professional is a big productivity booster compared to other traditional methods of working with business graphics. Prior to ClarisImpact, users had to work with numerous applications and charting utilities, cutting and pasting graphics between their spreadsheet, utility program and word processor or presentation application. ClarisImpact streamlines this process, and allows for editing of graphics on the fly, since graphics are always live, whether in a drawing, report or presentation.

Availability

The new ClarisDraw Value Pack offer can be purchased immediately direct from Claris, through corporate resellers and retail outlets. Editors can refer interested readers to the Claris, and a variety of Internet and online forums for product information, including:

- ClarisWeb: http://www.claris.com.
- America Online, keyword: CLARIS
- CompuServe: GO CLARIS
- Claris BBS

ClarisDraw has an SRP of $399. Customers who bought ClarisDraw in April of 1995 can purchase ClarisImpact software for a minimal shipping and handling charge, direct from Claris only. Customers who purchased ClarisDraw prior to April may buy ClarisImpact for a special promotional price of $49, plus shipping and handling, also direct from Claris only.

TA43278_Claris_Offers_Aggressive_Promotional_Bundle_For_ClarisDraw.pdf

ClarisImpact has a current suggested promotional price of $149. Claris offers a variety of volume pricing agreements and discounted pricing for educational institutions.

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On Location Freezes when Trying to Index the Claris Folder

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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A user of On Location, a text search and retrieval utility, has reported that the utility freezes when it scans the Claris Translators in the Claris folder inside the System folder. The scanning is done when On Location creates an index.

Removing the Claris folder from the System folder before creating the On Location index allows the indexing to proceed successfully. The Claris folder can then be returned to the System folder.

This behavior has not been verified by Claris Technical Support. Specific version information is unknown at this time.
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Macintosh: Rocky Mountain BASIC Equivalent Needed

I use Rocky Mountain BASIC on an HP. Is there a similar package for the Macintosh?

This article has been archived and is no longer updated by Apple.
The only implementation of BASIC for the Macintosh that is remotely similar to "Rocky Mountain BASIC" for the HP9000 series is Microsoft QuickBASIC. There are numerous differences, especially considering the machine-specific details of each BASIC. Rocky Mountain BASIC uses many commands and parameters that mean nothing to computers other than HP9000 systems. Likewise, Microsoft QuickBASIC uses Macintosh-specific commands that do not exist on other computers and a command syntax in traditional Microsoft BASIC style--a style much different than that of Hewlett-Packard's BASIC.

They do share the important ability to use subprograms and functions, but the method of implementing these is quite different between the two languages. Microsoft QuickBASIC would give you a powerful BASIC. However, porting anything other than the simplest programs from Rocky Mountain BASIC will not be a trivial task. This is especially with programs that are I/O-intensive, because these tend to be the areas where the languages differ the most.

There are some definite benefits to using Microsoft QuickBASIC over HP's BASIC, like advanced debugging features (breakpoints and animated tracing for source-level debugging) and a simpler mouse interface. Users can quickly grow accustomed to the Microsoft QuickBASIC product, while Rocky Mountain BASIC has a cruder interface and takes more time to master. Of course, you are already using Rocky Mountain BASIC, so the change in programming environment will have an impact to the degree that you are familiar with Macintosh user interface conventions.

If you need additional information on Microsoft QuickBASIC, we suggest that you contact Microsoft directly. They should be able to provide more up-to-date information and could, perhaps, assist in deciding if their product will fit your requirements. For more details, search the Technical Info library under "Microsoft Corp AND WA"

We should mention that at least one company sells what is essentially a clone of Rocky Mountain BASIC for MS-DOS computers. These products provide a command set and environment that is very similar to HP's. Unfortunately, we do not know of any plans for similar products for the Macintosh. The closest would be to use one of these BASIC clones on an MS-DOS emulator, like SoftPC or Mac286--not a very elegant solution.

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ClarisWorks: About Version 4.0 Macintosh, Read Me

A complete copy of the ReadMe file from the ClarisWorks 4.0 Mac installation

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This article has been archived and is no longer updated by Apple.

WELCOME TO CLARISWORKS 4.0!

Thank you for choosing ClarisWorks 4.0. We're excited about this latest release of ClarisWorks and know that it will help you to be more productive and creative. This Read Me file documents some additional tips that may prove helpful when using ClarisWorks 4.0, including changes for users of previous versions of the program. In particular, this document provides information about:

I. New features in ClarisWorks 4.0
II. Usability and design changes in version 4.0
III. Technical notes and tips

I. NEW FEATURES IN CLARISWORKS 4.0

ClarisWorks 4.0 has over 100 new features. Almost every aspect of ClarisWorks is more powerful and easier to use, especially word processing and database. In addition, ClarisWorks 4.0 adds a host of new capabilities to assist you in your work and to automate many common, but previously complex, tasks. Some of the highlights are listed below. For more information, consult the ClarisWorks User's Guide and on screen Help.

Word Processing
- Stylesheets
- Fully integrated outlining in word processing
- Paragraph/outline styles pop-up menu in text ruler
- Sections
- Multiple headers and footers
- Left/right/facing pages
- Endnotes
- Built-in HTML translator and stationery for creating documents for the Internet
- Enhanced mail merge (to show database data in word processing documents)
- New font styles (superior, inferior, double-underline)

Database
- Automatic list view
- New field types (name, radio buttons, check boxes and more)
- Reusable searches, sorts, and reports (FastReport feature)
- Pop-up menu access to layouts, searches, sorts, and reports
- New Mailing Label Assistant

Drawing
- Drag and drop ClarisWorks ReadyArt library feature
- 500 clip art images in ClarisWorks Libraries
- Free rotation

Spreadsheet
- Fill Special (automatically fill in day, month, year, etc.)
- Cell shading

Assistance, Automation, and Usability
- New ClarisWorks Assistants, including Mailing Labels, Home Finance, and Certificate
- ExpressStyle feature: reusable, universal styles for text, paragraphs, outlines, graphics, and tables
- Four sample AppleScripts for converting batches of documents, printing batches of documents, running remote slide shows, and using FileMaker Pro data for mail merge
- Instant help (automatic balloons) for Shortcut buttons
- Display of Shortcuts by name or enlarged buttons

Macintosh Operating System Support
- AppleEvents and AppleScript support
- WorldScript support for multi-language documents
- EGO (Edit Graphic Objects) AppleEvent support, for example, for external equation editors

II. USABILITY AND DESIGN CHANGES IN VERSION 4.0

Editing Charts and Formatting Chart Elements
In previous versions of ClarisWorks, chart elements such as axes labels and legend text took their font, size and size attributes from the formatting of the cells being charted in the ClarisWorks spreadsheet. If the formatting changed, so did the chart.

In version 4.0, you can format chart elements directly. For example, to format legend text, click the legend to select it, and then use the commands in the Format menu to apply font, size, and style attributes.

Working with Stationery and Assistants: Location on Disk
In previous versions of ClarisWorks, the ClarisWorks Assistants and ClarisWorks Stationery folders were located in the Claris folder in the System Folder. When you created new documents, ClarisWorks looked in those folders for the Assistants and Stationery choices displayed in the New Document dialog box.

With ClarisWorks 4.0, the ClarisWorks Stationery, ClarisWorks Assistants, ClarisWorks Libraries, ClarisWorks Scripts, and ClarisWorks Styles folders are located in the ClarisWorks 4.0 folder, not in the Claris folder.

When you create stationery documents in version 4.0, put them in the ClarisWorks Stationery folder in the ClarisWorks 4.0 folder. Then you'll see the stationery documents as choices when you create new documents. Similarly, you may want to put libraries you create in the ClarisWorks Libraries folder so that they will be accessible when you use the Library command in the File menu.

Note: If you are using System 7.5, we recommend that you reset the location where your documents are saved.
1. From the Apple menu, choose General Controls and then Control Panels.
2. Under Documents, click "Folder which contains the application."

Working with Text Styles Created in ClarisWorks 2.0, 2.1, and 3.0
In ClarisWorks 2.0, 2.1, and 3.0, you could create reusable text styles with your favorite settings for font, size, style and text color. These text styles were added to the Style menu and assigned a Command key equivalent.

ClarisWorks 4.0 supports many different reusable styles for text, paragraphs, outlines, graphics, and tables. When you open ClarisWorks 2.0, 2.1 and 3.0 documents in ClarisWorks 4.0, all existing text styles are added to the new Stylesheet palette.

To use these styles in your converted documents:
1. Choose Show Styles from the View menu.
2. Select the text you want to format using an existing style.
3. In the Stylesheet palette, click the name of the style that you want to apply to the selected text.

Working with Mail Merge
Because of file format changes in ClarisWorks 4.0, you need to update the field variables in merge documents created in previous versions of ClarisWorks.

Note: Field variables (for example, <<address>>) are database field names surrounded by the delimiter symbols << and >>. A merge document is a ClarisWorks document, such as a form letter, that contains field variables.

To update your merge document:
1. Open the merge document and then choose Mail Merge from the File menu.
2. In the New Document dialog box, navigate to and select the ClarisWorks database document that contains the fields you want to merge, and then click Open.
3. In the merge document, select the first field variable. Be sure to include its surrounding delimiters.
4. In the Mail Merge palette, select a field from the Field Names list and click Insert Field.
5. Repeat Steps 3 and 4 for each field in the merge document.
6. Save the merge document by choosing Save from the File menu.

III. TECHNICAL NOTES AND TIPS
Using Documents Created in ClarisWorks 2.0, 2.1, and 3.0
ClarisWorks 4.0 has a different file format than ClarisWorks 2.0, 2.1, and 3.0 (which used the same file format).

When you open version 1.0, 2.0, 2.1 and 3.0 files in ClarisWorks 4.0, you will see the message "This document was created by a previous version of ClarisWorks. A copy will be opened and '[v4.0]' will be added to the filename."

To replace your ClarisWorks 1.0, 2.0, 2.1, or 3.0 files with ClarisWorks 4.0 versions, choose Save or Save As from the File menu, remove [v4.0] from the file name, and click Yes when ClarisWorks asks if you want to replace the existing file. If you are converting a number of files to the 4.0 file format, you can turn off the warning and the [v4.0] filename suffix by choosing Preferences from the Edit menu and deselecting "Old Version Alert" and "[v4.0] Suffix."

Note: Because of changes in ClarisWorks 4.0 to support WorldScript, you may need to reformat some documents that you have converted from previous versions of ClarisWorks.

Important: At this time, ClarisWorks 4.0v1 reads files from earlier versions of the product but it does not save (write) them in the earlier version. Once you save a file in 4.0 format, older versions of ClarisWorks can't open it. If you want to preserve the original document, rename converted documents when you save changes.

Using ClarisWorks 3.0 and 4.0 on the Same Macintosh
Some users may want to have both versions 3.0 and 4.0 on their Macintosh*. (You might choose to do this if others in your organization have older versions of ClarisWorks.) Keep in mind that:

- ClarisWorks versions 4.0, 2.0, 2.1 and 3.0 all use the same "creator," so the desktop documents icons for documents created in older versions of ClarisWorks will look the same as the desktop document icons of documents created in version 4.0.

- For the same reason, the ClarisWorks 3.0 application will show the version 4.0 application icon on the desktop.

- ClarisWorks 3.0 uses Assistants and Stationery stored in the Claris folder in the System folder, while ClarisWorks version 4.0 uses the Assistants and Stationery stored in the ClarisWorks 4.0 folder. See "Working with Stationery and Assistants: Location on Disk" in Section II for details.

Sharing Files with ClarisWorks 4.0 for Windows
ClarisWorks 4.0 for Macintosh has the same file format, user interface, and features as the upcoming ClarisWorks 4.0 for Windows. ClarisWorks 4.0 for Macintosh also opens files created in ClarisWorks for Windows versions 1.0 and 3.0 and converts the files to version 4.0 format. When ClarisWorks 4.0 for Windows is available, you will be able to create a ClarisWorks document on Windows and edit it on a Macintosh computer or vice versa. Consequently, if you work with both Macintosh and Windows versions of ClarisWorks, or if you collaborate with colleagues who use ClarisWorks 4.0 for Windows, you can work without translating files or learning a different program.

Due to differences between Macintosh and Windows platforms, you must use a file transfer program such as PC Exchange, AccessPC, or a similar utility to transfer files via floppy disk. These utilities require that your Macintosh have a high density drive (FDHD SuperDrive). Follow the directions in the documentation of the file transfer utility program. After copying the files to or from a PC-formatted disk, rename the files with DOS-compatible filenames (8 characters or less) and include the .CWK extension.

After renaming your files, you can copy them to your computer's hard drive and open them as you would any ClarisWorks document.

Fonts, margins, page breaks, and graphics may look different after they are transferred from the Macintosh. You can minimize unintended font changes by using TrueType fonts on both platforms. Helvetica on the Macintosh converts well to Arial on Windows, and Times converts well to Times New Roman. To restore the original page breaks, you may need to change the margins and page breaks. QuickTime movies will be converted to PICT images. Some macros created on the Macintosh may not run as expected on Windows. In these cases, you'll need to recreate those macros.

Editing Documents Created with the ClarisWorks Assistants
Some documents created using the ClarisWorks Assistants or provided as Stationery files contain objects that are locked or grouped. (Locking and grouping keeps text and graphics objects in position and prevents accidental edits.)

To unlock and ungroup objects so you can move or edit them:
1. If the Arrow tool isn't selected, click it, and then select the object.
2. Choose Unlock or Ungroup from the Arrange menu. If an object is both locked and grouped, first unlock it and then ungroup it.

To edit a text object, click the Text tool and then click the text you want to edit.

Adjusting ClarisWorks Memory
In most cases, the preset memory allocation is adequate for working on ClarisWorks documents. However, if you are working with large Paint documents, very long documents, or if you have several large documents open at the same time, you may see the message "Not enough memory to complete this operation" or "The document has been reduced to fit the available memory." These messages mean that you need to increase the amount of memory set aside for ClarisWorks. Increasing the memory allocation may also reduce the time it takes to print some documents.

To increase the memory allocation for ClarisWorks:
1. If ClarisWorks is open, quit the application.
2. Open the folder that contains the ClarisWorks 4.0 application.
3. Click the ClarisWorks application icon once. (If you click the icon twice, you will start ClarisWorks. If that happens, choose Quit from the File menu and try again.)
4. Choose Get Info from the File menu.
5. Double-click the Preferred Size box.
6. Type a larger number to increase the memory size. If your computer has 4 MB, try 2000. On computers with 5 MB or more, try adding 1000 MB or more to the Preferred size.
7. Close the ClarisWorks Info window.

TA43281_ClarisWorks_About_Version_Macintosh_Read_Me.pdf

Running the Introduction to ClarisWorks

If you try to run the Introduction to ClarisWorks on a computer with a monitor set to Thousands or Millions of colors, you may see the message, "Not enough memory to run MacroMind Player." Either free some memory by resetting your Monitors Control Panel to 256 colors, or increase the memory for the Introduction to ClarisWorks file using the instructions in the previous section, "Adjusting ClarisWorks Memory."

Printing on a LaserWriter IIg/IIf

If the horizontal or vertical lines in your documents are not printing correctly, you can adjust your LaserWriter.

1. Open the LaserWriter Utility application on the LaserWriter disk tools disk that came with your printer.
2. Choose Set PhotoGrade[a] from the Utilities Menu.
3. Move the slider all the way to the left towards the More Levels of Gray option.
4. Quit the LaserWriter Utility application.

Using the Sample AppleScripts

Version 4.0 includes four sample AppleScript scripts that illustrate the use of AppleScript to automate ClarisWorks functions. The four AppleScript scripts are located in the ClarisWorks Scripts folder in the ClarisWorks 4.0 folder:

- Convert Documents (converts multiple non-ClarisWorks files, or files created in earlier versions of ClarisWorks, to ClarisWorks 4.0 format)
- Print Documents (prints multiple ClarisWorks documents)
- Mail Merge (merge FileMaker Pro database data into ClarisWorks documents)
- Remote Slide Show (runs ClarisWorks slide shows from remote Macintosh)

For more information on these scripts, consult the About the AppleScripts document stored in the ClarisWorks Scripts folder. For more information on the Apple Events supported by ClarisWorks 4.0, consult the ClarisWorks Apple Events List document in the ClarisWorks Scripts folder. (The document assumes familiarity with Apple Events and AppleScript.)

Note: AppleScript is provided with System 7 Pro and System 7.5. If you're using System 7.0 and 7.1, AppleScript is available from Apple Computer Inc. The Mail Merge and Remote Slide Show scripts require AppleScript version 1.1.

Using the HTML Translator for Creating Documents for the Internet

ClarisWorks 4.0 includes a translator for converting ClarisWorks word processing documents into HTML files, the format commonly used for documents that can be browsed on the Internet World Wide Web. For more information on using the HTML translator, see the document HTML Primer in the ClarisWorks 4.0 Folder.

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AppleEvents in ClarisWorks 4.0

The complete listing, with descriptions, of AppleEvents in CW 4.0

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Required Suite: Terms that every application should support

open: Open the specified object(s)
open alias-- list of objects to open

print: Print the specified object(s)
print alias-- list of objects to print

quit: Quit application
quit

run: Sent to an application when it is double-clicked
run

Standard Suite Subset: Standard Definitions

close: Close an object
close item-- the object to close
[saving yes/no/ask]-- Specifies whether or not changes should be saved before closing
[saving in alias]-- the file in which to save the object
[as type class]-- the type of file in which to save the document
[using string]-- the name of the XTND translator to use to save the document

open: Open the specified object(s)
open alias-- list of objects to open
[using string]-- the name of the XTND translator to use to open the file
[as DR/WP/SS/DB/PT/CM]-- the type of document as which to open the file

print: Print the specified object(s)
print alias-- list of objects to print
[merge alias]-- list of database files to merge

[one copy boolean]-- print one copy without displaying the print dialog?

quit: Quit application
quit
[saving yes/no/ask]-- specifies whether to save currently open documents

save: Save a document
save document-- the document to save
[in alias]-- the file in which to save the document
[as type class]-- the type of file in which to save the document
[using string]-- the name of the XTND translator to use to save the document

Class application: An application program
Elements:
document by numeric index, by name, as a range of elements
window by numeric index, by name, as a range of elements
Properties:
current slide slide [r/o] -- the current slide being displayed in a slide show

Class document: an open document

Class window: a window

Miscellaneous Standards Subset: Miscellaneous definitions

cut: Cut the current selection to the clipboard

cut

copy: Copy the current selection to the clipboard
copy

paste: Paste from the clipboard to the current selection
paste

do script: Execute the specified macro

do script anything-- the name of the macro to run

do menu: select a menu item and perform its action
do menu menu item-- the menu item to be selected

Class menu: A menu
Plural form:
menus
Elements:
menu item by numeric index, by name, as a range of elements
Properties:
name string [r/o]-- the name of the menu
ID small integer [r/o]-- the menuÕs ID

Class menu item: A menu item
Plural form:
menu items
Properties:
name string [r/o]-- the name of the menu
index integer [r/o]-- the menu item number

ClarisWorks Suite: Definitions specific to ClarisWorks

start slides: Start the slide show for the current document
start slides

stop slides: Stop the slide show, returning to the normal application state
stop slides

display: Go to a specific slide
display slide -- the slide to be displayed

Class slide: A slide which may be displayed in the slide show
Plural form: slides

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Claris Ships ClarisWorks 4.0 For Macintosh And Power Macintosh

"ClarisWorks 4.0 makes everything even easier to do. It's that simple," say beta testers.

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SANTA CLARA, Calif. -- June 14, 1995 -- ClarisWorks 4.0, the number one, best-selling all-in-one software for Macintosh, is now shipping and available from authorized Claris resellers across the U.S. and directly from Claris Corporation. ClarisWorks 4.0 for Windows 95 will be available this fall.

With almost four million users worldwide, ClarisWorks 4.0 is the smartest all-in-one program for business, education and home, combining a powerful, compact design with expert assistance and time-saving automation features in a single, easy-to-use program. From powerful new word processing capabilities like sections and stylesheets to enhanced database reporting, ClarisWorks 4.0 has the most robust set of features among all-in-one programs.

"The ClarisWorks 4.0 ready-to-use focus is designed so that users can begin working immediately," said Chris LeTocq, principal of SoftTracks, a Los Altos, Calif.-based market research firm. "And saving time is the number one priority of small business and home office users."

Expert Assistance and Time-Saving Automation

ClarisWorks 4.0 provides expert assistance, time-saving automation and enhanced usability enabling ClarisWorks 4.0 users to be more productive than ever. Three new ClarisWorks Assistants (Mail Label, Home Finance, and Certificate -- eleven total Assistants) offer step-by-step guidance and expert advice on document layout, design and content or help with complex tasks. New time-saving automation features include: ExpressStyle[a], which redefines the stylesheet metaphor enabling users to instantly format not only text and paragraphs, but also graphics, outlines and tables; FastReport[a], to automate searching, sorting, and reporting of frequently used data; and ReadyArt[a] Libraries, so users can store and organize hundreds of frequently-used clip art images (500 clip art images included with ClarisWorks 4.0.)

Arthur Dechene, a new home sales manager in Austin, Texas uses ClarisWorks at home and in the office. "The new ClarisWorks automation features are real time-savers. I really like the ExpressStyle feature because now I can instantly format outlines, regular text, paragraphs or whatever. The spreadsheet Fill Special feature also helps speed me through my work. Now with just one command, the month, date and year are automatically put into the spreadsheet."

"The Certificate Assistant is a great feature for schools because now instead of buying certificates we can easily create them ourselves," said Jan Clough, speech therapist for the Modoc County Office of Education in California. "The Mail Label Assistant is also terrific because if you don't have time to do the layout, you can just put the information in and the labels are automatically made for you."

Sharon Gray, a computer lab manager and teacher's aid at the Hawkins Elementary School in Hawkins, Texas uses ClarisWorks at school, at home and for her husband's construction business. "ClarisWorks 4.0 makes everything even easier to do. I really like the drag-and-drop ReadyArt libraries because you can store and manage all your graphics right there. You just select the graphic you want and insert it. It's that simple."

Powerful New Word-Processing and Database Features

To speed the formatting and layout of longer documents common in higher education and business settings, ClarisWorks 4.0 adds a host of new word processing capabilities, including ExpressStyle (universal stylesheets), sections, multiple headers and footers, left-and-right-facing pages, end notes, integrated outlining, new font styles, and mail merge preview.

ClarisWorks 4.0 adds new power and accessibility to its database with the new FastReport feature for custom searching, sorting, and reporting, and a spreadsheet-like List View so users can read data in a simple row and column format. Other database enhancements, such as the smart name field (one field for first and last name which automatically sorts by the first letter of the last name) and new radio buttons, check boxes, and pop-up menus, let users access and use information much more efficiently.

"I'm really impressed with the powerful new database features in ClarisWorks 4.0 like List View and the new tool panel buttons," said entrepreneur Norm Gulkis, owner of Pro-Mark Inc., whose company produces trade shows for the gift souvenir and novelty industry. "List View makes my job easier by doing all the formatting for me when I need to print a list of customers. The new FastReport feature also saves a lot of time because I can do everything right on screen and then save the criteria. I may have 10 different report formats and now all I have to do is click on the box, pick out the report I want and then print."

Internet Authoring with HTML Translator

ClarisWorks 4.0 offers users an easy way to create and read World Wide Web documents, with a built-in HTML (Hypertext Mark-up Language) translator.

Phil Biggs, instructional technology coordinator for the Greeley/Evans School District in Weld County, Colorado said, "I'm really excited about the built-in HTML translator in ClarisWorks 4.0. Many schools are starting their own web sites and need an easy way to create World Wide Web documents. The ClarisWorks HTML capability is awesome and will really be a big draw for our schools."

Unique Cross-Platform Compatibility

Alone among all-in-one packages, ClarisWorks 4.0 delivers cross-platform compatibility for Windows and Macintosh. With the delivery of version 4.0 for Windows 95 this fall, ClarisWorks will provide the same interface and file format for each platform. Macintosh users will be able to take advantage of System 7.5 capabilities including AppleScript (four sample scripts are included), AppleEvents, PowerTalk, and QuickTime. ClarisWorks 4.0 for Macintosh is also WorldScript ready, supporting Apple Language Kits, enabling customers to integrate 2-byte characters and therefore Chinese, Korean and Japanese text into their multi-lingual documents.

The Compact, Fast and Friendly Office Alternative

With its powerful new word processing and database features, superior usability, compact design and high performance, ClarisWorks 4.0 represents a real alternative to the Microsoft Office for many users in business, education and home settings. While adding over 100 new features, ClarisWorks 4.0 maintains its significant advantage in compact size and performance over both Microsoft Works and Office, especially on the Macintosh.

System Requirements

ClarisWorks 4.0 for Macintosh requires a Macintosh or Power PC-compatible computer running System 7 or higher with a 68020 or higher processor, a hard disk drive and 4 MB of RAM.

Pricing and Availability

ClarisWorks 4.0 for Macintosh and Power Macintosh is available now from authorized Claris resellers in the U.S. for a suggested retail price of $129. ClarisWorks 4.0 for Windows 95 will be available this fall for a suggested retail price of $99. Current users of either ClarisWorks for Macintosh or Windows can upgrade for $49.
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ClarisWorks 4.0 Disk Contents (Macintosh) and Installation Guide

An itemized list of the disk files for ClarisWorks 4.0 for the Macintosh and where they will be installed on your hard drive.

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This article has been archived and is no longer updated by Apple.
The ClarisWorks 4.0 High Density Disk Set for the Macintosh (a total of 6 disks) contains the following items. File sizes of individual items are approximate. These are compressed files and will be uncompressed during the installation process.

Disk 1
Install ClarisWorks (1336K)
ClarisWorks 4.0 Read Me (24K)

Disk 2
Install ClarisWorks.2 (1344K)

Disk 3
Install ClarisWorks.3 (1344K)

Disk 4
Install ClarisWorks.4 (1344K)

Disk 5
Install ClarisWorks.5 (1344K)

Disk 6
Install ClarisWorks.6 (504K)

You will need approximately 18.6 MB of free space on your hard drive to do an Easy Install. When doing an Easy Install, the contents of the disk set will be installed onto the hard disk as itemized below.

At the root (main) level of your hard drive:
ClarisWorks 4.0 folder (folder)
ClarisWorks (952K)
ClarisWorks 4.0 Read Me (26K)
ClarisWorks Assistants (folder)
Address List (230K)
Calendar (60K)
Certificate (230K)
Create Labels (85K)

Envelope (34K)
Find Document (60K)
Footnote (43K)
Home Finance (136K)
Newsletter (570K)
Presentation (332K)
Registrar (170K)
Table (26K)
ClarisWorks Libraries (folder)
Arrows (77K)
Balloons (17K)
Business Images (153K)
Common Symbols (85K)
Community (306K)
Computers (68K)
Education (26K)
Events & Holidays (502K)
Flags (187K)
Foods (111K)
Globes (43K)
Hands (17K)

Road Signs - USA (60K)
Shape bursts (60K)
Stars (60K)
Tools (60K)
Transportation (68K)
USA Maps (128K)
Weather (85K)

World Maps (485K)
ClarisWorks Scripts (folder)
About the AppleScripts (43K)
ClarisWorks AppleEvents List (51K)
Convert Documents (17K)
Mail Merge (374K)
Print Documents (17K)
Remote Slide Show (315K)
ClarisWorks Stationery (folder)
Annual Report (111K)
Border (26K)
Certificate A (17K)
Certificate B (77K)
Checkbook and Ledger (102K)
Club Newsletter (43K)
Customer Newsletter (60K)
Expense Report (34K)
Family and Friends List (43K)
Fax Cover Sheet (26K)
For Sale Sign (17K)
Holiday Letter (34K)
Home Budget (43K)
In Case of Emergency (26K)
Investment Tracker (68K)

Invitation A (60K)
Invitation B (43K)
Lease vs. Purchase Analyzer (43K)
Letterhead (17K)
Meeting Agenda (26K)
Membership Database (34K)
Memorandum (17K)
Mortgage Analyzer (51K)
Music & Video Database (43K)
Notice (17K)
Personal Stationery (17K)
Press Release (26K)
Promotional Flyer (17K)
Recipes (26K)
R□sum□ A (26K)
R□sum□ B (26K)
R□sum□ Cover Letter (26K)
To-Do List (26K)
WWW [HTML] Document (17K)
ClarisWorks Styles (folder)
HTML Styles (9K)
More Table Styles (26K)
HTML Primer (60K)
Introduction to ClarisWorks (1666K)

Into the Extensions folder of your System folder:

Apple Modem Tool (170K)
Claris Kermit Tool (68K)
Serial Tool (34K)
Text Preview (9K)
Text Tool (26K)
TTY Tool (68K)

VT102 Tool (153K)
XMODEM Tool (68K)

Into the Fonts folder of your System folder:
Arial MT Cn Lt (77K)
Bodoni MT Ultra Bold (43K)
Gill Sans Condensed Bold (43K)
Klang MT (51K)
New Berolina MT (51K)
Old English Text MT (85K)
Script MT Bold (51K)

NOTE: Fonts are installed into the Fonts folder only if you are using System 7.1 or later. If you are using System 7.0.1 or earlier, these fonts may be installed elsewhere in your System folder.

Into the Claris folder of your System folder:
Claris Translators (folder)
AppleWorks (34K)
AppleWorks DB/SS (17K)
AppleWorks GS (9K)
ASCII (9K)
ClarisWorks 1.0 Text (43K)
DBF (17K)
DIF (17K)
Dyno NotePad & Acta 3.0 (9K)
EPSF PFLT (9K)
GIF (9K)
MacPaint 2.0 (9K)
MacWrite 5.0 (17K)
MacWrite II (17K)
MacWrite Pro 1.x (60K)
Microsoft Excel 3-4 (68K)

Microsoft Word 3.0 (34K)
Microsoft Word 4-5 (43K)
Microsoft Word PC (26K)
Microsoft Works 1.1 (17K)
Microsoft Works 2.0 (17K)
Microsoft Works DB/SS (17K)
Movie (9K)
PICT (9K)
RTF (26K)
SYLK (26K)
Text (9K)
TIFF (34K)
WinWord (68K)
WordPerfect 1.0.x (34K)
WordPerfect 2.x (136K)
WordPerfect PC 4.2 (26K)
WordPerfect PC 5.0 (26K)
WriteNow (34K)
WriteNow NeXT (26K)
WWW [HTML] (26K)
Claris XTND System (43K)
ClarisWorks Balloon Help (111K)
ClarisWorks Help (3689K)
ClarisWorks Labels (17K)
Colors and Gradients (folder)
16 Hues (9K)
240 Grays & 16 Colors (9K)
256 Grays (9K)
Blue/Aqua - Gradients (9K)
Cyan to Blue (9K)
Earth Tones (9K)
Finder Icon Colors (9K)

Gray - Gradients (9K)
Green/Yellow - Gradients (9K)
Pastel (9K)
Pastels (9K)

Presentation (9K)
Rainbow (9K)
Red to Yellow (9K)
Red/Purple - Gradients (9K)
Strange (9K)
Violet to Magenta (9K)
Vivid (9K)
YellowGreen/GreenBlue (9K)
QuickHelp (264K)
US English - Hyphenation (102K)
US English - Spelling (179K)
US English - Thesaurus (162K)
User Dictionary (17K)

Published Date: Feb 18, 2012

ClarisWorks 4.0 System Requirements (Macintosh)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The minimum system requirements for ClarisWorks 4.0 for Macintosh are as follows:

Macintosh or Power Macintosh with 68020 or higher processor
Hard disk drive (internal or external)
4 MB RAM
System software version 7.0 or later
Hard disk space:
minimum installation: 1 MB (Macintosh), 2 MB (Power Macintosh)
full installation: 17.5 MB

NOTE: Due to the requirement of a 68020 or higher processor, ClarisWorks 4.0 will not run on the following machines: Plus, SE, Classic, and PowerBook 100.

On page 1 of the ClarisWorks 4.0 Installation Guide, it states that System Update 3.0 is recommended for customers using System 7.1, 7.1.1, or 7.1.2 and that System 7 tune-up version 1.1.1 is recommended if you are using System 7.0 or 7.0.1. This information is intended only as helpful advice, relating to the general use of your Macintosh computer.

The tune-up addresses many system-level issues relating to memory, file storage, speed and printing which could affect any of the programs you use on your Macintosh. Similarly, the System Update 3.0 provides system-level improvements to increase overall system performance and reliability on most Macintosh models.

Both of these updates are designed by Apple Computer to improve the functioning of your computer at the system level. They are not required to operate your computer or to run ClarisWorks.

These updates can be obtained at Apple Software Updates online. Please contact Apple Computer regarding further information.
Published Date: Feb 18, 2012

Disk Error Messages During Installation

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
An alert may appear during installation that says "A disk error occurred while reading from the disk. Please contact technical support for help. IO Error (Bad Disk)" . Here's what you can do to try to fix the issue, before ordering replacement disks.

1. Fixing a damaged Desktop file
The desktop file on the floppy disk may be damaged or unreadable. To rebuild the desktop, first drag the floppy disk icon to the trash, so that it's icon is not visible on the computer screen. Hold down the option and command keys and insert the disk. You'll see an alert that says "Are you sure you want to rebuild the desktop." Release the keys on the keyboard and click OK.
Repeat this for the remaining installation disks. Then try installing again.

2. Try copying the floppy disk to the hard drive. (Drag the floppy disk icon onto the hard drive icon). The contents of the floppy will be copied to a new folder, with the same name as the floppy. Then copy the contents of this folder to a new disk (open the folder and drag the contents; don't drag the folder itself). Rename the new disk to the same name as the folder. Then reinstall using the new disk in place of the bad one.

3. Try running Norton Disk Doctor on the floppy disk to repair it.

4. If the disk is unreadable or you can't copy it to the hard drive, try step #2 above on a different computer. The disk may be readable on another computer.

5. Try a custom installation to install just the application, instead of an Easy Install. (In the installer window, click on Easy Install and select Custom Install). If that works, try a Custom Install of another item, such as the Help files. Try installing each item, one at a time, from the Custom Install window.
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Claris Announces ClarisImpact 2.0 For Windows And Macintosh, about version 2.0, Press Release

Claris storms Windows business diagraming market with most complete, easy-to-use charting and diagraming application

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
PC EXPO, New York -- June 20, 1995 -- Claris Corporation today announced ClarisImpact 2.0, bringing Windows and Macintosh users the broadest range of quality business graphics for all their charting and diagraming needs. ClarisImpact 2.0 is in full beta-testing and on schedule to ship to U.S. resellers in August with a suggested retail price (SRP) of $129.

ClarisImpact 2.0 lets users automatically create connected diagrams (organizational charts, flow charts, computer diagrams, brainstorm charts, total quality management charts and more), project time lines, calendars, data charts, and freeform graphics in one easy-to-use application. ClarisImpact 2.0 for Windows is a 32-bit application ready for Windows 95, and the Macintosh version is native for Power Macintosh, providing great performance on both systems.

"ClarisImpact 2.0 will lead the business diagraming category for ease-of-use, breadth of chart types, speed of task completion, and cross-platform compatibility," said Guerrino De Luca, president of Claris. "We're very excited to be the only cross-platform charting solution for our many customers who work in mixed computing environments.

New to ClarisImpact 2.0 are brand-new styles providing users with professionally designed art for creating the best looking graphics in color or black and white, whether in text-based reports, on-screen presentations or overhead transparencies.

Also new to ClarisImpact 2.0 is DataDraw, which instantly creates graphics from any tab or comma separated data in a database or spreadsheet. For example, ClarisImpact 2.0 can take records from a human resources database and automatically generate an organizational chart. Or a spreadsheet used for managing project dates can be instantly turned into a time line for at-a-glance updates. ClarisImpact 2.0 will ship with DataDraw templates for FileMaker Pro databases and Microsoft Excel spreadsheets to automate the process.

ClarisImpact 2.0: Easier, faster than drag-and-drop

ClarisImpact 2.0 works by using a 3-clicks and you're done approach to creating new business charts and diagrams. One mouse click for selecting the graphic the user wants to create, another click to choose a great-looking style, and a third click to complete the graphic. The user can then further edit or add data to the graphic.

ClarisImpact 2.0 provides an immense productivity boost from the drag and drop process offered by other business charting and diagraming applications. In those applications, the user must drag each component of a graphic (such as the boxes and connectors of an organizational chart) onto the page, one at a time. Editing and tweaking the graphic can mean starting over. With ClarisImpact, global editing is as simple as choosing a different style. Move, edit or delete a single chart component, and ClarisImpact automatically reconnects and spaces the graphic.

Claris challenge: Compare ClarisImpact and VISIO

As with all Claris products, usability testing played a big part in creating ClarisImpact. But Claris went even further, and tested ClarisImpact against current Windows category leader, VISIO 3.0. ClarisImpact 1.0 and VISIO 3.0 users, and non-users, were tested on both products. The results were clear: ClarisImpact 2.0 was overwhelmingly rated easiest to use by test subjects and was, by far, the most preferred application chosen by test subjects.

"We did the internal competitive usability testing to improve ClarisImpact and encourage others to compare ClarisImpact 2.0 against the competition," said
Chris Nalls, product manager for ClarisImpact. "We know we have a better solution."

The tasks were real world in nature, and included creating and editing organizational charts, project time lines and flow charts. A complete summary of the usability test results is available from Claris Public Relations .

A compatible add-on for suite users

ClarisImpact 2.0 is a perfect add-on to suite offerings, such as Microsoft Office. Its built-in XTND translation engine allows for importing most major application formats, including several versions of Microsoft Word, Excel, PowerPoint, WordPerfect and any text or tab and comma-separated data. And ClarisImpact 2.0 can import or export standard Windows and Macintosh graphics formats as well.

For companies or users who are not suite-based, ClarisImpact provides presentation functionality tightly integrated with the charting and diagraming features. For computer slide shows, over 50 transition effects such as fades, wipes and dissolves, a light table for easy rearranging of slides, an integrated outliner and great background templates for color, black and white and transparencies make communicating easy. A full-featured word processing environment makes it easy to create text-based documents with compelling charts and diagrams.

ClarisImpact 2.0 pricing and availability

ClarisImpact 2.0 is scheduled to ship in August for both Windows and Macintosh (and native for Power Macintosh) for a suggested retail price (SRP) of $129, with an anticipated street price around $99. Upgrades are $59; trade-ups from other graphics products, FileMaker Pro and ClarisWorks are $69.

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Adjusting Line Spacing by Changing Character Size

Typically, line spacing can only be adjusted in half line increments. If you want more control over line spacing you can use the font size of a space character to change the line spacing.

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This article has been archived and is no longer updated by Apple.
In most programs line spacing can only be changed in half line increments. In ClarisWorks, line spacing can also be changed by manipulating the font size on each line. To change the line spacing this way, select the last space on a line and increase it's font size. As the font size is increased, the line spacing will increase to accommodate the larger font. Note that if a space character is chosen that is between two words but not at the end of the line, those two words will be separated differently than the other words so this is not recommended.

Note: This process should only be used after all text has been entered. Changes made to the text after font sizes have been changed could result in the space character, used to adjust the spacing, being moved to a different line. This would result in one of the lines not having the adjusted spacing.

If the program has a search and replace that also changes the font size and type, then a global search and replace can be done to change all spaces to the same font size and type. This will result in the same word spacing throughout the document. By changing the font being used to a narrower version of a larger font, the same thing can be done without changing the word spacing. The gap between the words with line spacing set to 1.5 is 0.16 inches verses character spacing set to 13 points space character is 0.14 inches.

Example: type some text using Helvetica 12 pt. with 1.5 line spacing. The text will look like this:

Sample Text for line spacing using space character font size. Sample Text for line spacing using space character font size. Sample Text for line spacing using space character font size.

Change the last space characters to 18 point Helvetica. The text will look like this:

Sample Text for line spacing using space character font size. Sample Text for line spacing using space character font size. Sample Text for line spacing using space character font size.
Published Date: Feb 18, 2012

Text Clippings Do Not Work in ClarisWorks 4.0 For Macintosh

ClarisWorks 3.0 and 4.0 both have a limited ability to use the System 7.5 drag and drop technology.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
System 7.5 has a feature called drag and drop. If an application program supports the feature you can drag items instead of the more conventional copy and paste. For example, you can click on a picture in the 7.5 Scrapbook and drop it onto the Desktop (to create a picture clipping) or into a drag and drop aware application.

You can only drag items INTO ClarisWorks 3.0.

Text (clippings, or selected text from a drag and drop application) can be dropped in.
Pictures can be dropped in.
QuickTime movies can be dropped in.
Sounds cannot be dropped in.

ClarisWorks 3.0 and 4.0 both have a limited ability to use the system 7.5 drag and drop technology. In ClarisWorks 3.0 you can drop both a text clipping as well as a text document either into a WP document or into a text frame. However, in 4.0, there is no longer the ability to drop a text clipping into any environment. If you try to drop a text clipping, the text clipping simply returns to the desktop without inserting.

Text documents, QuickTime movies, and PICT's function the same way in both versions.
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Translators Included With ClarisImpact 2.0 for Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is a list of translation formats supported by ClarisImpact 2.0 for Windows:

Import (Open/Read)

Text-Based and Proprietary Formats:
ClarisWorks files (Up to but not including ClarisWorks 4.0)
ClarisWorks Templates (Up to but not including ClarisWorks 4.0)
Word for DOS
Word for Windows
WordPerfect
Lotus 123 (wks, wk1, wk2)
Excel
ASCII Text
DBF
DIF
RTF
SYLK

Graphics Formats:
CGM
Bitmap (bmp, dib, rle)
EPS
MacDraw Pro
Macintosh PICT (pct)
MacPaint
AVI
WMF
TIF
Paintbrush (pcc, pcx)

Export (Write/Save As)

Text-Based and Proprietary Formats:
Word for DOS
Word for Windows
WordPerfect
RTF
TXT

Graphics Formats:
CGM
WMF
PICT (pct)
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Using Apple Display Cards With NTSC Monitors

I want to use the Display Card 4/8 or 8/24 with an NTSC Monitor. Do you know of any Apple or third-party cables? Or do you have pinout information that will help?

This article has been archived and is no longer updated by Apple.
The pinouts, sense-pin configuration, and data characteristics are listed below. After determining the pinouts of the monitor to which you plan to connect the video card, you can check the pinouts of Apple cables (posted on AppleLink) or third-party cables to see if one will work or if one must be made.

The Macintosh Display Card 8/24GC supports any display that meets one of the following specifications:

Sense pins			Hor x Vert Dot	Vert	Horiz
10	7	4	Display Pixels	Clock	Refrsh	Refrsh
0	0	1	Apple Portrait Display	640 x 870	57.2832	75	68.9
0	1	1	Apple Two-Page Monitor	1152 x 870	100	75	68.7
1	1	0	12" Apple Monochrome Monitor	640 x 480	30.24	66.7	35.0
1	1	0	13" AppleColor RGB Monitor	640 x 480	30.24	66.7	35.0
1	0	0	Interlaced Display	-	12.2727	-	-

0 - Grounded 1 - Not Connected
(Ground to pin 11, the Composite Sync and Vertical Sync Ground)

Note that sense pins 4, 7, and 10 are referred to as SENSE0, SENSE1, and SENSE2 in pinout tables for the video connectors.

None of the RasterOps or SuperMac 19-inch displays meets the above specifications. Based on this, we do not think that they will work properly.

Here are the pinouts for the Macintosh Display Card 8-24 GC:

Pin	Description
1	Red Video Ground
2	Red Video
3	Composite Sync
4	SENSE0
5	Green Video
6	Green Video Ground
7	SENSE1
8	Not Connected
9	Blue Video
10	SENSE2
11	Composite Sync and Vertical Sync Ground
12	Vertical Sync
13	Blue Video Ground
14	Horizontal Sync Ground
15	Horizontal Sync
Shell	Chassis Ground

SuperMac has announced two new monitors that work with the new Apple video cards. The first is called the "Color Two-Page Display" and the second monitor the "Platinum Two-Page Display."

TA43291_Using_Apple_Display_Cards_With_NTSC_Monitors_(TIL05649).pdf

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Update for TelePort Gold II for Performa Fax/Modems

Information from Global Village Communications about updating software for your modem if you own a Performa.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Information from Global Village Communications about updating software for your modem if you own a Performa.

The following information comes direct from Global Village Communications:
If you have a Macintosh Performa 580CD, 631CD, 640CD, 5200CD or 6116CD computer and want to use the included modem, you should update the GlobalFax software that was installed on your hard drive. You can do this by using the application called "Performa GlobalFax 2.5.2 Update." The update is available from the Global Village BBS.

The Updater application will update a copy of version 2.5.2P of the Global Village Toolbox extension to version 2.5.2P1. This Updater application automatically checks for the proper software, so it will not affect any version of the software that doesn't need the update.

You should keep the update application. If you ever reinstall your GlobalFax 2.5.2P software from your CD, you will need to run the updater again.
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ClickBook 2.1 Read Me File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Click Book Read Me
Notes for release 1.2

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ClickBook * BookMaker Corporation 1993, 1994, 1995

Hello

Thank you for purchasing the award winning ClickBook printing utility. We hope you'll enjoy using it and get hooked on printing easy-to-handle booklets!

How to print this document as a booklet

For detailed instructions, see the ClickBook help system (bring up ClickBook and click on the Help tab). In the Help Contents list, double-click on the Introduction to ClickBook topic and explore the topics.

After printing this document as a booklet, if the back sides of the sheets did not print correctly, double-click on the Solutions to Possible Problems topic and read the One side is double-exposed or upside-down! help topic.

Overview: What ClickBook does

ClickBook prints your documents -- from any Macintosh application in booklet form or other easy-to-handle formats like brochures. It prints multiple pages on both sides of a single sheet of paper. When you choose a booklet layout, ClickBook arranges the booklet pages on the printed sheets so that after you cut and bind the printout, you have a correctly paginated booklet.

You prepare your document as usual in your application program and choose print. After you click OK in the Print dialog box, ClickBook pops up.

In ClickBook, you select a layout and then click the Print button. That's all there is to it!

Recommendations for exploring ClickBook

To learn about any element (list or button, etc.) in ClickBook, you can use Balloon Help. ClickBook has a feature that allows you easily use Balloon Help. Just hold down the control and shift keys, and then point the cursor at the item that you want help for. (This also works for System 6.) This gives information such as what it does, and how to use it.
Try clicking on the layout illustration to cycle through all the available layouts.
Address book is one of our favorite layouts. It is handy for any information you'd like to carry with you in your wallet or a pocket.
Remember that your pages will shrink, so use large enough fonts to be readable in the layout you choose. For the Address book (folded) layout, we recommend at least a 20-point font for readability. We recommend using TrueType fonts, because they are fully scalable.

Note: If you have already prepared pages of the exact size you want them printed and therefore do not want ClickBook to shrink them, choose the No scaling option on the Modify Layout tab. See the Help topic Scaling for more information. (To find it, go to the Help tab and choose either Reference Information about... in the Help Contents or Scaling in the Help Index.)

About layouts

First, to discuss layouts clearly, we need a couple of definitions.
Page will mean a page according to your application's pagination of your document, which is the same as the resulting booklet page. It may end up smaller, but it will contain the same data.
Sheet will mean a sheet of paper, on which ClickBook may print several pages.

This section will be easiest to understand if you skim it once, and then reread it while looking at various layouts in the picture on the Main tab of ClickBook.

What is a layout? It is a detailed specification of how ClickBook must arrange the pages on the sheet of paper. Some of the essential details are

whether the sheet orientation is portrait or landscape, how many pages are printed across and down on one sheet, and whether to print single- or double-sided. Fine-tuning settings are also part of each layout, such as sizes of margins and binding space.

Each layout also specifies the pagination method to be used, which ClickBook must match to how you will bind the finished book. There are four general binding schemes. We call the corresponding layout types cut book, folded book, tri-fold and tiled.

The tiled layouts are designed for printing multiple pages on a sheet but not cutting the sheets. Folded books are designed for folding between facing pages, and stapling. Other methods of binding, which require cutting between facing pages, require cut book layouts. Tri-folds are single sheet brochures that are folded in thirds. Single-sided book layouts are designed for you to photocopy as double-sided, resulting in a correctly paginated double-sided booklet or brochure.

Sample files

We have included various sample files in this release for the following applications. The files are:

```
Sample Files            (Claris): version:

ClickBook ReadMe        (ClarisWorks) (ClarisWorks 4.0)
Calendar                (ClarisWorks 4.0)
Wine County             (ClarisWorks 4.0)
Industrial Davis Group  (ClarisWorks 4.0)

Sample Files            (Microsoft):   version:

ClickBook ReadMe        (Word)    (Word 4.2)
Wine County             (Word 4.2)
Industrial Davis Group  (Excel 2.0)
```

If you have any of the above applications you might want to try printing some of the sample files with ClickBook!

Note: you must have the version listed above (or later). Earlier versions use different file formats.

ClickBook's Customized Page Setup commands in popular applications
We have included the capability for a document to remember that it is a ClickBook document. If your application correctly supports Page Setup, and most applications do, then you can turn on ClickBook for specific documents. Just choose Page Setup in your application's File menu. ClickBook will add a checkbox at the bottom of the dialog. Choose to use ClickBook. If you then save your document, this setting will be saved with the document.

If your application doesn't correctly support Page Setup, all is not lost. Since there are some applications that do not, we have included a ClickBook Setup Control Panel. With this Control Panel, you can choose to always use ClickBook, never use ClickBook, or to use ClickBook through Page Setup. Just choose the always option, and then print from your application. (Do not forget to set the Control Panel back.)

Uninstalling ClickBook
Uninstalling ClickBook is a simple process. Drag the following applications and files into the trash.

1. The control panel ClickBook Setup found in the Control Panels folder.
2. The folder ClickBook Prefs Folder found in the Preferences folder (which is in the System folder) for System 7 and later. For System 6, you will find it in the System folder.
3. ClickBook (the application), which is generally located on your hard drive in the ClickBook folder.

Once you have emptied the Trash and restarted your Macintosh, ClickBook will be completely removed from your system.
Late-Breaking News
The environment in which ClickBook runs is constantly changing, but we are trying our best to keep up...

Duplex Printers:
ClickBook works great with duplexing printers (printers that can automatically print on both sides of a piece of paper). However, there is no way for ClickBook to automatically know that you have such a printer. Even if it could tell, ClickBook still could not tell if you are choosing to use the printer's duplexing capabilities. Therefore you need to specifically tell ClickBook that you want to print duplex.

To do this, go to the Modify Layout tab and choose Duplex. ClickBook now thinks that this layout is a duplex layout. You still need to tell the printer of your intention to print duplex. To do this, click the Page Setup button on the Modify Layout screen. You will be presented with two dialogs, Page Setup and Print. These dialogs will vary, according to your printer and print driver. However, somewhere in these dialogs will be an item that allows you to put your printer in duplex mode. Choose that and then click on Save in Modify Layout.

Print Driver incompatibilities

TA43293_ClickBook_Read_Me_File.pdf

There are some print drivers out there that cause ClickBook some problems. Here is some information on print drivers we know we have some problems with right now.

StyleWriter II drivers, before 1.2. (To check the version number of your driver, choose Page Setup from some application. The driver version number will be displayed near the upper-left corner.) If you have a driver older than 1.2, you may experience some clipping problems (portions of a page missing). The older versions of the driver do not handle clipping correctly in certain scaling situations. ClickBook does a lot of scaling, so this causes the problem to surface more often than normal.

LaserWriter 8 drivers. There are also some clipping problems, and as with the StyleWriter driver, they are due to scaling. (To check the version number of your driver, choose Page Setup from some application. The driver version number will be displayed near the upper-left corner.) If you are experiencing problems, try using an older LaserWriter 7.x.x driver. As of this document, LaserWriter 8.1.2 was still causing us some problems. Hopefully, future versions of the LaserWriter 8 driver will address this. (It seems that we work just fine with any flavor of LaserWriter 7 driver.)
Published Date: Feb 18, 2012

ClarisWorks 4.0 Apple Event Dictionary (All)

If you use AppleScript, here is the AETE Resource listing ?? or Apple Event Dictionary ?? for ClarisWorks 4.0. Also a brief explanation of popular AppleScript terminology is included for your reference.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Macintosh operating system (versions System 7.1 and later) has a system-level extension called AppleScript. AppleScript is an automation tool, and is a method by which you can control the behavior and functionality of specific programs. Application developers make their programs AppleScript-Savvy by adding an "AETE Resource." The AETE Resource for an application tells AppleScript what kinds of things it can do in that particular application.

There are three general levels of compatibility with Apple System resources like AppleScript: "Savvy," "Aware," and "Incompatible." If an application is described as AppleScript Savvy, it means that it has an "AETE Resource," which is the list of commands, or "Dictionary" for that application. It serves as the list of commands that AppleScript can execute in that program. If an application is described as AppleScript Aware, it means that it is fully compatible with AppleScript, and although it does not have an AETE Resource, it may support AppleScript or Apple events in a very limited way. If an application is described as being incompatible with AppleScript, it means that for some reason that program may exhibit crashes or other undesirable behavior when AppleScript is installed.

AppleScript-savvy applications like ClarisWorks 4.0 are described in three ways: "Scriptable," "Recordable," and "Attachable." ClarisWorks 4.0 contains an AETE Resource, so it is AppleScript Savvy, but it is only Scriptable, meaning that its commands must be accessed through scripting applications like Frontier, AppleScript, or even FileMaker Pro.

For an application to be Recordable, that application has to be able to send Apple events to describe what it's doing as it does things - those events can be stored by AppleScript as scripts, because AppleScript was able to "watch" them being done in the application where they were executed. Recordable applications are relatively uncommon due to the amount of programming that is required. Attachable applications allow you to attach scripts to menu selections, buttons, or other controls within the Attachable application itself.

Here is how the ClarisWorks 4.0 event dictionary appears in the AppleScript Script Editor.

Required Suite: Terms that every application should support

open: Open the specified object(s)
open alias -- list of objects to open

print: Print the specified object(s)
print alias -- list of objects to print

quit: Quit application
quit

run: Sent to an application when it is double-clicked
run

Standard Suite Subset: Standard Definitions

close: Close an object
close item -- the object to close
[saving yes/no/ask] -- Specifies whether or not changes should be saved before closing
[saving in alias] -- the file in which to save the object
[as type class] -- the type of file in which to save the document
[using string] -- the name of the XTND translator to use to save the document

open: Open the specified object(s)
open alias -- list of objects to open
[using string] -- the name of the XTND translator to use to open the file
[as DR/WP/SS/DB/PT/CM] -- the type of document as which to open the file

print: Print the specified object(s)
print alias -- list of objects to print
[merge alias] -- list of database files to merge
[one copy boolean] -- print one copy without displaying the print dialog?

quit: Quit application
quit
[saving yes/no/ask] -- specifies whether to save currently open documents

save: Save a document
save document -- the document to save
[in alias] -- the file in which to save the document
[as type class] -- the type of file in which to save the document
[using string] -- the name of the XTND translator to use to save the document

Class application: An application program
Elements:
document by numeric index, by name, as a range of elements
window by numeric index, by name, as a range of elements
Properties:
current slide slide [r/o] -- the current slide being displayed in a slide show

Class document: an open document

Class window: a window

Miscellaneous Standards Subset: Miscellaneous definitions

cut: Cut the current selection to the clipboard
cut

copy: Copy the current selection to the clipboard
copy

paste: Paste from the clipboard to the current selection
paste

do script: Execute the specified macro
do script anything -- the name of the macro to run

do menu: select a menu item and perform its action
do menu menu item -- the menu item to be selected

Class menu: A menu
Plural form:
menus
Elements:
menu item by numeric index, by name, as a range of elements
Properties:
name string [r/o] -- the name of the menu
ID small integer [r/o] -- the menuÕs ID

Class menu item: A menu item
Plural form:
menu items
Properties:
name string [r/o] -- the name of the menu
index integer [r/o] -- the menu item number

ClarisWorks Suite: Definitions specific to ClarisWorks

start slides: Start the slideshow for the current document
start slides

stop slides: Stop the slideshow, returning to the normal application state
stop slides

display: Go to a specific slide
display slide -- the slide to be displayed

Class slide: A slide which may be displayed in the slide show
Plural form:
slides
Published Date: Feb 18, 2012

Apple Modem Tool Tips

This document is included in the Support Files folder with Claris Emailer.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This document describes some tips for using the Apple Modem Tool. The Apple Modem Tool is shipped with Claris Emailer for use with America Online, and CompuServe connections via modems.

Updating the Apple Modem Tools Prefs file

The configurations for modems are stored in the Apple Modem Tool Prefs file which is stored in the Preferences folder in the System Folder. The file that normally accompanies the Apple Modem Tool has a limited set of modems. The Claris Emailer Installer installs a copy of the file with a more extensive list of files.

If, during the initial installation of Claris Emailer, you did not install the Apple Modem Tools Prefs, you can easily install the file separately.

1. Launch the Claris Emailer Installer.

2. Click Continue until you see the Installer window.

3. Select Custom Install from the pop-up menu in the upper left of the window.

4. Select Apple Modem Tool Prefs from the list.

5. Click the Install button.

6. If asked to Replace or Skip, click Replace to install the new Apple Modem Tool Prefs.

Adding or modifying a modem configuration in the Modem pop-up menu

You can add new entries to the Modem pop-up menu or modify existing entries. This allows you to create a set up for your modem that meets your specific needs.

1. In Claris Emailer, select a service that uses the Apple Comm Toolbox: either America Online or CompuServe.

2. Click the Edit button to open the Service entry.

3. Click the Configure button to display the Apple Modem Tool configuration dialog.

4. Choose Modify This Menu from the Modem pop-up menu in the Modem Options area of the dialog box for the Apple Modem Tool.

5. If modifying an existing entry, click on the modem that you would like to modify.

If you are creating a new modem entry, click on the modem that is most similar to the modem that you would like to add. Selecting the modem first creates a duplicate of that modem configuration.

6. Click the Add button to add a new configuration or click the Modify button to modify an existing entry.

7. Make the changes to the setup.

8. Click Done to save your changes and return to the Connection Settings dialog box.

9. Choose the modem definition that matches your modem from the Modem pop-up menu.

10. Click OK to save this configuration.

If your modem is not listed in the Modem pop-up menu, consider contacting the modem manufacturer to see if they have a setup file for the Apple Modem Tool.

Importing new modem configurations into the Modem pop-up menu

You can import entries into the Modem pop-up menu. Files containing modem configurations are sometimes available on online services and

directly from the modem manufacturers. Such files often have the string AMT (Apple Modem Tool) within the file name.

1. In Claris Emailer, select a service that uses the Apple Comm Toolbox: either America Online or CompuServe.

2. Click the Edit button to open the Service entry.

3. Click the Configure button to display the Apple Modem Tool configuration dialog.

4. Choose Modify This Menu from the Modem pop-up menu in the Modem Options area of the dialog box for the Apple Modem Tool.

5. To import the appropriate modem definition for your fax/modem, click the Import button and locate the modem definition file.

Once you have imported the modem definitions file, the names of the imported modem definitions appear in the list of modem definitions.

6. Click Done to save your changes and return to the Connection Settings dialog box.

7. Choose the modem definition that matches your modem from the Modem pop-up menu.

8. Click OK to save the configuration.

What to do if your modem is not listed in the list of modems

You can often use another modem type successfully. Try the following:

1. Pick a similar model. For example, if you own XYZ Modem 28.8 try XYZ Modem 14.4.

2. In the Modem pop-up, try each of the following:

Generic 2400
Generic MNP/V.32
Hayes-Compatible Modem

The above settings work with most modems but you may not get optimum performance.

3. Contact the modem manufacturer to see if they have an Apple Modem Tool setup that you can import and then use.

4. If you are comfortable configuring modem init strings, create a custom setup for your modem. Use the Custom menu item in the Modem pop-up menu.

Making the current configuration the default for all new configurations

You can set a default configuration for the Apple Modem Tool. After you have set a default configuration, each new configuration uses the default.

To make a modem configuration the default for all new connections, hold down the Option key while clicking the OK button in the Apple Modem Tool configuration.

Turning off the modem speaker

You can turn off the modem speaker by adding M0 (zero) to the modem initialization string for your modem. This takes a number of steps to set up but you only need to do it once.

Follow these steps to turn off the modem speaker:

1. Select a service that uses the Macintosh Comm Toolbox, such as America Online or CompuServe.

2. Open the Apple Modem Tool by clicking the Configure button.

3. Select the Modem pop-up menu and choose Modify this menu at the bottom of the menu.

4. Select your modem and click the Modify button to modify the modem settings. Or click the Add button to create a new copy of your modem settings.

5. Add M0 (zero) to the end of the Initialization string.

6. Save the changes.

You can use the same steps to change the volume of the speaker. Instead of using M0 (zero), use M1, M2, or M3 with M1 being the quietest and M3 being the loudest.
Published Date: Feb 18, 2012

Claris Emailer: Frequently Asked Questions (Address Book)

This is a portion of the FAQ that is included in the Support Files folder of Claris Emailer.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

- Can Claris Emailer import my Eudora, AOL, Navigator, and CIS Information Manager address books?

Yes. See the Claris Emailer User's Guide for more information on importing address books.

- How do I add someone to my address book from an incoming message?

Use the small + (plus) button next to the sender's name.

- I love using the + to add an address to the Address Book. Sometimes there is an address in the text of the message that I would like to add. Can I do that?

Yes. If you have Macintosh Drag and Drop installed, you can drag addresses from the body of any Claris Emailer message into the Address Book or onto the Address Book tab. Doing so creates a new entry in the Address Book.

The following address formats are supported:

<mailto: "John Doe" johndoe@host.com>
John Doe, johndoe@host.com
johndoe@host.com

Note that the address must be the full Internet address which contains the @ symbol.

- Why didn't the individual's address change in the group when I changed their address?

The addresses in groups are not connected to the addresses in the address book. To update a group address, you should edit the address within the group address.

- Where are the group addresses?

Group addresses are always at the bottom of the Address Book list.

- Can I put address book groups within groups?

No. Each entry in an address book group must be an address.

- Why did my address book destinations change?

The destinations are saved in a file called Destinations. If you move or delete this file, Claris Emailer creates a new one. The new one may not have the same entries as the one that was moved and your address book entries will need to be updated.

- Where do I put a company name in the Address Book?

You can use the Description field in the Address Book for anything including the company name.

- How do I find an address of a person on an online service?

To look up an address, you need to use the software that came from your online service. The best way to find someone's email address is to ask them for it. You can often save time and frustration this way. If you ask them to send you mail, you can easily add their address to your Claris Emailer address book by simply clicking on the + button next to their address on the incoming message.

- Can I put a space in an AOL address? For example, could I address a message to J Smith at AOL?

Spaces are optional in AOL screen names. For example, a screen name Jane Doe could also be written JaneDoe. When you send a message to someone at AOL via the Internet, the address cannot contain a space. Claris Emailer properly removes any spaces when sending the message.

- Does it matter if the address is in uppercase or lowercase characters? For example, does JaneDoe@host.com work as well as janedoe@host.com?

You can use either uppercase or lowercase characters in an address. None of the online services or the Internet are case sensitive.

- Why did my imported address book not have names?

Address books used by other email programs often do not store names. You need to edit these addresses after importing.

- I want to export my Address Book but groups are not exported. What can I do to save the groups?

Groups are not exported because there is not a standard for importing groups into other programs. If you have Macintosh Drag and Drop, you can easily save groups and later add them to the Address Book.

If your Finder supports Desktop Clippings, select the group and drag it to the Desktop to create a Desktop Clipping.

If your Finder does not support Desktop Clippings, select the group and drag it to any editor that supports Drag and Drop, such as SimpleText or even an outgoing Claris Emailer message.

To put a saved group back in the Address book, select the Clipping file (or list of addresses if saved as text), and drag and drop it to the Address Book or Address Book tab. You will need to enter a name and description.

- When I export my Address Book, what happens to the default address for each address book entry?

The default entry is exported as the first address. This makes importing the exported address book very easy as the first entry is used as the default address.
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TA43297_DOS_Version_and_the_Language_Card_(TIL00565).pdf

DOS: Version 3.3 and the Language Card

At power up, DOS 3.3 looks at location $E000, both on the motherboard and on the firmware card, to check which version of BASIC is available. If a Language card is present, DOS tries to jump into some random information on the card.

This article has been archived and is no longer updated by Apple.

This jump is prevented by a machinge language routine that places a $00 at $E000 on the Language card during booting. This routine is stored on the DOS diskette at track 0, sector 9, starting at byte $D3.

Published Date: Feb 18, 2012

Claris Draw: Multiple Duplication Offset Doesn‘t Work Properly

If the duplication offset doesn't work properly, it could mean that Layer 1 in your drawing is locked.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
It is often useful in ClarisDraw to be able to create a number of identical objects offset from each other in a regular way. For example, if you want a row of 1" squares separated from each other by exactly 1/4", you can create one square, select it, and choose Duplicate under the Edit Menu.

While the duplicate square is selected, you drag it into the correct offset position and duplicate it again. The second duplicate is now offset from the first by exactly the same amount and in the same direction as the first duplicate is offset from the original. If you continue duplicating the object without deselecting it, each new object is automatically offset by the correct amount and in the correct direction.

However, if Layer 1 is locked, succeeding objects do not automatically offset correctly.

To unlock Layer 1, choose <Layer Manager...> from the Layer pop-up menu found near the bottom left corner of your document window. Click on Layer 1 in the list appearing in the Layer Manager window, then uncheck the checkbox labeled "Locked."

Claris Development is aware of this issue.

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The Rules of Email

This article by Guy Kawasaki was originally published in MacWeek and is reprinted with permission.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Guy helps you brush up on your email etiquette

Much to the relief of my wife, I no longer deny that I'm obsessed with email. (She views this admission as the first step to a cure.) I receive fifty messages per day and send 100. When I check any of the five (down from seven) services that I use, and find that I don't have email, I get depressed.

My passion for email has gotten so bad that I started a company to create an email product--there is no greater inspiration for starting a company than wanting to use its product. And there is no greater inspiration for writing than to communicate information that directly impacts your life, so all you emailers out there, please observe these rules of email etiquette.

Files: Just Say No!

#1) Don't send a file unless the recipient wants it and expects it. I've gotten three-paragraph letters that were sent as files with a cover message that said, 'Please read attached letter.' Only bozos send files when they don't need to. They assume that files will be properly downloaded and that recipients have the applications to open them. Then there's the assumption that recipients want to see the GIF file of a bozo's face or a bozo's resume in QuarkXPress using Giovanni Book.

#2) Don't explain your life story--get to the bottom-line reason you're writing. Many messages start off with four long paragraphs explaining the sender's life history, starting with their Apgar score. For goodness sake, show some self confidence. You don't need to explain who you are or justify why you're writing to elicit a response. If the recipient is going to answer, he's going to answer. If not, life goes on.

#3) Describe the topic of your message in the subject area. This helps both you and your recipient. When your recipients have inboxes full of messages, they are going to make the decision about which messages to read and answer based on who sent the message and what the subject is. (In my case, for example, 'Love your books!' will always work.) The subject area is indispensable for the recipient to find a message that was filed away.

ALL CAPS: Just Say No!

#4) Never write in ALL CAPS. Text in all caps is considered screaming by savvy email users. It's okay to use for emphasis in rare instances of passion, but not for entire messages. An alternative is to put an underscore or asterisk before and after the text you wish to _emphasize_. Even if all caps wasn't considered screaming, it's simply harder, and therefore tiresome, to read.

#5) Quote the text from the incoming message in a reply. Hours, days, or even weeks can pass between the time a message is sent and a reply received. In that time, people can easily forget what they asked. For example, incoming message: 'How's the new vacuum cleaner? Answer, a few weeks later: 'It really sucks.' The convention is to place a '>' symbol or two in front of the question or comment in order to signal that this is the issue that you're addressing.

#6) Use carbon copies and blind carbon copies sparingly. Hardly anyone who gets a carbon copy or blind carbon copy message wants it. The sender thinks he's keeping people 'in the loop,' covering his assets, or intimidating someone. I often get a carbon copy of messages sent to Mike Spindler. Senders must think that Mike is going to be intimidated by the fact that I got the message too, that I will contact Mike on their behalf, or that Mike cares what I think. Dream on.

Chain Letters: Just Say No!

#7) Never create or forward 'chain-letter' email. There is nothing funny, cute, or redeeming about this practice. People who do this should lose their email accounts. However, it is okay to send copies of interesting messages and postings--for example, the hilarious press release about Microsoft buying the Roman Catholic Church--to people you know.

#8) Practice the 5 to 1 rule: for every five words in an incoming message, your reply should have one. Someone once told me that my emails are 'curt but complete.' He was trying to insult me, but I took it as praise. A lot of email is venting of emotions. It's not necessary or prudent to respond to each and every point, arguing and commenting tit for tat. A simple, 'Thanks for your comments.' is sufficient.

#9) Use signatures sparingly. Signatures are the text that people place at the end of messages. They contain information such as phone and fax numbers and company names. Some people, unfortunately, go overboard and create elaborate signatures with poetry, quotes, and ASCII art. Not that many people want to see the ASCII art rendition of your dog, so simplify your signature or don't use one at all.

The Golden Rule: Just Say So!

It's impossible to cover every situation in a column, so always remember the Golden Rule of Email: Message unto others as you would have them message unto you. If you want to be graded on your email etiquette, send me a message at MacWay@aol.com. I will tell you in advance, however, that messages in all caps, with file attachments, or with long signatures, will fail.

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Support Policy for Files Created in Beta Version of ClarisWorks

Files created in beta versions of ClarisWorks 4.0 prior to version d50 cannot be opened in versions later than d50, including the shipping version.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
A number of CSA members received a CD from Claris in early May of 1995 which contained a beta version of ClarisWorks 4.0. Due to factors encountered during the development cycle, files created or saved in this version of ClarisWorks 4.0 cannot be opened in later versions of ClarisWorks 4.0, including the certified, shipping version.

This software was distributed explicitly for evaluation purposes only and was accompanied by a letter (see below) which states: "As with any pre-release software, be sure to work with backup copies of your files as it is still possible to damage or lose data through program error. Please note that the software comes 'as is' and no technical support is provided."

As stated above, due to issues in version-to-version conversion between the various beta releases, Claris Technical Support is unable to convert any files created or saved in beta versions of ClarisWorks 4.0 to a format supported by the current shipping version.

CONFIDENTIAL PRE-RELEASED SOFTWARE

May 3, 1995

Dear ClarisWorks for Macintosh Evaluator:

Enclosed you will find a confidential pre-released version of ClarisWorks 4.0 for Macintosh, for your evaluation. As a CSA Member, you indicated an expert level in using ClarisWorks, and this software is being provided to you to view and evaluate the latest version of the best selling integrated application for the Macintosh.

This software will not be publicly announced until later this month, and under your CSA nondisclosure agreement, along with the enclosed license agreement you agree to become bound by the terms of this license.

This version of ClarisWorks has over 100 new features to help you be even more productive with your Macintosh. This package contains:
* Pre-release software
* Draft EvaluatorÕs Guide
* Quick Reference for key new features
* Evaluation survey
* Electronic help is also included in this version.

To install the software please follow these directions:
* First, please make a backup copy of the Claris folder (located in the System folder) since ClarisWorks 4.0 will add new items to your current Claris folder that will not currently work with ClarisWorks 3.0. We recommend that you name it ÔBackup ClarisÕ. Once you go back to using ClarisWorks 3.0, you should throw away the Claris folder and rename the backup copy to ÔClarisÕ.

* For CD-ROM installation: Place the CD into your CD-ROM drive. Double click on the folder named Disk 1. Double-click the Install ClarisWorks icon. Choose either the Easy Install or Custom Install and select the appropriate hard drive for installation.
*Please note that there are some placeholder items such as the README that will be in the final version, but are not included in this pre-release version.

As with any pre-release software, be sure to work with backup copies of your files as it is still possible to damage or lose data through program error. Please note that the software comes 'as is' and no technical support is provided.

Thank you for your participation in the evaluation program. Your help and input are greatly appreciated and always welcomed.

The ClarisWorks Team

Published Date: Feb 18, 2012

About ClarisWorks 4.0 Mac/Windows, Product Fact Sheet

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks 4.0 Fact Sheet
for Macintosh & Windows

Product Description:
ClarisWorks 4.0 is the smartest, all-in-one choice for business, education, and home.

The best-selling product for the Macintosh with almost four million users worldwide, ClarisWorks 4.0 provides users with powerful, all-in-one design, expert assistance, and time-saving automation features in a single, easy-to-use program. With full-featured word-processing, spreadsheet, database, graphics, and presentation capabilities, ClarisWorks 4.0 customers can create everything they need from memos to presentations, customer lists to mailing labels, letters to college term papers, flyers to invitations, home budgets to balance sheets, and family newsletters to business reports.

ClarisWorks 4.0 adds over 100 new features while still retaining an exceptionally compact size, providing lightning fast speed while requiring minimal space on a hard drive. And itÕs the only all-in-one program with Windows and Macintosh versions that are 100% compatible - identical user interface with no translation needed when sharing files across platforms.

ClarisWorks Customers:
* Small Business/Home Office Users will save time and money with only one application to buy and learn. ClarisWorks is the only general productivity tool they will need for creating letters, reports, invoices, presentations, proposals, mailing labels, customer lists, and newsletters.
* Home Users will benefit from the all-in-one design, with one application providing all the tools needed for Mom's home budget management, Dad's family newsletter, the kids' homework, and Grandma's recipe filing. The whole family will appreciate the step-by-step guidance and expert advice provided by the ClarisWorks Assistants.
* K-12 Educators will appreciate the excellent performance of ClarisWorks on the low-end Macintosh computers used most frequently in the classroom. And ClarisWorks in the Classroom and ClarisWorks for Teachers, popular add-on teaching aides available separately from Claris, make ClarisWorks the all-in-one favorite among teachers.
* Higher Education Students, Faculty and Administrators will use ClarisWorks as a one-stop productivity tool. And its outlining, full-strength word processor, end notes, research database and presentation capabilities make term paper publishing quick and easy.

* Mobile Professionals will benefit from the program's small size and fast performance. Its exclusive cross-platform compatibility allows users to easily share files with both Windows and Macintosh computers back in the office, and translate files from most other popular software programs.

Key Features and Benefits: Powerful, All-In-One Design

ClarisWorks 4.0 provides users with powerful, full-featured word-processing, spreadsheet, database, graphics, and presentation capabilities, in a single, easy-to-use program. Its seamless integration and all-in-one design allows users to switch from word-processing to spreadsheet capabilities with one click of the mouse, providing instant access to all of the program's features and the ability to combine words, graphs, tables, photo images -- and even video -- on a single page. ClarisWorks 4.0 provides all the tools users need to create everything from memos to presentations, customer lists to mailing labels, letters to college term papers, flyers to invitations, and home budgets to family newsletters.

From powerful new word processing capabilities like sections and stylesheets to enhanced database reporting, ClarisWorks 4.0 has the most robust set of features among all other Works programs making it the ideal choice for simple or complex tasks.

Expert Assistance and Time-Saving Automation
Demonstrably easy to install and use, ClarisWorks 4.0 offers step-by-step guidance and expert advice, to help users get their work done quickly. The ClarisWorks Assistants offer detailed, friendly help with layout, design and content in the automated creation of newsletters, presentations, tables, envelopes, labels, footnotes, address books and calendars.

ClarisWorks 4.0 includes three new Assistants:
* Mail Label
* Home Finance
* Certificate

ClarisWorks 4.0 also offers users many time-saving, automated features:
* 30 Stationary or sample templates for the creation of memos, letters, family address books, movie or music collection cataloging and more.
* Shortcuts provide push button access to over 170 of the most commonly used functions.

* The new ExpressStyle feature instantly formats text, paragraph, graphic, outline, and table styles. Both pre-defined and custom styles are

available; all styles are 100% editable. Users can easily create and edit styles from one palette in the same way whether itÕs tables, graphs, outlines or text.
* The new ReadyArt Libraries allow users to store and organize hundreds of frequently-used clip art images, including both ready-made clip art and custom art such as business logos.
* The new FastReport feature automates searching, sorting, and reporting of frequently used data, saving time by allowing users to create and save custom reports, sorts, and searches.

The Compact, Fast & Friendly Office Alternative
ClarisWorks 4.0 is a compact and less expensive alternative to the software suites. ClarisWorks 4.0 provides users with just the right set of features, no bloated software stuffed with features users will never need. ClarisWorks 4.0 provides lightning fast performance while requiring minimal RAM and hard disk space. It save times and money with only one application to buy and learn. AND at well under half the price of the Microsoft Office, ClarisWorks 4.0 gives users the best software value.

Uniquely Compatible Across Platforms and Products
ClarisWorks 4.0 is the only Works program that is 100% cross-platform compatible with the same interface and file format for both Windows and Macintosh. Users can easily share files created on their Macintosh at home or with the Windows PC in the office without needing to translate. And ClarisWorks users can also share files with other popular stand alone programs for DOS, Windows and Macintosh.

New Features in ClarisWorks 4.0:
Expert Assistance & Automation
* 3 New Assistants (11 total): Mail Label, Home Finance and Certificate
* ExpressStyle for formatting text, paragraphs, outlines, tables and graphics
* ReadyArt Libraries for storing hundreds of clip art images or text
* FastReport for quick database searching, sorting or custom reporting
Word Processing
* Integrated outlining in any paragraph or document
* Sections for professional-looking documents
* Multiple headers & footers
* ExpressStyle pop-up in text ruler
* Left/right facing pages
* End notes

* Mail merge preview

* New font styles (superior, inferior, double underline)
Database
* Spreadsheet-like List View for easy database viewing and manipulation
* New field types (smart name, radio buttons, check boxes, pop-up menu, serial number, value list, record info.)
* FastReport toolbar buttons for layouts, searches, sorts and reports
Spreadsheet
* Fill special (month, day, year, time, quarter, etc.)
* Cell-shading (colors & patterns)
Graphics
* Free rotation of any object (by 1 degree increments)
* 500 pieces of clip art already stored in ReadyArt Libraries
Internet Authoring
* HTML (Hypertext Mark-Up Language) translator for creation of documents for the Internet or Home Page on the World Wide Web

Mac OS Support
* AppleScript & AppleEvents support for batch printing, converting multiple documents, and sample scripts for mail merge
* WorldScript support for multi-lingual documents
Windows 95 Ready
* 32-bit application
* Windows 95 look & feel
* Status bar
* Long-format file naming
* Right mouse button support

System Requirements:

Macintosh and Power Macintosh
* Macintosh computer with 68020 processor or higher
* Requires a hard disk and 4 MB RAM
* System 7.0 or higher
Windows

* PC with any 386 or higher processor
* Requires a hard disk drive and 8 MB RAM
* VGA or better video
* Windows 95

About Claris:
Claris Corporation is a leading worldwide vendor of Windows and Macintosh applications for business, education and home, and is a subsidiary of Apple Computer, Inc., with headquarters in Santa Clara, Calif.

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ClarisWorks: Random Numbers Won‘t Sort Correctly (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When sorting a range of cells with the RAND() function that contain random numbers, those cells may appear not to sort correctly. In fact, the cells do sort correctly. However, after the cells are sorted, the spreadsheet recalculates a new set of random numbers, which will be unsorted.

To sort random numbers, first turn Auto Calc off in the Calculate menu, then Sort.

If you manually recalculate, the entire range of random number cells will be recalculated, resulting in a new set of unsorted numbers. To retain the original random numbers, you can copy them, then Paste Special to an adjacent blank column/row of cells.
Published Date: Feb 18, 2012

Version Information for XTND Translators in ClarisWorks 3.0 and 4.0

Some of the XTND translators installed by ClarisWorks 4.0 are updated versions from those installed by ClarisWorks 3.0.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The set of XTND translators installed by ClarisWorks 4.0 contain some updated translators from previous versions of ClarisWorks. Below is an itemized listing of the XTND translators ?? and their version numbers ?? for both ClarisWorks 3.0 and 4.0. An asterisk (*) preceding the translator name indicates an updated translator.

Name of Translator	Translator Version Number	Date Last Modified
Acta 3.0	ClarisWorks 3 installs 1.0	Wed Jun 3, 1992, 11:30 AM
	not used in ClarisWorks 4 (see Dyno NotePad & Acta 3.0)	
AppleWorks	1.0v2	Thu Mar 10, 1994, 4:00 PM
* AppleWorks DB/SS	ClarisWorks 3 installs 1.0	Sun Mar 14, 1993, 11:23 AM
	ClarisWorks 4 installs 2.0	Wed Apr 5, 1995, 4:15 PM
AppleWorks GS	1.0	Wed Jun 3, 1992, 11:30 AM
* ASCII	ClarisWorks 3 installs 1.0v3	Tue Oct 11, 1994, 1:00 PM
	ClarisWorks 4 installs 2.0	Wed Apr 5, 1995, 4:14 PM
ClarisWorks 1.0 Text	1.0v2	Sat Nov 6, 1993, 10:00 PM
* DBF	ClarisWorks 3 installs 1.0	Sun Mar 14, 1993, 11:26 AM
	ClarisWorks 4 installs 2.0	Wed Apr 5, 1995, 4:16 PM
* DIF	ClarisWorks 3 installs 1.0v2	Wed Oct 13, 1993, 3:00 PM
	ClarisWorks 4 installs 2.0	Wed Apr 5, 1995, 4:17 PM
Dyno NotePad & Acta 3.0	not available in ClarisWorks 3	
	ClarisWorks 4 installs 1.0	Wed Jun 3, 1992, 11:30 AM
EPSF PFLT	2.0v3	Thu Feb 25, 1993, 2:30 PM
GIF	1.0	Sun Mar 14, 1993, 11:28 AM
MacPaint 2.0	2.0v2	Thu Dec 10, 1992, 11:00 AM
MacWrite 5.0	1.0v5	Wed Jul 1, 1992, 5:00 PM
MacWrite II	1.0v2	Mon Aug 10, 1992, 5:30 PM
	ClarisWorks 4 installs 1.0v2	Mon Aug 10, 1992, 5:30 PM
MacWrite Pro 1.x	1.0v1	Tue Sep 6, 1994, 11:30 AM
* Microsoft Excel 3-4	ClarisWorks 3 installs 2.1v1	Tue Dec 7, 1993, 11:34 AM
	ClarisWorks 4 installs 4.0	Mon Mar 27, 1995, 8:00 PM
Microsoft Word 3.0	1.0	Wed Jun 3, 1992, 11:30 AM
Microsoft Word 4-5	1.0v4	Thu Aug 5, 1993, 10:00 AM
* Microsoft Word PC	ClarisWorks 3 installs 1.0v3	Tue Oct 27, 1992, 1:15 PM
	ClarisWorks 4 installs 1.0v4	Thu Jan 28, 1993, 1:30 PM
Microsoft Works 1.1	1.0v2	Wed Jun 3, 1992, 11:30 AM

Microsoft Works 2.0	1.0v1	Fri Oct 4, 1991, 12:00 PM
* Microsoft Works DB/SS	ClarisWorks 3 installs 1.0	Sun Mar 14, 1993, 11:28 AM
	ClarisWorks 4 installs 2.0	Wed Apr 5, 1995, 4:18 PM
Movie	1.0	Sun Mar 14, 1993, 11:28 AM
PICT	2.0v2	Thu Dec 10, 1992, 11:45 AM
* RTF	ClarisWorks 3 installs 1.0v2	Tue Mar 9, 1993, 1:15 PM
	ClarisWorks 4 installs 1.1v1	Wed Jun 1, 1994, 10:00 AM
* SYLK	ClarisWorks 3 installs 1.0v2	Wed Dec 8, 1993, 4:00 PM
	ClarisWorks 4 installs 2.0	Wed Apr 5, 1995, 4:20 PM
Text	1.0v2	Sat Nov 6, 1993, 10:00 PM
TIFF	2.0v2	Thu Dec 10, 1992, 11:00 AM
WinWord	1.0	Mon Mar 1, 1993, 2:02 PM
WordPerfect 1.0.x	1.0v2	Mon Nov 16, 1992, 5:45 PM
WordPerfect 2.x	XB 7.02	Thu Feb 18, 1993, 12:30 PM
WordPerfect PC 4.2	1.0v2	Wed Jun 3, 1992, 11:30 AM
WordPerfect PC 5.0	1.0v5	Mon Feb 28, 1994, 5:30 PM
WriteNow	1.0v2	Wed Jun 3, 1992, 11:30 AM
WriteNow NeXT	1.0	Wed Jun 3, 1992, 11:30 AM
WWW [HTML]	not available in ClarisWorks 3	
	ClarisWorks 4 installs 1.5.0	Thu Apr 6, 1995, 9:41 PM

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Basic PC Memory Management

The mystery of memory is explained in this two-part article on memory issues that directly affect the operation of Claris applications. Part one deals exclusively with Windows memory issues.

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Do the words "general protection fault" or "application error" put fear in your heart? Does the thought of doing any customizing or editing in MS-DOS fill you with fear? Do you feel you know "just enough to be dangerous" when it comes to handling your Windows computer?

Errors you may encounter on your Windows computer often have to do with the memory used by your computer to run your applications. As you will see, memory is an organized structure, and not mysterious.

Disk storage and RAM

There are two ways that data can be stored on a computer. First, it helps to know that data is anything that you put on your computer. Whether it is an application or a document you just saved, it is all data. The first method of storing data is known as temporary storage, most commonly referred to as RAM (Random Access Memory). This type of memory holds the data until you turn off your computer. The only way to ensure that a document or file in which you were working does not vanish when your computer is turned off is to save the file(s) before powering down your computer.

The second type of storage is known as permanent. There are many types of storage devices but they generally fall into two categories: hard disk and floppy disk. The data is read from and written to these permanent types of storage devices. A hard disk (also known as fixed disk) is usually installed inside the computer and can hold large amounts of data. A floppy disk is removable and can hold limited amounts of data.

Unit of measurement

A bit (short for binary digit) is the smallest unit of information in the binary code. A bundle of eight bits forms what is called a byte. A byte can represent 256 different combinations of zeros and ones (binary code) which form 127 different symbols such as letters, numbers, punctuation marks and special codes. The naming convention used for describing large increments of data includes Kilobyte (K), Megabyte (MB), Gigabyte (GB), and Terabyte (TB). The metric prefixes denote now many bytes of information. The prefix "kilo" means one thousand, "mega" equals one million, "giga" equals one billion and "tera" means a whopping one trillion! A kilobyte is actually slightly larger than one thousand bytes. It actually is 1,024 bytes. Thus, the megabyte is actually 1,048,576 bytes.

Memory on the PC

Memory on the PC is a variation of the theme described here. A PC divides its memory into separate blocks, each block being used for different things. You can picture the memory of a PC as a single region, with different types of memory layered on top of each other. (See Figure 1.)

Conventional memory

The first layer of memory on every PC running DOS is base or conventional memory. The conventional memory found on all PCs is the first 640 kilobytes of RAM, which can accommodate up to 640K of drivers. While most Windows applications are able to access other types of memory, this block is necessary because a number of programs use a small amount of base memory just to boot up. Also, there are still some programs, primarily DOS applications, which access conventional memory only.

Upper memory block

You can think of the memory directly above base memory as a small block known as upper, or high, memory; this is the 384K that, together with base memory totals one megabyte (640K + 384K = 1024K = 1 megabyte). (See Figure 1.) Because the amount of high memory is finite, MS-DOS can load only as many drivers and programs as will fit into that 384K memory range.

High memory and Extended Memory

The first 64K of Extended Memory is called High memory. In order to utilize any range of memory, high, extended or expanded, a memory manager must be used. Two files provided with MS-DOS and Windows, when used together, create an effective memory manager. HIMEM.SYS is required for Windows and SMARTDRV.EXE to run. In addition, EMM386.EXE is required for use of the memory area above 640K. The required syntax, as it would appear in the
CONFIG.SYS file is shown in the following examples. Since MS-DOS 6.0 (and higher) has the most current versions of EMM386.EXE and HIMEM.SYS, it is used throughout the syntax examples here. So, when using MS-DOS 6.0 (or higher) the commands are:

```
DEVICE=C:\\DOS\\HIMEM.SYS
DEVICE=C:\\DOS\\EMM386.EXE NOEMS
DOS=HIGH,UMB
```

Please note: When using MS-DOS 5.0, use the HIMEM.SYS and EMM386.EXE which are provided with Windows 3.1 (and higher). This means the lines in the CONFIG.SYS read as follows:

DEVICE=C:\\WINDOWS\\HIMEM.SYS
DEVICE=C:\\WINDOWS\\EMM386.EXE NOEMS
DOS=HIGH,UMB

Do-it-yourself PC memory
Even in the best of all possible worlds, this can happen to you: you're ready to go to work on that report that's due next week. You turn on your computer, load Windows, load your application and you see an "Out of memory" message on the screen. What do you do now?

Most of the time, memory errors can mean that not enough conventional memory is available for applications to use. It also can mean that a couple of simple changes need to be made in Windows. A good rule is to have at least 580K of available conventional memory. Although not all applications require that much to start and operate, it is helpful since you will most likely have more than one application running at the same time in Windows.

There are two files which instruct the computer what files and programs to load, where to find those files and programs and how to load them. These are the CONFIG.SYS and the AUTOEXEC.BAT files.

The CONFIG.SYS instructs the computer to load and configure the operating environment. The AUTOEXEC.BAT tells the computer what software applications and Terminate and Stay Resident programs (TSRs) to load and how to fine tune the operating environment. When using the memory management system provided with MS-DOS, the commands which instruct DOS to move a device driver or program into the high memory area are DEVICEHIGH in the CONFIG.SYS and LOADHIGH (or LH) in the

AUTOEXEC.BAT.

There are three basic things to investigate when an "out of memory" error is displayed when using an application in Windows. These include the examination and adjustment of the of the swap file for virtual memory; checking the amount of conventional memory available; and editing of your AUTOEXEC.BAT and CONFIG.SYS files.

Before you begin, always backup your files. To make backups of the AUTOEXEC.BAT and CONFIG.SYS files, type the following commands at the C:\\ prompt:

To save the AUTOEXEC.BAT file, type:

COPY AUTOEXEC.BAT AUTOEXEC.SAV

Then press Enter.

To save the CONFIG.SYS file, type:

COPY CONFIG.SYS CONFIG.SAV

Then press Enter.

Examine Virtual Memory swap file size
Check to see that there is a Windows Permanent Swap File and that it is at least 5MB in size. To check this, open Control Panel, click on the 386 Enhanced icon, click on Virtual Memory and view the displayed description. The second point only applies if you are using Windows for Workgroups. If you are using Windows for Workgroups, open File Manager from Program Manager, and locate the CLARIS.INI file in the Windows directory. Open that file and look for the line which reads: "Cache Size=xxx" (where "xxx" is a number). Edit this line so that it reads:

Cache Size=0

Save the file and close File Manager. Now, close Windows.

Check amount of available conventional memory
At the C:\\ prompt, type the following command:

MEM

Press Enter.

On the resulting display, examine the value labeled "Largest Executable Program Size." This value is the amount of available conventional memory. That part of the 640K range which is not being used by anything. The number should be around 580K. If this number is below 580K, you will want to examine and edit your AUTOEXEC.BAT and CONFIG.SYS file, so that as many as possible device drivers and programs are loaded high. For example, in the CONFIG.SYS file you may have a line like the one below:

DEVICE=C:\\DOS\\SETVER.EXE

The correct syntax which will instruct MS-DOS to remap the file into the high memory area (assuming your system is using MS-DOS 6.0 or higher) is as follows:

DEVICE=C:\\DOS\\HIMEM.SYS
DEVICE=C:\\DOS\\EMM386.EXE NOEMS
DOS=HIGH,UMB
DEVICEHIGH=C:\\DOS\\SETVER.EXE

In the AUTOEXEC.BAT file, there may be a line which reads something like:

C:\\MOUSE\\MOUSE.COM

This can be loaded high by using the following command:

LH C:\\MOUSE\\MOUSE.COM

Please note: Any changes you make to these files do not take effect until you reboot your computer.

General Protection Fault
A memory error
A General Protection Fault (GPF) fault signifies that something unexpected has happened within the Windows environment, usually an improper memory access. In other words, something running within the Windows environment has made a call to a location in memory that it should not have had access to, potentially overwriting and corrupting other program code in that area of memory. An application or Windows component might read or write to a memory location that it has not been reallocated, or memory that it does not "own."
Another situation where a GPF fault may occur involves the passing of parameters between applications and the Windows environment. Invalid parameters affect the performance of Windows and its applications by forcing an invalid instruction. This is usually the result of an application's internal program code incorrectly passing specific data that could not be correctly interpreted for Windows or another Windows application. The result is often a GPF fault, or it may "lock up" your system or give any of numerous other error messages.

General Protection Faults and Video
GPFs might also be occurring because of a video driver memory conflict. Try the following if you suspect a memory conflict.

1. Exclude video memory X=A000-C7FF from the EMM386 line in your config.sys file so that it reads:
Device=C:\\DOS\\EMM386.EXE X=A000-C7FF NOEMS
2. Try a different driver, such as Windows VGA. To change the video driver go into Windows Setup (found in the Main group) and change the system setting for Display to VGA. You may need your original Windows disks to this.

The quick test for this kind of conflict is to boot your computer without loading unnecessary drivers and devices. This is commonly known as a "clean" or "vanilla" boot and can be very helpful for general troubleshooting computers running MS-DOS 6.0 (or higher): Press the F8 function key on your keyboard when the line "Starting MS-DOS" appears at startup time. This allows you to boot the CONFIG.SYS and AUTOEXEC.BAT line by line. You want to specify "yes" for loading the Device=C\\DOS\\HIMEM.SYS, and not anything else.

For computers running older versions of MS-DOS, you can use a boot disk to get the same effect as the vanilla boot. To create a boot disk, you need a floppy that fits in your A:
drive. Format the disk by typing the following at the DOS prompt:

FORMAT A: /S

[This is the command for high density drives. For low density and 5 1/4" drives, please consult your MS-DOS documentation. -Ed.]

Once the format is complete, use the MS-DOS Editor to create a file on the disk called CONFIG.SYS. This is the same file that you used earlier to load devices. This time, however, the file needs to "tell" your system to load only one device, HIMEM, which is necessary to launch Windows. In this new file, then, you need only type one line:

DEVICE=C:\\DOS\\HIMEM.SYS
Make sure the file is saved to the floppy disk. Now, any time you want to see if doing a vanilla boot fixes your problem, insert the boot disk in your A: drive and reboot the
computer.

A few notes on troubleshooting memory issues
Troubleshooting your Claris Windows applications may require that you make note of your computer's behavior. For example, you may be dealing

with a memory issue if a problem or error occurs only when there is more than one file open. As another example, you may experience errors only during a certain sequence of events (e.g., you may change a style, then get a GPF or lock-up when attempting to print). Before treating these errors as memory-related, first ask yourself if you can rule out hardware errors: check cable connections; turn things on and off; reboot; check to see if the error occurs with other machines. If the error still occurs, check to see if the error occurs with other files. You could be dealing with damage in a single document, in which case you may need to resort to a backup. If the error still occurs in other documents, try the vanilla boot. Then, you can back up your CONFIG.SYS and AUTOEXEC.BAT files and try some of the simple editing techniques described in this article.

Memory management tools and limited space

Having zeroed in on your memory-related errors and found out that all of your conventional and upper memory has been used, you may consider investing in a third party expanded memory manager, such as QEMM or 386Max, utilities dedicated to handling memory on your PC. These utilities increase the capacity of the upper memory block, allowing you to load as many devices high as you need and freeing conventional memory for your programs.

Please note: Mention of third party products constitutes neither an endorsement nor a recommendation. Claris assumes no responsibility with regard to the performance or use of third party products.

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New Features in ClarisImpact 2.0

The new ClarisImpact is packed with new features for the business and education fields.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Introducing ClarisImpact 2.0--Claris Corporation's cross-platform business productivity tool for creating professional looking business graphics. A myriad of new features and enhancements make ClarisImpact 2.0 the speediest tool for creating and editing flow charts, org charts, calendars and more. The new features are explained briefly below.

Cross-platform support
While the enhancements to the ClarisImpact original feature set are profound, among the most impressive of its improvements is the effortless sharing of ClarisImpact files between Windows and Macintosh computers. This means that ClarisImpact 2.0 provides the fastest way to create high-quality diagrams, charts, presentations and more, on both the Macintosh and the PC!

DataDraw chart and graphing feature
This dynamic new feature provides an automated method for creating a diagram or chart from data exported from FileMaker Pro or any database which supports tab or comma delimited export files. By automatically turning names, dates and numbers into org charts, schedule charts, data charts or calendars, DataDraw gives you "at-a-glance" insight into the information in your database.

Organization chart enhancements
It's easier than ever to make complex organization charts fit into your available space with the addition of boxes that grow automatically and shrink automatically when data is added or deleted form a chart, tighter spacing between boxes and the ability to resize the entire org chart. New flexibility makes customizing the ClarisImpact pre-designed layouts fast and intuitive. For example, you can now specify the entire document reduced to fit a single page by just one click of the mouse!

New flow chart diagrams and symbols
Flow charts now include nine symbol sets to create a much wider variety of connected diagrams including Telecommunication and Transportation networks, Decision Trees, Brainstorming, Root Cause Analysis, Total Quality Management and Block Diagrams. New symbol creation controls, and the ability to attach text to a connector make flow chart creation easier and speedier.

Scheduling charts
Scheduling timeline charts are easier to read and easier to use for simple project planning or status reviews. Gridlines automatically adjust to match your project dates, tasks can be linked and unlinked to one another, and any task can be designated as a milestone.

Redesigned styles
All of the ClarisImpact styles have been professionally redesigned to reflect today's business standards. The styles now include customizable layout selections for each graphic that can be mixed and matched with a new selection of color and black & white styles. This combination speeds your graphic creation by allowing you to mix a pre-designed font and color scheme with whichever layout best communicates your data.

New presentation tools
To make communicating your ideas easier, the re-vamped presentation environment includes an integrated outliner to organize your thoughts before they appear on your slides and a slide sorter to view and rearrange your entire presentation at-a-glance. Speaker notes help you deliver your presentations while the new slide transitions and styles add a touch of pizzazz to on-screen presentations.

Spreadsheet functionality in tables
In addition to handling regular text, tables now offer the functionality of spreadsheets by supporting industry-standard formulas and summationsÑall of which are well documented in the extensive on-line help system.

More intuitive data charting tools
We've added many new chart types, simplified the terminology and included more ways to customize the charts to match your data.

More types of calendars supported
Calendars now better match basic business requirements by supporting week number display and the creation of weekday-only calendars. New calendar art for graphically highlighting holidays and other common events are also included.

Improved graphics tools
A broader palette of colors and gradients offers more artistic flexibility, plus the new Object Info palette and new zooming controls offer greater control to get your work done faster. New clip art libraries offer a colorful variety of high-quality art to use in creating clip art and block diagrams.

TA43307_New_Features_in_ClarisImpact_.pdf

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Claris Impact: Creating a Timeline

Here's how to use the ClarisWorks spreadsheet in a time(line)ly manner.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Picture this: Your boss just left your office insisting that a timeline for the Sushi Bar Project plan had to be completed by the staff meeting on Friday. Unfortunately you don't have ClarisImpact, a software package that does timelines, nor do you have time to get it, let alone learn how to use it. Fortunately, you do have ClarisWorks and thought of creating a drawing with the timeline information in it. This would work if the dates were firm and you had to do it once, but, as with all projects, the dates are cast in Jell-O and a drawing would be very tedious to change every time a date changed. Then you realize that, with a little effort, you could simulate a timeline by creating a spreadsheet that uses the Repeat function.

Timelines are graphic representations that show all of the separate tasks required to complete a project in the sequence in which they occur. Consequently, you must know the tasks required and the starting date and projected duration of each task. Each task would occupy a row in the spreadsheet and normally, but not always, are listed in starting date order. Occasionally it is desired to have related tasks on adjacent rows to emphasize the relationship between them.

To create your timeline, open a new ClarisWorks spreadsheet and create a title for the timeline by typing "Sushi Bar Project" in cell F1. Choose an appropriate font, size and center justify the text from the Format menu. In the example shown in Figure 1, the title has been set to Palatino, 18 point, bold, center-justified. Also, the height of Row 1 has been adjusted to 24 to fit the larger font size of the title.

Go to cell C3 and type "Start Date", press enter. Move to Cell C4 and select Number... from the Format menu. Choose the date format you prefer from the date format options under this menu. C4 is the cell that will be used to enter the actual start date of the project and will be used by calculations entered into other cells. Type in the actual start date of your project into cell C4. (Figure 1 uses 4/3/95 as a start date.)

In cell C5, type the following function:

=DAYNAME(WEEKDAY(C4))

This will place the name of the day of the week in that cell. Select the cells in B, C and D by clicking, and dragging through as many rows as you have tasks. Next, choose

Center from the Alignment sub-menu in the Format menu to format the cells.

Type the text, "Now:" into cell D5. Format with Right Alignment and a Bold font style. This is a label for the cells to the right of it that are going to indicate where the current date falls in the project.

Cell E5 is the first example of the use of the Repeat Function in our timeline. The repeat function has two arguments, the text that is to be repeated and a number (or calculation) that determines how many times the text is to be repeated. If you choose Paste FunctionÉ from the Edit menu, the Repeat function would appear as: REPT(Text , #_of_times).
If you typed "=REPT("xxxooo",4)" in a cell the result of the function would be: xxxoooxxxoooxxxoooxxxooo.

Go to Cell E5 and type the following:

=REPT("-", NOW()-C4) & "|"

The first argument ("-") is the text, a hyphen enclosed in quotes, that repeats in this field. The second argument, NOW()-C4, is equal to the number of days between the current date, "NOW", and the starting date of the project which is entered in Cell C4 and is the number of hyphens that will be entered in this cell. The & "|" at the end of the calculation will show the location of the current date.

Cell E5, and the other cells that use the repeat function, must be formatted using a mono-spaced font such as Courier. You are using a text character to display a graphic representation of time. Since time is made up of a number of increments of constant width (days in this case), the unit selected to represent time must also be a constant dimension. To make things easy to format, select the cell range from E5 to M12 and format these cells as follows: font of Courier, font size of 12 Points, Column Width of 48. The actual area used will vary according to the number of days in your project. It is essential that the graph (or timeline) area be formatted in this manner.

The next step is to add the dates to the graph area. First of all, select cells E6 through M6 and specify a date format from the Number... sub-menu of the Format menu. Go to Cell E6 and enter:

=C4

This sets the first column of the graph to the start date of the project. Tab (or move) to Cell F6 and enter the formula:

=E6+7

This adds one week to the start date. Select cells F6 through M6 and then choose Fill Right from the Calculate menu. This gives you nine weeks of dates for your project. It may be necessary to reformat the text in Row 6 to a 9 point font size so the dates will fit in the columns. If your project is longer than nine weeks, add a column for each additional week. (Remember to format the additional columns as Courier with a columns width of 48, and to format Row 6 to display a date format.)

Type the text, Task, From, To, and Duration as headings in Row 7 of Columns A, B, C, and D, respectively (refer to Figure 1 for guidance, if necessary). In cell E7 type the second use of the repeat function:

=REPT("^", WEEKDAY(C4)-1) & "|"

[For clarity, the "^" indicates where a space should be typed.]
This places a vertical bar reference mark within the cell that approximates the position of the day of the week for the date in the cell above it. Select Cells E7 through M7 and choose Fill Right from the Calculate menu. This puts the reference mark below each date in the timeline.

Starting in Row 8, enter the tasks required for the project in Column A. Enter the From dates for each task in Column B. Enter the End dates for each task in Column C. Then go to Cell D8 and enter the formula:

=C8-B8

Starting at Cell D8, select it and the cells below it for as many tasks as you have in your project and choose Fill Down from the Calculate menu. This formula calculates the number of days from the beginning to the end of each task. In the example in Figure 1, you would select cells D8 down to D12 before choosing the Fill Down command.

To create the actual timeline bar you use the Repeat function twice in the same formula. The first Repeat function will put spaces in the bar for the number of days between the start date of the project and the start of the task. The second Repeat function will place bullets (Option-8 on the Macintosh keyboard; on Windows hold down the Alt key and type 0149 on the numeric keypad) in the bar from the start of the task to the end of the task. You can use any mono-spaced character in place of the bullets, such as diamonds (Option-Shift-V on the Macintosh; on Windows hold down the Alt key and type 0224 on the numeric keypad) or triangles (Option-J on a Macintosh).

To create your timeline bar formula, go to Cell E8 and enter:

=REPT("^", B8-C4+1) & REPT("¥", D8)

[For clarity, the "^" indicates where a space should be typed.]
Starting at Cell E8, select the cells below it for as many tasks as you have in your project and choose Fill Down from the Calculate menu (in the example, cells E8 through E12 were selected). Again, the cells that contain the Repeat function must be formatted with a mono-spaced font in order to display the bar accurately.

This is a quick, simple timeline that may fill your needs when you are in a jam. If you wish to have a full featured timeline capability, have your dealer give you a demonstration of ClarisImpact.

Published Date: Feb 18, 2012

Blank Pages Print from HP DeskWriter or DeskJet Printer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Issue:
Printing from a Macintosh to an HP DeskWriter or DeskJet printer. The first few pages print correctly,but subsequent pages print out blank.

Fix:
Get the current version of the printer driver software.
You can get the latest software for your printer from the Internet, America Online or by phone.

Web / Internet:
http://www.hp.com:80/cposupport/cpoindex.html#Printers

America Online:
Keyword: HP

Order by Phone: (970) 339-7009Print HP DeskWriter Hewlett Packard
Published Date: Feb 18, 2012

ClarisWorks 4.0, 5.0: Assistants, Library Art Not Listed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

Note: The information in this article applies to the following software:

- ClarisWorks 4.0
- ClarisWorks 5.x
- AppleWorks 5.x

This article has been archived and is no longer updated by Apple.
If you are using ClarisWorks 4.0 or 5.x, or AppleWorks 5.x, and your Assistants and Stationery files are not listed in the New dialog (or your libraries are not showing in the Library list in the File menu), check the following:

Verify that the application is in the same folder as these folders:

- ClarisWorks Assistants
- ClarisWorks Libraries
- ClarisWorks Scripts
- ClarisWorks Stationery
- ClarisWorks Styles

Note: AppleWorks users will find that the folder names begin with "AppleWorks" rather than "ClarisWorks".

When the application is installed, it creates a new folder on your hard drive containing all of these folders. If you would like to move the application to another place (Apple Menu Items, Launcher, Desktop...) do the following:

1. Click once on the application icon to select it (but don't launch it).
2. In the File menu, choose Make Alias. (A duplicate item will be produced with italic letters and "alias" at the end of the name.)
3. Move the alias to the desired location.

If you had a previous version of ClarisWorks, there may be a ClarisWorks Stationery folder in your Claris Folder in your System Folder. You will see that the contents are very similar to the ClarisWorks Stationery folder contents in the ClarisWorks 4.0 folder. If you wish to combine the two stationery folders, keep the new ClarisWorks Stationery folder in the ClarisWorks 4.0 folder. Move any desired stationery from the "old" stationery folder into the new one in the new ClarisWorks 4.0 folder. Then throw out the old ClarisWorks Stationery folder from the Claris folder.
Published Date: Feb 18, 2012

Inserting a Field Multiple Times Into a ClarisWorks Database

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is an undocumented way to get a single field into a layout multiple times in a ClarisWorks database. This may come in handy if you are nearing the 255 field limit, and would like to eliminate calculations that only mirror another data entry field. Follow these steps and you will be able to insert the field as many times as you need.

1. In layout mode drag the field you would like inserted a second time up to the TOP of the layout, so that the field is partially off the top of the layout.

2.Go to the layout menu and choose Insert Field. You should see the field that has been dragged partially off the layout is now available to insert.

3. Highlight the field and choose Insert.

4. Drag the original of the field back down on to the layout.

Warnings:
The last occurrence (the one inserted last) will be the only one in which you may do data entry.

The other occurrences of the field will not show the information entered until a new record is created, or until you toggle Page View and will not be editable.

Published Date: Feb 18, 2012

Installing HTML Primer File Using Custom Install

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The HTML Primer file is not listed as an option in Custom Install in ClarisWorks 4.0. However, the HTML Primer file can be installed by doing a custom install and choosing File Translators.

This file can also be installed with an Easy Install, which reinstalls the complete program.

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Finding the ClarisWorks 4.0 Function List In The Online Help

Instructions for how to see the function lists in ClarisWorks 4.0 for Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
To see an alphabetical listing of all ClarisWorks spreadsheet and database functions:

1) Pull down the help menu, and select Index.
2) Within the index scroll to functions. As a shortcut, simply type fun, and the index screen will jump to the functions topic.
3) Within the functions listing, you will see About functions and Alphabetical list of functions. Click the Alphabetical list of functions topic, and click the Go To Topic button.
4) You will see a list of all of the ClarisWorks functions. This can be printed from the File menu.

Note at the end of the function list, you can break down the list by the selected categories:

Alphabetical list of functions
The following is a list of all ClarisWorks functions in alphabetical order.
Click an underlined title for more information.
ABS (Absolute Value)
ACOS (Arc Cosine)
ALERT
AND
.
.
.
WEEKOFYEAR
YEAR

See also

About functions
Business and financial functions
Date and time functions
Information functions
Logical functions
Numeric functions
Statistical functions

Text functions
Trigonometric functions

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DataDraw Documents Always Update When Used Cross-Platform

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When opening a DataDraw document that has been set to automatically update on opening, you will see a Data Import Status notification. Assuming that there's one DataDraw object in the file, if the data file has NOT changed since the last time the document was opened and saved, the notification will say "1 graphic was already up to date." If the data file HAS changed, the notification will say "1 graphic was successfully updated."

When opening an up to date file on the other platform, however, the graphic will always "update." In other words, if you save a file on a Macintosh and close it, then open that file with ClarisImpact Windows (without changing the data file) you will see a Data Import Status notification of "1 graphic was successfully updated".

While it may be inconvenient to wait for the graphic to update when it should already be up to date, it should be noted that the resulting file is correct.

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File‘s Library Does Not Automatically Open (Cross-platform use)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you save and close a ClarisImpact 2.0 document with a library open (on the same volume) that library will open when you open the document again. This is also true if the document and library are saved to a server.

However, the link is lost when the file is taken across platforms. For example, if you place a library on a server and save a document there with the library open using ClarisImpact Windows, and then open the file with ClarisImpact Macintosh the library will not open with the document. The same is true in the reverse (Windows to Macintosh).

To see this:
1. Place any library on a server.
2. Create a document and open the server library.
3. Save the document to the same location as the library.
4. Close the document and open it on another platform (Mac to Win or Win to Mac).

Note that the document opens without the library.
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Claris Impact: Movies Startup and Stop Differently When Using Markup

There are some platform-specific differences in the way that Macintosh and Windows movies will have their playback interrupted.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
A ClarisImpact slide presentation can contain movies (QuickTime on the Macintosh, AVI on Windows). When using the slide markup feature, a movie will be interrupted and stop playing. The point of interruption differs on each platform.

On the Macintosh, when using markup, holding the mouse button down (mouse-down) stops a movie; on Windows it doesn't stop until the mouse button is released (mouse-up).

To see this on Windows:
1. Open a ClarisImpact Windows presentation
2. Place an AVI movie.
3. Open Slide Show dialog.
4. Select Markup, Auto Play, and Complete Play Before Advancing.
5. Click Start.
6. After the movie begins, hold down the mouse and markup the slide.

Notice that the movie doesnÕt stop playing until mouse-up; on the Mac, it stops at mouse-down during markup.
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Open Library Dialog Permits File Multi-Launch

This is an issue in ClarisImpact for Windows, which only appears if you are accessing the Open Library dialog.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If a ClarisImpact document which is being stored on a server of some kind is opened, anyone else trying to access the file over the network should receive the message "File is already open."

However, there is an error in ClarisImpact for Windows. If the first person to open the file chooses File menu: Open Library and leaves that dialog box open, any of their open files or libraries can be opened by another person using ClarisImpact for Windows.

Exact steps to reproduce:
1. Use 2 PCs with access to the same libraries and ClarisImpact files on a server.
2. Launch on one PC and open a server file and a server library.
3. On the same PC, open the Open Library dialog.
4. Launch on the 2nd PC and try to open the same file and library from the server.

The files open instead of displaying the File already open alert.

Claris Development is aware of the issue.
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ClarisWorks Mail Merge - Print Merging Multiple Files Is Not Supported

Although ClarisWorks allows you to select more than one file to merge into a word processing document, it will merge only the first file's data.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks mail merge allows you to merge fields from more than one file into a word processing document. However, this feature is not supported. When you perform the print merge, only the fields from a single file will be merged. The fields from the other files will print as the field names instead of the merged data.

The best solution is to combine the information from both databases into a single database, then merge.
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Getting the Best Results with the HTML Translator

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When using the ClarisWorks WWW [HTML] translator, results will vary depending on the web browser being used to capture the page. Below are some guidelines for using the HTML translator.

If you are saving a document from Netscape Navigator, choose Save As, and choose source from the pop-up menu in the Save As dialog box. Save the document to your local drive. Then open the resulting saved document from ClarisWorks with the WWW [HTML] translator.

If using Mosaic, make sure you have the latest version (2.0.1 is the latest version at time of this printing). Best results are achieved when using the View Source command under the File menu.

When using the View Source command in Mosaic, make sure you have a text editor helper application set up in preferences. When you choose View Source the text editor will open up a document full of HTML code. Save this document out of your text editor, and open the resulting saved document in ClarisWorks with the WWW [HTML] translator.

The steps for making sure the file gets opened with the HTML translator and not the TEXT translator for all web browsers are as follows:

1. From the File menu in ClarisWorks, choose Open.
2. From the Document Type pop-up menu, choose Word Processing.
3. From the File Type pop-up menu, choose WWW [HTML].
4. Select the saved web page.
5. Click Open.

Warning: There is currently a non-certified version of the HTML language that has recently become very popular and is not supported by the ClarisWorks HTML translator. The new HTML information will be translated to literal HTML tags. This will usually be red-colored text surrounded by < > with black text interspersed within.

<Text-2>My Home Page </Text>

In short, the HTML translator tries to make everything as WYSIWYG (What You See Is What You Get) as possible, but will give you literal HTML tags if the information is not included in the HTML commands included in the translator.
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Setting The Options For The Standard Stationery In ClarisWorks 3.0 for Windows

The online information given on this topic is incorrect, below is a correction.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Setting The Options For The Standard Stationary In ClarisWorks 3.0 for Windows The online documentation for setting the default document options is incorrect. It states that you must save the files to the: \\WINDOWS\\CLARIS\\TEMPLATES directory when actually they should be saved to the:
\\WINDOWS\\CLARIS directory.
Saving them to the:
\\WINDOWS\\CLARIS\\TEMPLATES directory will make the default change once, but when you exit ClarisWorks and relaunch it, they will be lost.

Also be aware that when the defaults are changed, the new document windows will also add a Standard {module type} option.
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No Blinking Insertion Point in ClarisWorks 3.0 for Windows (WP, SS)

How to determine what video driver you have to see if it has been tested as less reliable with ClarisWorks for Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
No blinking insertion point in Word Processing or Spread Sheet documents with these drivers.

To see which video driver you currently have installed, go to Windows Setup in the Main window. Under Display you will see the name of the driver, for example:
CLGD5426/28 1.41 640x280x256. This is the name of one of the specific drivers we have had reported problems with, the Cirrus Logic 1.41 driver.

If you are running a Cirrus Logic driver whos version is lower than 1.43, then you will need to install the 1.43 CL-GD5428 driver on the system and follow the steps below. To obtain the updated driver, please contact Cirrus Logic at the following:
Cirrus Logic
3100 West Warren Avenue
Fremont, CA 94538
Tel: 510-623-8300
Fax: 510-226-2180
BBS: 510-440-9080

A- First run Install from the 1.43 driver disk to install this driver.

Now do the following steps to fix the driver:

1. Exit Windows and go to DOS
2. Insert the 1.43 driver disk in drive A:
3. Type 'A:\\' (or your appropriate floppy disk drive letter)
4. Type 'CD^512K' (a caret ^ indicates a space to be typed)

5. Type 'COPY^256_1280.DRV^C:\\WINDOWS\\SYSTEM'
(This will replace the driver that was already installed in step A)
6. Restart Windows

This problem has also been noted when the following drivers are installed:
ACTIX Prostar5 1.53
VC300 VGA 64x480x256

To correct the problem, you have several options. You can install the VGA driver from your Windows Setup Icon under Options - Change System Settings, then select the driver that says "VGA" only. This will produce an insertion point as well as get you through the introduction, but it will change your display to VGA 640 x480x 16 colors.

Claris has also developed a revision of ClarisWorks, 3.0v2, that addresses this problem as well.

You can also check with either the video card manufacturer or the video driver manufacturer to get updates to their drivers.

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ClarisImpact 2.0 CD Mentioned in Installation Guide, but not Available at This Time

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Installation Guide for ClarisImpact 2.0 gives instructions for installing from diskettes and also from a ClarisImpact 2.0 CD.

At the time of shipping ClarisImpact 2.0 (August, 1995) the CD is not yet available. At some time in the future the CD will be produced. Pricing and availability are not determined at this time, though we anticipate that it will be provided to ClarisImpact owners on request.

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ClarisImpact 2.0 System Requirements and Printer Support (Mac)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The minimum system requirements for ClarisImpact 2.0 for Macintosh are as follows:

Apple Macintosh, Power Macintosh or compatible computer with 68000 processor or higher
1.4MB high density floppy disk drive
Hard disk drive and 4MB memory
8MB recommended for System 7
8MB required for Power Macintosh
System software 6.0.8, System 7 or System 7 Pro, System 7.5

Printer Support

Apple LaserWriter, Personal LaserWriter, and ImageWriter, and Apple StyleWriter families
Hewlett-Packard (HP) LaserJet, DeskWriter and PaintWriter families
A wide variety of other Macintosh-compatible, third-party printers

A list of specific printers which have been certified or verified as fully functional with ClarisImpact 2.0 is not available. In general , a printer that is compatible with Apple print drivers and/or the above referenced Systems should work with ClarisImpact 2.0.
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ClarisImpact 2.0 System Requirements and Printer Support (Win)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The minimum system requirements for ClarisImpact 2.0 for Windows are as follows:

PC with 386/25 MHz or higher processor
One hard disk, one 3.5" floppy
Microsoft Windows 3.1
WIN32s (included)
8 MB RAM

Printer Support
Hewlett-Packard LaserJet, PaintJet, DeskJet series
Postscript printers such as Apple LaserWriter, IBM Laser Printers
A wide variety of other Windows-compatible printers

A list of specific printers which have been certified or verified as fully functional with ClarisImpact 2.0 is not available. In general , any printer which is fully compatible with the minimum hardware and system requirements should work with ClarisImpact 2.0.
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ClarisImpact and Corrupt Fonts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is from the ClarisImpact 1.0v4 Important Information file:

Fonts
This version of ClarisImpact tests for corrupt fonts when the application is first opened and when opening the application when fonts have been added to your system. ClarisImpact builds a 'Claris Fonts' file which is used to display fonts in their actual typeface in the Font menu. If ClarisImpact encounters a bad font, or one that it cannot correctly add to the Claris Fonts file, an alert is displayed indicating that some fonts may be bad. These fonts will be listed in a 'Bad Fonts' text file in the Claris Folder located inside your system folder. These fonts will also be displayed in Chicago font in the application's Font menus. We suggest removing or replacing these fonts from your system before using ClarisImpact. Refer to the manual that came with your Macintosh for instructions on how to remove or replace these fonts. Once these fonts have been removed or replaced, throw away the 'Claris Fonts' file, also located in the Claris folder, and open ClarisImpact. ClarisImpact will automatically create a a new 'Claris Fonts' file when the application is opened.

There may be some fonts that work properly in ClarisImpact and still fail our tests. The only difference between these and other fonts is that they will be displayed in Chicago font in the Font menu. However, we suggest performing the following simple tests on these fonts before by using them in the application:
1) Create some text in ClarisImpact and apply the font. If the application unexpectedly quits, this font is bad and should be removed or replaced immediately.
2) If the application does not quit when the font is applied, create multiple pieces of text, apply several different font sizes, and print the file. If the font appears on screen and on paper correctly, then there is no need to replace or remove this font.

Note: If you have a font that fails our test but functions properly, please send the font to Claris Technical Support so that we can update our test for future releases of ClarisImpact.

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AppleTalk Phase 2: Using LocalTalk-Based Networks

I am beginning to implement the DataKit technology from AT&T. The DataKit follows the AppleTalk Phase 2 router-to-router communications and is completely AppleTalk Phase 2-compatible. However, we have all PhoneNET networks running AppleTalk Phase 1 routers in the form of Hayes InterBridges.

These networks go through star controllers, and the DataKit will hang off one port of the controller. The DataKit is also an AppleTalk Phase 2 router, so it will be sending AppleTalk Phase 2 packets to the LocalTalk network.

Given this background, can you answer the following questions?

1. It was my understanding that LocalTalk-connected Macintosh systems could not take advantage of AppleTalk Phase 2 addressing. Why is this?
2. What about upgrading the Hayes InterBridges?
3. Does this mean that only the AppleTalk Phase 1 routers need to be upgraded to AppleTalk Phase 2 (like the Hayes InterBridge) and the rest of the nodes just become AppleTalk Phase 2 by installing AppleTalk version 53 in the System Folder?
4. Am I supposed to run the Internet Router in conjunction with the Upgrade Utility forever? (Do I have to use the Apple product? Does Kinetics or Hayes have an upgrade utility?) Can a LocalTalk network be AppleTalk Phase 2 by upgrading AppleTalk to override the ROMs, even though it cannot take advantage of AppleTalk Phase 2 addressing? Does the account have to upgrade all of their existing AppleTalk Phase 1 products to AppleTalk Phase 2, even though they are using only LocalTalk (inherently AppleTalk Phase 1)?

This article has been archived and is no longer updated by Apple.

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1) The AppleTalk Phase 2 extended-addressing and multiple-zones-per-physical-
  network features were not implemented on LocalTalk because of the limited
  number (32 maximum recommended) of nodes that can be attached to one
  physical network.  This is far less than the 254 nodes that AppleTalk
  Phase 1 supports.  EtherTalk and TokenTalk can support many more than 254
  nodes per physical network and, therefore, need the extended addressing and
  multiple zones capabilities that AppleTalk Phase 2 provides.

2) If the AT&T DataKit router is AppleTalk Phase 2 only and has nothing like
  our AppleTalk Phase 2 Upgrade Utility for dealing with AppleTalk Phase 1
  routers, it will be necessary to upgrade the Hayes InterBridges to be
  AppleTalk Phase 2-compatible.  Contact Hayes for information on this
  upgrade.

3) LocalTalk-based networks can be attached to AppleTalk Phase 2-compatible
  routers with LocalTalk ports without the AppleTalk version 53 file in the
  System Folder.  In fact, this is the most common setup.  The only time you
  need the AppleTalk version 53 file in the System Folder is when you need to
  support some of the new high-level AppleTalk calls that do not in any way
  change the protocols used on the LocalTalk physical medium.  These new
  high-level AppleTalk calls are documented in Macintosh Technical Note #250.

4) The AppleTalk Internet Router does not need the AppleTalk Phase 2 Upgrade
  Utility when routing between two LocalTalk-based networks.  The AppleTalk
  Phase 2 Upgrade Utility allows the AppleTalk Internet Router to broadcast
  and receive AppleTalk Phase 1-style RTMP packets.  This is all the AppleTalk
  Phase 2 Upgrade Utility does.  The only time the AppleTalk Internet Router
  needs the AppleTalk Phase 2 Upgrade Utility is when there is an AppleTalk
  Phase 1 router on the same physical cable as the AppleTalk Internet Router.
```

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
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ClarisImpact and Memory on the Power Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is from the ClarisImpact 1.0v4 Important Information file:

Power Macintosh applications are larger and require more memory than conventional Macintosh applications. The ClarisImpact application memory setting is set to 3714k when running with the default Power Macintosh system memory settings(Modern Memory Manager ON and Virtual Memory OFF). The ClarisImpact memory requirement is reduced to 1250k when Virtual Memory is turned ON.

If you have an 8MB Power Macintosh and usually run more than one application, you may want to turn Virtual Memory ON so that there is enough memory for these applications. However, performance is optimized when running with the default system settings.

If you plan on using all of the Model and Element styles, we suggest that you increase the application's default memory partition by 1000k. Refer to "Adjusting memory" on page 1-13 of "ClarisImpact Getting Started".

Occasionally in low memory situations an alert will appear stating "There is not enough memory to complete this operation". We suggest saving your document before continuing. If you are working with large documents and find yourself in this situation frequently, we suggest increasing the application's memory partition as indicated above.
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ClarisWorks 4.0 Macintosh Trial Software on CD

The first release of the ClarisWorks 4.0 Trial Software had incorrect instructions and an incomplete set of files.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks 4.0 Trial Software is a limited version of the full application. It cannot save, and prints with the words 'ClarisWorks Trial' in the background. The trial software includes only some of the Stationery documents, Libraries, and Assistants. In addition it comes with installation and usage instructions that walk you through trying the product.

The first release of the ClarisWorks 4.0 Trial Software took place on the Trial Software CD . This version had incorrect instructions and an incomplete set of files. The part number for the affected CD is U95073-015B. This number can be found on the CD itself.

The problems on this CD are in the Begin document which walks you through trying the software. In this document you are instructed to:
- Save the database file they create to use in mail merge.
(Problem: It is not possible to save a document in the trial version.)
- Use the Final Newsletter document as a guide for the document you were creating.
(Problem: This document is missing.)

You can obtain a corrected version of this trial software on America Online, CompuServe and AppleLink. Please download this version and follow its instructions for trying out the software.
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Documentation Error: Help System

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The help screen under linked tasks indicates linked tasks will have the word "linked" in the Planned Start column, when in fact, it works the way that MacProject did.

In MacProject, and in the ClarisImpact Timeline, planned dates as calculated by the program are shown as plain text and user entered task dates are shown underlined.
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High Density Floppy Drive Required to Install ClarisImpact 2.0

There are no 800k disks available in the fulfillment system to install on older machines.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The box for ClarisImpact 2.0 Macintosh states that a High Density (HD) 1.4mb floppy drive is required to install the product. While ClarisImpact will run on some machines that only have an 800K drive, specifically any Macintosh with a 68000 processor or higher, there are no disks available to install it.

Should you wish to install ClarisImpact and don't have a High Density Drive, consider these options:

1) If your Macintosh is on a network, install from a Server or shared volume. The Installation Guide gives detailed instructions on how to copy disks to a server for installation from a guesting Macintosh.

2) Install the ClarisImpact (temporarily so as not to violate licensing) onto a computer that does have an HD drive. Then use some compression utility (such as DiskDoubler or Stuffit) to move the parts onto 800k disks so that they can be copied to the Macintosh with the 800k drive. Refer to the TechInfo Brief entitled " ClarisImpact 2.0 Disk Contents (Macintosh) and Installation Guide" for a detailed account of which files get installed in which locations.
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How to Create a Logo With Text and Graphics in ClarisWorks

A guide to creating logos that are saved a pictures so the fonts used are disassociated from the logo.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you create a drawing, such as a logo that incorporates text, you need the fonts installed on your computer to view and print the text properly. This becomes a problem if you share files frequently with others who do not have the same fonts. You can eliminate the need for these fonts by converting the logo to a paint document.

To get a screen-resolution quality image (72 dpi) of your logo just copy and paste the original object and text to a new paint document. Then save the new paint document as a PICT file. You can then use this image in programs other than ClarisWorks.

To get a higher quality (~300 dpi) image for better printing output follow these steps:

1. Increase the size of the graphic 400 percent. Select your graphic and choose Transform from the Arrange menu, then choose Scale By Percent (ClarisWorks 4.0). In ClarisWorks 3.0 choose Scale Selection from the Options menu.

2. Increase the size of the text block by 4 times. For example, a text block formatted at 24 point size is set to 96 point size.

Note: Some objects may appear off the page because of the scaling procedure, however they are still available by choosing Select All from the Edit menu.

3. Move any objects as necessary to get them positioned properly.

4. Choose Select all from the Edit menu, then choose Copy.

5. Open a new Paint document.

6. Choose Resolution and Depth from the Format menu and set the resolution to 288 or 300 dpi. You may need to increase the amount of RAM allocated for ClarisWorks to 4 MB or so to do this as larger resolution document take more memory to create.

7. Choose Paste from the Edit menu to paste the logo into the paint document.

8. Choose Save As from the File menu, then choose the file type to PICT so that this image can be used in other documents or applications.

The paint document version of the logo will view and print properly, even if the computer does not have the fonts that were used to create the image. However, the text is no longer editable. Converting a drawing or text to PICT format or a paint document drops all the editing properties for the text or graphic. Therefore, you should keep the original draw document in case you need to edit the text later.

Published Date: Feb 18, 2012

ClarisDraw: How to Fix Files Corrupted by the Original 1.0v2 Updater

The first release of the updater for ClarisDraw 1.0v2 corrupted files. This affected a relatively small number of people, but was very troublesome.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
In the Spring of 1995, an improper ClarisDraw 1.0v2 Updater was sent to approximately 140 ClarisDraw customers. This Updater created copies of ClarisDraw 1.0v2 that allowed people to edit their files once, but, after saving the file, would be corrupted and unopenable. If someone attempted to re-open the file they would see this error message:

"This is not a ClarisDraw file or it has been corrupted."

Fortunately, a fix has been found for these files, and it is quite simple. It requires a file editor such as the Norton Utilities application.

To fix the file using Norton Utilities:

- Copy the file to your hard disk
- Launch Norton Utilities
- From the UTILITIES menu, choose "Norton Disk Editor"
- Under "Choose a volume to Explore" select your hard disk
- Click "Open"
- Once the "Directory" opens, go to the FILE menu and choose "Open File"
- Find the corrupt file and click "Open Data Fork"
- When the data fork opens, go to the third byte (hit the right cursor key two times)
- Type b1
- Close the file, save changes to the sector

The file is now fixed.

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Invoking a ClarisWorks 4.0 Macro with AppleScript

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
[NOTE: This script assumes you are using version 4.0 of ClarisWorks. It is also recommended that you have the following versions of software: System 7.1.1 or System 7.5; AppleScript 1.1]

APPLESCRIPT SCRIPTING LEVEL: BEGINNER

To invoke a ClarisWorks Macro from AppleScript, use the Do Script command, as in the following example. Be sure to replace the text between the quotes with the name of your macro:

```
tell application "ClarisWorks 4.0"
do script "Macro name here"
end tell
```

SCRIPTING SUPPORT

Apple Computer provides support for AppleScript and HyperCard. All customers have access to toll-free telephone support for pre-sales and Òup and runningÓ support by calling Apple Assurance at (800) SOS-APPL. ÒUp and RunningÓ support includes questions regarding installation, compatibility, configuration, and basic product use. Advanced scripting support is available for a fee by calling (800) 950-2442.

TRAINING
Self-paced and classroom-based instruction on Apple events and AppleScript is available from Apple Computer's Developer University (408) 974-4897, fax (408) 974-0544, and AppleLink: DEVLINK. Currently course offerings include "Scripting with AppleScript", "Introduction to AppleScript", and "Apple Events/AppleScript Programming."

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Mail Merge Limitations of ClarisWorks 4.0

Some tips on making your end results appear correctly when using Mail Merge

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Here are some tips to better help you to understand what is and isn't available when using Mail Merge in ClarisWorks 4.0

Users of ClarisWorks 4.0 through 4.0v3 should update to version 4.0v4. An updater is available online from ClarisWeb at http://www.claris.com. It is also available on America Online (keyword: Claris) or Compuserve (Go MacClaris) or by phone at (800)544-8554.

1. When more than one field is on a line and they are all blank, the text below will not slide up to fill in the blank line. Sliding up works correctly, though, when there is a single field on a line in your merge document. So, to eliminate blank lines in your merge letter, go back to your database and define a calculation field that combines the contents of the multiple fields. Then use that calculation field in your merge document.

For example, let's say that you're merging two fields on a line called FirstName and LastName. Go to your database file and go to Define Fields. Define a new field called FullName, make it a calculation field with this formula:

IF(ISBLANK('FirstName'),"",'FirstName'&"^") & 'LastName'

In this formula, type a space where you see the caret (^). Set the calculation to result in Text.
Go back to your form letter and remove the FirstName and LastName fields. Place the FullName field in their place.

2. If a field has more than one line worth of text, it will truncate (cut off) at the end of the line.

An example of a field with more than one line of text:
Memo field (text) "Hello to all good people of the republic. Thank you for your support of my campaign for election."

Merge document:
<<Memo>>

Result:
Hello to all good people of the republic. Thank you for your support of my campaign for

Notice the word "election." is cut off and does not wrap to the next line.

Work Around:
None known at this time. You need to limit text in a field to no more than one line of text. Returns in a field are ignored and will not create a new line.

3. A field used in a line with text before the merge field causes the field to drop to the next line. The text over one line is still cut off.

An example of field dropping to the next line:
Product field (text) "textile equipment with optional quantity feeder"

Merge document:
We are glad to fill your order. We will be shipping your order of <<Product>> by the 15th of the month.

Result:
We are glad to fill your order. We will be shipping your order of
textile equipment with optional quantity feeder by the 15th of the month.

The entire contents of the field Product is moved to the next line. Wrapping of data within the field does not occur.

Work Around:
None known at this time. Text in a field cannot wrap to the next line so paragraph structure must not try to wrap data to a new line.

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More Choices Button in the Color Picker

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
With the System 7.5 Color Picker installed on color systems, you will see a 'More Choices' button in the ClarisImpact Color Editing window.

When you click More Choices button, there are two choices: Apple HSL and Apple RGB. Clicking on Apple RGB will give you a window where you can adjust the Red, Green and Blue with a slider or by typing in the percentage desired.

Pre ?System 7.5 systems had one window with the RGB
controls on the left side of the window. With those limited controls, you could only type in the number or click on the arrows to change the Red, Green, and Blue.

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ClarisDraw: Rulers with Hanging Indents Skip Tab Stops

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisDraw has an issue with tabs following hanging indents in a text frame that do not have some text entered at the tab. To reproduce the issue, follow these steps:

1. Turn on Text Ruler
2. Create a text frame that extends from 1" to 7.5".
3. Hold down the option key and move the right margin indicator (the sideways triangle on the left side of the ruler) to the 2" marker.
4. Place a left align tab at 2.25".
5. Place a right align tab at 7.25".
6. Press the tab key and type in the number 1.
7. Press the tab key and type in "Some Text"
8. Press the tab key and type in "Right Side"
9. Press the return key.

We are now on the second line of your text frame. We want to add some more descriptive text below "Some Text" without putting in a new line number.

10. Press the tab key. This takes you to the hanging indent.
11. Press the tab key again. Gee, what happened to the cursor???

The cursor has jumped to the right align tab on the right side of the page. Please note that the type of tab is not important, it just skips the first tab after the hanging indent.

The workaround is to enter a <space> after pressing the tab key to get to the hanging indent in step 10.

This problem does not occur in ClarisImpact or ClarisWorks.

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EtherTalk 2.0: Networking Packet Formats and Protocols

1) With AppleTalk Phase 2, how does the SNAP (SubNetwork Address Protocol) work?

If this works with the condition: DSAP=SSAP in LLC (Logical Link Control), the first 5 bytes of the LLC Information (LLC data) is the PID (Protocol Identifier). In this case, what are the DSAP and SSAP used?

2) Also, if the above is correct, what is the Apple OUI (Organizational Unique Identifier) in the PID header?

Notes

IEEE 802.3 Frame

Preamble
Dest-Addr (6 bytes)
Source-Addr (6 bytes)
Length (2 bytes)
LLC-DSAP (1 byte)
LLC-SSAP (1 byte)
LLC-control (1 byte)
LLC-data (43-1497 bytes)

This article has been archived and is no longer updated by Apple.
1) With EtherTalk 2.0, Apple is adopting standard networking packet formats as defined by the Institute of Electrical and Electronics Engineers (IEEE) 802 committee. The 802 committee defines standards for local area networking.

The IEEE divides the OSI data link layer into the Logical Link Control (LLC) layer and the Medium Access Control (MAC) layer. The IEEE LLC layer provides error checking and reliable transfer of data. The LLC layer was defined to provide a uniform interface to the network layer, independent of the MAC and physical layers used. The LLC provides connectionless-oriented (Type 1) or connection-oriented (Type 2) services.

The MAC layer provides some of the lower-level functions of the OSI data link layer and some functions that fit into the OSI physical layer. These functions include channel (media) access, channel contention arbitration, and data formatting. The MAC layer has three variants:

- Carrier Sense Multiple Access/Collision Detect (CSMA/CD), which is similar to the Ethernet standard and is used in engineering and office automation applications.

- Token Bus, used in factory automation applications.

- Token Ring, which has been widely adopted by IBM and other companies for office automation applications.

Ethernet and 802.3 CSMA/CD are often incorrectly considered identical. Ethernet is a de facto local area network standard developed by Digital Equipment Corporation, Xerox, and Intel. It forms the basis for 802.3, but the 802.3 packet format is slightly different. Unlike the Ethernet packet, the 802.3 packet has no protocol-type field and has a data length field. Workstations using Ethernet packets do not recognize workstations using 802.3 packets, and vice versa.

The Ethernet protocol-type field is used to distinguish higher-level protocols. The protocol-type field allows for 64 different protocol

identifiers. However, with the maturation of local area network technology, 64 different protocol identifiers are too few. To accommodate the large number of protocols, the IEEE developed the SubNetwork Address Protocol (SNAP) standard.

SNAP allows multiple protocols to be used with one data link. It defines a 5-byte field to identify the protocol using the data link. It ensures that protocol identifiers from different vendors do not conflict. The IEEE has assigned Apple a SNAP identifier for AppleTalk and AARP (Apple Address Resolution Protocol).

With EtherTalk 1.0, AppleTalk data was transmitted in the data field of an Ethernet packet. With EtherTalk 2.0, AppleTalk data is encapsulated in a SNAP packet, which is encapsulated in an LLC packet, and transmitted in a CSMA/CD 802.3 packet. The result is that EtherTalk 1.0 packets are not seen by EtherTalk 2.0 nodes, and EtherTalk 2.0 packets are not seen by EtherTalk 1.0 nodes.

Though EtherTalk 2.0 uses the SNAP interface, higher-level protocols can go directly to the LLC layer, and not use SNAP. SNAP allows connectionless communication services only. Software developers that need to use connection-oriented services must bypass SNAP and use the 802.2 LLC interface directly. Such developers would use Apple's Ethernet driver for our EtherTalk card, but would not use our higher-level EtherTalk 2.0 software.

EtherTalk 2.x (802.3) Frame

802.3 Destination 6 bytes
802.3 Source 6 bytes
802.2 LLC Length 2 bytes
802.2 LLC Header
802.2 LLC DSAP 1 bytes (always $AA (SNAP SAP) for EtherTalk 2.x)
802.2 LLC SSAP 1 bytes (always $AA (SNAP SAP) for EtherTalk 2.x)
802.2 LLC Control 1 bytes (always $03)
SNAP Header 5 bytes (always $080007809B for EtherTalk 2.x)
DDP Header 13 bytes
AppleTalk Data ?? bytes (586 bytes maximum)
Padding (if needed) ?? bytes
---
60 to 621 bytes

DSAP - Destination Service Access Point
SSAP - Source Service Access Point
The SNAP SAP is defined as $AA.

If the 802.3 packet is less than 60 bytes padding is added to make the packet 60 bytes long.

In 802.2, DSAP and SSAP are almost always the same except in frames that are establishing an initial SNA connection.

2) The SNAP (SubNetwork Address Protocol) unique identifier assigned to Apple by the IEEE is $0800070000. The first 3 bytes of the unique identifier is the vendor address. The last 2 bytes are the local administered (by Apple) identifiers. We (Apple) have defined $809B as EtherTalk. The unique identifier for EtherTalk 2.0 is $080007809B. This is considered to be a locally administered SNAP address.

A global SNAP address has been defined by the IEEE for AARP packets. The SNAP number is $00000080F3.

These values are the same for TokenTalk 2.0.

TA43343_EtherTalk_Networking_Packet_Formats_and_Protocols_(TIL05656).pdf

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Sharing Documents and Libraries Between ClarisImpact 1.0v4 and ClarisDraw 1.0v2

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is from the ClarisImpact 1.0v4 Important Information file:

ClarisDraw Compatibility
ClarisDraw documents and libraries are supported in this version of ClarisImpact. These documents can be opened directly and used as if they were created in ClarisImpact. However, objects unique to ClarisDraw are converted to ClarisImpact objects. The converted objects will look the same as they did in ClarisDraw, but they do not retain the ClarisDraw functionality. Libraries can be used interchangeably between the two applications, but application specific functionality is lost when saved in the other application's format.

Example: A ClarisDraw library that has a bound text object can be directly opened in ClarisImpact. When the bound text object is used in a ClarisImpact document, it gets converted to a conventional group. The object will look the same, but the functionality is lost. Similarly, saving this ClarisDraw library in ClarisImpact converts the library and its contents to a ClarisImpact library. The following alert is generated when saving a ClarisDraw library from ClarisImpact: "Saving this library now will cause some ClarisDraw objects to be converted to ClarisImpact objects. To retain a separate copy of this library, click "Cancel", then use the "Save As" command."

ClarisDraw also supports ClarisImpact documents and libraries. The ClarisImpact models will look the same in ClarisDraw but are converted to PICTs that do not retain the model's functionality. The following alert is generated when saving a ClarisImpact library from ClarisDraw: "Saving this library now will cause any ClarisImpact models to be converted to pictures. To retain a separate copy of this library, click "Cancel", then use the "Save As" command."

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Subscribing to Excel Spreadsheets From ClarisWorks and ClarisImpact

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Microsoft Excel will, by default, publish a PICT image of a spreadsheet when asked to Create Publisher. This is not always what is needed. For example, if you wanted to chart some Excel data in another product, you could not use a picture of the data; you would need the data itself.

In order to use published Excel data in ClarisWorks or ClarisImpact, you will need to set some options in Excel:

1) In Microsoft Excel, select the data you would like to publish
2) In the Edit menu, select Create Publisher...
3) Click the Options button to see the Publisher Options window
4) In the ÒEdition Contains TEXT andÓ box, uncheck PICT, TIFF and RTF
5) Click OK, then Publish
6) In ClarisWorks or ClarisImpact, create a Spreadsheet, Spreadsheet frame, or a table
7) With a table or spreadsheet cell selected, choose Subscribe to... from the Publishing submenu in the Edit menu.
8) Select the Edition file created by Excel. You will then see the Excel data, and you can base calculations or charts on the data.

Remember: If you make a change in your Excel data, you must Save before the updates will be sent to the subscribing program(s).

(Excel 4.0 was used for the above description. Other versions of Microsoft Excel may vary.)

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Updating Fonts When Installing ClarisImpact 1.0v4

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is from the ClarisImpact 1.0v4 Important Information file:

The installer includes a custom install option to update the fonts included with previous versions of ClarisImpact.

If you are updating from ClarisImpact 1.0v3 or earlier, we recommend running this installer option. The fonts provided with this version of ClarisImpact are "Harmonized." This means that the Roman type face (ex:BernhardMod BT) is marked so that it knows about its Bold (BernhardMod Bd BT), Italic (BernhardMod It BT), and Bold Italic (BernhardMod BdIt BT) counterparts.

Once the fonts have been updated, the Bold and Italic versions of the fonts are no longer displayed in the Font menu. However, because the font names have changed, updating these fonts may cause uninstalled font alerts in documents created by other applications. To update the Fonts:
1) Select the Customize option in the Installer window.
2) Scroll down the list of installer options and select the appropriate ClarisImpact Update Font item for your current system.

3) Click install.

The installer will replace the old fonts with the new ones. This version of ClarisImpact will automatically update the old font information in ClarisImpact documents, styles, and libraries when these documents are opened and saved.

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Using All Flow Chart Styles with ClarisImpact 1.0v4

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is from the ClarisImpact 1.0v4 Important Information file:

The 'ClarisImpact Color Styles' and 'ClarisImpact B&W Styles' folders contain a second set of Flow Chart files located in the folder named 'Full FlowChart Styles'. These files contain the same Basic and Computer Network model and element styles that are in the first set of files and include the rest of the style families - Business, Deco, Informal, International, Modern, and Traditional. To use these styles, replace the 'FlowChart Symbols' and 'FlowChart Style' files in the 'ClarisImpact Color Styles' or the 'ClarisImpact B&W Styles' folders with the files in the 'Full FlowChart Styles' folders. Note: If you have customized the original files with your own styles, rename or make a copy of them before they are replaced.
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ClarisWorks: What To Do With Leftover Folders After Upgrading

Helpful hints on cleaning up your system after upgrading.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you have upgraded to ClarisWorks 4.0, here are some helpful hints about removing older versions of ClarisWorks:

1) If you are sharing files with someone who has a previous version of ClarisWorks, their version will not open files converted to ClarisWorks 4.0. (There will be translators available in the fall.)

2) You may remove older versions of ClarisWorks by simply taking their folders, and placing them in the trash.
A WORD OF CAUTION: Do check the contents of your previous versions of ClarisWorks folders before placing in the trash to ensure you do not have any documents in those folders which you may want to keep. For those users who have Performas, ClarisWorks 2.1 is located in the applications folder of your hard drive.

3)If you are using Launcher, you may want to remove the alias for older versions of ClarisWorks. To do so, go into the System folder of your hard drive and remove the alias from Launcher items.
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Auto-delete the Contents of a Field

A method for erasing field contents across a group of records

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

It is possible to erase the contents of a field across all records. This process is triggered manually, and using a macro, it is followed through automatically.

For example, after selecting the records for a mailing and having printed the corresponding labels, you may want to erase the identification character typed in the field called "Mailing." To accomplish this task, you create the following macro.

The steps for creating this solution with the ClarisWorks application for the Macintosh are as follows:

1. Click in the Mailing field in the first record.

2. Using the keyboard shortcut command, Shift-J, create a macro called "Erase Field Contents."

3. Type Command-A to highlight the contents of the field and click on the Delete key. Then click on the mailing field in the next record by typing Command-Return. Continue by typing the keyboard shortcut to trigger the macro (Command-Shift-J). End recording the macro.

To use the macro, simply click in the mailing field for the first record to erase and launch the macro using the keyboard Shortcut. Type Command-Period to stop the macro once you have reached the last record selected.

In ClarisWorks for Windows
Follow the same steps as for the Macintosh. The following keyboard combinations: Command-Shift-J is Shift-Ctrl-J.macro, delete, erase field

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Claris Works: Error in Calculation That References a Pop-up Menu (Value List)

ClarisWorks 4.0 for Macintosh does not properly evaluate calculations that are based on items in a value list.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Creating a calculation field in order to display a pop-up menu field will yield the position of the selection rather than the selection itself. For example, assuming a Popup Menu field named FieldOne with the following items in the list:

Three
Two
One

A calculation field resulting in text with the formula ='FieldOne' will show a result "1" if Three is selected from FieldOne, a "2" if Two is selected, and a "3" if One is selected.

The workaround is to force ClarisWorks to evaluate the result of the calculation as text by using a text function in the formula. For example, a calculation field resulting in text with the formula =CONCAT('popupmenuone',"") will yield the correct results.
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Quick Help Error in HLOOKUP (Horizontal Look Up) ClarisWorks 4.0 Macintosh

How to make the sample spreadsheet work correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The ClarisWorks 4.0 QuickHelp description for HLOOKUP (Horizontal Look Up) has an error in the sample spreadsheet. The last line shows that =HLOOKUP (A8,A1..E3, 1,0) would return the value 55. Since the lookup value in A8 was "F", and there were no F's in the data, the formula would have returned #N/A!

If the lookup value is changed from "F" to "E" in cell A8, the result of 55 will be correct.

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Word Count Causes System 7.0 Through 7.0.1 Macintosh Computers to Crash

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Word Count command in ClarisWorks 4.0 does not work properly on Macintosh computers running System 7.0. through 7.0.1. Attempting to execute a word count will cause the machine to crash. In addition, the shortcuts for converting text to all uppercase and all lowercase do not work.

At the present time, the only solution is to upgrade your Macintosh to System 7.1 or higher.

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ClarisWorks 4.0 is WorldScript Ready

To take advantage of WorldScript support in ClarisWorks 4.0, it is important to be aware of a few interface considerations.

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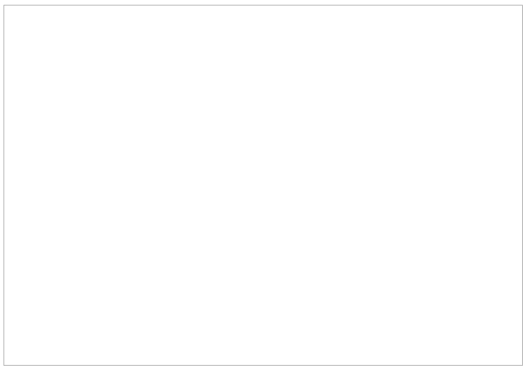

WorldScript is the Apple Macintosh technology that allows more than one script system to exist in the System at the same time. It is available for System 7.1 or later. All localized non-Roman script systems have WorldScript installed. The new ClarisWorks 4.0 software supports language scripts that are left-to-right; scripts that read right to left, such as Arabic or Hebrew, are not supported.

What is a script?
A script is a set of characters and the numeric codes used to represent them. Keyboards, input methods (for scripts like Chinese and Japanese), and fonts are technologies that support character input and output, so they are associated with specific scripts. In effect, a script can be viewed as the combination of fonts, keyboards, and input methods that are defined for it. As a result, if you change the font of a text selection in one script to a font belonging to another script, the character codes will be interpreted incorrectly and will possibly display as a string of gibberish. However, this is true only for characters in the Extended ASCII range (codes 128–255); ASCII characters, e.g., letters of the English alphabet, Arabic numerals, and the basic punctuation symbols, are common to all scripts and therefore will not be transformed by font changes. (See Figure 1.)

Language Kits
The Japanese and Chinese Language Kits add two-byte script capabilities to any System 7.1 (or higher) Macintosh operating system. These language kits include fonts, an input method, script resources and Apple WorldScript II.

How Does the Japanese Language Kit Work?
Let's examine a typical case of a U.S. System being used with the Japanese Language Kit. When you launch a Japanese localized application on the U.S. System, the Primary Script changes from Roman to Japanese as you use the different font and character sets. Let's say that you are using a Japanese application and its document window is currently active. The menus and dialogs will display in the Osaka font, the Japanese System font. If you were to switch back to the Finder at this point, all of your menus and dialogs would display in the Chicago font, because the Primary Script is Roman for the System and Finder. The effect is like having two different Primary Scripts, each activated depending on the application currently running in the front.

Language Register
Each Language Kit comes with a copy of the Language Register. By default, ClarisWorks uses the Roman script as its Primary Script, and all menus, and most dialogs, use the Chicago or Geneva font to display text. This means that in many dialogs, only English or European (Roman script) text are supported, unless you use the Language Register application.

When an application is launched on a System with a Language Kit installed, you can select your desired primary language script for your application. The Primary Script determines the font of all menus, dialogs, and other User Interface elements belonging to that application. If the correct font is not displayed, you can correct this by using the Language Register. It is recommended that you register ClarisWorks with the Language Register before attempting to use the WorldScript functionalities. By registering an application with the Language Register, you are forcing the Primary Script to be the same as the script set in the Language Register. To set the current script in the Language Register, launch the Language Register utility and choose a script from the pop-up menu. Then quit the Language Register utility, and simply "drop launch" the application you wish to register on top of the Language Register icon.

For example, if you want to name fields within your database, you go to the Define Fields dialog in the Database environment. Without first using the Language Register to change the Primary Script, you will be able to type field names in only the Roman script. If you want to enter field names in Japanese, you can register your application as Japanese with the Language Register. You will then be able to type field names in the Define Fields dialog using Japanese characters. With the change of the Primary Script to Japanese, the menus and dialogs now appear in the Osaka font instead of Chicago. However, you will also be able to type English text, because the lower ASCII characters also exist in Japanese script.

Unfortunately, extended ASCII characters, such as accented characters used in French, require the Primary Script to be Roman in order to display properly in the Define Fields dialog. These characters will not be available for field names if you change your primary script to Japanese.

Setting WorldScript Preferences

The Preferences dialog in ClarisWorks 4.0 allows you to select WorldScript preferences, such as the default font and sort order. The sort order choices are limited to those options installed in your System. The WorldScript panel does not appear unless the application is running on a WorldScript-enabled System. This includes any System using the Japanese, Simplified Chinese, or Traditional Chinese Language Kits, as well as any non-Roman localized Systems, versions 7.1 or greater. (See Figure 2.)

Default Font Preference
If the current font and Primary Script do not match, ClarisWorks 4.0 still prevents gibberish characters from displaying when you type. For example, if you begin typing in Japanese but the current font of the insertion point is not a Japanese font, then the Default Font for Japanese from the WorldScript Preferences dialog is used. To choose a new Default Font for a particular script that is installed, you select the script in the list then choose a font from the pop-up menu below the list. The contents of the pop-up will contain all the fonts for that script currently installed in your System, and will change when you select a different script in the list.

WorldScript support in the ClarisWorks environments
Depending on the environment, WorldScript functionality is consistent with the interface of that environment. Following are the highlights of ClarisWorks WorldScript support.

Spreadsheet
The Spreadsheet can handle only one font setting per cell, and it is therefore impossible to enter text in more than one script in the same cell.

Database
When defining fields in the Database, only one script (the Primary Script) can be used for field names. You can change the Primary Script by using the Language Register (see above). The Roman script is the default Primary Script and therefore field names can be defined in Roman text. (e.g., English, French, Italian, etc.) without changing anything.

Database fields can contain text in multiple scripts, just as text frames can. When entering text into a field, all scripts installed in the user''s System are available. Find/Change in the Database is also Multi-script savvy. For example, the cedilla (□) character is used as part of many different two-byte characters in the Japanese script, but if you try to find all records with the cedilla in a field, then no records with Japanese characters will be found, even if they contain the cedilla character code as one half of a Japanese character. The Match Records and Calculation Field dialogs cannot display text in a script other than the Primary Script set by the Language Register application. If you have a database with Chinese data, ClarisWorks should be registered as a Chinese application to correctly display Chinese text in those dialogs.

Because Match Records uses only the Primary Script in its dialog box, it performs a straight byte-comparison of the data in the database, and therefore is not strictly WorldScript-savvy. In other words, it will find records without looking at the script of the data in the fields being searched.

The functions used in a Calculation field will work properly with data in any script. However, any data entered in the dialog [e.g., Left("Field1", 1) = "□"] will be compared byte-by-byte with field data, and this will not reflect any script information. Therefore, if you are using mixed data in several different scripts, only the Primary script will be used to display text in the Calculation Field dialog. Sorting and finds, matches, or calculations that use symbols like "<" will follow the sorting rules from the WorldScript Preferences panel. (See Figure 2.)

Communications
The Communications Module does not support WorldScript or two-byte characters.

Word Processing
ClarisWorks is WorldScript-compatible in the Word Processor and text frames and therefore can handle text in all left-to-right scripts without modification.

A note about special functions
Document Word Count
Some languages do not have spaces between words, so the word count feature has been modified to count contiguous runs of characters of the same type as a word. For example, a Japanese sentence with some Kanji, then some Hiragana, then Katakana all in a row would result in a count of three words, one for each contiguous run of a particular character type, even though there are no spaces between any of the characters.

Character count returns the number of characters correctly, whether counting two-byte or one-byte characters.

Spelling
Roman letters exist in both one-byte and two-byte forms, and both will be spell-checked correctly. Multi-script text is supported in the Replace field of the Speller dialog.

TA43355_ClarisWorks_is_WorldScript_Ready.pdf

Sorting

You may be interested in sorting your data using two different language scripts. The "Sort Order" pop-up menu contains all the sort orders installed in your Text Control Panel in the System Folder. These extra sort orders are included with the Language Kit and are automatically installed together. Only one Sort Order may be used at a time, and the current Sort Order will determine how sorting of Database and Spreadsheet data occurs in all open documents. For this reason, ClarisWorks cannot correctly sort text from more than one non-Roman script at a time (e.g., Japanese and Chinese). If a database or Spreadsheet cell range has mixed Japanese and Chinese data, it is recommended to divide the data into similar sections and sort them separately, changing the Preferences each time.

Ready for WorldScript

ClarisWorks 4.0 is WorldScript-ready, which means that it supports multiple languages, scripts and Apple Language Kits, enabling you to integrate two-byte characters using Chinese, Korean and Japanese text within your multilingual documents. Keeping the above interface considerations in mind, you can take full advantage of the WorldScript functionality available to you in the various ClarisWorks environments.

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ClarisWorks: Performa Bundles

Listing of Performa models that will be bundled with ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The following are Performa models Claris is bundling ClarisWorks on for early summer and fall of 1995:

- 580
- 631
- 636
- 640
- 5200
- 5215
- 5300
- 6116
- 6216
- 6218
- 6220
- 6230

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Difficulty Installing ClarisWorks 3.0 for Windows On a Compressed Drive

How to remove WIN32s from your system so that ClarisWorks can be installed

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

When installing ClarisWorks 3.x onto a system that is using Stacker 4.0 (or other compression utilities), the ClarisWorks installer will not recognize the "stacked" or compressed drive letters and will only give the option of installing to the uncompressed drive letters of the system.

This seems to be an incompatibility with other versions of WIN32 and Stacker 4.0. If there is an version of WIN32 on the system and you get errors trying to install ClarisWorks, remove it and reinstall ClarisWorks starting with disk #1. Once the version of WIN32 that comes with ClarisWorks is installed it should allow the install program to recognize the "stacked" or compressed drives and installation can continue as expected.

Here are the steps needed to remove a preexisting version of WIN32 from your system

1. Remove the following line from the 386 Enhanced [386Enh] section of the SYSTEM.INI file:

DEVICE=<WINDOWS>\\<SYSTEM>\\WIN32S\\W32S.386

where <WINDOWS> and <SYSTEM> are the locations of your WINDOWS and SYSTEM directories, respectively. In a normal Windows configuration the line will read:

DEVICE=C:\\WINDOWS\\SYSTEM\\WIN32S\\W32S.386

2. Modify the following line from the [BOOT] section in the SYSTEM.INI

DRIVERS=MMSYSTEM.DLL WINMM16.DLL

the change should read as follows (remove WINMM16.DLL):

DRIVERS=MMSYSTEM.DLL

3. Delete the following files from the <WINDOWS>\\<SYSTEM> subdirectory or from the SYSTEM directory in network installations:
W32SYS.DLL
WIN32S16.DLL
WIN32S.INI

4. Delete all the files in the <WINDOWS>\\<SYSTEM>\\WIN32S subdirectory or the <SYSTEM>\\WIN32S subdirectory in network installations. Then delete the WIN32S directory itself.

The above changes will take effect the next time Windows is started.

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ClarisWorks 4.0: Spelling Checker Changes and Features

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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There are several new features available in the new "world-ready" speller that were not in the previous spelling checkers. The spelling checker now supports Japanese and other non-Roman scripts. However, it still does not support Arabic or Hebrew. In Japanese applications, the spelling checker works on all Roman text, whether it is one-byte or two-byte (Romanji). It skips over all two-byte Japanese text (Kanji, Hiragana, and Karakana) when spell-checking a language written in the Roman script. If you are checking a document and the speller finds a misspelled word, you now have the option to change the spelling of a misspelled word by replacing it with a text string made up of characters frommultiple scripts. For example, you can replace misspelled text such as "rennew" with a Kanji character. You can type Roman characters while in the Japanese font, and they will be spell-checked correctly.

If a Japanese font is used within the document, the context window will display the Japanese font. Each individual character in the context window appears in the font used for that character in the document. (See Figure below.)

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HTML Primer Version 1.5.1 (Included With ClarisWorks 4.0) - Part Two

This is a copy of the HTML primer that comes with ClarisWorks 4.0 for Macintosh. (Technical Details)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Technical details

This section describes some of the details of the HTML tags used by the translator.

Character formatting HTML has two kinds of text styles, logical and physical. Logical styles are interpreted differently by different browsers. For example, the logical style (that is, ÒemphasisÓ) may be represented as red single underline by one browser and italics by another. Other examples of logical text styles are and <cite>. Physical styles, such as italic, underline, and 11, 12, or 13 point bold, are represented as typed. When you format text as italic, underline, or 11, 12, or 13 point bold, the ClarisWorks HTML translator tags these physical character styles with logical character styles, like this:

These types of characters Are assigned this HTML tag

Italics <cite>

Underline

Bold (11, 12, or 13 point only)

Note If bold text is any size except 11, 12, or 13 points, the translator tags it as a header. See ÒHeaders,Ó below.

International characters The translator supports most of the ISO Latin 1 character set standard on both export and import.

Special characters Some characters (< > & ; and /) are used in HTML tags. If you type the characters <, >, &, ; or /, the translator interprets them as typed. If you want the characters to be interpreted as part of HTML tags, style the tags as literal text. See the section ÒLiteral text.Ó

Paragraphs and carriage returns The translator tags as a paragraph (<P>) any text followed by a hard return (created by pressing the Return key). The translator tags as a break (<BR>) any text block followed by a hard return that is formatted by placing the insertion point in the text, choosing Paragraph from the Format menu and then setting Space After to 0 (zero).

Headers A header is a logical style. The size depends on the type of header. Browsers usually insert white space above and below the header and display headers as bold.

If a text is bold, the translator checks the font size and then tags the bold text according to these rules:

If the bold text is this size The translator tags the text as

Greater than or equal to 20 points <H1>

Greater than or equal to 18 points and less than 20 points <H2>

Greater than or equal to 14 points and less than 18 points <H3>

Greater than 10 points and less than 14 points

Greater than 9 points and less than or equal to 10 points <H5>

Less than or equal to 9 points <H6>

Lists For each list level, the translator inserts the tag <OL> for an ordered list and <UL> for an unordered list. For each list item, the translator inserts a list-item tag (<LI>).

Horizontal rules If underscores begin and end with a hard Return, the translator inserts the <HR> (horizontal rule) tag in the HTML document.

About this HTML translator

The HTML translator included with ClarisWorks 4.0 represents the joint efforts of Claris and a dedicated team at the Highly Interactive Computing Project (Department of Electrical Engineering and Computer Science) at the University of Michigan in Ann Arbor.

Claris would like to express its thanks to the Highly Interactive Computing Project, including:

Brian Sullivan

Ryan Day

Sean DeMonner

Jeff Spitulnik

Amanda Pryor

Edward Andrews

Craig Braman

Elliot Soloway

Claris also extends its thanks Dr. Barbara Kurshan of Educorp Consultants.

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International Formatting Support

Claris Organizer has support for the metric system and general formats used by the international customer.

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This article has been archived and is no longer updated by Apple.

The Claris Organizer software personal information manager has had a good reception in the United states and is now becoming available in more and more countries, as part of its localization plan. While small and powerful, it also includes features that have been developed to support the needs of international customers. Below is a sampling of these features:

Measurement system
The measurement system featured in
Claris Organizer now supports the metric system.

Number formatting
The decimal separator that Claris Organizer uses is the one set in the Numbers Control Panel.

Week Start
The first day of the week in the Agenda is automatically set to Monday in European versions.

Addresses
The fields on Contact and Note cards generated in Claris Organizer now display the address fields in the right size and position for the addressing conventions in the countries for which Claris Organizer has been localized. The Copy Special command and print formats also use the correct address format. For example, the French version of 1.0v2 has the Postal Code (CP) before the city. See the listing below for the countries for which Claris Organizer has been localized.

Telephone numbers
Claris Organizer users can specify their own phone number formatting. The "Edit ListÉ" at the bottom of the telephone pop up menu in the Contact Preference allows the user to type in something like "(#) ### - ####" if they want a phone number formatted as (3) 456-9874.

Phone numbers that begin with a plus sign (+) are not formatted, they are treated as international phone numbers. It is assumed that international numbers will have a different format than local ones, and Claris Organizer users are expected to enter all formatting characters.

International telephone dialing
The International Prefix in Contact Preferences is dialed when a number begins with the plus sign (+). This prefix should be the international access code for the current country. The rest of the number is assumed to include the country code, city code and subscriber number.

Note: The city code should be entered in the form that is appropriate for international dialing. Usually, the leading zero should be omitted.

While Claris Organizer continues to have a successful reception in the United States, plans are underway to add localizations. The Claris Organizer Development Team is actively pursuing new ways to accommodate the international customer.

Localized versions
Claris Organizer 1.0v2 has been localized for the following countries:

United Kingdom
Canada (also available in French Canadian)
Australia
France
Germany

Please check with your Claris software dealer for details on ordering.

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LaserWriter: Recycled Paper Specifications

With the use of recycled paper becoming more of an issue, has there been any testing done on its effects on the Canon LaserWriter engine? How is the paper graded, and what can we advise users to ask their suppliers for to ensure that the paper works with the LaserWriter?
This article has been archived and is no longer updated by Apple.
There are a number of specialized tolerances associated with paper used in the LaserWriters. Although no specific tests have been done on recycled paper, the following specifications must be met for the paper, recycled or not, for paper to work properly:

Poundage tolerances = 16-35 lbs. with Manual Feed; 16-24 lbs. with Paper Tray.

Coating and grain are not specified individually, but the final smoothness, which includes the long-grain requirement and any coating, should fall into the range of 100-300 Sheffields.

The end result should be a paper, including any coating, that does not scorch or melt at 200 degrees C for 1/10 of a second.
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International Language Packs for ClarisWorks 3.0 for Windows

International language packs for ClarisWorks 3.0 for Windows support French, German, Spanish, U.K. English, and U.S. English

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This article has been archived and is no longer updated by Apple.
International language packs are available for ClarisWorks 3.0 for Windows software in the following languages:

* French
* German
* Spanish
* U.K. English
* U.S. English

International language packs for Windows are to be used with Claris 32-bit Windows applications. ClarisWorks 3.0 for Windows is the only 32-bit Windows application that Claris is currently shipping.

Note: International language packs for Windows are not suitable for use with ClarisWorks 1.0 for Windows or FileMaker Pro 2.0 for Windows, since they are 16-bit applications.

How to install international language packs for Windows
There is no special installation programs for the dictionary files included in the international language packs. Copy the dictionary files directly from the international language packs disk to the Claris directory on your hard disk using any Windows file copying function. The customary path name for the Claris directory is:

\\windows\\claris

Dictionary types are distinguished by their file extension:

*.msp indicates a main spelling dictionary

*.chy indicates a hyphenation dictionary
*.mth indicates a thesaurus

How to select and use international language packs for Windows

1. Launch ClarisWorks 3.0, and open a document.
2. Choose Edit-Writing Tools-Select Dictionaries from the menu. The Selection Dictionary dialog box will appear.
3. Use the pop-up menu at the top of the dialog box to specify the dictionary type desired.

Choose	To
Main Dictionary	Install a main spelling dictionary
User Dictionary	Install a user spelling dictionary
Hyphenation Dictionary	Install a hyphenation dictionary
Thesaurus	Install a thesaurus

4. Select the dictionary file for the desired language in the Open dialog box. By default, the dictionary files are located in the \\windows\\claris directory.
5. Click Select; then click Done to return to the document.

ClarisWorks 3.0 will now use the dictionary you have selected to perform the corresponding function (spell checking, hyphenation, or thesaurus look-up).

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Localized Updaters

Update your localized version of Claris software with the correct version of the updater.

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Localized updaters work only for applications in the same language. Practically speaking, this means you cannot update a French product with a German updater.

How an updater works
An updater works for specific versions of an application. You will want to consult the chart (see Figure 1) to see what versions apply to you. The update is a two-step process. In the first step, you update the application. In second step, you update the file translators. Once your update is complete, you can throw out the older version of the application. However, before running an updater, be sure you have addressed the following issues:

Virus detection software
The updater makes several changes to the application. Many virus utilities may prevent these changes and therefore prevent a successful update of your software. To avoid this inconvenience, disable all virus detection software and restart your Macintosh before running the update. The easiest way to do this is to restart your Macintosh with the Shift key held down, holding it down until the "Extensions Off" message appears in the Welcome to Macintosh dialog box.

Hard disk space
For this installation to be successful, be sure that you have enough free disk space on your hard drive. It is recommended that you have ten megabytes free for every 100 megabytes on your hard disk. Many updaters may take up to a full megabyte of space on your hard drive.

How to update an application
Here are the steps for running an updater:

1. Double click on the icon for the Updater application.
2. Click OK.
3. The Updater will attempt to find your copy of the application that you want to update. If the Updater fails to find it, you will be prompted to locate and select your current version of that application.
4. Click Update.
5. You will then get a status bar showing that the application is being updated. When it has finished, you will see a dialog that indicates a successful update has been performed. Click OK to continue.
6. From the desktop, go to the folder that contains the application. You will find your original program and the new version, which will be labeled with the newer version of the application.

7. To ensure that the updater worked correctly, double-click on the application just installed. If successful, quit the application and return to the Finder.
8. If your original application was not automatically deleted for you, place your original application in the Trash and choose Empty Trash from the Special menu in the Finder.

How to update the translators
As part of a regular update, you will also need to update your existing Claris application Translators file. To replace this file, follow these steps:
1. Open the System Folder on your hard disk.
2. Locate and Open the Claris folder.
3. Copy the new application Translators file from the updater diskette into the Claris folder; respond OK when asked whether to Replace the existing file. Note: be sure not to copy this file into the Claris Translators folder. If you do, the import/export capability will not work. The standard installation of the Claris application places the Claris application Translators file in the Claris folder. If you have done a custom installation, this file will either be in the System Folder or in the same folder as the application. If this is the case, locate the file and replace as directed.

A note on FileMaker Pro European Updaters
There is a corrected version of the Read Me file for the FileMaker Pro Updater 2.1v3. A change was made to point #7 in the Read Me file, which now reads as follows: If you are sharing databases on an AppleTalk network, copy the FileMaker Network file included with the Updater into the Claris folder. The Claris folder should be located inside your System Folder.

If you are sharing databases between PCs and Macintosh computers on a Novell network, copy the FileMaker Network file included with the Updater (in the MacIPX Updater folder) into the Claris folder. If you are asked to replace a file with the same name, do so. The MacIPX control panel should be put into the Control Panels folder inside the System Folder. The other MacIPX files (MacIPX Token Ring, MacIPX AppleTalk and MacIPX Ethernet) should be put into the Extensions folder inside the System Folder.

TA43364_Localized_Updaters.pdf

Where the updaters are
You can locate the updaters online at the following Internet ftp site:

ftp://ftp.claris.com

Log in as "anonymous."

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Obtaining High Resolution With Rotated Text

Rotated text is changed to a 72 dot per inch bit mapped image. Higher resolution can be achieved by creating the text in a paint document at 4 times the desired font size and pasting it in as an object and changing the frame resolution to 288 dpi.

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This article has been archived and is no longer updated by Apple.
When text is rotated, it is converted to a 72 dot per inch bit mapped image. This looks very poor when printed on any high resolution printer, including PostScript printers printing at 300 dots per inch (dpi) and QuickDraw printers such as the StyleWriter which prints at 360 dpi.

A high resolution version of the rotated text can be created by typing the text in a paint document at 4 times the desired font size. Copy the text from the paint document and paste it into the draw or database document. Select Modify Frame from the Options menu and change the resolution to 288 dpi. This increases the resolution and decreases the size by a factor of four. The object can now be rotated and positioned. If a rotation of other than 90 degree increments is desired, then rotate the text in the paint document before copying. After pasting into the draw or database document, change the fill pattern to transparent and the line width to none. This will allow other objects to show through the large frame of the rotated text object and remove the black border from around the frame.

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Russian ClarisWorks on non-Russian Operating Systems

To run Russian ClarisWorks on non-Russian Operating Systems, your system must be running the WorldScript I Extension and the fonts and keyboard supported by the language

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This article has been archived and is no longer updated by Apple.
The Russian ClarisWorks software can be used on different operating systems (including the U.S. operating system) if you have the following:

* Language Supported Keyboard
* Language Supported Fonts
* WorldScript I Extension

The three items listed above enable the U.S. system to accept Cyrillic characters and use Cyrillic fonts.

U.S. ClarisWorks on non-U.S. operating systems
U.S. ClarisWorks will work on a localized operating system as long as the above three items are installed.

Considerations when running an application on a different system:
As is the case with running on two different systems, character mapping will differ when you work with any version of ClarisWorks on systems with different character encodings, even when you can type Cyrillic characters and use Cyrillic fonts. Depending on how a particular character on a system is mapped to another character on a different system, there could be instances where a letter in the alphabet will be mapped to a punctuation character and vice versa. Therefore, things like word selection (double-click) won't work properly, because the punctuation character (such as comma or period) in the U.S. ClarisWorks could be mapped as a letter character on the Russian system. So, when you double-click, ClarisWorks is only going to select up to that letter character for the same reason that it only selects up to a period or comma had one double clicked on a U.S. system.

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System 7 Tune-Up, System Update 3.0 and ClarisWorks 4.0

An explanation of the recommendations made on page 1 of the ClarisWorks 4.0 Installation Guide

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This article has been archived and is no longer updated by Apple.
On page 1 of the ClarisWorks 4.0 Installation Guide, it states that System Update 3.0 is recommended for customers using System 7.1, System 7 Pro (System 7.1.1), or System 7.1.2, and that System 7 Tune-Up 1.1.1 is recommended for customers using System 7.0 or System 7.0.1. This information is included only as helpful advice on how to get the best performance and reliability from your Mac OS computer.

These tune-ups address many system-level issues that relate to memory, file storage, speed, and printing that can affect any of the programs that you use on your Macintosh.

Although neither of these updates are officially supported by Apple Computer, Apple Computer continues to make them available for download both via the Internet.

If you have Internet access, use your World Wide Web browser to access the following URL:

http://www.info.apple.com/cgi-bin/lister-pl?Apple.Support.Area/Apple.Software.Updates/US/Macintosh/System

If you prefer, these files may also be retrieved via anonymous FTP from ftp.info.apple.com.

In addition to the updates mentioned in the ClarisWorks 4.0 Installation Guide, Apple Computer has also made an update available for users of System 7.5. This update is called "System Update 1.0 for System 7.5" and is also available from the above-mentioned services.

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Exchanging ClarisImpact 2.0 Files Between Macintosh and Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisImpact 2.0 for Windows has the same file format, user interface, and features as ClarisImpact 2.0 for the Macintosh. You can create a ClarisImpact document on Windows and edit it on a Macintosh computer, or vice versa. Therefore, if you work with both Macintosh and Windows versions of ClarisImpact, or if you collaborate with colleagues who use ClarisImpact 2.0 for Macintosh while you use ClarisImpact for Windows, you can work without translating files or learning a different program.

However, if you want to transfer files between platforms via diskette, you must use a file transfer program such as PC Exchange, AccessPC, or a similar utility that lets you create and use PC- formatted diskettes on a Macintosh. These utilities require that your Macintosh have a high density drive (FDHD SuperDrive). Follow the directions in the documentation of the file transfer utility program.

After copying the files to or from a PC-formatted disk, it may be necessary to rename the files. When sharing files with systems running Windows 3.1 or Windows for Workgroups 3.11, make sure that your ClarisImpact filenames follow DOS filename conventions (8 characters or less) and end with the .CID extension. (For ClarisImpact Library files, use the .CLB extension.)

When you use a multi-platform server (such as Novell Netware) to transfer files from Macintosh to a Windows computer, you can use a ClarisImpact file right off the server. No file transfer program is required.

Fonts, margins, page breaks, and some graphics might display differently when transferred between Macintosh and Windows. You might have to adjust the margins and page breaks in the transferred file to restore the original appearance.

You can minimize font problems by installing and using the TrueType fonts that ship with ClarisImpact for both Macintosh and Windows.

Refer to the Important Information (Macintosh) or Read Me (Windows) file that is installed in the ClarisImpact application folder or directory for platform specific information on font mapping.

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How the ‘Fit Document to One Page‘ Printing Option Works

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact 2.0 adds a new option in the print dialog, 'Fit Document to One Page.' This option is available only in drawings; it will be grayed out on report (word processing) documents. The purpose of the 'Fit Document to One Page' checkbox is to give a snapshot view of the entire document. It fits the entire document (including white space) to one page, as opposed to fitting the graphic or model to one page.

Example
An organization chart model in a drawing document is set to print in landscape mode, but the organization chart spills over onto the second page to the right by approximately 3 inches. If this document is printed with the 'Fit Document to One Page' option checked, the organization chart prints on one page, but it is considerably reduced and has sizable white space to the right and below the chart.

If there are blank pages or extra blank space in the document, the white space will be even larger, and the graphic smaller. To remove blank pages, choose Document from the Layout menu. Using your mouse pointer, resize the number of pages with the document size box or manually type the number of pages for the document.

To print the organization chart so that it fills one page, consider these options:

1. Resize the model by clicking the selection handles and dragging until the graphic fits on one page.

2. When printing from a Macintosh, you can choose Page Setup from the File menu and reduce the image to less than 100 percent. The reduction option is, unfortunately, not available when printing from Windows 95.

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ClarisImpact 2.0: Mac Trial Version Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Welcome to ClarisImpact 2.0, the complete business graphics manager.

A few important things to know about this demonstration disk:

Some of the features have been disabled in this version of the application. You will not be able to save documents or copy objects to other applications via the clipboard. However, cut, copy and paste will work within the application.

Printing is available, but your printouts will have a watermark in the background.

The "Real Life" CD that was distributed at MacWorld Expo (and other places) includes a ClarisImpact 2.0 Trial version of the software (Located in the DemoWare section). The following is from the ReadMe First! file of that Trial Version:

The demo includes a sampling of the styles and art that are available. The non-demo version of ClarisImpact contains an even greater assortment for you to choose from.

Very Important Information for Claris Customers!

If you own another Claris application, chances are you have a copy of the "Claris XTND System" in your Claris Folder (located in your System Folder).

When you have finished using this demonstration, be sure to throw away the "Claris XTND System" that is included with this disk. While this will not adversely affect the operation of your computer, it is recommended to ensure you will get the best possible performance from your other Claris applications.
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ClarisImpact: Installation and Multi-Use from Novell NetWare Servers

Steps enabling you to multi-launch ClarisImpact from a Novell NetWare server

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The following information is from Section E of the Important Information file that ships with ClarisImpact 2.0 for Macintosh:

If you intend to run ClarisImpact as a multi-user application from Novell NetWare servers or perform network installations from an installer located on the server, and you are using System 7.1 or 7.5, then you need to reset the shared bit for the installer and/or the ClarisImpact application. This bit is preset in ClarisImpact, but the setting is cleared when the files are copied to a NetWare server if you are using the system versions named above.

You can reset the shared bit using either of the following two methods:

Method 1
Using the NetWare Tools application, which comes with Novell NetWare for Macintosh:
1. Make sure you have access privileges to change files.
2. Log onto the server.
3. Start NetWare Tools.
4. Select File and Folder Flags from the Utility menu.
5. Select the ClarisImpact Installer, ClarisImpact - Macintosh, and/or ClarisImpact - Power Macintosh that you want to share.

6. Click Shareable.
7. Close the File and Folder Flags window.
8. Quit NetWare Tools.

Method 2
Using ResEdit:
1. Make sure you have access privileges to change files on the server.
2. Log onto the server.
3. Start ResEdit.
4. Select Get File/Folder Info from the File menu.
5. Select the ClarisImpact Installer, ClarisImpact - Macintosh, and/or ClarisImpact - Power Macintosh that you want to share.
6. Click both Shared and Invisible in the Info window.
7. Select Save from the File menu.
8. Deselect the Invisible checkbox.
9. Select Save in the File menu.
10. Quit ResEdit.

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"Bad Formula" Message in ClarisWorks (Win), Calculations in FileMaker Pro 2.x Files Translated from Macintosh to Windows

If ClarisWorks or FileMaker do not see the proper separators in the control panel, it is likely the results will not be accurate.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When entering what looks like a valid calculation using ClarisWorks for Windows 3.x, the system will come back with a BAD FORMULA dialog and will not allow you to enter the calculation into the database or spreadsheet document.

Many functions in ClarisWorks 3.x require more than one parameter to work properly. For example the DATE function requires parameters for MONTH, DAY, and YEAR. When entering in this calculation, ClarisWorks expects that each parameter be separated by a comma (by default).

Example:
Date ('year value','month value','day value')
Date ('95','12','25')

In the INTERNATIONAL section of the CONTROL PANEL, there is a setting for LIST SEPARATOR. The value for list separator is normally a comma. If it is set to anything else, there is a possibility that will affect the entering of calculations within ClarisWorks. If possible, it is recommended that you change the LIST SEPARATOR to a comma, restart ClarisWorks and reenter your calculation(s).

If the LIST SEPARATOR cannot be changed, then it is still possible to create valid calculations within ClarisWorks. To do so, you will need to enter the calculations manually (as opposed to clicking on functions and fields) and substitute the value which is entered in the LIST SEPARATOR with all the commas in your calculation(s). NOTE: This is not recommended and may not work in all circumstances. Using a comma will always assure a valid calculation.

Example:
LIST SEPARATOR = #

An example of valid calculations based on the LIST SEPARATOR being a "#" would be:

Date ('year value'#'month value'#'day value')
If ('Field A' = 'Field B'#'Field C'#'Field D')
Average (2#4#6)

This does not seem to be a problem with ClarisWorks for Windows 1.0

This is also an issue for FileMaker Pro files created on the Macintosh platform and translated to the Windows platform as the different platforms use different separators. Again, the solution will be the same. Set up the separators in the INTERNATIONAL section of the CONTROL PANEL as mentioned above.

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Garbage Characters in Global Village Gold II Connection in ClarisWorks Communication Environment

Alternate settings to try if you are getting garbage characters in a communication connection.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Using a Global Village Gold II modem, if you run into "garbage" characters in a ClarisWorks communication connection do the following:

Try changing the Connection Settings Handshaking to CTS only.

If that does not work:

Try setting the modem to 2400 bps while "CTS only" handshaking is still set.

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Importing WordPerfect 6.0 (*.DOC;*.WPD Files) Into ClarisWorks 3.0v1 for Windows

ClarisWorks does not show a listing of files of type *.WPD.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When selecting WordPerfect 6.0 (*.DOC;*.WPD) for the file type to import into a word processing document, in the File entry box, ClarisWorks for Windows 3.0 will put a period at the end of WPD extension. This makes it so ClarisWorks for Windows will not show any '.WPD' files.

To recreate, follow these steps:

Select Open from the File menu.
Click import Option Chevron.
Click radio button for Word Processing.
Select WordPerfect 6.x (*.wpd;*.doc)
FileName box list *.doc;*.wpd.

This has been fixed in the 3.0v2 release of ClarisWorks. To upgrade to the new version you can call Claris at (800)544-8544, or you can download the updater from the ClarisBBS at (408)987-7421 via modem.

To download the updater for ClarisWorks 3.0v2 follow either of the groups of steps below once you are logged onto the Bulletin Board Service:
A.
- From the Main menu type "F" for Files
- Type "I" for Information / Updates
- Type "A" for Claris Product Updaters
- Select the file CLW30V2.ZIP

B.
- From the Main menu type "F" for Files

- Type "D" for Download File
- Type in the file name "CLW30v2.ZIP"

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STartFaxing Anomalies with FileMaker Pro 2.x and ClarisWorks

Some important considerations when using these programs concurrently.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The following is an excerpt from: STartFaxing Version 1.1 Release Notes, STF Technologies, Inc., November 1994.

ClarisWorks
If after using FaxMenu you immediately use Command-P to select "Print..." the chosen printer will still be FaxPrint.

Work around: Click in the menu bar once without the FaxMenu keys held down to reselect your original printer.

FileMaker Pro 2.0
The "Settings" button in FaxPrint will not be available unless the [FileMaker Pro] application memory size is increased. Also, using a "Print" button in a layout will not allow the FaxMenu hot keys to work.

Work around: Select Print from the File menu as normal.

[Note: STartFaxing is a lite version of FaxSTF that comes bundled with some modems. - Ed.]

[Note: Mention of third party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Claris assumes no responsibility with regard to the performance or use of third party products.]

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ClarisImpact 2.0v3 Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

WELCOME TO CLARISIMPACT 2.0v3!

Thank you for choosing the ClarisImpact 2.0 application. We're pleased to provide the ClarisImpact 2.0v3 Update, which addresses known issues since its initial release.

This document provides information about:

I. Installing the ClarisImpact 2.0v3 update
II. Problems and issues addressed in v3

I. INSTALLING THE CLARISIMPACT 2.0v3 UPDATE

Before running the updater make sure all of your computer's System software extensions are turned off. To do this:
1. Save all open files and quit all of the programs running on your computer.
2. Hold down the Shift key on your keyboard.
3. Choose Restart from the Special menu.
4. Do not release the Shift key until the words "Welcome to Macintosh. Extensions off." appear on your screen.

To update the ClarisImpact 2.0v3 product currently installed on your computer:
1. Double-click the "ClarisImpact 2.0v3 Updater" installer icon.
2. Read the Claris splash screen and click OK.
3. The ClarisImpact 2.0v3 updater will automatically search your hard disk (and any mounted volumes) and display a list of eligible files for updating.
4. Click Update. The updater will begin updating the selected application. Once the updater is finished, you have the option of deleting the original 2.0v1 or v2 file. Then click OK to quit and you can begin using the updated version of ClarisImpact.

II. PROBLEMS AND ISSUES ADDRESSED IN 2.0v3

This 2.0v3 Updater addresses the following issue from previous versions:

When attempting to save a file or library to a server volume with 2Gb or more free space, a "Disk is full." error would result.

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Home Pack Templates, File List

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
These are the names of the files included with the Home Pack Templates (Macintosh file names). :

-Borders
Bordered Document 1
Bordered Document 2
Bordered Document 3
Bordered Document 4
-Certificates
Certificate 1
Certificate 2
Certificate 3
Certificate 4
-Correspondence
Mail Merge Stationery
Names and Addresses
-Home Finance
Checkbook Balancer
Home Budgeter
How Much Home Can YouÉ
Investment Tracker
Loan Calculator
Mortgage Maker
-Home Organization
Home Inventory
Weekly Planner
-Invitations
Invitation 1
Invitation 2
Invitation 3
Invitation 4
Invitation 5
-Letterheads
Letterhead 1
Letterhead 2
Letterhead 3
Letterhead 4
Letterhead 5
-Newsletters
Newsletter 1
Newsletter 2
Newsletter 3
-Notices
Notice 1
Notice 2
Notice 3
Notice 4
Notice 5
-Resumes
Resume 1
Resume 2
Resume 3

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Small Business Solutions Pack, List of Files Included

NO LONGER AVAILABLE

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
These are the names of files included with the Small Business Solutions Pack (Macintosh version):

Standard templates:
Asset Management
Balance Sheet
Brochure
Business Card 1
Business Card 2
Business Plan
Buy vs. Lease
Customer Database
Direct Mail
Envelope 1
Envelope 2
Expense Report
Fax Cover Sheet
Feedback Form
Gift Certificate 1
Gift Certificate 2
Income Statement
Invoice
Job Application
Lead Tracker
Letter/Apology
Letter/Feedback
Letter/Follow Up
Letter/Interest
Letter/Overdue
Letter/Referral
Letterhead 1
Letterhead 2
Memo 1
Memo 2
Newsletter
Newspaper Ad
Personnel Record
Presentation
Price List
Promotional Flyer
Proposal Generator
Purchase Order
Proposal Generator
Purchase Order
Scheduling Form
Timesheet
Yellow Page Ad

Paper Direct Templates (for use with Paper Direct products):
-Acropolis
Brochure-Acropolis
Business Card-Acropolis
Envelope-Acropolis
Letterhead-Acropolis
Name Tags-Acropolis
Promotional Flyer-Acropolis
-Apollo
Brochure-Apollo

Business Cards-Apollo
Envelope-Apollo
Letterhead-Apollo
Name Tags-Apollo

Promotional Flyer-Apollo
-Aristocrat
Brochure-Aristocrat
Business Cards-Aristocrat
Envelope-Aristocrat
Letterhead-Aristocrat
Name Tags-Aristocrat
Promotional Flyer-Aristocrat
-Blue Carrara
Brochure-Blue Carrara
Business Cards-Blue Carrara
Envelope-Blue Carrara
Letterhead-Blue Carrara
Name Tags-Blue Carrara
Promotional Flyer-Blue Carrara
-Certificates
Certificate 1
Certificate 2
Certificate 3
-Influential
Brochure-Influential
Business Cards-Influential
Envelope-Influential
Letterhead-Influential
Name Tags-Influential
Letterhead-Influential
Name Tags-Influential
Promotional Flyer-Influential
-Marble
Brochure-Marble
Business Cards-Marble
Envelope-Marble
Letterhead-Marble
Name Tags-Marble
Promotional Flyer-Marble
-Monarch
Brochure-Monarch
Business Cards-Monarch
Envelope-Monarch
Letterhead-Monarch
Name Tags-Monarch
Promotional Flyer-Monarch
-Sapphire
Brochure-Sapphire
Business Cards-Sapphire
Envelope-Sapphire
Letterhead-Sapphire
Name Tags-Sapphire
Promotional Flyer-Sapphire
-Strategist
Brochure-Strategist
Business Cards-Strategist

Envelope-Strategist
Letterhead-Strategist
Name Tags-Strategist
Promotional Flyer-Strategist

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ClickBook Does Not Work with an ImageWriter

Clickbook will not work with any models of ImageWriter.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClickBook cannot be used with ImageWriter printers.

There is no workaround at this time. It is not expected that this situation will change.

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TA43381_LaserWriter_ROM_Changes_to_Font_Cache_(TIL00566).pdf

LaserWriter 2.0 ROM: Changes to Font Cache

This article has been archived and is no longer updated by Apple.

Operation of the font cache has changed somewhat. Formerly there was a single limit on the number of bytes occupied by a character in the cache; a character larger than that would not be cached. Now there are two cache thresholds, upper and lower. If a character is larger than the upper threshold (as determined by the bounding box specified to 'setcachedevice'), it will not be cached, otherwise it will be. If a character is cached and is larger than the lower threshold, it will be compressed, otherwise it will be stored as a full pixel array.

The two thresholds are manipulated by the new operators 'setcacheparms' and 'currentcacheparms', described below. The old operators, principally 'cachestatus' and 'setcachelimit', remain valid. PostScript programs rarely deal with these operators.

Although they consume much less space in the font cache than full pixel arrays (by a factor of up to 40), compressed characters require more computation to reconstitute when they are needed. Reconstituting a compressed character is still substantially faster than re-executing the original character description. In systems printing at 300 pixels per inch or less (including the LaserWriter), the default lower threshold is set so that characters up to about

20 points are stored as full pixel arrays while larger ones are stored in compressed form. Caching of regular-sized body text occurs with the full pixel array representation which is time-efficient while caching of large characters occurs with the compressed representation which is space-efficient.
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Serial NB Card: Multiple Serial Port Support

Can the Serial NB Card be used to add more serial ports?

This article has been archived and is no longer updated by Apple.
The Serial NB Card theoretically gives you four additional serial ports. With the introduction of Apple Remote Access (ARA) MultiPort Server you can simultaneously use all four serial ports on a card.

However, there isn't any other software that uses more than one of these ports at a time. This includes MacX25, and SNA*ps, which cannot coexist on one card. You could continue using the two built-in serial ports with the one additional "external" serial NB port (in conjunction with MacX25 or SNA*ps software), so you could have a total of three serial ports available simultaneously.

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Conflict with VISE Installer Causing Excessive Disk Swapping

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
You might find that when you are installing from floppy disks, you are required to do excessive disk swapping. It is often suggested that you restart with extensions off to solve this problem. We believe that the problem is caused by a conflict between the VISE installer and Thunder 7. This problem has been reported in ClarisWorks, FileMaker Pro, and ClarisImpact but may affect others as well.

Thunder 7 is a control panel which allows spell checking any text in any application and is manufactured by Baseline Software.

Workaround, install with extensions off.

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How to Insert an EGO Object

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
EGO stands for Equation Graphic Object. An EGO object is an equation from an Equation Editing Program. These objects, when double clicked on, open the Equation Editor, allowing you to edit and calculate equations like those used in Physics, Chemistry, and Math.

There are three ways to insert an EGO object into a MacWrite Pro or ClarisWorks 4.0 document
1. Insert a file that contains and EGO object.
2. Paste an EGO object from the Clipboard directly into a document,
3. Paste or insert an EGO object into a picture frame in MacWrite Pro* or into a graphics frame in ClarisWorks.

*When you paste an EGO object into an existing inline picture frame in MacWrite Pro, the frame is resized and positioned vertically, using the baseline offset information. A negative baseline offset in the picture information produces a frame that extends below the text in the line.

If the existing picture frame is not an inline frame, MacWrite Pro ignores the baseline information.

** This information is on page 5-2 of the MacWrite Pro Installation and new features guide **
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Simple Scheduling in ClarisWorks

It is possible in a ClarisWorks spreadsheet to schedule events between pairs of people or teams or items. (This method will work with any spreadsheet program that allows searching by cell references.)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Imagine you have six chess players, Ann, Bud, Cal, Dee, Ely and Fay. Each player needs to play each of the other players once. To be efficient, you want to know who should play whom at any given time to avoid idle players.

1. Start by placing a dash in cell A1. Then list the teams or items below that in column A. Also list the teams or items in the same order across the first row. Repeat the sequence again, for example: Ann Bud Cal Dee Ely Fay Ann Bud Cal Dee Ely Fay.

2. In cell B2, place the following formula:

=IF(B$1=$A2,"-",CONCAT($A2," ",B$1))

Press Return or Enter to accept the formula.

3. Highlight from B2 through M7 (click and hold cell B2, drag to cell M7). In the Calculate menu, select Fill Down, and then in the Calculate menu, select Fill Right.

4. In cell A10, type 0, then number from 1 through 3 in the cells below and to the right of the zero.

5. In cell B11, place the following formula:

=INDEX(A1..M7,$A11*2,$A11*2+(B$10*2-1))

6. Highlight from B11 through D13. In the Calculate menu, select Fill Down, and in the Calculate menu, select Fill Right.

Starting at cell B11, you will then see a list of Òmatch ups,Ó or games that should be played. They can be played in single games (only two players playing at a time) or multiple games (four players, or all six players can play at once.)

In a larger example, if twelve teams are playing, they could play up to six games at once (all twelve teams would be playing at once), or anywhere down to one game (two teams) at a time. By following the schedule, all the teams will play all the other teams in the most efficient way. (Work from top to bottom, from left to right, starting at B11.)

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Macintosh SE: How to Determine Different ROM Versions

When the Macintosh SE was introduced, I recall hearing something about the Macintosh SEs being shipped with different ROM versions. What are those differences, if any?

This article has been archived and is no longer updated by Apple.
You are right; there have been two versions of ROMs shipped in the Macintosh SE. The only difference, which also makes the two systems easily distinguishable, is that the systems with Apple SuperDrives (formerly Apple FDHD) have newer ROMs that include support for that drive. Those with 800K drives have the original ROM.

Since the new code in the new ROMs is also used in the new systems, if any incompatibilities exist, they are likely to be related to the SuperDrive code and may very well affect the other Macintoshes with SuperDrives. We aren't aware of any software compatibility problems caused by these new ROMs.

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Type 11 Errors in ClarisWorks

There have been reports of customers getting Type 11 errors in both ClarisWorks and WordPerfect. This is a solution that we have encountered in some instances.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The error "11" normally is hardware related but also occurs with System 7.1, the Drag & Drop extension, and various applications.

If you have System 7.1 with this extension and are getting this error, try removing it. See if it goes away. The Drag and Drop extension was an add-on to System 7.1 but is built into System 7.5. Upgrading to 7.5 also reportedly to solves the issue.

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Converting Microsoft Works Databases to ClarisWorks (DB) on a Macintosh

Guidelines for converting databases from Microsoft Works to ClarisWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you are using Microsoft Works 2.0, ClarisWorks (2.0 and 3.0) can read the database in directly. With ClarisWorks launched, select OPEN from the FILE menu, click on Database as the type of document, and then double click the MSWorks DB file. The file will open into a ClarisWorks database. Save it, and use it.

If you are using Microsoft Works 3.0, you must first save your database as a DIF file (this saves the data in a text format, with the field names), under a new name (ie., if file is called "My Database", then you would rename it something like "Import this to ClarisWorks"). Then, with ClarisWorks launched, select OPEN, click Database, and then double click the DIF file ("Import this to ClarisWorks"). The file will open into a ClarisWorks database. Save it, and use it.

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Understanding the ClarisWorks Font Menu In ClarisWorks for Windows (1.0 & 3.0)

How to control what appears in the font menu in ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks for Windows has a default setting which limits the number of fonts displayed in the Font menu to 22. The type and number of fonts installed on your system is what is initially responsible for determining which 22 fonts appear in the menu. ClarisWorks finds these fonts in the following order: ATM fonts, Windows screen/plotter fonts (MS Serif, MS Sans Serif, Modern, Roman, Script), TrueType, and lastly, printer fonts. So, for example, if you have 22 or more ATM fonts installed on your computer, the ClarisWorks Font menu will display only ATM fonts, regardless of the other types of fonts which may also be installed.

You can add fonts to the menu by choosing the "Other" command at the bottom of the Font menu. If you add a font without increasing the 22-font limit, the font you chose will be added and the least recently used font will be removed. This command can also be used to apply a font not in the menu to highlighted text without adding the font to the menu. This is the recommended procedure for applying a seldom-used font.

The total number of fonts displayed in the menu can be increased by changing the number of the MaxFonts= line in the [ClarisWorks] section of the Claris.ini file to some number higher than 22. This file is normally located in the \\Windows directory and can be opened and edited using Notepad, Write, or any other text editor.

******** WARNING: at approximately 70 fonts, ClarisWorks begins to exhibit erratic behavior. This is due to the functioning of the Windows core file GDI.EXE and the limited nature of its resources. Because of this, it is strongly recommended that this procedure be used only in cases where there is a compelling need to have an increased number of fonts displayed in the menu and that the number of increased fonts be kept as low as possible.

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ClarisImpact 2.0 Disk Contents (Macintosh) and Installation Guide

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The ClarisImpact 2.0 High Density Disk Set for the Macintosh (a total of 11 disks) contains the following items. File sizes of individual items are approximate. These are compressed files and will be uncompressed during the installation process.

Disk 1
Install ClarisImpact (1368K)
Important Information (24K)
Developer VISE Moved Items (Empty Folder)

Disk 2
Install ClarisImpact.2 (1376K)

Disk 3
Install ClarisImpact.3 (1376K)

Disk 4
Install ClarisImpact.4 (1376K)

Disk 5
Install ClarisImpact.5 (1376K)

Disk 6
Install ClarisImpact.6 (1376K)

Disk 7
Install ClarisImpact.7 (1376K)

Disk 8
Install ClarisImpact.8 (1376K)

Disk 9
Install ClarisImpact.9 (1376K)

Disk 10
Install ClarisImpact.10 (1376K)

Disk 11
Install ClarisImpact.11 (128K)

You will need approximately 20 Mb of free space on your hard drive to do an Easy Install. When doing an Easy Install, the contents of the disk set will be installed onto the hard disk as follows:

At the root (main) level of your hard drive, in ClarisImpact 2.0 folder (13368K):

Art (6444K)
ANIMALS1.CLB (324K)
ANIMALS2.CLB (276K)
ANIMALS3.CLB (176K)
ANIMALS4.CLB (224K)
ANIMALS5.CLB (16K)
APPLNC.CLB (12K)
ARCHIT.CLB (32K)
ARROWS.CLB (44K)
AUDIOVIS.CLB (24K)
AWARDS.CLB (44K)
BALLOONS.CLB (8K)
BIRDS.CLB (196K)
BIZ_EQUI.CLB (56K)
BKGRNDS.CLB (368K)

BURSTS.CLB (64K)
CHEM.CLB (36K)
CODEFLAG.CLB (16K)
COMMON.CLB (64K)
COMPUTER.CLB (52K)
DIGITAL.CLB (20K)
DINOSAUR.CLB (224K)
EDUCATE.CLB (16K)
EVENTS.CLB (60K)
FABRIC.CLB (8K)
FISH.CLB (128K)
FLAG_A_J.CLB (128K)
FLAG_K_Z.CLB (132K)
FLOW2D.CLB (8K)
FLOW3D.CLB (8K)
FLOWERS.CLB (136K)
FOODS.CLB (20K)
FORMS.CLB (56K)
FRUIT.CLB (40K)
FURNISH.CLB (20K)
GLOBES.CLB (48K)
HANDS.CLB (20K)

HOLIDAYS.CLB (172K)
ISO_7000.CLB (80K)
ISO_7001.CLB (100K)
LETTERS.CLB (132K)
LOGIC.CLB (40K)
MAPS1.CLB (116K)
MAPS2.CLB (132K)
MAPS3.CLB (132K)
MAPS4.CLB (148K)
MAPSYMBL.CLB (28K)
NETWORK.CLB (16K)
OFFICE.CLB (32K)
PEOPLE1.CLB (200K)
PEOPLE2.CLB (292K)
PEOPLE3.CLB (308K)
PICTOGRM.CLB (32K)
RELIGION.CLB (152K)
SIGNS.CLB (28K)
SPORTS1.CLB (48K)
SPORTS2.CLB (28K)
SPORTS3.CLB (260K)
SPORTS4.CLB (184K)
SPORTS5.CLB (200K)
SPORTS6.CLB (220K)
STARS.CLB (24K)
TOOLS.CLB (24K)
TRANSPRT.CLB (12K)
TREES.CLB (56K)
USA2D.CLB (24K)
USA3D.CLB (60K)
WEATHER.CLB (48K)
ZODIAC.CLB (12K)
CIStyles (2444K)
B&W (304K)
Bold (432K)
Flochart (256K)
Grays (344K)

Muted (344K)
Natural (420K)
Primary (344K)
ClarisImpact - Macintosh (2004K)

or
ClarisImpact - Power Macintosh (4322K)
DataDraw (1368K)
EXCEL (312K)
FMPro (1056K)
Important Information (16K)
Palettes (128K)
AppleSys.ccp (8K)
Bold.cgp (8K)
Cyan_Blu.ccp (8K)
Default.ccp (8K)
Default.cgp (8K)
Grays.ccp (8K)
Grays.cgp (8K)
Muted.cgp (8K)
Natural.ccp (8K)
Natural.cgp (8K)
Pastels.ccp (8K)
Presentn.ccp (8K)
Primary.cgp (8K)
Red_Yel.ccp (8K)
Viol_Mag.ccp (8K)
YGr_GrBl.ccp (8K)
Samples (196K)
Colors.CID (20K)
Cust_Col (144K)
Gradient.CID (20K)
Patterns.CID (12K)
Tutorial (768K)
Lesson 1 (12K)
Lesson 2 (8K)
Lesson 3 (8K)
Lesson 4 (8K)
Lesson 5 (8K)
Lesson 6 (8K)
Lesson 7 (8K)

Lesson 8 (8K)
Libraries (592K)
Newdates (4K)
Releases (8K)
Samples (96K)

In your System folder, into the Fonts folder (1272K):
TT BernhardMod Rm/Bd BT (244K)
TT Bodoni Bd BT (100K)
TT Bodoni BT (100K)
TT ClassGarmnd Rm/Bd BT (212K)
TT CommercialPi BT (24K)
TT CopprplGoth Bd BT (48K)
TT CopprplGoth BdCn BT (48K)
TT Futura BdCn BT (84K)
TT Futura Bk BT (80K)
TT Futura Md/Bd BT (164K)
TT Futura MdCn BT (40K)
TT GeoSlb712 Md/Bd BT (128K)

NOTE: Fonts are installed into the Fonts folder only if you are using System 7.1 or later. If you are using System 7.0.1 or earlier, these fonts may be installed elsewhere in your System folder.

In your System folder in the Claris folder (5440K):
Claris International Toolbox (12K)
Claris Translators (976K)
ASCII (12K)
CGM (140K)

Claris XTND Bridge (84K)
DIF (12K)
EPSF (160K)
GIF (8K)
MacDraw II 1.1 (112K)
MacDraw Pro (132K)

MacPaint 2.0 (8K)
MacWrite II (20K)
MacWrite Pro 1.x (52K)
Microsoft Excel 3-4 (64K)
Microsoft Word 3.0 (32K)
Microsoft Word 4-5 (36K)
Movie (4K)
PICT (8K)
RTF (28K)
SYLK (24K)
Text (8K)
TIFF (32K)
Claris XTND System (40K)
ClarisImpact Help (3952K)
ClarisImpact Hints & Tips (44K)
US English - Hyphenation (92K)
US English - Spelling (168K)
US English - Thesaurus (152K)
User Dictionary (4K)

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ClarisImpact: Cross-Platform Considerations

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisImpact 2.0 for Windows has the same file format, user interface, and features as ClarisImpact 2.0 for the Mac OS. You can create a ClarisImpact 2.0 document on a Windows computer and edit it on a Mac OS computer, or vice versa, without translating files on either platform.

Transferring a file:

Note: After you transfer files from a Mac OS machine to a system running Windows, make sure that your ClarisImpact 2.0 file names follow DOS file naming conventions (8 characters or less) and end with the .CID extension. (For ClarisImpact Library files, use the .CLB extension)

Using diskettes:
To transfer a file between a machine running the Mac OS and a machine running Windows 95, simply insert a PC-formatted diskette into the floppy drive of either computer, drag the document onto it, insert the disk into the other machine, and drag and drop the file to the new machine. The document is ready to use.

To transfer a file from or to a computer running the Windows 3.1 operating system use File Manager.

If you are transferring from a machine running a Mac OS version prior to 7.5, see the TechInfo article "Using Apple File Exchange" and/ or your computer's manual for instructions on transferring files to PC.

Over a network:
You can use a multi-platform server (such as Novell Netware) to transfer files from a Mac OS computer to a Windows computer. You can also use a ClarisImpact 2.0 file directly from the server. No file transfer program is required.

Considerations:
Fonts, margins, page breaks, and some graphics may display differently when transferred between Mac OS and Windows machines. It may be necessary to adjust the margins and page breaks in the transferred file to restore the original appearance. Minimize font problems by installing and using the TrueType fonts that ship with ClarisImpact 2.0 for both platforms.

Refer to the Important Information (Mac OS) or readme.txt (Windows) file that is installed in the ClarisImpact application folder or directory for platform-specific information on font mapping.

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Error in ClarisImpact Windows Installation Guide

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There is an error in the Installation Guide for ClarisImpact for Windows on page 17 under the Section title: Starting ClarisImpact.

Paragraph two (2) says that the first time you start ClarisImpact you're asked to enter your name, etc. This is true on the Mac platform, but NOT on Windows. The Windows installer asks for this info during installation.
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File Formats (Translators) Supported by ClarisImpact 2.0 for Macintosh

A listing of translators that the ClarisImpact 2.0 for Macintosh application can use.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The following is a list of formats supported by ClarisImpact 2.0 for Macintosh:

Import (Open/Read)

ClarisImpact 1.0
ClarisDraw
ClarisWorks (Up to but not including ClarisWorks 4.0)
ASCII Text
CGM
DIF
EPSF
GIF
MacDraw II
MacDraw Pro
MacPaint
MacWrite II
MacWrite Pro
Microsoft Word
Microsoft Word DOS
Excel
PICT
QuickTime
RTF
SYLK
TIFF
WordPerfect

Export (Write/Save As)

CGM
EPSF
MacDraw II
MacDraw Pro
MacWrite II
MacWrite Pro
Microsoft Word
Microsoft Word DOS
RTF
Text
WordPerfect

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MacProject Timeline Charts Paste as Text Only Into ClarisDraw

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you copy a task or resource timeline from MacProject Pro and paste it into a ClarisDraw document, only text appears, whereas pasting into a MacDraw Pro document yields a complete timeline.

To see this behavior:

1. Launch MacProject Pro.
2. Select Task Timeline or Resource Timeline from the Chart menu and Select All.
3. Copy and Quit.
4. Launch ClarisDraw and Paste into a new document.
5. Notice that only text appears.

The whole chart is pasted into the MacDraw Pro document because MacDraw Pro parses the private scrap type passed from MacProject Pro clipboard . This feature was omitted from ClarisDraw.

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Visual Quick Start Tips For ClarisWorks 4.0 Macintosh

Some General tips to make working with ClarisWorks easier the first-time used

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

General

'Cleaning Up' After an Upgrade

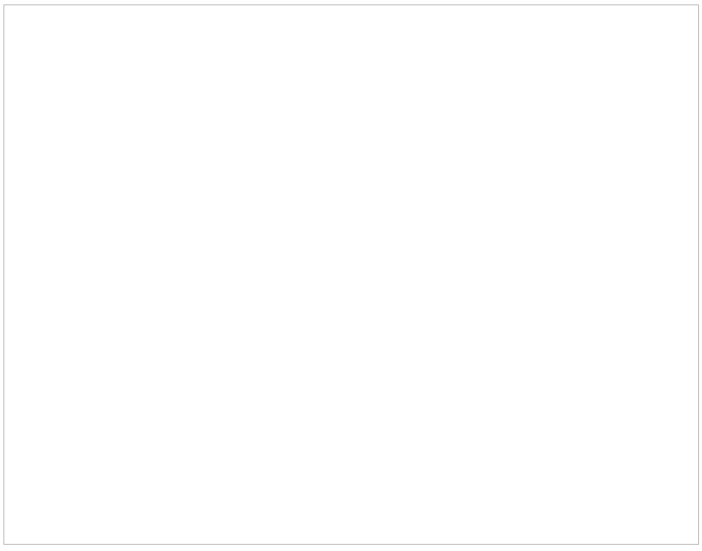
After installing a major ClarisWorks upgrade, such as ClarisWorks 4.0, you may notice that you still have another ClarisWorks folder on your hard drive. The ClarisWorks 4.0 installer places an entirely new version of the program onto your hard drive, so the other ClarisWorks folder which contains ClarisWorks 2.1 or ClarisWorks 3.0 is no longer necessary.

* Very important: On most Macs, when you save a ClarisWorks document, it is automatically saved into the same folder as the ClarisWorks application (unless you specified otherwise). This means that your old ClarisWorks folder(s) may have files that you created that will be irretrievably lost should you throw them in the Trash before making sure that they do not contain personal files. Before emptying the Trash, make sure you do not have personal files in the Trash.

If you use the Launcher (included with System 7.5 and most Performas), ClarisWorks 4.0 will automatically create a Launcher icon for ClarisWorks 4.0 for you. However, it will not remove Launcher icons for older versions of ClarisWorks automatically. To do so, open your System Folder. In the System Folder, open the Launcher Items folder. Then, throw out any icons that point to older versions of ClarisWorks. (Hint: They may be in folders within the Launcher Items folder.

Converting Old Files

Once you have your new version of ClarisWorks loaded on your computer, you can update or convert all your old files immediately by opening them with your new version of ClarisWorks. However, you may just as easily choose not to open all of your files at once, but open your files one at a time as you need them. The conversion of each of your old files occurs when it is opened in the new version of ClarisWorks. By default, ClarisWorks 4.0 will open your old ClarisWorks files when you double-click on them. However, it will not automatically replace the old file with a new file using the new ClarisWorks 4.0 format, but instead keep the old file and save a new file with a name that ends in a [v4.0] suffix (see Figure 1).



If you like, you may change the Preferences in ClarisWorks 4.0 so that you will not be alerted that you are opening an old file, and so that any old file you open will be replaced by a file in the new format. This saves time Ñ no annoying dialog boxes! Ñ and saves space on your Mac, as you won't have two copies of every file you use -- which can certainly be confusing.

To change this, launch ClarisWorks 4.0, and either open a new document or open an existing document. Then, go to the Edit menu and select Preferences. See that the General icon in the list on the left-hand side of the window is selected. If it isn't, select it by clicking once on it. (Hint: You may have to scroll up on the left-hand window to see it) Then, uncheck the following two options on the right-hand side of the window: Old Version Alert and [v4.0] Suffix. Then, click Make Default. Finally, close the Preferences window. From now on, whenever you open an old ClarisWorks document, it will seamlessly convert itself to the new ClarisWorks 4.0 format without bringing up any dialog boxes. This makesopening old files in ClarisWorks 4.0 faster and easier.

Tip: Convert all your files all at once to save time!
For a mass conversion of all your files, you can 'drop launch' the files onto the ClarisWorks icon. To do this, group select or ÒmarqueeÓ (draw a selection rectangle around the appropriate files so that they are simultaneously highlighted, or 'darkened'; see Figure 2). Drag the selected group of document icons onto the application icon for ClarisWorks. You will then see the selected documents you translate in rapid succession. You can then either save the converted documents under new names, in which youÕll have two copies of the document (one old and one converted copy). To have just a single copy of the file, name it the same as the old copy to replace the old copy.

Increase Memory for better performance
Sometimes, you may need to increase the memory (RAM) allocated to ClarisWorks. However, before increasing the memory allocation to ClarisWorks, you'll want to see how much RAM your computer has installed. To do that, select About this Macintosh... from the Apple menu when you are in the Finder. The Window looks like this (see Figure 3):

In Figure 3, the total memory in this Macintosh is 16, 384 K (or 16 megabytes). Of that, 3,989 K are used by the System, leaving roughly 12,000 K that can be used to run applications, such as ClarisWorks. You will want to make sure that the Largest Unused Block number (here 12,332 K) is large enough to accommodate a greater memory allocation (usually 2,000 K) for ClarisWorks.

Once you have made sure that you have the 'memory to spare,' follow these steps to allocate more memory to ClarisWorks:

1. Quit ClarisWorks, if it is currently running.
2. Open the ClarisWorks Folder.
3. Click once on the ClarisWorks Application Icon, just so it is highlighted.

4. Go to the File Menu and choose Get Info. (See Figure 4.)
5. Change the Preferred Size to 2000 K.
6. Close the Get Info box.
7. Restart ClarisWorks.

Automate settings in Each Environment
Do you find yourself changing the font, tabs, page setup and point size each time you create a new document? If you do this regularly, you may want to set up some defaults for each type of document you can create in ClarisWorks. For example, you can 'preset' ClarisWorks to always use your preferred font in all the Word processing documents you create. To do this:

1. Open a new word processing document.
2. Set all the defaults you might want changed (font, font size, page setup, tabs, etc.).
3. Choose Save As under the File Menu.
4. Save the document as ClarisWorks Stationery with the name 'ClarisWorks WP Options.'
Make sure the file is saved to the Claris Folder inside the System folder.

All new WP documents will come up with the defaults you set in your ClarisWorks stationery document. Check your online help in ClarisWorks, under the keyword 'stationery' for more uses of stationery documents for automating your work flow.

Use the Draw environment for Complex Documents
Many times with complex documents like newsletters, posters, and party invitations, the first impulse is to create the document in the Word Processing environment as it will contain a good deal of text. However, it is often much easier to do this type of 'page layout' work in the Draw environment. In the Draw environment, you can more freely place and resize text blocks, use all the draw tools, work with other types of frames, and link text boxes using the Frame Links command.

Keep work in a safe place
Your ClarisWorks files are often important to your business, your home finances, or your personal correspondence. You can probably think of many more good reasons to make sure you have a safe copy of your files. Floppy disks are not as reliable as your hard drive, so if your primary copy is on a disk, make frequent copies to your hard drive. If your hard drive currently contains the only copy of many important files, you may want to back them on to floppy disks, lock the disks, and put them away in case of an emergency.

Reverting to saved and Undo
When you edit one of your files, and moments later find that your change seems like a terrible mistake, remember that you can almost always undo your mistake. First try going to the Edit menu and choosing that first option, Undo. This can save you some from experiencing a late night disaster. However, be aware that the Undo command works on a very immediate level. You can, foe example, undo or redo typing, and depending on when you did your last save (whether it was minutes ago or hours ago), undoing your typing could mean undoing paragraphs (if you haven't saved in hours) or undoing words or sentences (if you haven't saved in minutes). The 'industrial strength' Undo command is the Revert command, which allows you to 'go back' to the previously saved version of your document. When you use this command, be aware that the good and bad work is lost, almost as if you had never even done anything after your last save.

See it as it really is

In spreadsheet, paint, draw, and database, the view you get on screen is not always the way the file winds up printing. Under the View menu, try turning on Page View. The page breaks and document margins will then show you a more accurate view of what the final printed version may look like. This is especially important for spreadsheets, as any row or column that will not fit completely on the page gets pushed to the next page.

Word processing

Use Tabs Over Spaces
For professional looking documents, avoid using spaces to set indentations in blocks of text or at the start of new paragraphs and separate text sections. Use the tab key or set a new tab on the ruler (Select Tab... from the Format menu; a tab on your ruler is represented by a triangle icon). The tab character is the dark arrowhead that points to the right. To see it, go to Preferences under the Edit menu and select Show Invisibles. (See Figure 5.) With tabs in your document, the printed result is smoother and more legible.

Text that floats
A little-used feature of ClarisWorks is the independent text frame. This text frame can have its own margins, style, and even its own columns. You use an independent text frame for creating reversed text (white text on a black background), for example To create a new independent text frame in a Word Processing document:

1. Hold down the Option key as you draw a text frame.
2. Enter your text in the text frame.

The text in the text frame in completely independent of the text in the main Word processing document of which it is part. You can still spell check and apply styles, but to select and edit the text in the independent text frame, you need to click in that frame.

Database

Easy Database Graphing
When you have database information that calls for a graph. Try this:
1. Do a find for the records you wish to see graphed.
2. Choose List View from the Layout menu (ClarisWorks 4.0 owners: Choose Show Multiple from the Layout menu).
3. Choose Select All from the Edit menu.
4. Then choose Copy from the Edit menu.
5. Choose New from the File menu and select spreadsheet.
6. Choose Paste from the Edit menu.

Then with little or no manipulation you can create a graph as you would with any other spreadsheet.

Drawing

Perfectly Spaced Drawings
Many times in Draw mode you may need to duplicate a single object repeatedly. And you would like to have them equidistant. By duplicating the first object, repositioning the duplicate, then choosing Duplicate from the Edit menu once again, all consecutive duplicates will be uniformly spaced just like the first one.

Placing Objects Precisely
When working in the Draw environment, you may find that the objects you have drawn 'snap' to only certain areas on the document. You can never get them exactly where you want them. To get around this, go to the Options menu and choose Turn Autogrid Off. Now you should be able to accurately place objects anywhere on the document. For small movements or 'nudging' an object, use the arrow keys on your keyboard to move the object. This will move the selected object one pixel at a time. Be sure to use your Alignment tools in the Draw environment (select Align Objects... from the Arrange menu; see Figure 6) to align objects you have selected.

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ClarisWorks 3.0v3 For Windows Read Me File

This is a copy of the README.WRI file that comes with the 3.0v3 copy of ClarisWorks for Windows, it describes what is new in 3.0v3 and some troubleshooting techniques.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
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Corrupted File Warning with ClarisWorks 3.x under Windows 95

How to work around the error message "This is not a ClarisWorks file or it has been corrupted".

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When running ClarisWorks for Windows 3.x under Windows 95, double clicking on a ClarisWorks document in either the WINDOWS EXPLORER or MY COMPUTER produces an error message as follows:

"THIS IS NOT A CLARISWORKS FILE OR IT HAS BEEN CORRUPTED"

followed by:

"FILE NOT FOUND"

This only seems to be a problem when double-clicking on a ClarisWorks document that resides in a folder whose name has a space in it. For example:

"My ClarisWorks Documents" would produce the error mentioned above
"My_ClarisWorks_Documents" would work fine
"Clworks" would also be fine

Opening this file via the OPEN dialog box from within ClarisWorks 3.x also seems to work fine, regardless of whether or not the folder that the document is residing in has a space in its name. It only seems to affect opening documents by double-clicking outside of ClarisWorks.

NOTE: This has been tested with version 3.0v1 and 3.0v2.

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"Not Enough Disk Space..." When Installing ClarisWorks 3.x Under Windows 95

How to get around this error if you are experiencing it.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When installing or reinstalling ClarisWorks under Windows 95, you may receive the following error:

"NOT ENOUGH DISK SPACE TO INSTALL TEMPORARY FILES"

The problem in this instance is that the environment variable that specifies the Temporary directory (TEMP directory) is invalid. Make sure that the SET TEMP= statement in the AUTOEXEC.BAT file references a valid directory on your hard drive.

To edit / check your AUTOEXEC.BAT under Windows 95, follow these steps.

1. From the START menu choose RUN
2. On the command line, type in SYSEDIT and click on OK
3. In the SYSTEM CONFIGURATION EDITOR, choose AUTOEXEC.BAT from the WINDOW menu
4. Either edit your existing statement or type "SET TEMP=C:\\WINDOWS" on a new line

NOTE: "SET TEMP=C:\\WINDOWS" is only used as an example. Any valid directory can be specified as the Temporary directory.

5. Choose SAVE from the FILE menu
6. Click on the CLOSE button (the button with the X in it) to close the EDITOR window

Once the changes have been made to the AUTOEXEC.BAT file, your system will need to be restarted for the changes to take effect. Save any work in progress and restart your system.

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ClarisWorks: "CALL TO UNDEFINED DYNALINK" Error

Some .DLL incompatibilities will cause this error in other applications after installing ClarisWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If, after installing ClarisWorks 3.x for Windows, you attempt to launch either Microsoft Word or Microsoft Excel (or other Microsoft Office applications) and you see the following error message:

APPLICATION ERROR
"CALL TO UNDEFINED DYNALINK"

then follow these steps:

1.Uninstall / reinstall ClarisWorks for Windows
2. Delete the following files from your \\WINDOWS\\SYSTEM directory

OLE2CONV.DLL
OLE2DISP.DLL
OLE2NLS.DLL
COMPOBJ.DLL
STORAGE.DLL

3. Reinstall any / all of your Microsoft Office package.

Explanation: This is caused from an incompatibility with certain Dynamic Link Library (.DLL) files that are installed during the installation of Win32s and those used by Microsoft Office products.

The .DLL files have to be deleted (or renamed) because the Office install program will not overwrite the files with the correct versions if it detects a copy of the file being on your system already. Deleting (or renaming) the files ensure that the proper versions of the files will get copied over.

This error occurs anytime an application tries to make a call to a .DLL file that is older than the .DLL that it needs. It is a generic error message that means the application tried to register a .DLL file that either does not exist or is incorrect.

This error does not occur with all version of Microsoft Office or Office products (Word, Excel, etc.)

For additional information and support, please contact Microsoft Technical Support at (206) 454-2030.
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Changing Line Thickness in Filled Tabs In ClarisWorks

Step by step instructions for changing the the line weight of filled tabs

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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It may not be something you would normally want to do, but yes, it is possible to change the line thickness of filled tabs in ClarisWorks 2.x/3.0/4.0, although the procedure changes slightly with ClarisWorks 4.0

Changing the line weight of filled tabs in ClarisWorks 2.x/3.0:

1. Add the Thicker Line tool and the Thinner Line tool to your Shortcut Palette. The Thicker Line tool is a thin line with a red arrow pointing towards a thicker line; the Thinner Line is its opposite.

2. Use a standard (non-filled) tab, and tab as desired.

3. Bring up the Tool Bar. Select the Line Tool, and draw a line equal to the length of the desired Filled Tab. Use the Thinner or Thicker line tool as desired. The Thinner Line tool will allow you to create a line even thinner than Hairline, although this will not be apparent on screen unless you increase magnification.

4. Once the line is the desired thickness, copy it. Select the tabbed space and replace it with the copied line. The line will be pasted in as an in line graphic. Select the arrow cursor and trim or lengthen the line as appropriate.

5. With the line selected, go to the Style menu and select Subscript. This will drop the line slightly below the line of text. Go to the Size menu and select a smaller font size for this selected line. Trial and error will find the correct match. (Example: for 8 point text, select a 4 point size for the line).

Changing the line weight of filled tabs in ClarisWorks 4.x:

1. Create a Fill Tab as you normally would [Format:Tab].

2. To create a thicker line, follow the procedures described above.

3. To create a thinner line, select the Filled Tab, then select Inferior from the Style menu. The resulting Filled Tab may actually be thinner than it appears on screen, so view at a greater magnification to reveal its actual size.

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Duplicate Layout Does Not Work in The Spanish Release of ClarisWorks 3.0Ev1

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks 3.0Ev1 (Spanish Version) the option for Duplicate Layout does not work. To reproduce this problem do the following:

* Create a new Database document
* Select from the menu Aspecto (Layout), Nueva presentaci-n...(New Layout...)
* Click on Duplicar (Duplicate) This option will not accept a selection.

This particular issue with ClarisWorks 3.0E has been fixed in 4.0E.
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Getting Garbled Text In ClarisWorks When Opening A Document

Translators don't automatically always choose the correct file type when settings are set to All Available files.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you try to open up a file that was not created in ClarisWorks. The file is translated by the translators and converted into ClarisWorks but the result may be garbled.

The problem is that ClarisWorks may not recognize the proper file type when the settings are left on All Available files. This may be due to the file coming from a PC. Selecting a Document Type and the desired translator from the File Type should correct the problem.
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HTML Primer (version 1.5.1) For ClarisWorks 4.0

Copy of the HTML Primer as posted on-line

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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* Literal text
* Technical details
* About this HTML translator

Introduction

To create documents that can be viewed by a World Wide Web (WWW) browser, you use the Hypertext Markup Language (HTML). HTML consists of a set of tags (formatting codes) added to text. For example, if the text 'Local News' is formatted as an 18 point header, the text looks like this: <H2>Local News</H2> when translated to HTML. Text can also be tagged to create a hypertext links to other documents. You can use ClarisWorks to open, edit, and create HTML documents without having to be familiar with HTML tags.

This document describes how to:
* open (import) HTML documents so you can read and edit them as word processing documents
* create word processing documents and save (export) them in the HTML format

As you get started, please keep the following points in mind:
* You should be familiar with the concepts and techniques for working with ClarisWorks word processing documents, stylesheets, and shortcut buttons. For more information on these topics, see the documentation that came with ClarisWorks.
* Each WWW browser interprets HTML tags in slightly different ways. For example, some browsers may display a header in color in an elegant typeface, while a text-only browser may display the same header in capital letters in the same size and font as the rest of the document. The ClarisWorks HTML translator uses the default display styles for Mosaic, a browser created by the National Center for Supercomputing Applications (NCSA). For more information on NCSA Mosaic, visit the WWW site at:
http://www.ncsa.uiuc.edu/SDG/Software/Mosaic

* The translator file is called 'WWW [HTML]' and is installed, along with other translators, in the Claris Translators folder in the Claris folder (inside the System Folder). You don't use the HTML translator file directly. Instead, you use the ClarisWorks save and open commands to direct the file through the translator.

Note: Updates to this document are available on ClarisWeb at: http://www.claris.com/pubs/clarisworks/html-primer.html

Creating HTML documents

This section describes how to create new HTML documents. For information on entering and formatting text in HTML documents, see the section 'Formatting and editing HTML documents.'

Using stationery to create HTML documents

The easiest way to create HTML documents is to start with the ClarisWorks HTML stationery, a template included with ClarisWorks 4.0. The stationery is a blank preformatted word processing document that you can reuse.

To open the stationery document:
1. Launch ClarisWorks by double-clicking the ClarisWorks icon.

2. Choose New from the File menu.

3. In the New Document dialog box, select Use Assistant or Stationery.
4. Choose Internet from the pop-up menu, select WWW [HTML] Document, and then click OK.
You see the blank, untitled stationery in its own window. The original document remains unchanged, ready for you to use again. The stationery includes a set of HTML styles in the stylesheet palette and three shortcut buttons, 'Make Hypertext Link,' 'Unordered List Item,' and 'Horizontal Rule.'
5. To open the stylesheet palette, choose Show Styles from the View menu.
The styles include headers of various sizes as well as styles for normal, literal, and preformatted text.
6. To display the shortcuts palette, choose Shortcuts and then Show Shortcuts from the File menu.
For specific information about using the shortcut buttons to create HTML documents, see the sections 'Hypertext links,' 'Lists,' and 'Horizontal rules.'
Note: To make the buttons appear in the shortcuts palette for any ClarisWorks word processing document or text frame (not just in a stationery document):

1. Launch ClarisWorks and open the HTML stationery by following Steps 1–4, above.
2. Choose Shortcuts and then Edit Macros from the File menu.
3. Select Make Hypertext Link from the Macro pop-up menu and then deselect
Document Specific. Do the same for Unordered List Item and Horizontal Rule.
4. Click Done.
The HTML stationery shortcuts now appear in the shortcuts palette for any word processing document.

Creating HTML documents without using stationery
If you prefer, you can create an HTML document in a regular word processing document instead of the HTML stationery.

To open a word processing document:
1. Launch ClarisWorks by double-clicking the ClarisWorks icon.
2. Choose New from the File menu.
3. In the New Document dialog box, select Word Processing and then click OK.
Using the ClarisWorks HTML stylesheet or HTML shortcut buttons is optional. If you want to use the ClarisWorks HTML stylesheet, go on to the next step. If you want to use the HTML shortcut buttons, follow the steps in the Note in the previous section 'Using stationery to create HTML documents.'

4. To import the HTML stylesheet into your blank document, choose Show Styles from the View menu.
5. In the File menu on the stylesheet palette, choose Import Styles.
6. Navigate to the ClarisWorks Styles folder in the ClarisWorks 4.0 Folder, select HTML Styles, and then click Open.
7. In the Select Styles to Import dialog box, click Check All and then click OK.

Saving documents as HTML files
To save (export) a document as an HTML file:
1. Choose Save As from the File menu.
2. In the Save As pop-up menu, select WWW [HTML].
3. Navigate to the folder in which you want to save the file, type a file name, and click Save.

To help you keep track of the file format of your documents, you can add extensions to the filenames, such as myfile.html for an HTML file, or myfile.cw for a ClarisWorks file. For best results with HTML files, don't use spaces in the filenames. Either remove spaces or replace them with underscores or hyphens.
Important: Be sure to keep copies of your documents in their original formats, especially HTML documents that you import. The translator does not provide a complete set of HTML tags and may replace some of the original tags.

Opening HTML files
To open (import) existing HTML files:
1. Launch ClarisWorks by double-clicking the ClarisWorks icon.
2. Choose Open from the File menu and then navigate to the HTML file you want to open.
3. In the Document Type pop-up menu, select Word Processing. In the File Type pop-up menu, select WWW [HTML]. (If you'd like see what the HTML codes in your text look like, select All Available or Text in the File Type pop-up menu.)
4. Select the name of the file you want to open, and click Open.
The HTML document opens. You see it as it might look when viewed by an HTML browser. If you want to use the optional ClarisWorks HTML stationery features, continue to the next step.
5. Import the HTML stylesheet into your document by following Steps 4–7 in the section 'Creating HTML documents without using stationery.'
Note: Imported text is styled as 'Body+' in the stylesheet. However, the translator tags the text correctly when you export it, even when styled as 'Body+,' and you can use the stylesheet to style any new text that you type.

6. Set up your document with the HTML shortcut buttons by following the steps in the Note in the section 'Using stationery to create HTML documents.'

Formatting and editing HTML documents
This section describes how to use ClarisWorks text and paragraph attributes to format or edit documents that can be translated to HTML format.

Getting started
You start with a ClarisWorks word processing document. To create an HTML document, follow the directions in the section 'Creating HTML documents.' To open (import) an HTML file that you want to edit, follow the directions in the section 'Opening HTML files.'

It's easier to apply the various text styles if you can see the carriage returns and spaces in your document. To show these characters-called invisibles or formatting characters-type
Command-; (semicolon). To hide the formatting characters, type Command-; again. (The Command key is the cloverleaf key on the bottom row of the keyboard.)

If you're using the ClarisWorks stationery, or if you've set up a word processing document so you can use the HTML stationery features, show the stylesheet (choose Show Styles from the View menu) and the shortcuts (choose Shortcuts and then Show Shortcuts from the File menu).

Important: Apply only those ClarisWorks styles that start with 'HTML' (for example, HTML Normal Text). With few exceptions, (noted in the applicable sections) the HTML translator and browsers don't recognize any other ClarisWorks styles.

Paragraphs
Type your text and end the line or paragraph by pressing Return (or place the insertion point in the text, choose Paragraph from the Format menu, and then type 1 in the space after box). The default paragraph style for the stationery is HTML Normal Text. The translator tags text styled as HTML Normal Text as a paragraph. Most browsers separate paragraphs by adding white space after the paragraph.
Note: The translator interprets soft returns (Shift-Return) as spaces.

If you don't want extra white space after a block of text, place the insertion point in the text, choose Paragraph from the Format menu, and then type 0 in the space after box. The translator will tag the carriage return as a break. Browsers don't usually add white space after a break.

Tabs
Tabs are usually translated into white space, except when the tabs appear in lists or preformatted text (see the sections "Lists" and "Preformatted text").

Character formatting
To make characters bold, italic, or underline, select the text and choose Bold, Italic, or Underline from the Style menu at the top of the screen. If you choose any other item from the Style menu (for example, Shadow or Inferior), the translator interprets it as plain text.
Note: The translator interprets most bold text as a header. Headers appear on a separate line when viewed from a browser. If you don't want the translator to interpret bold text as a header, make the font size of bold text 11, 12, or 13 points.

Headers
Use headers to structure and organize the HTML document, just as you use headers to structure and organize any text document. To create a header, type the text, select it, and then choose a header styleÑsuch as HTML Header (9 pt.)Ñfrom the stylesheet (or choose Bold from the Style menu and any size except 11, 12, or 13 points from the Size menu). When the translator interprets text styled as a header, it adds white space above and below the text.

Unsupported characters
The translator ignores or interprets as spaces characters such as soft returns (Shift-Return), page numbers, page breaks, and date characters inserted by using the Insert Date command.

Hypertext links
A hypertext link is a string of clickable text (called an anchor). When you click on the link in a browser, you 'jump' to another document.

To make a hypertext link:
1. Select the text that you want to be seen as the link anchor.
2. Click the Make Hypertext Link shortcut button (or style the text so it looks different from the surrounding text and then insert a footnote by choosing Insert Footnote from the Format menu).
Make hypertext link shortcut button
Clicking the button changes the selected text to blue underline and inserts a footnote mark. You see footnote text instructing you to fill in the Uniform Resource Locator (URL) of the document you are linking to.
Note: If you insert a footnote but don't change the anchorÕs appearance (for example, to blue underline), the translator uses the text preceding the footnote (up to 255 characters) as the link anchor. Note also that HTML doesn't support footnotes, so you can't use footnotes except to create hypertext links.

3. Replace the footnote text *INSERT URL HERE* with the URL of the destination document.
URLs represent file locations on the World Wide Web. A URL has the general form

scheme: //host.domain [:port] /path /filename

For more information on HTML and URLs, visit the WWW site at http://www.ncsa.uiuc.edu/demoweb/html-primer.html.

Lists
Use lists to group related items. List items always start with a tab (or a .5 inch indentation). You can show the relative importance of each item in a list by using multiple tabs (or multiple .5 inch indentations) to indent itemsÑas you would in an outline. Items in ordered lists are numbered and items in unordered lists are set off with a bullet. You can include both ordered items and unordered items in the same list.

To create a list:
1. Press Tab to indent the line one or more times (or choose Paragraph and type a multiple of .5 inches in the Left Indent box).
Each tab character, regardless of tab size (or each .5 indentation, as typed in the Left Indent box), adds an additional level of indention.

2. Type the character that defines the type of list item (ordered or unordered).
To create this type of list item - Do this
Ordered (numbered) - Type a number followed immediately by a period, right parenthesis, or a hyphenÑfor example, 1., 1), or 1-. Browsers vary in how they format the numbers on ordered list items.
Unordered (bulleted) - Insert a bullet by clicking the Unordered List Item shortcut button (or type the bullet by pressing Option-8). Most browsers display a bullet at the beginning of each item in an unordered list.
Unordered list item shortcut button
3. Type the text for the item. The text can extend to more than one line.
4. Repeat Steps 1&#65533;?3 for each item in the list.
5. End the list by doing one of the following:
* Start the next line of text at one less tab than the last item of the list.
* Press Return to insert a blank line after the last list item, and begin the next text segment with a non-list character (that is, no bullets or numbers).
Important: Don't use styles from the stylesheet (such as Bullet or Diamond) to create lists in your HTML documentÑthe HTML translator and browsers don't recognize ClarisWorks styles as list types.

Example 1 Each additional list level is called an embedded list.

1. The '1.' is the beginning of the initial list.
2. This is the second item of the initial list.
1. Here we are at two list levels, thus we begin a new list.
2. This is the second item of the embedded list.
3. Here we end the embedded list, and continue the initial list.

The embedded list could have been a bulleted list. The type of list (ordered or unordered) is determined by the first list item in that list level.

Example 2 This ordered (numbered) list contains an unordered (bulleted) list:

1) The '1)' is the beginning of the initial ordered list.
2) Second item of the initial list
* First item of the unordered embedded list.
* Second item of the unordered embedded list.
3) Third item of the initial list.

Example 3 This list shows that the first character of a new list determines if the list is ordered or unordered. When viewed by a browser, the list in this example is ordered exactly the same as the list in Example 2.

1- The '1-' is the beginning of the initial ordered list..
* Second item of initial list (the bullet will appear as Ò2.Ó in the HTML document)
* First item of the unordered, embedded list.
2- Second item of the embedded list. The number Ò2-Ó will be a bullet.
3- Third item of the initial list.

Pictures
You can include pictures (images) in your HTML document. The translator supports anchored pictures, but not floating ones. To make sure your pictures are anchored, select the picture and choose Cut from the Edit menu. Then click in the text where you want the picture to go and choose Paste from the Edit menu. Correctly anchored pictures have one handle when you select them. (Floating pictures have four handles when selected.)

The translator automatically saves the pictures as individual files and creates tags in the HTML file that refer to the picture files. The references are to the same relative directory as the HTML file, so if you move the HTML document to another location, you must also move the picture files.

The pictures are saved as PICTs, but to be able to view the pictures in the document on a WWW browser, you must convert them to Graphic Interchange Format (GIF). The translator adds the .gif extension to the picture filenames in the HTML source file, but you still must to convert the file from PICT to GIF format. When you've finished, check to be sure that the filename for each picture has the Ò.gifÓ extension in lower case. Note:Shareware conversion applications such as GifConverter and GraphicConverter are widely available from on-line services and popular Macintosh FTP archives on the Internet.

Horizontal rules
Horizontal rules are useful for separating sections of text. To insert a horizontal rule, click in the text and then click the Horizontal Rule shortcut button (or press Return, type a series of underscore characters, and then press Return again).
Horizontal rule shortcut button.
You see a series of underscores at the insertion point in the document.

Preformatted text
If you want a section of text to look exactly as you type it, select the text and then click

HTML Preformatted Text in the stylesheet palette in the HTML stationery (or choose Monaco from the Font menu). Preformatted text appears in both your document and the browser in a monospaced font:

```
            This is an example of what
        preformatted     text     looks          like.
```

Although tabs are supported in preformatted text, you should use spaces instead of tabs, because tab sizes can vary in different browsers.

Literal text
There are many features in HTML that the translator doesn't support. If you want to add advanced or unsupported HTML commands to your document, select the text and then click HTML Literal Text in the stylesheet palette in the HTML stationery (or choose Text Color from the Style menu and select a shade of red).

Technical details
This section describes some of the details of the HTML tags used by the translator.

Character formatting HTML has two kinds of text styles, logical and physical. Logical styles are interpreted differently by different browsers. For example, the logical style (that is, ÒemphasisÓ) may be represented as red single underline by one browser and italics by another. Other examples of logical text styles are and <cite>. Physical styles, such as italic, underline, and 11, 12, or 13 point bold, are represented as typed. When you format text as italic, underline, or 11, 12, or 13 point bold, the ClarisWorks HTML translator tags these physical character styles with logical character styles, like this:

These types of characters	Are assigned this HTML tag
Italics	<cite>
Underline	
Bold (11, 12, or 13 point only)	

Note: If bold text is any size except 11, 12, or 13 points, the translator tags it as a header. See 'Headers,' below.

International characters The translator supports most of the ISO Latin 1 character set standard on both export and import.

Special characters Some characters (< > & ; and /) are used in HTML tags. If you type the characters <, >, &, ; or /, the translator interprets them as typed. If you want the characters to be interpreted as part of HTML tags, style the tags as literal text. See the section 'Literal text.'

Paragraphs and carriage returns The translator tags as a paragraph (<P>) any text followed by a hard return (created by pressing the Return key). The translator tags as a break (<BR>) any text block followed by a hard return that is formatted by placing the insertion point in the text, choosing Paragraph from the Format menu and then setting Space After to 0 (zero).

Headers A header is a logical style. The size depends on the type of header. Browsers usually insert white space above and below the header and display headers as bold.

If a text is bold, the translator checks the font size and then tags the bold text according to these rules:

If the bold text is this size	The translator tags the text as
Greater than or equal to 20 points	<H1>
Greater than or equal to 18 points and less than 20 points	<H2>
Greater than or equal to 14 points and less than 18 points	<H3>

Greater than 10 points and less than 14 points	
Greater than 9 points and less than or equal to 10 points	<H5>
Less than or equal to 9 points	<H6>

Lists For each list level, the translator inserts the tag <OL> for an ordered list and <UL> for an unordered list. For each list item, the translator inserts a list-item tag (<LI>).

Horizontal rules If underscores begin and end with a hard Return, the translator inserts the <HR> (horizontal rule) tag in the HTML document.

About this HTML translator
The HTML translator included with ClarisWorks 4.0 represents the joint efforts of Claris and a dedicated team at the Highly Interactive Computing Project (Department of Electrical Engineering and Computer Science) at the University of Michigan in Ann Arbor.

Claris would like to express its thanks to the Highly Interactive Computing Project, including:

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ClarisImpact: Placing SYLK or DIF data in Tables, Timelines and Data Charts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is from the ClarisImpact 1.0v4 Important Information file:

When placing SYLK or DIF files in Tables, Timelines, and Data Charts, make certain that you select the SYLK or DIF translators in the Place dialog's "Show:" pop up menu. If the SYLK or DIF files menu item is not selected, the file may be imported as text.
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Date Fields: Calculating The Difference Between Dates, Finding Future Dates

A quick lesson on using date fields in a calculation

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
FileMaker Pro stores dates internally as number of days since January 1, 0001. ClarisWorks stores them as the number of days since January 1, 1904. For example, the screen may show January 1, 1996, but internally ClarisWorks stores 33603. For the same date, FileMaker Pro stores 728659.

If you have two date fields, and you wish to find the number of days between them, you simply subtract the earlier date from the later date.

In ClarisWorks: DaysDifferent (Calculation, Number result) ='Date2'-'Date1'
In FileMaker Pro: DaysDifferent (Calculation, Number result) = Date2 - Date1

If Date2 was January 1, 1996, and Date1 was January 1, 1995, the formula would return 365.

To find a date in the future, you simply add the number of days in the future to the existing date.

In ClarisWorks: DaysFuture (Calculation, Date result) = 'StartDate'+'SevenDayTrial'
In FileMaker Pro: DaysFuture (Calculation, Date result) = StartDate + SevenDayTrial

If StartDate was January 1, 1996, the result of this calculation would be January 8, 1996.

NOTES:
Since the slash (/) ?? a mathematical symbol ?? is used to separate the day, month and year in a date, you cannot use that format in a calculation formula. 1/1/1996 in a date field is a date, but in a calculation it means 1 divided by 1 divided by 1996. Which results in .000501002004008016.

To type a date in a formula, you must use either reference date field or use the Date function. For example, January 1, 1996 would be Date(1,1,1996) in FileMaker Pro and Date(1996,1,1) in ClarisWorks.

Be careful to use the full year in a calculation. If you type 1/1/96 into a date field, it would return January 1, 1996. If you type Date(1,1,96) into a calculation in FileMaker Pro, it would return January 1, 96. The year 96. Not 1996. A thousand years earlier!

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ClarisImpact 2.0 Help Incorrectly References Microsoft Word 6.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The online Help for ClarisImpact 2.0 implies that ClarisImpact can import and export Microsoft Word 6.0 format. Unfortunately, this is incorrect. ClarisImpact is able to read and save as Microsoft Word 4.0-5.0 format, but not 6.0.

Specifically, the online help topic 'Importing, placing and exporting files' includes a table that lists Translators and has checkmarks by 'Import' and 'Export'. It indicates that ClarisImpact supports Microsoft Word 6.0 in both categories.

Claris has not announced any plans of including a Microsoft Word 6.0 XTND translator and apologizes for any inconvenience caused by this error in the online help.

ClarisImpact owners who do extensive work requiring file transfers of Microsoft Word 6.0 may wish to contact DataViz, manufacturers of MacLinkPlus, a file transfer utility for the Macintosh. MacLinkPlus includes dozens of XTND translators that work with ClarisWorks, MacWrite II, and other Claris products that support the Claris XTND technology. DataViz also makes translators for use on the Windows platform.

[DataViz Inc, 55 Corporate Drive, Trumbull, CT 06611; (800) 733-0030; Fax: (203) 268-4345.]

NOTE: Mention of third party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Claris assumes no responsibility with regard to the performance or use of third party products.

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ClarisDraw: Can‘t Change Rulers for Existing Objects

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In Claris Cad, you could change the ruler setting for an object by selecting the object and changing the ruler. This capability does not exist in ClarisDraw 1.0.

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LapLink III: Macintosh IIfx Compatibility CDEV Available

LapLink III for the Macintosh does not work on the Macintosh IIfx. On launch, it crashes with an ID = 1.

This article has been archived and is no longer updated by Apple.
Traveling Software has heard reports of this problem. They are currently trying to locate the cause. If they find a fix for this situation, we will post the information.

Apple provides a CDEV that turns off the IOP of the Macintosh IIfx. This CDEV is available for licensing from the Software Licensing group. Traveling Software has obtained the license for this CDEV and will be providing it to registered users of LapLink III for the Macintosh. Contact Traveling Software for this CDEV. For more details, search the Technical Info library under "Traveling Software."

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Importing U.S.ClarisImpact Files Into Japanese ClarisImpact

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

You can import files from the U.S. version of ClarisImpact into ClarisImpact J, however, you cannot import the ClarisImpactJ files into the U.S. version.

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ClarisImpact: PostScript Errors When Printing May be Due to the Number of Fonts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following is from the ClarisImpact 1.0v4 Important Information file:

"Depending on the amount of printer memory or the number of fonts used in a document, PostScript errors may occur when printing. To correct this, select "Page Setup" from the File menu and click the "Option" button. Select the "Unlimited Downloadable Fonts in a Document" Check box in the Printer Options section."

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How to Reassociate a Data File / Document File in Windows 95

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When using Windows 95, if double clicking on a data file / document file in either MY COMPUTER or WINDOWS EXPLORER opens up the document in the wrong or an undesired application, it is likely that the association is incorrect.

To reassociate a data file / document file to another application, follow these steps.

1. Double click on MY COMPUTER
2. Select OPTIONS from the VIEW menu.
3. Click on the FILE TYPES tab.
4. Choose the document type that you wish to reassociate from the REGISTERED FILE TYPES list.
5. Click on the EDIT button
6. In the ACTIONS list, click on the OPEN option
7. Click on the EDIT button
8. In the APPLICATION USED TO PERFORM ACTION field, type in the modified path to the application you wish to use.

NOTE: The BROWSE button can be used navigate through your folder / directory structure to find the desired application.

9. Click the OK button
10. Click CLOSE to close the EDIT FILE TYPE window.
11. Click CLOSE to close the OPTIONS window

Double clicking on the file in either MY COMPUTER or WINDOWS EXPLORER will now open it up in the newly associated application.

This might be helpful for people who have several versions of an application installed on their machine but want certain file types to be opened up with certain versions or want to redirect certain files (i.e. text files) from their default association to another application.

Consult Mircosoft Technical Support for additional Technical Support and information at (206) 454-2030.

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Two New Text Styles: Uppercase and Lowercase In ClarisWorks 4.0

How to add these two buttons to your shortcuts palette, and some of the limitations of these shortcuts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks 4.0 features two new text styles: Uppercase and Lowercase. These styles are only available as buttons in the Shortcut palette. To add them to your shortcuts, choose Edit Shortcuts from the File menu, and Add the two buttons to your palette.

Some limitations:

*The uppercase and lowercase buttons are only available in word processing documents.

*The uppercase and lowercase buttons require System 7.1 or higher. If you highlight some text when in system 7.0.1, you may click the uppercase and lowercase buttons, but they will not function.
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Global Village Modems, Tools, and Basic Initialization Strings

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Most Global Village modems do not need a specific tool other than the Apple Modem Tool. That includes the 1XX series of the PowerPort modem. The Duo and 500 series will normally use a 500/Duo tool, which is installed when GlobalFax 2.5 is first installed.

Global Village's modems generally require the same basic initialization string, (AT&F1). Here is a list of most of the current and discontinued Global Village modems and their exceptions:

Externals:
Teleport Bronze for Performa - AT&F
Teleport Bronze II - AT&F
Teleport Silver, Gold, Mercury, & Platinum - AT&F1 (Hardware Handshake = CTS only)
Teleport Gold II (includes Performa) - AT&F1

Internals:
Powerport Bronze - AT&F
Powerport Gold (ATI1 checksum 246) - AT&F1 (Hardware Handshake = CTS only)
Powerport Mercury 1XX Series - AT&F1 (Hardware Handshake =CTS only)
Powerport Mercury 2XX (Duo) Series - AT&F (Handshake =*None)
Powerport Mercury 5XX Series - AT&F (handshake = *None)
Powerport Platinum 1XX Series - AT&F1 (Hardware Handshake =CTS only)

*built-in flow control
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Supra 288, Latest ROM (version 1.3.07) Not Connecting to AOL

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Apparently the problem is that certain AOLNet nodes are incompatible with the Rockwell chip set that Supra uses in their 28.8 modems. Supra Corporation is investigating the problem. In the meantime, you can add a \\N5 to your modem setup string for the Supra and it will reportedly take care of the problem.

Adding or modifying a modem configuration in the Modem pop-up menu

You can add new entries to the Modem pop-up menu or modify existing entries. This allows you to create a set up for your modem that meets your specific needs.

1. In Claris Emailer, select a service that uses the Apple Comm Toolbox: either America Online or CompuServe.

2. Click the Edit button to open the Service entry.

3. Click the Configure button to display the Apple Modem Tool configuration dialog.

4. Choose ÒModify This MenuÓ from the Modem pop-up menu in the Modem Options area of the dialog box for the Apple Modem Tool.

5. If modifying an existing entry, click on the modem that you would like to modify.

If you are creating a new modem entry, click on the modem that is most similar to the modem that you would like to add. Selecting the modem first creates a duplicate of that modem configuration.

6. Click the Add button to add a new configuration or click the Modify button to modify an existing entry.

7. Make the changes to the setup.

8. Click Done to save your changes and return to the Connection Settings dialog box.

9. Choose the modem definition that matches your modem from the Modem pop-up menu.

10. Click OK to save this configuration.

If your modem is not listed in the Modem pop-up menu, consider contacting the modem manufacturer to see if they have a setup file for the Apple Modem Tool.

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TA43416_Prototyper_Using_With_LightSpeed_Pascal__(TIL05666).pdf

Prototyper 2.1: Using With LightSpeed Pascal 3.0

In a development environment, will "Prototyper" take advantage of the object-oriented programming capabilities of the latest release of LightSpeed Pascal 3.0?

This article has been archived and is no longer updated by Apple.
The current version of Prototyper, version 2.1, was released before LightSpeed Pascal 3.0. The publishers, Now Software (formerly SmethersBarnes), state that Prototyper 2.1 does not support any of the object-oriented programming features of the LightSpeed Pascal product. However, the code generated by Prototyper can be compiled by LightSpeed Pascal 3.0. For more details, search the Technical Info library under "Now Software."

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Scientific Notation Calculation Errors in ClarisWorks for Windows

In the Windows version of ClarisWorks, some formulas within "( )" don't calculate properly in the spreadsheet environment.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
In the Windows version of ClarisWorks, some formulas within "( )" don't calculate properly in the spreadsheet environment. For example: The formula =(-1)^3 should return the value -1, but returns 1 (positive one) instead.

If the ( ) are removed from the formula, =-1^3 returns the correct -1 (negative one) value.

In another example, if the formula were =(2-3)^3, the answer should be -1, but is still 1 (positive one).

The ( ) cannot be removed in this instance to product the correct answer .

This only exists with ClarisWorks for Windows.
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Options File Not Recognized by WP Shortcut Button in ClarisWorks 4.0 Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When a Stationary Document is saved as "ClarisWorks WP Options" it is not utilized by the "New Document" Shortcut button automatically. It will default instead to a generic or default new document. A workaround is to copy the Stationary file from the ClarisWorks Stationary file and place it into the top level of the Claris Folder in the System Folder.

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How to Wrap Text Inside or Fill a Shape with Text

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This article has been archived and is no longer updated by Apple.

Although this technique is suitable for ClarisImpact, it can also be applied to a drawing object in ClarisWorks and ClarisDraw. The trick is to create objects that surround your shape. These objects will keep your text between their boundaries, and it will only appear that your original object is the boundary.

Here are the steps to accomplish this:

1. Draw a circle with a 3 ?inch diameter. This will be the object you wish to fill.
2. Using the polygon tool, click first near the top of the circle, then click several points along the left side of the circle until you reach the bottom. Then click to the left of the circle, once at the bottom, and once at the top (Figure 1, Step 1).

Note: The more points you use in outlining the circle, the more accuracy you will get.

3. Now select the new object, and duplicate it.
4. Move the duplicate to the right side of the circle.
5. Flip it horizontally.
6. Select each of the bounding objects and set the text wrap to Irregular
(Figure 1, Step 2).
7. With the polygon objects still selected, change the pen weight (line thickness)

to None. The objects will appear to vanish.
8. Turn on Frame Links (linked text) in the Options or Text menu. ('On' will be indicated
by a checkmark next to the option.)
9. With the Text tool, click and drag an outline (frame) surrounding the whole circle.
10. Type within the text frame, and note that the text appears to 'fill' the circle.

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Virus Prevention: Install the System from Locked Media (4/94)

This article describes the recommended approach when installing or upgrading software - use locked floppy disks, cartridge drives or CD-ROMs.

This article has been archived and is no longer updated by Apple.

If you install system software or application software from an unlocked floppy disk or unlocked removable cartridge (often called a Syquest cartridge) which uses an Installer application onto a system infected with a virus, that unlocked disk can become infected.

From that point on, every system you use that Installer disk on becomes infected.

To prevent any viruses from spreading, you must know your master disks are clean, and you must use them only in a locked state. You can also use CD-ROMs, such as Apple's InstallMeFirst CD which are read-only disks and have been checked for viruses before production.

Article Change History:
1 April 1994 - Added information on other locked media, as well as CD-ROM's
25 August 1993 - Removed references to specific viruses and virus
software that was outdated information.

Support Information Services
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About GrayShare Update Version 1.0 Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

GrayShare Update 1.0 Read Me

PRINTER SOFTWARE

This folder contains the latest changes to your printer's software. Follow these instructions to install your new printer software. After the installation instructions are some helpful printing tips.

Getting Ready to Install

Before you install your new printer software, you must make sure Printer Sharing is turned off in the Chooser. To turn off Printer Sharing:

1. Choose the Chooser from the Apple menu.
2. Select the icon of your printer. Depending on the printer you have, a Setup button may appear on the lower right side of the Chooser window. If no Setup button appears, close the Chooser and skip ahead to the next section, "Removing Your Old Software."
3. If a Setup button does appear, click it.
4. In the dialog box that appears, make sure the Share This Printer box does not have an X inside. If you do see an X in the box, click on the X to remove it.
5. Close the Chooser.

Removing Your Old Software

It's a good idea to remove your old software before installing your new software. To remove your old software, follow these steps:

Step 1
Drag the Printing Prefs folder to the Trash.
--If you have System 7, the Printing Prefs folder is inside the Preferences folder in your System Folder.
--If you have System 6.0.7, the Printing Prefs folder is in your System Folder.

Step 2
If you have Personal LW LS, LaserWriter Select 300, LaserWriter 300, StyleWriter, or StyleWriter II software on your system, then drag the software icons to the Trash.
--If you have System 7, the software is inside the Extensions folder in your System Folder.
--If you have System 6.0.7, the software is in your System Folder.

Step 3
Drag Printer Share extension to the Trash.
--If you have System 7, the Printer Share software is in the Extensions folder in your System Folder.
--If you have System 6.0.7, the Printer Share software is in your System Folder.

Step 4
Remove Chooser
--If you have System 7, drag Chooser from the Apple Menu Items folder in your System Folder to the Trash.
--If you have System 6.0.7, use Font DA Mover to remove Chooser from your System.

Installing Your New Software

To install your new printer software, follow these steps:

Step 1
Drag the PrinterShare icon from the Driver Update Disk to the icon of your System Folder. If you see a message asking if you want to replace your existing file with a newer one, click OK.

Step 2
Drag the icon of your printer (either the StyleWriter II or LaserWriter 300) from the Driver Update Disk to the icon of your System Folder. If you see any messages on your screen, click OK.

Step 3
Update the Chooser

--If you are using System 7, drag the Chooser to the icon of your System Folder.
--If you are using System 6.0.7, use Font DA Mover to install the new Chooser.

Step 4
Choose Restart from the Special menu. Your Macintosh will take a few moments to start up again.

Step 5
Choose the Chooser from the Apple menu.

Step 6
Select your printer in the Chooser. You can click Setup to share your printer if you want. For more information about choosing and setting up your printer, see the documentation that came with your printer.

PRINTER HINTS

This rest of this document includes the latest information about your printer software, as well as hints and tips for printing.

SYSTEM REQUIREMENTS

Your printer works best with Macintosh computers with system software version 7.0 or later installed, and that have hard disk drives with sufficient available space.

You can also use your printer with system software version 6.0.7 or later installed on the hard drive of your Macintosh.

LOW-MEMORY MACINTOSH COMPUTERS

If your Macintosh with System 7 has just 2 Megabytes (MB) of RAM (or 1 MB with System 6), you may occasionally run short of memory. You know you are low on memory when some documents do not print, when a printed document doesn't look correct (for example, if text looks jagged instead of smooth), or when you see "out of memory" messages on your screen. To make more memory available, try these suggestions:

- Open only one application at a time.

- Print color or grayscale images in Black and White mode.

- Make sure the RAM cache is turned off or set as low as possible. (To adjust the RAM cache, use the Memory control panel in System 7, or the Control Panel in System 6.)

- If you're using System 6, make sure MultiFinder is turned off. (To turn MultiFinder off, choose Set Startup from the Special menu. In the dialog box that appears, choose Finder. The next time you start up or restart your Macintosh, MultiFinder will be turned off.)

- If you are using System 7, try printing with background printing turned off. To turn off background printing, open the Chooser, click the icon of your printer (If you are unsure which Chooser printer icon to pick, refer to your printer's user's guide), and click the Off button next to Background Printing.

- INIT files in the System Folder use up some of your Macintosh computer's RAM. Remove these files to free up some memory.

- If you get "not enough memory" errors while printing to a shared printer, turn background printing off.

If you have only 2 MBs of RAM (or 1 MB with System 6), you may want to add more in order to make your Macintosh work more effectively. See the information about service and support that came with your computer to find out who to contact about adding RAM to your Macintosh.

PRINTING TIPS

Follow these suggestions to get the best results with your printer:

- It is recommended that you select Print Quality as Normal and Image as Grayscale in the Print dialog box because it gives you the best results with the fastest printing. (This is the default setting within the Print Dialog box.)

- If you are using System 6 MultiFinder or System 7, it's a good idea to use background printing. This allows you to continue working on your Macintosh while your printer is printing. To turn on background printing, open the Chooser, click the icon of your printer (If you are unsure which Chooser printer icon to pick, refer to the user's guide that came with this software), and click the On button next to Background Printing.

- You can connect your printer to either the modem port or the printer port. (Your printer port may already be used to connect your Macintosh to

an AppleTalk network.)

- If you use your printer with a PowerBook 100, you must connect it to the printer port because the modem port is internal on the PowerBook 100. Be sure to select the printer serial port in the Chooser after you install.

- When sharing your printer, give it a unique name so that other users can tell which shared printers are listed in their Choosers.

- Close the Chooser after making any printer setup changes.

- If you have printer Sharing turned on, and you reinstall your printer software, you must turn Sharing on again.

- If you have problems sharing your printer, reinstall your printer software.

- If you use System 6.0.x and have a LaserWriter driver installed, that LaserWriter driver must be version 7.0 or later to be compatible with the Print Monitor that is used with this printer driver.

- If you get the message "Serial port in use by another application, please quit the application and try again" and there is no other application running, restart your computer before sending another print job.

- For best results, do not attempt to share the printer if you have a large image copied to your Clipboard.

- If you have problems printing from an application program, try giving the application more memory. To give the application more memory, click the application icon to select it. Then choose Get Info from the File menu. In the window that appears, type the new size in the box labeled Current Size (If you have System 7.1, the box is labeled "Preferred Size.")

- If you are having problems printing large, complicated documents in the background, try giving Print Monitor more memory by following the previous item's instructions.

- For best results printing text, and if your applications supports it, turn 'Fractional Width' on before printing.

- To install or remove fonts on System 6, you must use the Font/DA Mover that is on your original printer software disk set.

USING THE PRINTER SOFTWARE WITH APPLICATION PROGRAMS

Some application programs do not yet take advantage of your printer's new features. If you experience problems with your application programs, contact the publishers of the programs. Here are some suggestions for getting the best results from your application programs:

4th Dimension version 2.2.3 (Acius)
Some documents print best at 100% scaling and in portrait (tall) orientation.

Illustrator 3.2 (Adobe)
For best results, use background printing and print at 100% scaling. Adobe Illustrator documents placed into other applications (for example, PageMaker) may print with gray outlines.

Canvas 3.0 (Deneba)
For best results, upgrade to version 3.0.4 or later. If you use Canvas 3.0.4 to create an image that has color patterns, print the image from Canvas rather than from another application.

ClarisWorks 1.0v2 (Claris)
For best results when printing a newly opened document that includes a chart, scroll the window to bring the chart into view before printing.

DeltaGraph Pro 2.0 (DeltaPoint)
Always click the QuickDraw button in the Print dialog box.

Digital Darkroom 2.01 (Aldus)
For best results, use the effects under the Image menu, rather than those under the Gray Maps menu.

Freehand 3.0 (Aldus)
For best results, print at 100% scaling, and turn background printing off.

HyperCard 2.1 (Claris)
Selecting Print Stack, will only allow you to print 16 cards per page. To get around this problem, type in a value larger than 100% in the Scaling field in the Page Setup dialog to get fewer cards per page.

MacDraw Pro 1.5v1 (Claris)

Color patterns printed in grayscale may show moire patterns. To avoid moire patterns, use solid colors instead of color patterns. Solid colors are chosen from the Claris Colors pallet of colors, which is to the left of the pattern pallet.

MacWrite II 1.1v3 (Claris)
The Collate option in the Print dialog box does not work.

Mathematica 2.1 (Wolfram Research, Inc.)
For best results printing color graphics, print using the Bitmap selection and turn background printing on.

Microsoft Excel 4.0
To print using grayscale, set two options in the Print dialog box: choose Grayscale from the Image pop-up menu, and turn on Print Using Color.

Microsoft PowerPoint 2.01f
Handouts and Notes from landscape (wide) documents may not print correctly. For best results, upgrade to PowerPoint 3.0.

Microsoft Works 2.0e
For best results, upgrade to version 3.0 or later. If you use version 2.0e, turn off background printing in the Chooser.

MORE 3.1 (Symantec Corporation)
For best results, print at 100% or less.

Ofoto 1.1 (Light Source, Inc.)
For best results, upgrade to Ofoto 2.0 and create a custom calibration for your printer.

Personal Press 2.0 (Aldus)
For best results, turn background printing on. In some cases you may be able to correct printing problems by giving the application more memory. (Select the application icon, choose Get Info from the File menu, and type the new size in the Current Size field.)

If Personal Press "unexpectedly quits" follow these steps: select another printer driver in the chooser, close the chooser, select Page Setup, save the document, reselect your printer's icon in the chooser, then print. If you are unsure which Chooser printer icon to pick, refer to the user's guide that came with your printer.

PixelPaint 2.1 (SuperMac)
For best results, print at 100% scaling or less.

QuickTime 1.5 (Apple Computer)
For best results, do not enlarge the image beyond the size of the selected page.

Quicken 3.0 (Intuit)
When printing with low memory, you may fail to print. Try the low-memory suggestions listed above.

ReadySetGo 4.5 (Letraset)
For best results, set your monitor to 256 colors or fewer.

ReadySetGo 5.14 (Manhattan Graphics)
Rotated objects may not print correctly.

Symantec GreatWorks 2.0
For best results when printing an envelope in landscape, select Black & White printing.

TeachText (Apple Computer)
If you get a system error 25, try the suggestions in the "Low-Memory Macintosh Computers" section above.

CONTACTING APPLICATION DEVELOPERS

If you are having problems when printing with your applications, you can contact the application developers' technical support lines. Here are some of the telephone numbers:

Acius 408-252-4444
Adobe System, Inc. 408-986-6500
Aldus 800-333-2538
Apple 800-776-2333
Claris 408-727-9054
DeltaPoint 408-375-4700
Deneba 305-596-5644

Intuit 415-858-6040
Microsoft 206-454-2030
SuperMac 408-245-2202
Symantec Corporation 310-449-4990
Wolfram Research Inc. 217-398-0700

Note: LightSource (the developer of Ofoto) no longer offers phone support or software upgrades, and has no plans to revise Ofoto to be compatible with current versions of the Mac OS.
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LaserWriter Pro Energy Star Software, Read Me

LaserWriter Pro Energy Star Software is available on the Apple Support Website, Apple Software Updates.
This article has been archived and is no longer updated by Apple.

Setting the Sleep Mode on LaserWriter Pro Printers

The contents of this disk allow you to set the sleep mode on a LaserWriter Pro printer. The sleep mode is the period of time a printer waits when not printing before going to sleep. In sleep mode, the LaserWriter Pro printer use approximately 70% less power than when in normal idle mode. To set the period of time before the LaserWriter Pro printer goes to sleep, perform the following steps:

1. Select the desired printer in the Chooser.
2. Double-click on the LaserWriter Utility icon.
3. Select Download PostScript File... from the Utilities menu.
4. Double-click on the file corresponding to the length of time you would would like the LaserWriter Pro printer to wait before going to sleep. For example, to select 30 minutes, double-click on the file named 30 Minute Sleep Mode.
5. The next dialog asks you to Save PostScript output as a file. For most users, the default name PostScript Log is acceptable, so just click on the Save. If you have previously set the sleep mode, another dialog box will appear asking if you would like to Replace or Cancel, click on Replace.
6. Print any page. One interesting page to print from within the LaserWriter Utility is the Configuration Page. To print it, select Print Configuration Page from the Utilities menu. Then click on Print in the next dialog box.

You have now set the sleep mode on the LaserWriter Pro printer. After the printer has not printed for the sleep mode period you have set, the printer will go to sleep. The first page you send when the printer is sleeping will take approximately 30 seconds longer to print than when not in sleeping. In essence it takes 30 seconds for the printer to wake up.

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About Portable StyleWriter Version 1.01, Read Me

This article comprises the Read Me document found with the Portable StyleWriter Update 1.0.1. This update was released on January 1993. This article has been archived and is no longer updated by Apple.

PORTABLE STYLEWRITER

SYSTEM REQUIREMENTS

Your Portable StyleWriter printer works with Macintosh computers with system software version 7.0 or later installed, and that have hard disk drives with sufficient available space (the Installer will check the space on your hard drive and tell you if you don't have enough).

MACINTOSH COMPUTERS WITH LOW MEMORY

In order to use the background printing feature of the Portable StyleWriter software, your computer should have at least 2 megabytes of RAM installed. If you do not have at least 2 megabytes of RAM installed in your computer, you should leave the "Background Printing" selection in the Chooser set to "off".

PRINTING TIPS

Follow these suggestions to get the best results with your Portable StyleWriter:

- It is recommended that you select Print Quality as Faster in the Print Dialog box because it gives you the fastest printing and good print quality. For the best print quality but longer printing times, set this selection to Best.
- If you have more that 2 megabytes of RAM in your computer, it's a good idea to use background printing. This allows you to continue working on your Macintosh while the Portable StyleWriter is printing. (To turn on Background Printing, choose the Chooser from the Apple menu. In the Chooser window, click the Portable StyleWriter icon, then click the On button next to Background Printing.)
- If you use the Portable StyleWriter with a PowerBook 100, you must connect it to the Printer port; the Modem port is internal on the PowerBook 100. Be sure to select the Printer serial port in the Chooser after you install.
- If you are using a PowerBook Duo computer which is NOT docked while printing to the Portable StyleWriter, the modem port must be selected and AppleTalk must be set to "inactive" in the Chooser. If you have an internal modem installed, you should also verify that the Portable Control Panel (accessible from the Apple menu) has the port set to "external"
- Close the Chooser after making any printer set-up changes.

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PICT2: Resource Fork Versus Data Fork Storage

I need some information on PICT2 data structure. I do digital photo-retouching frequently creates individual files 20MB to 30MB, or larger, especially when scanning at 4000 lines per inch.

I use film recorders, most of which are QuickDraw-based and accept PICT2 as input. I had a problem trying to create a 20MB PICT2 file from my scanning and retouching software (BarneyScan XP and PhotoShop). Is this a problem with the image software, or is it a PICT2 limitation?

We examined the PICT2 documentation in "Inside Macintosh, Volume 5." In PICT2, the picture length in the header is ignored (set to -1). Does this mean that this is variable data length?

This article has been archived and is no longer updated by Apple.

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The limitation that you are most likely running into is a resource size
limitation rather than a PICT2 format limitation.  If the application stores
the pictures in the file's resource fork (as a PICT resource), it is
understandable that you can't create a 20MB picture.  The maximum size of a
file's resource fork is 16MB.  This is because a 3-byte number is used by the
Resource Manager to offset into the resource map.

If your application can store the images in a format that uses the file's data
fork, you should be able to create and use images larger than 16MB.
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Adding New Address Doesn‘t Check for Existing Names

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you click the plus button in an Inbox Item to add an address to the Address Book, Emailer checks if there is already a record for that email address, but it doesn't check to see if there is already a record for that person's name.

Therefore, if a person changes their email address, a new record will be added for them and you will still have a record for their old address.

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Configuring Apple Express Modems

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Some PowerBooks, AV Macs, and PowerMacs come with Express Modems built in.

If you have an Express Modem, use the Express Modem tool rather than the Apple Modem tool to connect with services via Claris Emailer. To change modem tools, choose Services from the Setup menu, open a service, click the Configure button, and select Express Modem Tool from the Method popup menu. Then fill in the phone number.

In general, you can leave all other settings on their defaults. However, if you are having problems connecting, try turning off the handshake XON/XOFF checkbox. Also make sure that you don't have the minimum connection speed set to a high value. This should be set to 2400 or lower. If you have it set to 14,400 and you connect at 9600, the connection will be terminated since it isn't 14,400 or more.

Setting Data Features to Best Available is another thing to try when experiencing connection problems. This instructs the modem to negotiate the appropriate protocol based on the capabilities of modem it is connecting with.
Published Date: Feb 18, 2012

TA43431_LaserWriter_II_Printing_x_Labels_a_Workaround_(TIL05669).pdf

LaserWriter II: Printing 3x5 Labels, a Workaround

Do you have any kind of workaround for printing 3x5 labels on the LaserWriter II?

This article has been archived and is no longer updated by Apple.
We constructed a "carrier" for small forms. It is a piece of heavy paper (about the same weight paper as 3x5 stock) cut to the size of a standard envelope. It has a hole cut in it to print through and a standard piece of paper glued to the back that adequately holds the small form in place. The small form slides into place, and then We feed the carrier manually.

We do not propose this as a solution for the problem. It is much too much trouble for large quantities. It does work very well when printing single labels or small forms. We can even print individual disk labels with this method. To make it even easier, we created a MacDraw II template that shows me exactly where the window on the carrier is. We used the template to create the carrier.

If this idea could be developed into a useful solution by some industrious person, we wouldn't mind if they used it.

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Connection Fails Without Even Dialing Modem and Generates Empty File Named "False" on the Desktop

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If a Connection to AOL or CompuServe fails very quickly, without even dialing the modem, and a file named "False" is created on your desktop, you most likely have an older version of the Apple Modem Tool installed. To see if this is the case, open the System folder and then the Extensions folder. Select the Apple Modem Tool and choose Get Info from the File menu. If the file is a version earlier than 1.5.3, drag the file to the trash and run the Claris Emailer Installer again. As long as your Claris Emailer Folder is still on the main level of your hard drive, re-installing will preserve all your settings.

After doing an Easy Install, Quit the Installer, throw away the "False" file, launch Claris Emailer again, and open up any services you have accounts on (AOL or CompuServe). Click the Configure button for each service and make sure you see the version number 1.5.3 or later above the port selection area. Confirm that the phone number and modem type are correct and press OK.

This should fix the problem.
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DOS 3.3: Nonstop Catalog

Is there a way to vary the pause of the Catalog command?
This article has been archived and is no longer updated by Apple.
The Catalog command stops every 18 lines, allowing you to read the information on the screen before continuing. Vary this pause by changing three bytes in memory. In a 48K Apple:

poke 44601,234
poke 44602,234
poke 44603,234
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TA43434_LaserWriter_II_Envelope_Smudging_Problem_(TIL05670).pdf

LaserWriter II: Envelope Smudging Problem

I am having a problem printing on standard envelopes on a LaserWriter II. When I try, the envelopes are all black and smudgy.

This article has been archived and is no longer updated by Apple.
Try setting the density adjustment to 1. This should eliminate the smudging.

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Open Transport MacPPP Tip

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you are running Open Transport and you close a MacPPP connection, you will not be able to re-open the connection simply by trying to connect again. This issue is caused by a failure in the mechanism that the dialup SLIP/PPP software uses to inform Open Transport that a new IP address has been obtained. When you disconnect and reconnect, Open Transport still thinks you have your old IP address. If your terminal server assigns you a different one when you reconnect, nothing works. Apple says this will be fixed in version 1.1. To work around this issue you can use the Options dialog box in the TCP/IP control panel to force the Open Transport TCP/IP portion to unload and reload. Then you will be able to connect again without having to restart your computer.

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Returning Day Names and Weekday Numbers

Four different Calculations to use in Spreadsheets and Databases in ClarisWorks, and Tables in ClarisImpact

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

To obtain a day name such as "Monday" based upon a date entered into a cell (in a spreadsheet in ClarisWorks, a table in ClarisImpact, or a field in a ClarisWorks database) you need to create specific calculations to do this. There is no built-in menu function in ClarisWorks or ClarisImpact that generates the day of the week automatically. There are four different calculations to use that will return the desired result.

Spreadsheet or table

In a spreadsheet or table, you can return a day name or you can return the weekday number that it represents (1 through 7). The following examples assume that cell A1 is a date and A2 is the result.

1. To return the dayÕs name, use this calculation for cell A2:

=DAYNAME(WEEKDAY(A1))

Cell A1 has an entry of 1/14/96 that returns "Sunday" in cell A2.

2. To return the weekday number that the date represents, use the following for a week that begins with Monday as day 1 and ends with Sunday as day 7:

=IF(WEEKDAY(A1)=1, 7, WEEKDAY(A1)-1)

Cell A1 with the entry of 1/14/96 will return the

number 7 in cell A2.

3. To return a weekday number that begins with Sunday as day 1 and ends with Saturday as day 7, use the following:

=WEEKDAY(A1)

The entry of 1/14/96 in cell A1 returns the number 1 in cell A2.

4. If you want the weekday number to be returned with Sunday beginning as day 0 and ending with Saturday as day 6, the following will apply:

=WEEKDAY(A1)-1

Cell A1 with the entry of 1/14/96 returns the number 0 in cell A2.

Database

The calculations are slightly different than those in a spreadsheet or a table. Define the fields as follows, (assuming that "datefield' is where the date is entered and "weekname' or whatever you choose as a name will have these calculation(s) defined):

1. To return the day's name, use the following calculation:

DAYNAME(WEEKDAY('datefield'))

The "datefield' entry of 1/14/96 will return "Sunday" in the Ôweekname' field.

2. To return the weekday number that the date represents, use the following for a week that begins with Monday as day 1 and ends with Sunday as day 7:

IF(WEEKDAY('datefield')=1, 7, WEEKDAY('datefield')-1)

The "datefield" entry of 1/14/96 will return the number 7.

3. To return a weekday number that begins with Sunday as day 1 and ends with Saturday

as day 7 use the following:

WEEKDAY('datefield')

The "datefield" entry of 1/14/96 will return the
number 1.

4. If you want the weekday number to be returned with Sunday beginning as day 0 and
Saturday as day 6, the following will apply:

WEEKDAY('datefield')-1

The "datefield" entry of 1/14/96 will return the
number 0.

Note: In FileMaker Pro there is a calculation function called DAYNAME (date field) that does return the values Monday through Friday in a single step.

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Fill Special Dates Incremented By Month Does Not Fill Correctly

Using day numbers greater than 28 in conjunction with Fill Special will produce undesired results.

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This article has been archived and is no longer updated by Apple.
In ClarisWorks 4.0 and ClarisImpact 2.0 Fill Special does not fill correct dates when incrementing by one month and choosing a day that may not be present in all months.

Exact steps to reproduce:
1) Create a SS (In ClarisImpact create a Table)
2) Enter 12/31/95 in cell A1
3) Select row A1 through A4
4) Select Fill Special from the Calculate menu (From Table menu in ClarisImpact)
5) Choose Date increment by 1 month

The result is 12/31/95, 1/31/95, 3/2/95, 4/2/95. Fill Special can't find the end of the month and back up to it. Instead, it will fill with the wrong date for months after the first short month.

This happens with any date that cannot be found in the subsequent month. Another example would be beginning with 12/29/96, it doesn't find a 29th in February of 1997, so it drops that whole month and begins with 3/1/96 after that.

Conclusion: Using dates that range between a day number of 1-28 is safe, but this issue will show itself with day numbers 29-31 as those are days of that month that vary from month to month and year to year.
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Apple Internet Dialer, Internet Configuration System and Claris Emailer Lite

These 3 applications,included in the Apple Internet Connection Kit, enable you to change your mail settings. This article explains how they all relate to each other.

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This article has been archived and is no longer updated by Apple.

Apple Internet Dialer

The Apple Internet Dialer walks you through a process of choosing an Internet Service Provider or specifying one that you already use. When you save those settings at the end of the process, the Apple Internet Dialer modifies the Internet Configuration System settings file. The Apple Internet Dialer provides a more friendly interface than the Internet Configuration System by explaining each step for you.

Internet Configuration System

Also known as Internet Config, this application stores all your Internet settings in a central file so that they are accessible to all Internet applications which provide support for Internet Config. The benefit to you is that you only have to type your settings once. You can find Internet Config in the Utilities folder in the Internet Connection Kit folder. If you ever need to change your Internet settings, you may find it easier to use Internet Config rather than click Next, Next, Next through all the Apple Internet Dialer windows.

Claris Emailer Lite

Claris Emailer Lite uses the Internet Configuration System settings to pick up and send mail. You can see this by choosing Internet Setup from the Setup menu in Claris Emailer Lite. Notice that the checkbox labelled "Use Internet Configuration System" is checked. This means that Claris Emailer is getting its settings from a configuration file modifed by the Apple Internet Dialer. All fields except for the Account name field are grayed out indicating that you cannot type in them. You can however, uncheck the checkbox and manually enter settings straight into Claris Emailer Lite. The Account name field is simply a label that Claris Emailer uses for the Send Mail Via column in a new mail message. The full version of Claris Emailer supports several accounts, which makes the account name field necessary.

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TA43439_RasterOps_Card_Upgrade_Available_(TIL05671).pdf

RasterOps 224 Card: Upgrade Available

When the RasterOps 224 card was first announced and shipped, the field offices received one for demonstration purposes.

I have found this card to be a good 24-bit solution on the AppleColor High-Resolution RGB Monitor, but the card seems to crash often. I called RasterOps and found that we have old ROMs.

The Tech Support Manager said that RasterOps would upgrade the cards sent to the field at no charge.

This article has been archived and is no longer updated by Apple.

We spoke with RasterOps Tech Support and confirmed that they would upgrade the cards we shipped to the field. Contact RasterOps to get version 1.43 of the ROMs and version 1.5 of the Graphics System Software.

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About ClarisWorks 4.0v2 Mac Updater, Read Me

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WELCOME TO CLARISWORKS 4.0v2!

Thank you for choosing the ClarisWorks(R) 4.0 application. We're pleased to provide the ClarisWorks 4.0v2 Update, which has additional important features and addresses a few known issues with v1. Once you've installed the update, it will provide better Macintosh Drag and Drop support, backward file conversion, and more.

This document provides information about:

I. Installing the ClarisWorks 4.0v2 updates
II. Problems and issues addressed in v2
III. New features in ClarisWorks 4.0v2

I. INSTALLING THE CLARISWORKS 4.0v2 UPDATES

To update the ClarisWorks 4.0v1 product currently installed on your computer:
1. Put the ClarisWorks 4.0v2 Update disk in your floppy drive.
2. Double-click the ClarisWorks Update Installer icon.
3. Choose Easy Install (to install all of the new v2 components except the ClarisWorks File Converter) or Custom Install (if you want to specify which components to install), and then click Install.
Once installation is complete, the process of updating your existing ClarisWorks 4.0v1 application itself will begin.
4. Select the copy of the ClarisWorks 4.0v1 application to update and then click Update.
The installation process finishes and the application is updated.

Note: To install the ClarisWorks File Converter application, you must choose it from the Custom Install list. For more on using the ClarisWorks File Converter, see the document "Read Me - CW File Converter".

II. PROBLEMS AND ISSUES ADDRESSED IN V2

This v2 Updater addresses several issues from version 4.0v1:
* Mail Merge and Multiple Line Data. In v2, when a mail merge field contains multiple lines of text, the text now merges and prints correctly. (The text still displays as a single line on the screen.)
* Mail Merge and Sliding over Empty Fields. In v2, when there is an empty mail merge field on a line by itself, the following text moves up appropriately and prints correctly. (The text does not "slide" on the screen.)
* Rotating Library Images. In v1, some of the ReadyArt(TM) library images didn't rotate correctly. This was fixed in v2.
* Stationery Corrections. Minor changes were made to some of the stationery files.
* Address List Assistant. Minor changes were made to the Address List Assistant for better printing and on-screen display.
* New RTF filter.
* Faster Word Count
* Option left/right arrows in WP now correctly skips carriage returns and tabs (as it did in versions prior to 4.0).
* New Document dialog now displays more quickly, especially when there are many stationery files in the ClarisWorks Stationery folder.
* Word Services AppleEvent Support. In v2, it is easier to use applications that support the Word Services AppleEvent standard (such as some third party spelling or grammar checkers).

To enable the Word Services command in the Edit:Writing Tools menu of the ClarisWorks word processor:
1. Select Preferences from the Edit menu.
2. Select the Text icon.
3. Check the Word Services checkbox under General and click OK.

To select a Word Services application for use with ClarisWorks:
1. Open or create a word processing document.
2. Select Writing Tools from the Edit menu and then select Edit Word Services.
You see a dialog containing a list of all the Word Services applications for which ClarisWorks is currently configured.
3. Press the Add button.
You see a dialog listing the applications running on your Macintosh that use Word Services AppleEvent standard.
4. Select the one you want and click OK.
5. In the Word Services dialog, click OK.
A new menu item corresponding to the Word Services application you chose appears in the Writing Tools menu.

You can also use the Edit Word Services dialog to remove installed Word Services applications from the Writing Tools menu.

To use a Word Services application on a ClarisWorks word processing document, choose the appropriate menu item from the Writing Tools menu. This launches the Word Services application if is not already running. If you have text selected in the document, then the Word Services application checks the selection. Otherwise, the entire document is checked.

III.NEW FEATURES IN CLARISWORKS 4.0V2

In addition to resolving some known problems in v1, the v2 revision also adds new features, including:

* Macintosh Drag and Drop Support. In v2, users can use Macintosh Drag and Drop (that comes with System 7.5) to move text, graphic objects, and spreadsheet cells within ClarisWorks 4.0 documents, drag selections from one document to another, drag selections to other applications (including creating clipping files in the Finder).
* Backwards File Conversion to 2.0/2.1/3.0 Formats. You can use the new ClarisWorks File Converter application to save version 4.0 files in the format used by ClarisWorks versions 2.0, 2.1 and 3.0. For more on the File Converter, see the file "Read Me - CW File Converter".
* New filter for WordPerfect 3.1 for Macintosh.

Claris(R) and the ClarisWorks team thank you for your purchase of ClarisWorks 4.0. Your support, comments, and suggestions help us to continue to bring you better solutions for your future productivity needs.

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ABOUT THE CLARISWORKS 4.0 TO 2.X/3.0 FILE CONVERTER, Read Me

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ABOUT THE CLARISWORKS 4.0 TO 2.X/3.0 FILE CONVERTER

The ClarisWorks 4.0 to 2.x/3.0 File Converter enables users of the ClarisWorks(R) 4.0 application to share their documents with earlier versions of ClarisWorks. ClarisWorks 2.0, 2.1, and 3.0 cannot directly open files created by ClarisWorks 4.0; the File Converter can change ClarisWorks 4.0 files to the format read by ClarisWorks 2.0, 2.1, or 3.0, which all share the same file format. This document explains how to use the File Converter and how features unique to version 4.0 are converted to the 2.x/3.0 file format. ClarisWorks 2.0, 2.1, and 3.0 use a common file format. This is referred to as the 2.x/3.0 file format.

The File Converter is a separate application and does not require any version of ClarisWorks to be on your computer. The File Converter runs on any Macintosh on which ClarisWorks 2.x/3.0 can run, i.e., 68000 (that is, Macintosh Plus, SE, Classic, PowerBook 100, etc.) or higher Macintosh and Power Macintosh computers.

Important Note: The File Converter adds the suffix "[v3.0]" to the filename of converted files (documents); for example, "MyLetter" becomes "MyLetter [v3.0]". The original ClarisWorks 4.0 file remains unchanged and intact. ** It is always a safe practice to make a backup copy of each file that you want to convert, and to work with the copy.

INSTALLING THE SOFTWARE
The File Converter is installed by selecting it from the Custom Install list when running the Installer from either the ClarisWorks 4.0v2 installation disks or the ClarisWorks 4.0v2 Update disk.

Use these steps ONLY if you are installing the File Converter from a stand-alone File Converter disk (available separately):
1. Insert the File Converter disk into the 3.5-inch disk drive and double-click the disk icon to open it.
2. Drag the application from the File Converter disk to a folder on your computer.

CONVERTING FILES--METHOD I
Use Method I if you're using System 7.0 or later. (If you want to specify the names or location of the converted files, or if you're using System 6.0, use the directions under CONVERTING FILES--METHOD II.)

1. Click to select the ClarisWorks 4.0 file you want to convert. Shift-click to select multiple files.
2. Drag the selected files to the File Converter icon and release the mouse button when the Converter icon becomes shaded.

The File Converter converts the files to 2.x/3.0 format and saves them in the same folder as the original files. The File Converter adds "[v3.0]" to the end of the filename.

CONVERTING FILES--METHOD II
Use Method II if you're using System 6.0, or if you want to specify the names or locations of the converted files.

1. Double-click the File Converter icon.
2. In the Open dialog box, select the ClarisWorks 4.0 file you want to convert, and then click Open to initiate the conversion.
3. In the Save As dialog box, enter a name and choose a folder for the converted file, and then click Save.
4. To convert another file, choose Convert from the File menu, and repeat steps 2 and 3.

HOW THE FILE CONVERTER HANDLES CLARISWORKS 4.0 FEATURES
Several ClarisWorks 4.0 features, such as sections in word-processing files and pop-up fields in databases, were not available in ClarisWorks 2.0, 2.1, and 3.0. The converted documents may need to be reformatted so that they display and print correctly. Refer to the following list for specific details on how the File Converter converts ClarisWorks 4.0 features.

All Environments:
* New shortcuts and macros are not supported.
* Superior and Inferior font styles become Superscript and Subscript font styles.
* Double underline font style becomes single underline font style.
* Paragraph styles: Text, paragraph, and line spacing attributes are retained.
* Outline styles: Text, paragraph, and line spacing attributes are retained in non-outline view; labels are retained in outline view.
* Table styles: All attributes except color border and cell shading are retained.
* Basic styles: All attributes are retained.
* Auto-hyphenation is turned off in the converted document.

Word Processing:

* Section formatting: Attributes of the first section are applied to the entire document.
* Section breaks become Page/Column breaks.
* Section number-page count becomes a document page number.
* Document page count becomes a document page number.
* Endnotes become footnotes.
* Left and right headers and footers become left headers and footers.
* Mirrored facing pages: The inside margin becomes the left margin and the outside margin becomes the right margin.
* Left/Right facing pages are not supported.
* Mail merge fields are replaced with a "#" as a place holder.
* Paragraph labels are displayed only when the document is in outline view.
* The alignment of inline equations (created by EGO-aware editors) may change.

Spreadsheet:
* Colors and patterns applied to cells are not supported.
* Colored cell borders become black cell borders.
* Fill Special: Cells filled using the Fill Special command retain their data.
* BaseToNum and NumToBase functions: Cells containing the results of BaseToNum and NumToBase functions retain their values.

Drawing:
* Rotated objects are rotated to nearest 90 degree angle.
* Fill patterns and gradients applied to text frames become opaque.

Database:
* List view and saved searches, sorts, and reports are not supported.
* Radio Buttons and Popup Menu field types are retained as Text fields with a value list.
* Value List fields are retained as Text fields with a value list.
* Check Box fields become Number fields. The number is 0 if the field was unchecked and 1 if the field was checked.
* Serial Number fields become Number fields set up for serial number entry.
* Name fields become Text fields; any data is retained.
* Record Info fields: If the field options were set to Date Created or Date Last Modified, the field becomes a Date field. If the field options were set to Time Created or Time Last Modified, the field becomes a Time field. If the field options were set to Name of Creator or Name of Modifier, the field becomes a Text field.

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How to Scale a Paint Object by Percentage

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A paint (bitmap) object that's pasted into a word processing, drawing or spreadsheet document cannot normally be scaled by percentage. If you select the object and move a handle, the object will crop rather than scale. However, if you use the Insert command to insert a PICT, TIFF or EPSF file, that graphic can be scaled by percent using these step:

1. Paste the object into a blank drawing document. Choose Save As, and save the document as a PICT file.
2. Go to the document you want to place the graphic into (a word processing, drawing or spreadsheet document).
3. Select the arrow tool in the toolbar.
4. Choose Insert from the File menu and insert the PICT file.
5. Select the graphic.
6. Choose Transform from the Arrange menu, and select Scale by Percent.

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ImageWriter II: How Draft Mode Handles Fonts and Layout

Does the ImageWriter II have any built-in fonts? What font is used when the Draft option is selected? I printed in Draft mode from Microsoft Word 4.0, using both Palatino and Garamond, and the printouts were different. That is, the spacing between words was inconsistent.

Can you explain?

This article has been archived and is no longer updated by Apple.
There are fonts built into the ImageWriter II ROMs. They are very simple character fonts with limited quality. Because these fonts are resident in the printer, they can print very quickly compared to the bitmaps sent to the ImageWriter for Faster or Best modes. With a Macintosh, the built-in fonts are used only when printing in Draft mode or when an application bypasses the Macintosh print driver.

Draft mode allows very fast printing of documents, giving a best-guess layout of characters and lines. Because this mode uses the built-in fonts, it cannot duplicate the spacing and effects visible on the Macintosh screen and is, therefore, not intended for anything other than rough drafts.

The best way to improve the print layout with Draft mode is to use a screen font that approximates the ImageWriter fonts used. The ImageWriter fonts are pica or elite in various sizes between 9 and 17 characters per inch. A list of the fonts used is on page 74 of the "ImageWriter II Owner's Manual."

Matching different screen fonts to printer fonts requires experimentation. Because Draft mode was not designed for optimal appearance, use it only for rough-draft output.

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About ClarisDraw Version 1.0v2 Macintosh, Read Me

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ClarisDraw Important Information - 1.0v2

This file contains last-minute information that will help you get more from ClarisDraw. You will also find important tips in the "Troubleshooting" section of ClarisDraw's onscreen Help.

Hard Disk Space Needed During Installation

To save hard disk space, the "Easy install" option places all ClarisDraw files and only a minimal set of ClarisArt files on your hard disk. To install all of the ClarisArt files, relaunch the Installer, go to "Custom" install, and select the 'ClarisDraw ClarisArt' option.

During installation, ClarisDraw will temporarily require more hard disk space than it needs after installation is completed. This is because, during installation, the ClarisDraw Installer places compressed copies of the ClarisDraw files on the hard disk, then makes decompressed copies of these files. Once installation is successfully completed, the Installer automatically deletes the compressed files and leaves only the new, uncompressed files for your use.

Power Macintosh Installation

The "Easy Install" option places on your hard disk the appropriate Macintosh or Power Macintosh version of ClarisDraw, depending on the Macintosh being used. If you'd like to install both the Macintosh and Power Macintosh versions on any machine, use the following steps:

* Use the Easy Install option to install one complete set of files, then Quit the Installer.

* Open the 'ClarisDraw Folder' that was just installed and rename the ClarisDraw application appropriately (example: 'CD Macintosh' or 'CD Power Macintosh')

* Open the Installer a second time, choose "Custom" and select either 'ClarisDraw Application Macintosh' or 'ClarisDraw Application Power Macintosh', depending on the version previously installed.

When this installation is completed, both applications will be located in the same folder and will use the same auxiliary files.

Important: The Power Macintosh version will not run on a conventional Macintosh.

Memory

Occasionally in low memory situations an alert will appear stating "There is not enough memory to complete this operation". This is particularly common when working with paint frames, and is typical of any application with a paint feature. We suggest saving your document before continuing. If you are working with large documents and find yourself in this situation frequently, we suggest increasing the application's memory partition as described in the ClarisDraw onscreen help, or your Macintosh User's Guide.

Bad Fonts

ClarisDraw tests for bad fonts when the application is first opened. It also tests for bad fonts when opening the application after fonts have been added to your system. ClarisDraw creates a 'Claris Fonts' file which is used to display fonts in their actual typeface in the Font menu. If ClarisDraw encounters a bad font, or one that it cannot correctly add to the Claris Fonts file, an alert is displayed indicating that some fonts may be bad. These fonts will be listed in a 'Bad Fonts' text file in the Claris Folder, which is located in your System Folder. Additionally, these fonts will be displayed in the Chicago font in ClarisDraw's FONT menu. We suggest removing or replacing these fonts from your system before using ClarisDraw. Refer to the manual that came with your Macintosh for instructions on how to remove or replace these fonts. Once these fonts have been removed or replaced, throw away the 'Claris Fonts' file, also located in the Claris folder, and open ClarisDraw.

There may be some fonts that work properly in ClarisDraw and still fail our tests. The only difference between these and other fonts is that they will be displayed in the Chicago font in the FONT menu. However, we suggest performing the following simple tests on these fonts before using them in the application:

1) Create some text in ClarisDraw and apply the font. If the application unexpectedly quits, this font is bad and should be removed or replaced immediately.

2) If the application does not quit when the font is applied, create multiple pieces of text, apply several different font sizes, and print the file. If the font appears correctly on screen and when printed, then there is no need to replace or remove this font.

Exporting Documents with Bezigons Created from Text

If you create a document that includes bezigons created from text, and then save this document in EPSF, CGM, MacDraw Pro or MacDraw II format, you may see extra lines in the converted document, both onscreen and when printing. This is a limitation of Apple's "QuickDraw" object-drawing technology.

Opening or Saving Color Palettes

ClarisDraw ships with several specialized 256-color palettes. You can access these palettes by opening them from the "Colors & Gradients" dialog box in the LAYOUT menu. Make sure that you select the 256-color palette first; the "Open" and "Save" buttons will then become available.

Illuminated Letters Library

If your drawing includes objects from the Illuminated Letters library, and you need to scale these letters, for best results do not resize a letter by manually stretching it. If you do that, the letter or number background will scale accurately, but the enclosed letter or number will not because it is an actual piece of text. Instead, use the "Scale Selection" feature from the ARRANGE menu, with the "Scale text" option selected.

ClarisImpact Users:

If you own ClarisImpact, you can save a considerable amount of disk space by not installing the ClarisArt files for ClarisDraw. Both products include the same library files.

However, if you do install the ClarisArt libraries that come with ClarisDraw, to use them with ClarisImpact, you'll need to have ClarisImpact version 1.0v4 (or greater). Earlier versions of ClarisImpact cannot read library files in ClarisDraw's format.

If you own a version of ClarisImpact earlier than 1.0v4, contact Claris Customer Assistance for a maintenance release at (408) 727-8227, from 8 a.m.-5 p.m., Pacific time, Monday-Thursday (8 a.m.-2 p.m. Pacific time on Fridays). You'll also find this maintenance release on America Online, CompuServe, eWorld, AppleLink, and the Claris BBS (408-987-7421).

If you decide to use the same library set for ClarisDraw and ClarisImpact, remember that each application has certain kinds of objects that do not exist in the other. This can be a consideration under some circumstances.

For example, if you have text bound to a curve in ClarisDraw, and you then save that bound-text object to a library, if you open that library in ClarisImpact, the bound-text object will look the same, but if you ungroup it the text and the object it is bound to will all be separate objects. If you then save the library in ClarisImpact format and open it in ClarisDraw, you will not be able to unbind the text from the object. This is because the "Bind Text" feature is available in ClarisDraw, but not in ClarisImpact.

Similarly, if you place a "model" object from ClarisImpact into a library, then open that library in ClarisDraw, you will be able to place those objects into your document, but they will only be pictures - not the active models they are in ClarisImpact. This is because models are only available within ClarisImpact, not ClarisDraw. More importantly, if you modify the library and save it from within ClarisDraw, your models will look the same, but they will have lost their model functionality when you try to place them from the library into a ClarisImpact document. You'll be able to edit these objects with the drawing tools, but you won't be able to change them with the model tools. To avoid this, if you are using ClarisDraw and have opened a library containing ClarisImpact models, save any changes to a separate copy of the library. Use the "Save As" command under the Library's FILE menu.

ClarisDraw 1.0v2 Detailed Improvements

Claris periodically issues maintenance releases of shipping software applications. A maintenance release is identified by v2, v3, v4, etc. numbering. The improvements made in ClarisDraw 1.0v2 are included in this package and are detailed below.

Improved Translation of MacDraw Pro Files
* Text blocks import with correct size, and without wrapping
* Document size and page orientation information are properly imported
* Extremely fine pen sizes import at ClarisDraw's minimum available size, rather than being imported at a pen width of zero.
* MacDraw II and MacDraw Pro documents with rotated polygons import with all polygons accurately placed
* Objects in MacDraw Pro files opened in ClarisDraw for Power Macintosh print properly to Postscript printers.
* MacDraw Pro files containing PICT objects import completely and with correct size and proportion

Improved compatibility with ClarisImpact
* Imported ClarisImpact files retain correct ruler settings
* ClarisImpact files with rotated models, groups or tables import properly
* ClarisImpact files with all objects locked import properly

Import and Export Improvements
* Text in files saved as a PICT, then reopened and ungrouped, retains its proper color
* Pen size is properly translated when exported to CGM format

* Arrowheads properly export to CGM format
* Inappropriate "insufficient memory" error dialog eliminated when saving large PICT files as MacDraw II or MacDraw Pro.
* Resolution of bitmapped images properly preserved when exporting to MacDraw II or MacDraw Pro
* Black and white (one-bit) files export to EPSF with only the necessary information, so they remain reasonable in size
* White text, copied to the Clipboard along with colored text, does not change the way colored text is displayed on screen after you switch to the Finder and back
* QuickTime movies export properly

Improved Printing
* Print range settings work properly with slides and handouts
* Rotated, colored text prints properly with the Apple LaserWriter 7.x driver
* Polygons and bezigons print and display properly when exported or copied from ClarisDraw, then imported or pasted into other applications and printed to a Hewlett-Packard DeskWriter printer

System Conflict
* Memory is properly managed so closing Desk Accessories after use no longer causes a operating system conflict.
* Pop-up tools are now properly available when using System 7.1 on a Macintosh Plus, SE, Classic, PowerBook 100, or Portable

Miscellaneous
* The CommercialPi BT font displays correctly in the Font menu and in text
* ClarisDraw properly launches with a wider variety of corrupted fonts installed
* Proper line spacing is preserved even if a single line of text contains characters of varying point sizes, and line spacing is changed to a measurement other than Lines
* Objects snap correctly to the grid under a wider variety of situations
* Screen objects display properly after using the spell checker while viewing the Master Slide
* Colors in the gradient editor display properly when in paint mode with a paint frame set for thousands or millions of colors
* Library object "thumbnails" retain their proper size in Name View

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About Version 2.0 Macintosh, Read Me

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WELCOME TO CLARISIMPACT 2.0!

Thank you for choosing ClarisImpact(R) 2.0. This Important Information file documents some additional tips that may prove helpful when using ClarisImpact 2.0, including changes for users of previous versions of the program. This document provides information on:

I. Technical notes and tips
II. New features in ClarisImpact 2.0

I. TECHNICAL NOTES AND TIPS

A. Using ClarisImpact 1.0 and 2.0 on the same Macintosh
Some users may want to have both versions 1.0 and 2.0 on their Macintosh. (You might choose to do this if others in your organization have older versions of ClarisImpact.) If you plan to run both versions on your Macintosh, keep the following in mind:

- Version 2.0 uses the same desktop information as version 1.0, so documents created in ClarisImpact 1.0 will show the ClarisImpact 2.0 document icons. When you double click these icons, they will automatically open in ClarisImpact 2.0. If you want to keep your 1.0 documents in 1.0 format, start ClarisImpact 1.0 and use the open menu item instead of double clicking the document icons.

For the same reason, the ClarisImpact 1.0 application will show the version 2.0 application icon on the desktop. Rename ClarisImpact 1.0 and ClarisImpact 2.0 applications accordingly to avoid getting them confused.

- ClarisImpact 2.0 has a different file format than ClarisImpact 1.0. When you open a ClarisImpact 1.0 document with version 2.0, the document is converted to 2.0 format. This automatic conversion is indicated by the "- Converted" extension in the filename. If you save the converted file with a new name, the original 1.0 version is left intact.

After a file has been saved with version 2.0, it cannot be opened with version 1.0. Therefore, you should keep copies of important documents in 1.0 format if you or another user might need to access them using version 1.0 in the future.

B. Converting ClarisImpact 1.0 Styles to ClarisImpact 2.0 Style.
To update ClarisImpact 1.0 Color Styles and ClarisImpact B&W Styles to ClarisImpact 2.0 format, you need to follow the instructions located on page 4 of the Installation Guide. When following these instructions, you will likely encounter a -48 error after step 3. Okay the alert and continue with the rest of the instructions.
The -48 error is the result of attempting to combine the ClarisImpact 1.0 9" SE Slides and 10" PowerBook Slides to a single Custom slide file. If you did not use these slide styles in ClarisImpact 1.0, there is no need to continue. However, if you wish to use one or both of these files with ClarisImpact 2.0, quit ClarisImpact and use the following steps.

To convet 9" SE Slides and 10" PowerBook Slides files to ClarisImpact 2.0:
1. Make a copy of the original 9" SE Slide file.
2. Rename the file "Custom".
3. Copy the file to the folder created in step 8 of the Installation guide.
4. Make a copy of the original 10" PowerBook Slide file.
5. Rename the file "Custom".
6. Create a new folder in the CIStyles folder named "10" PowerBook Slide"
7. Copy the Custom file from step 5 to this folder.

The 9" SE Slide styles are accessed by selecting Custom from the slide size pop-up menu and the appropriate folder from the Style pop-up menu in the Presentation precreation dialog.
The 10" PowerBook Slide styles are accessed by selecting Custom from the slide size pop-up menu and the 10" PowerBook Slides from the Styles pop-up menu.

C. Sharing files with ClarisImpact 2.0 for Windows
ClarisImpact 2.0 for Macintosh has the same file format, user interface, and feature set as ClarisImpact 2.0 for Windows. You can create a ClarisImpact document on Windows and edit it on a Macintosh computer, or vice versa. Therefore, if you work with both Macintosh and Windows versions of ClarisImpact, or if you collaborate with colleagues who use ClarisImpact 2.0 for Windows, you can work without translating files or learning a different program.

However, if you want to transfer files between platforms via diskette, you must use a file transfer program such as PC Exchange, AccessPC, or a similar utility. These utilities require that your Macintosh have a high density drive (FDHD SuperDrive). Follow the directions in the documentation of the file transfer utility program. After copying the files to or from a PC-formatted disk, rename the files with DOS-compatible filenames (8 characters or less) and include the .CID extension (for ClarisImpact Library files, use the .CLB extension).

After renaming your files, you can copy them to your computer's hard drive and open them as you would any ClarisImpact document.

Fonts, margins, and page breaks may look different after they are transferred from Windows to the Macintosh. You can minimize unintended text changes by using the same fonts on both platforms. ClarisImpact provides several TrueType fonts that are common to both platforms. In addition to common fonts, ClarisImpact uses the Claris Font Map file located in the Claris folder to define Macintosh font substitutes for common Windows fonts. The Claris Font Map file is a basic text file that can be edited to add additional substitutions or modify the font mapping provided by ClarisImpact.

Font mapping syntax in the Claris Font Map file is:
<Windows font name>=<Macintosh font name>

ClarisImpact installs the following entries for you:

Arial=Helvetica
Courier New=Courier
Times New Roman=Times

To create a new font substitution, create a new line in the Claris Font Map file similar to those above. If you are unsure of the Windows font name, open the ClarisImpact file on the Macintosh and use the font name that is displayed in the uninstalled font dialog box for the variable <Windows font name>.

Note: Fonts are mapped and stored by name, so the names need to match exactly. If you have made unnecessary changes and would like to revert back the original Claris Font Map file, delete the Claris Font Map file and restart ClarisImpact. ClarisImpact recreates the Claris Font Map file automatically during start up if it is missing.

D. Adjusting ClarisImpact memory
In most cases, the preset memory allocation is adequate for working on ClarisImpact documents. However, if you are working with large drawing documents, very long documents, or if you have several large documents open at the same time, you may see the message "Not enough memory to complete this operation" or "The document has been reduced to fit the available memory." These messages mean that you need to increase the amount of memory set aside for ClarisImpact. Increasing the memory allocation may also reduce the time it takes to print some documents.

To increase the memory allocation for ClarisImpact:
1. If ClarisImpact is open, quit the application.
2. Open the folder that contains the ClarisImpact 2.0 application.
3. Click the ClarisImpact application icon once. (If you click the icon twice, you'll start ClarisImpact. If that happens, choose Quit from the File menu and try again.)
4. Choose Get Info from the File menu.
5. Double-click the Preferred Size box.
6. Type a larger number to increase the memory size.
7. Close the ClarisImpact Info window.

E. Software requirements for the DataDraw templates
If you want to use the database or spreadsheet templates that are installed in the DataDraw folder, you must have FileMaker(R) Pro or Microsoft Excel 5.0 installed on your system. Instructions for using each template are located on the Help screens in the FileMaker Pro and Excel template files.

F. Installing or multi-using from Novell Netware servers
If you intend to allow multiple users to install ClarisImpact or run ClarisImpact as a multi-user application from Novell Netware servers and are using System 7.1 or 7.5, then you need to reset the shared bit for the installer and/or the ClarisImpact application. This bit is preset in ClarisImpact, but the setting is cleared when the files are copied to a server if you are using the system versions and the Netware server named above.

You can reset the shared bit using either of the following two methods:

Method 1
Using the Netware Tools application, which comes with Novell Netware for Macintosh:
1. Make sure you have access privileges to change files.
2. Log onto the server.
3. Start Netware Tools.
4. Select File and Folder Flags from the Utility menu.
5. Select the ClarisImpact Installer, ClarisImpact - Macintosh, and/or ClarisImpact - Power Macintosh that you want to share.
6. Click Sharable.
7. Close the File and Folder Flags window.
8. Quit Netware Tools.

Method 2
Using ResEdit:
1. Make sure you have access privileges to change files on the server.
2. Log onto the server.
3. Start ResEdit.
4. Select Get File/Folder Info from the File menu.
5. Select the ClarisImpact Installer, ClarisImpact - Macintosh, and/or ClarisImpact - Power Macintosh that you want to share.
6. Click both Shared and Invisible in the Info window.
7. Select Save from the File menu.
8. Deselect the Invisible checkbox.
9. Select Save in the File menu.
10. Quit ResEdit.

II. NEW FEATURES IN CLARISIMPACT 2.0

A. Cross-platform support

ClarisImpact 2.0 is now available for Windows and Windows 95 as well as the Macintosh and the Power Macintosh. You can easily exchange files between platforms, because no file-format translation is needed.

B. Automated data transfer with DataDraw(TM)

You can automatically convert information from FileMaker Pro, Microsoft Excel, or any application that exports data to a text file into a number of supported ClarisImpact business graphics. DataDraw turns names, dates, and numbers into organization charts, timelines, tables, data charts, or calendars. Try it out with the templates provided in the DataDraw folder.

C. Enhanced styles

ClarisImpact styles have been professionally redesigned to reflect today's business standards. These pre-designed combinations of fonts and color schemes help you quickly communicate your data in an attractive graphic format.

D. Improved presentation builder

Organize your thoughts before they appear on your slides with the integrated ClarisImpact outliner. Use the slide sorter to view and rearrange your entire presentation at a glance. Include speaker notes that help you give your presentation. Add pizzazz to on-screen presentations with over 50 new slide transitions and slide markup.

E. More flowchart symbols

Create a wider variety of flowchart diagrams using nine symbol sets--7 more than version 1.0. New symbol sets include: Telecommunication and Transportation networks, Decision Trees, Brainstorming, Root Cause Analysis, Total Quality Management, and Block Diagrams.

F. New symbol creation controls on flowchart connectors

Redesigned flowcharts now include an indicator showing connector text placement and autogrow/autoshrink symbols. Create flowcharts faster and easier with these new connectors.

G. Flexible organization charts

Make complex organization charts fit where you need them. Quickly resize an entire organization chart by clicking and dragging while boxes in the chart automatically grow and shrink around text. The new Fit To Page feature prints an organization chart of any size on one page.

H. Versatile scheduling timelines

ClarisImpact timelines work well for planning simple projects and tracking milestones. Grid lines automatically adjust to match your project dates, tasks can be linked to and unlinked from each another, and any task can be designated as a milestone.

I. Easy to use table feature

Create complex tables easily. In addition to organizing text and numbers, tables now work like spreadsheets by supporting industry-standard formulas and summations.

J. More data chart types

We've added 32 new data chart types, simplified the terminology and interface for creating them, and included more ways to customize charts.

K. Enhanced calendars

Produce business or personal calendars that display week numbers as well as weekday-only calendars. New calendar art makes it easier to highlight holidays and other common events.

L. Create great looking graphics

Get creative with a broader palette of colors and gradients. Get your work done faster using the new object Info palette and zooming controls. The

TA43445_About_Version_Macintosh_Read_Me.pdf

ClarisArt libraries contain over 400 new clip art images to increase the variety of high-quality art you can use in your charts and diagrams.

Claris(R) and the ClarisImpact team thank you for your purchase of ClarisImpact 2.0. Your support, comments and suggestions help us to continue to bring you better solutions for your future productivity needs.

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Illegal Operation Message in Windows 95

This error message is typically generated when an incompatible printer driver is set as the default.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you receive an "Illegal Operation" or Exception error 10H message from Windows 95 when performing routine tasks in ClarisWorks 4.0 or 5.0, or FileMaker Pro 3.0 or 4.0, such as installing the application, running an Assistant or opening a file, there are several things that you can do to try to eliminate this error.

If you receive the "Illegal Operation" error click on the DETAILS button. If you get a message similar to the following:

"CLWORKS caused an exception 10H in module CLWORKS.EXE at XXXX:004dc6ef"
"FMPRO caused an exception 10H in module FMPRO.EXE at XXXX:004dc6ef"

(The XXXX seems to vary depending on the operation preformed but the rest of it seems to remain pretty constant.)

You may have an incompatibility between your application and your printer driver.

We have found this particularly to be the case the following printer drivers:

Canon BubbleJet BJC-70 (NOTE: The Windows 95 BJC-70 driver does not cause this error message.)
Canon BubbleJet BJ-210
Canon BJC-610
Canon BJC-4000 Windows 3.1 driver version 1.0d/3.1
Canon BJ-200EX
Canon BJC-4100
Canon BJC-4200
Eclipse Fax driver
Hewlett-Packard (HP) DeskJet 660
Hewlett-Packard (HP) DeskJet 660c driver versions prior to 8.0
Hewlett-Packard (HP) LaserJet 5L
Hewlett-Packard (HP) LaserJet 5P/5MP
Generic/Text Only
MidiComm Fax Driver by MidiSoft
Cheyenne Bit-Fax
Epson Color Stylus

If you are getting this error message, the printer driver you are using should not be set as the default printer when the application. Setting another printer as the default printer and then switching to your specific driver using PRINT SETUP may get you around the problem, but it may crash the system also.

Your best option is to print to another printer or use a compatible printer driver such as the 5P driver or download the updated driver from HP, in the case of the HP LaserJet 5L. For Cannon BubbleJet Printers try the IBM ProPrinter drivers (this does work for the BJ 200EX). Often times compatible drivers will be listed in the printer manual.

Contact your printer manufacturer to see if an updated printer driver is available also.

If changing the printer driver to a compatible driver does not stop the crashing problem, you may try turning off the Math coprocessor. To do this follow these directions:

1. With your right mouse button, click My Computer, and then click Properties.

2. On the Device Manager tab, click View devices by type.

3. Double-click System Devices.

4. Click Numeric Data processor, and then click Properties.

NOTE: With a Plug and Play bios, the Numeric Data Processor option will be under a Plug and Play branch in the Device Manager rather than at the top level.

5. On the Settings tab, click Never Use The Numeric Data Processor.

6. Click OK.

7. Restart your computer.

If you are still having problems, make sure that your temp variable is set correctly. To do this, follow these directions:

1. Click the Start button, point to Programs, and then click MS-DOS Prompt.

2. Type the following and press ENTER:

set

3. Note the directory specified by the TEMP= line.

4. Attempt to access that directory. Type the following at the MS-DOS prompt and press ENTER

cd\\<temp>

where <temp> is the path specified in step 3.

5. If you receive the following error message,

Invalid directory

type the following at the MS-DOS command prompt and press ENTER:

md <temp>

If you do not receive an error message, clear the temp directory of temporary files. Type the following at the MS-DOS and press ENTER:

del *.tmp

6. Type the following at the MS-DOS prompt and press ENTER:

exit

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"Device Not Functioning" Error When Installing ClarisWorks 4.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When attempting to install ClarisWorks 4.0 for Windows 95, you may receive the following error message.

"A Device Attached To The System Is Not Functioning Properly"

After acknowledging the error message, the install routine is aborted.

This error can occur if the system is unable to read one of the installation diskettes for whatever reason. Most likely this points to a badly damaged or corrupted diskette. You can verify that the diskette is damaged by trying to copy the contents of the diskette to the hard drive in a blank folder / directory. If any read errors occur during the copying then the diskette is bad and should be replaced.
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Connectix Speed Doubler Causing Crashes while Unpacking Messages

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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We have received reports from customers who have tracked down problems they are having with Claris Emailer to a potential incompatibility with Speed Doubler by Connectix. Claris and Connectix have not confirmed this report but are in communication about it. Customers have reported that the problem seems to be specifically related to the Speed Access component of the Speed Doubler product.

Some customers report system crashes when Claris Emailer is unpacking messages it has just downloaded. Another report is system crashes when launching the Claris Emailer application.

Currently, the only workaround is to disable Speed Access. It is recommended that you run Disk First Aid or another hard disk repair tool to check your disk.

If you can confirm this incompatibility, please inform Claris by sending email to emailer-help@claris.com. Include what Macintosh model you have, and the version of the System and Claris Emailer you are using.

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Macintosh Portable Data Modem: Using with Dial-Back Systems

I want to use the Macintosh Portable with internal modem to dial into a corporate office network. We have a "dial-back" security system called Defender that requires the modem to answer the "callback" from the corporate network in "originate" mode.

Can this be done?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable Data Modem 2400 doesn't have an option for answering in originate mode, but it can be tricked into doing this. It won't be quite as convenient as setting up a single register, though, and you may want to use a script to automate it, depending on the communications program you are using.

Scenario

Because the goal is to make the modem answer in originate mode, and the modem doesn't have this option, we're going to dial in originate mode, instead and just not dial a number. The trick is to set the modem options to disable Dial Tone detection. If this isn't done, the modem will wait for a dial tone when the other end is sending a carrier.

Follow these steps:

1) Set the modem's active response codes with: ATX3

(Enables OK, RING, NO CARRIER, ERROR, BUSY, and CONNECT messages, but disables dial tone detection which would prevent this from working.)

2) Dial the host and do the necessary steps to generate a callback.

3) Wait for Macintosh Portable modem to generate RING.

4) Immediately force the modem off-hook with: ATD

(The Macintosh Portable modem should wait for carrier and negotiate with the host's modem for a connection.)

5) When the CONNECT message appears, the modems will be talking.

This could easily be put into a communications program script, simplifying the process.

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Message Limit with APS Driver

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you can only download a limited number of messages check if you have an APS hard drive. If you have initialized the drive with a driver earlier than the APS 4.0 version, you will have to reinitialize the hard drive with the version 4.0 driver. Just updating as opposed to reinitializing doesn't fix the issue.

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Apple‘s Strategy Re: System Application Architecture (SAA)

What Systems Application Architecture (SAA) standard does Apple write to? Can you help?
This article has been archived and is no longer updated by Apple.
Systems Application Architecture (SAA) established a set of common standards and procedures for working with IBM systems and data. These include definitions for Common User Access, Common Communications Support, and Common Programming Interface. The following article from Networking and Communications summarizes how Apple complies with IBM's SAA:

Apple and SAA
Networking and Communications Product Marketing
March, 1990

A key element of Apple's networking strategy is Macintosh integration with IBM systems. The goal is to provide basic connectivity for the Macintosh, and then provide developers and customers with a set of protocols, interfaces, and tools that enable the development of consistent, integrated Macintosh applications for the IBM environments.

Apple will implement the IBM Systems Application Architecture technologies that complement the Macintosh, thereby enabling user transparent access to IBM data and services. Apple's product development will continue to focus on the core networking protocols, interfaces, and services that enable commercial developers and customers to create applications for end users. This helps to produce highly functional software in the shortest possible time by allowing developers to concentrate on the application and user interface, rather than networking.

Apple will continue to enhance the Apple-IBM product line through improvements in functionality, performance, and usability. The commitment is to provide customers with a common Macintosh view of IBM data, services, and applications through support of Macintosh-complementary SAA technologies.

Common Communications Support
Apple now offers a range of networking products that implement key SAA Common Communications Support (CCS) functions. The Apple TokenTalk NB, Serial NB, and Coax/Twinax Cards provide Macintosh connections to IBM SNA networks. MacDFT software provides 3270 terminal emulation with file transfer, as well as copy and paste, between the 3270 screens and Macintosh applications. MacDFT also supports the NetView alert reporting functions of SNA/MS. The Apple 3270 API serves as the 3270/SNA programming interface for MacDFT, Data Access Language (DAL, formerly known as "DAL"), MacWorkStation, and third-party applications. It is also available for the development of customized 3270 applications. MacAPPC implements the LU6.2/NT2.1 protocols, offering the basis for Macintosh integration with emerging cooperative processing applications. These products can be the basis for a wide range of applications, such as Macintosh interfaces to OfficeVision, DB2, and SQL/DS.

With the key connection and communication standards available, SAA application services, such as SNA/DS and DIA, are planned. Apple will also investigate implementations of SNA/MS, DDM, and SNA/FS as those technologies evolve.

Common Programming Interface
The Common Programing Interface (CPI) element of SAA contains two technologies that complement the Macintosh: SQL for the Database interface and CPI-C for Communications.

DAL is Apple's host database access software and programming interface that provides the functionality of the CPI SQL interface. DAL provides consistent access to multiple database environments and multiple operating systems from Macintosh applications. Software developers will use the Apple System 7.0 Database Access Manager (DAM) to link their applications with DAL host servers for MVS or VM, providing access to DB2 and SQL/DS databases. This approach promotes network and database independence for Macintosh applications, and enables users to access data in IBM, Digital VAX, and UNIX environments from a single application.

The DAM also offers developers an interface for implementation-specific SQL dialects to complement DAL. Macintosh applications that access host data through DAL are enhanced by a range of query tools that allow users to perform ad hoc queries in intuitive, graphical ways. These third-party products take the form of Desk Accessories, HyperCard stacks, and applications.

As the customer requirement for LU6.2 products expands, CPI-C (the SAA interface to LU6.2) will be implemented as an enhancement to Apple APPC products.

Three other CPI technologies (Dialog, Query, and Presentation) specify functions that will not be directly supported by Apple because they are targeted at OS/2 and similar functionality is already integral to the Macintosh.

Common User Access
The Common User Access (CUA) element of SAA covers a wide range of guidelines, technologies, and products aimed at improving user interface consistency across IBM platforms. Apple does not plan to support the diverse elements of CUA since the Macintosh provides the best and the most consistent user interface to IBM systems as well as to multivendor environments.

Many organizations employ Digital VAX systems and UNIX platforms in addition to IBM. With the Macintosh, a "common user interface" that is integral to the Macintosh architecture for local and LAN-based applications is also supported on the VAX. In UNIX environments, Apple's A/UX 2.0 implementation of System V UNIX runs Macintosh applications and standard UNIX applications with full communications support based on industry standards, such as TCP/IP and NFS.

Unlike many vendors, whose personal computer, mainframe, and workstation user interfaces vary, Macintosh can provide a single-user interface, a mature application base, and rich data interchange capability across all of these systems. This advantage will be applied to SAA resources.

Common Applications

The goal of Common Applications (CA) is to deliver functionality that spans several IBM platforms with a consistent user interface and portability. In addition to the advantages in a multivendor environment, Macintosh participates in Common Applications through support of SAA communications protocols and programming interfaces. Combined with the rich networking and toolbox facilities in the Macintosh environment, these SAA functions provide Macintosh users with a "common view" of the IBM host environments.

Summary

Apple is committed to serving its customers by providing IBM SAA-compliant products that are integrated into the Macintosh environment. Apple has delivered the most critical networking and communications products for Macintosh interoperability in SAA environments and will continue to enhance our IBM networking and communications product line through support of accepted SAA standards that complement the Macintosh in an IBM environment.

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Reported Conflict with Quick Help

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There has been a reported conflict with the Help System in ClarisWorks 4.0 for Macintosh when run with the Fax Manager v1.1 extension. Fax Manager v1.1 is supplied as part of the Mac Comm Centre 1.1 software. This extension causes the Help System to not function in ClarisWorks 4.

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Label Sizes for Laser, Dot Matrix and Inkjet Printers

The new Avery 8000 label line is the same measurement as the 5000 line.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Recent versions of FileMaker Pro, ClarisWorks and Claris Organizer have built-in label templates for the most popular sizes of Avery labels. The templates are identified by the Avery model number. The 4000 series are labels for dot matrix printers. The 5000 series are for Laser printers.

Avery now produces a line of labels just for inkjet printers. These labels are the 8000 series. Each 8000 series label is the same size as its 5000 series equivalent. For example, the 8162 label is the same size as the 5162. Therefore, to create a label layout for an inkjet printer, use the 5000 series equivalent layout.
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How to Speech-Enable Your Documents

Using the Text To Speech features of your Macintosh computer to speak your text in ClarisWorks 3.0 and 4.0 documents

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

If you want your Macintosh to speak a ClarisWorks document, you can make this happen provided you have ClarisWorks 3.x or 4.x and PlainTalk application program with Speech Manager.

Plain Talk is a System Extension. If it is not installed, copy two files and one folder from the Text-to-Speech folder in the Apple Extras folder (on your hard drive or Apple Macintosh CD) to your System/Extensions folder. Those 3 items are: MacInTalk Pro, Speech Manager, and Voices Folder. After copying these items, restart your computer.

To verify that PlainTalk is installed, make sure that the Speech Manager extension is in your Extensions folder (in your System folder).

In ClarisWorks, you need to install a shortcut to speak your documents. To do this follow the next instructions:

1. Launch ClarisWorks.

2. Select Shortcuts... Edit Shortcuts from the File menu. A dialog box will appear, and under Available Shortcuts, scroll down to the bottom and click on the red lips icon. You can tell that you have chosen the correct icon, because the Speak Text description will appear in the dialog box.

3. Click on the Add button and the Speak Text Shortcut will be added to the list of installed shortcuts.

To use Speak Text, open a document, click and drag to select the text you want to hear and click on the lips button in the shortcuts palette. If the palette is not showing up, then choose Shortcuts... Show Shortcuts from the file menu.

Volume
The speaking may not be very loud using the built-in speaker. To turn it up, go to Control Panels and Sound. Change from Alert Sounds to Volumes and turn up the Built-In Volume.

Troubleshooting
If you are in a Word Processing document and the lips do not show up in your Shortcuts Palette, and you have added them, then PlainTalk/Speech Manager is not installed.

Notes: ClarisWorks will only speak word processing and drawing Documents. The lips icon will not show up in other ClarisWorks modules. ClarisWorks 2 and earlier did not have text-to-speech capabilities.

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Rotating Mail Merge Fields Redraw Incorrectly

Undocumented Feature: Rotating Mail Merge Fields In ClarisWorks 4.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

With ClarisWorks 4.0 you can insert and rotate a merged field within a mail merge document. However, this is an extremely unstable feature. You will have unusual redraw problems after you rotate the field, and under certain circumstances you may even experience system freezes.

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About ClarisDraw Version 1.0 Windows, Read Me

Here's essential information you'll need for ClarisDraw 1.0 for Windows.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

WELCOME TO CLARISDRAW 1.0!

This Read Me file contains technical notes and tips that may prove helpful when you use ClarisDraw 1.0, as well as the latest news about great features of ClarisDraw.

I. TECHNICAL NOTES AND TIPS

A. Installation Follow the instructions in the installation guide to install ClarisDraw. You can't copy the files to your hard drive using the DOS copy command, because the files are compressed to fit on fewer disks. The setup program decompresses files during installation.

You must be running SMARTDRV.EXE to install ClarisDraw. Claris recommends using the default values for SmartDrive.

ClarisDraw is a 32-bit application. Before installing ClarisDraw on a computer running Windows 3.1 or Windows for Workgroups 3.11, you must install Win32s, which is included in this package.

Note: If you are using Windows 95, do not install Win32s.

Some virus checking software may interfere with the installer or slow down the installation process. Turn off any virus checking software before starting the ClarisDraw Installer. You can turn virus checking back on after your installation is successful.

You cannot start ClarisDraw from a directory whose name contains upper ASCII characters (for example E, (c), #). This is a limitation of Win32.

B. In-box Support Materials

Installation Guide User's Handbook Context-sensitive Help system 2,400 piece SmartSymbol clip art library

C. System Requirements and Compatibility IBM and compatible personal computers, 386 or higher processor, and a recommended 8Mb of RAM. Hard disk with 15Mb (to install all clip art libraries) available and Windows 3.1 or higher. Printers supported: Hewlett Packard LaserJet, PaintJet, DeskJet series. Postscript printers such as Apple LaserWriter, IBM Laser Printers, and a wide variety of other Windows compatible printers.

D. Out-of-memory error messages If you encounter an error message that indicates there is not enough memory to perform an operation, Claris recommends:

--adjusting your Virtual Memory setting (see Performance tips for Windows 3.1 and Windows for Workgroups 3.11 below)

--removing any unnecessary drivers and TSRs from the CONFIG.SYS file to free up more memory in DOS

--closing other applications and ClarisDraw documents that are running in the background

E. Performance tips for Windows 3.1 and Windows for Workgroups 3.11 32-bit applications such as ClarisDraw 1.0 require that Virtual Memory is on. To improve performance on computers with 8 MB of memory or less, Claris recommends setting virtual memory to permanent and using the suggested size for your virtual-memory setting as displayed in the Virtual Memory dialog box. This value is typically twice the size of physical memory, but should be at least 11,700 K or 11.7 MB.

If the suggested size of virtual memory is less than twice the physical memory installed on your computer, you might need to increase your free disk space by removing unwanted files or defragmenting your hard disk.

Note: DOS 6.0 users can use DEFRAG.EXE.

To set virtual memory:
1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the 386 Enhanced icon.
2. Click Virtual Memory and then click the Change.
3. Select Permanent from the Type pop-up menu.
4. Click the checkbox next to Use 32-Bit Disk Access. Note: This setting is NOT recommended for laptops running on battery power.

5. Click OK.

If you are an experienced Windows user and you have adjusted your virtual memory settings as described, but still want to improve your system's performance:

-- In DOS, run: DEFRAG MEMMAKER

-- Change the following settings in the CONFIG.SYS file: FILES=60 STACKS=9,256

-- Add the following line to the CONFIG.SYS file: BUFFERS=10

-- Add the following line to the [WINDOWS] section of the WIN.INI file: DefaultQueueSize=16

-- Add the following lines to the [386enh] section of the SYSTEM.INI file: DMABuffersize=64 XLatBufferSize=128 MaxBPS=768

-- Delete the following lines from the [386enh] section of the SYSTEM.INI file: EGA80W0A.FON... EGA40W0A.FON... CGA80W0A.FON... CGA40W0A.FON...

-- Always use SmartDrive!

F. Using ClarisDraw with Windows 95 You cannot launch ClarisDraw 1.0 using the Network Neighborhood feature of Windows 95. Use a different method to launch ClarisDraw instead (for example, use Explorer).

G. Printing If you have trouble printing, try installing an updated printer driver, available from your printer manufacturer or Microsoft Corporation. For instructions on installing a driver and configuring your printer, see the the Control Panel information in the Microsoft documentation. ClarisDraw requires a valid default printer driver, NOT the Generic/Text Only driver.

To select or change the default printer:

1.In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the Printers icon.
2.Select a printer from the Installed Printers list and click Set As Default Printer. If no printers appear in the list, see your Microsoft documentation for instructions on installing printers.

Printing with Hewlett-Packard printers in PCL mode: Under some conditions, the default settings for printers using PCL mode will not print rotated text correctly. To change the default settings:

1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the Printers icon.
2. Select the printer under "Installed Printers", then click Setup.
3. In the Setup dialog box, click the Options button. Change the Graphics Mode option to "Raster", then click OK for each dialog box. Click Close for the setup box, and exit Control Panel. (Note: for Windows 95 users, please see your Win95 documentation for changing printer properties).

H. Video cards and drivers If your screen doesn't display objects correctly, you may have a issue with your video driver. Try changing the resolution to 640x480 or 800x600 or try changing the number of colors displayed (for example, 256, 32K, or millions of colors).

To verify a video driver issue, change the video driver to Windows standard VGA and run ClarisDraw. If the issue disappears, contact the video card manufacturer for the latest version of the video card driver or use the driver that is included with the Windows installation.

I. ClarisDraw INI file settings If you experience either of the issues listed below, make the suggested changes to the [ClarisDraw] section of the CLARIS.INI file in your Windows directory:

-- Issue: Color/gradient palettes do not draw completely, or show up with black or missing colors/gradients Suggested setting: Cache Palettes = 0

-- Issue: Tools are not drawn correctly, or display as black Suggested setting: BitmapTools=0

J. Fonts If fonts do not display or scale correctly (for example, if they are clipped or overlap), Claris recommends that you:

-- Make certain a valid printer driver is selected as the default and that it is NOT the Generic/Text Only driver

-- Enable TrueType fonts (see below)

-- Make certain the standard Windows fonts, such as Arial, are properly installed

To delete or reinstall standard Windows fonts, see the Microsoft documentation.

To enable True Type fonts:

1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the Fonts icon.
2. Click TrueType, and then click Enable TrueType Fonts.

K. Sharing ClarisDraw files between the Macintosh and Windows ClarisDraw 1.0 for Windows has the same file format, user interface, and features as ClarisDraw 1.0 for the Macintosh. You can create a ClarisDraw document in Windows and edit it on an Apple Mac OS computer, or vice versa. Therefore, if you work with both Macintosh and Windows versions of ClarisDraw, or if you collaborate with colleagues who use ClarisDraw 1.0 for Macintosh, you can work without translating files.

To open a ClarisDraw 1.0 Windows file using ClarisDraw 1.0 for the Macintosh:

1. Hold down the Option key and choose Open from the File menu.
2. Choose ClarisDraw in the Show section of the Open dialog box.
3. Double-click on the name of the file you want to convert.

To open a ClarisDraw 1.0 Macintosh file using ClarisDraw 1.0 for Windows:

1. If you are using Windows 3.1 or Windows for Workgroups 3.11, make sure the filenames of the Macintosh ClarisDraw files you want to convert follow DOS filename conventions (8 characters or less) and end with the .CDD extension. (For ClarisDraw Library files, use the .CLB extension.)
2. Open the files in ClarisDraw 1.0 for Windows.

If you want to transfer ClarisDraw files between platforms via 3.5-inch disks, you must use a file transfer program that lets you create and use PC-formatted 3.5-inch disks on a Macintosh. To copy the ClarisDraw files onto a PC-formatted disk, follow the directions in the documentation for the file transfer program you are using. When you use a multi-platform server (such as Novell Netware) to transfer files from a Macintosh to a Windows computer, you can use the ClarisDraw documents right off the server. No file transfer program is required.

Fonts, margins, page breaks, and some graphics might display differently when a file is transferred between Macintosh and Windows. You might have to adjust the margins and page breaks in the transferred file to restore the original appearance.

You can minimize font issues by installing and using the TrueType fonts that ship with Windows. When you open a file, ClarisDraw first checks to see if each of the fonts in the document is installed in the current system. If a font is not installed, ClarisDraw checks its font mapping information to substitute an appropriate font. Font mapping information is stored in the Claris Font Map file inside the Claris folder in your System folder on Macintosh and in the [ClarisFontMap] section of the CLARIS.INI file in your Windows directory on the PC. If a font is not listed in the font mapping file, it is mapped to Helvetica on the Macintosh and to Arial on the PC.

L. Network installation issues ClarisDraw can be installed and run simultaneously by multiple users off of a server. See the "ClarisDraw for Windows Installation Guide" for information on how to set up ClarisDraw on a server.

Multiple simultaneous users can share ClarisDraw palettes. However, if simultaneous users edit the same palette, only changes from the last save are retained. For this reason, Claris recommends that users who access ClarisDraw from a server and who want to customize palettes should store their PALETTES directory on their own hard disks.

Multiple users cannot simultaneously open the same ClarisDraw document or library.

M. Converting MacDraw Pro files to ClarisDraw 1.0 for Windows format

If you have ClarisDraw 1.0 for the Macintosh, use the procedure below to convert MacDraw Pro files.

[*Editor's Note:* The original ClarisDraw 1.0 for Windows Read Me document did not include the revised information contained in the "If you don't have ClarisDraw..." paragraph immediately below.]

If you don't have ClarisDraw 1.0 for the Macintosh, you must acquire the Convert2DOS application. For more information on how to acquire and use the Convert2DOS application, see the following Tech Info Library article:

Article 58253: "**Convert2DOS Read Me**"

To convert a MacDraw Pro file:

1. Open the MacDraw Pro file in ClarisDraw 1.0 for the Macintosh.
2. Save the file as a ClarisDraw file with a name that follows DOS file naming conventions (8 characters or less) and ends with the .CDD extension (for example, PARIS.CDD).
3. Open the file in ClarisDraw 1.0 for Windows.

N. Paint mode color palettes In Paint mode, the color palettes each display the default 256-color ClarisDraw palette rather than a palette customized according to the colors in a paint frame.

II. GREAT FEATURES OF CLARISDRAW 1.0

A. Cross-Platform Support ClarisDraw 1.0 is now available for Windows and Windows 95 as well as the Macintosh and Power Macintosh. You can easily exchange files between platforms, because no file translation is required.

B. Great Looking Graphics Get creative with a broader palette of colors and gradients. Get your work done faster using the object info palette and zooming controls. The ClarisArt libraries contain over 400 new clip art images to increase the variety of high-quality art you can use in your charts and graphics.

C. Breakthrough Graphic Intelligence SmartSymbol Libraries dramatically speed up the creation of graphics with drag and drop ease, and you can add your own frequently used graphics to a custom library. Editing is easier as you can search and replace objects dragged from libraries, just as with text.

Claris and the ClarisDraw team thank you for your purchase of ClarisDraw 1.0. Your support, comments, and suggestions help us to continue to bring you better solutions for your future productivity needs.
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Line Spacing Indicator Not Updating Correctly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you double click on the line spacing indicator under the ruler bar in ClarisWorks 4.0 for Macintosh, you will be presented with the Paragraph dialog box. You can change the line spacing from lines to points or another unit, and change the unit value for the line spacing. If you change the unit measurement without also changing unit value, the line spacing indicator in the ruler bar doesn't reflect this change, even after clicking OK or Apply. To get the change to be reflected by the line spacing indicator press the Tab key, click the Align pop-up menu in the Paragraph dialog box or actually change one of the unit values in the line spacing boxes before clicking OK or Apply.

Published Date: Feb 18, 2012

PowerBook 2300c Update 1.0, Read Me

This system extension ensures that the trackpad works correctly on localized PowerBook 2300c systems. It goes in the Extensions folder, inside the System Folder. It is available in the WorldWide Software Updates in the following languages: Catalan; Croation; Czech; German, Danish, Spanish, French Universal, Norwegian, Japanese, Finnish, Dutch, Swedish and Italian.

This article has been archived and is no longer updated by Apple.
Important Information About the Update for Your Macintosh PowerBook 2300c Computer

This document adds to and updates the information in the manuals that came with your computer and the general PowerBook 2300 Read Me file on your computer's hard disk. It is a good idea to read this document now, and keep it for future reference.

If your PowerBook is connected to a printer, choose Print from the File menu to print a copy of this document. When you are finished reading and printing, choose Quit from the File menu to quit the SimpleText application program.

PowerBook 2300c Update

To ensure that the trackpad on your PowerBook operates correctly, the PowerBook 2300c Update file must be in the Extensions folder, which is inside the System Folder on your computer's hard disk. The update file and a copy of this document are located in PowerBook Extras folder, inside the Apple Extras folder.

On some computers (possibly including yours), the update file was put in the Extensions folder at the factory. You can check the contents of the Extensions folder to see if the PowerBook 2300c Update is in that folder. If the update file is not in the Extensions folder, use the instructions below to put it in the folder.

Putting the PowerBook 2300c Update file in the Extensions folder

To put the update file in the Extensions folder, follow these steps:

1. Open the Apple Extras folder on your computer's hard disk.

2. Open the PowerBook Extras folder and locate the PowerBook 2300c Update file.

3. While holding down the Option key, drag the update file to the icon of the System Folder (not to the System Folder window, if that window is open).

4. When you see a message reporting that the file belongs in the Extensions folder, click OK. If you see a second message asking if you want to replace a file with the same name, click OK.

The update file will be copied to the Extensions folder.

Important: If you reinstall the system software, you must put the update in the Extensions folder after installation is complete. Be sure to leave a copy of the update file and the update Read Me document in the PowerBook Extras folder so that you can reinstall the update file if necessary.
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About Version 1.0, Product Fact Sheet

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This article has been archived and is no longer updated by Apple.
Macintosh version shipping, with a Windows version to follow in the first half of 1995.

Product Description
ClarisImpact software creates an entirely new category of productivity software for business and general users: Business Graphics Processing. Until ClarisImpact, users had to purchase, then master, a hodge podge of spreadsheet, charting, drawing and presentation applications to create, edit and communicate business graphics. Creating graphics with spreadsheets or underpowered charting programs is cumbersome and editing is limited. If the user is already in a report or slide and a change must be made to the graphic, they have to go back into the application where the graphic was created and edit the data. Cutting and pasting between programs not only decouples the graphic from the data source, but resolution is lost as well. Drawing applications used to edit these basic graphics suffer from growing complexity. Word processing and presentation tools don't support the range of chart types or depth of graphics tools a business user needs.

ClarisImpact unifies the create-edit-communicate process prevalent in today's business computing environments into one simple application. ClarisImpact automatically creates the graphics a user wants, allows for instant editing, and provides a completely integrated solution for communicating the graphics in text-based reports or slide presentations. Claris has leveraged its leadership in user interface design and cross-platform technology to bring business computing with graphics to a new level.

Key Features and Benefits

* Automatic graphics Models; create organizational charts, flow charts, timelines, network diagrams, data charts, graphs and calendars, with proper sizing and connectors.

* Intelligent editing; ClarisImpact automatically updates the graphic when changes are specified. Moving any connected object will result in the rejoining of connections. Dragging and dropping elements into any Model results in instant reordering, aligning and spacing. Style changes and edits are simply a matter of browsing an extensive list of pre-defined and custom styles, and applying a favorite with one click.

* Integrated word processing; create reports and memos with business graphics. No need to cut and paste graphics into a separate word processor. Automatic text-wrap around all graphics, footnotes, page numbers, font, style options, formatting and spell checking are included. Import support for MacWrite Pro, MS Word, WordPerfect and other formats included.

* Integrated presentations; create slide presentations with professionally designed backgrounds and special effects, all included in ClarisImpact. Use any of the business graphics in the same document, on the same page. Multi-media capabilities (Apple QuickTime video and sound), automatic slide builds, and transition effects within or between slides, auto-play and simple slide reorganization are included. Output choices allow the user to easily create overhead transparencies, on-screen presentations, handouts or slides.

* Professionally designed chart styles and artwork; 3,000 piece clip art library allows for easy, customized, flexible editing. Users can select from dozens of pre-defined styles and style "families" for both flexibility and consistency.

* Mix multiple graphics with text in the same report or presentation; graphics are always live -- the user can create or edit graphics directly in the report or slide.

* Claris Graphics Engine (CGE); provides seamless cross-platform (Macintosh and Windows) transparency with data and files between Claris graphics products, such as ClarisImpact for Mac and ClarisDraw for Windows, high performance and intelligence.

* Drawing tools built-in; create or customize graphics with the polygon, bezier, ellipse, line and rectangle tools. Fill color, gradient, pen and line style options included.

* File exchange capabilities; the XTND architecture is built in to ClarisImpact, and allows users to easily open, work with and save documents in a variety of industry standard file formats such as PICT, PICT2, MacDraw(R)Pro, MacDraw II, EPSF and other graphics and text file formats.

ClarisImpact Target Users

Business professionals, from administrative and clerical support to management-level professionals in corporations and government, higher education and small office/home office will benefit from productivity gains made by using ClarisImpact. Business users will be able to instantly access the Models and built-in intelligence in ClarisImpact to create and edit many different types of business graphics for reports and presentations.

Corporations and government agencies of all sizes and types will benefit from the features, cross-platform capabilities, flexibility, and especially productivity gains made from ClarisImpact. No big training investment, and no need to use multiple applications to create stunning reports and

presentations.

In-box Support Materials

* Getting Started Guide
* User's Guide
* Sample files and pre-defined artwork and styles
* Context-sensitive Help system

Support Services

* Customer Relations; for registration and other non-technical information, phone lines are open from 8 a.m. - 5 p.m. PST, Monday through Thursday, 8 a.m. - 2 p.m. Friday. Phone: (800) 544-8554

* Technical Support; a dedicated team of technical support specialists are available to answer technical questions and solve issues. Phone lines staffed from 6 a.m. - 6 p.m. PST Monday through Thursday, 6 a.m. - 2 p.m. Friday. Phone: (408) 727-9054.

System Requirements, Compatibility

* Apple Macintosh Plus, Centris, Classic, LC, SE, Performa, PowerBook, II, Quadra families.

* Native version available for the PowerMacintosh family.

* Hard disk drive and 2MB of memory required for System 6.0.7 or later; 4MB for System 7.x

* Printers supported; Apple LaserWriter, Personal LaserWriter, ImageWriter and StyleWriter. Hewlett-Packard LaserJet, DeskWriter and PaintWriter families and 100% compatibles.

* Graphics file formats supported; EPSF, TIFF, PICT or PICT2, CGM, MacDraw II, MacDraw Pro, MacPaint, QuickTime Movie.
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Growstub Error

Avoiding application and growstub errors

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This article has been archived and is no longer updated by Apple.
If you're getting an "Application Error", "Growstub caused a General Protection Error (GPF) in module Pointer.dll" with the options to [CLOSE] or [IGNORE], you should select close. This will isolate the incident, close the application and let you proceed in Windows. This error generally occurs under the following circumstances:

--Using Windows 3.11
--Running Microsoft Mouse Driver v9.01
--Launching Claris Impact 2.x

The error occurs as a result of going into the "Mouse Manager" software and exiting or canceling out and not restarting Windows. To avoid this error, after using Mouse Manager, just restart Windows.
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Numbers in Calculation Fields Change When Opened with Power Macintosh ClarisWorks (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Numbers in calculation fields may change under the following conditions:

1. Create a database using the 68K version of ClarisWorks 3.0 with a calculation that has a number in the formula
2. Open this database using ClarisWorks 3.0 PowerMac.
3. Save, close, and reopen the file.
4. Go to Define Fields and look at the calculation formula.

You'll notice that the numbers in the formula have changed. For example, the formula:
'Amount Sold' * 0.0825
might be changed to something like
'Amount Sold' * 1.9875985

The workaround is to put the numbers in the formula in quotes. For example:
'Amount Sold' * "0.0825"

This issue is fixed in ClarisWorks 4.0.
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About ClarisWorks Version 4.0v4 Updater, Read Me

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WELCOME TO CLARISWORKS 4.0v4!

Thank you for choosing the ClarisWorks(R) 4.0 application. We're pleased to provide the ClarisWorks 4.0v4 Update, which has additional important features and addresses a few known issues with v1. Once you've installed the update, it will provide better Macintosh Drag and Drop support, backward file conversion, and more.

This document provides information about:

I. Installing the ClarisWorks 4.0v4 updates
II. Problems and issues addressed in v4
III. New features in ClarisWorks 4.0v4

I. INSTALLING THE CLARISWORKS 4.0V4 UPDATES

To update the ClarisWorks 4.0 (v1, v2, or v3) product currently installed on your computer:
1. Put the "ClarisWorks 4.0v4 Update Disk 1" disk in your floppy drive.
2. Double-click the ClarisWorks Update Installer icon.
3. Choose Easy Install (to install all of the new v4 components except the ClarisWorks File Converter) or Custom Install (if you want to specify which components to install), and then click Install.

Once installation is complete, the process of updating your existing ClarisWorks 4.0 (v1, v2, or v3) application itself will begin.
4. Select the copy of the ClarisWorks 4.0 application to update and then click Update.

The installation process finishes and the application is updated.

Note: To install the ClarisWorks File Converter application, you must choose it from the Custom Install list. For more on using the ClarisWorks File Converter, see the document "Read Me - ClarisWorks File Converter".

II. PROBLEMS AND ISSUES ADDRESSED IN V4

This v4 Updater addresses several issues from version 4.0v1:
* Mail Merge and Multiple Line Data. In v4, when a mail merge field contains multiple lines of text, the text now merges and prints correctly. (The text still displays as a single line on the screen.)
* Mail Merge and Sliding over Empty Fields. In v4, when there is an empty mail merge field on a line by itself, the following text moves up appropriately and prints correctly. (The text does not "slide" on the screen.)
* Rotating Library Images. In v1, some of the ReadyArt(TM) library images didn't rotate correctly. This was fixed in v4.
* Stationery Corrections. Minor changes were made to some of the stationery files.
* Address List Assistant. Minor changes were made to the Address List Assistant for better printing and on-screen display.
* New AppleWorks DB/SS and RTF filters.
* Faster Word Count
* Option left/right arrows in WP now correctly skips carriage returns and tabs (as it did in versions prior to 4.0).
* New Document dialog now displays more quickly, especially when there are many stationery files in the ClarisWorks Stationery folder.
* Word Services AppleEvent Support. In v4, it is easier to use applications that support the Word Services AppleEvent standard (such as some third party spelling or grammar checkers).

To enable the Word Services command in the Edit:Writing Tools menu of the ClarisWorks word processor:
1. Select Preferences from the Edit menu.
2. Select the Text icon.
3. Check the Word Services checkbox under General and click OK.

To select a Word Services application for use with ClarisWorks:
1. Open or create a word processing document.
2. Select Writing Tools from the Edit menu and then select Edit Word Services.

You see a dialog containing a list of all the Word Services applications for which ClarisWorks is currently configured.
3. Press the Add button.

You see a dialog listing the applications running on your Macintosh that use Word Services AppleEvent standard.
4. Select the one you want and click OK.
5. In the Word Services dialog, click OK.

A new menu item corresponding to the Word Services application you chose appears in the Writing Tools menu.

You can also use the Edit Word Services dialog to remove installed Word Services applications from the Writing Tools menu.

To use a Word Services application on a ClarisWorks word processing document, choose the appropriate menu item from the Writing Tools menu. This launches the Word Services application if is not already running. If you have text selected in the document, then the Word Services application checks the selection. Otherwise, the entire document is checked.

III. NEW FEATURES IN CLARISWORKS 4.0V4

In addition to resolving some known problems in v1, the v4 revision also adds new features, including:

* New picture and layout in the ClarisWorks splash screen.
* Macintosh Drag and Drop Support. In v4, users can use Macintosh Drag and Drop (that comes with System 7.5) to move text, graphic objects, and spreadsheet cells within ClarisWorks 4.0 documents, drag selections from one document to another, drag selections to other applications (including creating clipping files in the Finder).
* Backwards File Conversion to 2.0, 2.1, and 3.0 formats. You can use the new ClarisWorks File Converter application to save version 4.0 files in the format used by ClarisWorks versions 2.0, 2.1 and 3.0. For more on the File Converter, see the file "Read Me - ClarisWorks File Converter".
* New filter for WordPerfect 3.1 for Macintosh.

Claris(R) and the ClarisWorks team thank you for your purchase of ClarisWorks 4.0. Your support, comments, and suggestions help us to continue to bring you better solutions for your future productivity needs.

Claris, ClarisWorks, and ReadyArt are registered trademarks of Claris Corporation.
Macintosh is a registered trademark of Apple Computer, Inc.
WordPerfect is a trademark of WordPerfect Corporation.
All other trademarks are the property of their respective owners.
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Merge Data Field Limit for ClarisWorks 4.0v4

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The technical specification for database in ClarisWorks 4.0v4 allows for the maximum number of characters in a merge field to be 255.

Characters over 255 will be dropped, but sliding works correctly.
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Converting MacDraw Pro or MacDraw II files to Claris Impact for Windows or ClarisDraw for Windows

MacDraw Pro files can be converted to ClarisDraw for Windows or ClarisImpact for Windows format using the Claris utility, Convert2DOS. MacDraw II files can also be converted using other methods.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
CONVERTING MACDRAW PRO FILES:

The MacDraw Pro utility, Convert2DOS, is a Macintosh application which changes MacDraw Pro files into Windows format by splitting them into a data file (with an 8 character name plus the .MDP extension) and a resource file (with the identical name except for a .RES extension.). Your original MacDraw Pro files are not altered; Convert2DOS reads these files and creates new files which then can be converted.

Convert2DOS works with files from all versions of MacDraw Pro, but does not work with MacDraw II files. To convert MacDraw II files, save them within MacDraw II as Color PICT2. If you no longer have MacDraw II, import the files into an application which can open these files on the Macintosh, then save them as PICT. Once saved on a PC formatted disk on the Mac, these files can then be opened by ClarisDraw or ClarisImpact for Windows.

The converter is available in the Software Libraries of all of our online services under the Miscellaneous Mac category. Because the file is a Macintosh self-extracting archive, it should be downloaded directly to a Macintosh. Downloading the file to a Windows machine can cause issues when trying to extract it on a Macintosh.

NOTE: The application, Convert2DOS, does not run on the Windows platform. It must be run on a Macintosh.

Convert2DOS is most useful if you do not have ClarisDraw or ClarisImpact for Macintosh. If you have ClarisDraw or ClarisImpact for Macintosh, you do not need to use Convert2DOS. You can open your MacDraw Pro files in ClarisDraw or ClarisImpact for Macintosh, then save them with the proper extension (.CID for Claris Impact and . CDD for ClarisDraw). Your ClarisDraw or ClarisImpact for Macintosh files can then be copied to a DOS-formatted disk and read directly by ClarisDraw or ClarisImpact for Windows.

System Requirements:
* a Mac, Power Mac or equivalent with a 68030 processor or better
* a high-density floppy drive
* System 7.x
* PC Exchange or Apple File Exchange
* 50 K of free disk space plus space for the converted files
* 2.5 MB of RAM for the application (more for optimum performance)

Download Sites:
<http://www.claris.com/software/graphics/Convert2DOS.sea.hqx>
<ftp://ftp.claris.com/pub/USA-Macintosh/x.misc/Convert2DOS.sea.hqx>

America Online: keyword Claris - Software Libraries
CompuServe: Go Claris

CONVERTING MACDRAW II FILES:

Convert2DOS works with files from all versions of MacDraw Pro, but does not work with MacDraw II files. To convert MacDraw II files, save them within MacDraw II as Color PICT2. If you no longer have MacDraw II, import the files into an application which can open these files on the Macintosh (such as ClarisWorks) , then save them as PICT. Once saved to a PC formatted disk on the Mac, these files can then be opened by ClarisDraw or ClarisImpact for Windows.
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Font Size or Type is Not Correctly Reflected in ClarisWorks 4.0 Document (WP)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This issue occurs in all versions of ClarisWorks 4.0, v1-v4 Mac and Windows.

If you select text attributes (for example, font or size) while text is not selected, then choose a ruler setting (for example, line spacing), then type, the typed text does not have the selected font attributes.

1- Open a new word processing document
2- Select a font and size (e.g., Avant Garde 18 pt.)
3- Select a ruler setting (e.g., line spacing or center alignment)
4- Type a word. You'll see that the font and size are not remembered.

If you apply the ruler settings first (step 3), then the font and size, all the settings are remembered and it works correctly.
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Superscript and Subscript Keyboard Shortcuts Do Not Respond Correctly (DB)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Issue: In a database, using the keyboard commands for superscript and
subscript do not work. The only workaround is to use the menus to manually select those styles.

Steps to recreate the issue:

1- Create a database with a text field
2- Place insertion point into the text field
3- Try using the keyboard commands for superscript and subscript
(command-shift + and command-shift -)

The superscript keyboard command works if you use the + key on the numeric
keypad, but not on the standard keypad. The - key does not work in either
location.

The ClarisWorks development team is aware of the issue.
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ClickBook and the HP DeskJet 850c

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClickBook does not work with the HP Deskjet 850c printer if you have background printing turned off and you have the ClickBook Setup control panel to "ClickBook active from Page Setup"

If you click the "Use ClickBook" check box in page setup and then print, ClickBook will not take over the printing. The solution is to turn background printing on or set the ClickBook setup control panel to "ClickBook Always Active".
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Error message : "Sorry the ASCII translator is not responding properly"

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This error message is returned when importing a text file into a ClarisWorks word processing document if a Claris XTND system file 1.3 is found by ClarisWorks in the System folder as well as in the Claris folder .

To correct the issue, remove the Claris XTND file from the System folder.
Published Date: Feb 18, 2012

Trial Version Documentation: Using Claris Emailer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Using Claris Emailer

This file covers most of the day-to-day tasks for which you'll use Claris Emailer--creating, sending, receiving, and filing mail messages. It also provides information about using the Claris Emailer Address Book and scheduling account connections. You send and receive messages during a connection to an online service, such as AOL or CompuServe. You can set up a connection to communicate with one service or many services.

Connecting to a service

You can connect to a service immediately or at your next scheduled connection. For more information on scheduling a connection, see "Scheduling account connections" later in this document.

Important You must turn on your computer and modem, and launch Claris Emailer, for a connection to work. If you schedule a connection for a time when you'll be away from the computer, be sure to leave your computer and modem on, and leave Claris Emailer running.

To connect to a service immediately, choose Connect Now from the Mail menu. You see the Connect Now Setup dialog box.

* To retrieve incoming messages during the connection, select Get.
* To send messages during the connection, select Send and choose an option from the pop-up menu. Then, choose Specified Msg to send an open message, or choose All Pending Msgs to send all the unsent messages in your Out Box.
* To initiate the connection, click Connect.

Creating messages

To create a message from the Out Box, choose Out Box from the Window menu and then click Add. To create a message at any time, choose New from the Mail menu. You see a new blank message.

Tip To create a message that's already addressed to your intended recipients, choose Address Book from the Window menu, select one or more addresses, and then choose New from the Mail menu.

Addressing messages

After you create a message, you can address it by typing addresses manually, using the Find Address dialog box, or using Macintosh drag and drop.

When you finish addressing a message, you see a clock icon next to the recipient's name, meaning that the message will be sent at the next scheduled Send connection. If you see the triangular alert icon, your address is incomplete. If this happens, read this section carefully to make sure you entered all the required addressing information.

Addressing a message manually

To address a message manually, you type information in the address area of the message. To add another recipient, click Add Recipient. To delete a recipient, click anywhere in the recipient line and then click Delete Recipient.

* To enter the recipient name, type a name in the Recipient field. As you begin typing the recipient's first name, Claris Emailer fills in the rest of the name for you by searching within the address book. Keep typing until Claris Emailer fills in the correct name.

If the recipient is in the Address Book, press Tab to have Claris Emailer automatically enter the rest of the addressing information. If the Address Book has two or more recipients with the same name, or if the recipient is a group, you see the Find Address dialog box (see the next section). If you inadvertently enter the wrong recipient, you can type over the recipient's name and addressing information, or delete the recipient and add a new one.

* To enter the recipient address, type the recipient's mail address in the Address field.
* To enter the destination, choose the name of the service that the recipient uses to retrieve mail from the pop-up menu. For example, choose America Online if the recipient receives mail in an America Online account. Note that when you choose a destination, you only enter the account name in the Address field, and not the entire email address.

If you want, you can type the name of the destination instead. As you type, Claris Emailer fills in the rest of the destination for you. Keep typing until Claris Emailer fills in the correct destination.

If the recipient is in the Address Book, the destinations they have addresses for are in bold in the Destination pop-up menu. If you choose one of these destinations, Claris Emailer updates the Address field with the correct address.

* To choose a service to send the mail, choose the name of the service you want to use to send the message from the pop-up menu under Send Mail Via. For example, choose CompuServe if you want to use your CompuServe account to send this message.

If you want, you can type the name of the destination instead. As you type, Claris Emailer fills in the rest of the service name for you. Keep typing until Claris Emailer fills in the correct service.

Using the Find Address dialog box

To find recipient addresses and add them to an outgoing mail message:

1. Create an outgoing message.

See "Creating messages," earlier in this document.

2. Click Find Recipient.

You see the Find Address dialog box.
3. If you want to narrow down the number of recipients in the Find Address dialog box, type a few letters in the Filter text box.
You can type lowercase or uppercase letters. Claris Emailer finds all the recipients that contain the specified letters in the Name and Description fields. For example, typing ja finds "Japan University" and "Jane Smith."

Note You cannot enter part of a first name and a last name to create a match. For example, entering sal will doesn't find "Sally Willford."

4. Select one or more recipients.
* To select a recipient, click anywhere on the recipient's row.
* To select more than one recipient, Shift-click the recipients you want to select. To deselect a recipient, or to select noncontiguous recipients, Command-click the recipients.
* To select a different destination for a recipient that subscribes to more than one mail service, click the triangle next to the recipient's name to display other destinations for a recipient. Then select the row containing the destination you want.
5. Click Select.
If the selected address is a group, all the recipients in the group are added to the recipient list.

Addressing messages using Macintosh drag and drop
You can address a message by dragging the recipients' addresses to the message. The recipients' addresses can be from the Address Book or from text clippings on the desktop.

You can drag addresses or text clippings to either the address area of the message or to the address area icon, which looks like a face. If you drop the addresses on the address area, you see a border around the address area.

Including carbon copy and blind carbon copy recipients
There are three types of recipients in a message. You can change a recipient's type at any time by choosing an option from the Type pop-up menu in the address area.
* Choose To when the recipient is the primary recipient. It's best to include at least one To recipient in a message. You aren't required to include To recipients. All recipients can tell who the To recipients are.
* Choose CC (Carbon Copy) when the recipient is not the primary recipient, but the recipient may be interested or involved in the content of the message. All recipients can tell who the Carbon Copy recipients are.
* Choose BCC (Blind Carbon Copy) when the recipient is not the primary recipient, but the recipient may be interested or involved in the content of the message. No recipient can tell whether there are any Blind Carbon Copy recipients. A Blind Carbon Copy recipient cannot tell whether there are other Blind Carbon Copy recipients.

Enclosing files
You can enclose any type of file in an outgoing message using the Find Enclosure button, the Open dialog box, or the Macintosh drag-and-drop feature.

You enclose files by adding them to the Enclosure area of an outgoing message. To see the Enclosure area, click the paperclip icon.

Before you send an enclosure, consider the following:
* To enclose an entire folder, you must enclose each file within the folder separately, or use an application, such as StuffIt, to convert the folder to a single file.
* Be sure to enclose the original file and not an alias to the file.
* Check with both the sending and receiving services before sending enclosures over the Internet. (Some services do not support sending and receiving enclosed files over the Internet.)
* Check with the recipient to make sure that they have the applications necessary to open the files you're sending. If you save your files in text (ASCII) format, they can be opened in most applications that accept text.
* If you're enclosing a text file of less than a few pages, you may want to include the text in the message body instead of sending it as an enclosure.

Using the Find Enclosure button
Follow these steps to add an enclosure using the Find Enclosure button. If you are not already in the Enclosure area, click the paperclip icon.
1. Click Find Enclosure in the Enclosure area of a message.
2. In the Find Files dialog box, choose the name of the disk you want to search from the Volume pop-up menu.
3. Type the name (or partial name) of the file you want to search for.
4. Click Search.
5. Select the file(s) you want to enclose.
6. Click OK.

Using the Open dialog box to add an enclosure
Follow these steps to add an enclosure using the Open dialog box. If you are not already in the Enclosure area, click the paperclip icon.
1. Click Add Enclosure in the Enclosure area of a message.
2. Select a file from the Open dialog box.
3. Click Select.

Dragging an enclosure to a message

Follow these steps to add an enclosure using the Macintosh drag-and-drop feature. If you are not already in the Enclosure area, click the paperclip icon.

1. Arrange the windows so that you can see the desktop and the Enclosure area of the message.
2. From the desktop, select the files you want to enclose.
3. Drag the files from the desktop to the scrolling list in the Enclosure area.

As you drag the files into the message, you see a border around the Enclosure area. When you release the mouse, the enclosures are added to the message.

Tip You can also drag enclosures to the paperclip icon of a message.

Setting options for sending enclosures

To set the way Claris Emailer handles the sending of enclosures, select options from the Enclosure area of a message.

* To compress the files you're sending, select Compress Files.

You must compress files if you include more than one enclosure. Compressing enclosed files saves time during the transfer and can reduce the charges on some services. Claris Emailer uses the StuffIt compression technology to compress the files. The recipient of the message must have a StuffIt expansion tool (available from the public domain) to expand any compressed files. If the message is received using Claris Emailer, enclosures are automatically expanded.

* To set the encoding of compressed files, choose an option from the Encoding pop-up menu.

Enclosed files are sent using special encoding to ensure that they arrive without errors. If the recipient's destination is the same as the service you're sending the message through, choose Service Default, the optimal encoding for your service. If your service doesn't support enclosures, try choosing BinHex, which appends the enclosure as text in the message body.

Removing enclosures

To remove enclosures, select one or more enclosures in the Enclosure area of a message and click Delete Enclosure.

Sending messages

After you create a message, you can:

* save it and send it at the next connection to a service
* save it without sending it
* send it immediately. (When you send a message immediately, it is automatically saved for you.)

You can also reply to or forward a message you receive.

Outgoing messages are saved in the Out Box. To open a message in the Out Box, double-click it.

Sending a message at the next connection

To save a message and send it at the next connection to a service, click Save. Claris Emailer saves your message, closes it, and stores it in the Out Box. To save your message without closing it, choose Save from the File menu. For information on setting up scheduled connections, see "Scheduling account connections," later in this document.

Saving a message without sending it

If you're not finished composing a message, you can save it without sending it, and continue working on it later. To do this, select Do not schedule, and then click Save. Claris Emailer saves your message, closes it, and stores it in the Out Box. To save your message without closing it, choose Save from the File menu.

Sending messages immediately

After you create a message, you can send it immediately. You can also immediately send all the unsent messages in your Out Box.

* To save a message and send it immediately, click the Send Now button at the top of the message screen. (The Send Now button is dimmed if you try to send a message while a connection is open.)
* To immediately send all the unsent messages in your Out Box, choose Connect Now from the Mail menu.

Note You must close a message before you can send it. Clicking Send Now automatically closes a message before sending it.

After either of these actions, you see the Connect Now Setup dialog box. For information on setting connection options, see "Connecting to a service," earlier in this document.

Checking the status of messages you send

After you save or send a message, you can check its status in the Out Box. To go to the Out Box, choose Out Box from the Window menu.

The icons in the first three columns show the status or give information about a message.

* The clock icon shows that the message will be sent at the next scheduled connection.
* A crossed-out clock icon shows that the message has been saved but will not be sent because the Do not schedule option was selected in the message. If you want, you can edit the message and save it again and/or send it.
* A checkmark shows that the message has been sent successfully.

* The triangular alert icon shows that the message has an addressing error. This icon is also shown in the Out Box tab.
* The paperclip icon shows that the message contains one or more enclosures.
* The left arrow icon shows that the message is a reply to a message you received.

Receiving messages

This section covers reading, replying to, and forwarding messages you receive, and storing and opening enclosed files.

You can immediately retrieve incoming messages from one or more online services, or wait until messages are retrieved automatically at the next scheduled connection. To retrieve messages immediately, follow the instructions on connecting to a service, earlier in this document.

Messages you receive are stored in the In Box. When you receive a message, you see:
* a flashing Claris Emailer icon at the far right of the menu bar (when Claris Emailer is hidden), and
* an arrow in the In Box tab in the Browser.

A checkmark shows that you read the message.

A paperclip icon shows that the message contains one or more enclosures.

A left arrow icon shows that you replied to the message.

Reading messages

To read a message, choose In Box from the Window menu, select the message you want to read, and click View (or double-click the message). You see the message window for the current message.

Opening and moving enclosed files

If a message has an enclosure, you see the Enclosures list the first time you open the message. You can also show the Enclosures list at any time by choosing Toggle Mailer from the Edit menu or clicking the triangle above the message area. You can open an enclosure from Claris Emailer, or move it to a convenient location on your hard drive and open it there. You move an enclosure on the desktop, or by dragging it from the Enclosures list using Macintosh drag and drop.

Important You cannot open enclosures in a filed message. To open an enclosure, move the message back to the In Box or Out Box. See the next section, and "Moving messages using Macintosh drag and drop," later in this document.

Opening an enclosure in Claris Emailer

To open an enclosure, double-click it in the Enclosures list. Claris Emailer launches the application used to create the enclosure.

Important Claris Emailer cannot open an enclosure by itself. To open an enclosure, you must have the application used to create that enclosure.

Moving an enclosure on the desktop

Enclosures are automatically saved in the Downloads folder in the Claris Emailer folder. You can drag an enclosure from the Downloads folder to another location on the desktop.

Tip To change the default folder where downloaded enclosures are saved, choose Preferences from the Setup menu, click the General tab, click Set, and then select a folder.

Moving an enclosure using Macintosh drag and drop

Follow this procedure to drag a message from the Enclosures list to a folder or disk on the desktop.
1. Open the Enclosures list for an incoming message.
2. On the desktop, set up the windows so that you can see both the Enclosures list and the folder or disk into which you want to move the enclosure.
3. Select one or more enclosures in the Enclosures list.
Shift-click the enclosures you want to select. To deselect an enclosure, or to select noncontiguous enclosures, Command-click the enclosures.
4. Drag the enclosures to the desired folder or disk on the desktop.

Replying to a message

To reply to a message:
1. From the In Box, open the message you want to reply to.
2. Click Reply or choose Reply from the Mail menu.
If there is more than one recipient, select an addressing option in the Reply To dialog box, and click Reply.

Tip While you're still in the message, press Option as you click Reply to bypass the Reply To dialog box.

In your reply, you can add and remove recipients as you do for a message you create. For information, see "Addressing messages," earlier in this document.

Including text from the original message
You may want to include part of the original message in your reply, especially if:
* there is a long delay between the original message and the reply
* you want your reply to be seen in the context of the original message
* one or more recipients did not receive the original message

Claris Emailer has a quoting feature you can use to mark the text of an original message in a reply. Every line of a quote is preceded by a quoting character (>).

Use one of the following methods to add a quote to a reply:
* To use text from an original message in a reply, open the original message, select the text that you want to include in the reply, and then create the reply. For information on creating a reply, see the previous section.
* To copy text from a message (or any other type of document) and then paste it into another message, open a message or other document containing text, and copy the text you want to quote. Then position the insertion point in the reply and choose Paste as Quotation from the Edit menu.
* To copy the entire body of a message, including details about the sender and subject, open a message, and then choose Copy Entire Message from the Edit menu. You can then paste the text into a reply, or any other document that accepts text.

Forwarding a message
A message you forward contains the complete original message. You can edit the text of the forwarded message just as you would a new message.

To forward a message, open the message you want to forward and click Forward or choose Forward from the Mail menu. To address the message, see "Addressing messages," earlier in this document.

Filing messages
You can file incoming and outgoing messages in folders in the Filing Cabinet. Filing messages helps you to organize your In Box and Out Box.

To file a message, select it in the In Box or Out Box, and then click File. Or, if you hold the mouse down over the File button, you see a pop-up menu. Choose a folder from the menu to save the selected message in that folder. (Claris Emailer is preset to save the message in the folder shown in bold in the pop-up menu.)

In the Filing Cabinet, you can view and open filed messages. To open the Filing Cabinet, choose Filing Cabinet from the Window menu.

Working with filed messages
You can select and delete messages, find text in a message, and move messages back to the In Box or Out Box or to a different folder in the Folder Name list.
* To select a message, click anywhere on the message. Shift-click to select more than one message. To deselect a message or to select noncontiguous messages, Command-click the messages.
* To delete selected messages, click Delete File(s).
* To find text in a message, click Find. In the dialog box, type the text you want to search for, select where you want to search, and click OK.
* To move selected messages to the In Box or Out Box, hold the mouse down over the Move File(s) button, and choose In/Out Box from the pop-up menu.
* To move selected messages to another folder in the Folder Name list, click Move File(s). In the dialog box, select the folder you want to move the messages to, and click OK.

Moving messages using Macintosh drag and drop
You can drag messages from the Filing Cabinet to:
* the In Box or Out Box (by dropping them on the In Box or Out Box tab)
* another folder in the Folder Name list
* a folder or disk on the desktop

Note You cannot drag incoming messages to the Out Box or outgoing messages to the In Box.

Setting up folders in the Filing Cabinet
You can add and delete folders, and delete all the messages in a folder.
* To add a folder to the Folder Name list, click Add Folder and then type a name for the folder. You can add as many folders as you want to the Filing Cabinet. When you name a folder, use a meaningful name, such as "Project Status Messages."
* To delete all the messages in a folder, select the folder and click Empty Folder. You can empty only the Read Mail, Sent Mail, and Deleted Mail folders.
* To delete a folder, select the folder and click Delete Folder. You can delete only folders you've added to the Filing Cabinet.
The folders in the Filing Cabinet are stored on the desktop. Any folders you add to the Filing Cabinet go in the Personal Folders.

Tip If you file a message in a folder, or drag it to the desktop, you can open the message by double-clicking it.

Using the Address Book

Use the Address Book to store addresses. You can add addresses to the Address Book and set up group addresses. You can also import and export addresses to and from other applications and text files. When you're finished adding addresses, you can find an address quickly by typing text in the Filter text box.

After you add addresses to the Address Book, you can use them to address outgoing messages.

Adding addresses

You add addresses to the Address Book by either typing them manually or by adding the sender or recipient addresses from messages you receive. You can also exchange addresses with other people by saving them as text clippings.

Adding addresses manually

To add an address manually to the Address Book:
1. Choose Address Book from the Window menu.
2. Click New User.
3. Enter a name and description for the recipient.
4. For Destination, choose a destination from the pop-up list or type the name of the service that the recipient uses to retrieve mail.
For example, choose America Online from the pop-up menu if the recipient receives mail in an America Online account.
If you want, you can type the destination instead. As you type, Claris Emailer fills in the rest of the destination for you. Keep typing until Claris Emailer fills in the correct destination.
If the destination does not appear in the pop-up menu, choose Internet and add the recipient's full Internet address.
5. Enter the mail address in the Address field.
6. If the recipient has more than one mail address, click the Add icon to add another address line, and then repeat steps 4 and 5.
Continue adding lines until you've added all of the recipient's addresses.
Note To delete one of the recipient's addresses, click anywhere in the address line and click the trash icon.
7. Click in the left-most column next to the address that you want to be the preferred address.
The preferred destination icon appears. Claris Emailer uses the preferred address when addressing a message.
8. Click Save.

Creating groups

You can consolidate several recipient addresses into a group. When you send a message to a group, every recipient in the group receives the message.

Note Addresses you add to a group are not linked to individual addresses in your Address Book. If you edit individual addresses, they do not change the addresses in any group. To edit addresses in a group, you must select the group, click Edit, and make the changes there.

To create a group:
1. Choose Address Book from the Window menu.
2. Click New Group.
3. In the Address Book Group Entry dialog box, enter a group name and description.
4. Follow the instructions in the next section for adding addresses to a group.
5. Click Save.

Adding addresses to a group

You can add addresses to a group by typing them manually, or by dragging them to the Address Book Group Entry dialog box using Macintosh drag and drop. You can drag addresses from the Address Book, or from the desktop.

Importing addresses

If you have addresses in one of the following mail programs, you can import them directly into Claris Emailer.

Mail program/Address book filename/Location
* America Online/Address Book/Online Tools folder in AOL folder
* CompuServe Information Manager/CompuServe Addresses/CompuServe folder in System Preferences folder
* Eudora/Eudora Nicknames/Eudora Folder in System Folder
* Navigator/CompuServe Addresses/Navigator folder

To import addresses from another mail program:
1. Choose Import Addresses from the File menu.
2. Find the file you want to import.
3. Click Open.

Scheduling account connections

This section provides step-by-step instructions scheduling connections to services.

You can automate when Claris Emailer sends and receives your mail by creating schedules. Schedules help you efficiently manage your computer

and automate connections to online services. For example, you could create one schedule to check your mail often during the week and another to check only once a day on the weekends.

Important You must have your computer and modem on and the Claris Emailer application running for schedules to run. Schedules do not launch Claris Emailer.

Creating or changing a schedule

You can create several schedules to send and receive your mail. Schedules can help you control connections to different services at various times during the day. For example, you can retrieve your mail from one service once a day, but send mail to another service once an hour.

Claris Emailer staggers the connection times within the ten-minute intervals you can choose for a schedule. This random interval relieves peak congestion at online services, helping you avoid connection errors.

Note You might want to consider the monthly costs of connecting to your services when you create a schedule. For example, if you create a schedule to connect once every 30 minutes to a service, you'll connect 1,440 times per month. At one minute per connection, you would accumulate 24 hours of connect time.

To create or change a schedule:

1. Choose Schedules from the Setup menu.
You see the Schedules List window.
2. Click Add to create a schedule. To change an existing schedule, double-click the name of the schedule.
You see the Schedule Entry dialog box.
3. Type the new or changed name of the schedule.
It's a good idea to name the schedule so that it is easily recognizable. For example, you might name a schedule that retrieves mail from America Online, AOL Mail.
4. Select the tasks to perform during the connection. You can select Get Mail or Send Mail, or both.

Note If you want to get your mail at one time and send it at another, you'll need to create a schedule for each task.

5. Select the account(s) that you want to make a scheduled connection to. You see a checkmark next to each selected account.
You can connect to several accounts with one schedule. To disable an account without removing it from the schedule, deselect it.

Important Changing how you connect to an account does not change a schedule; the schedule still runs, but using the connection information selected in the Service Entry dialog box. Likewise, if you select a different location in the Locations List window, be sure that the schedules you create for an account are still valid for the new location.

6. Choose either a timed or repeating connection from the Schedule Type pop-up menu.
* If you choose a timed connection, select the days, hours, and times that you want the schedule to run. You must select at least one day, hour, and time to activate the schedule.
* If you choose a repeating connection, choose how often the schedule will run from the Frequency pop-up menu.

Note The scheduling options in the Schedule Entry dialog box change when you select either a timed or repeating connection from the Schedule Type pop-up menu.

7. Click Save.

Published Date: Feb 18, 2012

Waiting for Connection Gray Out in Canadian French and French Versions of ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Apple Modem Tool 1.1F and 1.5F shipping with ClarisWorks 2.x, 3.0 and 4.0 Macintosh has a problem that prevents ClarisWorks 2.0 through 4.0 to use the wait for connection command.

These communication tools are currently shipping with ClarisWorks 2.0, 3.0 and 4.0 Canadian French and French applications.

The immediate workaround will be to either use an Apple modem tool 1.02F or a US Apple Modem Tool 1.5 or above. Apple is aware of that and should provide an update version of the French Apple modem tool.
Published Date: Feb 18, 2012

White Objects Print Black to HP 4 and 4 Plus

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When using Windows 95, printing white graphic objects or data chart elements to a Hewlett-Packard 4 or 4 Plus printer can result in the objects printing out black.

To correct this problem, change the printer driver graphics mode from "Use vector graphics" to "Use raster graphics."

To do this:

1. Choose Print Setup from the File menu
2. Confirm that the currently selected printer is the one you wish to print to and click on the Properties button
3. Click on the Graphics tab and select the radio button next to "Use raster graphics"
4. Click OK, when the previous screen reappears, click OK again
5. Choose Print from the File menu and print as usual

The problem has been observed on the 4 and 4 Plus, but may also occur on other printer models. This solution has only been tested on the 4 and 4 Plus, however.
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Arrows Are Reversed When Resizing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Under some circumstances, arrows will be reversed if they are resized. This is a problem in ClarisDraw 1.0 and ClarisImpact 2.0.

This problem occurs if you draw lines with either Arrow at Start or Arrows at End chosen, then select and resize them. The arrows on these lines will be reversed after resizing.
Published Date: Feb 18, 2012

ClarisWorks: How to Set Up a Layout for Envelope Printing

Some guidelines to follow when setting up a layout to print envelopes from ClarisWorks (DB).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

Note: AppleWorks is the new name for ClarisWorks.
This article has been archived and is no longer updated by Apple.
To print multiple envelopes from a ClarisWorks database you should set up an envelope layout. To do this, follow these step-by-step instructions:

1. Determine whether your printer feeds envelopes top-first or sideways. Your printer manual is the best source of this information, but if the manual is not available, markings on the printer itself may indicate the direction. Look carefully near all openings and on paper trays for a small envelope icon and note its orientation.

2. If your printer feeds envelopes sideways (most laser printers do), determine whether your printer feeds envelopes by edge-feed or center-feed. Again, see the printer manual or markings on the printer for this information.

3. Create a new blank layout: go to the Layout menu and choose Layout. Next, Choose New Layout from the Layout menu. Give it a name like "Envelope" and choose Blank for the type. Click OK.

4. Choose Print Setup (Windows)/ Page Setup (Mac OS) from the File menu. Choose the envelope size you want if that option is available, otherwise use the US Letter paper size. If your printer feeds envelopes sideways, choose Landscape (sideways or horizontal orientation). Click OK.

5. In your layout, drag the Body line down so that the Body section covers about three quarters of the page.

6. Place the fields on the layout by choosing Insert Field from the Layout menu. Choose Insert Field for each field you want and repeat this step until you have inserted all necessary fields for the envelope. You can then delete the field descriptions (the bold text to the left of each field box).

7. Next, move the fields to where you want them to print on the envelope, resizing them (click to select, then drag a corner dot) if necessary. It may be helpful to Show Rulers (under the Window menu in ClarisWorks 5.0/ View menu in other versions).

If you are printing a standard business-size envelope:

- For edge-feed and top-feed envelopes the upper-left corner of the layout is the upper left corner of the envelope; the return address would thus go in the top left, and the recipient's address would typically start about 2 inches from the top and 4 inches from the left side.
- For center-feed envelopes, the return address should be placed about 2-1/4 inches from the top, and the recipient's address would be at about 4 inches from the top and 4 inches from the left.

Note: These measurements are approximate; it may take some experimentation and testing to get your desired result.

8. Choose Browse from the Layout menu and print one test envelope to see if it prints in the correct place. If it does not look right, return to Layout mode, move the fields on the layout in the direction you want them, and test-print again.

Additional tips for printing envelopes:

- Use Slide Objects to eliminate blank spaces in fields. Refer to the ClarisWorks On-Line Help for further information on Sliding Objects.
- If you need to print many envelopes, check your printer manual to see if you can place multiple envelopes in a paper tray. Some printers only allow envelopes to be printed singly by hand-feeding them.

Published Date: Feb 18, 2012

TA43481_DOS_Text_File_Format_(TIL00568).pdf

DOS 3.3: Text File Format

DOS sequential text files are saved as strings of ASCII characters, just as if they were printed. Furthermore, numeric variables are stored as a string of characters rather than in their internal binary format.
This article has been archived and is no longer updated by Apple.
The number of characters required by a given variable VAR can be found with:

```
PRINT LEN (STR$ (VAR))
```

The carriage return, along with other separating characters sent out after the data, also need space allocated for them.
Published Date: Feb 18, 2012

ClarisWorks 4.0: HTML Primer 1.5.2

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

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Introduction

To create documents that can be viewed by a World Wide Web (WWW) browser, you use the Hypertext Markup Language (HTML). HTML consists of a set of *tags* (formatting codes) added to text. For example, if the text "Local News" is formatted as an 18 point header, the text looks like this: <H2>Local News</H2> when translated to HTML. Text can also be tagged to create a hypertext links to other documents. You can use ClarisWorks to open, edit, and create HTML documents without having to be familiar with HTML tags.

This document describes how to:
· open (import) HTML documents so you can read and edit them as word processing documents
· create word processing documents and save (export) them in the HTML format
As you get started, please keep the following points in mind:
· You should be familiar with the concepts and techniques for working with ClarisWorks word processing documents, stylesheets, and shortcut buttons. For more information on these topics, see the documentation that came with ClarisWorks.
· Each WWW browser interprets HTML tags in slightly different ways. For example, some browsers may display a header in color in an elegant typeface, while a text-only browser may display the same header in capital letters in the same size and font as the rest of the document. The ClarisWorks HTML translator uses the default display styles for Mosaic, a browser created by the National Center for Supercomputing Applications (NCSA). For more information on NCSA Mosaic, visit the WWW site at:
http://www.ncsa.uiuc.edu/SDG/Software/Mosaic (note 1)
· The translator file is called "WWW [HTML]" and is installed, along with other translators, in the Claris Translators folder in the Claris folder (inside the System Folder). You don't use the HTML translator file directly. Instead, you use the ClarisWorks save and open commands to direct the file through the translator.
Note: Updates to this document are available on ClarisWeb at: http://www.claris.com/pubs/clarisworks/html-primer.html (note 2)

Creating HTML documents

This section describes how to create new HTML documents. For information on entering and formatting text in HTML documents, see the section "Formatting and editing HTML documents."

Using stationery to create HTML documents

The easiest way to create HTML documents is to start with the ClarisWorks HTML stationery, a template included with ClarisWorks 4.0. The stationery is a blank preformatted word processing document that you can reuse.

To open the stationery document:
1. Launch ClarisWorks by double-clicking the ClarisWorks icon.
2. Choose New from the File menu.
3. In the New Document dialog box, select Use Assistant or Stationery.
4. Choose Internet from the pop-up menu, select WWW [HTML] Document, and then click OK.
You see the blank, untitled stationery in its own window. The original document remains unchanged, ready for you to use again. The stationery

includes a set of HTML styles in the stylesheet palette and three shortcut buttons, "Make Hypertext Link", "Unordered List Item", and "Horizontal Rule."
5. To open the stylesheet palette, choose Show Styles from the View menu.
The styles include headers of various sizes as well as styles for normal, literal, and preformatted text.
6. To display the shortcuts palette, choose Shortcuts and then Show Shortcuts from the File menu.
For specific information about using the shortcut buttons to create HTML documents, see the sections "Hypertext links", "Lists", and "Horizontal rules."
Note: To make the buttons appear in the shortcuts palette for any ClarisWorks word processing document or text frame (not just in a stationery document):
1. Launch ClarisWorks and open the HTML stationery by following Steps 1-4, above.
2. Choose Shortcuts and then Edit Macros from the File menu.
3. Select Make Hypertext Link from the Macro pop-up menu and then deselect
Document Specific. Do the same for Unordered List Item and Horizontal Rule.
4. Click Done.
The HTML stationery shortcuts now appear in the shortcuts palette for any word processing document.

Creating HTML documents without using stationery

If you prefer, you can create an HTML document in a regular word processing document instead of the HTML stationery.

To open a word processing document:
1. Launch ClarisWorks by double-clicking the ClarisWorks icon.
2. Choose New from the File menu.
3. In the New Document dialog box, select Word Processing and then click OK.
Using the ClarisWorks HTML stylesheet or HTML shortcut buttons is optional. If you want to use the ClarisWorks HTML stylesheet, go on to the next step. If you want to use the HTML shortcut buttons, follow the steps in the Note in the previous section "Using stationery to create HTML documents."
4. To import the HTML stylesheet into your blank document, choose Show Styles from the View menu.
5. In the File menu on the stylesheet palette, choose Import Styles.
6. Navigate to the ClarisWorks Styles folder in the ClarisWorks 4.0 Folder, select HTML Styles, and then click Open.
7. In the Select Styles to Import dialog box, click Check All and then click OK.

Saving documents as HTML files

To save (export) a document as an HTML file:
1. Choose Save As from the File menu.
2. In the Save As pop-up menu, select WWW [HTML].
3. Navigate to the folder in which you want to save the file, type a file name, and click Save.

To help you keep track of the file format of your documents, you can add extensions to the filenames, such as myfile.html for an HTML file, or myfile.cw for a ClarisWorks file. For best results with HTML files, don't use spaces in the filenames. Either remove spaces or replace them with underscores or hyphens.
Important: Be sure to keep copies of your documents in their original formats, especially HTML documents that you import. The translator does not provide a complete set of HTML tags and may replace some of the original tags.

Opening HTML files

To open (import) existing HTML files:
1. Launch ClarisWorks by double-clicking the ClarisWorks icon.
2. Choose Open from the File menu and then navigate to the HTML file you want to open.
3. In the Document Type pop-up menu, select Word Processing. In the File Type pop-up menu, select WWW [HTML]. (If you'd like see what the HTML codes in your text look like, select All Available or Text in the File Type pop-up menu.)
4. Select the name of the file you want to open, and click Open.
The HTML document opens. You see it as it might look when viewed by an HTML browser. If you want to use the optional ClarisWorks HTML stationery features, continue to the next step.
5. Import the the HTML stylesheet into your document by following Steps 4-7 in the section "Creating HTML documents without using stationery."
Note: Imported text is styled as "Body+" in the stylesheet. However, the translator tags the text correctly when you export it, even when styled as "Body+," and you can use the stylesheet to style any new text that you type.
6. Set up your document with the HTML shortcut buttons by following the steps in the Note in the section "Using stationery to create HTML documents."

Formatting and editing HTML documents

This section describes how to use ClarisWorks text and paragraph attributes to format or edit documents that can be translated to HTML format.

Getting started

You start with a ClarisWorks word processing document. To create an HTML document, follow the directions in the section "Creating HTML

documents." To open (import) an HTML file that you want to edit, follow the directions in the section "Opening HTML files".

It's easier to apply the various text styles if you can see the carriage returns and spaces in your document. To show these characters - called *invisibles* or *formatting characters* - use the keyboard shortcut Command-; (semicolon). To hide the formatting characters, press Command-; again. (The Command key is the cloverleaf key on the bottom row of the keyboard.)

If you're using the ClarisWorks stationery, or if you've set up a word processing document so you can use the HTML stationery features, show the stylesheet (choose Show Styles from the View menu) and the shortcuts (choose Shortcuts and then Show Shortcuts from the File menu). Important: Apply only those ClarisWorks styles that start with "HTML" (for example, HTML Normal Text). With few exceptions, (noted in the applicable sections) the HTML translator and browsers don't recognize any other ClarisWorks styles.

Paragraphs

Type your text and end the line or paragraph by pressing Return (or place the insertion point in the text, choose Paragraph from the Format menu, and then type 1 in the space after box). The default paragraph style for the stationery is HTML Normal Text. The translator tags text styled as HTML Normal Text as a paragraph. Most browsers separate paragraphs by adding white space after the paragraph.
Note: The translator interprets soft returns (Shift-Return) as spaces.

If you don't want extra white space after a block of text, place the insertion point in the text, choose Paragraph from the Format menu, and then type 0 in the space after box. The translator will tag the carriage return as a break. Browsers don't usually add white space after a break.

Tabs

Tabs are usually translated into white space, except when the tabs appear in lists or preformatted text (see the sections "Lists" and "Preformatted text").

Character formatting

To make characters bold, italic, or underline, select the text and choose Bold, Italic, or Underline from the Style menu at the top of the screen. If you choose any other item from the Style menu (for example, Shadow or Inferior), the translator interprets it as plain text.
Note: The translator interprets most bold text as a header. Headers appear on a separate line when viewed from a browser. If you don't want the translator to interpret bold text as a header, make the font size of bold text 11, 12, or 13 points.

Headers

Use headers to structure and organize the HTML document, just as you use headers to structure and organize any text document. To create a header, type the text, select it, and then choose a header style-such as HTML Header (9 pt.)-from the stylesheet (or choose Bold from the Style menu and any size except 11, 12, or 13 points from the Size menu). When the translator interprets text styled as a header, it adds white space above and below the text.

Unsupported characters

The translator ignores or interprets as spaces characters such as soft returns (Shift-Return), page numbers, page breaks, and date characters inserted by using the Insert Date command.

Hypertext links

A hypertext link is a string of clickable text (called an *anchor*). When you click on the link in a browser, you "jump" to another document.

To make a hypertext link:
1. Select the text that you want to be seen as the link anchor.
2. Click the Make Hypertext Link shortcut button (or style the text so it looks different from the surrounding text and then insert a footnote by choosing Insert Footnote from the Format menu).
* Make hypertext link shortcut button
Clicking the button changes the selected text to blue underline and inserts a footnote mark. You see footnote text instructing you to fill in the Uniform Resource Locator (URL) of the document you are linking to.
Note: If you insert a footnote but don't change the anchor's appearance (for example, to blue underline), the translator uses the text preceding the footnote (up to 255 characters) as the link anchor. Note also that HTML doesn't support footnotes, so you can't use footnotes except to create hypertext links.
3. Replace the footnote text "INSERT URL HERE" with the URL of the destination document.
URLs represent file locations on the World Wide Web. A URL has the general form

scheme: //host.domain [:port] /path /filename

For more information on HTML and URLs, visit the WWW site at http://www.ncsa.uiuc.edu/demoweb/html-primer.html (note 3)

Lists

Use lists to group related items. List items always start with a tab (or a .5 inch indentation). You can show the relative importance of each item in a list by using multiple tabs (or multiple .5 inch indentations) to indent items-as you would in an outline. Items in *ordered lists* are numbered and items in *unordered lists* are set off with a bullet. You can include both ordered items and unordered items in the same list.

To create a list:
1. Press Tab to indent the line one or more times (or choose Paragraph and type a multiple of .5 inches in the Left Indent box).
Each tab character, regardless of tab size (or each .5 indentation, as typed in the Left Indent box), adds an additional level of indention.
2. Type the character that defines the type of list item (ordered or unordered).
To create this type of list item - Do this
Ordered (numbered) - Type a number followed immediately by a period, right parenthesis, or a hyphen-for example, 1., 1), or 1-. Browsers vary in how they format the numbers on ordered list items.
Unordered (bulleted) - Insert a bullet by clicking the Unordered List Item shortcut button (or type the bullet by pressing Option-8). Most browsers display a bullet at the beginning of each item in an unordered list.
3. Type the text for the item. The text can extend to more than one line.
4. Repeat Steps 1-3 for each item in the list.
5. End the list by doing one of the following:
· Start the next line of text at one less tab than the last item of the list.
· Press Return to insert a blank line after the last list item, and begin the next text segment with a non-list character (that is, no bullets or numbers).
Important: Don't use styles from the stylesheet (such as Bullet or Diamond) to create lists in your HTML document-the HTML translator and browsers don't recognize ClarisWorks styles as list types.

Example 1 Each additional list level is called an *embedded* list.

1. The "1." is the beginning of the initial list.
2. This is the second item of the initial list.
1. Here we are at two list levels, thus we begin a new list.
2. This is the second item of the embedded list.
3. Here we end the embedded list, and continue the initial list.

The embedded list could have been a bulleted list. The type of list (ordered or unordered) is determined by the first list item in that list level.

Example 2 This ordered (numbered) list contains an unordered (bulleted) list:

1) The "1)" is the beginning of the initial ordered list.
2) Second item of the initial list
· First item of the unordered embedded list.
· Second item of the unordered embedded list.
3) Third item of the initial list.

Example 3 This list shows that the first character of a new list determines if the list is ordered or unordered. When viewed by a browser, the list in this example is ordered exactly the same as the list in Example 2.

1- The "1-" is the beginning of the initial ordered list..
· Second item of initial list (the bullet will appear as "2." in the HTML document)
· First item of the unordered, embedded list.
2- Second item of the embedded list. The number "2-" will be a bullet.
3- Third item of the initial list.

Pictures

You can include pictures (images) in your HTML document. The translator supports anchored pictures, but not floating ones. To make sure your pictures are anchored, select the picture and choose Cut from the Edit menu. Then click in the text where you want the picture to go and choose Paste from the Edit menu. Correctly anchored pictures have one handle when you select them. (Floating pictures have four handles when selected.)

The translator automatically saves the pictures as individual files and creates tags in the HTML file that refer to the picture files. The references are to the same relative directory as the HTML file, so if you move the HTML document to another location, you must also move the picture files.

The pictures are saved as PICTs, but to be able to view the pictures in the document on a WWW browser, you must convert them to Graphic Interchange Format (GIF). The translator adds the *.gif* extension to the picture filenames in the HTML source file, but you still must to convert the file from PICT to GIF format. When you've finished, check to be sure that the filename for each picture has the ".gif" extension in lower case.
Note: Shareware conversion applications such as GifConverter and GraphicConverter are widely available from on-line services and popular Macintosh FTP archives on the Internet.

Horizontal rules

Horizontal rules are useful for separating sections of text. To insert a horizontal rule, click in the text and then click the Horizontal Rule shortcut button (or press Return, type a series of underscore characters, and then press Return again).
You see a series of underscores at the insertion point in the document.

Preformatted text

If you want a section of text to look exactly as you type it, select the text and then click HTML Preformatted Text in the stylesheet palette in the HTML stationery (or choose Monaco from the Font menu). Preformatted text appears in both your document and the browser in a monospaced font:

```
This is an example of what
preformatted text looks like.
```

Although tabs are supported in preformatted text, you should use spaces instead of tabs, because tab sizes can vary in different browsers.

Literal text

There are many features in HTML that the translator doesn't support. If you want to add advanced or unsupported HTML commands to your document, select the text and then click HTML Literal Text in the stylesheet palette in the HTML stationery (or choose Text Color from the Style menu and select a shade of red).

Technical details

This section describes some of the details of the HTML tags used by the translator.

Character formatting HTML has two kinds of text styles, *logical* and *physical*. Logical styles are interpreted differently by different browsers. For example, the logical style (that is, "emphasis") may be represented as red single underline by one browser and italics by another. Other examples of logical text styles are and <cite>. Physical styles, such as italic, underline, and 11, 12, or 13 point bold, are represented as typed. When you format text as italic, underline, or 11, 12, or 13 point bold, the ClarisWorks HTML translator tags these physical ch aracter styles with logical character styles, like this:

These types of characters	Are assigned this HTML tag
Italics	<cite>
Underline	
Bold (11, 12, or 13 point only)	

Note: If bold text is any size except 11, 12, or 13 points, the translator tags it as a header. See "Headers," below.

International characters The translator supports most of the ISO Latin 1 character set standard on both export and import.

Special characters Some characters (< > & ; and /) are used in HTML tags. If you type the characters <, >, &, ; or /, the translator interprets them as typed. If you want the characters to be interpreted as part of HTML tags, style the tags as literal text. See the section "Literal text."

Paragraphs and carriage returns The translator tags as a paragraph (<P>) any text followed by a hard return (created by pressing the Return key). The translator tags as a break (<BR>) any text block followed by a hard return that is formatted by placing the insertion point in the text, choosing Paragraph from the Format menu and then setting Space After to 0 (zero).

Headers A header is a logical style. The size depends on the type of header. Browsers usually insert white space above and below the header and display headers as bold.

If a text is bold, the translator checks the font size and then tags the bold text according to these rules:

If the bold text is this size	The translator tags the text as
Greater than or equal to 20 points	<H1>
Greater than or equal to 18 points and less than 20 points	<H2>
Greater than or equal to 14 points and less than 18 points	<H3>
Greater than 10 points and less than 14 points	
Greater than 9 points and less than or equal to 10 points	<H5>
Less than or equal to 9 points	<H6>

Lists For each list level, the translator inserts the tag <OL> for an ordered list and <UL> for an unordered list. For each list item, the translator inserts a list-item tag (<LI>).

Horizontal rules If underscores begin and end with a hard Return, the translator inserts the <HR> (horizontal rule) tag in the HTML document.

About this HTML translator

The HTML translator included with ClarisWorks 4.0 represents the joint efforts of Claris and a dedicated team at the Highly Interactive Computing Project4 (Department of Electrical Engineering and Computer Science) at the University of Michigan in Ann Arbor.

Claris would like to express its thanks to the Highly Interactive Computing Project, including:

Brian Sullivan
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Crash During Startup While Rebuilding the XTND Translator List

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks utilizes a file known as the "XTND Translator List" to keep track of which file translators are available to it for opening and saving files in foreign file formats.

Occasionally, it is necessary to delete and rebuild this file. ClarisWorks will automatically rebuild this file during startup if it senses that it is not present. On Power Macintosh machines, a problem can occur which will cause ClarisWorks to crash while attempting to do this. This can happen if the machine has an alias to anything (a file, folder, or volume) that is not located on a local hard drive (e.g. a server alias) if the alias is located in the Claris folder or the Extensions folder (both of which are located within the System folder), or in any sub folder within either of these two folders.

The solution is to move such aliases to another location on the hard drive (or to the desktop) before starting up ClarisWorks. After ClarisWorks has successfully started and rebuilt the XTND Translator List, the aliases can be moved back to their original location, if desired.
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MacDraw Pro, ClarisDraw, & ClarisImpact: QuickDraw Limits on Document Size

The maximum document size in MacDraw Pro, ClarisDraw and ClarisImpact is limited by QuickDraw.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Because of limits with QuickDraw (the method that MacDraw Pro, ClarisDraw and ClarisImpact use to describe objects), these applications have limits on printed document size. This maximum size is dependent on the resolution of the document.

Any single object larger than 113.77 inches printing at 300 dpi (the resolution of the LaserWriter) will print incorrectly. MacDraw Pro worked around this by limiting the document size to 100"x100".

To calculate this size, divide 2^16 (which is the largest integer range that QuickDraw can handle) by 2 to get the maximum positive value. Next, take that number and divide it by QuickDraw's resolution, 72 dpi. The resulting number should be divided by the scaling used by the application in order to print to the chosen printer.

To calculate the maximum size for a document to be printed to a LaserWriter, for example:

2^16 = 65,536 (largest integer range).
65,536 / 2 = 32,768 (maximum positive value)
32,768/72 dpi (QuickDraw resolution)= 455.11".

ClarisImpact and ClarisDraw would then scale the the object by 4 to print at 300 dpi.

455.11" / 4 = 113.77".

This 113.77" x 113.77" is therefore the maximum size for ClarisImpact and ClarisDraw.

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ClarisDraw: Installer does not support installing onto remote server volumes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The current version of the installer for ClarisDraw uses technology which allows multiple installation options. While these options can support installation on remote volumes, such as PathWorks volumes for placing Macintosh files on Unix machines, the choice was made to not use this option with the ClarisDraw installer. Therefore it is not possible to install ClarisDraw on remote volumes.

The developers are aware of the desire on the part of system administrators at large facilities to make remote installation possible. This request is currently being considered by the development team.

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ClarisDraw: MacDraw II Files Convert as Libraries

Resolving difficulties with MacDraw II Library files which have been converted to ClarisDraw

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

When you convert MacDraw II files to ClarisDraw, any document that contains library objects is automatically converted into a ClarisDraw library. The only workaround for this issue is to remove all the library objects from your document prior to converting it. In MacDraw II:

1. Open your document.
2. Choose Library from the Arrange menu.
3. Select each item in the library and click Remove.
4. Save the document.
5. Convert the file by opening it with ClarisDraw.

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Opening ClarisDraw for Windows Files with ClarisDraw for Macintosh

What to do if a ClarisDraw for Windows file does not appear in the Open dialog box, refuses to open, or opens as text (or otherwise improperly) when you double-click on it
Note that ClarisDraw for Macintosh 1.0v3 corrects this problem.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

ClarisDraw for Macintosh 1.0v1 or 1.0v2:

If you try to open a file from ClarisDraw for Windows with ClarisDraw for Mac 1.0v1 or 1.0v2, it may not open, or not be listed in the Open dialog box. To open the files, hold down the option key while selecting Open in ClarisDraw for Macintosh. While still holding down the Option key, select the ClarisDraw Windows file and open it. Once the file is saved by ClarisDraw for Macintosh, you will no longer need to do this.

Background: PC files do not have a Type and Creator attribute. On a Mac, these files default to the type 'TEXT' (which is incorrect), causing the above problems. Note that ClarisDraw for Macintosh 1.0v3 does not have this problem (see below).

ClarisDraw for Macintosh 1.0v3:

ClarisDraw for Macintosh 1.0v3 now opens ClarisDraw for Windows files directly from the Open File dialog box as long as the Windows files have the .cdd (ClarisDraw Document) or .cdt (ClarisDraw Template) extension.

In earlier versions of ClarisDraw for Macintosh, you had to hold down Option while choosing Open from the File menu to force ClarisDraw for Macintosh to open .cdd and .cdt files as ClarisDraw files, instead of incorrectly using the last XTND translator in the list (usually the text translator).

This change is unclear in the readme.txt file that ships with ClarisDraw for Windows.
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ClarisWorks: "Required resource could not be found" when Trying to Open an AppleWorks Database File

Trying to open an AppleWorks database file with ClarisWorks 4.0v1 returns the error message "required resource could not be found".

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Install ClarisWorks 4.0v4 Updater.
(The AppleWorks translator that was shipped with ClarisWorks 4.0v1 did not work correctly)
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ClarisWorks: Percentages Don‘t Appear in Legend of a Pie Chart

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Deselecting the Color option when creating a pie chart causes percentages not to show. While there will be space for the percentages in the legend, they will not appear.

A simple workaround is to leave the Color checkbox checked while creating the chart. After clicking OK, the percentages will appear in the legend. Double-click the chart to edit the chart options. Now, click the Color checkbox so that it is unselected. Click OK and the percentages will appear in the chart.

If the chart has already been created, double-click on the chart to edit it. Click the Color checkbox so that it is selected. Click OK. The percentages appears. Double-click on the chart a second time to bring up the Chart Options dialog box. Click the Color checkbox to uncheck it, and then Click OK. The percentages now appear in the chart.
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ClarisWorks: Charting Dates (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Let's say you want to graph your golf scores by date so you get a line chart that shows your improvement over a period of time. You might enter the information like so:

1-1-96 98
2-3-96 96
2-14-96 95

When you chart this range of cells you will get unexpected results. Your dates will not be points on the X-axis but instead will be represented on the Y-axis as impossible dates.

The workaround is to make the dates into text values. Simply enclose the dates with quotes and preceded them with an equals sign: ="1/1/96" so that the numbers are considered text by ClarisWorks:

="1-1-96" 98
="2-3-96" 96
="2-14-96" 95

Note: The dates will not display with the equal sign or the quotes.
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ClarisWorks: The File "ClarisWorks Help" Cannot be Found

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you get an error message when trying to access Help from ClarisWorks 4.0, try deleting the help files that are installed and reinstalling them.

To delete the help files:
1- Open the Claris folder, which is inside the System folder
2- Trash two files: ClarisWorks Help and Quickhelp. Empty the Trash.

Install the ClarisWorks 4.0 help files:
1- Run the ClarisWorks installer
2- Click on Easy Install and select Custom Install
3- Scroll down and click the checkbox for "ClarisWorks Help"
4- Click Install
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Name Restrictions for Default Stationery for all Communication Documents in Canadian French and French ClarisWorks 4.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In the Canadian French and also in the French ClarisWorks 4.0v1 and 4.0v4, the name of a communication stationery document for all new documents should end with a blank space and be preceded by a Control-E character. The name of this document should be "ClarisWorks CM Options "

The ClarisWorks Development team is aware of this problem and is trying to fix it in a later release of ClarisWorks.

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ClarisWorks: Performing a Mail Merge

A step-by-step guide to exporting your FileMaker Pro data into a ClarisWorks database and mail merging with a ClarisWorks word processing document.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Performing a mail merge between FileMaker Pro data and a ClarisWorks document consists of a few steps that, although easy to follow, must be performed in the proper order. The first step is getting the data out of FileMaker using the Export command. Next, you convert the exported data to a ClarisWorks database file. Lastly, you perform the merge.

These steps are detailed below, and you can also use the same steps for data you keep in a ClarisWorks database. Remember: you can mail merge in word processing documents as well as spreadsheet or draw documents, so once you know these steps, you can look for new ways to apply this technique.

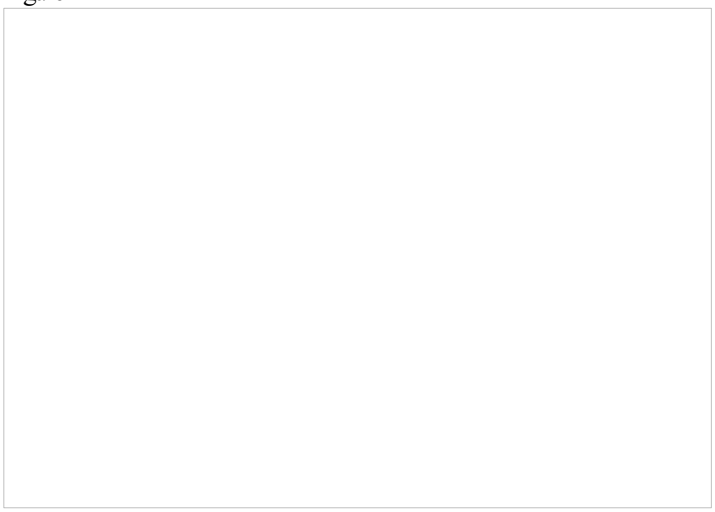
There are some limits in a ClarisWorks database file that may affect your mail merge task. Namely, the maximum number of records per ClarisWorks database document is 32,767. The maximum number of fields per document is 255. Please keep these limits in mind when you are merging data from large FileMaker Pro files. You may also need to allocate more memory to ClarisWorks.

Step One: Exporting data from FileMaker Pro

This step is necessary only if you are using FileMaker Pro, as the task is to get the data in a format that ClarisWorks recognizes. Here's how to do it:

1. Find the desired records you wish to merge in your FileMaker database. If you wish to merge all your records, choose Find All from the Select menu in FileMaker.
2. Export your records by selecting Import/Export... Export Records... in your FileMaker database. Select DIF as the file type from the pop up menu.
3. Name the file so that it has the .DIF suffix (For example, MyNames.DIF). This technique makes it easy to identify this file later on.
4. Save the file to the Desktop, so that it is easy to locate later on. If you are using System 7 (or later), click the Desktop button. Note: If you are using an earlier system, take note of the folder or directory to which you save the document. Click New.
5. In the Specify Field Order for Export dialog that appears, make sure that all the fields you want to Export are marked with a checkmark (you can click on the checkmarks to toggle them on or off). Click OK to start the Export. (See Figure 1.)
6. Quit FileMaker.

Figure 1



The preceding steps save your FileMaker Pro data as a text file only. No layouts, calculations or graphics are saved. The DIF format stores data in rows and columns, where rows function as records and columns function as fields. The important thing is that the DIF format is easily recognized by ClarisWorks, as demonstrated in the following step.

Step Two: Converting data to a ClarisWorks database

This next step converts your data to a ClarisWorks database, so that it can be used for a mail merge.

1. Launch ClarisWorks.
2. Choose Open... from the File menu.
3. If you are using ClarisWorks 1.0, click on the Import Options flag and select Database. With all other versions of ClarisWorks, select Database in the Document Type pop-down menu.
4. Locate the DIF file which contains your FileMaker Pro data. If saved to the Desktop, the DIF file appears when you click on the Desktop

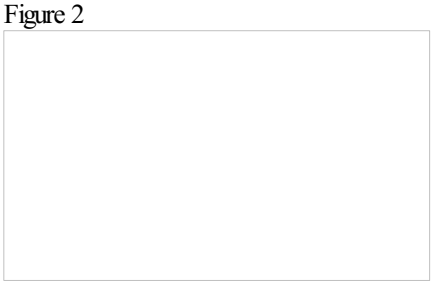
button (using System 7).
5. Open the file to convert it to a ClarisWorks database. The data appears in a standard database format.
6. Select Save from the File menu and name the ClarisWorks database. This step is important, because the database document is not available through the mail merge feature unless it has been saved.
Once the conversion is complete, you can select the records you wish to merge. ClarisWorks gives you the option to hide selected records (select the Organize Menu, then choose Hide Selected), so that you may work with smaller sets of records in your database. Only records that are visible ("unhidden") are available for mail merge.

Step Three: Performing the Mail Merge in ClarisWorks

You can now merge the data to a ClarisWorks word processing document. To merge to drawing documents, click on the Text tool from the Tools Palette and click anywhere on the document (this creates a text box) before following the steps outlined below. If you are merging to a spreadsheet document, you can insert merge fields directly into spreadsheet cells.

To perform the merge:
1. Open your ClarisWorks word processing (or other) document.
2. Select Mail Merge from the File menu. The mail merge window appears. Note: your cursor still appears in your document, allowing you to insert merge fields or continue working on your document while you are preparing it for mail merge.
Note that you can drag the Mail Merge window around the screen to make inserting merge fields easier. If the mail merge window is in your way, click in its upper right hand corner to make it shrink or grow.
3. To make the field list appear in the dialog box, select the database file.
4. Insert your merge fields by selecting the field in the Mail Merge window and clicking Insert Field. Notice that this adds a merge field where your cursor is located in the document. A merge field is indicated with special characters (e.g., «First» and «Last»). If you make a mistake, you can cut and paste merge fields into their appropriate locations.
5. If you are using ClarisWorks 4.0, clicking the Show Field Data box will let you see the actual data merged into your document. (See Figure 2.)
6. When you are ready to print your documents, click "Print Merge...". You will see the Print dialog. When you print, each record is printed.

Figure 2



You now have all you need to perform a mail merge between your database files and ClarisWorks documents.
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ClarisImpact: Moving Files With Custom Styles

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Using ClarisImpact software, there are instances when you may want to create your own styles for use in charts. For example, the symbols in a flowchart may not be exactly what you need. To get the desired style you choose the closest style to what you want, click the Edit button at the bottom of the styles palette, and edit it. This is a great way to customize your charts. You can get very creative with the styles that you create yourself, and may even create a whole new style of your own that contains items that you have designed.

You can encounter difficulties when taking a file created with these customized styles to other computers, however. Whenever you move a file to another system that is using its own installation of ClarisImpact, it is important to take the style file from the computer the file was created on to the new computer. This applies to computers on the same platform as well as cross platform.

The styles are located in their respective folders. For the custom flow chart styles example, look under the following folders:

Windows
Impact:CIStyles:Flochart

Macintosh
Claris Impact:CIStyles:Flochart

If you edit the items used in the ANSI symbols, you must copy the ANSI file from this folder along with your ClarisImpact file and take it to the same location on the hard disk of the destination computer. The files carry over to other platforms just as easily. When both the ClarisImpact style and document files are copied to the proper folder or directory in the destination computer, the document can be used with the custom style information.

Note: Because of differences in naming conventions between the Macintosh and Windows operating systems, it is best to keep your style name to no more than eight characters.

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Calculating Radians When the Degrees Include Minutes & Seconds (SS)

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

The Radians function in ClarisWorks converts an angle measurement given in degrees into radians (the standard unit used in trigonometric functions). This function has one argument, or variable, which is the number of degrees and fractions of a degree expressed as a decimal number. If your angle measurements are expressed in degrees, minutes, and seconds, you must convert these numbers to a single decimal number within your formula in order to convert it to radians.

The following formula will do this. It assumes the degrees are in column B, the minutes in column C, the seconds in column D, and that you want to calculate the radians in column E:

E1=RADIANS(B1+(C1/60)+(D1/3600))

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Troubleshooting Win32s Errors in Windows 3.x

Win32s is a sub-system created by Microsoft to allow 32-bit applications to run in a 16-bit environment. These are some symptoms and solutions to the most common problems when running Win32s based applications under Microsoft Windows 3.x

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Because of the complexity of running 32-bit applications under Windows 3.x and Windows for Workgroups 3.x, occasionally you will encounter errors. This article is laid out in a logical troubleshooting order. It is recommended that you try these steps in order. After each step it is also recommended that you try to reproduce the error that you were getting initially. If the problem continues, go on to the next step.

Some of the following troubleshooting steps require good working knowledge of computers and Windows. It is advised that you seek the help of others if you are unclear or uncomfortable with performing these steps.

1. ADJUST VIRTUAL MEMORY / SWAP FILE
Virtual memory should be setup as permanent and should be at least twice the size of the amount of physical RAM that you have in your system. If a Permanent Swap File has already been established, then it is recommended that the permanent swap file be deleted and recreated. Deleting and recreating a Swap File is as easy as disabling Virtual Memory, restarting Windows, and then turning the Virtual Memory back on.

2. BOOT YOUR SYSTEM CLEAN
When booting a system clean, it is recommended that you boot with only HIMEM.SYS loaded in the CONFIG.SYS and nothing in your AUTOEXEC.BAT. If other TSRs or device drivers are necessary to boot your system, such as SCSI drivers or disk compression drivers, they should also be included. Booting with just HIMEM.SYS is all that is required to run Windows and ANY Claris 32-bit application.

Booting a system clean with DOS 6.0 or above is a simple process. Just restart your system and press the F8 key when you see the STARTING MS-DOS prompt come up. This will allow you to step through and confirm the loading of each line in your CONFIG.SYS and AUTOEXEC.BAT file. Remember to say no to everything except for HIMEM.SYS (and anything else you absolutely need).

If you do not have DOS 6.0 or above it is recommended that you create a bootable diskette with the above suggestions.

Error messages when launching Windows and slow performance are to be expected. The error messages can be ignored as long as they do not prevent you from getting into Windows.

PLEASE NOTE: Booting your system clean is not a permanent solution. The next time you start up your system normally you run the risk of the error returning. If booting your system clean fixes the errors you are getting, it is advised you consult with your PC vendor on how to better configure your system.

3. START WINDOWS CLEAN
There are three things to check when starting Windows with a basic configuration.

The first thing is to check the LOAD and RUN lines in the WIN.INI file. These files can be looked at and edited with ANY text editor. It is recommended that you comment out these two lines to prevent them from being executed. To do this, place a semicolon (;) in front of each line and save the file. The next time Windows is run, these two lines will be ignored.

The second thing to do is to check the Windows Startup Group. If there are any icons in the STARTUP Program Group they should temporarily be relocated to another group so they are not executed. After moving these icons, the next time Windows is run they will not be processed. You can also hold down the SHIFT key when restarting Windows to bypass anything in the STARTUP Program Group.

The last thing to check is the Windows Task List. Holding down the CTRL+ESC keys brings up the TASK LIST and shows everything that is running in the background when running Windows. The only thing that should be on this list is the PROGRAM MANAGER (or equivalent).

PLEASE NOTE: Starting Windows clean is not a permanent solution. The next time you start up your system normally you run the risk of the error returning. If starting Windows clean fixes the errors you are getting, it is advised you consult with your PC vendor on how to better configure your system.

4. CHECK YOUR VIDEO DRIVER
NOTE: This step may require the use of your Microsoft Windows diskettes. Make sure they are available before continuing.

It is recommended that you try reproducing the error using the Microsoft VGA driver. Older video drivers may not be compatible with Win32s and may need to be updated. Additionally, some drivers for video cards based on the S3 chip are not compatible with Win32s applications. To determine if your video card is based on the S3 chip or to inquire about updated drivers, please contact your video card vendor.

5. CHECK HARD DRIVE

It is recommended that your hard drive be checked for minor damage and/or fragmentation. Microsoft, as well as some third-party developers have created disk analysis and repair utilities as well as utilities to optimize disk performance. Two such utilities that ship with DOS 6.x are SCANDISK and DEFRAG. Any equivalent utility can be used.

6. VERIFY CONFIGURATION OF THE WIN32S SUB-SYSTEM
It is very important for the Win32s sub-system to be installed correctly for any Win32s based application to function properly. To confirm the configuration of Win32s on your system, there are three things to check.

The first thing to do is to verify that the /WINDOWS/SYSTEM/WIN32S directory exists. If it does not exist then your Claris application should be reinstalled.

The second thing to do would be to test to see if you can run the FREECELL card game without error. The FREECELL card game is installed, by default, when you install Win32s. If FREECELL does not run, then your system is having a fundamental problem running 32-bit applications. Contact Microsoft Technical Support for additional information.

The last thing to do is to configure Win32s to load last in your SYSTEM.INI file. During the installation of your Claris application, it modifies the SYSTEM.INI file to load drivers necessary for Win32s to function properly on your system. By default the installer loads the Win32s driver at the top of the 386 Enhanced ([386Enh]) section of the SYSTEM.INI. Edit the SYSTEM.INI file and move the reference to Win32s from the top of the 386 Enhanced section to the bottom of the 386 Enhanced section.

7. DELETE AND REINSTALL YOUR WINDOWS BASED CLARIS APPLICATION
NOTE: It is recommended in this step that you back up your data files to prevent accidental deletion of them.

Occasionally important application files get corrupted or misplaced. Claris Windows applications come with an automated uninstall utility. The one drawback to using this utility is that it does not have the ability to automatically remove the Win32s sub-system. Therefore Win32s will need to be removed manually. Below are some basic steps in removing Win32s from your system. If you need further explanation of how to do this please see the TechInfo article "HOW TO UNINSTALL WIN32S FROM YOUR SYSTEM."

- remove the "device=c:\\windows\\system\\win32s\\w32s.386" line from your SYSTEM.INI
- remove WINMM16.DLL from the DRIVERS line in the BOOT section of the SYSTEM.INI
- delete W32SYS.DLL, WIN32S16.DLL, and WIN32S.INI files from the SYSTEM directory
- delete the WIN32S directory

Once your Claris application AND Win32s are removed, reinstall the application per the install instructions that came with your software.

8. OBTAIN THE LATEST VERSION OF THE WIN32S SUB-SYSTEM
The latest version of Win32s, as of 19 Mar 1996, is 1.30. Other Win32s applications that you might have installed since installing your Claris application may have updated the version of Win32s already. To check the version of Win32s that is currently running on your system, examine the WIN32S.INI file located in your SYSTEM sub-directory. This file contains version information, among other things.

If the version shows 1.30.XXX or greater than that indicates you have the latest version of Win32s and there is no need to update. The latest version of Win32s can be downloaded from the Microsoft BBS at 206-936-6735. The name of the file, as of 19 Mar 1996 (when this article was written), is PW1118.EXE. It is also available on the Internet at http://www.microsoft.com/kb/softlib/mslfiles/PW1118.EXE

9. RENAME THE WIN.INI FILE IN YOUR SYSTEM DIRECTORY
Renaming this file and restarting Windows will start Windows in a generic configuration. Fonts, printers, and other parameters may not function properly. If you are unable to reproduce the errors you are getting after renaming the WIN.INI, that indicates that there is something in that file that is causing a problem or the WIN.INI file has become too large for Windows to manage properly.

Troubleshooting its size and/or contents goes beyond the capability of this article or our Technical Support to assist you. At this point, it is recommended that you contact Microsoft Technical Support for information on managing your WIN.INI file.

If this does not fix the errors you are receiving, it is highly recommended that you rename your WIN.INI file back so your Windows environment functions properly.

10. REINSTALL WINDOWS & YOUR CLARIS APPLICATION IN A NEW DIRECTORY
At this point evidently there is something in your existing Windows configuration that is not compatible with your 32-bit Claris application. To confirm this, it is suggested that you installed a NEW copy of Windows in a different directory and then install your CLARIS application based on this version of Windows.

This is a drastic step and requires at least 20 megabytes of free disk space to perform. Make sure when installing Windows again that you choose a CUSTOM SETUP and that you pick a different directory for Windows other than the one it is already in.

Please consult your Microsoft documentation for further information on installing and reinstalling Windows.

Once Windows is installed, install your Claris application based on the new version of Windows.

11. WRAPUP

There are some systems out there that for some reason or another are not compatible with Win32s. If you have gone through all 10 troubleshooting steps and are still getting errors it is possible that your system is incompatible.

Here are some other things to keep in mind when troubleshooting Win32s errors:

*** Is it File Specific? -- If you can only reproduce the error you are getting when using a specific file, it is possible the file is damaged or corrupted. Contact Technical Support for more information.

*** Do you have the latest drivers? -- If you get a Win32s error when trying to print, for example, it may be due to an outdated or buggy printer driver. Contact your printer vendor for more information on updating your driver. SCSI drivers, memory managers, and other device drivers may also need updating.

*** Can you reproduce this error on another machine? -- If you have other machines at your disposal, try reproducing the problem on the other machines. If the problem follows the machines around it may be the way they are all configured or it could indicate a problem with a particular data files you might be using.

*** Keep in mind it is impossible to get a Win32s error in Microsoft Windows 95. -- If all else fails you might want to consider updating to Windows 95. Since your Claris application is already 32-bit not only will it be more stable but it will also run much faster under Windows 95 in most configurations. Windows 95, being a 32-bit Operating System already, does not need the Win32s sub-system so it is ignored if installed.

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Checking The Version Of Win32s Installed On Your System

There are several different versions of Win32s out there and depending in the Claris application you are using, it requires a particular version. This is a quick and easy way to determine what version may already be installed on your system

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Win32s is a sub-system created by Microsoft for the Windows 3.x and Windows for Workgroups 3.x operating systems. The Win32s libraries allow Windows 3.x and Windows for Workgroups 3.x users to run 32-bit applications in a 16-bit environment.

Since its inception, Win32s has been updated several times. Depending on the Claris application, or other Win32s based application you are using, it might be important to know about and use a particular version of Win32s. All Claris applications come with the required version for that application. However, if other applications also install their own version of Win32s it is very easy to not know what version of Win32s is installed on your system and if it is compatible with your Claris application.

To confirm the version of Win32s that is installed on your system, one of two methods may be used.

1. CHECK THE VERSION IN THE WIN32S.INI FILE.
The WIN32S.INI located in your \\WINDOWS\\SYSTEM subdirectory. It is a small configuration file that you can view with any text editor. Additionally, if Windows is configured to view INI files, you can double click on the WIN32S.INI file in the File Manager. It will bring up information similar to the following:

```
[Win32s]
Setup=1
Version=1.30.166.0

[Nls]
AnsiCP=1252

[Freecell]
Setup=1
Version=1.30.166.0

[OLE]
Setup=1
Version=2.3.130.166
```

In the above example, the version of Win32s is 1.30.166

2. CHECK THE PROPERTIES OF THE WIN32S16.DLL
The WIN32S16.DLL file is located in the \\WINDOWS\\SYSTEM directory. It is a library file used by Win32s. The version of Win32s can be checked by checking the Properties of this file in the File Manager. Locate the WIN32S16.DLL file and click on it one time to highlight it. With the file highlighted, select PROPERTIES from the FILE menu of the FILE MANAGER to view the version.

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Using ImageWriters Overseas

How do I adapt an ImageWriter I or II for European power 220V 50Hz?

This article has been archived and is no longer updated by Apple.
The ImageWriter I printer requires a grounded, step-down, isolation transformer when used with a 220V power source. Using the ImageWriter I printers on a 50Hz source can noticeably affect spacing between characters.

There are already several articles in the Tech Info Library that discuss the ImageWriter II:

- "Part Available For Using ImageWriter II And ImageWriter LQ Overseas"

- "Electrical Specifications of Most Apple Hardware"

- "Using Apple Equipment Overseas"

- "Traveling with an Apple" contain more information.

Use the search criterion of "Overseas".

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Macintosh Portable: How To Disable Rest Mode (11/94)

My Macintosh Portable cycles the clock speed down after a few minutes when running programs. What's going on?

This article has been archived and is no longer updated by Apple.
The slowdown that you are experiencing is actually called Rest Mode.

The Power Manager processor monitors the amount of time the Macintosh Portable has been inactive. After a period of 15 seconds without any activity, the unit goes into Rest mode. It causes the CPU to insert 64 wait states into RAM and ROM accesses, which lowers the effective clock rate to approximately 1MHz. Interrupts continue to be processed at the same rate. As soon as the trackball or mouse moves, or any peripheral device is activated, the computer returns to full speed instantly.

The following items are checked and stop the unit from entering rest mode:
- Mouse movement
- I/O activity (keyboard, trackball, modem, and so on)
- Cursor change
- Serial port access

This feature can be turned off when running Video Works or some other program that avoids detection by the rest routine. You can disable rest mode by doing this:

1) Enter the Control Panel DA and select the Portable CDEV.

2) Hold Down the Option key and press on the words "Minutes Until Automatic Sleep".

3) Click "Don't Rest" in the dialog box that appears and select "OK".

Article Change History:
17 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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Data Charts Update Incorrectly Using DataDraw When Importing Long Values as Column Headings

DataDraw adds an extra column to the data table when updating a data chart that uses a long value from the last field in the first record of the text file as a column heading.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

In ClarisImpact 2.0, DataDraw will update a data chart incorrectly under certain circumstances. When you have a text file where the first record is imported as column headings and the value in the last field in that record has a long name, DataDraw will add an extra column to the data table linked to the data chart when it updates that graphic.

Although this extra table column does not show on the screen, it is used for charting. This can produce unexpected results. In a bar chart, an extra category will appear in the legend. In a pie chart, the size of the pie will change to accommodate the second pie that DataDraw expects to create from the additional column of data.

The work around is to shorten the value that causes DataDraw to add the extra column. For example, if you export a Merge formatted text file from FileMaker Pro, the first line could look something like this:

Product_Name,Product_Count

In this case, these are the field names from FileMaker Pro (with an underscore substituted for a space). Changing the name of the second field from "Product Count" to "Count" in FileMaker Pro and exporting the data again will eliminate the problems when the graphic is updated.

Note that when the chart is initially created, you will see no evidence of this issue. It will appear only after the graphic has been updated.

The ClarisImpact Development Team is aware of this issue.

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Emailer: Using AppleScript to Close MacPPP

This article has been archived and is no longer updated by Apple.
Because there is no direct interface between Claris Emailer and MacPPP we have to rely on AppleScript to close MacPPP. This is necessary because Claris Emailer cannot cope with a user-initiated hard close, if you use a hard close in MacPPP you will have to restart your Macintosh so that Claris Emailer can again access the port.

Claris Emailer includes AppleScripts which will open MacPPP, connect, gather mail then close PPP when finished. The purpose of this article is to take you through the process of configuring a machine to take advantage of this feature.

You will need:

"Internet using MacPPP" scripts. Installed in the AppleScripts for Schedules folder in the Support Files folder in the Claris Emailer folder. These need to be moved before you use them - place the "Internet using MacPPP" scripts in the AppleScript folder in the Claris Emailer Files folder.

MacPPP Control 1.4. THIS IS NOT INCLUDED WITH THE CLARIS EMAILER PRODUCT, this can be obtained from our WEB/FTP site. Make sure you are using version 1.4. This is to be installed in the Scripting Additions folder in the Extensions folder.

MacPPP. For Macs running Open Transport you need to be running FreePPP 1.0.5. For Macs running MacTCP (so-called Classic Networking) you should be running FreePPP 1.0.5 or MacPPP 2.2.0a.

Mac/FreePPP consists of two components: a control panel called ConfigPPP and an extension called PPP.

This will be further complicated with the imminent release of FreePPP 2.5 which will supplant previous versions of BOTH MacPPP and FreePPP. It will consist of an extension, PPP and a new control panel Setup FreePPP. In theory, FreePPP 2.5 should be the choice for both Open Transport and MacTCP when it is released.

Housekeeping, or caught between a soft and a hard close.

There is now a choice of two scripts for controlling PPP: Internet using MacPPP (Soft) and Internet using MacPPP (Hard). Internet using MacPPP (Soft) uses a soft close when it completes a connection, while Internet using MacPPP (Hard) uses a hard close. Using a hard close avoids a problem that MacPPP occasionally has with dialing, but when using the hard close script, you cannot do a Connect Now between scheduled connections.

If a customer is content to do only scheduled connections, use Internet using MacPPP (Hard). If they want to be able to do Connect Now, use Internet using MacPPP (Soft).

The script assumes the application is called Claris Emailer 1.0v3. If your copy of Claris Emailer is not called Claris Emailer 1.0v3, the script may prompt you to locate Claris Emailer 1.0v3 or you may edit the script.

The script connects to the default account of the Internet service. You can also connect to another service or a specific account by editing the script.

In Claris Emailer, create a schedule that will execute this script. Select AppleScript from the Execute pop-up menu and select the script from the AppleScript pop-up menu.
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ClarisDraw 1.0v3 for Macintosh: Readme

This is the Read Me file that ships with ClarisDraw 1.0v3 for Macintosh. It details the changes since ClarisDraw 1.0v1.

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This article has been archived and is no longer updated by Apple.

ClarisDraw Important Information ?? 1.0v3

This file contains last-minute information that will help you get more from ClarisDraw. You will also find important tips in the "Troubleshooting" section of ClarisDraw's onscreen Help.

Hard Disk Space Needed During Installation

To save hard disk space, the "Easy install" option places all ClarisDraw files and only a minimal set of ClarisArt files on your hard disk. To install all of the ClarisArt files, relaunch the Installer, go to "Custom" install, and select the 'ClarisDraw ClarisArt' option.

During installation, ClarisDraw will temporarily require more hard disk space than it needs after installation is completed. This is because, during installation, the ClarisDraw Installer places compressed copies of the ClarisDraw files on the hard disk, then makes decompressed copies of these files. Once installation is successfully completed, the Installer automatically deletes the compressed files and leaves only the new, uncompressed files for your use.

Power Macintosh Installation

The "Easy Install" option places on your hard disk the appropriate Macintosh or Power Macintosh version of ClarisDraw, depending on the Macintosh being used. If you'd like to install both the Macintosh and Power Macintosh versions on any machine, use the following steps:

--Use the Easy Install option to install one complete set of files, then Quit the Installer.

--Open the 'ClarisDraw Folder' that was just installed and rename the ClarisDraw application appropriately (example: 'CD Macintosh' or 'CD Power Macintosh')

--Open the Installer a second time, choose "Custom" and select either 'ClarisDraw Application Macintosh' or 'ClarisDraw Application Power Macintosh', depending on the version previously installed.

When this installation is completed, both applications will be located in the same folder and will use the same auxiliary files.

Important: The Power Macintosh version will not run on a conventional Macintosh.

Memory

Occasionally in low memory situations an alert will appear stating "There is not enough memory to complete this operation". This is particularly common when working with paint frames, and is typical of any application with a paint feature. We suggest saving your document before continuing. If you are working with large documents and find yourself in this situation frequently, we suggest increasing the application's memory partition as described in the ClarisDraw onscreen help, or your Macintosh User's Guide.

Bad Fonts

ClarisDraw tests for bad fonts when the application is first opened. It also tests for bad fonts when opening the application after fonts have been added to your system. ClarisDraw creates a 'Claris Fonts' file which is used to display fonts in their actual typeface in the Font menu. If ClarisDraw encounters a bad font, or one that it cannot correctly add to the Claris Fonts file, an alert is displayed indicating that some fonts may be bad. These fonts will be listed in a 'Bad Fonts' text file in the Claris Folder, which is located in your System Folder. Additionally, these fonts will be displayed in the Chicago font in ClarisDraw's FONT menu. We suggest removing or replacing these fonts from your system before using ClarisDraw. Refer to the manual that came with your Macintosh for instructions on how to remove or replace these fonts. Once these fonts have been removed or replaced, throw away the 'Claris Fonts' file, also located in the Claris folder, and open ClarisDraw.

There may be some fonts that work properly in ClarisDraw and still fail our tests. The only difference between these and other fonts is that they will be displayed in the Chicago font in the Font menu. However, we suggest performing the following simple tests on these fonts before using them in the application:

1) Create some text in ClarisDraw and apply the font. If the application unexpectedly quits, this font is bad and should be removed or replaced immediately.

2) If the application does not quit when the font is applied, create multiple pieces of text, apply several different font sizes, and print the file. If the

font appears correctly on screen and when printed, then there is no need to replace or remove this font.

Exporting Documents with Bezigons Created from Text

If you create a document that includes bezigons created from text, and then save this document in EPSF, CGM, MacDraw Pro or MacDraw II format, you may see extra lines in the converted document, both onscreen and when printing. This is a limitation of Apple's "QuickDraw" object-drawing technology.

Opening or Saving Color Palettes

ClarisDraw ships with several specialized 256-color palettes. You can access these palettes by opening them from the "Colors & Gradients" dialog box in the Layout menu. Make sure that you select the 256-color palette first; the "Open" and "Save" buttons will then become available.

Illuminated Letters Library

If your drawing includes objects from the Illuminated Letters library, and you need to scale these letters, for best results do not resize a letter by manually stretching it. If you do that, the letter or number background will scale accurately, but the enclosed letter or number will not because it is an actual piece of text. Instead, use the "Scale Selection" feature from the ARRANGE menu, with the "Scale text" option selected.

ClarisDraw 1.0v3 Detailed Improvements

Claris periodically issues maintenance releases of shipping software applications. A maintenance release is identified by v2, v3, v4, etc. numbering. The improvements made in ClarisDraw 1.0v2 and ClarisDraw 1.0v3 are included in this package and are detailed below.

Better Integration with ClarisDraw for Windows
--ClarisDraw for Windows files (.cdd and .cdt) open directly from the Open File Dialog
--Wrapped text created in ClarisDraw for Windows appears correctly
--Improved import of graphics with rotated and grouped objects from ClarisDraw for Windows
--When ClarisDraw 1.0v3 is launched for the first time, a text file is created in the Claris folder named Claris Font Map, containing the following entries:
Arial=Helvetica
Courier New=Courier
Fixedsys=Monaco
Modern=Helvetica
MS Sans Serif=Helvetica
MS Serif=Times
Script=Geneva
Small Fonts=Geneva
System=Geneva
Terminal=Geneva
Times New Roman=Times
Wingdings=Cairo
A font named on the left in a ClarisDraw for Windows document will be mapped to the corresponding Macintosh font named on the right when opened in ClarisDraw 1.0v3. This list may be edited and augmented as needed by the user.

Improved Translation of MacDraw Pro Files
--Landscape documents import as landscape
--Spell checking imported MacDraw documents works correctly
--Text objects maintain correct text wrap
--Rotated text objects import correctly

System Conflict
--Memory is properly managed so closing Desk Accessories after use no longer causes a operating system conflict.

Miscellaneous
--Resizing multiple lines with arrows at end retains correct arrow orientation
--Fixed a problem printing the ClarisDraw help files to Hewlett Packard printers
--Improved printing multiple documents from the finder
--Drag selecting text now also selects the last character
--In the first row of text, up arrow goes to beginning of line
--In the final row of text, down arrow goes to end of line
--Corrected map of Japan in ClarisArt library
--Corrected images in the code flags and map symbols libraries

ClarisDraw 1.0v2 Detailed Improvements

TA43505_ClarisDraw_v_for_Macintosh_Readme.pdf

Improved Translation of MacDraw Pro Files
--Text blocks import with correct size, and without wrapping
--Document size and page orientation information are properly imported
--Extremely fine pen sizes import at ClarisDraw's minimum available size, rather than being imported at a pen width of zero.
--MacDraw II and MacDraw Pro documents with rotated polygons import with all polygons accurately placed
--Objects in MacDraw Pro files opened in ClarisDraw for Power Macintosh print properly to Postscript printers.
--MacDraw Pro files containing PICT objects import completely and with correct size and proportion

Improved compatibility with ClarisImpact
--Imported ClarisImpact files retain correct ruler settings
--ClarisImpact files with rotated models, groups or tables import properly
--ClarisImpact files with all objects locked import properly

Import and Export Improvements
--Text in files saved as a PICT, then reopened and ungrouped, retains its proper color
--Pen size is properly translated when exported to CGM format
--Arrowheads properly export to CGM format
--Inappropriate "insufficient memory" error dialog eliminated when saving large PICTÊfiles as MacDraw II or MacDraw Pro.
--Resolution of bitmapped images properly preserved when exporting to MacDraw II or MacDraw Pro
--Black and white (one-bit) files export to EPSF with only the necessary information, so they remain reasonable in size
--White text, copied to the Clipboard along with colored text, does not change the way colored text is displayed on screen after you switch to the Finder and back
--QuickTime movies export properly

Improved Printing
--Print range settings work properly with slides and handouts
--Rotated, colored text prints properly with the Apple LaserWriter 7.x driver
--Polygons and bezigons print and display properly when exported or copied from ClarisDraw, then imported or pasted into other applications and printed to a Hewlett-Packard DeskWriter printer

System Conflict
--Pop-up tools are now properly available when using System 7.1 on a Macintosh Plus, SE, Classic, PowerBook 100, or Portable

Miscellaneous
--The CommercialPi BT font displays correctly in the Font menu and in text
--ClarisDraw properly launches with a wider variety of corrupted fonts installed
--Proper line spacing is preserved even if a single line of text contains characters of varying point sizes, and line spacing is changed to a measurement other than Lines
--Objects snap correctly to the grid under a wider variety of situations
--Screen objects display properly after using the spellchecker while viewing the Master Slide
--Colors in the gradient editor display properly when in paint mode with a paint frame set for thousands or millions of colors
--Library object "thumbnails" retain their proper size in Name View
Published Date: Feb 18, 2012

ClarisWorks for Windows: Internal Spelling Error SPL01 When Spell Checking

This error can occur in ClarisWorks 3.0 and ClarisWorks 4.0 for Windows and seems to be related to the USER dictionary in one form or another

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

When spell checking a document in ClarisWorks 3.x for Windows or ClarisWorks 4.0v1 for Windows 95, it is possible to receive the following error message:

INTERNAL SPELLING ERROR SPL01

This error is caused by a problem with the way ClarisWorks is configured to use the USER dictionary that is installed on your machine. Please consult the troubleshooting tips listed below depending on the version of ClarisWorks that you are using. The steps below do require an intermediate comfort level with Windows, if you are uncomfortable with making the changes suggested below, please consult a technician. To verify which version of ClarisWorks you are using open Claris Works and go to the Help menu and choose About ClarisWorks.

CLARISWORKS 3.x
Most likely this error is being caused by a corrupted USER dictionary. To confirm this the USER dictionary should be deleted and recreated. Any new words that you had ClarisWorks "learn" during previous spell checks will be lost. By default, the ClarisWorks 3.x USER dictionary is called USER.USP and is located in your CLARIS directory. This file, or it's equivalent should be deleted or renamed before recreating the new file.

To recreate the USER dictionary file follow these steps.
1. Choose WRITING TOOLS from the EDIT MENU
2. Choose SELECT DICTIONARIES
3. In the SELECT DICTIONARIES dialog box, choose USER DICTIONARY from the SELECT DICTIONARY drop down list
4. In the FILE NAME box, type in a new name for your dictionary (i.e, USER) and click on the NEW button.
5. Close ClarisWorks

The next time you restart ClarisWorks, it will activate the new USER dictionary

CLARISWORKS 4.x
Most likely this error is being caused by ClarisWorks being configured to use an invalid USER dictionary. In this case all that needs to be done is to configure ClarisWorks to use the proper USER dictionary.

To switch what USER dictionary is being used in ClarisWorks 4.x follow these steps:
1. Choose WRITING TOOLS from the EDIT MENU
2. Choose SELECT DICTIONARIES
3. In the SELECT DICTIONARIES dialog box, choose USER DICTIONARY from the FILES OF TYPE drop down list
4. Confirm that the CURRENTLY SELECTED DICTIONARY is not already configured to a valid USER dictionary. A valid USER dictionary should have a USP file extension. If this appears to be configured correctly, then your USER dictionary could be corrupt and needs to be replaced.
5. Navigate through your directory / folder structure until you locate the USER.USP file and double click on it.
6. Close ClarisWorks

When you restart ClarisWorks, it will activate the new USER dictionary.

If you find it necessary to recreate your USER dictionary, follow these steps
1. Delete your old USER dictionary (the file with the *.USP extension)
2. Choose WRITING TOOLS from the EDIT MENU
3. Choose SELECT DICTIONARIES
4. In the SELECT DICTIONARIES dialog box, choose USER DICTIONARY from the FILES OF TYPE drop down list
4. In the FILE NAME box, type in a new name for your dictionary (i.e, USER) and click on the NEW button.
5. Close ClarisWorks

When you restart ClarisWorks, it will activate the new USER dictionary.
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Claris Products: International Country Codes

Claris products (besides the U.S. English versions) have a language code, which indicates the language that they are localized in. This is a guide to all of the codes.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
International versions of Claris products have a Language code (one or two letters), the US English products do not. This Language code is placed between the version and the revision letter. For instance a Spanish version 4.0v1 of ClarisWorks (4.0 is the version and v1 is the revision) will be : "ClarisWorks 4.0Ev1".

Language code.....Language

AB.....Arabic
B.....British
BR.....Brazilian Portuguese
CA.....Australian
CD.....Canadian-English
CF.....Canadian-French
CH.....Simplified Chinese
CR.....Croatian
CT.....Traditional Chinese
CY.....Russian
CZ.....Czech
D.....German
DK.....Danish
E.....Spanish
F.....French
FA.....Farsi (Persian)
G.....Greek
GE.....Irish
H.....Norwegian
HB.....Hebrew
J.....Japanese
K.....Finnish
KH.....Korean
L.....Iceland
MG.....Hungarian
N.....Dutch
P.....Portuguese
PO.....Polish
RU.....Rumanian
S.....Swedish
SD.....Swiss German
SF.....Swiss French
T.....Italian
TU.....Turkish
UA.....Ukrainian
UE.....US Spanish
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ClarisDraw 1.0v2 for Windows: ReadMe.txt

This is the complete ReadMe.txt file that ships with ClarisDraw 1.0v2 for Windows. A detailed list of changes from ClarisDraw 1.0v1 appears toward the end.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

WELCOME TO CLARISDRAW 1.0!

This Read Me file contains technical notes and tips that may prove helpful when you use ClarisDraw 1.0, as well as the latest news about great features of ClarisDraw.

I. TECHNICAL NOTES AND TIPS

A. Installation

Follow the instructions in the installation guide to install ClarisDraw. You can't copy the files to your hard drive using the DOS copy command, because the files are compressed to fit on fewer disks. The setup program decompresses files during installation.

You must be running SMARTDRV.EXE to install ClarisDraw. Claris recommends using the default values for SmartDrive.

ClarisDraw is a 32-bit application. Before installing ClarisDraw on a computer running Windows 3.1 or Windows for Workgroups 3.11, you must install Win32s, which is included in this package.

Note: If you are using Windows 95, do not install Win32s.

Some virus checking software may interfere with the installer or slow down the installation

process. Turn off any virus checking software before starting the ClarisDraw Installer. You can turn virus checking back on after your installation is successful.

You cannot start ClarisDraw from a directory whose name contains upper ASCII characters (for example é, ©, £). This is a limitation of Win32s.

B. In-box Support Materials

Installation Guide
User's Handbook
Context-sensitive Help system
2,400 piece SmartSymbol® clip art library

C. System Requirements and Compatibility

IBM and compatible personal computers, 386 or higher processor, and a recommended 8Mb of RAM.
Hard disk with 15Mb (to install all clip art libraries) available and Windows 3.1 or higher.
Printers supported: Hewlett Packard LaserJet, PaintJet, DeskJet series. Postscript printers such as Apple LaserWriter, IBM Laser Printers, and a wide variety of other Windows compatible printers.

D. Error messages

If you encounter an error message that indicates there is not enough memory to perform an operation, Claris recommends:
--adjusting your Virtual Memory setting (see Performance tips for

Windows 3.1 and Windows for Workgroups 3.11 below)
--removing any unnecessary drivers and TSRs from the CONFIG.SYS file to free up more memory in DOS
--closing other applications and ClarisDraw documents that are running in the background

If either XTNDGR32.dll or XTNDGR95.dll is not present in the Claris directory, ClarisDraw will not launch. Reinstall the XTND option in Custom Install. (If XTNDGR95.dll is not present, the alert erroneously states "XTNDGR32.dll is not present".)

E. Performance tips for Windows 3.1 and Windows for Workgroups 3.11
32-bit applications such as ClarisDraw 1.0 require that Virtual Memory is on. To improve performance on computers with 8 MB of memory or less, Claris recommends setting virtual memory to permanent and using the suggested size for your virtual-memory setting as displayed in the Virtual Memory dialog box. This value is typically twice the size of physical memory, but should be at least 11,700 K or 11.7 MB.

If the suggested size of virtual memory is less than twice the physical

memory installed on your computer, you might need to increase your free disk space by removing unwanted files or defragmenting your hard disk.

Note: DOS 6.0 users can use DEFRAG.EXE.

To set virtual memory:
1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the 386 Enhanced icon.
2. Click Virtual Memory and then click the Change.
3. Select Permanent from the Type pop-up menu.
4. Click the checkbox next to Use 32-Bit Disk Access. Note: This setting is NOT recommended for laptops running on battery power.
5. Click OK.

If you are an experienced Windows user and you have adjusted your virtual memory settings as described, but still want to improve your system's performance:

--In DOS, run:
DEFRAG
MEMMAKER

--Change the following settings in the CONFIG.SYS file:
FILES=60
STACKS=9,256

--Add the following line to the CONFIG.SYS file:
BUFFERS=10

--Add the following line to the [WINDOWS] section of the WIN.INI file:
DefaultQueueSize=16

--Add the following lines to the [386enh] section of the SYSTEM.INI file:
DMABuffersize=64
XLatBufferSize=128
MaxBPS=768

--Delete the following lines from the [386enh] section of the SYSTEM.INI file:
EGA80W0A.FON...
EGA40W0A.FON...
CGA80W0A.FON...
CGA40W0A.FON...

--Always use SmartDrive!

F. Using ClarisDraw with Windows 95
You cannot launch ClarisDraw 1.0 using the Network Neighborhood feature of Windows 95.

Use a different method to launch ClarisDraw instead (for example, use Explorer).

G. Printing
If you have trouble printing, try installing an updated printer driver, available from your printer manufacturer or Microsoft Corporation. For instructions on installing a driver and configuring your printer, see the the Control Panel information in the Microsoft documentation. ClarisDraw requires a valid default printer driver, NOT the Generic/Text Only driver.

To select or change the default printer:
1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the Printers icon.

2. Select a printer from the Installed Printers list and click Set As Default Printer. If no printers appear in the list, see your Microsoft documentation for instructions on installing printers.

Printing with Hewlett-Packard printers in PCL mode:
Under some conditions, the default settings for printers using PCL mode will not print rotated text correctly. To change the default settings:
1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the Printers icon.
2. Select the printer under "Installed Printers", then click Setup.
3. In the Setup dialog box, click the Options button. Change the Graphics Mode option to "Raster", then click OK for each dialog box. Click Close for the setup box, and exit Control Panel.
(Note: for Windows 95 users, please see your Win95 documentation for changing printer properties).

H. Video cards and drivers
If your screen doesn't display objects correctly, you may have a problem

with your video driver. Try changing the resolution to 640x480 or 800x600 or try changing the number of colors displayed (for example, 256, 32K, or millions of colors).

To verify a video driver problem, change the video driver to Windows standard VGA and run ClarisDraw. If the problem disappears, contact the video card manufacturer for the latest version of the video card driver or use the driver that is included with the Windows installation.

I. ClarisDraw INI file settings
If you experience either of the problems listed below, make the suggested changes to the [ClarisDraw] section of the CLARIS.INI file in your Windows directory:
--Problem:
Color/gradient palettes do not draw completely, or show up with black or missing colors/gradients
Suggested setting:
Cache Palettes = 0

--Problem:
Tools are not drawn correctly, or display as black
Suggested setting:
BitmapTools=0

J. Fonts
If fonts do not display or scale correctly (for example, if they are clipped or overlap), Claris recommends that you:

--Make certain a valid printer driver is selected as the default and that it is NOT the Generic/Text Only driver
--Enable TrueType fonts (see below)
--Make certain the standard Windows fonts, such as Arial, are

properly installed

To delete or reinstall standard Windows fonts, see the Microsoft documentation.

To enable True Type fonts:

1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the Fonts icon.
2. Click TrueType, and then click Enable TrueType Fonts.

K. Sharing ClarisDraw files between the Macintosh and Windows

ClarisDraw 1.0 for Windows has the same file format, user interface, and features as ClarisDraw 1.0 for the Macintosh. You can create a ClarisDraw document in Windows and edit it on an Apple Mac OS computer, or vice versa. Therefore, if you work with both Macintosh and Windows versions of ClarisDraw, or if you collaborate with colleagues who use ClarisDraw 1.0 for Macintosh, you can work without translating files.

To open a ClarisDraw 1.0 Windows file using ClarisDraw 1.0 for the Macintosh:

1. Hold down the Option key and choose Open from the File menu.
2. Choose ClarisDraw in the Show section of the Open dialog box.
3. Double-click on the name of the file you want to convert.

To open a ClarisDraw 1.0 Macintosh file using ClarisDraw 1.0 for Windows:

1. If you are using Windows 3.1 or Windows for Workgroups 3.11, make sure the filenames of the Macintosh ClarisDraw files you want to convert follow DOS filename conventions (8 characters or less) and end with the .CDD extension. (For ClarisDraw Library files, use the .CLB extension.)
2. Open the files in ClarisDraw 1.0 for Windows.

If you want to transfer ClarisDraw files between platforms via 3.5-inch disks, you must use a file transfer program that lets you create and use PC-formatted 3.5-inch disks on a Macintosh. To copy the ClarisDraw files onto a PC-formatted disk, follow the directions in the documentation for the file transfer program you are using. When you use a multi-platform server (such as Novell Netware) to transfer files from a Macintosh to a Windows computer, you can use

the ClarisDraw documents right off the server. No file transfer program is required.

Fonts, margins, page breaks, and some graphics might display differently when a file is transferred between Macintosh and Windows. You might have to adjust the margins and page breaks in the transferred file to restore the original appearance.

You can minimize font problems by installing and using the TrueType fonts that ship with Windows. When you open a file, ClarisDraw first checks to see if each of the fonts in the document is installed in the current system. If a font is not installed, ClarisDraw checks its font mapping information to substitute an appropriate font. Font mapping information is stored in the Claris Font Map file inside the Claris folder in your System folder on Macintosh and in the [ClarisFontMap] section of the CLARIS.INI file in your Windows directory on the PC. If a font is not listed in the font mapping file, it is mapped to Helvetica on the Macintosh and to Arial on the PC.

L. Network installation issues

ClarisDraw can be installed and run simultaneously by multiple users off of a server. See the "ClarisDraw for Windows Installation Guide" for information on how to set up ClarisDraw on a server.

Multiple simultaneous users can share ClarisDraw palettes. However, if simultaneous users edit the same palette, only changes from the last save are

retained. For this reason, Claris recommends that users who access ClarisDraw from a server and who want to customize palettes should store their PALETTES directory on their own hard disks.

Multiple users cannot simultaneously open the same ClarisDraw document or library.

M. Converting MacDraw Pro files to ClarisDraw 1.0 for Windows format

If you have ClarisDraw 1.0 for the Macintosh, use the procedure below to convert MacDraw Pro files. If you don't have ClarisDraw 1.0 for the Macintosh, you will need to acquire the MacDraw Pro Convertor application from Claris*.

To acquire the converter using America Online, use the keyword "Claris", click on the software library icon, choose "Updaters@Utilities" from the list that appears, and click on "MDPro --> C.Draw Win Converter".

To acquire the converter using CompuServe, go "WINCLARIS", click on the Browse Libraries icon, choose "General Info/Utilities" from the list, and click on "Convert2DOS utility to convert M..."

To convert a MacDraw Pro file:

1. Open the MacDraw Pro file in ClarisDraw 1.0 for the Macintosh.
2. Save the file as a ClarisDraw file with a name that follows DOS file naming conventions (8 characters or less) and ends with the .CDD extension (for example, PARIS.CDD).
3. Open the file in ClarisDraw 1.0 for Windows.

N. Paint mode color palettes
In Paint mode, the color palettes each display the default 256-color ClarisDraw palette rather than a palette customized according to the colors in a paint frame.

ClarisDraw 1.0v2 Detailed Improvements

Claris periodically issues maintenance releases of shipping software applications. A maintenance release is identified by v2, v3, v4, etc. numbering. The improvements made in ClarisDraw 1.0v2 and ClarisDraw 1.0v3 are included in this package and are detailed below.

Improved Use of ClarisImpact files

· ClarisImpact 2.0 drawing and presentation files can be read
· More that one art library can be opened simultaneously
· Custom color palettes can be imported
· Improved translation between ClarisDraw and ClarisImpact

Miscellaneous

· Right mouse button shows Windows95 menus
· Black and white CGM images import correctly
· Corrected map of Japan in ClarisArt library
· Corrected images in the code flags and map symbols libraries
· Under Windows95, selecting ClarisDraw Options Template (*.cdt) in the Save dialog will not automatically switch to the Claris directory. An Options file must be located in the Claris directory to be invoked with subsequent File:New commands.
· Under Windows95, orientation of printed bound text with non-standard

fonts to PostScript printers is incorrect with default printer settings. To correct this, open Print Setup, click the 'More' button, PostScript tab, and select Optimized for Portability.

II. GREAT FEATURES OF CLARISDRAW 1.0

A. Cross-Platform Support

ClarisDraw 1.0 is now available for Windows and Windows 95 as well as the Macintosh and Power Macintosh. You can easily exchange files between platforms, because no file translation is required.

B. Great Looking Graphics

Get creative with a broader palette of colors and gradients. Get your work done faster using the object info palette and zooming controls. The ClarisArt libraries contain over 400 new clip art images to increase the variety of high-quality art you can use in your charts and graphics.

C. Breakthrough Graphic Intelligence

SmartSymbol Libraries dramatically speed up the creation of graphics with drag and drop ease, and you can add your own frequently used graphics to a custom library. Editing is easier as you can search and replace objects

dragged from libraries, just as with text.

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* This software is no longer available online through Apple Computer, Inc.

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ClarisDraw 1.0v2: Cannot Open a ClarisImpact 2.0 library

Opening ClarisImpact 2.0 Libraries in ClarisDraw 1.0v2 can cause error messages.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisDraw 1.0v2 cannot open a ClarisImpact 2.0 library. It will display the following message : "This file was created by a newer version of ClarisDraw and can't be opened "

ClarisDraw 1.0v3 fixes this issue (this information is not in ClarisDraw 1.0v3 read me file).
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SAM 2.0: Fix for MPW Linker Problem

SAM 2.0 has a problem with the MPW Linker. It refuses to learn about the MPW Linker adding CODE resources. What can I do?

This article has been archived and is no longer updated by Apple.
Here is the fix for the MPW Linker problem:

1) Open SAM Intercept's resource fork with a HEX file editor (for example, FEdit).

2) Search for this hex string: "210370427ECFB8DE7E3A5C8F2874AE1B".

3) Change it to: "230370427A64DE3E18023C1F0C35E07E".

4) Save the changes.

5) Close the file.

6) Restart your Macintosh.

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ClarisWorks: Footer Only on Page One in Stationery File

How to work around the limitation of no built-in ability to have a title footer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisWorks does not have a built-in command to create a title footer (a footer that only appears on the first page of a multi paged document). Although you can insert a section break at the end of the first page, this is not helpful when creating a stationery or template file. If you create a blank file with a section break, then type into the document, the section break gets pushed down the document as you type.

The workaround described below involves typing what you want to have appear at the bottom of the first page as a text object, placing the object at the bottom of the first page, then using the Text Wrap feature to wrap the document text around the text object.

Here are the steps:
1) Select Show Tools from the View menu
2) Click on the text tool (A)
3) Option+Drag (Macintosh) / Ctrl+Drag (Windows) a rectangle into your document. This creates a text object.
4) Type or Paste in the text you wish to have appear at the bottom of the first page.
The text will be pasted as a separate object on top of the main document frame.
5) Press Enter on the numeric keypad. You'll see the selection / resize handles in the corners of the text object.
6) Drag the object to the bottom of the first page.
7) Drag out the selection handles to the left and right sides of the page guides.
8) With the text object selected, choose Text Wrap from the Options menu and set text wrap to Regular Wrap.
9) Choose Lock from the Arrange menu.
10) Choose Save As... Stationery file from the File menu

The text you type into the document will wrap around the text object.
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ClarisImpact 2.0: AppleScript Dictionary

AppleScript commands for ClarisImpact 2.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The ClarisImpact 2.0 AppleScript dictionary includes only the 6 commands listed below. There is no ability to do a menu item or copy and paste. For additional flexibility in working with other applications such as FileMaker Pro, a solutions developer will need a scriptable third application such as QuicKeys from CE Software.

ClarisImpact 2.0 AppleScript Dictionary

open: Open the specified object(s)
open alias -- list of objects to open

print: Print the specified object(s)
print alias -- list of objects to print

quit: Quit application
quit

run: Sent to an application when it is double-clicked
run

Save Document: Saves the front most document.
Save Document string -- Optional parameter. This is the name of the document you want to save. If not specified the top most window will be saved.
[New Name file specification] -- Optional parameter. This contains a new full path and file name. If not specified the current window name will be used for the filename and the

file will be saved to the application folder if not previously saved.

Close Document: Closes the front most document.
Close Document string -- Optional parameter. The name of the window to close. If not specified the top most window will be closed.
Save boolean -- Required parameter. Do you want the document saved before closing?
[New Name file specification] -- Optional parameter. This contains a new full path and file name. If not specified the current window name will be used for the filename and the file will be saved to the application folder if not previously saved.
Result: 'Null'

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ClarisWorks for Windows 4.x: Files Added During Installation

Here is a breakdown of all the files installed by ClarisWorks for Windows 4.x, as well as all changes that are done to the Windows Registry

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The following files are installed by ClarisWorks 4.0. By default the ClarisWorks installer will create the following directories / folders.

C:\\PROGRAM FILES\\CLARIS CORP\\CLARISWORKS 4.0
C:\\PROGRAM FILES\\CLARIS CORP\\CLARISWORKS 4.0\\ASSISTNT
C:\\PROGRAM FILES\\CLARIS CORP\\CLARISWORKS 4.0\\LIBRARY
C:\\PROGRAM FILES\\CLARIS CORP\\CLARISWORKS 4.0\\STYLES
C:\\PROGRAM FILES\\CLARIS CORP\\CLARISWORKS 4.0\\TEMPLATE
C:\\PROGRAM FILES\\CLARIS CORP\\CLARIS
C:\\PROGRAM FILES\\CLARIS CORP\\CLARIS\\PALETTES
C:\\WINDOWS\\START MENU\\PROGRAMS\\CLARISWORKS 4.0

The following files are installed into the following folders:

\\CLARISWORKS 4.0
clworks.cnt
clworks.hlp
cwintro.hlp
deisl1.isu
font.map
html.hlp
readme.cwk
winsize.dll

\\CLARISWORKS 4.0\\ASSISTNT
addressl.ast
calendar.ast
certific.ast
createla.ast
envelope.ast
homefina.ast
insertfo.ast
newslett.ast
presenta.ast
registra.ast
tablemak.ast

\\CLARISWORKS 4.0\\LIBRARY
arrows.cwl
balloons.cwl
busimage.cwl
community.cwl
comnsymb.cwl
computer.cwl
educatn.cwl
flags.cwl
foods.cwl
globes.cwl
hands.cwl
holidays.cwl
roadusa.cwl
shapbrst.cwl
stars.cwl
tools.cwl
transprt.cwl
usamaps.cwl
weather.cwl
worldmap.cwl

\\CLARISWORKS 4.0\\STYLES
htmlstyl.stl
moretabl.stl

\\CLARISWORKS 4.0\\TEMPLATE
agenda.cws
annlrept.cws
border.cws
certifa.cws
certifb.cws
chkbklgr.cws
clubltr.cws
coverltr.cws
custltr.cws
emergncy.cws
expnsrpt.cws
famfrnds.cws
faxcover.cws
forsale.cws
holidltr.cws
hombudgt.cws
invitea.cws
inviteb.cws
invsttrk.cws
leasprch.cws
letterhd.cws
membdata.cws
memorndm.cws
mortgage.cws
musicvid.cws
notice.cws
perstnry.cws
pressrel.cws
promofly.cws
recipes.cws
resumea.cws
resumeb.cws
todolist.cws
wwwpage.cws

\\CLARIS
ascii.f32
avi.f32
biff.f32
biff5.f32
bmp.f32
cgm.f32
clhyph.dll
clspell.dll
clthes.dll
clworks.lbl
dbf.f32
dif.f32
dostext.f32
eps.f32
fltrsup.dll
htlm.f32
pcx.f32
pict.f32
rtf.f32
sylk.f32
text.f32
tiff.f32
usenglsh.chy

usenglsh.msp
usenglsh.mth
user.usp
wk1.f32
wk3.f32
wks.f32
wmf.f32
worddos.f32
wordwin.f32
wordwin6.f32
wperf60.f32
wperfect.f32

\\CLARIS\\PALETTES
256grays.plt
erthtone.plt
yell_grn.plt
red_yel.plt
viol_mag.plt
cyan_blu.plt
strange.plt
vivid.plt
present.plt
rainbow.plt
pastels.plt
pastel_b.plt
16hues.plt
grad_red.plt
grad_grn.plt
grad_gry.plt
grad_aqa.plt

\\WINDOWS\\FONTS
gillcdb.ttf
arcl.ttf
bodub.ttf
klang.ttf
newber.ttf
old.ttf
scrib.ttf

Besides installing all the above files, the ClarisWorks installer will also make the following changes / additions to your system

Add C:\\WINDOWS\\START MENU\\PROGRAMS\\CLARISWORKS 4.0\\ClarisWorks.LNK
Add C:\\WINDOWS\\START MENU\\PROGRAMS\\CLARISWORKS 4.0\\Introduction to ClarisWorks
Add C:\\WINDOWS\\START MENU\\PROGRAMS\\CLARISWORKS 4.0\\ClarisWorks Help.lnk
Add C:\\WINDOWS\\START MENU\\PROGRAMS\\CLARISWORKS 4.0\\Readme File.lnk
Add C:\\WINDOWS\\SHELLNEW\\clworks.cwk

The installer will also make the following changes to the Registry

'hkey_local_machine\\software\\claris corporation'
'hkey_local_machine\\software\\microsoft\\windows\\currentversion\\uninstall\\clarisworks4'
'hkey_current_user\\software\\claris corp.'
'hkey_local_machine\\software\\microsoft\\windows\\currentversion\\apppaths\\clworks.exe'
'hkey_classes_root\\.cwk'
'hkey_classes_root\\clarisworks.document.4'
'hkey_classes_root\\.cws'
'hkey_classes_root\\clarisworks.stationery.4'
'hkey_classes_root\\.chy'
'hkey_classes_root\\claris.hyphenation'
'hkey_classes_root\\.mth'
'hkey_classes_root\\claris.thesaurus'
'hkey_classes_root\\.msp'
'hkey_classes_root\\claris.maindictionary'

'hkey_classes_root\\.usp'
'hkey_classes_root\\claris.userdictionary'
'hkey_classes_root\\.cwl'
'hkey_classes_root\\clarisworks.library.4'

The Registry is a database, under later versions of Microsoft Windows (95 and NT), that contains startup and configuration information. A Registry Key is a category of information stored in the Registry. Registry data describes user preferences, hardware settings, and other configuration information. The registry keys are the means used to index that data. For more information on the Registry and Registry Keys, please contact Microsoft's Technical Support.

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The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

ClarisWorks: Setting a Default Font In a Word Processing Document or Stationery

Opening a new document, changing the default font, selecting a drawing tool and and saving the document without typing anything does not retain the new default font.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

If you open a new ClarisWorks Word Processing document and change the font, select a drawing tool, then save the file without any other typing, will not cause it to retain the new font setting. This behavior happens only when the only change is the font.

For example:

1) Open a new document. Set the font to the font you desire.
2) Select any tool on the palette. It doesn't matter if you create an object.
3) Close and save the document.
4) Open the document and begin typing.

You will find that the font will be the original default font, either Helvetica or the font set in your stationery file, if you have one.

Workarounds:

1) Open a new document. Set the font to the font you desire.
2) Change another character setting, such as size or style.
4) Save the file.

OR

1) Open a new document. Set the font to the font you desire.
2) Type a space. The font of that space is now your selected font.
3) Move the cursor back to the beginning, to the left of the space.
4) Save the file.

Published Date: Feb 18, 2012

TA43516_Ethernet_Bridges_and_Routers_(TIL05688).pdf

Ethernet: Bridges and Routers

I need to have 20 Macintoshes on an Ethernet network but want to isolate them from the backbone. I like the Internet router, but need IP routing. Is there a bridging product that supports multiple protocols and does Ethernet-to-Ethernet bridging? Does DEC have such a product?

This article has been archived and is no longer updated by Apple.
Bridges operate at the datalink layer level and are usually indifferent to network protocol. Routers operate at the network layer level and route only specific protocols.

DEC does have bridges that "routes" IP, as do Cisco, CableTron, Ungermann-Bass, Redix, NCS, ACC, and so on. Be aware, however, that some of the older bridges may not pass both 802.3 and Ethernet packets. If you want to isolate the network segment from the backbone, yet route IP and AppleTalk packets, Cisco is one example of the many companies that can provide this support (product descriptions are on AppleLink). They're among many developers of products sometimes called "brouters" or bridge-router hybrids.

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ClarisWorks 4.0: Macros Don‘t Record Moving Paragraph Indent Markers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

In ClarisWorks 4.0 Macintosh, if you record a macro which includes moving the paragraph indent or first line markers in the ruler, these movements are not recorded.

These marker indents could be recorded in ClarisWorks 2.0. These macros, when converted to 4.0, will probably not run.

The best workaround is to record the macro in ClarisWorks 4.0 using the Paragraph... command to change the indent and first line positions, rather than changing them manually.

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ClarisWorks: Using with WorldScript

Using Apple's Language Kits with ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
WorldScript is the Apple Macintosh technology that allows more than one language's system of fonts, keyboards, and input methods to exist in the system software at the same time. It is available for System 7.1 or later.

ClarisWorks 4.0 and ClarisWorks/AppleWorks 5.0 (U.S. versions) software support the following language scripts:

Roman (The standard English script. This script is also used for Italian, Danish, Dutch, Finnish, French, French Canadian, German, Norwegian, Spanish and Swedish)

Japanese
Chinese (both simplified and traditional)
Cyrillic

These scripts read left-to-right, like English. Please note that the Japanese and Chinese Language Kits allow only left-to-right text in ClarisWorks, not top-to-bottom vertical text.

Scripts that read right-to-left, such as Arabic or Hebrew, are not supported in the U.S. versions of ClarisWorks. Arabic versions or Hebrew versions of ClarisWorks are not available in the U.S. due to distribution agreements, even though the promotional materials, the box, and the Read Me file which ships with the language kits may give the impression that they are.

The only way to use the Hebrew or Arabic Language Kits and have right-to-left text in ClarisWorks is under the following circumstances:

1. The U.S. version of the Mac OS
2. ClarisWorks Hebrew or ClarisWorks Arabic (neither of which is available in the U.S.)
3. The Hebrew or Arabic Language Kit.

For further information, please see the following two TIL articles:

article# 56569: "**Language Kits, WorldScript, and Claris**"
article# 56573: "**ClarisWorks 4.0 is WorldScript Ready**"
Published Date: Feb 18, 2012

Fonts Make It Possible to Create the Appearance of Rotated Fields

Two fonts, TomatoRolledLeft and TomatoRolledRight, make it possible to imitate a rotated field in FileMaker Pro and ClarisWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Although it is not possible to rotate a database field in FileMaker Pro or ClarisWorks, there is a font available called TomatoRolledLeft and TomatoRolledRight that will often produce acceptable results. The characters in these fonts are rotated (left or right as indicated by the name). To use these fonts, enter returns between each character. It is also possible to use a calculation to enter returns between each letter in a field. The following calculation will add returns between the first 5 characters in a field. The calculation can be expanded to handle longer values.

Replace(Replace(Replace(Replace(Field,5,0,"¶"),4,0,"¶"),3,0,"¶"),2,0,"¶")

Both fonts are available in the Software Library areas of online services, or on the Internet via the ftp archives.
Published Date: Feb 18, 2012

What‘s Inside the Extensions Folder of System 7.5.3

A detailed description of what is installed in the Extensions Folder in System 7.5.3.
This article has been archived and is no longer updated by Apple.
About this document

If you're curious about the contents of the Extensions folder, this document provides a brief description of each extension. You can use these descriptions to help determine which extensions you may need and which ones you may not need.

What is an extension?

An extension is a small file that changes how your computer operates. Unlike a control panel, you typically do not have any direct interaction with an extension. An extension makes the appropriate changes when you start your computer and remains active until you shut down your computer.

Depending on the type of computer you have, the contents of your Extensions folder may vary. You might have extensions that were added by third-party applications, and you donÕt need to have all the extensions described below. You can use the Extensions Manager control panel to turn off any extension you donÕt need.

9500 Guide Additions: Adds step-by-step instructions for using features specific to the Power Macintosh 9500 to the onscreen help provided in Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

A/ROSE: Allows communication between your computerÕs main logic board and NuBus cards that run the Apple Real-Time Operating System. Examples of such NuBus cards include the Apple Token Ring 4.16 NB card and the Apple Serial NB card.

About Apple Guide: Provides information about how to use AppleÕs onscreen help system. You can access About Apple Guide from the Guide (question mark) menu when the Finder is active.

AppleCD Audio Player Guide: Provides step-by-step instructions for using the AppleCD Audio Player. You can access the AppleCD Audio Player Guide from the Guide (question mark) menu, after you install and open AppleCD Audio Player.

Apple CD-ROM: Enables your computer to use an Apple CD-ROM drive.

Apple Color Printer: Enables your computer to print documents on an Apple Color Printer.

Apple Color SW Pro CMM: Contains color-matching information used by ColorSync 2.0 to maintain consistent color between documents.

Apple Guide: Adds Apple Guide functionality to your computer. Apple Guide is AppleÕs integrated onscreen help system.

Apple Photo Access: Part of the CD-ROM software for viewing Kodak PhotoCDs.

AppleScriptLib: Provides native support for AppleScript on PowerPC-based computers.

AppleScript: Enables automation of repetitive tasks in applications that support it.

AppleShare: Gives you access to shared disks on the network.

AppleTalk ImageWriter: Enables your computer to print documents on a networked ImageWriter II.

AppleVision Guide Additions: Adds step-by-step instructions to Macintosh Guide about how to use AppleVision displays with your computer. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

Assistant Toolbox: This is the base extension for AutoRemounter. AutoRemounter works on Macintosh PowerBook computers and allows file synchronization, battery management, and easy mobile computing. It also provides support for a persistent RAM disk and deferred printing. This extension may conflict with the LaserWriter Select 310 printer software to block printing. A solution is to turn off background printing in the Chooser.

Audio CD Access: Lets you play audio CDs on your internal or external CD-ROM drive. Requires the AppleCD Audio Player or equivalent application to control the audio CD.

AV Guide Additions: Adds step-by-step instructions to Macintosh Guide about how to use AV monitors with your computer. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

AV Setup: Used to control AppleVision displays.

Caps Lock: Provides a visual indication of the state of the Caps Lock key on a Macintosh PowerBook. When Caps Lock is turned on, an ÒupÓ arrow appears in the menu bar next to the Guide (question mark) menu. (Not needed on Macintosh PowerBook 500 series computers.)

Clipping Extension: Lets you use the drag-and-drop feature to create clipping files on your desktop.

Color Picker: Presents a standard interface for color selection. Applications can use this tool to let you choose colors.

Color SW 2000 Series CMM: Color-matching information used by ColorSync 2.0 to maintain consistent color between documents printed on a Color StyleWriter 2000 series printer and other color devices.

Color SW 2400: Enables your computer to print documents on a Color StyleWriter 2200 or Color StyleWriter 2400.

Color SW Pro: Enables your computer to print documents on a Color StyleWriter Pro.

ColorSync: Matches colors on your display with the closest matching colors on your printers, scanners, and other devices.

EM Extension: Works with the Extensions Manager control panel, which lets you specify which extensions are turned on when you start your computer.

Energy Saver Guide Additions: Adds step-by-step instructions for using Energy Saver to the onscreen help provided in Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

Ethernet (Built-In): Used by Open Transport to allow access to the built-in Ethernet port on your computer.

EtherTalk Phase 2: Lets you connect your computer to an Ethernet network.

File Sharing Extension: Enables your computer to share files and folders with other computers on your network.

Find File Extension: Lets you search for files and view the results in a single window. If you turn off this extension and choose Find from the File menu, youÕll get the System 7.1 Find dialog box instead of the Find File window.

Finder Help: Provides Balloon Help support for the Finder.

Finder Scripting Extension: Allows you to use AppleScript to automate tasks in the Finder.

Foreign File Access: Enables your computer to work with CD-ROM discs whose contents donÕt use the standard Mac OS file system (for example, ISO 9660 or High Sierra formats).

Graphics Accelerator: Provides video acceleration for the PCI video card.

High Sierra File Access: Part of the CD-ROM software that lets you view CDs with High Sierra file systems.

IIci/IIsi Monitors: Describes the capabilities of the built-in video card for the Macintosh IIci and IIsi. If you remove this file, your computer can still use the video card and you can still select the number of colors displayed on your monitor, but monitor options (such as gamma settings) may not be available.

ImageWriter: Enables your computer to print documents on an ImageWriter or ImageWriter II connected to a serial port.

ImageWriter LQ: Enables your computer to print documents on an ImageWriter LQ connected to a serial port.

ISO 9660 File Access: Part of the CD-ROM software that lets you view CDs with ISO 9660 file systems.

LaserWriter: (version 7.2) Enables your computer to print documents on a PostScript printer connected to an AppleTalk network.

LaserWriter 300: Enables your computer to print documents on a Personal LaserWriter 300, LaserWriter Select 300, or a Personal LaserWriter LS.

LaserWriter 8: (version 8.x) A PostScript level II print driver that enables your computer to print documents on a PostScript printer connected to an AppleTalk network.

LaserWriter IISC: Enables your computer to print documents on a LaserWriter IISC connected to a SCSI port. Replaced by Personal

LaserWriter SC.

LW Select 310: Enables your computer to print documents on a LaserWriter Select 310.

MacinTalk Pro: Lets your computer read text documents in human-like voices. Older computers (with 68030 or 020 processors) should use MacinTalk 3 instead.

MacinTalk 3: Lets your computer read text documents in human-like voices. Used by MacinTalk version 3. Computers with 68040 or PowerPC processors should use MacinTalk Pro instead.

Macintosh Guide: Contains step-by-step instructions for working in the Finder. You access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

MacTCP Token Ring Extension: Enables you to connect to a Token Ring network using TCP/IP protocol.

Mailbox Extension: Supports your PowerTalk mailbox. Enables the Mailbox icon to appear on your desktop.

Monitors & Sound Guide Additions: Adds step-by-step instructions for using the Monitors & Sound control panel to Macintosh Guide. You access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

My Speech Macros: Supports the Speech Macro Editor.

Network Extension: Lets you set Personal File Sharing from the Finder.

Network Guide Additions: Adds step-by-step instructions for using your computerÕs network to Macintosh Guide. You access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

ObjectSupportLib: A library developers use to support AppleScript on PowerPC-based computers.

Open Transport Guide Additions: Adds step-by-step instructions for using Open Transport to Macintosh Guide. You access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

Open Tpt AppleTalk Library: Used by Open Transport for the AppleTalk communication protocol.

Open Tpt Internet Library: Used by Open Transport for the TCP/IP communication protocol.

Open Transport Library: Used by Open Transport.

OpenTptAppleTalkLib: Used by Open Transport for AppleTalk communication protocol.

OpenTptInternetLib: Used by Open Transport. for the TCP/IP communication protocol.

OpenTransportLib: Used by Open Transport.

PB 500 Upgrade Guide Additions: Adds step-by-step instructions for using features specific to the PowerBook 500 to Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

PB 190 Upgrade Guide Additions: Adds step-by-step instructions for using features specific to the PowerBook 190 to Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

PB 2300 Upgrade Guide Additions: Adds step-by-step instructions for using features specific to the PowerBook 2300 to Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

PB 5300 Upgrade Guide Additions: Adds step-by-step instructions for using features specific to the PowerBook 5300 to Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

Personal LaserWriter SC: Enables your computer to print documents on a Personal LaserWriter SC or a LaserWriter IISC.

Portable StyleWriter: Enables your computer to print documents on a Portable StyleWriter.

PowerBook Guide Additions: Adds PowerBook-specific topics to Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

PowerBook Monitors Extension: Describes the PowerBook built-in display. If you remove this file, your computer can still use the PowerBook video card and you can still select the number of colors your screen can display, but certain options (such as gamma settings) may not be available.

PowerPC Monitors Extension: Supports the AudioVision 14 monitor.

PowerTalk Extension: Supports PowerTalk services. Includes information used by the PowerTalk key chain.

PowerTalk Guide: Provides step-by-step instructions for using PowerTalk. You can access the PowerTalk Guide from the Guide (question mark) menu, after you install PowerTalk.

PowerTalk Manager: Manages your PowerTalk mailbox and services.

Printer Descriptions: Contains descriptions for all printers that use the LaserWriter 8 printer software.

Printer Share: Provides the ability to share non-network printers (for example, the StyleWriter II) across a network.

PrintMonitor: Controls the printing process when background printing is activated.

Quadra AV Monitors Extension: Describes the capabilities of the built-in video card for the Macintosh Quadra and Centris AV computers. If you remove this file, your computer can still use the video card and you can still select the number of colors displayed on your monitor, but monitor options (such as gamma settings) may not be available.

Quadra Monitors Extension: Describes the capabilities of the built-in video card for the Macintosh Quadra and Macintosh Centris computers. If you remove this file, your computer can still use the video card and you can still select the number of colors displayed on your monitor, but monitor options (such as gamma settings) may not be available.

QuickTime: Provides built-in multimedia support for applications.

QuickTime PowerPlug: Provides native support of QuickTime for PowerPC-based computers when used in combination with QuickTime 2.0. This extension must be used in addition to QuickTime 2.0.

QuickTime Musical Instruments: Supports 30 Roland Standard MIDI sound samples that can be accessed by QuickTime applications with no additional MIDI equipment.

Scripting Additions: Extends the AppleScript language with special features, such as finding the date or time of day. With scripting additions installed, AppleScript acts as if these features are part of the language. Scripting additions are required only when a script uses them.

Serial (Built-In): Used by Open Transport to allow access to the built-in serial port on your computer.

Shared Library Manager: Provides native support for Open Transport.

Shortcuts: Explains common keyboard equivalents and other shortcuts to use in the Finder. You can access Shortcuts in the Guide (question mark) menu when the Finder is active.

SimpleText Guide: Provides step-by-step instructions for using SimpleText. You can access the SimpleText Guide from the Guide (question mark) menu, after you open SimpleText.

Speech Guide Additions: Adds step-by-step instructions for using speech recognition to the onscreen help provided in Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

Speech Recognition: Provides support for speech recognition.

SR Monitor: Used to monitor and interpret speech.

StyleWriter II: Enables your computer to print documents on a StyleWriter II. Replaced by StyleWriter 1200.

StyleWriter 1200: Enables your computer to print documents on a StyleWriter, StyleWriter II, or StyleWriter 1200.

SystemAV: Used for audio-video input.

System Speech Rules: Supports voices and speech dialects.

TokenTalk Phase 2: Used by the Apple Token Ring card.

TokenTalk Prep: Supports TokenTalk Phase II.

Tutorial Items: Provides instructions for learning basic skills on your computer. You can access the tutorial from the Guide (question mark) menu when the Finder is active.

Video Guide Additions: Adds step-by-step instructions for using video to the onscreen help provided in Macintosh Guide. You can access Macintosh Guide from the Guide (question mark) menu when the Finder is active.

Video Startup: Used by the Apple Video Player.

WorldScript Power Adapter: Supports language kit software on PowerPC-based computers.

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January 16, 1996

Published Date: Feb 18, 2012

Claris Applications: EPSF Translator Doesn‘t Export Colors

The EPSF translator used by ClarisDraw and other Claris applications to export and import file information can't fully handle detailed PostScript information. It imports basic color and file data, but loses data when it sends information out that contains spot (Pantone Colors) or process (CMYK) colors.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This is because the filter is not up to the latest PostScript language standards that are used by other high-end graphics applications such as Adobe Illustrator, Adobe PageMaker, Adobe Photoshop, Macromedia FreeHand, and QuarkXPress. Setting the preferences for MacDraw Pro will not hurt the file being exported, but, if you choose no PICT preview for the EPSF translator settings, you will end up with a PostScript error when printing in QuarkXPress. There is no fix for this other than using a color or B/W PICT preview and defaulting to use CMYK separation for the image.
Published Date: Feb 18, 2012

ClarisWorks: Supra‘s FAXcilitate Needs to be Upgraded to 2.x for Compatibility with PCI-based computers and System 7.5.3

FAXcilitate versions prior to 2.x have some difficulty faxing from "some" applications on a PCI-based Macintosh computers running System 7.5.3; one such application is ClarisWorks 4.0vX.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
FAXcilitate 1.7.x exhibits this issue. FAXcilitate 2.x is able to fax from those same applications. Supra is now recommending that users with PCI-based Macintosh computers running system 7.5.3 upgrade to FAXcilitate 2.x.

FAXcilitate 2.1 is the most current version:

NEW FEATURES:

* Power Macintosh Native
* Gray-scale faxing
* Apple Guide Support
* Fully Apple Scriptable
* QuickDraw GX support
* RapidFax supports stylized text. Change the font, size and style of your note.
* FAXQueue Monitor. Faxes are quickly spooled to the FAXQueue Monitor allowing you to go back to work while the fax imaging and sending are done in the background.

FAXcilitate 2.1 was developed by Supra Communications, a Division of Diamond Multimedia, solely for use with Supra and PSI fax modems. Contact them for further information, including updates.

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The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

ClarisWorks: Changing Default Document Settings Using Stationery

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks has the ability to store as a default many settings that are in the Preferences dialog box and other document configuration areas. Examples of such settings might be the default font, default font size, page margins, or even a default logo to place in the header. You can find the instructions in the on screen Help by going to the help index and looking under "stationery, creating."

For ClarisWorks 3.0, 4.0 and 5.0:

1. Setup a new, blank document with all of the parameters as desired.

2. Choose Save As from the File menu.

3. Change the file type from "Document" to "Stationery" by clicking on the radio button next to "Stationery". When the "Stationery" option is chosen ClarisWorks automatically chooses the correct location in which to save the file.

4. Name the file exactly as outlined in the list below, depending on the environment type.

5. Click the Save button.

Note: When creating new documents, a copy of the "options stationery" file that you have just created will open automatically, it is not necessary to choose "Start with an Assistant or Stationery" (version 3.0), or "Use Assistant or Stationery" (version 4.0). If you want to create a new document without the default stationery settings, select a standard document type (such as "Standard Word Processing") from the scrolling list in the New Document dialog box.

For ClarisWorks 1.0, 2.0 and 2.1:

1. Setup a new, blank document with all of the parameters as desired.

2. Choose Save As from the File menu.

3. Change the file type from ClarisWorks to ClarisWorks Stationery in the "Save As" pop-up menu.

4. Name the file exactly as outlined in the list below, depending on the environment.

5. Choose either the ClarisWorks application folder, or the folder named "Claris" (which is located in the System Folder) as the location in which to save the file. Do NOT choose the folder named "ClarisWorks Stationery".

6. Click the SAVE button.

Note: When creating new documents, a copy of the "options stationery" file that you have just created will open automatically. If you want to create a new document without the default stationery settings, hold down the Option key on your keyboard while clicking on the OK button in the New Document dialog box (version 1.0, or choose "None" from the Stationery pop-up before clicking on the OK button (versions 2.0 and 2.1).]

For all versions of ClarisWorks, use the appropriate name from the following list:

ClarisWorks WP Options -- Word Processing Default Options

ClarisWorks DB Options -- Database Default Options

ClarisWorks SS Options -- Spreadsheet Default Options

ClarisWorks GR Options -- Graphics Default Options (For version 1.0)

ClarisWorks DR Options -- Drawing Default Options (For versions 2.0, 2.1, 3.0 and 4.0)

ClarisWorks PT Options -- Painting Default Options (For versions 2.0, 2.1, 3.0 and 4.0)

ClarisWorks CM Options -- Communications Default Options

Published Date: Feb 18, 2012

TA43524_DOS_and_Which_version_is_this_(TIL00569).pdf

DOS 3.2, 3.2.1 and 3.3: Which version is this?

Check two locations to determine which version of DOS your Apple is running.
This article has been archived and is no longer updated by Apple.
These addresses are for a 48K Apple; therefore, subtract $4000 (16384) for a 32K system.

Addresses

DOS	$9D02 (-25342)	$BD84 (-17020)
3.2	$81 (129)	$D0 (208)
3.2.1	$81 (129)	$AE (174)
3.3	$81 (129)	$0B (11)

Published Date: Feb 18, 2012

Adobe Type Reunion and the ClarisWorks Font Menu

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Type Reunion, from Adobe Systems, is a Macintosh System extension that groups all of the fonts of a font families together. It lists the font name once in the Font menu with the various styles of that font (bold, italic, etc.) listed in a sub-menu.

In altering the display of the Font menu, Adobe Type Reunion also disables the option to display the fonts in the menu in their own typeface (showing "Times" in the Times typeface and "Geneva" in the Geneva typeface, for instance). Normally, this feature is an option which can be turned on or off in the ClarisWorks Preferences dialog box. However, if you have Adobe Type Reunion installed, all of the font names in the Font menu will display in the default system font, regardless of the Preference setting. The only way to regain this functionality is to turn off the Type Reunion extension by disabling System Extensions.

Published Date: Feb 18, 2012

Retaining Cell Formatting While Sorting in ClarisWorks (SS)

ClarisWorks will sort cell formatting along with the data. This article explains a method to retain the original formatting in those cases where this changes the look of the spreadsheet.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Formatting information such as cell color is stored as part of the data of a cell. When you sort a range of cells, therefore, the style information will be moved with the data.

On spreadsheets formatted with alternating colors, however, this can destroy the look of the spreadsheet.

Currently, there is no way to prevent this from happening but, by following the next few steps, you can obtain the same affect.

1. Select the range of data you wish to sort and choose Copy from the Edit menu.
2. Select New from the File menu and create a new Spreadsheet document. This document will only be used temporarily so you can close it without saving after you have finished.
3. Select Paste from the Edit menu to paste the data into the new spreadsheet. The style information will also be pasted.
4. Select the range of data you wish to sort, select Sort from the Calculate menu and sort the data as desired. The formatting information at this point will appear incorrect - disregard its initial appearance.
5. Select all the data again and choose Copy from the Edit menu.
6. From the View menu, select the original database.
7. With the same range of data selected in the original database, choose Paste Special from the Edit menu, select the option to Paste Values Only and click OK.

The data will be pasted into the original database in the new order but without the formatting information.

NOTE: The Paste Special feature is primarily intended to remove calculated results from their formula. If the sorted data was derived by calculations, therefore, the formulas will be removed. Solutions to this problem depend greatly on the design of the database. In most cases, you do not need to include calculated cells in the pasted information since they will be recalculated based on the new data.
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ClarisWorks 4.0 Certified Hardware

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 4.0 is certified as fully functional in the following hardware environments:

CPUs
Ambra 486/66 8Mb
AST 486/66 8Mb
AST Bravo MS/P90 16Mb
Canon 486/50 8Mb
Canon MT 9100 P60 16Mb
Comp USA Pentium 60 8Mb
Compaq DeskPro 486/33 8Mb
ComStar 486/66 16Mb
Dell 486/33/L 16Mb
Dell 486/D/25 8Mb
Dell 486/50 16Mb
Dell 486/50 8Mb
Dell 486D/20 12 Mb
Dell 486D/50 12 Mb
Dell Dimension 486/66 16Mb
Dell Dimension 486/66 8Mb
Dell NPS 486/66V 16Mb
Dell NPX P60 16Mb
Dell OMNI Pentium 90 32Mb
Dell Pentium P60 16Mb
Epson Laptop 486/75 16Mb
Gateway 2000 16Mb Pentium
Gateway 2000 24Mb Pentium ATI
Gateway 2000 486/33 8Mb
Gateway 2000 4DX-66P 24Mb
Gateway 2000 Pentium 24Mb
IBM PS/2 model 90 486/33 20Mb
IBM ThinkPad 750c 486/33 20Mb
Micro Express 486 8Mb
Nec 486/33 8Mb
Olivetti 486 8Mb
PC Clone 486/66 8Mb
PowerMac 6100/with DOS card
Toshiba 486 T4400C 12Mb
Toshiba Portege 486 12Mb
Toshiba T6400 486/33 8Mb
Zeos Desktop/66 486 16Mb

Printers
Apple LaserWriter II
Apple LaserWriter IIg
Brother HL-630 (1.00)
Brother HL-645 (1.00)
Canon BJ 10sx
Canon BJ 200e
Canon BJ 200ex
Canon BJ 4000
Canon BJC 4000
Canon BJC 600
Canon BJC 600e
Canon BJC-70
Canon BJC-800
Canon LBP 430
Epson ActionLaser 1400 (1.01)
Epson LQ-1170
Epson Stylus 800
Epson Stylus Color

HP 1200c
HP 4MV
HP 4si/mx
HP 550c
HP 5MP
HP Asterix (Beta)
HP Color LaserJet
HP DeskJet 1200c
HP DeskJet 320
HP DeskJet 500
HP DeskJet 500c
HP DeskJet 850c (6.1d)
HP IIID
HP LaserJet III
HP LaserJet IIIsi
HP LaserJet IIP plus
HP Spruce (Beta)
Lexmark Execjet IIc (3.1)
Lexmark WinWriter 200
Okidata OL410e
Panasonic KX-P1123
Panasonic KX-P4400
Panasonic KXP 2624

Video Cards
PCI Boards:
#9GXE/PCI
#9GXE64/PCI
Actix Graphics/PCI
ATI Graphics Ultra Pro PCI
ATI Graphics Ultra Pro (built in)
Cirrus Logic
Cirrus Logic 5429/30/40
Fahrenheit Pro64 PCI
Graphics Xpression/PCI
Hercules Stingray64/PCI
Kelvin 64
Mach 32
MGA Matrox
NITRO/PCI
Paradise/PCI
S3 PCI
S3 Vision864 PCI
S3 Vision964 PCI
Viper/PCI

VLB Boards:
#9 /924 S3
#9GXE64(S3)
#9GXE64/VLB
Actix Graphics 32VL
ATI Graphics Ultra (Mach8)
ATI Graphics Ultra Pro (Mach 32)
Boca
BocaVortex/VLB
Diamond Stealth 24(S3)
Diamond Stealth 24VL
Diamond Stealth Pro/VLB
ET4000W32
Fahrenheit 1280/VLB
Genoa VGA 24/VLB
Graphics Wonder/VLB
Hercules VLB
MiroCrystal 10SD/VLB
Spider 256/VLB

Spider 32plus (Cirrus Logic)
STB Horizon VLB
STB Horizon VLB (Cirrus Logic)
Trident TVGA/VLB
Tseing 4000
Viper SE/VLB

ISA Boards:
ATI Graphics (Mach 32)
ATI Graphics Ultra Pro (Mach 32)
ATI Graphics Ultra Pro ISA
Cirrus Logic
Diamond Speedstar PRO/ISA
Everex Systems/ISA
Graphics Ultra/A/ISA
Graphics Ultra/mach32/ISA
Match 32
Sigma Design Windstorm/ISA
Speed Star Pro ISA
SpeedStar VGA/ISA
Trident/ISA

Other Boards:
PowerMac video card
Published Date: Feb 18, 2012

Needed: Internet Router-Like Product for IP Routing

Do you know of an IP routing product that works like the AppleTalk Internet Router? Specifically, I am interested in a product that is installed on a Macintosh that does IP routing.

I like the functionality and flexibility of the AppleTalk Internet Router but need IP routing.

This article has been archived and is no longer updated by Apple.
As of April, 1990, there are no IP routing products that work with or like the AppleTalk Internet Router. (We have had repeated requests for this type of product.)

Published Date: Feb 18, 2012

Fixes in ClarisWorks 4.0v2 for Windows 95

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The following issues have been corrected in ClarisWorks 4.0v2 for Windows 95:

1. Receiving an error message, "Internal Spelling Error SPL01," when spell checking in ClarisWorks for Windows.
NOTE: If you received version 4.0v2 in the box, the above issue will never occur.

2. Font corruption issues in files converted from ClarisWorks 3.0 for Windows. Files which were created in 3.0, opened in 4.0, saved, closed, and reopened should no longer exhibit random font/size/style changes.

3. Printing issues. A specific fix corrects the situation where ClarisWorks would crash when attempting to print a spreadsheet document which contained a cell with currency formatting and a value of 0 (zero). More importantly, a general fix corrects various sporadic printing issues associated with a variety of Windows 95 printer drivers (particularly, certain Canon BubbleJet drivers). Because this fix is rather vague, because many of the tested drivers exhibited issues in other Windows 95 applications, and because SQA does not know all of the affected printers, the ReadMe contains only very broad language on this subject, as follows:

"ClarisWorks 4.0 was tested with the printer drivers which ship with Windows 95. If you encounter difficulties while printing, you may be using a printer driver which does not function correctly with Windows 95. Reinstall the printer using the driver that came with Windows 95. Set this printer as the default printer driver."

"If you are having difficulty with a printer driver which was released after Windows 95 shipped (August 1995), make sure you are using the latest version of the driver. If that doesn't work, try going back to the version that shipped with Windows 95. If this fixes the issue, contact that printer manufacturer."

"If you encounter printing errors while printing Gradients to inkjet printers, try the Faster Gradients option. Choose Preferences from the Edit menu. In the Preferences dialog box, click the Graphics icon in the scrolling list, then select Faster Gradients."

"If you have a color matching issue, make sure you are using a Windows 95 compatible video card and printer drivers."

4. International versions of ClarisWorks 4.0v2 will now support accent marks in dialog box text.

5. The RTF filter was updated to fix a couple of issues. Most notably, ClarisWorks will no longer crash when attempting to convert RTF files that were originally created in MS Word 6.0 or AmiPro.
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About ClarisWorks Version 4.0v2 Windows Updater, Readme.txt File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
v2Update.exe

This self-extracting "v2Update.exe" archive contains the "Cwksupv2.exe" updater file and the "Update.txt" instruction file. The "Cwksupv2.exe" updater is used to upgrade the Windows 95 version of ClarisWorks 4.0v1 to ClarisWorks 4.0v2.

This release of ClarisWorks addresses several issues including printing problems with some printer drivers and occasional problems with fonts from ClarisWorks 3.0 documents being read incorrectly by ClarisWorks 4.0. It also provides an updated version of the Rich Text Format (RTF) file filter.

Installation
To install the "Cwksupv2.exe" updater and the "Update.txt" instructions file:

1) Double click the "v2Update.exe" file. (This will open an MS-DOS Prompt and begin extracting the files.
2) Once the files are done extracting, click the close box in the upper right hand corner of the MS-DOS Prompt window to close it.

The "Cwksupv2.exe" and "Update.txt" extracted files are located in the same directory as the "v2Update.exe" file.

Read the Update.txt file for instructions on updating ClarisWorks 4.0v1 to 4.0v2
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About ClarisWorks Version 4.0v2 Windows Updater, Update.txt File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 4.0v2 Updater

Thank you for investing in Claris software. From time to time, we produce maintenance releases of our software. We'll add minor functionality, correct defects, or respond to customer requests. We'd like to make it as convenient as possible for you to obtain these new versions and enjoy their benefits.

Updates, in contrast to upgrades, contain few changes from the previous version. Instead of distributing the full, revised application, we can provide just the files necessary to incorporate the new functionality and fixes. When you run the accompanying Updater, it will combine your original ClarisWorks 4.0v1 files with the new changes to create new ClarisWorks 4.0v2 files. The following files are updated with this updater:

Clworks.exe - ClarisWorks 4.0v2 application rtf.f32 - Rich Text Format (RTF) file filter Readme.cwk - ClarisWorks document that describes general and v2 release information.

This document describes the steps you take to apply the update. You may want to print it out if this is the first update you've installed.

ClarisWorks 4.0v2 Updater will upgrade U.S. versions 4.0v1 to the current U.S. release, 4.0v2. This Updater WILL NOT update any international versions of ClarisWorks.

The information is organized as follows:
1. Guide to updating your ClarisWorks 4.0 files
2. Legal considerations

Guide to updating your ClarisWorks 4.0 files

The ClarisWorks 4.0v2 Updater can run from a hard disk or a network disk drive. However, you need to run the updater from the drive that contains your original version of ClarisWorks.

1.1 Applying the update

Quit ClarisWorks, if you're using it.

Run the Windows program CWKSUPV2.EXE included in this distribution. The updater will search for your current ClarisWorks 4.0 folder and bring up a dialog for you to select CLWORKS.EXE. If you have multiple copies of ClarisWorks, navigate to the correct one. Select the file and click Open. The updater will ask you to confirm the location. Click Yes if it's correct or Cancel to start over again if it's wrong.

The updater will then search for your current Claris folder and bring up a dialog for you to confirm its location. If you have multiple copies of the folder, selecting 'no' in the confirmation dialog will cause the updater to search again for another instance of the folder - continue selecting 'no' until the one you want to update is shown.

If any errors occur during the update process, the Updater will restore your files to their original state.

1.2 Technical Considerations

Hard Disk Space You'll need approximately 5MB of free disk space.

Virus Detection Software The Updater makes several changes to the resources in ClarisWorks. Many virus utilities consider this activity improper and may try to prevent it. To avoid this inconvenience, disable all virus detection software before applying the update.

Legal Considerations

Legal Considerations The enclosed .RTPatch updater program is ©1991-1995 by Pocket Soft, Inc. P.O. Box 821049, Houston, Texas 77282.

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Translators are Not Accessible After Updating ClarisWorks 4.0CFv1 to Version 4.0CFv4

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This article has been archived and is no longer updated by Apple.
If you do not have access to the translators after updating the Canadian French ClarisWorks 4.0CFv1 to version 4.0CFv4 using the Canadian French updater , you will have to do make some manual changes to your system.

Do the following:
1) Open the hard disk
2) Open the System folder
3) Open the Claris Folder
4) Click inside the name of the Claris XTND document and add a space to the end of this name.

Now after you restart ClarisWorks you should have access to all your translators.
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Linking Remote Sites Over 25-Pair Telco Wire

I want to link a remote site (approximately 3 miles) and has 25-pair Telco wire already laid from point to point. I know of the Shiva Telebridge and the Digital Access solution, but want to know if I have any alternatives.

This article has been archived and is no longer updated by Apple.
Line drivers, signal boosters, short-haul modems, CSUs, DSUs, and so on should all be available from your local telephone company or suppliers, such as BlackBox. The type you would use depends on the type of link you have (T1, 1MB, ISDN, DDS, and so on) and data rates you want to achieve.

Because you mention the Telebridge, it seems that you want to route AppleTalk packets over the link. Other products, like the Solana R-Server, the H-Server, and the Hayes InterBridge, can do this. Both the R-Server/S and the H-Server support data rates similar to that of the Telebridge.

Editor's Note 22 June 1992: Solana has discontinued business to our knowledge, so we are unable to refer you to them directly for further information.
Published Date: Feb 18, 2012

Claris Emailer Updater 1.1v2: Previously Altered Sound Resources

There were a number of utilities available for altering the sound resource for earlier versions of Claris Emailer. They may cause issues when using the 1.1v2 updater.

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This article has been archived and is no longer updated by Apple.
The Claris Emailer 1.1v2 updater (for versions 1.0v1 through 1.0v3) will copy the personalization and will skip the sound resource if the customer has replaced the original sound with a custom sound.

The updater will not work if the customer has changed, added, or deleted any other resources. In particular, it will not work if they added a new sound and renumbered the old sound.

In these cases customers will need to put aside their Claris Emailer Files folder, reinstall from their original disk, drop the Claris Emailer Files folder in the the new Claris Emailer Folder, and re-update with the 1.1v2 Updater.
Published Date: Feb 18, 2012

Won‘t Dial Phone for Internet Connection

If Claris Emailer won't call up FreePPP to dial your Internet service provider, the option "Allow applications to open connection" may not be selected in FreePPP.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Question: When I try to connect to my Internet Provider, it won't dial. I'm using System 7.5.3 and Open Transport and FreePPP.

Answer: Claris Emailer should activate TCP/IP, which then calls up FreePPP. If FreePPP is not activated and does not dial, first check to see if you can connect directly using FreePPP, by launching FreePPP Setup on your hard drive or selecting Open FreePPP from the FreePPP menu bar item and and clicking on the Connect button.

If that works, then launch FreePPP, click on the General tab and select the option: Allow applications to open connection.

If that option is not selected, then Claris Emailer will not be able to call up FreePPP to dial the phone.
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ClickBook: Epson Color Stylus Printer

CilckBook is not compatible with the Epson Color Stylus Printer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClickBook does not work with an Epson Color Stylus printer at all.
Published Date: Feb 18, 2012

ClarisWorks: Crashes When Closing a File

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
This is fixed in ClarisWorks 4.0v5 Macintosh.
An updater for all previous versions of 4.0 is available online.

If you have 48 MB or more of free memory (RAM) on your computer when ClarisWorks 4.0 launches, it will usually crash when trying to close a file. In some cases, the issue only occurs in documents of certain types, or only in documents containing headers. This is true for all Macintosh and compatible model machines, including Power-PC and 680x0 microprocessor-based CPUs. The amount of free memory may be the result of either physical RAM, virtual memory (including such utilities as RAM Doubler), or both.

The ClarisWorks engineering team is aware of this issue. At the current time, the only solution is to configure your system so that there is less than 48 MB of free RAM when ClarisWorks starts up. This can be accomplished by launching other programs prior to starting ClarisWorks (and increasing the memory allocation of these programs if necessary). You can quit these other applications once ClarisWorks is running, but will have to relaunch them prior to any relaunch of ClarisWorks.

The following examples show what you might do to avoid this issue.

Example 1
Computer with 24 MB of RAM, running RAM Doubler to 48 MB.
In this case, the issue will not occur. The system software will be using memory, so the amount of free memory will be less than 48 MB.

Example 2
Computer with 56 megabytes (MB) of real or virtual memory. System software is using 6 MB of RAM. Thus, the free memory is 50 MB. Set a program like SimpleText to a Preferred memory size of more than 2 MB. Place an alias to SimpleText in your Startup Items folder inside your System Folder. After starting your computer, there will be less than 48 MB of memory available. Launch ClarisWorks. You can then quit SimpleText.

An alternate solution may be to create a RAM disk on your system to take up the free RAM.
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Creating or Modifying a File Type in Windows 95

How to Create or Modify a file type in Windows 95

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How to create or modify a file type in Windows 95:

1) Double-click the My Computer icon.
2) On the View menu, click Options, and then click the File Types tab.
3) To create a new file type, click New Type.
4) To modify the settings for an existing file type, click the type, and then click Edit.
5) Specify a description for the file type and the filename extension associated with this type of file.
6) Click New to define an action for this file type.
If you are modifying an existing type, you can click the command in the Action box that you want to modify, and then click Edit.
7) Specify the action that you want to define, such as Open or Print, and the command that should run to complete this action.
8) Click Done to save the changes.
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ClarisWorks: Plotting Null Values

Null values plot as zeros in a ClarisWorks charts. Below is a work around to hide unwanted plot lines.

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In a ClarisWorks spreadsheet line chart, a cell with no value is treated as a zero and plotted accordingly. This technique results in a chart that accurately reflects a null value.

- Create the chart with the null value.

- Using the line drawing tool, draw in plot lines directly over the existing lines. Do not draw in lines connected to a null value.

- Select the plot line with the issue by clicking in the associated color box in the legend.

- Use the line tool to select Other for the line width and set it to 0. The lines generated by ClarisWorks will disappear leaving the drawn in lines that accurately reflect a null value.

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How To Format a Disk in Windows 95

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

1) Double-click the My Computer icon, and then click the icon for the disk you want to format.

2) Be sure not to double-click the disk icon, because you can't format a disk if it is open in My Computer or Windows Explorer.

3) On the File menu, click Format.

Notes:

Formatting a disk removes all information from the disk.

You cannot format a disk if there are files open on that disk.

If the disk has been compressed, use DriveSpace, or other compression software, to format the disk.

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How To Start a Program Each Time Windows Starts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
To start a program each time Windows starts:

1) Click the Start button, and then point to Settings.
2) Click Taskbar, and then click the Start Menu Programs tab.
3) Click Add, and then click Browse.
4) Locate the program you want to start, and then double-click it.
5) Click Next, and then double-click the StartUp folder.
6) Type the name that you want to see on the StartUp menu, and then click Finish.
7) If Windows prompts you to choose an icon, click one, and then click Finish.
Published Date: Feb 18, 2012

How To Start your Computer Without Starting Windows 95

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

1) Restart your computer by clicking the Start button, clicking Shut Down, and then clicking Restart The Computer.
2) When you see the message "Starting Windows 95," press the F8 Key.
3) If you want to load your Autoexec.bat and Config.sys files, choose Step-by-Step Confirmation.
4) If you want to skip your Autoexec.bat and Config.sys files and go to the command prompt, choose Command Prompt Only.
5) If you want to skip your Autoexec.bat and Config.sys files and go to the command prompt without network support, choose Safe Mode Command Prompt Only.

Note:
After you start your computer in MS-DOS, you need to restart your computer to start Windows again.
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Claris Emailer 1.1v2 Updater: Installs Second Claris Emailer Folder

There is an issue with the Claris Emailer 1.1v2 Updater that will install a second Claris Emailer Folder inside of your Claris Emailer Folder if you changed the name of the Claris Emailer Folder.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you have changed the name of your Claris Emailer Folder, the Claris Emailer 1.1v2 updater will update your application file to Claris Emailer 1.1v2 and will create a new Claris Emailer Folder inside of your existing folder with all of the new Claris Emailer Files and support files in it.

To resolve this issue, rename your folder than holds Claris Emailer 1.x to Claris Emailer Folder and rerun the updater to update all of the files. You can then delete the duplicate Claris Emailer Folder.
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DataDraw Primer: Growing Your Business With ClarisImpact 2.0

Tracking your business growth with FileMaker Pro 3.0 and ClarisImpact 2.0 with DataDraw.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
For years small businesses have created accounting systems with FileMaker Pro database software. With the addition of relational capabilities in FileMaker Pro 3.0, business owners have gained an entirely new suite of tools to track growth and trends of their companies. Working with layouts, individuals at all levels can combine information from multiple related databases to create quick, accurate reports.

Yet sometimes, even accurate data is not enough to get your point across. For example, a table of fiscal results is not as powerful as an easy-to-read graph, and a list of employees is not as descriptive as an organization chart. That is where ClarisImpact 2.0 software with its DataDraw feature becomes the charting companion for FileMaker Pro 3.0.

ClarisImpact 2.0 expands on the data manipulation capabilities of FileMaker Pro 3.0 by turning simple rows and columns of information into professional-looking business graphics in only a few steps. What's more, you can set DataDraw to keep the business graphics up-to-date every time you open them. Instead of performing time-consuming changes to your graphics whenever your data changes, you can have DataDraw make the changes for you.

Defining your needs

To help you understand the power and simplicity behind ClarisImpact 2.0, lets take a look at Mary Gold, owner of Gold Blooms Flower Shop, and how she uses ClarisImpact 2.0 to handle her business needs. Mary's business has two stores, and she plans to open another one within the next month. With plans for the extra staff, Mary's personnel work has increased dramatically. She needs a simple organization chart to keep track of which employees work at each store.

Mary maintains a personnel database in FileMaker Pro 3.0. The database is very useful and keeps tabs on everyone, their location, title, and phone numbers. However, what the employees of Gold Blooms need is a visual representation of the staff at each store along with their titles and phone numbers. This information is already in the personnel database, ready to be made into an organization chart, but Mary does not want to create a new chart from scratch every time a change takes place in one of her stores.

Working with FileMaker Pro 3.0

In planning her organization chart, Mary knows that she needs seven types of information: employee ID, first name, last name, title, phone number, status, and manager name. All of this information is already in fields in the FileMaker Pro 3.0 database, except for manager name. When the shop was small, there was no need to list this personnel information. Mary oversaw everything. Now, she needs the manager information to create the organization chart she envisions. Mary adds a field called Manager to her personnel file in FileMaker Pro 3.0, and uses the new ability of FileMaker Pro 3.0 to create a value list based on a field in a file. With this setup, she can click on a pop-up menu in the personnel record and see a list of all employee IDs and last names. Assigning manager names is a snap.

TIP: Since Mary Gold is the boss, she leaves her Manager field blank. DataDraw places her position at the top of the organization chart and builds the chart from there.

Once she has correctly formatted her fields the way she wants them, Mary does two more things in FileMaker Pro 3.0 to prepare for the automation process discussed later. First, she performs a Find on the Status field to find only currently active employees. She then Exports the following fields to a tab-separated text file: EmployeeID, FirstName, LastName, Title, PhoneNumber, and ManagerName. She names this file OrgChart.tab.

Preparing your chart

ClarisImpact 2.0 ships with a wide variety of organization chart styles, but sometimes you want to personalize a business graphic to reflect the individual character of your company. With ClarisImpact 2.0, you can create both custom position styles and custom organization chart styles. Once you have experimented and designed a style that meets your needs, you can save the style for use with future organization charts. Here are some basic steps that you can take to customize your chart style.

1. Begin by creating a new organization chart with one employee at each level. For Mary, that means having an owner, a manager, and a floral designer.

2. Choose Position Styles from the OrgChart menu to display the Position Styles palette (Figure 1). To create a new position style family, click the pop-up menu at the top of the Position Style palette, choose New Style, and give your new family a name in the New Style dialog box. Mary calls her style Flowers. Click OK.

3. In the lower-right corner of the palette, click the triangle to see the options for creating or customizing position styles. ClarisImpact 2.0 adds styles to the currently-selected style family. Click the New button to enter the Position Editor.

4. Use the Position Editor to create completely new position styles. In the Position Editor, you can change the shape and color of the position, customize the text style for each field, add additional fields to the position (such as phone number), move the connection points for the position, and place pictures from the ClarisArt libraries or other graphics files. Once you have made all the changes, click OK to save and return to the Position Styles palette. Now you can name the position style by entering the desired name in the Name box and click Rename. You can customize position styles for every level of your organization. Mary Gold creates three new position styles (owner, manager, and floral designer) by combining the text and graphic elements she wants with images from the ClarisArt libraries.

5. In the original organization chart, click the first level to select it. In the Position Styles palette highlight the position name that matches this level. Click Apply and the new position style is applied to the selected position on your organization chart. (You can also apply any other settings from the OrgChart menu that you want. These include changing the organization chart orientation, defining level settings so all additional positions at the same level use your new position styles, or selecting another worker layout.) Select the remaining positions and apply the appropriate style. Close the Position Styles palette and save your changes.

6. Choose OrgChart Styles from the OrgChart menu to display the Org Chart Styles dialog box (Figure 2). If your style is not already showing, click the Style pop-up menu and select it. Mary uses her Flowers style. Next, click New. You can now name and save your new style variation to the style group previously selected. Mary saved her style called Gold Blooms to the Flowers style group that she set up earlier. Click OK to exit your setup. This ensures that you will be able to reapply your style settings to any new documents.

Implementing DataDraw

Once you have designed your custom style in ClarisImpact 2.0 and set up your information in FileMaker Pro 3.0, it is time to bring together all of the pieces you have created.

Create a new ClarisImpact 2.0 organization chart using DataDraw. DataDraw steps you through the process by asking you to do the following three things:

1. Select the data file to import. This is the OrgChart.tab file we exported from FileMaker Pro 3.0 earlier.

2. Choose an Org Chart style such as the one created above.

3. Align the fields in the data file with the fields on your organization chart.

DataDraw creates the organization chart for you. Once the document is created, you can set the graphic to update whenever you open the file.

This keeps the organization chart current and ready for use. To do this, choose Auto-Update Settings from the DataDraw item of the File menu. The Auto-Update Settings dialog box appears and gives you options for updating data and graphics in your chart (Figure 3). Once your preferences are set, click OK. Finally, save your file to keep from losing all your hard work.

Mary does the same. Once Mary Gold finishes her design work, she imports into ClarisImpact 2.0 the data file OrgChart.tab that she exported from FileMaker Pro 3.0 and chooses the Gold Blooms style that she created earlier. After aligning her fields, Mary sees the results of her work instantly as her organization comes to life on her screen. All that remains for her to do is change her Auto Update Settings and save her document as GoldBlm.CID.

Automating the process
Once you have done all of the preliminary setup, you can create a script in FileMaker Pro 3.0 to automate the process. On both Mac OS and Windows, the script can Find the active employees, Export the data to a tab-separated text file, and Open the organization chart in ClarisImpact 2.0 so that the graphic updates.

If you have performed a Find or Export since you exported data to your OrgChart.tab above, do your desired Find and Export again, to be sure the correct Find and Export criteria are saved with your script.

Create the following script called Export to ClarisImpact:

Mac OS
Perform Find [Restore]
Export Records [Restore, No dialog, "OrgChart.tab"]
Send Apple Event ["GoldBlm.CID", "ClarisImpact - Mac OS", "aevt", "odoc"]
open application, open document, Bring target application to foreground

Windows
Perform Find [Restore]
Export Records [Restore, No dialog, "OrgChart.tab"]
Send Message ["GoldBlm.CID", "aevt", "odoc"]
open document/application, Bring target application to foreground

Now whenever you need to see an updated organization chart, all you have to do is run the Export to ClarisImpact script in FileMaker Pro 3.0.

It keeps growing and growing
In only a short time, Gold Blooms has gone from a single shop to a growing enterprise. Not even Mary knows the shape her company will take in a few years. She does know that she can count on ClarisImpact 2.0 and FileMaker Pro 3.0 to meet the changing needs of her small business, no matter how the business climate changes.
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Troubleshooting the Unhandled Exception Error in Module WIN32SCOMB.DLL or APPSETUP.EXE in Claris Impact 1.0 for Windows

Win32s may cause a Unhandled Exception Error in ClarisImpact 1.0 for Windows

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The version of Win32s that ships with ClarisImpact may not be compatible with some systems running Windows 3.1. You may experience an Unhandled Exception Error in Module WIN32SCOMB.DLL or APPSETUP.EXE when installing Claris Impact 1.0 for Windows. This error usually occurs after Win32s has been installed and appears to be operating successfully.

Try the following steps:
1] Remove the version of Win32s that was installed on your system by ClarisImpact.
2] Install the Newest version of Win32s (Currently version 1.30C) on your system
3] Reinstall ClarisImpact
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Work In Style With ClarisWorks 4.0

ClarisWorks 4.0 has a powerful new feature called styles that helps you design and produce powerful and professional looking documents.

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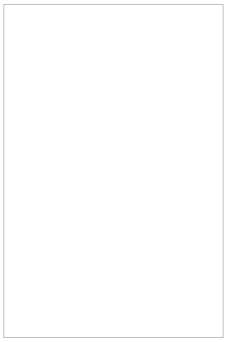
This article has been archived and is no longer updated by Apple.

Have you ever wondered if there was an easier way to format your documents without the hassle of changing everything line-by-line? Or perhaps you have slaved over designing a great spreadsheet table but now you forgot what you did to create it? With ClarisWorks 4.0 software and styles, you won't have worry anymore. Formatting all the paragraphs of a large document is only a mouse click away.

Styles are a series of attributes or formatting options applied to text, graphic objects, spreadsheet cells, database fields, or paint images. Styles are available in every type of ClarisWorks document except Communications. What makes styles so useful is that you can save a complex combination of formatting options in a single style and then use it over and over again with a single mouse click. ClarisWorks comes with a number of pre-defined styles. You can use any of these preset styles, modify them to suit your particular needs, or create your own styles. What's more, you can copy or import styles you create in one document for use in another file, or copy them to a disk to share with friends and colleagues.

The stylesheet palette

Each document has its own set of styles, called a "stylesheet," which is saved with the document. In ClarisWorks, a document's stylesheet is accessed through the stylesheet palette, which is the tool box for keeping your styles in order. The palette breaks out each style by category and sub-styles. To view the palette, choose Show Styles from the View menu on a Macintosh computer, or the Window menu on Windows (Figure 1).



Paragraph and outline styles can also be applied from the styles pop-up menu in the ruler bar. Like all the other palettes in ClarisWorks, the stylesheet palette can be moved easily around your document window by clicking and dragging on the palette's title bar. When you are not actively using the stylesheet palette, you can also collapse it and dock it in the upper-right corner of your document window by clicking the control box on the right hand side of the palette's title bar. There are four categories in which you can set up your formatting preferences:

Basic styles

These contain the attributes of objects such as fill color and pattern; pen width, color, and pattern; and text character formatting options such as font, size, style (bold, italics, and so on.), and text color.

Paragraph styles

These control the formatting that applies to entire paragraphs of text, including line spacing, space before and after paragraphs, text alignment, first line and paragraph indents, and tab spacing and fill options. What is less obvious about Paragraph styles is that they are also used to control certain aspects of spreadsheet cells and database fields (such as text alignment and line spacing). For added power, paragraph styles can also contain basic styles. This enables you to apply both paragraph and character-based formatting with a single style.

Outline styles

Similar to paragraph styles, they contain options particular to outlines in word processing documents or text frames. Specifically, these styles contain substyles that apply to each level of the outline and can be designed or edited separately.

Table styles

Only used to format a range of spreadsheet cells, table styles also contain substyles that govern the formatting of the various rows and columns of the cell range. Each substyle of a table style contains a basic style, as discussed above, to control such things as alignment, number formatting, and cell shading.

You can readily identify style categories by looking at the symbol to the right of a style in the palette. To see more information for a given style, click the Edit button on the lower-right of the palette. When you are editing styles, the palette name changes to Edit Style and will expand to show the list of properties contained in the selected style. At this point, you can also click on the Edit menu in the palette to select the option to show a sample of the selected style (Figure 2). In editing mode, the style categories have a triangle icon next to them. Clicking on these icons expands or collapse to show or hide all of the styles under a particular category.

Styles and documents

The stylesheet palette keeps track of what type of document you are working in, such as Word Processing or Spreadsheet. This applies to the type of document or active frame. This integrated palette is a very powerful tool, but it can also be confusing if you are not fully aware of how it works. It is a good idea to take a moment to become familiar and experiment with the stylesheet palette before using it in your everyday work. The following exercise is a good way to do this.

Exercise

Start with a new Drawing document and add a few elements to it, one at a time. First, use the text tool to create a text frame and type a few words into it. While the cursor is blinking within your frame, open the stylesheet palette. You will see the built-in paragraph and outline styles that are stored in all new ClarisWorks files by default. Next, select the spreadsheet tool and drag out a small spreadsheet frame (a few rows and columns should be fine). Notice that the stylesheet palette now contains the Default SS Basic style, the Default Paragraph style, and seven pre-defined table styles, and that the text-based styles listed previously are no longer available. Now create a small rectangle and observe that only the Default Paragraph style is accessible. Lastly, click the selection arrow and try single- and double-clicking on the frames and objects you have created. You will see that the stylesheet palette responds to the type of frame selected and displays the same options

There are two exceptions to whether you single-click to select the frame or double-click within the frame to make it the active item in the document. If you apply a style while the frame is selected, the entire contents of the frame are formatted according to that style, while applying it within the frame lets you select just that portion of the frame contents to which you wish to apply a particular style.

Some special considerations arise when using styles in the Database and Paint documents. In database files, styles are most useful in Layout mode, where the stylesheet palette behaves as demonstrated in the previous exercise. As you would expect, styles applied to fields on a layout affect all of the records in the file when viewed in Browse mode. Styles can also be used in Browse or List mode, but this can sometimes lead to unexpected results. Styles applied in Browse mode only apply to whatever is selected. Also, data formatted in Browse mode retains the formatting applied and ignores a style change.

In List mode, if you click a column header to select the entire column before applying a style, the data appears to have the attributes of that style, but reverts to its previous state when viewed in Browse mode. However, if you select a row heading to select an entire record, an applied style behaves in the same manner as styles applied to data in Browse mode. The same is also true for any individual cell or field to which you apply a style in List Mode. Because of the inconsistencies which can result from this approach, you should exercise caution when formatting database documents in Browse or List modes.

Because the Paint document has no pre-defined styles, the use of styles here is not as extensive as in other document types. If you are using a paint frame, you can use styles to change the pen color, pattern and width, and the fill color and pattern of the entire frame.

If you make and select a style before you begin using a paint tool, the images will have the pen and fill attributes of that style, but unlike in other documents, changing the options of the style later on will not affect anything previously created with that style.

Adding your own style

Once you have a solid understanding of styles, you are ready to start putting them to use. If the style already exists, applying it is as simple as selecting whatever you want the style applied to and clicking on the style name in the stylesheet palette. Keep in mind that you cannot apply a style if the palette is in Edit Style mode (Figure 3). If your palette is in this state, finish any editing you are in the middle of and click the Done button in the palette before attempting to apply a style.

As mentioned earlier, you can also apply paragraph and outline styles from the ruler bar, though basic and table styles must be accessed through the palette. Since paragraph and outline styles are paragraph-based they will be applied to the entire paragraph which contains your selection, even if you have selected only a portion of the text within a paragraph. This is true even if the style you are applying has only character-based formatting options.

It is common to see a "+" after a style name that has a check mark next to it. This plus sign indicates that the selection has had formatting attributes added (or deleted) manually, either before or after the style was applied. You may try to "erase" all previous formatting options by applying a second style and be surprised to find that the "+" is added at the end of this second style name as well. This is because character-based options that are applied manually, such as a font size change, always take precedence over a style which is applied.

For instance, if you format some text to have a text color of green, then subsequently apply a paragraph style which includes an option for red text, any other options of that style will be applied, but the text color will remain green and the plus sign will still appear after the style name.

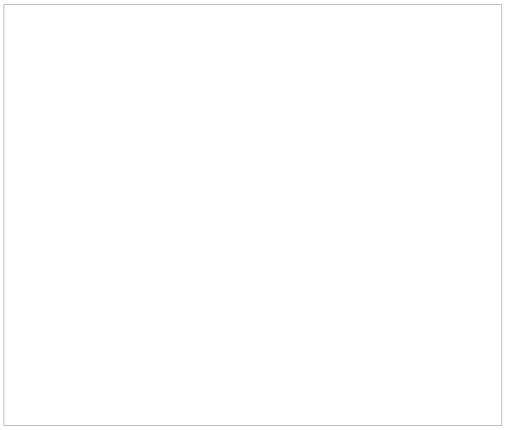
The real power and fun of styles comes from creating and using your own. You can save yourself a lot of time and frustration by designing styles for things you use repeatedly such as quotes, citations, bulleted lists, or recipe tables of ingredients and measurements. The use of styles also ensures a consistent look throughout your files.

Two ways to create a new style

If you have already applied a series of formatting options to a paragraph or group of cells, you can capture those settings in a style by selecting the desired text/object, clicking the New button in the stylesheet palette, and clicking the checkbox to "Inherit document selection format."

Give the style a descriptive name. For example, names based on the dominant formatting options like "Big Red Text" or "Chapter Title" work well. Make sure to choose the radio button that corresponds to the type of style you want to create. When you click OK, you see the style name in your newly customized stylesheet palette. Note that because you have not yet applied this style to the selection you used to create it, the palette still shows the check mark and the "+" on the style previously in effect. Although there is no visible change, it is good practice to go ahead and apply the new style to the selection.

You can also create styles from scratch. If you click OK in the New Style dialog box without choosing to inherit formatting from the selection, the insertion point changes to indicate that you are in style creation/editing mode (Figure 3). At this point, you can choose formatting options one at a time the same way you do when manually formatting by using tools, palettes, menu commands, and ruler controls. As you make your choices, you see them added to the style's list of properties. When you have chosen all of the desired options, click the Done button in the stylesheet palette. The properties list collapses, the pointer returns to its normal arrow shape, and you are ready to apply the style you just created.



When creating a style, you can also choose to have its attributes based on another style by using the Based on pop-up menu in the New Style dialog box. This is a good shortcut for creating a style which is very similar to a style which already exists in the current document. However, this feature should be used carefully because a style can have many properties.

Deleting a style

To delete a style, make sure you are in style editing mode, click the style name in the palette, and choose Clear Style from the palette's Edit menu. If you have designed a style to be based on another style, the later style depends on the first one for information on which formatting options to use. Because of this, you can't delete such a style without first deleting all styles which have been based on it. Many of the built-in styles cannot be removed from the palette, and neither can any custom style which has been applied anywhere in the file.

Changing existing styles

There are several ways to change existing styles. If you choose Modify Style from the palette's Edit menu, you can change a style's properties by changing the style on which it is based. You can also change the style's name and remove individual attributes from a style by clicking the desired property in the list, then choosing Clear Property or Cut Property from the palette's Edit menu. You can copy properties from one style to another by using the Copy Property and Paste Property commands. Lastly, you can add or change attributes by using any of the appropriate tools, palettes, menu commands, or ruler controls.

Sharing styles

Once you have taken the time to develop your own custom set of styles, you may want to reuse those styles in other files or have them available every time you create certain types of documents. If you have a single style that you want to use in another file, you can simply copy that style and paste it into the second file. To do this, open the file which contains the style, select the desired style from the stylesheet, and choose Copy Style from the stylesheet's Edit menu. Then, open the file in which you want to use the style and choose Paste Style from the palette's Edit menu. The pasted style appears in the palette and is stored with the second file when it is saved.

Exporting stylesheets

If you have a collection of styles which you wish to reuse, you will want to take advantage of the ability to export and import groups of styles between documents. When you choose Export Styles from the stylesheet palette's File menu, you see the Select styles to export dialog box.

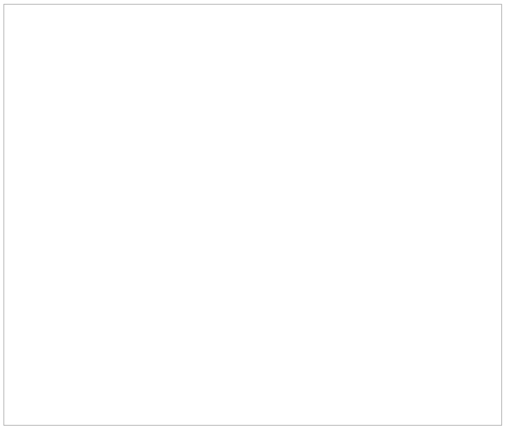
TA43547_Work_In_Style_With_ClarisWorks_.pdf

All of the document's styles are available to export, including the pre-defined styles. All styles whose checkbox is checked are exported to a single styles file when you click OK. This enables you to export and reuse any of the pre-defined styles which you modified in the current document. By default, ClarisWorks saves all stylesheets to the Styles folder inside the ClarisWorks 4.0 folder.

After you choose Import Styles from the stylesheet palette's File menu, you are prompted to choose which style-sheet in the Styles folder you want to open. After you choose a stylesheet, the Select styles to import dialog box shows all of the individual styles saved in that stylesheet. You can choose just the styles you want to use in the present file.

Final thoughts on styles

A last helpful tip to leave you with lies in using the on screen Help system. For more specific information on styles, choose Index from the Help menu in Windows, or the Guide menu, represented as the question mark menu icon, on a Macintosh. Scroll down to the key word "Styles." With the extensive on screen Help system you'll have all the information you need to fully take advantage of styles. With the power of styles by your side, it should be much easier to create your own stylish documents.



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ClarisWorks Products Which Support World Script I

Word processing products which currently support World Script I, allowing them to work with Hebrew and Arabic.

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This article has been archived and is no longer updated by Apple.

NisusWriter by Nisus Software, Inc. and WorldWrite by WorldSoft Corporation support World Script I, allowing them to work with Hebrew, Arabic and other languages which are entered from right to left. ClarisWorks Hebrew and ClarisWorks Arabic are not available in the United States. The U.S. version of ClarisWorks supports only WorldScript II, which allows it to work with Japanese, Chinese (both simplified and traditional) and Cyrillic. The U.S. version does not support WorldScript I, therefore it cannot work with right-to-left languages such as Hebrew or Arabic.

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Serial NB Card, MacDTF, and MacAPPC

1) Can the Serial NB Card communicate with an IBM mainframe over a 4800-baud modem to CICS?

2) Can MacAPPC run over SDLC this way?

This article has been archived and is no longer updated by Apple.
1) Yes, via MacDFT 1.1 with the Serial NB Card, running SNA/SDLC.

2) Yes, MacAPPC 1.1 can communicate with other LU6.2 devices serially or over Token Ring (Serial NB or TokenTalk NB card, respectively). It is also capable of distributing these sessions from the server machine to other AppleTalk network system nodes using ADSP on LocalTalk, TokenTalk, or EtherTalk.

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How to Enable Your Macintosh Computer to Speak

The ClarisWorks Text-to-Speech shortcut and the FileMaker Pro Speak script command require the PlainTalk system software extensions.

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This article has been archived and is no longer updated by Apple.
The ClarisWorks Text-to-Speech shortcut and the FileMaker ProSpeak script command require the PlainTalk system software extensions. This software can be found on the System 7.5.3 CD (in the CD extras folder), or available from Apple Computer.

When you arrive at this location download the English Text-to-Speech file.

Technical details:

The software that enables your computer to speak has these components:
- Speech Manager, a system extension;
- one or more of these English speech synthesizers, depending on your hardware
and software:
- MacinTalk 2 for standard-quality speech,
- MacinTalk 3 for high-quality speech,
- MacinTalk Pro for highest-quality speech.

- several voice files, each identified with one particular synthesizer;

- the Speech control panel (if you have system software 7.0 or later).

The Installer installs the files that are appropriate for your system.

- If you have version 6.0.7 or 6.0.8 of system software on any Macintosh, these files are
installed.
- Speech Manager, in the System Folder;
- MacinTalk 2, in the System Folder;
- 9 voices, in the Voices folder, which is in the System Folder.

- If you have version 7.0 or later of system software on a Power Macintosh or on a Macintosh with a 68040 processor, the following files are installed.
- Speech Manager, in the Extensions folder;
- the Speech control panel, in the Control Panels folder;
- MacinTalk 3 and MacinTalk Pro, in the Extensions folder;
- 19 MacinTalk 3 voices, in the Voices folder, which is in the Extensions folder;
- 3 MacinTalk Pro voices (Agnes, Bruce, and Victoria), also in the Voices folder.

- If you have version 7.0 or later of system software on a Macintosh with a 33 MHz or faster 68030 processor, the following files are installed.
- Speech Manager, in the Extensions folder;
- the Speech control panel, in the Control Panels folder;
- MacinTalk 3, in the Extensions folder;
- 19 voices, in the Voices folder, which is in the Extensions folder.

- If you have version 7.0 or later of system software on any other computer, the following files are installed.
- Speech Manager, in the Extensions folder;
- the Speech control panel, in the Control Panels folder;
(Note: On Macintosh SE computers, the Speech control panel requires version 7.1
or later of the system software)
- MacinTalk 2, in the Extensions folder;
- 9 voices, in the Voices folder, which is in the Extensions folder.

Troubleshooting (issues and solutions):

- My Macintosh won't speak.
- Turn up the speaker volume in the Sound control panel.
- Choose a voice that requires less random-access memory. The voices Agnes, Bruce,
and Victoria take the most memory.

- The Installer program says there's a issue with the hard disk.

- Reinstall your system software, then try installing the English text-to-speech software again.

- The Installer program displays other error messages.
- Make sure you restart the computer with extensions off, as described in Installing the Software, above.

- I had an older version of text-to-speech software, then did a custom installation of the new software, but some of my older voices disappeared.
- The custom installation you chose erased the older version of the software that can use those voices. You can install newer versions of the voices by doing another custom installation of the new software to install MacinTalk 2 or MacinTalk 3 whichever you used to have. (If you're not sure which you had, you can install both.)

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ClarisWorks: Issues Using AppleScript to Save with XTND Translator

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are a few issues that can occur when using AppleScript to save ClarisWorks 4.0 documents with an XTND Translator. For instance, if you wanted to save the active Word Processing document with the MacWrite 5.0 XTND translator you would use the following script:

```
tell application "ClarisWorks"
activate
save document 1 in "MyFile" using "MacWrite 5.0"
end tell
```

If the XTND translator is not spelled exactly as it appears in the Save As dialog popup menu then the XTND translator will not be used. The XTND translator files contained within the Claris folder on the hard disk are not always named the same as what appears in the Save As dialog. For example, the translator in the Claris folder is named "Microsoft Excel 3-4" but appears as two translators in the Save As dialog.

In addition, the XTND translator may be ignored if capitalization is incorrect. For instance, "MacWrite II" needs to be spelled with a capital "M" and a capital "W".
Published Date: Feb 18, 2012

ClarisWorks: Creating Return Address Labels

Use the power of the ClarisWorks database to easily create return address labels by placing this information directly on the label layout.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Printing multiple copies of a name and address in a database won't normally print on all the labels on a label sheet. The printer will usually try to print each name and address on a separate page. Here's a workaround that will let you print multiple copies of a name and address, such as for a return address, using all the labels on a sheet.

The secret is to put the return address information directly on the label layout, and then create the appropriate number of "blank" records for a single sheet of labels. When you print the blank records, you'll be printing the return address that is on the layout.

1. Create a new database, called "Return Address Labels." It is best to do this in a new database file. This way you do not add blank records to your main database.

2. Define a single field, of type Text. Name it "Place holder."

3 From the Layout menu, select New Layout.

4. From the New Layout dialog box, select Labels. Choose the appropriate Avery label number for the labels you plan to use. For this example, we will assume the Avery 5160, which come 30 to a sheet, in three columns of ten.

5. In the Specify Field Order dialog box, choose the Place holder field and move it over to the right. Click OK.

6. From the Layout menu, select Layout. This will bring you into Layout mode, which will let you edit the label layout you have just created.

7. Click on the Place holder field. Press the Delete key to delete the field.

8. Click on the Text tool (the letter "A") and draw a text box in the label area. Do not move the small box with the word Body in it; draw on top of this box if necessary. (Moving this box will change the size of each label on the sheet.)

9. Type your return address information within this text box.

10. From the Layout menu, select Browse. We now need to create 30 records to correspond with the 30 labels on a sheet of Avery 5160s. (For other labels, create the number of records equal to the number of labels on a single sheet). In Browse, hold down the Apple key (*) and hit the letter "R" (*+R) in Windows use the Ctrl key and the letter "R" (Ctrl+R). This will create a new record. The idea is to create 30 blank records (one for each label). Keep creating new records until the Records indicator in the Status Area (the bar on the left side of the screen) reaches 30.

To print your return address labels, select Browse from the Layout menu, then choose Print from the File menu.

If you want to print more than one sheet of labels, use the Print dialog box to specify the number of copies desired.
Published Date: Feb 18, 2012

A/UX: How to Partition for Two 45MB Cartridges

In our office, we use 45MB removable cartridges as standards for hard disk storage. Some of us now want to use A/UX. Is it feasible to put A/UX on two separate 45MB cartridges and run it as is? If yes, what partitioning would you recommend?

This article has been archived and is no longer updated by Apple.
If you have two 45MB cartridge drives on a Macintosh running A/UX, it may be possible to separate the standard A/UX Root&Usr partition into Root and Usr partitions on two different drives. Here is the list of disk partitions and their sizes from the standard A/UX 2.0b for an 80MB drive:

```
Approx. size Partition
------------ ---------
16K Macintosh Driver
16K Free
54567K A/UX Root&Usr (slice 0)
18432K A/UX Swap (slice 1)
3072K A/UX Autorecovery
2048K MacPartition
1K Free A/UX (slice 3)
1K Free
```

For this particular situation, we would suggest that you put the "Macintosh Driver", the "A/UX Root"(/), the "A/UX Swap", and the "MacPartition" partitions on one drive, and put the "Usr"(/usr) partition on another drive. You may remove the "A/UX Autorecovery" partition if you have a way to recover from any disk disaster.

The total size of the "Macintosh Driver" (16K), the "A/UX Swap" (18432K), and the "MacPartition" (2048K) partitions is 20496K. Therefore, you can create the "Root" (/) file system with the size of about 45MB - 20496K. Note that the current disk space occupied by the "Root" file system (excluding /usr) is about 20MB. Therefore, you have about 5MB of space for growing in the "root" drive. The entire disk size (in blocks) can be found from the report of "dp /dev/rdsk/cXd0s31" (X is the SCSI ID of the drive).

Use the "dp" command to create the above partition names and sizes in one drive. Within "dp", write down the size (in block) of the "Root" (/) file system for later "newfs" use.

On the other drive, you can allocate the entire 45MB for the "Usr" (/usr) partition. Use the same "dp" to create the "Usr" (/usr) partition, and write down its size. Note that the current disk space occupied by the "Usr" (/usr) is about 18MB. Therefore, you have about 25MB (maybe less due to 5 percent "low-water-mark" required on BSD UFS) space to grow.

To balance the disk space between the two drives, you can "symbolically" link some files or directories from the "Root" drive to the "Usr" drive.

To make a "Root" (/) Berkeley file system (UFS) do:

```
# newfs -s number-of-blocks-for-root /dev/dsk/cXd0s0
```

"X" is the SCSI ID of the 45MB "Root" drive.

To make a "Usr" (/usr) Berkeley file system (UFS) do:

```
# pname -cY -s2 "Usr"
==> /dev/dsk/cYd0s2
```

"Y" is the SCSI ID of the 45MB "Usr" drive, and assume "Usr" is the partition name created in the drive.

newfs -s number-of-blocks-for-usr /dev/dsk/cYd0s2

After you have these file systems created, you can mount the above two file systems. Here is an example:

mount /dev/dsk/cXd0d0 /45root
mount /dev/dsk/cYd0s2 /45usr

After mounting the file systems, you can use either "cpio" or "tar" to copy the following files and directories (exclude /usr) onto the 45MB "Root" drive:

/.[a-z]*
/[a-t]*
/[v-z]*
/[A-Z]*

and copy the following /usr directory onto the 45MB "Usr" drive:

/usr

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ClarisWorks: Maximum Rows and Columns (SS)

What is the maximum number of rows down and columns across on a ClarisWorks spreadsheet?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The maximum number of rows down is 16,384 on a ClarisWorks spreadsheet. The maximum number of columns across is 256. This is a total maximum of 4,194,304 cells.

To change this, select Document from the Format Menu and then change the numbers in Columns and Rows under Size.
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ClarisWorks: Saving Only Selected Fields and Records of a Database to Another File Format

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
In ClarisWorks, if you use the Save As command to save a database in another file format, the resulting file will contain data from only the found (visible) set of records. Because of this, you can limit which records are saved by performing a Find prior to using Save As. However, if you use Save As, the resulting file will always contain the data from every field in the found set of records.

If you want to limit which fields are used in the "export" file, the trick is to use Copy and Paste instead of Save As. Perform the following steps:

1. Create a layout in the database which has only the fields which you want to "export" and make it the current layout.

2. If appropriate, perform a Find so that only the desired records are visible.

3. Press the Enter key (on the far right of your keyboard, in the numeric keypad) to ensure that no individual record or field is selected or active.

4. Choose Select All from the Edit menu (Command-A on Mac, Ctrl A on Windows).

5. Choose Copy from the Edit menu (Command-C on Mac, Ctrl C on Windows).

6. Create a new, blank Spreadsheet document (Command-N, down arrow 3 times, then press Return on Mac; Ctrl N, down arrow 3 times, then press Enter on Windows).

7. Choose Paste from the Edit menu (Command-V on Mac, Ctrl V on Windows). At this point, you will have an Untitled ClarisWorks spreadsheet document which contains only the desired data.

8. Choose Save from the File menu (Command-S on Mac, Ctrl S on Windows), select the desired format, name the file, choose the desired location for the file to be saved to, and press Return (Mac) or Enter (Windows), and there you have it.

If you want this data in a format not available for spreadsheets (e.g. WordPerfect or Microsoft Word), in step 6, create a new word processing document instead of a spreadsheet and then follow steps 7 and 8. This will result in a text file with the data in tab separated format. If you want the data in comma separated format, use the Find/Change command to replace the tabs with commas before proceeding to step 8.

All or much of this process can be automated with a macro as well.
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ClarisDraw: Showing Line Lengths In Feet and Inches When Using Autosize Lines

How to use the ruler to show feet and inches, rather than the default feet and fractions of feet when using autosize lines.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When using Autosize lines to display the lengths of lines, if the line is scaled so that one inch represents one foot, the default display format is in feet and fractions of feet (for example, the default display for 6' 3" would be 6 1/4', while the default fraction-as-decimal display for 6' - 3 11/16" would be 6.6875').

To show the result in feet and inches (i.e. 6' 3" or 6' 3-11/16"), the Divisions in the Ruler dialog box must be set to a multiple of the number of standard divisions of both inches (i.e. 16) and feet (12), or 192. Perhaps the best way to do this is to set the scale at .25 inches to 1 foot, and set the number of divisions to 48.

See the online help under Autosize Line for instructions on implementing ruler changes for existing lines.
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Can‘t Donate, Sell or, Transfer Old Software After Purchasing Upgrade

The Claris software license agreement stipulates that you may not donate, sell, or transfer the old version of your software after purchasing an upgrade.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Claris software license agreement stipulates that you may not donate, sell, or transfer the old version of your software after purchasing an upgrade. Although the new version may come with a new serial number, the owner still only has one software license.

The exact legal specifics from the Software License agreement read:
1.License
(d) Notwithstanding any other terms in this License, if the Software is licensed as an Upgrade or Update, then you may only use the Software to replace previously validly licensed versions of the same software. You agree that the upgrade or update does not constitute the granting of a second license to the Software (i.e., you may not use the upgrade or update in addition to the software it is replacing, nor may you transfer the software which is replaced to a third party).
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ClarisDraw for Windows 1.0: Import/Export Formats

Import/Export formats for ClarisDraw for Windows 1.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The file formats that ClarisDraw for Windows 1.0 supports include:

Importing:

ClarisImpact 1.0 presentation and draw Documents
ClarisWorks Draw Documents (*.CWK)
Computer graphics metafile (*.CGM)
DIB-bitmap (*.DIB, *.BMP, *.RLE)
Encapsulated Postscript file preview (*.EPS)
EPS file TIFF preview (*.EPS)
MacDraw Pro (*.MDP)
Macintosh picture file (*.PCT)
MacPaint (*.MAC)
Microsoft video (*.AVI)
Microsoft Windows metafile (*.WMF)
DOS Text (*.TXT)
Rich Text Format (*.RTF)
Microsoft Word for Windows 2.0 & 6.0 (*.DOC)
Tagged image file format (*.TIF)
WordPerfect 5.1 & 6.0
ZSoft Paintbrush files (*.PCX, *.PCC)

Exporting:

Macintosh picture file (*.PCT)
Computer graphics metafile (*.CGM)
Microsoft Windows metafile (*.WMF)

Note: This information can also be found on the on-line help that comes installed with ClarisDraw for Windows.
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A/UX: Questions and Answers (11/95)

This article contains frequently asked questions (FAQ) about A/UX?

This article has been archived and is no longer updated by Apple.

Question: A/UX supports the Comm Toolbox. Can I drag tools from Mac OS and use them with A/UX, or must they be special versions?

Answer: If the tool uses a low-level communication protocol that A/UX supports (for example, serial, MacTCP), there is a good chance that the tool will work under A/UX. However, if the tool uses something unsupported, such as DECnet, it will not function properly under A/UX.

Question: MacTCP works on A/UX. Is it the same as on Macintosh OS, a special version, or a switch toward "native TCP/IP on A/UX"?

Answer: The MacTCP on A/UX is a special version of MacTCP for A/UX. The Macintosh OS version of MacTCP lets a non-Ethernet-based Macintosh run IP-based communications programs over LocalTalk by encapsulating IP packets into DDP packets. The A/UX version of MacTCP does not support this option.

Question: MacX works on A/UX. Is it the same as on Macintosh OS, and in this case, is the "MacTCP tool" in the Comm Toolbox the same as on Macintosh OS?

Answer: The MacX server under A/UX is identical to the MacX under Macintosh OS. So is the "MacTCP Tool" in the A/UX Extensions folder. If you intend to use a version other than that supplied with A/UX, refer to the MacX User's Guide for correct installation instructions.

Question: Does "X Window System native" work only in the Console Emulator session type, or does it work with other sessions types?

Answer: The "Native X11 Window System" can work only in the "Console Emulator" session type under A/UX.

Question: Why is UFS quicker than SVFS?

Answer: According to the original implementors of Berkeley Fast File System (UFS), the UFS provides up to ten times the file access rate of the traditional UNIX file system (SVFS). The performance enhancements include better locality of reference in the file system structures and support for large block sizes. In addition, the BSD UFS provides support for file-locking, symbolic links, "long" file names, 32-bit inodes, and resource quotas. In A/UX, however, A/UX UFS does not support resource quotas.

Question: What are the main improvements of X11R4 compared with X11R3?

Answer: In general, compared to X11R3, the code of X11R4 is smaller, and the performance of X11R4 is faster. It also provides a variety of bug fixes in X11R3.

Question: What is the Xaw Athena Widget Set?

Answer: The Xaw Athena Widget Set is a set of user interface components known as widgets, including scroll bars, menus, and buttons, and so on. The Xaw Athena Widget Set is included in the standard X11 distribution. In A/UX Native X Window System, the /usr/lib/libXaw.a library is the Xaw Anthena Widget Set.

Question: How does A/UX manage an A/UX Toolbox application, compared with the MultiFinder Toolbox, which is not "re-entrant"? Are all managed by the startmac process?

Answer: It is managed by the UI (User Interface) device driver and the MF (MultiFinder) under A/UX. Note that MultiFinder under A/UX follows the Macintosh paradigm for cooperative tasks and does NOT create a new or different one from the Macintosh.

Question: When an application uses the Toolbox, the calls are trapped (GetFile is changed in open or fopen, for instance). Is it the same for A/UX and Macintosh OS applications?

Answer: Yes, A/UX performs the same as it does under Macintosh OS. Toolbox applications share the same address space with Macintosh applications in that they have access to the application and system heaps, low-memory globals, and so on.

Question: Do communications cards, like Serial NB and others, work under A/UX?

Answer: It seems that the Apple Serial NB Card does not have a driver for A/UX yet. We would think both the AST-ICP card and the SuperMac Comm card should continue to work under A/UX.

Question: Is there an implementation of Open Look on A/UX?

Answer: Neither Tech.Comm nor A/UX Engineering knows of a port of AT&T Open Look for A/UX.

Question: Can MacX on A/UX manage several screens?

Answer: MacX server under A/UX supports only one screen (display). It does the same as under Macintosh OS.

Article Change History:
28 Nov 1995 - Updated format and added keyword.
01 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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ClarisWorks: Single Quote or Accent Mark in Field Name Hinders Label Assistant from Making Field

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This article has been archived and is no longer updated by Apple.

If the single quote or accent mark is used in a field name the ClarisWorks Label Assistant cannot create a calculation field equal to the original field, thus hindering the assistant from accurately creating the field.

The only way to get around this issue is to change the field name so it does not use the single quote or accent mark.

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Third Party Translators to Convert to DXF

This article lists two third party CAD mover packages that will convert files to DXF and other formats

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This article has been archived and is no longer updated by Apple.

PowerDraw Translator

System Requirements: Macintosh Classic or larger; hard disk drive; drawing software.

PowerDraw Translator from Engineered Software converts drawings between PowerDraw, Illustrator88/EPS, PICT, PICT II and DXF file formats into fully editable drawings. It also gives users the capability to read previous versions of PowerDraw, Clipboard/Scrapbook, MacDraw, Claris CAD, Library and HPGL file formats. External versions are available for PowerDraw 4.0 or later users and PowerCADD 1.0. Suggested retail price is $275 retail; stand-alone version $249 retail; external version.

CADMover 4.0

System Requirements: Macintosh or Power Macintosh.

CADMover from Kandu Software Corp. enables users to get their two- and three-dimensional graphics where they need to be: across departments, computer platforms or programs. Users can create synergy via 3DGF, Adobe Illustrator, Architron II, CGM, Claris Cad, DDES2/IT8.6, Dimensions, Dreams, DXF (both text and binary), ENVISAGE 3D, Gerber Plotter, HPGL, Focus, Zoom, IGES, MacDraft, MacDraw II, MiniCad+ Text, PICT, Presenter Professional, Sculpt 3D, STL (stereolithography), Super 3D Text and Wavefront (.OBJ). CADMover's precision transformation logic maintains a high degree of accuracy for all calculations. Translation options include multiple layers and levels, multiple drawings within a file, scaling between most formats, unlimited file size with use of hard disk and full color. CADMover 4.0 has pan and zoom for accuracy checks, new editing dialogs and six new EPSF readers. Suggested retail price is $495 retail.

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ClarisWorks for Windows: Removing List of Recently Opened Files

This article will assist you when removing unwanted files from the list of recently opened files for ClarisWorks for Windows.

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This article has been archived and is no longer updated by Apple.
This is an update to an existing article.

When opening up files in ClarisWorks, ClarisWorks keeps a running list of the last four files that were opened and displays those file names at the bottom of the File menu. This information is updated each time a new file is opened, and the most recent file appears at the top of the list while all other names are booted down on the list with the one at the bottom moving completely off the list.

If you delete a file from your hard disk using the File Manager in Windows, the name does not disappear from the list. It will only disappear from the list after opening four other documents (if it was the first on the list when the file was deleted).

CLARISWORKS 3.x

In order to clear these files off the bottom of the file menu (without opening four documents), you need to edit the CLARIS.INI file. When you edit the CLARIS.INI file, in the ClarisWorks 3.0 section you will see lines that read:

LRUfile0=c:\\<path>\\<Filename.EXT>
LRUfile1=c:\\<path>\\<Filename.EXT>
LRUfile2=c:\\<path>\\<Filename.EXT>

If you delete these LRUfile<x> lines, it will remove the files from the File menu list. As you open new files, they will come up in the listing under the File menu.

CLARISWORKS 4.x

In order to clear these files off the bottom of the file menu (without opening four documents), you need to edit the Windows 95 System Registry.

PLEASE NOTE: The central information database for Windows 95 is called the Registry. Due to the importance of this file, great care must be taken when editing / modifying this file. It is recommended that only experienced users attempt to edit the Registry. It is also advisable to backup the Registry database before making changes. The Registry can be saved (exported) in text format as a .REG file by using the Registry Editor (REGEDIT.EXE). The Registry can later be restored (if necessary) by importing a .REG file that was created by exporting the Registry. Please consult your Windows 95 documentation for more information on the Registry Editor and backing up its contents. Please do not attempt the following Registry edits if you are not comfortable.

1. Click on the START button on the Windows 95 Task Bar and choose RUN.
2. In the OPEN dialog box, type in REGEDIT and click on OK.
3. In the REGISTRY EDITOR, double click on HKEY_CURRENT_USER
4. Under HKEY_CURRENT_USER, double click on the folder entitled SOFTWARE
5. Under SOFTWARE, double click on the folder entitled CLARIS CORP.
6. Under CLARIS CORP., double click on the folder entitled CLARISWORKS FOR WINDOWS
7. Under CLARISWORKS FOR WINDOWS, double click on the folder entitled CLARISWORKS 4.0

On the right hand side of the screen you should see several lines of data. Locate the lines that look similar to the ones below.

LRUfile0
LRUfile1
LRUfile2

If you delete these LRUfile<x> lines, it will remove the files from the File menu list. To do so, right click on the ones you want to delete and select DELETE from the pop-up menu. Make sure that you do not delete anything else but the lines that start with LRU. Once the edits have been made, close the Registry and relaunch ClarisWorks 4.x.
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ClarisDraw: Grouped Objects Rotated 90 Degrees Disappears

Objects will seem to disappear in certain cases when grouped, then Rotated 90 degrees.

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This article has been archived and is no longer updated by Apple.
An issue occurs in Claris Draw for Windows in certain cases, when you group objects then choose Transform.. Rotate 90 degrees, under the Arrange Menu.

Issue: The objects seem to disappear, however, they are still there, on another part of the page.

Workaround:
1. Choose Show Object Info, under the View menu.
2. Select & Group your objects.
3. Select Transform... Rotate 90 degrees, under the Arrange menu
4. If the object seems to disappear, look at the Show Object Info box. One of the numbers may show a negative number. Change that to a positive number and your Rotated and Grouped object will reappear.

Lastly, Ungroup the objects, rotate them and then regroup them.
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WorldScript Update 1.1- Read Me

This article contains the Read Me file for the WorldScript Update v1.1.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Who Should Install WorldScript?

This installer will install files needed by WorldScript technology for users running Mac OS 7.5 and above. Users of the Japanese and Chinese Language Kits or applications which depend on WorldScript technology should install these pieces as they improve the stability and performance of your system.

QuickDraw GX and Power Macintosh users should upgrade to these pieces as they provide important improvements over previous versions.

The files in this WorldScript updater are taken from the Arabic Language Kit 1.0.1, Hebrew Language Kit 1.0.1 and the Cyrillic Language Kit 1.0. You do not need this if you are running one of these kits and do not simultaneously have Japanese or Chinese installed.

What's new in the WorldScript Updater 1.1 over WorldScript Updater 1.0.1?

1. It updates the Language Kit Extension to 7.5.2 when it is present and not otherwise. In previous versions of the WorldScript Updaters, the Language Kit Extension was left untouched.

2. WorldScript I is version 7.5.3. Improvements since 7.5.1 include fixing a conflict with ATM, fixing a crash with LC 475, Performa 57x, and Duo 280c CPUs, allowing Setting control panels (Arabic, Hebrew, Persian) to work better as secondary scripts and some minor improvements to WorldScript I script resources.

3. The WorldScript Updater 1.1 installer script recognizes name differences by doing a more intelligent search and thus will now work with localized file names.

4. It recognizes the difference between WorldScript Power Adapter and WorldScript II which at one point had the same type and creator.

5. It prevents installation of the Language Kit Extension on systems where it does not already exist.

6. It updates InputBackSupport even when WorldScript II doesn't need to be updated.

7. Naming is now more consistent. "WorldScript Pieces", "WorldScript Pieces Installer", "WorldScript Updater", "WorldScript Installer", 7.5.1, 1.0, have all been changed so that it is consistently called "WorldScript Updater 1.1."

About the WorldScript Updater

The WorldScript Installer installs the following files:

* WorldScript I (version 7.5.3) used for complex one-byte processing of languages such as Arabic and Hebrew,

* WorldScript II (version 7.5.1) used for two-byte processing of languages such as Chinese, Japanese, and Korean,

* InputBackSupport (version 7.5.3) provides support for two-byte fonts; automatically installed with WorldScript II,

* Language Kit Extension (version 7.5.2) provides essential support for all Language Kit products. This extension cannot be custom installed. It will be automatically installed on all systems where it is necessary.

Using the WorldScript Updater

The Easy Install option of the WorldScript Updater 1.1 updates your existing WorldScript and/or Language Kit Extension files. If you want to install additional files, you can use the Custom Install option of the Installer. The Language Kit Extension will only be available as an update. In other words, you cannot install this unless you have purchased an Apple Language Kit and have it installed in your active system.

1. To open the WorldScript Updater, double-click the Installer icon on the disk you received with your WorldScript Updater package.

2. To update existing WorldScript and Language Kit Extension files on your startup hard disk, click Install.

To install additional files, choose Custom Install from the pop-up menu, then click to put an X in the box next to each item you want to install. When you're finished choosing items, click Install.

TA43567_WorldScript_Update_Read_Me.pdf

The files are installed on your hard disk. You may be prompted to restart your computer after installation.
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ClarisWorks: Converting Comma Separated Text (ASCII) Files to Tab Separated Text

ClarisWorks does not import comma separated text files into the database or spreadsheet. You can convert a comma separated text file to a tab separated text file by doing the following steps.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Open the text file as a Word Processing document. (Select Word Processing as document type.)

Choose Find/Replace from the Edit menu.

Enter: "," (quote comma quote) in the Find box, and enter: \\t (the symbol for a tab) in the Change box. Click on Change All.

Now do one more Find/Replace, this time enter: " (quote) in the Find box, and enter a space in the Change box. Click on Change All.

Choose Save as... from the File menu for this document and save it as Text.

Now you have a tab separated text document. When you open this document as a Database (select Database as document type) it will create the fields and convert the data automatically.

This works great for data such as names and addresses, but can be a little tricky if you are importing fields with quotes or tabs contained in the text.
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Using Bar Codes in Claris Databases

This brief covers the background, specifications, and usage considerations when using bar codes.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The different bar code types are intended for different applications, i.e., the Postnet is the one used by the U.S. Postal Service and it contains information (including the ZIP code) that allows them to sort letters mechanically.

The most widely used bar code is Code 39. Because it contains numbers, letters and some characters such as dash, dollar, slash, etc., it can be used with existing numbering systems.

The UPC (Universal Product Code) is the main system used by retail stores, but it contains ONLY numbers, and must have a fixed number of characters in it.

The Interleaved 2 of 5 is the system used for industrial purposes, and is the standard for shipping containers. The main advantage of this system is that it is very compact, thus making it suitable for use where space is limited.

Code 128 is the only code that has all 128 ASCII characters so the bar code can contain alpha, numeric, punctuation or special characters.

Printing bar codes may present a issue if you use an ink jet printer. The issue may arise if the bar code reader is intended to read "invisible light". There are two types of readers: visible light and invisible light readers. With invisible light readers, the reader "needs" a carbon content in the ink, which ink jet ink does not have. This means that the barcode will print nicely, but the reader will not read it. If you print something on an ink jet printer and the bar code reader cannot read it, try making a "Xerox" copy of the printed page and see if it reads, if it does, then you know that the issue is the printer ink.

A very important setting in ClarisWorks when using bar codes is the "Fractional Character Widths" in Text Preferences.

Bar codes cannot be compressed or reduced. This means you have to use the correct size font. This is why when you purchase a commercial bar code font it comes in various sizes.
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ClarisImpact 2.0: Datasheet Text

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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ClarisImpact 2.0

ClarisImpact software lets you create more kinds of structured business diagrams than other programs, flowcharts, orgcharts, datacharts, calendars, network diagrams and much more. And they have never been so easy to create. Instead of building them one piece at a time, you simply select the diagram type you need and ClarisImpact creates your entire graphic instantly.

You will get exactly the look you want, thanks to six professionally - designed style families. Just choose the look you want and add it to your chart or diagram with a click of the mouse. Each is fine tuned to print beautifully in black and white or color. And combine style elements to create hundreds of custom looks. Either way, you can create the kinds of graphics that make you look good, without being a graphic designer.

What is more, with the DataDraw ª feature you can quickly turn data from your favorite spreadsheet or database file into an eye-catching ClarisImpact chart or diagram. When you are ready to communicate, use the built-in word processing and presentation capabilities to create a report or a slide show. In mixed platform environments ClarisImpact lets you trade files between your Windows and Macintosh computers without the need for translation.

ClarisImpact. Automatic charts, diagrams and more.

* Flow charts
* Organization charts
* Network diagrams
* Timelines
* Process diagrams
* Calendars
* Tables
* Outlines
* Schematic diagrams
* Total Quality Management charts
* Brainstorms
* Data charts and graphs
* Reports
* Presentations
* And more! For Windows , Macintosh , and Power Macintosh

All-In-One Business Graphics Solution

Complete Charting and Eliminate the need for multiple business graphics. Graphics Capabilities utilities. Each ClarisImpact tool has the capabilities found in dedicated applications.

Automatic Graphic Instantly create perfectly-aligned and proportioned Creation business graphics using any of 6 basic tools available in ClarisImpact.

Pre-defined Styles Create your own look or select from an extensive collection of professionally-designed styles to give all your business graphics a unified, professional presence.

Turn Spreadsheet and Automatically turn your spreadsheet and database. Database Files into Charts files into eye-catching charts with DataDraw, and ClarisImpact can be set to automatically update linked graphics whenever the original file is changed or modified.

Artistic Impact Personalize graphics down to the last detail using the integrated drawing tools and a clip art library with thousands of professionally-designed symbols, graphics and high-impact artwork, you simply drag and drop them into position.

Powerful Presentations Create powerful online presentations with over 50 transition effects, QuickTime or AVI movies, integrated outliner and speaker notes. Slide sorter lets you easily view and arrange an entire presentation . Built-in Word Processing With complete word processing capabilities, you can create professional-looking documents. Specify margins, columns, tabs, spacing, and more even use text wrap, footnotes, and spell checking.

Cross - Platform Share files instantly between Windows, Macintosh Compatibility and Power Macintosh computers without file translation

Connected Diagram Lets You Picture Any Process

Connectors Draw Simply point and click to chart the steps of any Automatically process flow, network, TQM, brainstorm, decision - tree, transportation and more resulting in a clean, crisp connected diagram that is easy to follow.

Standard Symbols Use ANSI-standard process and flow chart symbols and computer network symbols provided, or customize and create your own.

Connector Options Add emphasis to your diagram by applying different spacing, direction, or color to key connectors.

Organization Charts to Reflect Your Business Structure
Organization Chart Tools Enter names, titles and other relevant information to create professional-looking organization charts in seconds.

Fast Reorganization Reflect changes to your organization by simply adding and deleting boxes, or clicking and dragging from one location to another, connections and alignment are automatically updated.

Features / Benefits
Extensive Format Options Exercise complete format control, including orientation, distribution and spacing of management, peers, and subordinates.

Timeline and Calendar Models Manage Projects and Time
Standard Timeline Create Gantt charts or timelines to track project Features start and completion dates, durations, milestones, dependencies, critical paths, etc.

Timeline Task Simply click and drag to reorganize tasks, all data Reorganization and graphics adjust automatically.

Monthly or Yearly Create and combine calendars to notate events from Calendars personal travel to group meetings.

Unique Calendar Produce eye-catching calendars with day and text Design Options styles, like banners and symbols to show special days.

Data Chart and Table Models Compare Your Data
Multiple Data Chart Types Access a complete selection of data charts: bar, line, scatter, hi-lo, pie, pictograms, and more, 96 variations in all, even mix chart types in a single graph or add 3D and shadow effects.

Enliven Data Chart s Add new life to old, familiar charts using blends, gradients and a full set of drawing tools to make charts stand out.

Quick and Easy Turn comparative text and numeric data into Table Creation eye-catching tables. Customize grid lines, formatting and justification, even automatic cell width and height control . Advanced Table Calculation Now you can create tables that act just like spreadsheets, supporting industry - standard formulas and summations.

Row and Column Simply click and drag rows or columns to reorder Reordering data, and graphics adjust automatically.

Full Display Control Customize axes, legend, line styles and data display to emphasize information, even set numerical display for percent, decimal, currency and more.

Built-in Graphics Intelligence Always Available
Smart Graphics Automatically retain element alignment, spacing, and proportions when editing or scaling charts and graphics.

Smart Line Routing Maintain connections between elements, even when they move! Smart Connector [a] lines automatically route around other elements to ensure clear presentation.

Easy Editing Edit text and values directly on charts or through data tables for quick, clean revisions to your document. Edits are instantly reflected so your work is always current.

Outline Model Helps Organize and Present Ideas
Easy Outline Editing Change outline sequence by simply clicking and Features dragging text.

ClarisImpact . Now when you need great looking business graphics and you need them fast, there is ClarisImpact. With just a few clicks of your mouse, you can produce timelines, calendars, structured diagrams, data charts and much more. You can even transform your database and spreadsheet files into ClarisImpact charts or diagrams automatically, using its built-in DataDraw capabilities, without rekeying any data. Is not it about time you took the hassle out of creating graphics? With ClarisImpact, absolutely no drawing talent is required, but the results will make you look like a pro!

For Macintosh
File Formats Supported
* EPSF (import & export)
* TIFF (import)
* PICT and PICT2 (import & export)
* CGM (import & export)
* ClarisDraw, [a] MacDraw * II, MacDraw Pro(import & export)
* MacPaint * (import)
* Apple QuickTime Movie (import)
* DIF (import)

* GIF (import)
* Microsoft Excel 3.0 - 4.0 (import)
* Mac Write * II, MacWrite Pro (import & export)
* Microsoft Word 3.0, 4.0, 5.0, (import & export)
* Microsoft Write 1.0 (import & export)
* RTF (import & export)
* Text (import & export)
* ASCII text (import)
* SYLK (import)
* ClarisWorks ª 1.0, 2.0, 3.0 word processing and drawing (import) Required Equipment
* Apple Macintosh, Power Macintosh or compatible computer with 68000 processor or higher
* 1.4 MB high density floppy disk drive
* Hard disk drive and 4 MB memory
* 8 MB recommended for System 7
* 8 MB required for Power Macintosh
* System software 6.0.8, System 7, or System 7 Pro, System 7.5 Printer Support
* Apple LaserWriter, Personal LaserWriter, and ImageWriter , and Apple StyleWriter families
* Hewlett-Packard LaserJet, DeskWriter, and PaintWriter families
* A wide variety of other Macintosh-compatible, third-party printers For Windows

File Formats Supported

* .WMF (import & export)
* .CGM (import & export)
* .TXT - ASCII text (import)
* .TXT - text file, text file DOS (import & export)
* .DBF
* .DIB, .BMP, .RLE - Bitmap (import)
* .DIF
* .XLS - Excel (import)
* .WKS, .WK1, .WK3 - Lotus 1-2-3 (import)
* .MDP - MacDraw Pro (import)
* .EPS (import)
* .PCT - Macintosh PICT (import & export)
* .MAC - MacPaint (import)
* .TIF (import)
* .PCX, .PCC - PaintBrush files (import)
* .AVI (IMPORT)
* .CWK - ClarisWorks 3.0 (import)
* .RTF (import & export)
* .SLK - SYLK (import)
* .DOC - Word for DOS 5.x, Word for Windows 2.X, Word for Windows 6.x (import & export)
* .WPD, .DOC - WordPerfect 5.1, WordPerfect6.x (import & export)

Required Equipment

* PC with 386/25 MHz or higher processor
* One hard disk, one 3.5" floppy
* Microsoft Windows 3.1
* WIN32s (included)
* 8 MB RAM

Printer Support

* Hewlett-Packard LaserJet, PaintJet, DeskJet series
* Postscript printers such as Apple LaserWriter, IBM Laser Printers
* A wide variety of other Windows-compatible printers

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Applesoft: Internal program storage format

Applesoft programs are stored one line at a time starting at memory location $801 and ascending in order by line number.

This article has been archived and is no longer updated by Apple.

Each line is stored in this format:

```
                          $8xx
00  01  02  03  04  05  06  07  08  09  0A  0B  0C  0D  0E

00  0D  08  0A  00  97  3A  BA  22  48  49  22  00  00  00
 E   LINK   LINE #   H   :   P   "   H   I   "   E   LINK
 O                   O       R                   O
 L                   M       I                   L
                     E       N
                             T
```

The first two bytes are pointers to the absolute address of the beginning of the next line. The first byte is the least significant.

The next two bytes are integers representing the line number of that line. Again, the first byte is the least significant.

The next byte, a token, stands for the first Applesoft keyword. When the lines starts with "A = 1", the variable name (in ASCII) is first. The remaining command consists of keywords and symbols reduced to one byte tokens and unmodified ASCII text.

A list of Applesoft's tokens appears on page 121 of the Applesoft Reference manual.

The subsequent bytes are either "$00"s signifying the end of this line, or "$3A"s, indicating multi-statement lines, followed by a "$00.

If the link field for a line is 00 00, then Applesoft considers it the last line in the program while running or listing. The SAVE command uses a different pointer for the end of the program. $AF,B0 normally points to the high byte in the line number of the line beyond the last line.

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DOS 3.3: BASIC Entry Vectors

The following table shows the addresses of some machine language routines on a 48K Apple.
This article has been archived and is no longer updated by Apple.
Call them from your BASIC program after a command or DOS error if you wish.

Addr	Int	ASRom	ASRam	Description
$9D56	36 E8	-	-	Chain entry
$9D58	E5 24	FC 24	06 25	Run
$9D5A	E3 E3	65 D8	67 10	Error entry
$9D5C	00 E0	00 E0	84 1D	Initialize BASIC memory
$9D5E	03 E0	3C D4	3C 0C	Continue after DOS commands
$9D60	-	F2 D4	F2 0C	Line link resequence

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Creating a New SYSTEM.INI without any Third-Party Drivers

For in-depth troubleshooting purposes, you can create a clean SYSTEM.INI file using your original Windows diskettes

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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The SYSTEM.INI file is a text file used my Windows to configure hardware and other device drivers to be used in Microsoft Windows. Overtime, installation of hardware devices and software applications can add to or modify the SYSTEM.INI file that might cause conflicts with other applications. Because of this it might be desired to create a clean version of the SYSTEM.INI file for troubleshooting purposes. Unlike the WIN.INI file, which you can rename and have Windows create a generic one for you, the SYSTEM.INI file must actually be rebuilt to reflect the hardware that is in your machine.

To create a new SYSTEM.INI file that is configured for your specific hardware but does not contain any references to third-party device drivers, do the following:

1. Rename the SYSTEM.INI to SYSTEM.BAK

2. Expand the file SYSTEM.SR_ from the original Windows diskettes to the Windows directory with the following command:

c:\\windows\\expand a:\\system.sr_ c:\\windows\\system.ini

NOTE: This file can be found on DISK1 of the Windows 3.1 1.44 megabyte 3.5 inch disk set or on DISK 2 of the 1.2 megabyte 5.25 inch disk set.

3. Change to the Windows drive, and then change to the Windows directory.

4. Type SETUP and press ENTER / RETURN to start the MS-DOS based Windows Setup. It is very important that this step is run when in your Windows directory (see STEP 3)

5. Select the correct hardware options for your system.

6. Accept the changes. At this point you can have SETUP copy new drivers if you want

7. Open the new SYSTEM.INI in a text editor and make the following changes:

- Add PROGRAM.EXE to the SHELL= line of the [Boot] section.

- Remove or remark out the TASKMAN= line in the [Boot] section.

- To enable 32-bit disk access, add the following lines to the [386Enh] section:

32BitDiskAccess=<Boolean>
device=*int13
device=*wdctrl

Replace <Boolean> with ON if you want 32-bit disk access enabled; replace it with OFF if you do not want 32-bit disk access enabled.

8. Start Windows. If you do not receive any errors, you have successfully recreated your SYSTEM.INI file.

At this point, try recreating the issue you were having. If the issue is not reproducible, then there was something in your SYSTEM.INI file that was causing a issue. Troubleshooting SYSTEM.INI file issues goes beyond the capacity of Claris Technical Support to assist you. At this point it is recommended that you contact Microsoft's Technical Support for more information on your SYSTEM.INI file.

If the new SYSTEM.INI file does not fix the issue, the you can rename your backed up SYSTEM.INI from STEP #1
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Text Pasting as OLE Object into ClarisWorks for Windows 4.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When trying to copy text from Wordpad and paste it in a Clarisworks word processing document, the text is pasted as an OLE object rather than as text.

If you open your preferences and select the general option, you will see a check box titled "OLE Menu Items". By default this box is unchecked. If you check this box, you will then under the Edit menu get several new options:

Paste Special
Insert Object
Object
Links
Show Objects

To copy just the text into your document, you must select Paste Special from the Edit menu, and specify that you want the data to be pasted as text.

By allowing you to copy OLE objects into your documents, you have more flexibility to create better looking documents and also edit them with the native application.
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Unable to Open your ClarisImpact 2.0v1 File?

Upon attempting to open the file, the alert, "Not enough memory to complete this operation" appears and the file cannot be opened regardless of how much memory you've allotted to ClarisImpact.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
There is a "known" problem with ClarisImpact 2.0v1 for the Macintosh computer that can result in file corruption. The corruption is usually to such degree that the file can no longer be opened or used in any way. Upon attempting to open the file, the alert, "Not enough memory to complete this operation" appears and the file cannot be opened regardless of how much memory you've allocated to ClarisImpact.

This problem was addressed by Claris Engineering and released in ClarisImpact 2.0v2.

Once you've updated to version 2.0v2 and save your files created in v1 again, things will be okay , however, if a file opens in 2.0v2 but crashes frequently, copying and pasting to a fresh 2.0v2 document is recommended.
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Contact List Preview Too Small to Read

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing your Contact List, you may notice that the page preview is almost too small to read. If you would like to have a list of your contacts printed for your organizer, make sure you have Address Book selected. When you specify Contact List in the Print menu, Claris Organizer will attempt to put all your contacts on one page. This requires the font to be too small to read. Change it from Contact List to Address Book and the print out will come out in the desired type size.

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"File is Busy" Message during PowerBook Synchronization

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Synchronizing Claris Organizer files to a PowerBook will return an error message stating that: "File is busy", it will be followed by another message stating, "The two files could not be synchronized because the file could not be opened."

Instant Organizer will not allow synchronization to take place when docked or connected to a PowerBook. Copy the file to the desktop computer and then Synchronize the file. After synchronization has been completed, transfer the file back to the PowerBook and replace the other file with this new file.
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Adding New Paper Layouts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When the printing dialog is up and you want to add more paper layouts, pull down the menu under Layout and scroll to the bottom. Select Paper Planner Interview. Choose the Planner and size. After making your selection and press the Ok button. Claris Organizer will the additional planner to your menu.

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Cannot Eject Disk with Instant Organizer File Active

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you open a Claris Organizer 2.0 file from a floppy disk and Instant Organizer is active, you may have trouble ejecting that disk. Instant Organizer activates the file that was opened most recently and will not allow you to copy or remove that file until another file is activated. You can deactivate Instant Organizer by restarting with your Extensions off.

This will also be true if the file was opened from a SyQuest, Zip or other removable hard drives.
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Cannot Print the Weekly Calendar Planner to Sr. or Jr. Pocket Format

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris Organizer 2.0 cannot print out the Weekly calendar planner to formats smaller than 5.5 x 8.5 paper. At present there is no workaround for this issue.
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Creating your Own Organizer Decors

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Claris does not provide technical support on how to make and edit your own Decors. If you would like to edit or make your own Decors, you can do so by using ResEdit or Resourcer with the existing Decors. We are not responsible for any errors or issues when editing Decors.

Claris does not provide technical documentation regarding the ResEdit program. Information on how to use ResEdit can be obtained from Apple Computer, Inc.
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Error: "Can‘t open temporary file, do you own it?"

This error message comes from your Internet Provider, not from Emailer.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Issue:
When I try to connect to my Internet Provider, I can't get my mail and I get the following error message in my Connection Log:

Execution of Schedule "Connect Now" at Thu, Sep 19, 1996
Connecting To Internet using Account "My Internet Account"
Checking for mail
** -ERR System error, can't open temporary file, do you own it?

Answer:
This error comes from the mail server at your Internet Provider. It is not a Claris Emailer issue. If you continually get this message, you can call your provider and ask them to solve the problem with the temporary file on their server.
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TA43585_Using_Apple_Guide_Under_Systems_and_.pdf

Using Apple Guide Under Systems 7.0 and 7.1

If it's not working , you may have an enabler conflict.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you are unable to run Apple Guide under System 7.0 or 7.1, look in your System folder for the Drag & Drop enabler and remove it. The Apple Guide enabler supersedes the Drag & Drop enabler, and having the Drag & Drop enabler installed prevents the Apple Guide enabler from loading properly.
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Claris Emailer 1.1v3: Who Should Upgrade?

Reasons to upgrade to Claris Emailer 1.1v3 and Claris Emailer 1.1v3.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Claris Emailer 1.1v3
You only need to upgrade to Claris Emailer 1.1v3 if you are running Open Transport 1.1.1. There are no other advantages to upgrading if you are not running Open Transport 1.1.1. If you are not running Claris Emailer 1.1v2, you should upgrade this version.

Claris Emailer Lite 1.1v3
You should upgrade to Claris Emailer Lite 1.1v3 if you are using Open Transport 1.1.1 or if you would like to take advantage of these new features.

WELCOME TO CLARIS EMAILER
Thank you for choosing Claris Emailer.(TM) This Read Me file documents some additional tips that may prove helpful when using Claris Emailer, including a description of changes for users of previous versions of the program.

In particular, this document provides information about:

1. Terminology used for Internet account setup
2. New features in Claris Emailer 1.1
3. New features in Claris Emailer 1.0v3 and 1.0v2
4. Where to go for more information and help
5. Changes and fixes

1. TERMINOLOGY USED FOR INTERNET ACCOUNT SETUP
The terminology used to set up Internet accounts has been changed since the printing of the manual. The new terminology is now the same as that used by the Internet Configuration System (Internet Config). Internet Config is a tool available from online services that allows applications that are Internet aware to share a common setup.

Old term New term
POP account Email account
POP password Email password
SMTP server SMTP host
Return address Email address

Please see pages 1-4 and 6-12 of the Claris Emailer User's Guide for more information on setting up an Internet account.

2. NEW FEATURES IN CLARIS EMAILER 1.1
In addition to numerous smaller enhancements, Claris Emailer 1.1 has nine new features added since 1.0v3.

- Support for Claris OfficeMail
- Drag and Drop Text Files into Messages
- Messages Deleted in the Filing Cabinet are Moved to Deleted Mail
- Local Preferences
- Specify Recipient Type in Find Address
- Enhanced Support for Addresses
- Choose a Sound for New Mail
- Folders can be sent as Enclosures

Support for Claris OfficeMail

Claris Emailer connects to Claris OfficeMail. Claris OfficeMail is a LAN email solution for work groups and small businesses. It includes support for a gateway connection to the Internet.

Drag and Drop Text Files into Messages

You can drag a text file from the Finder into the body of a message. This is similar to capabilities available with desktop clippings.

Messages Deleted in the Filing Cabinet are Moved to Deleted Mail

Items that are deleted from folders in the Filing Cabinet are now moved into the Deleted Mail folder, not deleted from disk. Of course, if the message is already in the Deleted Mail folder, then the message is deleted.

Local Preferences

You can now keep the Claris Emailer Preferences file in the same folder as Claris Emailer. This can be useful if you keep Claris Emailer on a removable disk. You can also use a local preferences file to run more than one copy of Claris Emailer simultaneously on a single machine.

To use a local preferences file, copy the Claris Emailer Preferences file from the Claris folder in the System Folder into the Claris Emailer Folder. A local preferences file is always used instead of a preferences file in the Claris folder. When you use a local preferences file, the title of the Claris Emailer Browser window changes to reflect the name of the copy of the Claris Emailer that you are running.

Specify Recipient Type in Find Address

The Find Address dialog now allows the user to select what type of recipient the selected addresses should be (To, CC, or BCC). The recipient type defaults to the type of the current row in the addressing window.

Enhanced Support for Addresses

Claris Emailer allows you to drag the text of an email address to a number of places including the recipient list and the address book. Claris Emailer now recognizes the following forms of text drags:

sally_jones@host.com
Sally Jones, sally_jones@host.com
"Sally Jones" <sally_jones@host.com>
Sally Jones <sally_jones@host.com>
"Sally Jones" sally_jones@host.com
sally_jones@host.com (Sally Jones)
<sally_jones@host.com> (Sally Jones)

Claris Emailer has always supported command-clicking a URL (Uniform Resource Locator) if Internet Config is installed. There is now support for command-clicking on an email address even if Internet Config is not installed. To command-click an address with a name, select the entire name and address, then, while holding down the command key, click on the highlighted text.

Choose a Sound for New Mail

You can now choose a sound to be played when you receive new mail. Use the Play Sound pop-up menu in the Preferences to choose the sound. Note that you can also specify a sound to be used for each Claris OfficeMail account if Claris Emailer is not running.

Folders can be sent as Enclosures

Folders can be sent as enclosures by dragging a folder to the enclosures area of an outgoing message. Note that you cannot add a folder by using the Find Enclosure or Add Enclosure buttons.

3. NEW FEATURES IN CLARIS EMAILER 1.0v2 AND 1.0v3
Claris Emailer 1.0v2 and 1.0v3 had eight new features added since 1.0.

- Save As Text
- Execute an AppleScript Document for a Schedule
- Native Open Transport
- Connect Again
- More Information During a Connection
- Internet Config Settings Display
- Default Encoding Setting for Internet Enclosures

These features are incorporated into Claris Emailer 1.1.

Save As Text

You can save any message that you are viewing as a text file. The text file can be opened by a text editor, word processor, and many other applications.

To save a message as a text file, follow these steps:

1. Open the message. The message can be in the In Box, Out Box, or in the Filing Cabinet.

2. From the File menu, select the "Save As Text" menu item. A save file dialog box is displayed.

3. Enter a name for the document and click the Save button.

In addition to the Save As Text feature, Claris Emailer installs an XTND translator for saved Claris Emailer messages. The XTND translator allows applications like ClarisWorks to directly open messages saved in the Filing Cabinet.

Execute an AppleScript Document for a Schedule

Claris Emailer allows you to execute an AppleScript document as part of a schedule. The AppleScript document can instruct Claris Emailer to connect to one or more accounts or services.

To install an AppleScript document:

1. Locate the AppleScripts folder inside the "Claris Emailer Files" folder.

2. Copy the AppleScript document into the folder.

To select an AppleScript document to execute at scheduled times:

1. From the Setup menu, select the Schedules menu item. The list of schedules is displayed.

2. Click the Add button to create a new schedule or select an existing schedule and click the Open button to edit an existing schedule. The schedule dialog box is displayed.

3. In the upper left side of the dialog box, select AppleScript from the Execute pop-up menu. A new pop-up menu listing the available AppleScripts is displayed below the Execute pop-up menu.

4. Choose the AppleScript to execute from the AppleScript pop-up menu.

Two example AppleScripts are included. They are located in the folder "Scripting Claris Emailer" which is in the "Support Files" folder.

* All Services - This example simply connects to each service.

* Internet via MacPPP - The AppleScript opens a TCP connection via MacPPP, connects to your default Internet account, and then closes the MacPPP connection. This AppleScript is also installed in the AppleScript folder and is available to your schedules. Note that you must have the "MacPPP Control" AppleScript addition installed.

Here is one location on the Internet for MacPPPControl:
http://www.claris.com/support/products/emailer/docs/freeppp.html

Note: AppleScript is provided with System 7 Pro and System 7.5. If you're using System 7.0 and 7.1, AppleScript is available from Apple Computer Inc.

Native Open Transport

Open Transport is a new networking technology from Apple Computer that provides enhanced networking. When Open Transport TCP is installed, Claris Emailer uses Open Transport for Internet connections. This can improve performance when compared to MacTCP.

Connect Again

The Connect Again feature immediately connects using the previous Connect Now settings. This is quicker than Connect Now since the Connect Now dialog box is not displayed.

The Connect Now menu item is the last menu item in the Mail menu. It uses command-option-K as a keyboard equivalent.

More Information During a Connection

The Connection Status window displays more information about the current connection. This information includes:

- The subject of the current message.
- An estimate of the current data throughput.
- Notice if there was no mail waiting.

Internet Config Settings Display

When the checkbox "Use Internet Config" is selected in the Internet account setup, the Internet Config information is displayed in the account fields. The settings cannot be edited since they come from Internet Config.

Default Encoding Settings for Internet Enclosures

You can now set a default encoding to use when sending an enclosure via the Internet. Click the Options button in the Internet account setup to change the setting.

4. WHERE TO GO FOR MORE INFORMATION AND HELP
Claris Emailer includes files which contain special tips for using Claris Emailer. These files are in the Support Files folder.

* Claris Emailer FAQ (Q&A) 1 & 2 - These files contain frequently asked questions (FAQs) about Claris Emailer. Read these file for tips on configuring and using Claris Emailer.

* Apple Modem Tool Tips - This file contains instructions on configuring the Apple Modem Tool. The Apple Modem Tool can be used to connect to America Online and CompuServe.

There are three folders in the Support Files folder.

* Claris Emailer XTND Translator - This folder contains information about installing and using the Claris Emailer XTND translator. The translator allows other programs to open Claris Emailer messages that have been saved in the Claris Emailer Filing Cabinet.

* AppleScripts for Schedules - This folder contains AppleScripts that can be executed from Claris Emailer schedules.

* Example AppleScripts - This folder contains AppleScripts that demonstrate how to use AppleScript to control Claris Emailer.

For the latest information, visit the Claris Emailer Home Page at:
http://www.claris.com/support/products/ClarisEmailer/index.html

* There is a mailing list dedicated to Claris Emailer. Mailing lists provide a place for people with similar interests to communicate with each other. The Claris Emailer mailing list is called Emailer-Talk.

To subscribe to the Emailer-Talk mailing list, send an email message to:

emailer-talk-request@eskimo.com

In the subject enter:

subscribe

Because of the volume of mail that you might receive via the mailing list, you may want to set up a Mail Action to manage the mail. A possible Mail Action would be the following which would move the Emailer-Talk messages into the Filing Cabinet.

If any recipient contains "emailer-talk"
File message in "Emailer-Talk Folder"

Note: The Emailer-Talk mailing list is run by an independent organization and is not in any way associated with Claris or Apple Computer.

5. CHANGES AND FIXES
Following are the changes and fixes that were made in 1.0v2, 1.0v3, 1.1v1, 1.1v2 and 1.1v3.

Changes and Fixes in 1.1v3

* Made changes to run properly under Open Transport (OT) 1.1.1.
* Fixed problem where encoded subjects in outgoing Internet mail could show up in an error log.

Changes and Fixes in 1.1v2

* The "connect to" AppleScript command now waits until a connection is done.

Changes and Fixes in 1.1v1

* The eWorld service has been removed.

* The enriched text information in Internet messages (text styles) is stripped leaving only the text of the message.
* Opening new messages is generally faster.
* SimpleText or TeachText read only files can be dragged into the message body.
* When importing address books, the number of items imported is reported.
* "(No Subject)" is inserted as the subject in outgoing messages sent via AOL.
* Claris Emailer previously filled in a user's name if they are in the address book. Claris Emailer no longer fills in the name if the name is specified with the address that was received.
* You can now paste an address of the form: "First Last" address@host.com into the address field of an outgoing message.
* Better handling of SMTP servers that respond with two-line responses. This problem caused synchronization errors when sending more than one message.
* Better management of low memory situations.
* Implemented the ability to send CompuServe messages with "No encoding" specified.
* Added x-sender: header to outgoing Internet messages when the email account is different than the email address.
* Proper error message is reported when trying to send stuffed aliases or unstuffed folders.

Changes and Fixes in 1.0v3

* Internet account options are now accessed via a button called Options.
* Domain names are now cached for Open Transport connections.
* America Online TCP connections are now Open Transport native.
* Added support for Open Transport on 68K Macintosh.
* Leading spaces in incoming subjects are stripped.
* Creating new folders in the Filing Cabinet no longer gives an error message.
* The Type field on outgoing messages can no longer be blank.
* Toggling arrows in a new mail window no longer marks a message as changed.
* Clicking the recipient or enclosure tab no longer marks a message as changed.
* Meta-characters are now stripped out of Window menu listings of Filing Cabinet windows.
* Incoming CompuServe messages with extended envelopes that have greater than 50 recipients are now managed properly.
* Enhanced error reporting format for unknown errors in the connection logs.
* Now recovers better from addressing errors in Internet connections.
* Errors for invalid local recipients for Internet messages are now reported.
* When sending hundreds of messages at once, no longer reports "too many files open."
* Header "titles" are now in bold in the newly renamed Show Original Headers dialog.
* The filename variable in content-disposition headers of Internet messages are now handled properly.
* Outgoing quoted-printable messages with enclosures are now handled better.
* Now writes a date header for outgoing Internet messages.

Changes and Fixes in 1.0v2

* No longer loses memory after many connections to America Online.
* Dates on some incoming messages could be wrong in 1.0. They are correct in 1.0v2. Claris Emailer uses your location on the earth to establish the local time. Make sure that you have used the Date & Time control panel to set your Macintosh's time zone and daylight savings time.
* Closing a message window with unsaved changes now prompts you to save the changes. The previous version always saved the changes.
* Outgoing messages via the Internet now use quoted printable encoding when the message includes extended ASCII characters. This allows you to send messages containing characters not in the ASCII character set such as curly quotes or European characters.

Claris(R) and the Claris Emailer team thank you for your purchase of Claris Emailer. Your support, comments, and suggestions help us to continue to bring you better solutions for your future productivity needs.

Claris is a registered trademark of Claris Corporation.
Claris Emailer is a trademark of Claris Corporation.
Claris OfficeMail is a trademark of Claris Corporation.
AppleScript and Macintosh are registered trademarks of Apple Computer, Inc.
Published Date: Feb 18, 2012

Word wrapping from Internet mail received on CompuServe address using Claris Emailer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Q: When I receive E-mail through my CompuServe E-mail address, that comes off the internet (Not a CompuServe customer) The box in the lower corner of the mail says "Fixed Margins" I always do a select all and copy, then open a new ClarisWorks file and move the text. When I do this the first line goes across the page to the right margin, then wraps the next 3 or 4 words. It then goes to the next line and starts over, even though this is not a new sentence or paragraph. In order to get the letter in the proper paragraph format, I have to go to the beginning of a new line and do a delete, then ad a space. For 3 and 4 page letters this is time consuming.

A: The reason this happens is that each line of the email ends in a carriage return, so when you paste it into ClarisWorks (or any other word processor), the carriage returns are also pasted in. Each line, however, is longer than what can fit in the word-processing document, so each line wraps also. One way of fixing this is to use a smaller font size in the WP document.

Another way is to do strip out the carriage returns via find and replace. First set the find to look for two consecutive carriage returns, and set the replace as a combination that wouldn't be in the document normally (I use a double bullet--two option-8 characters in a row). Then Change All. Next, set find to one carriage return and replace to one space, and do another Change All. Finally, find the two bullets and change them back to two carriage returns, using find/change as before.

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Division will always get printed when printing labels

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When printing labels, the division field will get printed if you have Title or Company selected. To avoid printing the Division field, print out the Addresses. Development is aware of this issue.

Published Date: Feb 18, 2012

ClarisWorks and Art Explosion - MTIFF Translator

Nova Development's Art Explosion clip art collection uses a special "MTIFF" translator that may conflict with the existing TIFF translator in ClarisWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Users who install Art Explosion automatically install an XTND translator called MTIFF. This allows ClarisWorks to open the files on the Art Explosion CD ROMs. However, Claris's TIFF translator is left in place and the two may conflict. Users must remove the old TIFF translator in order to open the clip art items. MTIFF is supposed to also handle normal TIFF files; this has not been conclusively tested by Claris.

The MTIFF XTND translator is not a Claris product, it is a product of Nova Development, the makers of Art Explosion.
Published Date: Feb 18, 2012

Database Field of Type: Name Sorts Incorrectly

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Example: If you create a field called 'Full Name' of type Name and enter the following data into the field:
William Gold
Alex Gold
Gordan Gold

When you sort, you expect the results to be:
Alex Gold
Gordan Gold
William Gold

But the results are:
Alex Gold
William Gold
Gordon Gold

If you change the name Gordon to Cassey, it will sort correctly. If you change the name Gordon to Harry or Gary, the sort will be incorrect.

The ClarisWorks development team is currently looking into this issue. The only work around is to change the 'Full Name' field into 2 text fields 'First Name' and 'Last Name' and sort by 'Last Name' then 'First Name'.
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Changing Decors on Some Computers May Take a Long Time When Using a Large Virtual Memory Setting

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

With Virtual Memory turned on, it will take longer for Claris Organizer to change the decors. To fix this issue, increase the amount of RAM in the computer instead of using Virtual Memory.

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Functions Not to Use in the Match Command

Functions that cannot or should not be used in a Match command formula

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The following commands have no meaning when used in the Match Command.
ALERT(value)
BEEP()
CHOOSE(index, value)
COLUMN()
ERROR()
HLOOKUP(lookup-value, compare-range, index, {method})
INDEX(range, row, column)
IRR()
ISNA(value)
LOOKUP(lookup-value, compare-range, index, {method})
LOWER()
MACRO(text)
MATCH(lookup-value, compare-range, {type})
NA()
PROPER(text)
REPLACE(old text,start num,num chars,new text)
REPT(text,# of times)
ROW()
TYPE(value)
UPPER()
VLOOKUP(lookup-value, compare-range, result-range, {method})

Although many of the business and financial functions can be used in the Match command they may not yield the desired result if used incorrectly. The result must be evaluated to a single value and the function can not use a range of values in any of the variables. Any variable expected as a single value may be entered in the Match formula as a referenced field. Since when using these functions the end result is a single value it is probably better to use the function in a calculation field and match for the result rather than using the function in the Match command.

For example, in the function Present-Value -- PV(interest rate per period, number of periods, payment to be made each period, {future value, type}) -- the value in each variable is a single entry therefore this function could be used in a Match formula.
The function Net-Present-Value -- NPV(interest-rate, payment1, payment2,.payment3,...) -- uses a range of payments that would not work if referenced as a single field. [example: NPV(10, Payment)] But, if each payment is referenced as an individual field then the formula would evaluate each record and could be used.[example: NPV(10, payment1, payment2, payment3)].
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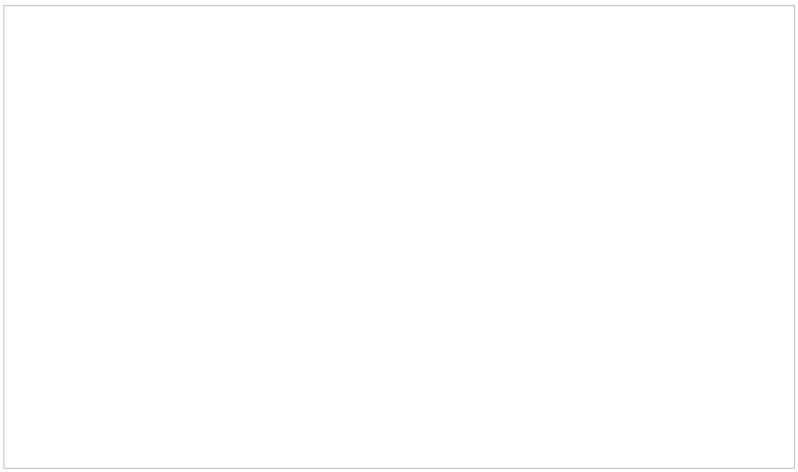
PowerBooks Using PCMCIA Modem Cards

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Many PowerBook models have PCMCIA card slots that can accommodate a network card, modem card or a combination of the two. When users of these PowerBooks use a PCMCIA card for their modem they will have to use the modem tool that shipped with the modem when setting up their settings in Claris Emailer or any other Claris product that can dial through a modem. (See figure 1) The other alternative for these PowerBooks is to use the Printer/Modem port selection with an external modem.



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Making Footnote Numbers More Readable

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Background:
ClarisWorks versions 1.x, 2.x and 3.x:
Footnote numbers use the Superscript style. When a footnote number is created, ClarisWorks applies the Superscript style and assigns it a size that's about 3/4 of the size of the adjacent text. So, if you add a footnote to some 12 point text, the footnote number is generated in 9 point superscript.

ClarisWorks version 4.x:
Footnote numbers use a newly added style called Superior. The Superior style scales the font size down internally. For example, if you footnote some 12 point text, then select the footnote and check the size, it is still defined as 12 point text even though it is visibly smaller.

The benefit of Superior style is that it's scalable. That is, if you resize the text later, the Superior style will automatically scale the footnote number to the correct size. The Superior style is also optimized for printing the correct size characters for footnotes.

However, these Superior-styled footnote numbers may be difficult to read on screen. They can be so small that the screen does not have enough resolution to display them properly.

Workaround:
You can edit the Style used for footnote numbers so that it uses the superscript style, like earlier versions of ClarisWorks. You will lose the benefits of scalability and optimization for printing, but this will make them more readable on screen.

To edit this style, choose Show Styles from the View menu. Select the Footnote Index style, then click the Edit button. Choose 'Superscript' and '9 point' from the menus. Click Done. All your existing footnote numbers will change to match the new style settings.

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Issues Beyond the Year 2040

If your calendar goes beyond the year 2040, you may encounter some issues when browsing the monthly or weekly calendar.

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If your calendar goes beyond the year 2040, you may encounter some issues when browsing the monthly or weekly calendar.

This is a limitation with the current Macintosh operating system. System 7.X it is not currently designed to work with dates past the year 2040. It is expected that that future versions of the Macintosh Operating System will solve the limitation but we cannot know for certain until it has been released.

Published Date: Feb 18, 2012

Reducing the Probability of Illegal Operation Errors in Windows 95

Here are some troubleshooting techniques to reduce the probability of encountering Illegal Operation Errors in Windows 95

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
In Windows 95, it is never completely clear why Illegal Operation Errors occur. The reasons for these errors can be anything from the printer driver to the type of hard drive controller. It is best to make sure that you are using the latest video driver and printer driver for your system before you move on to the following troubleshooting steps.

Here are some things to try:

1] Use the ctrl-alt-del function to bring up the task list. There is a possibility that a program that you have running in the background might be conflicting with the application that reported the illegal operation error. The only programs that you need to run in the background are a] explorer and b] systray. You should use the end task function to make sure that your application has the full attention of your CPU.

2] Run scandisk.exe and defrag.exe on your hard drive(s). These are basic programs that come installed on Windows 95 machines and they searche for general maintenance errors and fix them.

3] a) In the Start menu, select control panels and system. In system, select performance and then file system. The typical role of the machine should be set to network server.

b) Chances are the illegal operation error occurred because of a memory conflict in your system. This may result because there wasn't enough memory available for the specific application being used. Everything about Windows 95 is memory related. If you installed Windows 95 using the default configurations, your machine is using virtual memory. You can check this by going to settings from the start menu/control panels/ system/performance/virtual memory. Select "let me manage my own virtual memory settings". The virtual memory settings should be: the minimum swap file size should be the amount of memory that you have installed and the maximum swap file size should be set to your memory installed doubled. For example, on a machine that has 16mb ram installed, your minimum swap file size should be set to 16mb and your maximum swap file size should be set to 32mb.

The best defense against the Illegal Operation Error message in Windows 95 is maintenance. If you can make sure that all of the above steps have been performed, you can reduce the probability of getting the dreaded Illegal Operation Error message in Windows 95.

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Macintosh-to-Amiga Amiga Graphics Transfer

I want to convert Amiga screens to the Macintosh. I don't write Macintosh programs, but I want to use the Macintosh with PageMaker to document Amiga the games.
This article has been archived and is no longer updated by Apple.
GIF, an interchange format designed by CompuServe, is one of the most-used file formats for moving graphic images between different computer platforms. Various utilities are available in both the Macintosh and Amiga public domain arenas for converting standard graphic file formats to the GIF interchange format. Once in this format, just transfer the GIF files to the Macintosh.

On the Macintosh side, there is a utility called Giffer that reads a GIF file and writes a PICT file. The PICT file can then be placed in the PageMaker documents.

Published Date: Feb 18, 2012

Getting the Out of Hard Drive Space Error Message when Trying to Install FileMaker Pro 3.0 , ClarisWorks 3.0 or ClarisWorks 4.0 in Windows 95.

If you get the"out of hard drive space" error while installing these programs and you are not out of hard drive space, here's a remedy.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The "out of hard drive space" error in Windows 95 can be misleading; you may have plenty of room on your hard drive, but you keep receiving this error message every time you attempt to install FileMaker Pro 3,ClarisWorks 3 or ClarisWorks 4.
In the control panels, select "system/performance/file system/troubleshooting/", make sure that, "disable long name preservation for old programs " is unchecked. This option is intended for system administrators only and sometimes, mistakenly, has been checked.
When "disable long name preservation for old programs" is checked, the install program gets to a point and tries to install a file which has a long file name. When the long file name preservation scheme has been disabled, your machine will not recognize long file names. The install program responds to the flag, as if it was told to stop installing, and thinks there is not enough room to install the program, thus resulting in the "out of hard drive space error" message.
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Macintosh Electronic Documentation (E-Docs) Information

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Some Macintosh ClarisWorks 4.0 customers get an electronic version of the documentation. The electronic docs consist of a data file and an application. The application is called "E-Doc 1.0.20", which is by Modern Age Books. The data file is called "ClarisWorks 4.0 User's Guide".

Electronic User Guides in Modern Age Book format are also available for FileMaker Pro 3.0, ClarisDraw, ClarisImpact 2.0 and Organizer 1.0.

Troubleshooting:
Troubleshooting is the same as with any other application. If you double-click on the User Guide file and get an "application can't be found" alert, try drop-launching the User Guide onto the E-Doc application. Rebuild the desktop to solve this problem permanently.

If you can't find the E-Doc application, try using Find File to locate it. If you can't find it with Find File, the application has been deleted, and needs to be replaced.

E-Doc Read Me
Notes on using the E-Doc Application

Memory Allocation
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If you have a large size color monitor, you may want to increase the memory allocated to the E-Doc application after it has been installed.

The standard memory configuration is for 2,500K. This should be fine for any system with a standard size monitor (640 x 480). If your monitor is larger and you want to view a book at the full size of your screen, you should allocate more memory for E-Doc.

To increase the memory available to E-Doc, select E-Doc in the finder and select Get Info (Command-I) from the File menu. To Increase the memory, type a larger value into the Preferred size field.

The default setting will be 2500, so try putting in a value of 3000.

Defining a User
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Before Bookmarks or Annotations can be added to a book, you must first define a User.

Both Bookmarks and Annotations are stored separately for each defined user. This way more than one person can read the book and create bookmarks and annotations for themselves.

After Dark Screen Saver
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Problems have been encountered when running some versions of the screen saver, After Dark, with E-Doc. If you experience any problems, turn off After Dark before using E-Doc.

E-Doc Help File

This Help file covers the electronic book commands and options.

Buttons
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Note: Before creating annotations and bookmarks, please define a user first from the User Menu. Annotations and Bookmarks are kept separately for each user.

Paper Clip - Used to add annotations to an electronic book.
To Use: Click on the Paper Clip and drag the pointer onto the paragraph in the text that you would like to be annotated. A dialog box will appear and text can be entered for this annotation. When done, click OK and a Paper Clip Icon will now appear in the text. Click on the icon to bring up the dialog box again and view the annotation text.

Yellow Stickies - Used to add bookmarks to an electronic book. To Use: Click on the Yellow Sticky and a dialog will appear with the suggested title for the bookmark. The text can be changed, if desired. After clicking OK to save the bookmark, a yellow tab at the top of the book will appear representing the bookmark. Click on the tab to bring you back to that position in the electronic book.

Browse Arrows - Used to move forward or backward one chapter in the electronic book. To Use: Click on the right arrow to go forward one chapter. Click on the left arrow to go backward one chapter.

Contents - Displays the book table of contents.

Index - Displays the Index Window.
To Use: Click on the button to bring up the window. The window can be repositioned. Select an index entry and click the Goto button to move to that location within the book.
Back - Returns to the last known position within the book.

History - Displays the History Window.
To Use: Click on the button to bring up the window. The window can be repositioned. Select an entry in the list and click the Goto button to move to that location in the book.

Search - Displays the Search Window.
To Use: Click on the button to bring up the window. The window can be repositioned. Type a search string into the field next to the Search Button. When done, click the Search button or hit the return or enter key to begin the search. Matching entries will be displayed in the list. Double Clicking on any entry will expand the items list for that entry. The Previous / Next buttons at the bottom of the screen will bring you from entry to entry within the text of the book. The Rev / Fwd buttons move one complete section at a time, ignoring the individual entries in the search window. The View button expands or contracts the search window to allow more room for viewing the book while browsing the search results. The Options button brings up a dialog that allows the search to be restricted to just one chapter within the book. The Exit button closes the search window.

Font Scale Slider - Used to adjust the display size of the electronic book. The scale can be set from 50% to 150%. Double Clicking the percentage (starts at 100%) will reset the scale to 100%. To Use: Click and drag the font scale knob and move left to reduce the scale. Move right to increase the scale.

Menus
=====
File Menu
Open - Opens an Electronic Book.
Close - Closes an Electronic Book.
Page Setup - Defines the page setup for a print.
Print - Prints selected chapters from the electronic book.
Quit - Exits the application.

Edit Menu
Copy - Places the displayed text onto the clipboard.
Annotate - Brings up the annotation dialog box.

Goto Menu
Menu items vary with each electronic book. Each Item brings you to a specific area of the book.

User Menu
Define - Brings up the define user dialog box.
User List - The remaining menu items are Users that are already defined for this book. Choosing a user from the list makes that user active.

Bookmark Menu
Define - Brings up the define bookmark dialog box.
Bookmark List - The remaining menu items are bookmarks that have been defined for this book by the current user. Choosing a bookmark from this list will bring you to that location in the book.

Tabs
====
Each electronic book will have a unique set of tabs located on the right side of the book window. Clicking on a tab will bring you to a specific location in the book. Usually this will be the beginning of a chapter.

Leaving the cursor over a tab for a few seconds will bring up a description of where the tab will bring you within the book.

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Published Date: Feb 18, 2012

StyleWriter Driver 7.2.3 Exhibits Strange Printouts with Certain Fonts

Printing full justification with StyleWriter driver 7.2.3

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

If you are printing in MacWrite II or ClarisWorks and you are using a StyleWriter you might find your text running off the page when you print. The Style Writer 7.2.3 driver has a issue which will not allow the documents written in MacWrite II and even ClarisWorks 4.0 to print in "Times" when the document is set to full justification. If the font type is changed to a monospaced font such as Geneva or Monaco, then it will print properly.

A document written in Clarisworks 4.0, which contains the proportional Times font with full justification turned on, will also demonstrate the same issue when you print to a StyleWriter with driver 7.1 . If you must use the Times font, the current solution is to use the Stylewriter II or StyleWriter 1200 driver.

Published Date: Feb 18, 2012

Altsys Metamorphosis: Utility to Retrieve Fonts

How can I retrieve the font outlines from the LaserWriter hard disk and save them in Illustrator, Fontographer, and Type 3 font formats?
This article has been archived and is no longer updated by Apple.
Try Metamorphosis from Altsys. It can retrieve the font outlines from the LaserWriter hard disk and save them in Illustrator, Fontographer, and Type 3 font formats. This will work well for all Type 3 fonts that have been loaded on the LaserWriters hard disk. However, as of April, 1990, any Type 1 Adobe fonts that are on the hard disk can be retrieved only as Type 3 fonts.

Published Date: Feb 18, 2012

‘ObjectSupportLib‘ versions 1.0.4 and 1.1.1 Break Some Application‘s Apple Events Handling

Claris is distributing v1.1 of the OSL:

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
It has recently come to our attention that some applications install versions of the 'ObjectSupportLib' which cause several other programs (including FileMaker Pro) to stop handling Apple events. In this event, formerly functioning Apple Scripts will now generate an error. Reinstalling an appropriate version of the OSL should solve this issue.

Specifically, if you have installed the America Online 3.0 Evaluation software, it has installed a version of the OSL (v 1.1.1) which breaks our AE handling. OSL 1.1 does not have this issue.

What exactly is the issue?

Following Apple guidelines, FileMaker Pro checks with the Gestalt Manager to see that the ObjectSupportLib is indeed installed on the given machine. If the OSL is available, the event is passed along to FileMaker Pro, and the magic happens. This occurs whenever an Apple event is sent to FileMaker Pro (except when the application is launched from the Finder).

This is all well and good, except that the specific version of the OSL that is being discussed does not register itself with the Gestalt Manager. Hence, whenever FileMaker Pro receives and Apple event, it needs to be sure that the ObjectSupportLib is available. To do that it asks the Gestalt Manager if the OSL is around. The Gestalt Manager will always report that the OSL (at least version 1.1.1) is NOT available, and so the Apple event will NOT be handled.

It has been suggested that if an application NEEDS OSL 1.1.1, you can have DUAL FUNCTIONALITY if you install the appropriate version of the OSL in the given application's folder. In other words, if America Online 3.0 absolutely REQUIRES that OSL 1.1.1 be available to it (and we know that FileMaker Pro 3.0 needs OSL 1.1) you could put the OSL 1.1.1 file in America Online's application folder (right next to the application itself) and the OSL 1.1 file right into the FileMaker Pro 3.0 folder (ditto). We only offer this as a suggestion, as we have not tested this option.

If this does not work for you, or this is simply not a viable option, you may need to simply determine which application has a greater need for AppleScript in your given situation.
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WEB Servers - Third Party Software

This article provides a partial list of third-party software titles which provide WEB servers for the Mac OS.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
This article provides a partial list of third-party software titles which provide WEB servers for the Mac OS. This article provides information about products which are not manufactured by Claris. Claris is not responsible for the contents. Please contact the vendor for additional information.

WEB (http and WWW) Servers for the Apple Macintosh

Web*Star 1.3.1 - From StarNine/QuarterDeck - http://www.starnine.com/

WebSTAR helps you publish hypertext documents to millions of Web users around the world, right from your Macintosh. You can also use WebSTAR to put any Macintosh file on the Web, including GIF and JPEG images, Shockwave movies, QuickTime VR, and Java applets. And yet, using WebSTAR is as easy as double-clicking. Plus, it's faster than many Web servers
running on UNIX.

Currently Bundled on Apple Internet Server Solutions for the WWW.

NetPresenz 4.0.1 - From Peter Lewis, Stairways Software - http://www.share.com/peterlewis/

NetPresenz allows your Macintosh to become an FTP, WWW, or Gopher server so that other people can get information from your Mac over the Internet. It honors the Users & Groups privileges and passwords and supports multiple logins, anonymous FTP (user name "anonymous" or "ftp"), full CGI support, MacBinary and BinHex transfers and much more.
It runs either as a background only application or as a normal application displaying the log file.

MacHTTP 2.2.2 - From Chuck Shotton - http://www.biap.com/
http://www.starnine.com/

MacHTTP is a shareware product, and is best used for small or internal web sites. It is the most widely-used desktop Web server on the Internet.

WebSTAR and StarNine - The commercial version of MacHTTP has become StarNine's new WebSTAR product. For more details on WebSTAR, upgrades from MacHTTP, etc., check StarNine Technology's home page.

Boulevard 1.0b21 - http://www.resnova.com/boulevard/

Boulevard for MacOS is a high performance, full featured web server, designed to host professional web sites. The Boulevard interface is rich, elegant, and easy to use. Boulevard supports CGIs, ACGIs, and W*API plug-ins. The server has built-in support for many functions that are traditionally handled by CGIs, making Boulevard a faster and more economical choice than other Macintosh web servers.

RushHour - http://www.maxum.com/

RushHour is the Macintosh Web server optimized for what is probably the vast majority of your server volume - Graphics. Your full-featured Web server, like StarNine's WebSTAR, handles all sorts of files under virtually any conditions, but most of the overhead involved in doing so
is unnecessary for most files. RushHour cuts out the overhead and adds a high-performance RAM cache to serve your GIF, JPEG, and other large binary data with extreme speed.

Sonic Servers - http://www.sonicsys.com/

Sonic Internet Servers are a group of high performance software Internet Servers which make it easy and economical for businesses to establish a presence on the Internet as well as providing Intranet solutions for intra-office communications. This group of highly integrated Internet Servers includes Web, E-mail, FTP, DNS and DHCP. These servers run on any Macintosh computer and offer easy set-up and maintenance.

All Sonic Internet Servers can be configured and managed via InterManage, Sonic's common management interface application which is included with the Internet Servers. InterManage can access each Internet Server over the LAN or through the Internet, giving the network manager
the flexibility to perform configuration and maintenance from anywhere in the world!

Web for One - http://www.resnova.com/

Web for One(TM) is a personal web server designed to let every MacOS computer on a TCP/IP network publish documents on the Internet or LAN. For small business and home users with continuous Internet connections, this provides an easy and inexpensive way to establish a presence

on the Internet.

Web for One is a full featured web server, optimized to run in the background using very little memory. The web server supports CGIs, ACGIs, and has built-in support for image maps, server-side includes, server push, directory browsing and automatic form processing. By integrating these features with the server, users can create dynamic, interactive web pages without using expensive and cumbersome CGIs.

WebCenter - From Chris Hawk - http://www.slaphappy.com/

WebCenter is a high-performance web server for the Macintosh and Macintosh compatibles. It offers a wide range of features, making it suitable for virtually any Macintosh-based web site with features like: Multi-threading for fast connection handling, Full CGI compatibility with other MacOS web servers, Server Side Includes to create dynamic web pages, Memory-based file caching for fast file access, Customizable through AppleScript-ability and attach-ability Password-based file access through server realms, Allow or deny clients based on their network address, Power Mac native for quick performance, Open Transport native for maximum performance.

Distributed as freeware. No other MacOS web server has WebCenter's breadth of features. WebCenter is capable of handling tens of thousands of hits per day, enabling it service even the busiest of Macintosh-based web sites.

FireSite v1.0.2 - http://www.clearway.com/

FireSite gives you fast, interactive Web serving power at an affordable price. Before ClearWay created FireSite, running a Web server had to be expensive and complicated. FireSite cuts through the cost and complications, and makes your own interactive Web server an affordable reality. With FireSite, all you need to connect your own Web server to the Internet is a simple 28.8K modem and a regular phone line. FireSite automatically uses your Internet Service Provider as a lightning-fast 'graphics cache', and accelerates your Web site far beyond the speed limits of your modem!

Common Lisp Hypermedia Server (CL-HTTP)
http://www.ai.mit.edu/projects/iiip/doc/cl-http/home-page.html

CL-HTTP is a full-featured server for the Internet Hypertext Transfer Protocol (HTTP 1.1, HTML 2.0, & pre-HTML 3.0) that comes complete with source code.

A World-Wide Web (WWW) server was implemented in Common LISP in order to facilitate exploratory programming in the interactive hypermedia domain and to provide access to complex research programs, particularly artificial intelligence systems. The server was initially used to provide interfaces for document retrieval and for email servers. More advanced applications include interfaces to systems for inductive rule learning and natural-language question answering.

InterServer Publisher 1.2.1 - http://www.intercon.com/products/interserverp.html

InterCon's InterServer Publisher* answers the increasing demand for distributing information electronically. As the industry's first integrated Macintosh-based Internet server package, InterServer Publisher allows you to create a highly interactive Web, FTP (File Transfer Protocol), and Gopher server presence on the Internet in a matter of minutes.

NetWings HTTP Server - http://netwings.com/nw_home_pages/prod_info.html

Our NetWings and those Macs can get you and your students surfing and serving the Internet now. If you've got one Mac, or twenty. NetWings can let you serve and surf over any type of internet connection. It's software only, you don't need a router and it works on a LocalTalk or EtherTalk LAN. It caches pages. It has site blocking. It does web, ftp, gopher, email, and much more.

Web Server 4D - http://www.mdg.com/

Web Server 4D is a fast web server and a very fast relational database in one. This provides unparalleled site tracking without sacrificing performance. In fact, the author of Web Server Construction Kit For Macintosh (Hayden Books), Stewart Buskirk wrote in the comparisons of various packages that, "Web Server 4D is wicked fast!"

Web Server 4D can track new vs. repeat users, serves different pages based on domain, IP or browser, serves files from memory not slow disks, supports clickable maps, Guest Books, form to Email, inserts page counts, odometer page counts, current date, current time all without using CGI - although WS4D is compatible with CGI! Security for any file/folder is available with users and groups support (and tracking history for each realm, user and group!). Supports multiple hosts from one server. Other web servers cannot compare to the standard built-in features of WS4D. Developer edition includes open 4D source code which allows complete customization or integration with existing databases.
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How to Avoid Showing Zeros if your Calculation Result is a Zero

Here is a description of how to create a calculation so that the result of zero will not display.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
To avoid showing zero as a calculation result, it is necessary to include a test for zero within the calculation.

For example, let's say we have two numbers we want to multiply. If the result is zero, we want nothing to be printed, however, if the result is anything other than zero, we want to see that value.

In a ClarisWorks spreadsheet, the calculation would appear as:

=IF((A5*B5)=0,"",A5*B5)

If the value in A5 multiplied by the value in B5 equals zero, print nothing (""), otherwise, print the result of A5 * B5.

In a Clarisworks database, this same formula would appear as:

IF('Number Field A'*'Number Field B'=0,"",'Number Field A'*'Number Field B')

If the value in Number Field A multiplied by the value in Number Field B equals zero, print nothing, otherwise, print the result of Number Field A * Number Field B.
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List of All Localized Trial Versions

A listing of all of the localized trial versions of Claris software

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

This information is current as of week 2 of November 1996.

Product and Language	Version	Platform	Certif.Date
Macintosh Versions			
Claris Home Page German	1.0Dv1	Mac/PPC	07/10/96
ClarisDraw German	1.0Dv1	Mac	07/14/95
ClarisDraw British	1.0Bv1	Mac	07/14/95
ClarisDraw Swedish	1.0Sv1	Mac	07/14/95
ClarisDraw Italian	1.0Tv1	Mac	07/14/95
ClarisDraw French	1.0Fv1	Mac	07/14/95
ClarisImpact British	2.0Bv2	Mac	11/21/95
ClarisImpact French	2.0Fv2	Mac	11/21/95
ClarisImpact Japanese	1.0Jv1	Mac	02/16/95
ClarisImpact German	1.0Dv1	Mac	08/12/94
ClarisImpact Swedish	1.0Sv1	Mac	03/25/94
Claris Organizer Japanese	1.0Jv1	Mac/PPC	10/11/95
ClarisWorks German	4.0Dv1	Mac/PPC	09/06/95
ClarisWorks German	3.0Dv1	Mac	05/08/95
ClarisWorks Japanese	2.0Jv2	Mac/PPC	09/06/94
ClarisWorks Swedish	2.1v1	Mac	08/18/94
ClarisWorks Swedish	2.1Sv3	PPC only	06/29/94
ClarisWorks British	2.1Bv3	Mac	05/11/94
ClarisWorks French	2.1Fv1	Mac	04/25/94
ClarisWorks British	2.1Bv1	Mac	04/12/94
ClarisWorks Spanish	2.1Ev1	Mac	03/07/94
ClarisWorks German	2.1Dv1	Mac	03/03/94
ClarisWorks Spanish	2.1Ev1	Mac	03/02/94
ClarisWorks USA	2.1v1	Mac	02/04/94
FileMaker Pro Spanish	3.0Ev2	Mac/PPC	05/15/96
FileMaker Pro Italian	3.0Tv2	Mac/PPC	05/08/96
FileMaker Pro Dutch	3.0Nv2	Mac/PPC	05/03/96
FileMaker Pro Italian	3.0Tv2	Mac/PPC	05/01/96
Filemaker Pro French	3.0Fv2	Mac/PPC	04/30/96
FileMaker Pro German	3.0Dv2	Mac/PPC	04/30/96
FileMaker Pro British	3.0Bv2	Mac/PPC	04/17/96
Filemaker Pro Japanese	2.1JV1	Mac	09/12/94
FileMaker Pro USA	2.1v3	Mac	08/29/94
FileMaker Pro Server USA	2.0v1	Mac	08/29/94
MacDraw Pro British	1.5Bv1	Mac	06/07/93
MacProject II USA	2.5v1	Mac	11/14/91
MacProject II German	2.5Dv1	Mac	11/14/91
MacProject II French	2.5Fv1	Mac	11/14/91
MacProject II Swedish	2.5Sv1	Mac	11/14/91
MacWrite II Japanese	1.5v2	Mac	05/20/94
MacWrite II Japanese	1.5v1	Mac	01/12/94

MacWrite Pro British.....1.5Bv2.....Mac.....03/22/94
MacWrite Pro German.....1.5Dv1.....Mac.....03/04/94
MacWrite Pro Dutch.....1.0Nv2.....Mac.....10/01/93
MacWrite Pro German.....1.0Dv2.....Mac.....09/21/93
MacWrite Pro Swedish.....1.0Sv2.....Mac.....09/16/93
MacWrite Pro French.....1.0Fv2.....Mac.....08/01/93
MacWrite Pro USA.....1.0v2.....Mac.....07/22/93
MacWrite Pro British.....1.0Bv2.....Mac.....06/08/93

PC Versions
Claris Home Page Italian.....1.0Tv1.....PC.....08/10/96
Claris Home Page German.....1.0Dv1.....PC.....07/10/96

ClarisImpact French.....2.0Fv1.....PC.....01/09/96
ClarisImpact British.....2.0Bv1.....PC.....11/20/95

ClarisWorks Czech.....4.0CZv1....PC.....09/05/96
ClarisWorks Dutch.....4.0Nv1.....PC.....04/01/96
ClarisWorks Italian.....4.0Tv1.....PC.....03/25/96
ClarisWorks Swedish.....4.0Sv1.....PC.....03/22/96
ClarisWorks Australian.....4.0CAv1....PC.....03/13/96
ClarisWorks Canadian-English....4.0CDv1....PC.....03/12/96
ClarisWorks Canadian-French.....4.0CFv1....PC.....03/11/96
ClarisWorks French.....4.0Fv1.....PC.....03/08/96
ClarisWorks German.....4.0Dv1.....PC.....03/05/96
ClarisWorks British.....4.0Bv1.....PC.....02/29/96
ClarisWorks USA.....4.0v1.....PC.....02/08/96
ClarisWorks USA.....4.0v1.....PC.....02/08/96
ClarisWorks Spanish.....3.0Ev2.....PC.....07/10/95

ClarisWorks German.....3.0Dv2.....PC.....03/30/95
ClarisWorks USA.....3.0v1.....PC.....02/01/95
ClarisWorks British.....3.0Bv1.....PC.....01/30/95
ClarisWorks French.....3.0Fv1.....PC.....01/16/95
ClarisWorks Finnish.....1.0Kv1.....PC.....11/29/93
ClarisWorks German.....1.0Dv1.....PC.....11/17/93
ClarisWorks Norwegian.....1.0Hv1.....PC.....10/29/93
ClarisWorks Spanish.....1.0Ev1.....PC.....08/09/93
ClarisWorks Dutch.....1.0Nv1.....PC.....08/04/93
ClarisWorks Italian.....1.0Tv1.....PC.....07/19/93
ClarisWorks Swedish.....1.0Sv1.....PC.....07/01/93
ClarisWorks German.....1.0Dv1.....PC.....06/22/93
ClarisWorks French.....1.0Fv1.....PC.....06/10/93
ClarisWorks British.....1.0Bv1.....PC.....05/05/93

Filemaker Pro Spanish.....3.0Ev3.....PC.....09/17/96
Filemaker Pro German.....2.0Dv1.....PC.....06/23/95
FileMaker Pro Dutch.....3.0Nv2.....PC.....05/02/95

FileMaker Pro Italian.....3.0Tv2.....PC.....05/01/95
FileMaker Pro French.....3.0Fv2.....PC.....04/30/95
FileMaker Pro German.....3.0Dv2.....PC.....04/30/95
FileMaker Pro British.....3.0Bv2.....PC.....04/17/95
Filemaker Pro German.....2.0Dv1.....PC.....03/23/95

FileMaker Pro British.....2.1Bv2.....PC.....04/08/94
Filemaker Pro Spanish.....2.0Ev1.....PC.....01/10/94

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Slashed Zeros in Spreadsheets

This article describes how to display and print slashed zeros.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
You can display and print slashed zeros in your ClarisWorks spreadsheets by using a font that has slashed zeros. These include " TTYFont" and "VT100" fonts that ClarisWorks installed on your system.

To change fonts, choose "Select All" from the Edit Menu, then choose the new font.
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Transferring ClarisWorks Word Processing Documents into AppleWorks

This article describes why you may be having issues transferring ClarisWorks word processing documents in to AppleWorks.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

To transfer ClarisWorks word processing documents into AppleWorks, choose the "Save As" command from the File Menu. If AppleWorks cannot read the files, the likelihood is that you are probably using version 1.0 of PC Exchange. We have found a issue in PC Exchange that caused the program to create unreadable AppleWorks files on ProDOS disks. Your solution is to upgrade to the latest version of PC Exchange. You can find PC Exchange bundled with the latest version of System 7.5.X.

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Converting Documents to ClarisWorks 4.0 for Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks 4.0 includes an AppleScript application to automatically convert documents to ClarisWorks 4.0 format. The application is called "Convert Documents" and is located in the ClarisWorks Scripts folder, inside the ClarisWorks 4.0 folder.

Convert Documents will convert any document type that can be opened by ClarisWorks 4.0, including ClarisWorks 2.0 / 3.0 documents.

To convert all your old documents to ClarisWorks 4.0:
1- Place all your old documents into a folder
2- Launch ClarisWorks 4.0
3- If necessary, Click Cancel. Select Preferences from the Edit menu.
4- Click the General icon. Uncheck the checkboxes for "Old Version Alert" and, optionally, "[v4.0 suffix]". Click the Make Default button.
5- In the Finder, drag the folder icon containing your documents onto the Convert Documents icon. Your documents will be opened, converted and saved automatically. The names of the converted files will end in ".cwk"
TIP: change the folder view to View by Date. All the new converted documents will be listed first, so you can easily select them all and drag them to the desired folder in which you want to store the files.
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Omnis 5.0: Solution for AppleTalk Printer Timeout Problem

I have problems printing long reports (20+ pages) from Omnis 5.0 to an ImageWriter II with AppleTalk Option Card. The print job halts randomly with this error message "Connection with printer has been lost."

This article has been archived and is no longer updated by Apple.
As of April, 1990, Omnis could not able to produce output quickly enough while generating a report to keep the printer from timing out. (This happens with both the AppleTalk ImageWriter and the LaserWriter.) This is similar to what we've seen with 4th Dimension.

The workaround is to have Omnis generate a page of output and then send the entire page to the printer. To do this, either put the report output into a list or spool it to disk. With a LaserWriter, you have an additional option of using background printing under MultiFinder. The page-at-a-time approach is what we've used with our 4th Dimension database.

Although we did not get into specifics, the Omnis people did not tie this problem to a problem with the AppleTalk ImageWriter driver. Instead, it seems to be a reality of printing reports that take a lot of processing when printing to any network-based printer.

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Dictionary Versions and ClarisWorks

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
A version 1.0.3 of the dictionary was shipping with ClarisWorks 1.0 Macintosh. From version 2.0 through 4.0 of ClarisWorks the spelling dictionary version is 2.3. The name has been changed from Main dictionary to US English - Spelling, this has been the case since version 3.0 of ClarisWorks.

(The version 2.3 of the spelling dictionary can be used with any Macintosh versions of ClarisWorks from version 1.0 through version 4.0)
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Canon Bubble Jet Setup Information

Canon Bubble Jet Setup information

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Some PC's currently out on the market (e.g. Compaq PCs) are configured in a way which is incompatible with some of Canon's Bubble Jet printers. As a result, some PC owners may be experience printing problems such as the printer only printing 1/2 or 3/4 pages. Here are 4 possible solutions to this problem. If these do not correct your problem please contact Canon Technical Support for assistance.

1. Printer Port Set to ECP in Device Manager

Boot Windows 95 and right click on "My Computer" icon.
Select Properties.
Select Device Manager tab.
Double click on Ports (Com & LPT).
Double click on ECP Printer port (LPT1). If your configuration is already Printer Port, this correction does not apply.
Select Driver tab.
Select Change Driver...
Select Show all devices.
Under Models: Select Printer port, then click OK.
Click OK again.
Shut down Windows 95 and Reboot.

2. Port Resource Settings Incorrect e.g. Compaq PC's

Right click on My Computer
Select Properties

Select Device Manager tab
Double-click Ports (COM & LPT)
Double-click LPT
Select Resources tab
De-select Automatic Settings
Change Basic Configuration, find the configuration that meets the following conditions.

The settings need to be set for:
Input/Output Range 0378-037?
Input/Output Range 0778-077?
Interrupt Request 07
NO DMA.

Select OK
Shut down Windows 95 and Reboot.

3. [K is printed at top of page and the rest of the page is correct.

Right click on My Computer
Select Properties
Select Device Manager tab
Double-click Ports (COM & LPT)
Double-click LPT
Select Driver tab
Look at the File Revision line, LPT.VXD v4.00.950. You will need to replace LPT.VXD v4.00.950 with LPT.VXD v4.00.503. The LPT.VXD file is
located in the Windows\\System directory.
Confirm that your CMOS (BIOS) settings are set to Standard Bidirectional

[Note: CMOS configurations can vary from model to model. Please check your owners manual or contact your computer manufacturer for details.]

4. Incorrect Port Configuration on Toshiba Laptops:

TA43620_Canon_Bubble_Jet_Setup_Information.pdf

From Windows 95 click on Start
Go to Programs
Select Toshiba Utilities
You will have either the TSETUP or HARDWARE SETUP utility
Reboot your system

For TSETUP:

Under Parallel Port select Standard Bidirectional
Reboot your system

For HARDWARE SETUP:

Select Hardware Options
Select Parallel/Printer
Select Standard Bidirectional
Click OK
The machine will ask if you want to reboot. Select Yes.
Reboot your system.

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Page Fault in Win32s16.DLL

How to Interpret the "FMPRO30 caused a Page Fault on Module WIN32S16.DLL @ 0005:0632" message when running Win32s

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
After installing Win32s in your Windows 3.x system, you may receive a page fault error message that reads, "'FMPRO30 caused a Page Fault on Module WIN32S16.DLL @ 0005:0632". This message points towards a particular incompatibility with your machine and Win 32s.

Generally, there are three possible incompatibilities: video driver bios, printer driver bios and your machine's system bios. This can usually be corrected by updating the bios for the particular device driver.

Specifically, in some Dell PC- Compatible machines, the new Dell A05 bios has been known to cause Page Faults within Win 32s. However, the Dell A02 bios appears to work fine.
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Setting Text Case - Proper Case, Title Case, Word Cap

This article illustrates how to automate the application of "proper" or "title" case as a text style A.K.A. "word capped."

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ClarisWorks provides shortcuts for setting text to upper case or lower case, but not to proper case (also known as "title" case or "word capped.") A macro can be created to perform this conversion and the macro can be added to the shortcuts palette. Here are the steps:

```
Step Keystroke comment

1. Command-shift-j begin recording macro
2. Proper case enter name of macro
3. <enter key>
4. Command-c copy
5. <left arrow key>
6. Command-f find
7. Command-v paste
8. Command-w close find window
9. Command-n new document
10. s spreadsheet
11. <enter key> create
12. Command-v paste
13. <tab key> go to cell a2
14. =proper(a1) enter formula
15. <enter key> terminate editing and stay in cell
16. Command-c copy
17. Command-w close spreadsheet window
18. Command-d don't save*
19. Command-f find
20. <tab key> go to change field
21. Command-v paste
22. <enter key> perform find
23. <Change button> click the change button
24. Command-w close find window
25. Command-shift-j end recording macro
```

*Step 18 is Command-d for ClarisWorks 4.0, and Command-n for 3.0.
It's convoluted, but it works. Try it. Select a word or phrase and use the new Proper case shortcut.
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DOS 3.3: Renumber fix

The Renumber program on you DOS master diskette contains an error which mistakes the number after a "*" as a line number and renumbers it.
This article has been archived and is no longer updated by Apple.
For example, if you had a line:

10 let A=B*10

it might become:

20 let A=B*20

The permanent fix is:

For RAM Applesoft	For ROM Applesoft
(DOS 3.2)	
load renumber	load renumber
poke 14342,172	poke 4815,172
poke 14343,171	poke 4816,171
unlock renumber	unlock renumber
save renumber	save renumber
lock renumber	lock renumber
(DOS 3.3)	
load renumber	load renumber
poke 14316,172	poke 4789,172
poke 14317,171	poke 4790,171
unlock renumber	unlock renumber
save renumber	save renumber
lock renumber	lock renumber

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System Folder: Securing With "Secure INIT"

Do you know of any software that I can use to protect my System Folder configuration, so that users can't change it?

This article has been archived and is no longer updated by Apple.
There is a Macintosh program called "Secure INIT" that records a fixed configuration of the System Folder. An option can be enabled that restores this fixed configuration on system Shutdown or Restart. It is also possible to make the System Folder invisible to the user.

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Sorting by Two Different Fields Not Printing Correctly

Two-tiered sorts will not print correctly in Claris Organizer 2.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

In Claris Organizer 2.0 you can sort by two fields and view the results but you cannot print them. For example, you may often want to sort by last name and first name. This can be accomplished by either clicking on Last Name in the Contact List then holding down the shift key and clicking on First Name, or, using the sort function from the View menu and entering Last Name as the Primary field and First Name as the secondary field. The result of your sort will show up fine in the Contact Menu but you will not be able to print this way.

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Adding Music to your Documents

The following article will briefly explain how to add MIDI music to your QuickTime movies.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
While you are collecting clip-art graphics and QuickTime movies for your slide shows, you can add music files for your shows as well. You can use MIDI type music files then convert the MIDI files into QuickTime "movies".

The following steps will convert your MIDI music files to QuickTime format.

1. Launch SimpleText, choose "Open" from the File Menu, navigate to the MIDI file you want to use in your slide show, and click on "Convert".

2. Click on the Options Button to listen to the song or to change musical instruments

3. Click on "OK" and then "Save"

SimpleText will add the word "Movie" to the file name automatically and will display a Control Panel figure which offers Play, Rewind, and Fast Forward Buttons.

QuickTime is a feature of system 7.5. If you do not have system 7.5 or later, QuickTime can be purchased. To check if you have QuickTime installed, open the Extensions folder inside your System folder and look for the QuickTime extension.
Published Date: Feb 18, 2012

Error message: This is not a ClarisWorks file or has been corrupted.

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This article has been archived and is no longer updated by Apple.
The inability to access files created with earlier versions of ClarisWorks is usually caused by a damaged "XTND Translators List" file; a file that ClarisWorks creates and uses whenever you open or import a document. Follow these steps to trash the old translator file and create a new one:

1. Quit ClarisWorks.

2. Open the Preferences folder within the System Folder.

3. Drag the XTND Translators List file to the trash.

4. Launch ClarisWorks. ClarisWorks will then check the translators in your system and create a new XTND Translators List file.

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About ClarisWorks Version 4.0v5 Mac, Updater Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

WELCOME TO CLARISWORKS 4.0v5!

Thank you for choosing the ClarisWorks¨ 4.0 application. We're pleased to provide the ClarisWorks 4.0v5 Update, which has additional important features and addresses a few known issues since its initial release.

This document provides information about:

I. Installing the ClarisWorks 4.0v5 updates
II. Problems and issues addressed in v5
III. Problems and issues addressed in previous releases
IV. New features

I. INSTALLING THE CLARISWORKS 4.0V5 UPDATES

Before running the updater make sure all of your computer's System software extensions are turned off. To do this:
1. Save all open files and quit all of the programs running on your computer.
2. Hold down the Shift key on your keyboard.
3. Choose Restart from the Special menu.
4. Do not release the Shift key until the words "Welcome to Macintosh. Extensions off." appear on your screen.

To update the ClarisWorks 4.0 (v1, v2, v3 or v4) product currently installed on your computer:
1. Double-click the "ClarisWorks 4.0v5 Updater" installer icon.

2. Read the Claris splash screen and click Okay
3. Choose Easy Install (to update ClarisWorks and install all of the new v5 components except the ClarisWorks File Converter) or Custom Install (if you want to specify which components to update).
4. Verify that the "Update Location" box in the lower left corner of the Updater window lists the correct location (disk and folder name) of the version of ClarisWorks which you wish to update. If you have multiple copies of ClarisWorks, click "Select Folder" and select the appropriate folder.
Note: If the updater does not find a folder that contains ClarisWorks, go back through the steps listed above to ensure that your Macintosh is running with the extensions turned off, then try running the Updater again.
5. Click Update (or Install if you have selected a custom option that only installs files)
The updater will begin updating the application and installing updated files at the same time. Once the updater is finished, click Quit and you can begin using the updated version of ClarisWorks.

Note: To install the ClarisWorks File Converter application, you must choose it from the Custom Install list. For more on using the ClarisWorks File Converter, see the document "Read Me - CW File Converter," which is installed into your ClarisWorks folder when running the ClarisWorks 4.0v5 Updater.

II. PROBLEMS AND ISSUES ADDRESSED IN V5

This v5 Updater addresses several issues from previous versions:
*Closing documents. In v4 and earlier versions, on Macintoshes with more than 48 MB of available system RAM, closing a ClarisWorks document would cause a crash on some machines This has been fixed in v5.
*Importing Excel documents. In v4 and earlier versions, calculations in Excel spreadsheets
that contained numbers greater than 32767 imported as negative numbers in ClarisWorks. This was fixed in the latest version of the Excel translator provided with this update.
*Several stationery files have been updated to use 1997 dates where appropriate.

III. PROBLEMS AND ISSUES ADDRESSED IN PREVIOUS RELEASES

This v5 updater also addresses all issues fixed in previous releases:

* Mail Merge and Multiple Line Data. In v4, when a mail merge field contains multiple lines of text, the text now merges and prints correctly. (The text still displays as a single line on the screen.)
* Mail Merge and Sliding over Empty Fields. In v4, when there is an empty mail merge field on a line by itself, the following text moves up appropriately and prints correctly. (The text does not "slide" on the screen.)
* Rotating Library Images. In v1, some of the ReadyArt library images didn't rotate correctly. This was fixed in v4.
* Stationery Corrections. Minor changes were made to some of the stationery files.
* Address List Assistant. Minor changes were made to the Address List Assistant for better printing and on-screen display.
* New AppleWorks DB/SS and RTF filters.
* Faster Word Count
* Option left/right arrows in WP now correctly skips carriage returns and tabs (as it did in versions prior to 4.0).
* New Document dialog now displays more quickly, especially when there are many stationery files in the ClarisWorks Stationery folder.

* Word Services AppleEvent Support. In v4, it is easier to use applications that support the Word Services AppleEvent standard (such as some third party spelling or grammar checkers).

To enable the Word Services command in the Edit:Writing Tools menu of the ClarisWorks word processor:
1. Select Preferences from the Edit menu.
2. Select the Text icon.
3. Check the Word Services checkbox under General and click OK.

To select a Word Services application for use with ClarisWorks:
1. Open or create a word processing document.
2. Select Writing Tools from the Edit menu and then select Edit Word Services.
You see a dialog containing a list of all the Word Services applications for which ClarisWorks is currently configured.
3. Press the Add button.
You see a dialog listing the applications running on your Macintosh that use Word Services AppleEvent standard.
4. Select the one you want and click OK.
5. In the Word Services dialog, click OK.
A new menu item corresponding to the Word Services application you chose appears in the Writing Tools menu.

You can also use the Edit Word Services dialog to remove installed Word Services applications from the Writing Tools menu.

To use a Word Services application on a ClarisWorks word processing document, choose the appropriate menu item from the Writing Tools menu. This launches the Word Services application if is not already running. If you have text selected in the document, then the Word Services application checks the selection. Otherwise, the entire document is checked.

III. NEW FEATURES (No New Features in 4.0v5)
The previous release, 4.0v4 added several new features, including:
* New picture and layout in the ClarisWorks splash screen.
* Macintosh Drag and Drop Support. Users can use Macintosh Drag and Drop (that comes with System 7.5) to move text, graphic objects, and spreadsheet cells within ClarisWorks 4.0 documents, drag selections from one document to another, drag selections to other applications (including creating clipping files in the Finder).
* Backwards File Conversion to 2.0/2.1/3.0 Formats. You can use the new ClarisWorks File Converter application to save version 4.0 files in the format used by ClarisWorks versions 2.0, 2.1 and 3.0. For more on the File Converter, see the file "Read Me - CW File Converter".

* New filter for WordPerfect 3.1 for Macintosh.

Claris and the ClarisWorks team thank you for your purchase of ClarisWorks 4.0. Your support, comments, and suggestions help us to continue to bring you better solutions for your future productivity needs.

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Macintosh is a registered trademark of Apple Computer, Inc.
WordPerfect is a trademark of WordPerfect Corporation.
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Cannot Find a Contact if the Company Name Starts with "The"

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If you have a contact with a company name that started with "the", such as "The main company" you will not be able to find this company using a Find.

The workaround is to click on the more choices button located in the find dialog box , select the company field and enter the find criteria , such as "The main company".

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Deleting Messages in Auto-File Log deletes Messages

When looking at the Auto-file Log and you delete a message, it will actually delete the message.

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If you are looking at the Auto File Log and a message is highlighted, if you click on the delete key, the message will be deleted, by being moved to the deleted mail folder.

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Using AppleShare to Share Your User Dictionary Across a Network

When you have many people on a network it can be very valuable to share a common user dictionary.

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This article has been archived and is no longer updated by Apple.
This article requires that you have a basic understanding of how to share files via AppleShare.

When you have many people on a network it can be very valuable to share a common user dictionary. That way words that are commonly used, like your company name or a product name, only have to be entered once.

Here's an easy way to set this up:
The first thing you need to do is to decide who will host the dictionary and go to that computer
Create a folder named "Shared" and allow sharing of it's contents
Open your applicatio
From the Edit menu select Spelling then Select Dictionaries*
Make sure that User Dictionary is chosen from the pull down menu
Click on New
You can name your new dictionary "Shared Dictionary" and save it in your new Shared folder
Now move to another computer
Go to your Chooser and mount the volume that has the Shared folder
Open your application
From the Edit menu you can select Spelling then Select Dictionaries
Now you can select the Shared Dictionary from the Shared folder that you mounted via AppleShare

Now you are sharing the dictionary and any changes you make will effect everyone who is also using this dictionary.

* For ClarisDraw select Spelling from the Edit menu then Install Dictionaries. For ClarisWorks select Writing Tools from the Edit menu, then Select Dictionaries

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AppleTalk: Network Manager Status Program

Do you know of any product that updates software installed on local workstations through the network? This should act somewhat like Responder and Inter-Poll except that the workstation software can actually be updated. Also, the program should be able to do an analysis on each workstation and summarize the results in report form.

For example:

System 1: (ZONE: Finance)
MS Word ver 3.01
MacWrite ver 1.1
Finder ver 6.0.5
LaserWriter ver 6.0.1 ...etc..

System 2: (ZONE: Sales)
MS Word ver 4.0b
MacWrite ver 1.0
Finder ver 3.2
LaserWriter ver 4.1 ...etc..

.
.
.

System n (ZONE: Engineering)
MS Word ver 3.01
MacWrite ver 1.1
Finder ver 6.0.5
LaserWriter ver 6.0.1 ...etc..

Summary:

2 MS Word ver 3.01
1 MS Word ver 4.0b
2 MacWrite ver 1.1
2 Finder ver 6.0.5

This article has been archived and is no longer updated by Apple.
We don't know of a package that does updates, but there is a package to be released in July, 1990 from Pharos called System Status Mac. It acts like Inter-Poll and investigates workstations on the network, responding with the version numbers of software. The System Manager can then compile the results and advise users when upgrades are available.

For more details, search the Tech Info library under "Pharos Technologies, Inc."

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Two-sided Printing

There are ways to print on both the front and back of your paper.

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Issue: How do I print on both the front and back of my paper?

Answer: Claris software, such as ClarisWorks and FileMaker Pro, do not have built-in capabilitiy to support two-sided printing. However, there are ways to achieve two-sided printing from almost any program.

1- You can print single-sided from your computer and make two-sided copies with a photocopier.

2- You can print the odd-numbered pages one at a time, then reinsert these pages back into the printer and print the even-numbered pages, again, one at a time. When reinserting the pages into the printer, the correct order and position will vary depending on your printer.

3- If you have an HP DeskJet 800 Series printer, you can use the version 9.1 printer driver. This driver has an option in Page Setup that automates two-sided printing. To update your printer driver, call HP. Or, you can download this driver from the Hewlett Packard Web site at http://www.hp.com or from their forum on America Online (keyword: hp). Some other drivers may have this option, check with your printer manufacturer for the latest version.

TIP: When printing two-sided copies, you may want to go to the Documents command and click the checkbox for "Facing Pages". This changes the Left/Right margin controls to Inside/Outside margin controls.
TIP: When printing two-sided for a book, the odd numbered pages are on the right.

4- If you have a printer other than the DeskJet that uses a driver without two-sided printing support, you can purchase ClickBook (for Macintosh.) ClickBook adds two-sided printing to almost all Mac programs and is supported by most printers.

The same company that does ClickBook also has a Windows version named:
WebPrinter 2.0 for Windows 3.1 and Windows95

WebPrinter will instantly turn your valuable Internet, CD-ROM and Windows data into attractive booklets with WebPrinter. With only two clicks, sports stats, custom travel itineraries, financial "how-to" guides, product literature, maps and even photos are transformed into convenient, double-sided booklets.

Features: Rotates, reduces & realigns documents automatically
Walks you through double-sided printing
Works with any laser or inkjet printer
Saves your documents for offline printing
Available for Windows 3.1 and Windows95

Authors of ClickBook:
The Forefront Group
formerly: BookMaker Corporation

Product Information (Web): http://www.clickbook.com

Technical Support: 713-961-1101
Technical Support Fax: 713-961-1149
Technical Support Email: support@ffg.com

Published Date: Feb 18, 2012

Black Dialog Boxes and Redraw Problems under Windows 95

Several Claris applications may exhibit strange video behavior when used in conjunction with the Stealth GT drivers from Diamond Multimedia. This article explains the compatibility problem as well as something to fix it.

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If you are using the GT drivers for Windows 95 supplied by Diamond Multimedia Systems with any of the following video cards:

Stealth SE
Stealth 64 VRAM
Stealth 64 Graphics 2000 series (Stealth 64 DRAM is included in this series)
Stealth 64 Video 2000 series
Stealth 64 Video 2001 series
Stealth 64 Video 3000 series

the following Claris applications may exhibit strange color distortion and/or screen redraw problems.

ClarisWorks, ClarisImpact, and ClarisDraw will display blacked-out New Document dialog boxes, as well as other blacked-out menu items and dialog boxes. In some cases the documents themselves will be black.

FileMaker Pro 3.x will display mouse trails, mouse droppings and lines on the screen when moving anything in Layout Mode. Forcing a screen redraw (zooming in and zooming out, minimizing the screen, or switching to another layout and back again) will clear up the problem until something is moved or resized in the layout.

You can tell if you are using the Diamond GT drivers in several ways. The easiest way is to see if you have the InControl Tools icon in the notification area of your Windows 95 Taskbar (a diamond-looking icon located near the clock). Or, you can look in the Control Panel at the DISPLAY properties to see what driver you are currently using. To do this, do the following:

- Click on the START button, point to SETTINGS and then point to CONTROL PANEL
- In the Control Panel window, double click on the SYSTEM icon
- In the System Properties screen, click on the DEVICE MANAGER tab at the top
- Locate the DISPLAY ADAPTERS item and click on the plus sign next to it
- The information listed under Display Adapters is the video driver you are currently using.

There are several solutions and workarounds to this problem:

1) Diamond has an ALPHA driver on their FTP site that fixes the problem with ClarisWorks, ClarisImpact, and ClarisDraw. The alpha drivers DO NOT fix the problem with FileMaker Pro. Diamond's FTP address (as of the writing of this article) is ftp://ftp.diamondmm.com. There are complete installation instructions included with the driver from Diamond. Note that since these are still alpha drivers, it means they have not been officially tested, certified and released by Diamond. More information about this is also included with the driver.

2) You can use the Diamond-specific drivers off of the Windows 95 CD-ROM. These drivers are located in the \\DRIVERS\\DISPLAY\\DIAMOND folder on the Windows 95 CD (upgrade or retail version) or in the \\DRIVERS\\DISPLY\\STEALTH folder on the Windows95 OEM version CD ("For Distribution Only with a New PC") . There is a README text file as well as an INSTALL text file that you can consult for more information on these drivers -- including detailed directions on how to install them. Using these drivers will fix ALL video related problems when using a Stealth video card and ANY Claris application listed above. You will lose any functionality you might have had when using the InControl Tools supplied by Diamond. The InControl Tools DO NOT work with non-GT drivers.

3) You can contact S3 Incorporated (they are the makers of the accelerator chip(s) used on the Stealth line of video cards) and download the drivers for the specific chipset your card uses. As of the writing of this article, S3 can be reached on the Internet at http://www.s3.com.

These errors are caused by a compatibility problem between the GT drivers and Claris applications. While this might appear to be a Claris related problem, it is actually a problem with the GT drivers as other non-GT drivers have been proven to work successfully.

Contact Diamond Multimedia for more information on Stealth compatibility and driver availability.

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AppleScript to Open Web page on Internet Explorer

AppleScript to open Web page on Internet Explorer

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Here is a new script for Claris Organizer to access the Internet Explorer:

Open the "Open Netscape to URL" AppleScript document located in the "Claris Organizer Scripts" folder included in the "ClarisOrganizer 2.0" folder.

Change or edit the script to read:

```
tell application "Claris Organizer 2.0"
set strURL to Button Field of contact 0
end tell

tell application "Internet Explorer 2.1"
Activate
CancelTransaction 1
OpenURL strURL
end tell
```

Published Date: Feb 18, 2012

Error Message: "A script error has occurred. There may be not enough memory to launch the application, or it may have a dialog up."

International ClarisWorks and Claris Organizer US have trouble writing letters.

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This article has been archived and is no longer updated by Apple.
If you have an international version of ClarisWorks installed on your computer and you are using Claris Organizer 2.0 you may get this error message "A script error has occurred. There may be not enough memory to launch the application, or it may have a dialog up."

This error message will occur when you open Claris Organizer, display a contact card and click on the attach letter button located on the address section area.

Solution:
Open the "ClarisWorks Letter Link" AppleScript document located in the "Claris Organizer Scripts" folder included in the "ClarisOrganizer 2.0" folder.

Locate the following instruction in the "-- handle secondary version number" section of this script :

set versionNum to (majorVersionStr * 100) + versionNum

Enter two dashes in front of this sentence, then save and quit the ScriptEditor. This will prevent this error message .

--set versionNum to (majorVersionStr * 100) + versionNum
Published Date: Feb 18, 2012

TA43637_K_INIT_Use_with_System_or_Earlier_(TIL05712).pdf

800K INIT: Use with System 6.0.3 or Earlier

Was the 800K INIT fix included as part of System 6.0.3 (and later) software? Is it part of the System file? I can't find an INIT file called 800K INIT.

This article has been archived and is no longer updated by Apple.
You do not need to use the 800K INIT with System Software 6.0.4 or later because its equivalent is built in--it's actually part of the System file.
However, you do need to install it on Macintosh computers with 800K drives when using System Software 6.0.3 or earlier.

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When is a PICT not a PICT?

There are differences between Pict files....

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This article has been archived and is no longer updated by Apple.
PICT files are object-based files. That is, they can contain distinct geometric objects, such as lines, rectangles, circles and polygons. Another type of object that a PICT file can contain is a bitmap object.

When you save as a PICT file from a bitmap / paint program, such as Adobe Photoshop or GraphicConverter, you're saving out a PICT file with a single bitmap object. You're not saving out a PICT file that contains distinct objects. Since the entire drawing is a bitmap object, it will only be editable with bitmap editing tools.
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CD Configuration for "ClarisWorks Internet Edition - Macintosh"

Configuration of the CD "ClarisWorks Internet Edition - Macintosh"

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This article has been archived and is no longer updated by Apple.

Disk: "CW_INTERNET"
Listing 41 subfolders, 207 files

_BEGIN_HERE.DOC
INST32I.EX
_ISDEL.EXE
_SETUP.DLL
_SETUP.LIB
CLARIS INSTALL GUIDE.PDF
CLWORKS.Z
CWINTDOC.Z
HOMEPAGE.Z
SETUP.EXE
SETUP.INS
TEMPLATE.Z
UNINST.EXE

BEGIN (folder)
_BEGIN_HERE.DOC

BOOKS (folder)
ABCs Internet (folder)
DATA.Z
DISK1.ID
FILELIST.TXT
SETUP.BMP
SETUP.EXE
SETUP.INI
SETUP.INS
SETUP.LNG
SETUP.PKG
UNINST.EXE
INST32I.EX
_ISDEL.EXE
_SETUP.DLL
_SETUP.LIB
Claris Home Page (folder)
01 Title Page.pdf
02 Contents.pdf
03 Welcome.pdf
04 Ch1 Planning.pdf
05 Ch2 Basics.pdf
06 Ch3 Text.pdf
07 Ch4 Images.pdf
08 Ch5 Tables.pdf
09 Ch6 Library.pdf
10 Ch7 Links.pdf
11 Ch8 Frames.pdf
12 Ch9 Forms.pdf
13 Ch10 Upload.pdf
14 Ch11 HTML.pdf

App A Special.pdf
App B Shortcut.pdf
App C Trouble.pdf
Index.pdf

TA43639_CD_Configuration_for_ClarisWorks_Internet_Edition_Macintosh.pdf

Tutorial.pdf
ClarisWorks4 (folder)
DATA.Z
DISK1.ID
FILELIST.TXT
ISDBGN.DLL
SETUP.BMP
SETUP.EXE
SETUP.INI
SETUP.INS
SETUP.LNG
SETUP.PKG
UNINST.EXE
INST32I.EX
_ISDEL.EXE
_SETUP.DLL
_SETUP.LIB
Create Business Plan (folder)
DUNZIP.DL_
INSTALL.EXE
INSTALL.INI
INSTALL.VTZ
Create Marketing Plan (folder)
DUNZIP.DL_
INSTALL.EXE
INSTALL.INI
INSTALL.VTZ
READ_PDF.exe
Using CWks & Home Page Together (folder)
images (folder)
dopencw.gif
dsave.gif
dsaveas.gif
wdopencw.gif
wdsave.gif
wdsaveas.gif
working-with-chp-and-cw.html
Yellow Pages (folder)
DATA.Z

DISK1.ID
FILELIST.TXT
SETUP.BMP
SETUP.EXE
SETUP.INI
SETUP.INS
SETUP.LNG
SETUP.PKG
UNINST.EXE
INST32I.EX
_ISDEL.EXE
_SETUP.DLL
_SETUP.LIB

IMP_INFO (folder)
CWUG Info (folder)
ClarisWorks Journal.pdf
ClarisWorks Products.pdf
CWUG Discount.pdf
What Is CWUG.DOC
READ_PDF.EXE
Support Info (folder)
Where To Get Support.DOC
Training Info (folder)
chptrngprod.html

cwaddl.html
cwtrngprod.html

INTERNET (folder)
CANADA (folder)
INTERNET_IN_CANADA.DOC
INSTALLERS (folder)
ATT_NET (folder)
Att_info.DOC
DISK1 (folder)
DISK1.ID
SETUP.BMP
SETUP.EXE
SETUP.INI
SETUP.INS
SETUP.PKG
SYSTEM.Z
UNINST.EXE

INST32I.EX
_ISDEL.EXE
_SETUP.DLL
_SETUP.LIB
DISK2 (folder)
DISK2.ID
JAVA.Z
MAPI.Z
PEDATA.Z
DISK3 (folder)
CUSTOM.REG
DATA.Z
DISK3.ID
NETSCAPE.SR
REG.INI
INSTRUCTIONS.DOC
NETCOM (folder)
DATA.Z
IMAGES (folder)
DISK1 (folder)
DATA.1
DISK1.ID
SETUP.BMP
SETUP.EXE
SETUP.INI
SETUP.INS
INST32I.EX
_ISDEL.EXE
_SETUP.DLL
_SETUP.LIB
DISK2 (folder)
DATA.2
DISK2.ID

DISK3 (folder)
DATA.3
DISK3.ID
DISK4 (folder)
DATA.4
DISK4.ID
DISK5 (folder)
DATA.5
DISK5.ID
DISK6 (folder)
DATA.6
DISK6.ID

DISK7 (folder)
DATA.7
DISK7.ID
INSTRUCTIONS.DOC
SETUP.BMP
SETUP.EXE
SETUP.INI
SETUP.INS
INST32I.EX
_ISDEL.EXE
_SETUP.DLL
_SETUP.LIB
SPRYNET (folder)
BIN (folder)
COMMON.Z
MAIL.Z
NETSCAPE.Z
OLE.Z
PPP.Z
RAMP.Z
SWITCH.Z
WSOCK16.Z
BMPS.Z

DATA (folder)
SPRY.ALS
INSTALL.Z
INSTRUCTIONS.DOC
LEVI.SPR
LICENSE.TXT
NEEDHELP.BMP
README.TXT
README.Z
SCRIPTS (folder)
SCRIPTS.Z
SETUP.BMP
SETUP.EXE
SETUP.INS
TCP (folder)
HOSTS
PROTOCOL
SERVICES
VIEWFILE.DLL
WINDOWS (folder)
AIRWIN.INI
APP2SOCK.INI
BILLING.IBX
LOCATION.IBX
MODEMS.IBX
PHONE.INI
PROFILE.INI
REMOTE.INI
PICK_ISP (folder)
NETCOM_DESC.PDF
PICK_ISP.DOC
SPRYNET_DESC.PDF

TRIALAPP (folder)
CDRAW1 (folder)
Draw_10.shr
INSTALL.WRI
Trial31.cfg
Trial31.exe

Trial95.cfg

Trial95.exe
CIMPACT2 (folder)
CITRIAL.WRI
Impact2.shr
IMPCT_GY.EXE
Trial95.cfg
Trial95.exe
FMAKER3 (folder)
INSTALL.WRI
SETUP.EXE
Prod Briefs Sys Reqs.doc

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Contents of CD "ClarisWorks Internet Edition - Macintosh"

CD Content of "ClarisWorks Internet Edition - Macintosh"

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Disk: "ClarisWorks Internet Edit'n" (474,912K used, 164,320K free)

Begin Here

Claris Software (folder)
Install Claris Software
Installing CW Internet Edition

Documentation (folder)
Adobe Acrobat Reader 2.1 (folder)
Adobe Acrobat Reader v2.1
Coupon.pdf
Installing Acrobat Reader
AICK Documentation (folder)
Claris Emailer.pdf
Getting Started Manual.pdf
MacPing.txt.pdf
MacTelnet.pdf
Netscape Navigator Handbook.pdf
NewsWatcher Doc.pdf
AICK/Emailer Tips & Hints (folder)
images (folder)
background.gif
chpmade.gif
clarislogo.gif
emailerlitelogo.gif
ISP's.html
LiteFaq.html
Claris Home Page User's Guide (folder)
01 Title Page.pdf
02 Contents.pdf
03 Welcome.pdf
04 Ch1 Planning.pdf

05 Ch2 Basics.pdf
06 Ch3 Text.pdf
07 Ch4 Images.pdf
08 Ch5 Tables.pdf
09 Ch6 Library.pdf
10 Ch7 Links.pdf
11 Ch8 Frames.pdf
12 Ch9 Forms.pdf
13 Ch10 Upload.pdf
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Shopping for an Internet Service Provider (ISP)

A checklist for checking out Internet Service Providers and a short list of national Internet Service Providers

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Note: To search for Internet Service Providers, go to the web site at
http://thelist.iworld.com/

Checklist
When you're setting up a Web site, there are several technical and economic considerations to keep in mind. The following is a checklist of basic requirements for a PPP (Point to Point Protocol) Internet account which will allow you to post your Web pages.

Note: When creating or editing pages with Claris Home Page, you don't need to be online or even have an Internet account. Using Claris Home Page does not necessarily cause you to incur charges from your Internet service provider (ISP).

1. Does the provider have a local access number?
You shouldn't have to pay for toll calls to access your account. Although some providers have a toll-free 800 number, there may be extra charges to use this 800 number.

2. What's the number of and speed of the modems they utilize?
Ask them how many clients they have per modem; a 10 to 1 ratio is usually sufficient. If their modem pool uses anything slower than 28.8k baud per second modems, look elsewhere.

3. Do they bill by metered time or do they offer a flat rate?
A flat rate for access is increasingly common and usually a superior value. Estimate how much time you'll be online each month before you sign up with any service. If you're planning 40 hours of Web surfing, the $8.00 plan with $1.00 hourly charges will cost you almost $50.00 at the end of the month. Most flat rate plans are below $30.00 per month.

4. Setup fees?
Some ISPs charge a one-time setup fee while others do not. Be sure to inquire before signing up.

5. How much Web server space do they offer their users?
For others to view your Web site, it must be on a Web server. This should be included in the price of the account. For a personal Web site, 5 megabytes is usually sufficient. However, the more space you get, the better. If you plan on operating a small business Web site, 20MB is a good starting point.

6. What connection software and support do they offer?
Your ISP should provide you with the basic tools necessary to connect to the Web. They should also be happy to mail this software to you on floppy disks if you have no means of downloading it. Their technical support staff should be prepared to walk you through installing and configuring your setup.

Special note to Macintosh users: ask specifically about Mac support while shopping for an ISP. Many outstanding support departments have only Windows agents. Be sure your platform is well supported before you make a commitment.

7. Do they offer access to CGI scripts?
You may want to implement forms, image maps or counters to track visits to your site. These require the use of Common Gateway Interface scripts. Rather than learning how to program CGI scripts yourself and then uploading them to your site, many providers allow you to access their preexisting scripts. If you plan to add a high level of interactivity to your site, seek a provider with plenty of scripts at your disposal. If you plan to write your own CGI scripts, be sure the provider you select will allow you to upload and use them. Some ISPs do not allow the use of outside CGIs for security reasons.

Listing of a Few National Providers
HoloNet (510) 704-0160 www.holonet.net
MindSprint (800) 719-4332 www.mindspring.com
Delphi (800) 695-4005 www.delphi.com

Netcom (800) 353-6600 www.netcom.com
Earthlink (800) 395-8425 www.earthlink.com
PSI (800) 827-7482 www.psi.com

OfficeMail: Listing of a Few National Providers which provide UUCP type of accounts

UUNet (800) 488-6383 www.uunet.com
Netcom (800) 353-6600 www.netcom.com
Supernet (303) 296-8202 www.sni.net
Teleport (503) 223-0076 www.teleport.com

Mention of these providers does not imply an endorsement by Claris. This information is provided simply for your convenience.

If you have authorized Web access from someplace else (at work or a friend's house, for example) you can look for a provider using a search service from iWorld. This service can help you locate smaller providers in your area. The small providers are usually quite competitive and it's definitely worth your while to investigate them. This service is located at:
http://thelist.iworld.com

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Apple Tape Backup 40SC: Third-Party Backup Speeds

Using Apple Tape Backup 40SC 2.0.1, what is the average access time for the drive if a user has it mounted on the desktop?

This article has been archived and is no longer updated by Apple.
By "average access time", we assume that you mean the average transfer rate. Measuring the average access time for a tape drive would make little sense, since it's not a random access device. If one were to test this, it could take a very, very long time.

Apple does not publish any official numbers for this specification, but we were able to achieve .95MB per minute using Tape Backup 40SC version 2.0.1. This rating was calculated without the time required to rewind the tape at the beginning and end of the backup. Only the speed of writing to tape for a 20MB volume backup was used.

Backing up files is considerably slower and varies depending on the sizes and numbers of files. Third-party backup programs that are compatible with our tape drive are faster in file-by-file mode than Tape Backup 40SC 2.0.1.

Tape Backup 40SC cannot be mounted on the desktop. The Tape Disk INIT was designed solely for single-file recovery from backups created with the volume backup option. It was not created to provide another backup option, and will not perform this function, unless a volume backup already exists for it to work with. This is documented in the "Apple Tape Backup 40SC Owner's Guide."

SuperMac Technologies has released their equivalent of Tape Disk named TapeDriver. It appears to work with the Apple Tape Backup 40SC to allow mounting the tape on the desktop, even if the tape doesn't contain a volume backup. It is not compatible with Tape Backup 40SC 2.0.1 volume backups, though, and asks to erase any tape inserted that contains one. The INIT is available on AppleLink by following this path:

3rd Party Connection
Third Party Software Updates
SuperMac
Mass Storage Support Files
TapeDriver

The two programs that we tested and found to be compatible with the Apple Tape Backup 40SC are Retrospect (Dantz Development Corp) and FastBack II (Fifth Generation Systems, Inc). Contact their vendors for more information. For more details, search the Tech Info library under company names for details.

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Illegal Operation Error in Module COMCTL32.DLL when Switching into Edit Page Mode from Preview Page Mode

Here's what to do when you receive this error message: "an illegal operation error has occurred with an invalid page fault in module COMCTL32.DLL."

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you receive this error message "an illegal operation error has occurred with an invalid page fault in module COMCTL32.DLL.", when switching to Edit Page mode from either Edit HTML Source or Preview Page mode in Claris Home Page, it is usually the result of an incompatibility with the video driver that is installed in your Windows 95 machine. Sometimes, however, the issue may be with an incompatible printer driver instead.

In either case, you need to install a more compatible video or printer driver from the Windows 95 CD or diskettes that came with your system.

To install a video driver:
1] select the Start menu
2] choose Settings and then Control Panel
3] double click on the Display icon
4] click on the tab that is labeled settings
5] click on change display type and select change under adaptor type
6] click on the radio button that reads show all devices

To install a print driver:
1] select the Start menu
2] choose Settings and then Printers

3] if you have more then one printer listed, you need to remove them all by highlighting each of them individually and selecting Delete from the File menu
4] double click on the Add Printer icon and follow the prompts when you click Next

Note: It is recommended that before installing or reinstalling a printer or video driver in your system, you know the manufacturer of your video card and printer. This will make installing the different driver easier because Windows 95 has drivers listed for just about every company manufacturer.

This article can be used for troubleshooting any error message that refers to the COMCTL32.DLL file.

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Conflict with RAMDoubler and Kensington

Software conflicts can involve more than one extension/control panel, often with older versions of software utilities

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It was reported what was thought to be a conflict between RAMDoubler and ClarisWorks 3.x and 2.x. Neither application would launch while RAMDoubler was active. When the Kensington Turbo Mouse software was updated to version 4.02 or later, both versions of ClarisWorks launched with RAMDoubler enabled.

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Cannot Scroll Through Appointments with Multiple Event Banners

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1. Open to "Monthly" calendar view
2. Create 3 or 4 appointments for a specific date. Notice that you can scroll through the appointments.
3. Add 2 or 3 "Event Banners" to the same date. In the event that you cover up all of your appointments with event banners, you will not be able to access your appointments.

Event banners are different from the Special Events of Claris Organizer 1.0 in that they are not scrollable.

Workaround is to view your appointments in the Weekly or Daily view.

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ClarisWorks: DOS 21 Error when Using Win32s Based Applications

This article outlines some of the causes of a DOS 21 error and the steps you can take to possibly correct them.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Microsoft Win32s is a system extension that allows specially designed 32-bit windows applications to function and run in Windows 3.x or Windows for Workgroups 3.x which are 16-bit operating systems. In other words, Win32s enables Windows 3.x or Windows for Workgroups 3.x machines to emulate 32-bit mode.

Since Win32s runs Windows 3.x and Windows for Workgroups 3.x in a state Windows was never truly designed to run in, problems may arise. One such problem is a DOS 21 error. This error is a generic error indicating that Windows is having problems running your Win32s based application.

You will want to follow the steps below if you attempt to launch your Win32s based application and get any or all of the following error messages:

Win32s - Error: At least one system component is out of date. Please reinstall C:\\FMPRO30\\FMPRO30.EXE

Win32s - Error: Initialization of a dynamic link library failed. The process is terminating abnormally.

Unexpected DOS error 21

Application Error: Call to Undefined Dynalink

Depending on when you get this error will determine what path you take to try and resolve this. Please follow the proper path listed below.

YOUR WIN32S BASED APPLICATION USED TO WORK BUT NOW IT DOESN'T

If your Win32s based application, such as FileMaker Pro or ClarisWorks used to work but then suddenly stopped working, it is normally caused by another application or program installing older versions of files that are vital to the proper functioning of Win32s. To verify this you will want to perform the following steps:

1. Search for the files listed below and delete them from every directory EXCEPT from the \\WINDOWS\\SYSTEM

COMPOBJ.DLL 109056 9/6/95
OLE2.DLL 304640 9/6/95
OLE2CONV.DLL 57328 8/14/95
OLE2DISP.DLL 165008 7/25/95
OLE2NLS.DLL 152976 7/25/95
OLE2PROX.DLL 51712 9/6/95
STDOLE.TLB 5472 7/25/95
STORAGE.DLL 157696 3/2/95
TYPELIB.DLL 177824 7/25/95

The file size and date are taken from the files installed by the latest version of Win32s which is 1.30c. If you are using an older version of Win32s your file sizes and dates may vary. It is highly recommended that you obtain the latest version of Win32s if you are using an older version. It is also possible that you will encounter files whose dates is newer than the one listed above. This is usually OK --- the older ones are generally the problem.

2. In the \\WINDOWS\\SYSTEM directory, rename all the files listed above so that they have a .130 extension. Backing up the files ensures that if something goes wrong you can restore your system to the way it was before you starting troubleshooting this error.
3. The next step requires editing the SYSTEM.INI file. Open it up in any text editor, like NOTEPAD or SYSEDIT, and modify the following line from the [BOOT] section

DRIVERS=MMSYSTEM.DLL WINMM16.DLL

So that you remove the reference for WINMM16.DLL. The line should look like this when your doneÉ

DRIVERS=MMSYSTEM.DLL

4. Also in the SYSTEM.INI, remove the following line from the 386 Enhanced [386Enh] section of the SYSTEM.INI file:

Device=c:\\windows\\system\\win32s\\w32s.386

5. Save the changes to your SYSTEM.INI file
6. In the File Manager or equivalent , delete the entire WIN32S directory --- which is located in the \\WINDOWS\\SYSTEM subdirectory.
7. Quit out of Windows and restart
8. Delete the following files from the \\WINDOWS\\SYSTEM sub-directory

W32SYS.DLL
WIN32S16.DLL
WIN32S.INI
WINMM16.DLL

The above changes will take effect the next time Windows is run.

9. Reinstall Win32s per the directions that came with your application or from the directions that came with Win32s (if you downloaded it.)

After reinstalling Win32s, try your Win32s based application again and see if you can reproduce the errors you were getting. If the errors go away, then your system is fixed and your system should still function normally. If you continue to get any of the errors listed in this article, please see the section entitled:

YOUR WIN32S BASED APPLICATION HAS NEVER WORKED PROPERLY

If you just installed your Win32s application and immediately got one of the above errors, then another conflict is going on in your machine that is beyond the capacity of Claris Technical Support to assist you with. In this case one of two things is happening

1. There is another file or application on your system conflicting with the proper operation of Win32s
2. Your systems hardware, for one reason or another, is not compatible with Win32s.

It may be worthwhile to try uninstalling and reinstalling Win32s from your system, especially if you think you might have had a previous version of Win32s already installed. Please follow the directions listed above to see if it makes a difference.

To determine if you have a conflict with another file or application already installed on your system, you can try to reinstall Windows in another directory and see if that makes a difference. You can install Windows in another directory so that you do not effect your original configuration. Once you install Windows in another directory (for example \\WINDOWS2), launch that version of Windows and install Win32s and your Win32s based application into the new version of Windows.

If running your Win32s based application in the new version of Windows solves the problem, that indicates there is a configuration/compatibility issue between your original configuration and your Win32s based application. It is recommended that you use your new version of Windows and install all your Windows applications into this new version of Windows. Once you have confirmed that everything is running properly and/or has been copied over properly, you can delete your original version of Windows.

If the new version of Windows also produces the errors listed above then your system is having a general compatibility problem with Win32s. It is unlikely, without some hardware changes that you will be able to run your Win32s based application. At this point, you should contact that manufacturer of your system to see if they can offer any advice in running Win32s based applications.
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Datapen Bar-Code Reader

I need a lightpen to read bar-code data that will be stored in a 4th Dimension or Foxbase database. Do you know anything about?

This article has been archived and is no longer updated by Apple.
Datapen is a computer-keyboard interface device used for decoding and entering data via bar codes. Bar-coding can be incorporated into any type of computer terminal or point-of-sale system. There is no need to change the system software, because Datapen emulates the existing keyboard and is completely transparent to the programs in use.

You don't need a decoder, since Datapen itself is a decoder device. The system thinks all the data is entered from the keyboard. To the existing programs, Datapen is invisible.

Contact pen readers, laser scanners, badge readers, CCD scanners, and most other types of intelligent, RS-232, input devices work with Datapen. Datapen supports the following bar-code readers/scanners:

- All Datalogic standard readers
- Pens P10, P31, P32, P40
- Laser hand-held scanner LS8110, DL4100, and DL4200
- CCD hand-held scanner DL60 series
- Slot reader SR11

Datapen supports UPC/EAN, 2/5/5 bars, Code 39, Codabar, 2/5 Interleaved, 2/5, ABC Codabar, MSI, Plessy, Code 32, Code 11, UPC A/E Add on code, 2/5 Datalogic, EAN/LAC, 2/5 Industrial, Delta IBM, Code C.I.P., Code 93, and Code 128.

Datapen installs between the computer and the keyboard. The keyboard cable from the Macintosh is plugged into Datapen, and the Datapen cable is plugged into the computer keyboard.

Apple Computer Model	Datapen Model
Macintosh, Macintosh Plus	DPA-04
Macintosh SE, II, Apple IIGS	DPA-03

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Microsoft Office Launches ClarisDraw Without a New Document

ClarisDraw will not create a new document when launched from Microsoft Office.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Microsoft Office places a "pencil" icon near the Finder icon. One of the features of this icon is opening other applications both Microsoft and other. When you open ClarisDraw with this feature, it will not open a new document.

Steps to reproduce:
1) Go to the pencil icon on the top of the screen next to the Finder icon
2) Click on the pencil to and go to the Customize menu
3) Click New, Go to ClarisDraw and launch

ClarisDraw launches but will not open a new document. Workaround is to open ClarisDraw directly from the application icon or the Recent Applications menu.
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Unexplained Menu Behavior and Minimized Application Window with ClarisWorks 4.x

The System Registry is the main database file for Windows 95, and from time to time entries within the Registry can become corrupt and cause issues with Windows 95 applications, including ClarisWorks 4.x.

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If you encounter either of the following issues when using ClarisWorks 4.x, it is most likely caused by a corrupt entry in the System Registry:

-- Launching ClarisWorks 4.0 causes the application window to appear automatically minimized. ClarisWorks will appear in the Taskbar, and attempts to restore do not work. Double-clicking on a ClarisWorks file from the Explorer will also appear minimized, with the name of the ClarisWorks document showing up in the Taskbar.

-- Unexplained menu behavior, including not being able to see the menus (they are off the screen), or the menu commands themselves are unreadable.

If you encounter either of the above symptoms or other unexplained behavior in ClarisWorks 4.x, it is recommended that you delete the ClarisWorks for Windows section from the System Registry and restart ClarisWorks for Windows. Doing so will rebuild the contents of the System Registry and will allow your application to function normally once again.

ClarisWorks 4.0 for Windows 95 uses the Windows 95 System Registry to store information about the application as well as configuration parameters. The Registry is the central information database for Windows. Due to the importance of this file, great care must be taken when editing / modifying this file. It is recommended that only experienced users attempt to edit the Registry. It is also advisable to backup the Registry database before making changes. The Registry can be saved (exported) in text format as a .REG file by using the Registry Editor (REGEDIT.EXE). The Registry can later be restored (if necessary) by importing a .REG file that was created by exporting the Registry. Please consult your Windows 95 documentation for more information on the Registry Editor and backing up it's contents. Please do not attempt the following Registry edits if you are not comfortable doing so.

Editing the Registry to fix the issues mentioned above:

1. Close all open applications.
2. Click on the START button on the Taskbar and choose RUN.
3. In the OPEN dialog box, type REGEDIT and click OK.
4. In the REGISTRY EDITOR, double click on the HKEY_CURRENT_USER folder.
5. Under HKEY_CURRENT_USER, double click on the folder entitled SOFTWARE.
6. Under SOFTWARE, double click on the folder entitled CLARIS CORP.
7. Under CLARIS CORP., click once on the CLARISWORKS FOR WINDOWS folder.
8. With CLARISWORKS FOR WINDOWS highlighted, press the DELETE key on your keyboard.
9. Confirm that you want to delete the highlighted key.

Once you have deleted the ClarisWorks section of the Registry, close the Registry Editor (select EXIT from the REGISTRY menu) and relaunch ClarisWorks.

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Avery Label Sizes Not Available For New Database Layouts

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks has a number of preset label configurations that allow you to easily set up a label layout in your database file for use with popular Avery label sizes.

These label sizes are normally accessed by selecting the Label radio button in the New Layout dialog box and then clicking on the pop-down list to choose the desired Avery label.

Sometimes, when clicking on this pop-down list, "Custom" will be the only option and none of the Avery sizes will be listed. There are three situations that can cause this to happen:

1. The ClarisWorks Labels file has been deleted from your computer's hard drive.

Use the Macintosh Find (or Find File) command (under either the File or Apple menus) to search for "ClarisWorks Labels" (without the quotes). If you locate a file, read #2 and/or #3 below to correct the issue. If you do not have this file on your computer, you will have to reinstall ClarisWorks in order to access the Avery formats.

2. The ClarisWorks Labels file has been moved to an improper location on your hard disk.

This file must be located either within the Claris folder, which is within the System folder; or within the same folder as the ClarisWorks program. If your ClarisWorks Labels file is in a location other than one of these, move it to either of these locations.

3. The ClarisWorks Labels file has been converted to something other than a Simple Text (or TeachText) file.

This file is used by the ClarisWorks program internally and is not meant to be opened directly (if you have a lot of experience with ClarisWorks you may want to edit this file to include additional label configurations, but this is not recommended). If the file has been inadvertently opened and saved using a word processing program other than Simple Text or TeachText (such as ClarisWorks or MacWrite Pro), it will no longer be accessible in your database. To correct this issue, either delete the file and reinstall ClarisWorks, or open the file and use the Save As command to save a copy of the file in Simple Text or TeachText format. Be sure to name the file "ClarisWorks Labels" (without the quotes) and to put the file in one of the locations outlined in #2 above.

NOTE: ClarisWorks 1.0 does not have any preset label configurations

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Converting Various Graphic Files to Macintosh PICT Files

I want to transfer DigiPaint (HAM format) and Professional Paint (some type of encapsulated PostScript) files from an Amiga 2500 series computer to the Macintosh. (I don't think they care about the format.) Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
"PICTure This" from FGM Software is an application and DA that converts a wide variety of graphic file formats to PICT and PICT2 formats. Professional Paint should also provide the Amiga IFF format. FGM has indicated that Amiga EPSF files are different than Macintosh EPSF files, and they do not support the Amiga format at this time.

File Formats

Targa 8, 16, 24, 32
CGM
PCX (all varieties)
TIFF (all varieties)
LetraSet RIFF
Amiga IFF (except the 24 bit)
Amiga HAM
RIFF
X11 Bitmaps
Dr. Halo Cut (with palette support)
SunRaster Images (B&W and 8 bit)
CompuServe GIF
CompuServe RLE
GEM IMG (PC and Atari)
Lotus PIC
Lotus BIT
Lotus RLE
MacPaint
Macintosh EPSF (due to variations, most other platforms are not supported)

For more details, search the Tech Info library under "FGM Inc."

Published Date: Feb 18, 2012

DEMOWeekly Preview of ClarisWorks for Kids (Vol 2, #6, 2/24/97)

Claris Pushes Deeper into Education Market

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Claris is readying a specialized version of ClarisWorks that has been adapted for the educational market and children in kindergarten through the fifth grade (ages five through 11). Called ClarisWorks for Kids, the new application is based on ClarisWorks but contains a number of modifications that make it useful for schools that offer Windows or Macintosh-based computer education for their students.

Over the past two years, Claris has been quietly gaining ground in the education market, and ClarisWorks is becoming the program of choice for middle-school computer education projects nationwide. ClarisWorks for Kids is interesting because of the approach the developer has made in order to adapt a "grown up" integrated software package for young students. The company hasn't "dumbed down" the software, but instead has added features that make it more appropriate for a classroom setting. The core elements of this program are password protected so that teachers can unlock new features as they are needed. ClarisWorks for Kids contains a special Internet launching tool that works with Navigator or Internet Explorer and which can be used to easily connect to a Claris Web site designed for kids. And the program has a speech-to-text generator that makes it easy to use for the youngest students, as well as those with learning challenges. Changes to the interface design also help youngsters learn basic skills needed to work effectively with software applications.

Claris establishes a strong example in leveraging a core competency into new markets. Unlike other software companies who are trying to take old products into new markets (usually by altering pricing and packaging), Claris stands apart in its efforts to make a horizontal product suitable for a somewhat vertical market by first examining and understanding the unique needs of that market.

Published Date: Feb 18, 2012

International Dialing Adds Extra Characters

Extra characters will be added to international numbers when confirming the dialing

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you have your dialing preferences set to confirm a phone number before dialing, you might notice some extra characters on international numbers. If you have the phone number on the contact card set with a preceding "+" and the preferences set to start International dialing with 011 then the dialing string will look like:

011 "extra character" 4412341234

This is a known issue, current workaround is to dial without confirming numbers.
Published Date: Feb 18, 2012

Button Switched on Kensington Turbo Mouse

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you are using version 5.0 of MouseWorks Software with a Kensington Turbo mouse and ClarisWorks 4.x, you will have a problem with the buttons on the mouse. For instance, if you have the right top button on your mouse set to one click and the left button set to double click, the functions will be reversed in ClarisWorks. There is no workaround at this time.

Published Date: Feb 18, 2012

AFP Passwords and User Authentication Methods

Are AppleShare File Server user passwords stored in the Users and Groups file in an encrypted or unencrypted form? If encrypted, what is the algorithm? If encrypted, is the encryption key stored on the server volume?

It is my understanding that in the Random Number Exchange method for user authentication, user passwords are never transmitted over the network unencrypted. Is this correct?

This article has been archived and is no longer updated by Apple.
It is true that passwords are not encrypted in the Users and Groups file on the server. The theory is that the file is not accessible over the network and that a server requiring security can be locked away from prying eyes and software.

You are correct in stating that the Random Number Exchange method of user authentication does not send a password over the network unencrypted. Be aware that some third-party AFP servers may not support this method (although it would be unusual), and the user has no control over what user authentication method is used. The server being connected determines this. For a more detailed description of user authentication methods available through the AppleTalk Filing Protocol, read "Inside AppleTalk" pages 13-28 through 13-30.

Published Date: Feb 18, 2012

Macintosh: Application Launch Time Depends on Amount of RAM

When launching FileMaker II (Macintosh IIci, Internal HD80 SC, 8MB RAM) under the Finder, it takes twice as long as under MultiFinder. I've tried it with and without the video card and had the same results. I've also tried it with a Macintosh IIcx, and it took approximately the same time to launch under Finder and MultiFinder. Can you explain?

This article has been archived and is no longer updated by Apple.
We were able to reproduce these results on a number of systems, and it seems to be based on the amount of memory available to the application. Launching FileMaker II in a 6MB MultiFinder partition takes significantly longer than in a 2MB space. When the application launches, it checks the space available to it, and prepares it for its own use. It is also possible that more resources are preloaded into available memory. We found the same to happen with a number of applications, including Microsoft Word.

You didn't mention how much RAM was in the Macintosh IIcx that you tried, but we suspect that it has 2MB or less. This would explain why the launch time under Finder was close to that under MultiFinder. Launching FileMaker II under Finder on an 8MB Macintosh IIx took 50% longer than on the same system in a 512K MultiFinder partition.

Published Date: Feb 18, 2012

How to "Hide" an Application using AppleScript

An example of how to hide FileMaker Pro as if you had chosen "Hide FileMaker Pro" in the Application Menu

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

It is possible to hide an application (and it's open windows) by selecting "Hide [appname]" from "the application menu" in the menu bar. The application menu is the right-most menu, to the right of the help menu, and is always present.

However, it may be desirable to script the hiding of an application. The following AppleScript can be used in various situations to aid in this automation. In FileMaker Pro, this can be used in a "Perform AppleScript" step in a ScriptMaker script.

```
tell application "Finder"
set visible of process "FileMaker Pro" to false
end tell
```

Published Date: Feb 18, 2012

Not Recognizing an Application when Selecting it for "Send Apple Event"

What to do when the selected application shows up as "<unknown>" after you specify the application

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

When constructing a "Send Apple Event" script, you will sometimes need to specify an application to send the event to. When FileMaker Pro shows you a dialog box to select an application, it only shows you those applications that can accept Apple Events.

Issue

After you select the proper application, the name of that application should appear to the right of the words "Target Application". However, if the Target Application name appears as "<unknown>" even after you select an application, the desktop file may be damaged.

A Solution

Restart the Mac, holding control and command down until you are prompted about rebuilding the desktop. After rebuilding the desktop, try to specify the same application. After specifying the application, it's name should appear as the "Target Application".

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CompuServe New Mail System, Customers Cannot Go Back to Old System

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Customers having issues with the New Mail system on CompuServe who request to go back to the old system are currently being told that there is no way to go back. CompuServe is aware of continuing issues with the New Mail system and investigating ways of getting people back to the old system.

The following is a statement from CompuServe's online support:

We are aware of this issue, and we are in the process of correcting it. Unfortunately, we do not have an exact time as to when it will be corrected.

Unfortunately, we do not have a way to transfer you back to the Old Mail system at this time. We are currently looking into a way to do so, but an exact date is not available. You will want to watch the "What's New" message for further information. I apologize for the inconvenience that you have been caused.

Published Date: Feb 18, 2012

Microsoft¨ Compatibility Tool Version 1.0 for Windows NT¨ Workstation 4.0

The Microsoft Compatibility Tool Version 1.0 for Windows NT Workstation examines the hardware on your computer and tells you if your computer can support Windows NT Workstation 4.0. It also provides you with a summary of detected hardware.

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Microsoft Compatibility Tool Version 1.0 for Windows NT Workstation 4.0

The Microsoft Compatibility Tool Version 1.0 for Windows NT Workstation examines the hardware on your computer and tells you if your computer can support Windows NT Workstation 4.0. It also provides you with a summary of detected hardware. Best of all, it's free from Microsoft. Specifically, this tool will:

* Identify PCI, EISA, ISA, MCA, and legacy devices, and the system resources used by the detected devices.
* Compare the detected devices with the system requirements and Hardware Compatibility List (HCL) for Microsoft Windows NT Workstation 4.0.
* Use this comparison to show if Windows NT Workstation 4.0 should install and run properly.
* Log the detected devices to a file named "NTCT.TXT" on Disk 2.

In addition to determining if your personal computer is capable of running Windows NT version 4.0, this software tool may be useful in diagnosing issues that occur during installation of Windows NT Workstation.

To download to tool and for more information, go to:

http://www.microsoft.com/windows/common/ntcompto.htm

Published Date: Feb 18, 2012

How to Go to a URL from FileMaker Pro

You can set up a Send Apple Event in ScriptMaker to open Netscape & to go a URL

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Issue:
How do I click on a URL in FileMaker Pro and have it open Netscape and go to that URL?

Answer:
You can write a script in ScriptMaker, then attach a script to that field or you can set up a button next to the field labeled "Go to URL," which would run the script.

The script would have one step, Send Apple Event. After clicking on the Specify button, do the following:
1. Choose Other; Specify the Other Event
2. It will then come up with Specify Event dialog box. Type in GURL in both Event Class and Event ID. This is the Get URL event.
3. Select Field Value. A dialog box will come up listing your fields, you should choose the field where the URL is stored.
4. At the bottom, put a check in both options, Bring Target Application to Foreground and Wait for Event Completion Before Continuing.
5. Click on the Specify Application button and go to the folder where Netscape is stored (or other browser) and double click on Netscape.

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Claris Emailer 2.0: Important Information

The read me document for Claris Emailer 2.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Important Information Regarding Claris Emailer 2.0

Thank you for choosing Claris Emailer 2.0, the best way to manage your email. Please take the time to read this document. It includes valuable information on undocumented features, recommended versions of software necessary to Claris Emailer, and compatibility reports and warnings.

IMPORTANT: The installation instructions in the printed Claris Emailer Getting Started guide are inaccurate. For updated instructions, download the PDF version of the Getting Started manual located on the Claris Emailer Web site at <http://www.claris.com/emailer>. Also available from this site is an expanded version of the Claris Emailer 2.0 User's Guide in PDF format, with over 100 pages of additional information.

This File Contains:

1. Installation Information
2. Technical Notes and Tips
3. Compatibility Issues
4. Late-Breaking Issues and More Information

1. Installation

Important: If you are having difficulty upgrading from a previous version of Claris Emailer, please read the document "Upgrading Instructions" located on installation Disk 1.

To obtain the latest version of the full Installation Guide, download the Getting Started PDF from the Emailer page on the claris web site at <http://www.claris.com/emailer>

This version of Claris Emailer 2.0 will install the following files:

-A Claris Emailer 2.0 Application
-This Important Information file
-Upgrading Instructions
-A Claris Emailer Files Folder, containing support files necessary to Claris Emailer 2.0
-A Support Files Folder, containing AppleScript and Modem Tool information
-A Downloads folder which will act as the default folder for any enclosures received. (See the Help Files for instructions on changing the default Downloads folder.)
-Help files, automatically placed in the Claris folder in the System Folder.

Initial installation of Claris Emailer 2.0 will most likely take up less than the recommended 9 mb of hard disk space. However, as more messages are added to the mail database, it will grow. If you currently have stored mail in Claris Emailer 1.X that you wish to convert to the new database format, you may need to clear additional hard disk space prior to launching Claris Emailer 2.0.

2. Technical Notes and Tips

A. Open Transport

If your Macintosh is running Open Transport networking software, Claris recommends that you use the latest release version of Open Transport, currently 1.1.2. This software is available from the Apple web site at <http://www.info.apple.com>.

B. Versions of PPP

If your Macintosh is running Open Transport networking software and you have a dial-up connection to your internet service provider, please obtain the latest Open Transport compatible version of your PPP software. OT/PPP, Apple's PPP software, is available free of charge from the Apple web site at <http://www.info.apple.com>.

C. Next Message Command Key

The command key equivalents for previous and next message are command - [and command -]

D. Get All Messages from Server

In the account options for all Internet and OfficeMail accounts the button 'Get all messages from server' will download all messages currently on the server regardless of their status as read or unread.

E. Mail Database Recovery Option

Holding down the Option key as you launch Claris Emailer, will provide the option of rebuilding the database. This feature will repair any damage and compact the file to reclaim unused space. A backup copy of your current mail database will be saved automatically in the Mail folder in the Claris Emailer Files folder. (Note: For larger databases, this process may take some time.)

F. Marking Recipients as Unsent

You can resend any message to the same recipient by opening the previously sent message in Sent Mail or wherever it currently resides and then clicking the green check to the left of the recipient's name. From the resulting pop-up menu select "Mark recipient as unread". The message will send with the next connection to that account.

G. AppleScript for Converting 1.X Databases

If you choose not to convert your old messages when you first install Claris Emailer 2.0 an AppleScript for converting all your messages later is available. The script is located in the AppleScripts folder in the Support Files Folder in your Claris Emailer folder and is called "Convert Emailer 1". As long as the necessary AppleScript software is installed, simply double-click on the AppleScript and select your old Emailer Files folder.

H. AOL Address Converter

For those who are already using version 3.0 of the AOL client software, a separate address book converter is available from the Claris Emailer support page on the Claris web site at <http://www.claris.com/emailer>.

3. Compatibility Issues

A. Norton Disk Doctor

Do NOT run Norton Disk Doctor while Claris Emailer 2.0 is running. This can result in a damaged mail database and lost data. No issues will occur if Claris Emailer 2.0 is not running when Norton Disk Doctor checks the drive.

B. WebQuick WWW Menu Garbled

If you are running WebQuick by Europa Software (included with NOW). You must have the latest version, or you may experience garbled menus in the WebQuick interface. Europa can be found at <http://www.europasoftware.com>

C. Saving to PostScript File

Using the print dialog to save multiple messages to a Postscript file on your drive, may cause Claris Emailer 2.0 to quit unexpectedly. The issue does not occur when saving only a single file.

D. QuickHelp Issues

-There is a conflict with the version of QuickHelp that Claris Emailer 2.0 installs (4.0) and certain configurations of QuickTime. If QuickTime Musical Instruments is installed but disabled and QuickTime and QuickTime Power Plug are enabled, QuickHelp 4.0 will crash during startup.

The issue will not occur if all three are enabled or Musical Instruments is removed.

-If previous versions of QuickHelp are RUNNING when QuickHelp 4.0 is launched from the Help menu in Claris Emailer, QuickHelp 4.0 will not launch.

E. GTQ Scripting Additions

GTQ scripting additions (AppleScript software for PowerTalk) may interfere with AppleScript capabilities in Claris Emailer 2.0. Remove the GTQ additions to avoid issues.

4. Late-Breaking Issues and More Information

TA43668_Claris_Emailer_Important_Information.pdf

For late-breaking news, instructions on how to subscribe to the Emailer-Talk list from Raven Systems Ltd., and further information regarding Claris Emailer, please consult the Claris Emailer home page: <http://www.claris.com/support/products/emailer/emailer.html>

For information on how to contact Claris Technical Support please see the Claris Service Directory included in the box.
Published Date: Feb 18, 2012

If Only Decor Available is Gray

Missing Decors are a result of missing folder, duplicate copies of the application, or moved application or folders.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

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If the Decor shows up as gray then there are three things to check for:

1. The application has been moved. Claris Organizer 2.0 looks for the Decors Folder in the same folder as the application. If the Application has been moved out of the folder, like into the Apple Menu Items folder, then the decors aren't available to the application.

2. The same holds true if the Decors folder is moved or renamed. The application and the sub-folders in the Claris Organizer folder must all be kept together.

3. After updating the application there will be two copies of the application on the computer. Under some circumstances, like launching the application from the Launcher alias, the user may use the original version instead of the new version. Since the original may not be in the Claris Organizer Folder the Decors will not show in the menu.
Published Date: Feb 18, 2012

LaserWriter 2.0 ROM: Problems the New ROMs Haven‘t Fixed

This article has been archived and is no longer updated by Apple.

Nearly all the problems described in section D.7 of the PostScript Language Reference Manual (copyright 1985, Adobe Systems, Inc., Addison-Wesley Publishing Co., ISBN 0-201-10174-2) have been fixed in the new LaserWriter software. The only unsolved problems are:

-- The readline problem described under 'Input/output problems'

-- The BuildChar problem, described under 'Font and cache problems'

-- The manualfeed problem, described under 'Miscellaneous problems'

The first of these should be considered a property of all PostScript printers when connected to AppleTalk; the latter two are peculiar to the LaserWriter.
Published Date: Feb 18, 2012

Apple HD SC Setup 2.0.1: Partition Size

I just used the new Apple HD SC Setup 2.0.1, part of System Software 6.0.5, to reformat the internal HD80 SC drives on my Macintosh IIci and my Macintosh II. I was surprised to find that this reduced the disk capacity by roughly 1MB. I did a backup using DiskFit before reformatting. After reformatting, there wasn't enough room to restore. After deleting some non-essential files to make everything fit, I have "74,753K in disk and 1,539K available". Where did the space go?

This article has been archived and is no longer updated by Apple.
If a Quantum PRO drive was originally initialized with Apple HD SC Setup 2.0, the HFS partition would be larger than if it was initialized with Apple HD SC Setup 2.0.1. The reason is that the PRO drives were not directly supported by Apple HD SC Setup 2.0 (the drive did not exist yet!). However, because it was an Apple drive, the Apple HD SC Setup 2.0 software supported the drive with generic, Apple-drive settings. The size of the HFS partition was rounded down to the closest 20MB. Therefore, under Apple HD SC Setup 2.0, the HFS partition was 160,000 blocks (even).

Apple HD SC Setup 2.0.1 included changes that added direct support for PRO drives and the Macintosh IIci. (See the "System 6.0.5 Final Change History" for details.) The default HFS partition size for each drive is in an internal lookup table. The number of blocks allocated on a standard, known 80MB drive is 156,270 blocks. This size has been dictated by the original Quantum Q280 5.25-inch drive that had only 156370 blocks. To make ALL 80MB drives look alike (at least on the surface), we standardize on one 80MB partition size.

Therefore, if you had a PRO 80s drive, and you initialized it with Apple HD SC Setup 2.0 software and then went to Apple HD SC Setup 2.0.1 software, you would have lost 3730 blocks of storage or about 1.5MB. A workaround would be to use the CUSTOM partition screen, remove the original HFS partition, and create a new one manually, which is 80,000K.

Published Date: Feb 18, 2012

Where Are OT/PPP Control Panel Settings Stored?

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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This article is taken from the Apple Computer TechInfo Library

TECHINFO-0021132

The configuration information entered through the PPP control panel are stored in the Remote Access Connections document (System Folder:Preferences:Remote Access:Remote Access Connections). Removal of this file clears all PPP control panel preferences including saved configurations and connect scripts.

Modem scripts used by OT/PPP are stored in the same location as ARA modem scripts, (System Folder:Extensions:Modem Scripts).

Modem control panel settings are stored in the Modem Preferences file (System Folder: Preferences: Modem Preferences).

This article comes from Apple's Technical
Information Library (TIL). This library consists of over 12,000
articles related to Apple products and technologies. The TIL is
available through various online sources including:

America Online: Use AOL Web Browser to visit:
<http://til.info.apple.com/til/til.html>

CompuServe: Located in the Apple Tech Info area (go apltil).

The Internet (gopher): info.hed.apple.com -- Path:
Home Gopher Server -> Computer Information -> Apple Tech Info Library

info.apple.com

World Wide Web:
<http://til.info.apple.com/til/til.html> OR
<http://www.info.apple.com/info.alley>

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Claris Organizer Version 2.0v2 Updater: Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Claris Organizer 2.0v2 Updater

Important:
To use this updater you must have already installed Claris Organizer 2.0. If, for any reason, the updater doesn't work for you, make a backup of your personal Organizer data file (you should always do this anyway) and re-install Claris Organizer 2.0 from your original diskettes. When the installer is finished DO NOT restart your computer. Instead, immediately launch the updater again.

To take advantage of the updated Instant Organizer you must restart after using this updater.

Bugs Fixed in Claris Organizer 2.0v2

- There was a problem with deletion of recurring tasks or appointments in the monthly calendar window. This has been fixed.
- The speed of various popup menus in the contact card and the list view windows has been dramatically increased.
- When the alarm notification dialog appears it will be accompanied by your computer's alert sound.
- Printing of single, marked contacts should now work in all cases.
- Many other small changes that should make Claris Organizer even more stable.

Suggestions
Do not let too many items accumulate in your popup menus. The popup menus are designed to provide short-cuts to frequently used cities, companies, etc. If you expect to have a very large number of contacts (over one thousand) we suggest that you turn off the "Add new items to menus" preference. Here's how to do this: from the Edit menu choose "Preferences..." then click on the icon on the left that is labeled "Contacts". Find the check-box that says "Add new items to menus" and un-check it.

There is also another preference that you might consider disabling if you have a very large number of contacts. If you turn of the "Do not auto-attach contacts" preference you will be spared waiting for the auto-attachment dialog when you enter a new appointment, task, or event that contains a reference to a contact. To turn off this preference select "Preferences..." from the Edit menu. Click on the icon on the left that is labeled "General". Select the radio button that says "Do not auto-attach contacts". You may also want to experiment with the other three radio buttons in this preference panel.
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Small Business Collection for Macintosh CD - Begin Here

Begin Here document for the Small Business Collection for Macintosh CD.

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This article has been archived and is no longer updated by Apple.
Welcome to the Small Business Collection for Macintosh!

* Small Business Collection for Macintosh CD #1
* How to Really Start Your Own Business published by Inc. Magazine and Zelos Digital Learning

****
The Small Business Collection for Macintosh CD #1 includes:

4 full software applications:
* FileMaker Pro 2.1 - see enclosed card for cross-platform offer
* ClarisImpact 2.0 - NEW RELEASE!
* Apple Personal Diagnostics 1.1.2 - NEW RELEASE!
* ClickBook 1.2.8 - NEW RELEASE! (see below for important installation instructions)

and

* FileMaker Pro Ready-to-Use Solutions
- Over 20 Ready-to-Run Solutions created to help you manage your business & home: Lead Tracking Manager, Expense Manager, Invoice System, Project Manager, Product Manager, Contact Manager, To Do List, Asset Management, Home Budgets, Messages, Personnel Records, Employee Leave Form, Job Search Database, Job Application Form, Buy vs. Lease Analysis, Home Inventory, Student Database and Party/Wedding Planner.

- A Guide to More Solutions, CSA.fm, a directory of services and solutions created specifically for Claris software applications by Claris affiliated consultants, trainers, custom developers and publishers located in the United States and Canada

and
* Important Information:
- Developer program and services information - see description below
- How to order additional Claris and Apple applications, templates and courseware
- SimpleText and TeachText by Apple Computer
- FrameViewer application to facilitate viewing of User Guides for ClarisImpact and FileMaker Pro
- Adobe Acrobat to facilitate viewing of User Guides for Apple Personal Diagnostics
- Information on Claris Support. Please see the Reference Guide for support on non-Claris products

DEVELOPER INFORMATION
* A program overview of the Claris Solutions Alliance, a program created exclusively for software professionals and publishers who provide effective solutions for corporations, small businesses, educators and end users
* Solution Examples, a movie highlighting the benefits of FileMaker Pro for solution development
* The Claris Solutions Alliance enrollment application

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How to Order Claris or Apple Applications, Templates and Courseware

Claris and Apple applications, courseware and training materials are available through your schools or districts for volume purchase licensing. To obtain more information about volume purchases, please call 800-3-CLARIS.

For individual or parent purchases of Claris products at Education pricing, please call 800-544-8554, extension 490.

For Support information on non-Claris products, please see the Reference Guide included in the box.

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INSTALLING THE SOFTWARE:

Please see the Reference Guide enclosed in the box. In addition, for instructions on installing ClickBook open the ClickBook 1.2 folder, then double-click the ClickBook Introduction file.

TA43677_Small_Business_Collection_for_Macintosh_CD_Begin_Here.pdf

Once ClickBook and FileMaker Pro are installed, please refer to the FileMaker Pro Quick Start file written by BookMaker that provides step-by-step instructions on how to create booklets from FileMaker Pro files

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Claris Impact 2.0 Windows Cannot Open A ClarisWorks 4.0 Document

When attempting to open a ClarisWorks 4.0 Document in Claris Impact 2.0, an error message is generated.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When attempting to open a ClarisWorks 4.0 Document in Claris Impact 2.0, you will receive the following error message:

"This is a ClarisWorks 4.0 document. Claris Impact cannot open a ClarisWorks 4.0 document."

This is due to the fact that the ClarisWorks translator that ships with Impact 2.0 will not recognize the ClarisWorks 4.0 file format.

You can still convert your ClarisWorks 4.0 document into a Claris Impact 2.0 document by saving it in a file format that Impact can read. For instance, you can save the document as .WMF (Windows Meta File), or as .PCT (PICT), both of which can be opened by Impact.
Published Date: Feb 18, 2012

EPSF Image Is Placed Correctly On Screen, but Shifts When Printed

If an EPSF object placed in a ClarisDraw document appears correctly onscreen but alignment shifts when it is printed, the issue may be in the source image.

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This article has been archived and is no longer updated by Apple.
If an EPSF object placed in a ClarisDraw document appears correctly onscreen but alignment shifts when it is printed, the issue may be in the source image.

For example, in Mathematica, images can be cropped in such a way that the actual size of the object remains the same while only the cropped image is visible. An EPSF file created from this image will include the "removed" part of the image, and if this part is invisible in its environment, the image will appear to have moved.

Solution: Recompile the image in Mathematica so that the image's size matches its visible part, and bring this image into ClarisDraw.
Published Date: Feb 18, 2012

Getting the Correct Path for a Picture in a Container Field When Only a Reference to the File Has Been Stored

You can place the references (pathnames) of a picture container field into another field using AppleScript.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Container fields in FileMaker Pro 3.0 can store a reference to a graphic file instead of storing the actual graphic within the database. By importing a picture and storing a reference only, you can display the graphic on your layout while it is actually stored elsewhere. FileMaker Pro stores the path and name of your file in the field, but there is no feature which allows you to view or modify this path directly. This may become a issue if, after importing pictures as a reference only, you decide to move them to another folder, or if you are using a Web publishing tool that needs to access the references to those pictures so they will appear on a Web page.

AppleScript to the rescue!

A solution to this issue lies in the use of AppleScript applications. The two AppleScript applications below can be used to manipulate the references stored in container fields. They are provided as a reference only and can be modified to more precisely fit your needs. For example, you may alter these AppleScript applications to direct another application to open the graphic instead of putting the reference into a FileMaker Pro field. Or you can use the Replace command to change parts of the path name field to reflect a relocation of folders and then run the script to update or "mass re-import" graphics as references.

Both AppleScript applications were written based on the following assumptions:

1. All records in the current found set contain graphics that have been imported using a reference.

2. The relevant container field is named "Picture."

3. The text field to contain the reference/path is named "FileName."

4. The scripts are to be run as separate applications, either executed manually or by using the "Send Apple Event" script step in ScriptMaker software.

5. FileMaker Pro has the relevant database open and is currently the foremost, or foreground application.

6.You have made a backup of your databases before running these AppleScript applications.

The following AppleScript named "Get References" will get the path name and put it into the field "FileName."

```
Tell application "FileMaker Pro"
-- count the found set of records in the (current) database and
-- put that number into NumOfRecords.

set NumOfRecords to count record of layout 0 of database 1

-- Loop through all the found set

repeat with i from 1 to NumOfRecords

-- Get the contents of "Picture" in a certain record of the
current database

set PictureReference to cell "Picture" of record i of layout 0
of database 1

-- Put the contents into "FileName" as text

set cell "FileName" of record i of layout 0 of database 1 to
PictureReference as text

-- Stop when you run out of records

end repeat
end tell
```

TA43681_Getting_the_Correct_Path_for_a_Picture_in_a_Container_Field_When_Only_a_Ref

The following AppleScript named "Set References" will use the path name in the "FileName" field update the reference in the a field "Picture."

```
tell application "FileMaker Pro"

-- count the found set of records in the (current) database and put that number into NumOfRecords.

set NumOfRecords to count record of layout 0 of database 1

-- Loop through all the found set

repeat with i from 1 to NumOfRecords

-- Set the data reference of "Picture" to the file whose name
is "FileName"

set data of cell "Picture" of record i of layout 0 of database
1 to file (cell "FileName" of record i of layout 0 of database
1 as text)

-- Stop when you run out of records

end repeat
end tell
```

Published Date: Feb 18, 2012

A/UX: System 5 Interface Definition (SVID) Compliance

I want to know what our level of SVID compliance is. Can you help?

This article has been archived and is no longer updated by Apple.

This is the response from A/UX Engineering Management regarding the A/UX SVID compliance:

SVID - System Five Interface Definition is a two-volume book that describes the user and program interface to AT&T System V UNIX. It is published by AT&T and available for a nominal charge. SVVS, System Five Verification Suite, is a lengthy test program from AT&T that one MUST pass, WITHOUT modifications to claim SVID compliance.

A/UX passes SVVS V.2 and always has. The V.2 designation means that it is the verification suite for UNIX release V.2 from AT&T. There is also SVVS V.3, which verifies UNIX V.3 compliance, and there will be a V.4 verification suite available from AT&T shortly.

Now, to make matters a little more complex, there are also optional kernel extensions in the SVID. They are optional, not mandatory. However, if implemented, you pass the optional tests in SVVS to claim compliance. All releases of A/UX 1.0, 1.0.1, 1.1, 1.1.1, 2.0, and 3.0 pass these optional kernel extensions as well.

So the bottom line is that A/UX 3.0 is SVID V.2 compliant with the optional kernel extensions.

There are different editions of the SVID associated with the different releases of AT&T System V:

SVID	System V
Issue 2, Volumes 1 and 2	Release 2
Issue 2, Volumes 1 through 3	Release 3
Issue 3	Release 4

Our current version of A/UX conforms to SVID Issue 2, Volumes 1 and 2.

Published Date: Feb 18, 2012

ISO-8859-1 or Latin 1 formats

Displaying other typefaces in Claris Emailer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Claris Emailer will always convert latin-1 (ISO-8859-1) to Mac ASCII on the way in. You will never get a message in latin-1 format inside of Claris Emailer.
Published Date: Feb 18, 2012

Making Floppies from Electronic Purchase

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The Claris Emailer installer was designed for floppy disks (3 of them) and so your installer should have come with three folders labled "Disk 1", "Disk 2", and "Disk 3". You should be able to copy those folders directly onto floppy disks for storage.

If you want real executable install floppies, you must name the disks as above (no quotes) and then copy the "contents" of the disks (not the folders saying "disk 1", etc.) onto those disks. If you do all that, you should be able to run the installer directly from the floppies.
Published Date: Feb 18, 2012

A/UX: Partitioning Third-Party Hard Drives (6/95)

I want to use a third-party 320MB hard drive and partition it for use with A/UX.

This article has been archived and is no longer updated by Apple.
To partition non-Apple drives, do the following:

1) First, initialize the third-party hard disk drive using SilverLining, FWB Tools, or the utility that came with the drive.

2) Launch the HD SC Setup program that came with A/UX on the installation CD-ROM. (NOTE: The Mac OS version of HD SC Setup cannot be used for this task.)

If you have not yet installed A/UX, then boot from the A/UX Installation CD-ROM. Follow the instructions in the A/UX Installation Guide for preparing the disk and installing the A/UX software.

3) Partition the hard disk. You should refer to the A/UX Installation Guide section on Performing a Custom Installation for detailed instructions.

Some Important Space Considerations

In creating a bootable system disk, don't forget to create Autorecovery and swap space partitions and to leave a minimum amount of user free space:

Autorecovery - The Autorecovery partition maintains a copy of the files used in the A/UX startup process so that, if you ever experience a catastrophic system failure with A/UX, the files that are critical to the A/UX startup process can be restored from the Autorecovery partition, if necessary. The Autorecovery partition requires 3 MB of disk space.

Swap space - A/UX provides the ability to use space on a hard disk to increase the computer's memory. The UNIX terminology, this space is called the swap space, and is used to exchange, or swap, portions of files in the computer's memory with those being kept temporarily on the hard disk. The recommended minimum amount of swap space is 18 MB. Generally, swap space should be set to 1.5 to 2 times the amount of physical RAM installed.

User free space - User free space is a portion of each file system not used for storing data. The space is used by the operating system to maintain the files in the file system. The recommended minimum is 5 MB. It cannot be smaller than 2 MB.

It is recommended that you do not create any partitions larger than 1.8 gigabytes in size.

You may also be able to use the "dp" (disk partition) command under A/UX to partition the entire drive. For more detailed information on how to use "dp", refer to dp(1M) manual pages.

Article Change History:
05 Jun 1995 - Changed access to everyone.
23 Aug 1994 - Updated for HD SC Setup that comes with A/UX.

Support Information Services
Published Date: Feb 18, 2012

MacDraw Pro 1.5v3 Updater does Not Run on PowerMacs

This updater only runs on 68k Macintosh computers, not PowerMacs.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The MacDraw Pro Updater, which updates MacDraw Pro 1.5v1 and MacDraw Pro 1.5v2 to MacDraw 1.5v3 and updates the EPSF Translator, will only run on Macintosh 68k machines. On PowerMacs it will not launch properly and closes without any message or error code. It will function properly on a Macintosh 68k based machine.

In order to update your MacDraw Pro application to 1.5v3, you must first update the application on a 68K Mac then transfer the application to a PowerMac.
Published Date: Feb 18, 2012

Installer Issue with CSA CD-ROM Release VI (6)

The alias to the installer for Claris Emailer 1.1v3 is looking for a disk to install from that does not exist.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
There is nothing wrong with the installer for Claris Emailer 1.1v 3 on this disk, however, the alias for the installer was created when the CD was named something different, thus it cannot find the installer.

The solution is to open the installer directly from within the Disk 1 folder.
Published Date: Feb 18, 2012

Company Name Missing on Mailing Labels

Unless the Title field is checked to print, the Company Name will not print on a mailing label.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When setting up a custom layout for a mailing label, unless the Title field is selected to print, the Company name field will not print, even though it has been selected. The solution is to select the Title to print as well.
Published Date: Feb 18, 2012

Epson Stylus Printer Can Cause Problems with the Library Dialog

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

There is a known incompatibility with ClarisWorks for Kids 1.0 and the Epson Stylus printer drivers 2.52 and 3.04 when background printing is turned on. If you are using either of these drivers and are having problems with the Library dialog in ClarisWorks for Kids 1.0, turn Background Printing off. To do this, select the Chooser under the Apple menu, click on the icon for the Epson Stylus printer, and click the "Off" radio button under Background Printing.

Published Date: Feb 18, 2012

FreePPP, MacPPP, and OT/PPP

This article provides a brief overview of FreePPP, MacPPP, and OT/PPP.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you use a dial-up connection to the Internet, you'll also need to install an implementation of PPP. As SLIP (Serial Line Protocol) has more or less gone the way of the dinosaur, PPP has taken over. You can use FreePPP or MacPPP with MacTCP or FreePPP or OT/PPP with Open Transport (OT/PPP can only be used with Open Transport).

There is no hard and fast rule about which protocol you should use with which Macintosh or even which networking architecture. If your Macintosh uses a PowerPC processor (four-digit model numbers), OT/PPP may provide a faster connection because it's native, which means it takes advantage of the faster processor. If your Macintosh is a 68K processor, FreePPP and MacPPP might have the edge because they're already running in 68k mode, whereas the native OT/PPP has to run in emulation (which means it's pretending to be written for a 68k Mac) on non-Power Macs.

Setting aside performance benefits, FreePPP does have the edge on user interface, allowing you to monitor connection activity and connect or disconnect by using a menu that's always on the menu bar. FreePPP also makes it easy to write your own modem scripts and adjust your port speed- the speed at which your modem connects. However, if you don't usually tinker with these variables, OT/PPP should suit you just fine.

You can always install both FreePPP and OT/PPP to test which you like better, using the TCP/IP control panel to switch between the two. Of course, remember that you can't switch protocols during an open connection.

Published Date: Feb 18, 2012

A/UX: Recommended Technical and Reference Materials (9/94)

Can you provide documentation or technical references for the following list of OS nucleus functions?

- Interrupt handling
- Process creation and destruction
- Process stat switching
- Dispatching/process scheduling
- Process suspension and resumption
- Process synchronization
- Interprocess communication
- Manipulation of process control blocks
- Support of I/O activities
- Support of storage allocation and deallocation
- Support of the file system
- Support of a procedure call/return mechanism

This article has been archived and is no longer updated by Apple.
First of all, A/UX is based on AT&T System V R2.2 with BSD 4.3 Extensions, which include networking and software interrupts. Both AT&T System V.2.2 Interprocess communication (Message, Semaphores, and Shared Memory) and BSD Interprocess communication (Sockets) are supported by A/UX. Also, NFS (Network File System) from Sun Microsystems is supported by A/UX; services includes NFS, YP, and RPC (Remote Procedure Calls).

With the A/UX description above, and since UNIX is an industry standard operating system, the references for UNIX kernel functions can be found in any UNIX publications and reference books. A notable one is "The Design of the UNIX Operating System" by Maurice Bach. It covers most of the topics.

BSD 4.3 "UNIX System Manager's Manual" is a good reference for B-Net networking and Fast File System (UFS) supported under A/UX 2.0 and 3.0.

"Implementing Remote Procedure Calls" by Birrell and B.J. Nelson is good reference for RPC. It was published in ACM Transactions on Computer Systems, Vol. 2 No. 1, Feb 1984, pp. 39-59.

In addition, the "A/UX Network Applications Programming" documentation contains RPC, XDR, NFS, and YP Protocol specifications and a B-Net programming guide.

For UNIX system programming, the following books are recommended:

- "The UNIX Programming Environment" by Brian Kernighan and Rob Pike
- "Advanced UNIX Programming" by Marc J. Rochkind

Also, O'Reilly and Associates, Inc. publishes the "Nutshell Handbook" series which covers a wide range of UNIX and TCP/IP topics.

Article Change History:
19 Sep 1994 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

"Not Enough Space on the disk" error in ClarisWorks with Gateway Machine Running Windows NT 4.0 on a 2gb+ Drive

There appears to be a problem with some models of Gateway Pentium computers with hard drives of 2+gigs, running Windows NT 4.0 . While running ClarisWorks 4.0 customer have reported receiving a "Not enough space on the disk" error message.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:
There appears to be an issue with some models of Gateway Pentium computers with hard drives of 2 gb+ running Windows NT 4.0. While running ClarisWorks 4.0 customers have reported receiving an error message that there was "Not enough space on disk" to complete an operation.

Windows Explorer shows that there is plenty of space available, but running the Windows NT Diagnostics Report (Start:Programs:Administrative Tools (Common):Windows NT Diagnostics) shows 0 kb available.

Solution:
This seems to be a problem with some specific Gateway models. Please call Gateway Technical Support for assistance (General Technical Support # 800-846-2301, URL: http://www.gateway.com).

Published Date: Feb 18, 2012

ClarisWorks for Kids 1.0 ReadMe -- Macintosh

This is the Read Me file which is included with version 1.0v1 of ClarisWorks for Kids for the Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Important Information Regarding ClarisWorks for Kids 1.0 Software

Thank you for licensing ClarisWorks for Kids. We believe you will enjoy hours of entertainment and educational learning with the product. This document contains:

1. Installation Information
2. Technical Notes and Tips
3. International issues
4. Late-Breaking Issues and More Information

1. Installation
The CD version of this software installs the following files:

A. A complete version of the ClarisWorks for Kids application including a full set of clip art, templates, sounds, and movies. Alternatively, you may select to install a subset of the clip art if you have a limited amount of disk space using the Custom Install option. The floppy disk edition includes the complete application but only a subset of the full content found on the CD.
B. This Read Me document.
C. A PDF version of the ClarisWorks for Kids Getting Started Guide. You will need Adobe Acrobat to open the file.
D. A ClarisWorks for Kids Folder, containing the support files necessary to run ClarisWorks for Kids.

E. Help files, automatically placed in the Claris folder in the System Folder.
F. The ClarisWorks for Kids penmanship fonts which are placed in the Fonts folder in the System Folder.

2. Technical Notes and Tips
A. The software is preset to 3,250K minimum and 5,000K preferred and suggested. However, if you intend to work with large documents or insert many QuickTime movies and sounds, it is strongly recommended that you increase the allotted memory partition for ClarisWorks for Kids. This is done by increasing the "preferred size" in the "Get Info" Dialog box in the Finder for ClarisWorks for Kids.
B. If you experience problems running ClarisWorks for Kids on your computer, try turning off any unnecessary System Extensions and Control Panels and restarting your machine. To take advantage of ClarisWorks for Kids' full multimedia capabilities, Apple Computer's QuickTime¨ and Speech Manager and should be turned on. However, to improve performance consider turning these off.
C. Be sure to change your password and "hint" in the Teacher Menu if you are concerned about security.

D. If you had previously installed a beta version of ClarisWorks for Kids, it is recommended that you delete the existing ClarisWorks for Kids Preference file (found in the Preferences Folder in your System Folder) before you install this final version.
E. If you intend to run a web browser from within ClarisWorks for Kids' Web tools folder, you will need sufficient RAM in your computer to open both programs simultaneously.
F. If ClarisWorks for Kids is not "speaking", be sure that Apple MacinTalk (English Text to Speech) software is loaded on your computer. A copy of this software is available on this CD. You should be aware that most voices use 300Kb of RAM above and beyond what is required to run ClarisWorks for Kids. The "Bruce", "Agnes" and "Victoria" voices require 1,500Kb. Also, be sure that you have your computer volume levels turned up (System Folder: Control Panels: Monitors and Sounds).
G. If Adobe Type Reunion is installed on the same computer as ClarisWorks for Kids, menu and button display and functionality may be problematic. Remove Adobe Type Reunion from your Extensions folder within the System folder and restart your computer.

H. Certain Activities will not print correctly to PostScript printers (transparent paint frames do not print WYSIWYG via PostScript printer drivers). These are Copying, Tracing Animals, Hidden Animals, Drawing with Shapes, Graphs, Baseball, Football, Basketball. Some Clip Art library objects are also affected.
I. To achieve maximum performance, consider turning off one or more of the speech options in the Teacher menu's Audio Feedback dialog.
J. ClarisWorks For Kids documents have been saved with Page Setup settings for PostScript printers (e.g. Apple LaserWriter, HP LaserJet). When printing to other types of printers (Apple StyleWriter, HP DeskJet), set Orientation to landscape in the Teacher menu's Page Setup dialog.
K. With Modern Memory Manager turned off (32-Bit Addressing under System 7.1), ClarisWorks For Kids will not work correctly. Use the Memory Control Panel to turn on Modern Memory Manager (or 32-Bit Addressing) and restart your Macintosh.
L. Some sounds are distorted with Virtual Memory on. Use the Memory Control Panel to turn off Virtual Memory.

M. There is a known incompatibility with the Epson Stylus printer drivers 2.52, 2.70, and 3.04, with Background Printing turned On. If you are using one of these drivers and are seeing an empty Library dialog, turn Background Printing Off in the Chooser and relaunch ClarisWorks for Kids.
N. When attempting to save a file to a hard drive with more than 2.1 Gb of free space, a disk full error will result under operating systems prior to 7.5. Either save the file to a floppy, or consider upgrading your system software.

O. If you have selected a clipart library and the program asks you to insert the disk ClarisWorks for Kids CD, this means a file containing a QuickTime movie cannot be located on your hard disk. Insert the ClarisWorks for Kids CD, and Cancel the "Movie cannot play properly" dialog. Select "Hide Clip Art" from the Options menu, then "Show Clip Art" and select the desired library.

3. International Issues

A. ClarisWorks for Kids installs the US English dictionary. If you prefer to use another dictionary, you must open the Claris Folder in the System folder and remove the file called "US English - Spelling" from the folder. Launch ClarisWorks for Kids and from within a document and select Spelling in the Edit menu. The program will then automatically provide you with a dialog box that allows you to locate the Main dictionary. Navigate to the Claris folder in the System folder and select the dictionary of your choice. Your new selection will now be maintained. We've included a copy of the "UK English - Spelling" dictionary on ClarisWorks for Kids CD in the UK Dictionary Folder if you don't already have this software on your computer. Copy it to your Claris Folder in your System folder on your computer's hard drive.

B. If you would like to remove content that is specific to the US edition (US Presidents etc.), simply open from within the Finder the ClarisWorks for Kids folder after installation and navigate to the Clip Art or Activities folders. Remove the unneeded documents.

4. Late-Breaking Issues and More Information

For late-breaking news, please consult the ClarisWorks for Kids home page: <http://www.claris.com/k12/kids>

Some files are from Read It! Draw It! Solve It! by Miller and Parkosewich. Copyright 1997 Dale Seymour Publications.

Published Date: Feb 18, 2012

Changing the Amount of Time Allowed For Services to Shutdown

How to increase the WaitToKillService Timeout value in the System Registry to increase the length of time given for services to shut down.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
In Windows NT 3.51 and 4.0, the WaitToKillServiceTimeout value name in the registry allows you to specify a length of time that the service control manager must wait for services to complete the shut-down request.

To specify the wait time, follow these steps:

1. Start the Registry Editor (Regedt32.exe) and locate the following Registry subkey in the HKEY_LOCAL_MACHINE subtree:

\\SYSTEM\\CurrentControlSet\\Control

2. Highlight the value WaitToKillServiceTimeout

3. From the Edit menu, select String.

4. Enter the amount of time desired in milliseconds (the default is 20,000)

If a value is not present, select Add Value from the Edit menu and enter the following:

Value Name: WaitToKillServiceTimeout
Data Type: REG_SZ
String: <in milliseconds; default is 20,000>)

Note: Keep in mind that if you lose power, it is possible that your uninterruptible power supply (UPS) may not provide enough backup power to the computer to allow all of the services to shut down properly in addition to the shutting down the System. If you have a longer timeout value, the UPS may run out of power before the services run.

5.Click OK and then quit the Registry Editor to save the changes.

Published Date: Feb 18, 2012

A/UX 2.0: How to Start X11 in Color

Configuration

Macintosh IIfx with 8MB RAM and internal HD80 SC
A/UX 2.0b10
External HD80 SC
AppleColor High-Resolution RGB Monitor
X11 Window System (version that shipped with A/UX 2.0b3)

Problem

I can get X11 in color by selecting the "Console Emulator" session type and typing:

X -screen 0 -depth 8

However, I cannot find a way to enable X11 color in such a way that the user can select the "X11" session type and have a color X11 display appear as the default. None of the various .Xdefaults, .x11start, and so on files seems to have an option that tells the X server to expect a color display device. Is there any way to do this, other than via the Console Emulator (or hacking the /usr/bin/X11/X startup script)?

This article has been archived and is no longer updated by Apple.

```
Yes, there are two ways to launch X11, the native X11 Window System, under A/UX
2.0.  One is choosing from the "A/UX Console Emulator" session type.  The other
is choosing from the "X11" session type from the login dialog Option menu.

The problem you are experiencing is because the default X11 server startup
script (/usr/bin/X11/X) starts up the window in black and white mode.  To start
up the X11 server in color mode from the "X11" session, modify the "xinit"
command line in the /usr/bin/X11/X script file as below (this example is for
8-bit color):

Change:

    xinit xterm ... -- XmacII -logo -v $*  >> $DEBUGLOG 2>&1

To:

    xinit xterm ... -- XmacII -logo -v -screen 0 -depth 8 >> $DEBUGLOG 2>&1
```

Published Date: Feb 18, 2012

Word Wrap not working in Netscape 2.0

Messages sent from Emailer as quote-printable will not word wrap in Netscape 2.0.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
I have had the experience that a message prepared in Emailer and read by Netscape mail reads as a long uninterrupted line, until a carriage return is encountered.

This is a bug in Netscape 2.0 that I believe they fixed in 3.0. It was due to an error in managing messages that are quoted-printable. Your messages are probably quoted-printable because you use accented characters.

Any character that requires two or more keystrokes to use is a higher order character (an 8 bit character) that must be broken into a two character (or more) sequence to be sent over the internet, and the message is flagged as quote-printable so the receiving program can properly decode the information.

Published Date: Feb 18, 2012

Column Headings in Multiple Page Timeline Documents

Claris Impact does not automatically repeat column heading information at the top of each page of a multiple page timeline document. Here is a workaround.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

ClarisImpact does not automatically repeat column heading information at the top of each page of a multiple page timeline document. If you have many tasks and your timeline is longer than one page, you can place headings at the top of each page of your timeline by taking a screen shot of your timeline and copying and pasting the heading part of your picture into the top of your second page. To do this:

1. Under the View menu, select Show Page Breaks

2. Insert a task at the top of your second page; leave this task blank

3. Resize this blank top row so that it is the same height as your heading. Resize the surrounding task rows as necessary to ensure a clean break across pages.

4. Set your View to 100% and make sure you can see as much of your column heading information as possible.

5. Take a screen shot of your timeline (command-shift-3; this is a Macintosh feature that will work in any application)

6. Look for Picture 1 on your hard drive and open it (if you have other screen shots, it may be Picture 2 or Picture 3, etc.)

7. Draw a rectangle around the header part of the picture of your timeline and Copy to the clipboard.

8. Close Picture 1 and return to your timeline

9. Paste your heading at the top of the second page. If necessary, use the Arrange menu options to bring it to the front.

10. If your heading information does not all fit on one screen, make the other part of your heading information visible and repeat steps 5 through 9.

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Claris Emailer Version 2.0v2 Updater: Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Changes between Claris Emailer 2.0v1 and 2.0v2

Claris Emailer 2.0v2 is a maintentance release, consisting of a number of bug fixes and minor feature enhancements.

Bug fixes

1. In AppleScript, "the front window" will now always return the correct window under all circumstances.

2. In AppleScript, accessing unread incoming messages in the Out Box and Deleted Mail folders now works properly.

Enhancements

1. In the Schedule Entry dialog, the day-of-week abbreviations are displayed according to the values set in the Date and Time control panel.

2. In the Schedule Entry dialog, the appropriate hours, separators, and "before noon" and "after noon" tags are displayed according to the values set in the Date and Time control panel.

3. When clicking the "Stop" button on the connections Dialog with the Option key depressed, all pending connections will be stopped--not just the current one. Clicking Stop without the Option key depressed will stop only the current connection as with previous versions of Claris Emailer.

4. The "filter" Applescript verb has been added; this will apply mail actions to specified messages.

5. The number of characters accessible from within AppleScript in the subject field has been increased to 255.

6. Added the "properties" property to allow getting all properties at once with an AppleScript.

7. Claris Emailer will now sort contacts, recipients, and subjects according to the rules of the language specified in the Text control panel. If you are upgrading from Emailer 2.0v1, you will need to rebuild ("Typical Rebuild") your message database to take advantage of this feature.

IMPORTANT: Once you have rebuilt the database with Claris Emailer 2.0v2, you will not be able to open the database with Claris Emailer 2.0v1 unless you rebuild the database using the Advanced Rebuild option with 2.0v1.

HOW TO REBUILD YOUR DATABASE: Quit Claris Emailer if it is running. Launch Claris Emailer, holding down the Option Key. You will see the rebuild dialog. Click on the Typical Rebuild or the Advanced Rebuild radio button, as needed, and then click the Rebuild button.

"Typical Rebuild" will remove deleted messages from the Mail Database file and compact the file; it will also remove index entries to those messages from the Mail Index file, reducing the size of that file as well. "Advanced Rebuild" will create a new Mail Index file from the Mail Database file; this will result in deleted messages becoming undeleted, and may expand the size of both files.

You will need free disk space equal to the combined sizes of the Mail Database and Mail Index files in order to be able to rebuild the database.

8. New AppleScripts added to the AppleScript menu:
- Mark as read (marks selected messages as read)
- Mark as unread (marks selected messages as unread)
- Run mail actions on message (performs mail actions on selected messages)
- Toggle schedules (Toggles schedules on and off)

To the Example AppleScripts folder
- Save messages as text Saves selected messages as text files)

9. AppleScripts that have been modified
In the AppleScript menu:
- Go to Claris Emailer Home Page
- Register Claris Emailer

In the 'Example AppleScripts' folder:
- Emailer USENET news WWW search
- New unread mail in the In Box

Important Information Regarding Claris Emailer 2.0

IMPORTANT: The installation instructions in the printed Claris Emailer Getting Started guide are inaccurate. For updated instructions, download the PDF version of the Getting Started manual located on the Claris Emailer Web site at <http://www.claris.com/emailer>. Also available from this site is an expanded version of the Claris Emailer 2.0 User's Guide in PDF format, with over 100 pages of additional information.

This File Contains:

1. Installation Information
2. Technical Notes and Tips
3. Compatibility Issues
4. Late-Breaking Issues and More Information

1. Installation

Important: If you are having difficulty upgrading from a previous version of Claris Emailer, please read the document "Upgrading Instructions" located on installation Disk 1.

To obtain the latest version of the full Installation Guide, download the Getting Started PDF from the Claris Emailer Support page at <http://www.claris.com/emailer>.

This version of Claris Emailer 2.0 will install the following files:

-A Claris Emailer 2.0 Application
-This Important Information file
-A Claris Emailer Files Folder, containing support files necessary to Claris Emailer 2.0
-A Support Files Folder, containing AppleScript and Modem Tool information
-A Downloads folder which will act as the default folder for any enclosures received. (See the Help Files for instructions on changing the default Downloads folder.)
-Help files, automatically placed in the Claris folder in the System Folder.

Initial installation of Claris Emailer 2.0 will most likely take up less than the recommended 9mb of hard disk space. However, as more messages are added to the mail database, it will grow. If you currently have stored mail in Claris Emailer 1.X that you wish to convert to the new database format, you may need to clear additional hard disk space prior to launching Claris Emailer 2.0.

2. Technical Notes and Tips

A. Open Transport

If your Macintosh is running Open Transport networking software, Claris recommends that you use the latest release version of Open Transport, currently 1.1.2. This software is available from the Apple web site at <http://www.info.apple.com>.

B. Versions of PPP

If your Macintosh is running Open Transport networking software and you have a dial-up connection to your internet service provider, please obtain the latest Open Transport compatible version of your PPP software. OT/PPP, Apple's PPP software, is available free of charge from the Apple web site at <http://www.info.apple.com>.

C. Next Message Command Key

The command key equivalents for previous and next message are command - [and command -]

D. Get All Messages from Server

In the account options for all Internet and OfficeMail accounts the button 'Get all messages from server' will download all messages currently on the server regardless of their status as read or unread.

E. Mail Database Recovery Option

Holding down the Option key as you launch Claris Emailer, will provide the option of rebuilding the database. This feature will repair any damage and compact the file to reclaim unused space. A backup copy of your current mail database will be saved automatically in the Mail folder in the Claris Emailer Files folder. (Note: For larger databases, this process may take some time.)

F. Marking Recipients as Unsent

You can resend any message to the same recipient by opening the previously sent message in Sent Mail or wherever it currently resides and then clicking the green check to the left of the recipient's name. From the resulting pop-up menu select "Mark recipient as unread". The message will send with the next connection to that account.

G. AppleScript for Converting 1.X Databases

If you choose not to convert your old messages when you first install Claris Emailer 2.0 an AppleScript for converting all your messages later is available. The script is located in the AppleScripts folder in the Support Files Folder in your Claris Emailer folder and is called "Convert Emailer1". As long as the necessary AppleScript software is installed, simply double-click on the AppleScript and select your old Emailer Files folder.

H. AOL Address Converter

For those who are already using version 3.0 of the AOL client software, a separate address book converter is available from the Claris Emailer support page on the Claris Emailer Support page at <http://www.claris.com/emailer>.

3. Compatibility Issues

A. Norton Disk Doctor

Do NOT run Norton Disk Doctor while Claris Emailer 2.0 is running. This can result in a damaged mail database and lost data. No problems will occur if Claris Emailer 2.0 is not running when Norton Disk Doctor checks the drive.

B. WebQuick WWW Menu Garbled

If you are running WebQuick by Europa Software (included with NOW). You must have the latest version, or you may experience garbled menus in the WebQuick interface. Europa can be found at <http://www.europasoftware.com>

C. Saving to PostScript File

Using the print dialog to save multiple messages to a PostScript file on your drive, may cause Claris Emailer 2.0 to quit unexpectedly. The problem does not occur when saving only a single file.

D. QuickHelp Issues

-There is a conflict with the version of QuickHelp that Claris Emailer 2.0 installs (4.0) and certain configurations of QuickTime. If QuickTime Musical Instruments is installed but disabled and QuickTime and QuickTime Power Plug are enabled, QuickHelp 4.0 will crash during startup.

The problem will not occur if all three are enabled or Musical Instruments is removed.

-If previous versions of QuickHelp are RUNNING when QuickHelp 4.0 is launched from the Help menu in Emailer, QuickHelp 4.0 will not launch.

E. GTQ Scripting Additions

GTQ scripting additions (AppleScript software for PowerTalk) may interfere with AppleScript capabilities in Claris Emailer 2.0. Remove the GTQ additions to avoid problems.

4. Late-Breaking Issues and More Information

For late-breaking news, instructions on how to subscribe to the Emailer-Talk list from Raven Systems Ltd., and further information regarding Claris Emailer, please consult the Claris Emailer Support page at <http://www.claris.com/emailer>.

For information on how to contact Claris Technical Support please see the Claris Service Directory included in the box.

Published Date: Feb 18, 2012

Setting a Default Color Palette in ClarisImpact 2.0

The documentation for ClarisImpact 2.0 Macintosh [page 3-21] for setting a default palette is incorrect. The correct procedure is detailed below.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The documentation of ClarisImpact 2.0 gives incorrect information on how to select a default color or gradient palette for the application.

The documentation instructs you to Choose Colors and Gradients from the Layout menu, and Click Make Default.

There is no Make Default button.

The correct procedure is to Choose Colors and Gradients from the Layout menu, Click Open and select an alternative palette, Click OK. Then, Choose Save As from the File menu, Select ClarisImpact Options from the pop-up menu. Click Save.

This creates a new ClarisImpact Options document which the application uses as a template for creating new documents. The Options document stores color palette information.

Published Date: Feb 18, 2012

Some Font Suitcases Cannot be Opened, Moved or Deleted under Mac OS 8

Attempting to open, move or delete some fonts results in the alert: "The name, "TT BernhardMod Rm/Bd BT" is already taken. Please use another name."

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Most of the font "suitcases" installed with ClarisImpact 2.0 cannot be opened in Mac OS 8.

Attempting to open:
TT BernhardMod Rm/Bd BT
TT Bodoni Bd BT
TT Bodoni BT
TT ClassGarmnd Rm/Bd BT
TT Futura BdCn BT
TT Futura Bk BT
TT Futura Md/Bd BT
TT GeoSlb712 Md/Bd BT

...will results in the alert: "The name, "xxx" is already taken. Please use another name."

These other fonts behave properly:
TT CommercialPi BT
TT CopprplGoth Bd BT
TT CopprplGoth BdCn BT
TT Futura MdCn BT

Note: In all cases, the fonts seem to display OK in the font menu and there have been no reports of other "abnormal" activity. However, the suitcases, once installed cannot be dragged out of the 'blessed' Font folder. If you drag the entire folder to the desktop and restart, you can trash them (but you still can't open them).

Published Date: Feb 18, 2012

ClarisWorks Menus Do Not Appear Correctly in Mac OS8

Menus in ClarisWorks appear with gray borders with white squares.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When running ClarisWorks 4.0 with Mac OS 8, the menus will not be gray when "System-wide platinum appearance" is checked in the Appearance Control Panel. Instead, the Font menu will have a gray border, and other menus will have white squares in them.

This is a cosmetic problem. The menus do work correctly.

From the Mac OS 8 Read Me file:
"Unusual or inconsistent appearance
Some applications will exhibit unusual or inconsistent cosmetic anomalies when used with Mac OS 8. These are harmless, but if they bother you turn off the system-wide setting in the Appearance control panel. Contact the manufacturer of the program to see if an updated version of the program is available."

At this time there is no update to ClarisWorks 4.0 that fixes this problem, and no update is planned. This problem is corrected in ClarisWorks Office 5.0.

Published Date: Feb 18, 2012

LaserWriter IINTX: Timeout Problems

I have a Compaq PC connected via serial cable to an LaserWriter IINTX. I used terminal emulation to enter PostScript interactive mode and changed the default timeout parameters so that jobs never time out. I want to change these parameters back to a more normal setting.

When I enter the interactive mode and keys in "statusdict begin" followed by a carriage return, the command is processed and the whole job finishes. However, I can't get the LaserWriter IINTX to accept any of the remaining commands required to reset the default settings. Normally, I would get the PS> prompt, but since the change was made to the timeout defaults, this is no longer the case.

1) How can I change back to reasonable default times?

2) Why am I seeing this problem? Is there something strange going on in the product, or am I doing something that's not permitted?

Nevertheless, printing from applications using the batch mode still works OK, and jobs still seem to timeout.

This article has been archived and is no longer updated by Apple.
Using the following sequence of commands, we were able to set and restore timeout defaults using both batch and interactive modes. Line numbers are for reference in this article only, and are not required by the printer.

```
1 serverdict begin 0 exitserver
2 /helvtica findfont
3 15 scalefont
4 setfont
5 72 700 moveto
6 /str 20 string def
7 %statusdict begin 0 60 30 setdefaulttimeouts
8 statusdict begin defaulttimeouts str cvs show
9 str cvs show
10 str cvs show
11 showpage
```

What may be confusing in interactive mode is that after typing line 1 the "PS>" prompt is no longer displayed and the printer stops echoing keystrokes to the user. Type line 2 to prove that commands are still accepted by the printer. It returns a notice that it can't find "helvtica" and is substituting courier. Turning local echo on after line 1 will eliminate blind typing.

Commenting out line 7 lets the user power-cycle the printer to see that the changes are permanent. Lines 8, 9, and 10 pop values returned by defaulttimeouts off the stack in the order wait, manual feed, job.

Information on setdefaulttimeouts and defaulttimeouts is available on page 300 of the "PostScript Language: Reference Manual" from Addison-Wesley (ISBN # 0-201-10174-2).

Published Date: Feb 18, 2012

ClarisWorks 5.0 - Disk 3 of 9

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

ClarisWorks 5.0 - Disk 3 of 9

A batch of disks for ClarisWorks 5.0 (Macintosh) were distributed where Disk 3 had the contents of Disk 4 by accident. If you have one of these disk sets, you can download an image of DIsk 3 from our web site, and use it to restore the proper contents of floppy disk #3.

REQUIREMENTS 'Mac OS 7.0.1 or later 'A Macintosh or Mac OS compatible computer with a 1.4 MB floppy drive. This includes all PowerPC computers, all Performa computers, all LC series computers, all Centris and Quadra series computers, and all PowerBook computers equipped with a floppy drive. Macintosh computer models that do not have this size floppy drive include the Mac 128, Mac 512, Mac Plus, some Mac SE and some Mac II series computers. If you?re uncertain, see the manual that came with your computer for more information.

To make a floppy from a disk image

1. Make sure you have enough 1.4 meg floppy disks at hand to make a complete set of disks. Each disk image file will require a separate floppy disk.

2. Quit all open applications and start Disk Copy.

3. Choose "Make a Floppy..." from the Utilities menu and select the first disk image file. Disk Copy verifies the disk image file to ensure that it is not corrupted.

4. When prompted, insert a 1.4 MB floppy disk. Disk Copy shows a dialog box asking you to confirm that you want to erase everything on the floppy disk. Click OK. Disk Copy finishes and verifies the new information on the floppy disk.

5. Write the name of the disk on a label and affix it to the disk. Do not rename the disk on the computer. Disk Copy will properly name the disk.

6. Choose "Make a Floppy..." from the Utilities menu and select the next disk image file. Repeat this process until all of the new floppies have been made.

NOTE If you have a PowerBook computer with a removable or separate floppy drive, you?ll need to make sure that the floppy drive is connected and available before attempting to make a floppy with Disk Copy.

Published Date: Feb 18, 2012

Two Help Menus Better Than One?

Claris Organizer 2.0v2, while running on Mac OS 8, displays two Help menus side-by-side

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
Claris Organizer 2.0v2, while running on Mac OS 8, displays two Help menus side-by-side.

The left-most Help menu is actually the Claris Organizer Help menu that is specific to Claris Organizer, such as:
Contents...
Search Index for...
Tips...
Ten Minute Tour...

The right-most Help menu is the Mac OS Help menu, containing items such as:
Balloon Help, Help Topics, as well as the contents of the other Help menu.

Both menus are active and fully functional. Besides the odd appearance of two Help menus, there are no other known oddities specific to Mac OS 8 and Claris Organizer 2.0.

This is a cosmetic problem. The menus do work correctly.

From the Mac OS 8 Read Me file:
"Unusual or inconsistent appearance
Some applications will exhibit unusual or inconsistent cosmetic anomalies when used with Mac OS 8. These are harmless, but if they bother you turn off the system-wide setting in the Appearance control panel. Contact the manufacturer of the program to see if an updated version of the program is available."

At this time there is no update to Claris Organizer 2.0 that fixes this problem, and no update is planned.

Published Date: Feb 18, 2012

ClarisWorks for Kids Brings Power and Ease of Use to Students, Parents and Teachers

ClarisWorks for Kids allows teachers and parents to combine a large mix of ready-made templates and educational clip art to create activities that can enhance a child's learning opportunities.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

The ClarisWorks for Kids integrated software package, designed specifically to help children in grades K - 5 (ages 5-11) excel in school and inspire learning at home, is now available. Based on ClarisWorks 4.0 software, ClarisWorks for Kids allows students to communicate their ideas in a variety of creative, powerful, and fun ways.

Using a Writing Pad (word processing), Art Pad (painting), List Pad (database) and Graphing Pad (spreadsheets) -- all designed for the younger child -- teachers and students will find that ClarisWorks for Kids has all the tools they will need to work successfully.

With more than 75 fun and creative activities -- from charting the weather to measuring plant growth -- ClarisWorks for Kids provides rich educational content in many subjects, including language arts, math, history, geography and science. Teachers as well as parents can easily design new activities in ClarisWorks 4.0 software, since it is document-compatible with ClarisWorks for Kids. A password protected adults-only menu lets adults customize the use of ClarisWorks for Kids to suit different age levels and activities.

Ability to create templates in ClarisWorks 4.0 is key

The ability to create custom templates in ClarisWorks 4.0 is one of the key features of ClarisWorks for Kids because it gives teachers, parents, and outside developers the ability to put together an almost unlimited number of lesson activities. Work sheets, special projects, even entire units (related activities on a specific subject) can be assembled, shared with colleagues, or marketed.

Special features

Among the features that make ClarisWorks for Kids a true standout are its large collections of sounds, movie clips and educationally relevant clip art, all designed to allow students to make creative, exciting documents, reports and graphs. Also included are easy-to-read penmanship fonts, an intuitive filing system and musical color palettes. A text-to-speech command lets students hear their work read back to them. Whether they're creating multimedia reports that build on what they've learned or illustrated stories that come straight from the imagination, children will find that ClarisWorks for Kids contains the tools they need to bring their ideas to life.

System requirements for the Mac OS

* Mac OS-compatible computer with a 68020 or higher processor
* System 7.1 or later
* 8 MB RAM (if running System 7.1)
* 10 MB RAM (if running System 7.5/7.6)
* 13" monitor (or larger)
* 30 MB disk space for minimal installation; 150 MB disk space for full installation.
* CD-ROM drive [Note: ClarisWorks for Kids software is shipped on CD-ROM. The CD-ROM includes a tremendous amount of clip art, templates and activities. A high-density diskette version is available for an additional fee. The diskette version, due to space, contains the entire ClarisWorks for Kids application but only a subset of the full CD content. The diskette version is fully functional and can provide hours of enjoyment for your child or student. Check with your Claris reseller for more information on how to obtain the diskette version.

Published Date: Feb 18, 2012

Problems in Removing Objects from Documents with Missing Fonts

Deleting objects or layers with text does not necessarily modify the font information associated with the document.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When fonts are used in a ClarisDraw document, ClarisDraw keeps an internal list of used fonts within the document. If the fonts are then changed or removed, the internal font list may not reflect the fact that the removed fonts are no longer present.

This idiosyncrasy becomes very evident when a document is transferred from one machine to another where the installed fonts are different. ClarisDraw will report the uninstalled fonts used in the document as missing. Removing or changing the fonts in the document to match the current installed fonts, then saving the document, will not remove this message when the file is reopened. The only workaround is to create a new document and then copy and paste the desired objects into the new document.

Published Date: Feb 18, 2012

Category Sub-menu Does Not Display with OS 8

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

When running under Mac OS 8, the sub-menu for the Category command in the Edit menu does not display all the values. Instead, it displays two to three menu items with up and down scroll arrows to scroll the sub-menu.

The sub-menu does work correctly. This is a cosmetic problem. One workaround is to select Edit Categories, then click done. The sub-menu will then display all the category values.

Published Date: Feb 18, 2012

Macintosh IIfx: Non-Apple RAM SIMM Requirements

Can you give me the specifications for ordering non-Apple RAM SIMMs for a Macintosh IIfx?

This article has been archived and is no longer updated by Apple.
The Macintosh IIfx requires SIMMs that conform to the following specifications:

- 1 or 4MB capacity--256KB SIMMs are not supported.

- 64-pin (for separate Read and Write lines) versus 32-pin for other Macintoshes. The LaserWriter IINTX uses similar, but slower, 64-pin SIMMs. Macintosh IIfx SIMMs will work in a LaserWriter IINTX, but LaserWriter IINTX SIMMs are too slow for the Macintosh IIfx.

- Fast Page Mode support, like the Macintosh IIci.

- 80ns or faster.

Published Date: Feb 18, 2012

Customized Elements Seem to Disappear After a Clean System Installation

The ClarisWorks Shortcuts preferences file must be moved back into the active Preferences folder if a new operating system has been installed using the Clean Install option.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Problem:
Application specific macros (Shortcuts in ClarisWorks 4.0), customized Button Bars, Dictionaries (spell checking, auto-hyphenation, thesaurus), file translation, customizations to Assistants, and Equation Editor preferences seem to disappear when a new Mac OS is installed using the Mac OS Installer's Clean Install option.

Background:
Preference files for all of these features are stored in the Preferences folder in the System folder. (Document-specific shortcuts / Macros are stored with a document).

If a new Mac OS is installed using the Mac OS Installer's Clean Install option, the contents of the old System Folder are placed in a folder called Previous System Folder. Items moved to this Previous System Folder include the Claris folder, which contains spelling dictionaries, help files, translators, etc., and the Preferences folder, which contains preference files for the features above .

Solution:
To restore your customized tools and operations:

1. Quit the ClarisWorks 5.0 or ClarisWorks 4.0 application if it is open.

2. Move the Claris folder from the previous System Folder to the new System folder at the same level as the Control Panels folder and the System file itself. Then move all ClarisWorks 5.0 preferences files (if you're using ClarisWorks 4.0, there is only the ClarisWorks Shortcuts document) from the Preferences folder in the Previous System Folder to the Preferences folder in the new System Folder.

3. Launch ClarisWorks. All previously defined application-specific Shortcuts/Macros, customized Button Bars, specialized Assistants, and Equation Editor customizations should now be restored.

Published Date: Feb 18, 2012

ClarisWorks for Kids File Translator List

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks for Kids 1.0 includes translators (filters) for the following types of files:

AppleWorks
ASCII
ClarisWorks 1.0 Text
EPSF PFLT
GIF
MacWrite II
Microsoft Word 3.0
Microsoft Word 4-5
Microsoft Word PC
Microsoft Works 1.1
Microsoft Works 2.0
Movie
PICT
RTF
Text
TIFF
WordPerfect Mac 3.1
WordPerfect PC 5.0

Published Date: Feb 18, 2012

The Line Width Menu, in some Claris Applications, Doesn‘t Display All Line Widths Properly in Windows 95

On some Windows machines, with newer video cards, the line width menu shows only the 1 pt. line. All other point widths show their number, but not the visual line.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
On some Windows machines, with newer video cards, the line width menu shows only the 1 pt. line. All other point widths show their number, but not the visual line.

If set to one point, a line drawn in your Claris application will display correctly. However, if it is set to any other point size, the line will disappear; the only thing you will see is the selection handles on the document.

To fix this problem, you need to reduce the graphics acceleration for your video card.

Follow these steps:

1] Go to the System properties -- right-mouse click on My Computer and choose Properties, or click on Start, Settings, Control Panel, and find the System control panel.

2] Choose the Performance tab. Click on the Graphics button. Slide the indicator from Full acceleration down to None. Restart your machine.

Note: You may have other applications in your system that need some of the capabilities of your accelerated video card. In that case, you will need to experiment with the acceleration setting and figure out the least possible setting that your other applications will work in and that the specific Claris application needs to have to display all line width menu selections.

Published Date: Feb 18, 2012

ClarisWorks & AppleWorks: Password Removal

I used the password protection feature of AppleWorks (or ClarisWorks) to protect a document, but now can no longer remember the password. Can Apple help me remove the password?
This article has been archived and is no longer updated by Apple.
Apple does not offer a password removal service for protected documents.

The password protection feature does not encrypt documents, but modifies them only to the extent that AppleWorks requires a password to open them.
Published Date: Feb 18, 2012

How to Consolidate Spreadsheet Data to One Page

How to print all your data on one page when it is spread across more than one page.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

When printing a spreadsheet larger than a page in ClarisWorks, the spreadsheet will split the information onto two pages, starting from column A, thus, leaving you with one half of your information on the first page and the other half on the second. This is especially noticeable when you have only a few rows but many columns. This will leave you with extra space below each portion of the spreadsheet on each page. What if you could put both halves of the divided spreadsheet on one page?

The following is a work around solution:

1. Go to your spreadsheet and view it in Page View. This will show you how many columns are divided between two pages.

2. Select the columns you want to move by highlighting them with the the mouse.

3. Go to the 'Calculate' menu and select 'Move...'. This is where we will designate the new location of the cells we want to move from the second page.
*note: You will want to designate a cell which is below the information on the first page.

The space below the information on the first page should now contain the information which was located on the second page.

For additional 'Moves', repeat steps 1 -3.

For more info on the 'Move...' feature in ClarisWorks, consult the chapter on Spreadsheets in your User's Guide.

Published Date: Feb 18, 2012

PostScript: Language change incorporates packed arrays

This article has been archived and is no longer updated by Apple.

Several additions have been made to the standard PostScript language. These additions are upward-compatible and do not affect the function of any existing PostScript programs. The changes are included in the new LaserWriter, LaserWriter Plus, and other PostScript printers; they will be documented in a future edition of the PostScript Language Reference Manual.

-- General comments

PostScript programs that are intended to be compatible with all PostScript printers should not make use of the new features. However, it is possible for a program to determine whether or not the new features are present and to invoke them conditionally. The descriptions below suggest how to determine whether a particular feature is present or not.

-- Packed array representation

PostScript procedures are represented as executable arrays which, until now, have been stored in the same fashion as literal data. The representation, while offering maximum flexibility, is very costly in space (8 bytes per element). Large PostScript programs, such as the built-in server program, and downloaded preambles, consume considerable amounts of Virtual Memory.

Since most programs do not require the ability to be treated as data but only the ability to be executed, a more compact representation has been introduced: the packed array. Programs represented by packed arrays are typically 50 to 75 percent smaller than the same programs represented as ordinary arrays.

The packed array object has a type different form an ordinary array object ('packedarraytype' versus arraytype'); but in most respects it behaves the same as an ordinary array.

The differences between a packed array and an ordinary array are:

1. Packed arrays are always read-only: you can't use 'put', 'putinterval', etc. to store into a packed array.

2. Packed arrays are created differently from ordinary array (see below).

3. Accessing arbitrary elements of a packed array can be quite slow; however, accessing the elements sequentially (as is done for the PostScript interpreter and by the 'forall' operator) is approximately as efficient as accessing an ordinary array.

4. The 'copy' operator cannot copy into a packed array since it is read-only; however, it can copy the value of a packed array to an ordinary array of at least the packed array's length.

To create packed arrays, you may employ two methods, the PostScript input scanner and the operator 'packedarray'. More commonly, the PostScript input scanner creates packed arrays automatically for all executable arrays that it reads. That is, whenever the scanner encounters a "{" while reading a file or string, the scanner accumulates all tokens up to the matching "}" and turns them into a packed array instead of an ordinary array. To build a packed array explicitly, invoke the 'packedarray' operator with a list of operands to be incorporated into the new packed array.

Published Date: Feb 18, 2012

SMB Server: Connection Solutions

I am having difficulty attaching to an SMB server on a Token Ring. Here are my system specifications and my AUTOEXEC.BAT listing:

Macintosh configuration:

- Macintosh IIcx
- 1MB RAM
- 40MB hard disk
- 1-bit monochrome monitor
- Apple TokenTalk NB Card
- System 6.0.3, Finder 6.1

Token Ring network:

- IBM PC server running PC LAN 1.32 Extended Services
- Server Name: DOM1
- System software is on drive labeled CDRIVE
- Applications and documents on drive labeled DDRIVE
- Using 4MB Token Ring Interface cards on PS/2 nodes

AUTOEXEC.BAT listing:

```
date
time
PATH=C:\\PCLP13BS;C:\\PCLP13XS\\DOS;C:\\PCLP13XS\\NET1_30
prompt $p$g
cls
@ECHO OFF
YNPROMPT Y N 31 Start PC LAN Program 1.3 (Y/N)?
IF ERRORLEVEL 1 GOTO NOPCLP
FASTOPEN C:=100
NET START SRV DOM1 /XS
IF ERRORLEVEL 1 GOTO NOPCLP
XSDC.BAT
:NOPCLP
```

I know that the cabling is good, because I can successfully connect a PS/2 to the same cables and get a connection. When Iuse the Macintosh, I enter the server drive/pathname through the SMB DA and select it for connection. I get the message: "The server is not responding", which, according to the manual, means that the name or path specified is incorrect.

I believe that I am entering the name and path correctly, although there seems to be some discrepancy as to whether I should enter server name\\path or volume name\\path. I can't find anyone who can tell me if this is an SMB server. IBM systems engineers here haven't heard of SMB. If this is not an SMB server, how can I tell, and can it be made into an SMB server?

Originally, the SMB server hard drive did not have a name. I was using the Macintosh pathname as the server name. I tried naming the Drive volume and using that name in the Macintosh DA SMB pathname, but I still had problems.

This article has been archived and is no longer updated by Apple.
The Server Message Block protocol is a Microsoft-developed protocol that is used in the IBM PC LAN program and OS/2 LAN server. It is a presentation layer protocol corresponding to Apple Filing Protocol (AFP) in the AppleTalk Protocol Stack. Since this server is running the PC LAN program, it is an SMB server.

1) Workstation Name: Workstation Name is the name of your workstation. It tells the network administrator who you are. You can enter any name in this field as long as it has at least one character. The limit is 14 characters. Note that if you are using an OS/2 LAN server, this name must exactly match the username created on the OS/2 server (all in uppercase).

2) When you Add an SMB volume name, the format is \\\\ServerName\\VolumeName.

Server Name is found by issuing the NET NAME command on the server machine. In your case, it is DOM1 as also stated in the NET START command in the AUTOEXEC.BAT file.

Volume Name is the same name you specified in the NET SHARE command. For example, the following shares a volume name "EXAMPLES" for read/write access and with password TESTPASS:

NET SHARE EXAMPLES = C:\\SMB\\EXAMPLES TESTPASS /RW

Note that you "equate" the path to a volume name in the above NET SHARE command on the server, and then use that volume name when you add the server volume. The hard drive name on the server has nothing to do with this utility.

The password is optional if you did not specify one in the NET SHARE command on the server. For testing until you get it to work, omit the password. You can always add a password later. If you specify only the root directory of the drive (such as C:\\), all files on that drive are available to other computers.

To display the sharing status on the server, issue the NET SHARE command without any parameters: NET SHARE. We suggest that you check into this since we did not see any NET SHARE command in the AUTOEXEC.BAT file. Remember, you need to use NET SHARE to "publish" a volume to be shared.

3) Once you have added a volume, select it and click the Connect button. Leave the password field blank, if you did not enter a password in the NET SHARE command on the server.

If the volume is successfully mounted, its name appears in the lower SMB server DA window.

If you add the names of all SMB volumes on your network at one time, later, when you want to access a different volume, its name will already be an option in the Select an SMB volume window.

4) Also, make sure that you use the Apple File Exchange shipped with the latest SMB File Transfer Utility.

We hope that this helps to clear the confusion between server name, volume name, pathname, and so on.

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ClarisWorks 5.0 Features

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New Look And Feel
- Buttons and Button Bars
- Redesigned Text Ruler
- Easily accessible functions in spreadsheet
- Context-sensitive Help using ?

Enhanced Functionality
- Bookmark, Document, and URL links
- Default font easy to set
- Equation Editor
- Password Protected documents
- New Textures palette
- Named Ranges in spreadsheets
- Organize Libraries into Folders
- Apply multiple styles
- Multimedia field in database
- Larger text fields in database (~1000 characters, up from 510)
- Page breaks before and after Parts in database
- New Assistants / Improved Assistants
- New Stationery (templates) / Improved Stationery (templates)
- More clip art

Improved File Compatibility
- Improved HTML translator
- Updated File Translators

Internet Savvy Features
- Start Browser from ClarisWorks
- URL links within ClarisWorks
- Custom buttons for your favorite Web Pages
- Make Web pages
- - save as HTML
- - web page templates
- One button to go to Claris technical support web page
- Interactive documents using links

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ClarisWorks 5.0 Mac, Read Me

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Welcome to ClarisWorks 5.0 for Macintosh!

Thank you for choosing ClarisWorks 5.0 software. We're excited about this latest release of ClarisWorks and hope that it will help you to be more productive and creative. This Read Me file documents some tips that may prove helpful when using ClarisWorks 5.0, including changes for users of previous versions of the program. In particular, this document provides information about:

I. New Features in ClarisWorks 5.0
II. Usability and Design Changes in Version 5.0
III. Technical Notes and tips

I. New Features in ClarisWorks 5.0
For a detailed list of the new ClarisWorks 5.0 features, refer to the "ClarisWorks Installation and New Features Guide" (chapter two) or to the ClarisWorks Help System.

Launching Help
1. From the Help or ? menu, choose "ClarisWorks Help Contents"
2. Click on the link "New features in ClarisWorks 5.0" under the section "ClarisWorks Help".

Changes to the Interface
The Button Bar
The most noticeable change in ClarisWorks is the button bar. The button bar gives you one-click access to 150 shortcuts to make your work easier. You can also create your own buttons to appear on the button bar. With so much flexibility the button bar could get pretty crowded so we've added the ability to create multiple button bars. There are 4 different button bars (Default, Assistant, Internet and Document), and you can create your own button bar! You can switch between button bars at any time. Also, you can now dock your button bar at the top, bottom, left, or right on your screen. You can even tear it off to make it into a palette.

The Text Ruler
The text ruler has been streamlined to make it easier to set up tabs and margins. When you move tabs or margins, page guides allow you to align text precisely.

The Paste Function Dialog
In a spreadsheet, clicking the Paste Function button will bring up a dialog showing all functions, organized by category that you can paste into your spreadsheet. This feature makes memorizing the syntax of a function unnecessary.

Compatibility
ClarisWorks can now read documents created in Microsoft Word and Excel, WordPerfect, Lotus 1-2-3, and other applications. You can even save files in these formats as well.

Content
ClarisWorks includes many new stationery files. To see the new stationery files, choose New from the File menu, click the button "Use Assistant or Stationery" and choose "About Stationery" from the pull down menu. Additionally, there are new clip art libraries. Choose "Library" from the File menu to display a menu containing all libraries in the application.

The Internet
Take advantage of the Internet by starting your browser or email application from ClarisWorks, linking a ClarisWorks document to a Web page, creating custom buttons for your favorite Web pages, making your own Web page, or linking documents together.

II. Usability and Design Changes in Version 5.0

Styles
In ClarisWorks 4.0, applying a style to text (for example) then applying another style would "compound" (overlap) the two styles. In ClarisWorks 5.0, you can compound styles or not. By default, compounding styles is turned off. Refer to the Help system using the keyword "Compound Styles command" for more information.

Palettes
The Texture palette is new in ClarisWorks 5.0. You can edit textures as well as patterns and save your customized palettes. For more information, use the keyword "textures" or "palettes" in onscreen Help.

Access To the Help System from within any Dialog
In ClarisWorks 5.0, you can access onscreen Help from any dialog box. This is helpful if you are using a feature and have a question about the functionality. Click on the Help button (a question mark in the lower left corner of the dialog box) to display a Help topic that is applicable to the current dialog box.

Apple Guide Support
The Macintosh version of ClarisWorks 5.0 offers the item "Frequently Asked Questions" under the Help or ? menu. For example, if you've always wondered how to create mailing labels, the "Frequently Asked Questions" feature can help you.

III. Technical Notes and Tips

Using Documents Created in ClarisWorks 2.0, 2.1, 3.0 and 4.0
ClarisWorks 5.0 has a different file format than ClarisWorks 2.0, 2.1, 3.0 (which all used the same file format) and ClarisWorks 4.0.

When you open ClarisWorks version 1.0, 2.0, 2.1, 3.0, and 4.0 files in ClarisWorks 5.0, you will see the message "This document was created by a previous version of ClarisWorks. A copy will be opened and '[v5.0]' will be added to the filename."

To replace your ClarisWorks 1.0, 2.0, 2.1, 3.0, or 4.0 files with ClarisWorks 5.0 versions, choose Save or Save As from the File menu, remove [v5.0] from the file name, and click Replace when ClarisWorks asks if you want to replace the existing file. If you are converting a number of files to the 5.0 file format, you can turn off the warning and the [v5.0] filename suffix by choosing Preferences from the Edit menu and deselecting "Old Version Alert" and "[v5.0] Suffix".

Note: Macros and shortcut buttons created in ClarisWorks 3.0 and 4.0 documents are not supported in ClarisWorks 5.0 and will need to be recreated.

Installing and Using the ClarisWorks File Converter
The "ClarisWorks File Converter" formats version 4.0 files so they can be opened by 2.0, 2.1, and 3.0 versions of ClarisWorks. To install the ClarisWorks File Converter application, you must run the file "Install ClarisWorks" in the ClarisWorks Office Software folder on the CD, choose Custom Install from the popup menu and select the "ClarisWorks 4.0 to 2.0/3.0 File Converter" option from the list under File Translators.

To share ClarisWorks 5.0 files with users of versions 2.0, 2.1, and 3.0, you first save the ClarisWorks 5.0 files in 4.0 format by choosing Save As from the File menu and selecting ClarisWorks 4.0 from Save As Type list. Then you use the separate ClarisWorks 4 to 3 Converter application to convert the 4.0 documents so they can be used with these versions.

For more on using the File Converter, see the document "Read Me - CW File Converter" that is installed with the File Converter.

Using ClarisWorks 4.0 and 5.0 on the Same Macintosh
Some users may want to keep both versions 4.0 and 5.0 on their Macintosh. (You might choose to do this if others in your organization have older versions of ClarisWorks.) Keep in mind that all versions of ClarisWorks use the same "Creator", so older versions of ClarisWorks and the ClarisWorks documents created by them will have the same desktop icons as version 5.0.

Sharing Files with ClarisWorks 5.0 for Windows
ClarisWorks 5.0 for Macintosh has the same file format, user interface, and features as ClarisWorks 5.0 for Windows. ClarisWorks 5.0 for Macintosh also opens files created in ClarisWorks for Windows versions 1.0, 3.0, and 4.0 and converts the files to version 5.0 format. You can create a ClarisWorks document on Windows and edit it on a Macintosh computer or vice versa. Consequently, if you work with both Macintosh and Windows versions of ClarisWorks, or if you collaborate with colleagues who use ClarisWorks 5.0 for Windows, you can work without translating files or learning a different program.

Due to differences between Windows 95/NT and Macintosh platforms, you must use a file transfer program such as PC Exchange, AccessPC, or a similar utility to transfer files via floppy disk. Most Macintosh computers come with PC Exchange installed as part of the operating system. Follow the directions in the documentation for the file transfer utility program. Before copying the files to or from a PC-formatted diskette, rename the ClarisWorks files with DOS-Compatible filenames (8 characters or less, no space or punctuation marks) and be sure to include the .CWK extension. (.CWS for stationery files)

After copying your files to a PC-formatted floppy diskette, you can copy them to your PC's hard drive and open them as you would any ClarisWorks document.

Fonts, margins, page breaks, and graphics may look different after they are transferred from the Macintosh. You can minimize unintended font changes by using TrueType fonts on both platforms. Helvetica on the Macintosh converts well to Arial on Windows, and Times converts well to Times New Roman. To restore the original page breaks, you may need to change the margins and page breaks.

Some macros created on the Macintosh may not run as expected on Windows. In these cases, you'll need to recreate those macros.

Equations created with the Equation Editor become picture objects when transferred to Windows 95/NT. You will need to recreate the equation should you wish to edit it.

Textures will also appear altered when moving from one platform to another. Default textures are replaced by the texture in the same location in the palette on the other platform. Custom textures will come across, but will be altered to meet the size conventions on each platform. Macintosh textures can be as large as 64 x 64 pixels; Windows textures are limited to 8 x 8 pixels. Textures will be enlarged or shrunk as appropriate to fit in the texture palette.

Editing Documents Created with the ClarisWorks Assistants

Some documents created using the ClarisWorks Assistants or provided as Stationery files contain objects that are locked or grouped. (Locking and grouping keeps text and graphics objects in position and prevents accidental edits.)

To unlock and ungroup objects so you can move or edit them:
1. Click the Arrow tool and then select the object.
2. Choose Unlock or Ungroup from the Arrange menu. If an object is both locked and grouped, first unlock it and then ungroup it.

To edit a text object, click the Text tool and then click the text you want to edit.

Adjusting ClarisWorks Memory

In most cases, the preset memory allocation is adequate for working on ClarisWorks documents. However, if you are working with large Paint documents, very long documents, or if you have several large documents open at the same time, you may see the message "Not enough memory to complete this operation" or "The document has been reduced to fit the available memory." These messages mean that you need to increase the amount of memory set aside for ClarisWorks. Increasing the memory allocation may also reduce the time it takes to print some documents.

To increase the memory allocation for ClarisWorks:
1. If ClarisWorks is open, quit the application.
2. Open the folder that contains the ClarisWorks 5.0 application.
3. Click the ClarisWorks application once. (If you click the icon twice, you'll start ClarisWorks. If that happens, choose Quit from the File menu and try again.)
4. Choose Get Info from the File menu.
5. Double-click the Preferred Size box.
6. Type a larger number to increase the memory size.
7. Close the ClarisWorks Info window.

Running the Introduction to ClarisWorks tour

The Introduction to ClarisWorks tour requires a 640x480 monitor or larger, and prefers 256 colors and 4096k of memory. The tour will run at higher color settings and with as little as 2048k of memory, but you may experience color problems or the sound may not work.

If you experience color problems, change the number of colors to 256 using the Monitors control panel.

If you experience memory problems and are running the Introduction to ClarisWorks application and ClarisWorks application at the same time, quit ClarisWorks and double-click the "Introduction to ClarisWorks" file (in the ClarisWorks 5.0 Folder).

Using the Sample AppleScript scripts

Version 5.0 includes four sample AppleScript scripts that illustrate the use of AppleScript to automate ClarisWorks functions. The four AppleScript scripts are located in the ClarisWorks Scripts folder in the ClarisWorks 5.0 folder:

1. Convert Documents converts multiple non-ClarisWorks files, or files created in earlier versions of ClarisWorks, to ClarisWorks 5.0 format.
2. Print Documents prints multiple ClarisWorks documents.
3. Mail Merge merges FileMaker Pro 3.0 database data into ClarisWorks documents.
4. Remote Slide Show runs ClarisWorks slide shows from a remote Macintosh.

For more information on these scripts, consult the "About the AppleScripts" document stored in the ClarisWorks Scripts folder. For more information on the AppleEvents supported by ClarisWorks 5.0, consult the ClarisWorks AppleEvents List document in the ClarisWorks Scripts folder. (The document assumes familiarity with AppleEvents and AppleScript.)

Note: AppleScript is provided with System 7 Pro and System 7.5. If you're using System 7.0 and 7.1, AppleScript is available from Apple Computer, Inc. The Mail Merge and Remote Slide Show scripts require AppleScript version 1.1.

ClarisWorks Required Internet Config Settings

ClarisWorks 5.0 takes advantage of Internet Config 1.3 (installed with the ClarisWorks 5.0 installer) to open Web browsers and electronic mail

(email) applications. We have preset the "Helper" settings defined in Internet Config to use Netscape Navigator as your browser and Claris Emailer software as your email application. If you want to use different Helper applications for Web browsing or email or have previously installed and defined Internet Config settings, you'll need to do the following:

1) Double-click the Internet Config alias icon located in the Internet Config 1.3 folder in the ClarisWorks 5.0 folder (or click the Internet Config button in the ClarisWorks 5.0 Internet button bar).
2) Click the "Helpers" button.
3) Modify (or add as needed) the following entries:
file - <browser application of choice>
http - <browser application of choice>
https - <browser application of choice>
mailto - <email application of choice>
4) Close the "Helpers" window by clicking the close box.

5) Choose Save from the File menu.
6) Quit Internet Config and restart your computer.

For more information refer to the user documentation.html file located in the Internet Config 1.3 folder in the ClarisWorks 5.0 folder on your hard drive.

MacLinkPlus for ClarisWorks
The MacLinkPlus for ClarisWorks files are not compatible with Macintosh 840AV and 660AV computers when running system software 7.1.2 or earlier. The ClarisWorks Easy and Custom installer options prevent these components from being installed on these systems. If you have either of these systems, and would like to take advantage of the MacLinkPlus translators provided with ClarisWorks, you'll need to upgrade your system software to version 7.5 or newer before installing ClarisWorks 5.0.

ClarisWorks installs the 68K versions of all the MacLinkPlus for ClarisWorks files and filters on PowerPC as well as 68K computers. There is a known problem resulting from PowerPC versions of MacLinkPlus for Easy Open and Mac OS Easy Open that could cause ClarisWorks to experience difficulties when it is first launched. We have worked around this problem by providing the 68K files.

When opening files using any of the MacLinkPlus or XTND supported file filters, we suggest that you specifically select the "Document Type" and "File Type" to be used in the Open Dialog. Many applications use the same file types for multiple versions of their documents. Attempting to open these documents without specifically selecting the document and file type may cause the application to use a translator for an earlier version and fail to translate the document. If this happens, you'll see the message "Cannot convert to specified document type".

ClarisWorks contains portions of the file translation library of MacLinkPlus, a product of DataViz, Inc.

Claris and the ClarisWorks team thank you for your purchase of ClarisWorks 5.0. Your support, comments, and suggestions help us to continue to bring you better solutions for your future productivity needs.

Mention of third party products and companies is for informational purposes only and constitutes neither an endorsement nor a recommendation.

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CLARISWORKS OFFICE NOW AVAILABLE FOR WINDOWS 95, NT 4.0 AND MAC OS

Users of popular productivity tool applaud its tightly integrated architecture, customized business solutions, and Internet capabilities

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This article has been archived and is no longer updated by Apple.

SANTA CLARA, Calif., September 17, 1997 ? Claris Corporation today announced the immediate availability of ClarisWorks Office, the newest version of the company's complete cross-platform productivity solution software for Windows 95, NT 4.0 and Mac OS users. Small, fast and extremely economical, ClarisWorks Office is less than one half the size of other suites, while providing a powerful and full-featured alternative to bloated suite products.

ClarisWorks Office includes the new ClarisWorks 5.0 software, which features Internet enabling and linking, a customizable button bar for faster access to the most used features of ClarisWorks, enhanced HTML translation for quick productivity on the desktop or on the World Wide Web, an easy on-ramp to the Internet with a choice of Internet Service Providers (ISPs); Claris Home Page Lite software for easy authoring of Web pages, and more than 230 ready-to-use documents including JIAN BusinessBasics (Claris Edition), a comprehensive set of small business solutions from the makers of the popular business planning software BizPlanBuilder.

"At a time when the number of companies with less than 20 employees comprise about 90 percent of the business market ClarisWorks Office, with its compact size and exciting new features, sets the office suite standard for todayÕs small business user." said Dominique Goupil, Claris president. "Small businesses need to watch their expenses and really make sure theyÕre getting value for their dollar; for them, ClarisWorks Office fits the bill perfectly."

Designed to deliver all the office needed for small business, home or education users who want productivity but do not have dedicated support technicians to back them up, ClarisWorks has attracted more than 15 million users worldwide with its ease-of-use and award-winning seamless integration of powerful productivity tools. Earlier this year ClarisWorks 4.0 was rated by small businesses as more reliable, easier to learn, offering more value for the money and higher general satisfaction than Microsoft Office in a study by Dataquest, a Gartner Group Company.

Beta tester Jim Erwin, president of sYnapse Software, Inc. in Rochester, New York, believes other office suites are too cumbersome for most small businesses. "ClarisWorks Office is the best piece of software ever created for small business. It combines capability with power and flexibility that's just not matched. All the clumsy office 'bloatware' suites just don't do it for the vast majority of small business people," said Erwin. "ClarisWorks Office is simple, it's powerful, and it has tremendous capabilities ? a database, spreadsheet, word processing, graphics, and macro capability ? all rolled into one extremely well integrated package."

Everything users need for productivity on the desktop and on the Web
With full-featured productivity tools, customized documents, plus the power of the Internet, ClarisWorks Office enables users to create everything from memos to presentations, customer lists to mailing labels, letters to school term papers, custom Web pages to invitations, balance sheets to home budgets, and business reports to family newsletters.

ClarisWorks Office consists of:
ClarisWorks 5.0: The new version of the smartest all-in-one productivity software, which features enhancements to word processing, spreadsheet, graphics and database software; powerful presentation capabilities; and Internet enabling that lets users create links to the Internet from documents ? all in a single, easy-to-use program that offers instant access to all features and the ability to combine words, graphs, tables, photo images, and even video, on a single page.

JIAN BusinessBasics (Claris Edition): More than 60 business documents: agreements, worksheets and checklists covering sales, marketing, finance, accounting, management and operations provide effective, time-saving ways to manage and grow emerging and existing small businesses.

Ready-to-use documents: 175 ready-made customizable ClarisWorks documents including: newsletter layouts, financial worksheets, databases, presentations, Web page templates and more enable any user to instantly create professional-looking documents for business, home or school.

Claris Home Page Lite: Establishing a presence on the Web is simple with this powerful authoring tool that lets users build dynamic Web pages in minutes ? without learning HTML programming.

Internet connection software: Users can be up and surfing, exchanging email and creating a presence on the Internet quickly and easily with a choice of either NETCOM's Internet Suite, NETCOMplete or EarthLink Network's TotalAccess software. Both services include browser software. ClarisWorks Office users who subscribe to NETCOM's SOHO hosting service for six months will receive a free set-up and one free month of service. U.S. users who subscribe to EarthLink's Internet access will receive a free set-up and one free month of access. Canadian users should call EarthLink at 800/395-8410 for special prices.

Right tools at the right time
Rather than bombarding users with thousands of features they must pay for but will never use ?? and that take valuable RAM and disk space ?? ClarisWorks Office presents the tools users need, when they need them, saving time and enhancing productivity. The new fully customizable, context-sensitive ClarisWorks button bar provides users with the appropriate tools for the task and enables them to build their own desktop "control center" with custom buttons for launching other applications, documents, and Web sites. Users can also set up a button bar that will travel with a document ?? so the right shortcuts are there when needed.

ClarisWorks Assistants offer detailed, friendly help with layout, design and content in the automated creation of everything from newsletters and tables to mailing labels and business cards. New contextual help within ClarisWorks makes it simpler than ever to get answers quickly from any dialog box.

The new robust ClarisWorks HTML translator with support for GIF and JPEG images, background images, and tables makes it a snap to create documents for the Internet. Ten new ClarisWorks templates for quickly creating single page Web sites help even the most novice users easily create their own Web pages. And, when users are ready to publish multiple page sites, Claris Home Page Lite offers the Web authoring tools they need.

ClarisWorks 5.0: More power and compatibility plus Internet enabling and linking
The foundation of the ClarisWorks Office product, ClarisWorks 5.0 offers significant new features that deliver more power at users' fingertips. In addition to the button bar which brings one click access to 150 of the most commonly used features, ClarisWorks 5.0 includes an improved text ruler featuring new tab and margin guidelines for aligning text easily and access to text attributes such as font, size and style. Users can also now specify a default font for all their documents and password-protect confidential documents.

The spreadsheet now supports named ranges so users can create easy-to-understand formulas that make data sharing simpler. In addition, the more than 100 functions included in the spreadsheet have been categorized for easier access. As important data comes in many forms, the database now supports multimedia fields including pictures and QuickTime movies. More than 600 new clip art images (over 1100 total) are available to illustrate any ClarisWorks 5.0 document.

Users can now also create Internet-enriched documents that include references and links to Web sites, easily link related documents, and facilitate navigation within larger documents through new Web and document linking capabilities in ClarisWorks 5.0.

When sharing data with associates or friends who use other productivity software such as Microsoft, Lotus, and Corel products, ClarisWorks 5.0 makes it simple with translators created exclusively for ClarisWorks Office by DataViz, makers of the popular MacLinkPlus and Conversions Plus translation products. ClarisWorks 5.0 also continues to be the only productivity suite that delivers complete cross-platform compatibility with no translation required.

Excellent value
ClarisWorks Office has a lower initial retail cost than traditional suite products and its usability and integration are designed to lower training and support costs as well. ClarisWorks also continues to require modest computing power: 8 MB RAM and 68 MB of disk space for a full install including all clip art and templates, less than one half the disk space of Microsoft Office 97, so users are much less likely to require costly hardware upgrades to be productive.

The U.S. estimated retail price for the Windows 95/NT 4.0 version of ClarisWorks Office is $79, with an upgrade/trade up rebate of $20. The U.S. estimated retail price for the Mac OS version is $99, with an upgrade/trade up rebate of $30. U.S. users of previous versions of ClarisWorks can upgrade to just ClarisWorks 5.0 for $49.

Availability and system requirements
Windows systems require Microsoft Windows 95 or NT 4.0 and a 386 or newer processor; Macintosh requirements are Mac OS System 7.0.1 or later and a 68020 or newer processor. On all platforms, ClarisWorks Office requires a CD-ROM drive and 8 MB of RAM and 21 MB of hard disk space for a minimal installation.

For more information, call 1-800-544-8554 or visit the new ClarisWorks Office Web site at http://www.claris.com/clarisworks. ClarisWeb, the Claris World Wide Web home page, is located at http://www.claris.com.

Claris is among the world's largest vendors of productivity software for personal computers, based on total revenue. Claris Corporation, a leading vendor of cross-platform software for business, education and home, has headquarters in Santa Clara, Calif. Note to editors: Visit the Claris media center on the Web at http://www.claris.com/news/press.

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is required for Internet and Web related functions.

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Fonts Included with ClarisWorks 5.0 for Macintosh

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ClarisWorks 5.0 for Macintosh installs the following seven fonts:

Arial MT Cn Lt
Bodoni MT Ultra Bold
Gill Sans Condensed Bold
Klang MT
New Berolina MT
Old English Text MT
Script MT Bold

The following two terminal emulation fonts are installed for use with ClarisWorks Communications documents:

TTYFont
VT102Font

All nine of the above fonts are installed in the Fonts folder within your System folder.

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Fonts Included with ClarisWorks for Kids

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This article has been archived and is no longer updated by Apple.
ClarisWorks for Kids 1.0 installs the following three fonts:

Early Learner
SchoolScript
SchoolText

The latter two are contained in a font suitcase called SchoolFonts.tt. All of these fonts are installed into the Fonts folder within your System folder.

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Updated Windows 95 Driver For The HP LaserJet 5 Family Seems to Reduce Printing Errors

There is a PCL driver available from HP that is compatible with Claris software running under Windows 95. It is compatible with the LaserJet 5, 5L, 5M, 5N, 6P & 6MP.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The standard PCL (printer control language) driver version G1.30 is available for the HP 5, 5L, 5M, 5N, 6P & 6MP laser jet models. The actual version of the new driver is G1.30 (PCL). If you have been experiencing problems printing to an HP 5 series driver we recommend installing this latest version. You can find version information for your currently installed HP 5-family driver by following these steps:

1) Click the Start button, choose Settings, then Printers
2) Right-click on your HP driver and choose Properties
3) Click on the Device Options tab
4) Click on the About button

Anything prior to version G1.30 may be incompatible with Claris software.

The driver is available on the Hewlett-Packard website, www.hp.com. The specific URL for the the LaserJet 5L page is http://hpcc923.external.hp.com/cposupport/indexes1/lj5ls.html.

Once you download the compressed driver archive to your hard drive, expand it into its own folder. Proceed with a normal installation of a new printer (Start, Settings, Printers, Add Printer), and when you get to the list of manufacturer's, click on Have Disk. Navigate to the folder where you expanded your archive and it will install the new driver.

You can also just change your existing installation of any printer driver by doing the following:

1) Click on Start, Settings, Printers.
2) Right-click on your installed HP driver and choose Properties.
3) Click on the Details tab.
4) Click on the New Driver button and proceed as described in the previous paragraph to the list of manufacturers and the Have Disk button.

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Error when Connecting: "Could not resolve the domain name because no data was available for reading"

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This article has been archived and is no longer updated by Apple.
This message will appear if Emailer is running on a network and that network is down. To verify that the network is down, check the Chooser.

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Troubleshooting Windows Printing Issues (Errors Or WYSIWYG)

This article is designed to be the one-stop shopping for your Windows printing troubles -- whether you're getting an error or not getting what you want (WYSIWYG).

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Are you getting an ERROR?

-- Exception 10h:

Switch to a driver that ships with Windows 95 - usually the same model printer, but try one lower family number. [Example: HP LaserJet 5si and HP LaserJet 4si]

or

Turn off the Math Coprocessor :
1. With your right mouse button, click My Computer, and then click Properties.
2. On the Device Manager tab, click View devices by type.
3. Double-click System Devices.
4. Click Numeric Data processor, and then click Properties.
NOTE: With a Plug and Play bios, the Numeric Data Processor option will be under a Plug and Play branch in the Device Manager rather than at the top level.
5. On the Settings tab, click Never Use The Numeric Data Processor.
6. Click OK.
7. Restart your computer.

-- Divide Error:

Switch to a driver that ships with Windows 95 - usually the same model printer, but try one lower family number. [Example: HP LaserJet 5si and HP LaserJet 4si]

-- "Cannot Access Print Options":

This usually only occurs in FileMaker Pro 3.0v1 and 3.0v2. It was fixed as of v3, so updating their FMP application is the solution.

Are you getting printed out what you see on-screen (WYSIWYG)?

-- Text Clipping:

In FMP versions 3.0v3 and later, go to layout mode and hold the Shift key down while accessing Mode, Layout Setup. A New Break checkbox will appear in the dialog box. Check it and see if that does it.

If the above doesn't work, remain in Layout mode, select the text field that is getting clipped and go to Format, Line Spacing and choose Custom. Switch the Lines to Pixels and lower the default number of 16 to something like 13. Switch to Preview mode and check it out.

-- Solid Black or Shading instead of Pattern Fill:

If you are printing to an HP 4 (most models), you likely need to switch your printer's graphics mode from raster to vector or vice versa. This is done in the printer's properties. Click on Start, choose Settings, then Printers. Right-click on your printer and choose properties from the pop-up menu. Click on the graphics tab, where you'll see the radio buttons for raster and vector graphics. Whatever it is set to, choose the other one.

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Text Color Can Only Be Changed From Button Bar

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In previous versions of ClarisWorks, the color of a text selection in a word processing document could be changed via the 'Text Color' option in the 'Style' menu. This option no longer exists in ClarisWorks 5.0, and has been replaced by a Text Color palette on the button bar.

The color of text within a text frame in a Word Processing document can be changed under the 'Format' menu if the entire frame is selected as an object, as in previous versions of ClarisWorks.

The text color of cells in a ClarisWorks 5.0 Spreadsheet document can still be changed by choosing 'Text Color' in the 'Format' menu.

The color of text within a field in a ClarisWorks database document can be changed under the Format menu as well as in Layout mode.

The ClarisWorks help system incorrectly states that the color of text in a Word Processing document can be changed in the 'Style' menu.

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Bookmarks Do Not Appear In New Document Window

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When creating links to bookmarks in the same document, you must be sure to leave the default document setting to '<Current Document>'. If you try to select the document you are working in by hitting the 'Choose Document' button, the bookmarks you created will not be available to you. This scenario only happens when the document has been saved first. Newly opened documents that have not been saved will not show in the 'Choose Document' window, thus avoiding the entire issue.

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Underlined Space Characters Do Not Print In ClarisWorks 5.0

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When creating underlines in ClarisWorks 5.0, selecting 'Underline' in the Styles menu and then using the space bar to place the line in your document has been found to not print the line created. The problem also occurs when documents created in older versions of ClarisWorks are used in ClarisWorks 5.0. Lines created by either option spaces or tab spaces will print. As of yet, there is no solution to correct the problem.

It is recommended that you not create underlines in this fashion. The best way to make long underlines is by creating a tab and setting the tab to have a fill of the underline character. This can be done by double clicking on the tab after it is created. You could also create a plain tab and use the drawing tool to draw in a line as well.

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Movies Don‘t Play Correctly When Using QuickTime 2.5

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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When using ClarisWorks versions 2.0, 2.1,3.0 and 4.0 with QuickTime 2.5, QuickTime movies won't play correctly in the Slide Show. The movie soundtrack plays correctly, but the display only shows the first frame of the movie. To have movies play correctly in these versions of ClarisWorks, use QuickTime 2.1.

ClarisWorks 5.0 works correctly with QuickTime 2.5, which is supplied on the ClarisWorks Office CD.

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ClarisWorks 5.0 Upgrade Comes with Two CDs

When you purchase ClarisWorks 5.0 you'll receive two CDs, but only one license.

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ClarisWorks 5.0 is available as an 'application only' Upgrade or as a new Retail product which includes the application, some added ClarisWorks templates, Claris Home Page Lite, and additional 3rd party items such as Jian Business Templates and some Internet Service Provider software.

If you own an earlier version of ClarisWorks, you have an option to buy either the Upgrade or the Upgrade and the content of the Office product. If you qualify, the second offer allows you to get the same extra items which a new ClarisWorks Office Retail customer gets, but at a price "net" the Retail in-box rebate.

If you buy the Upgrade CD and the ClarisWorks Office CD through our upgrade mailing offer you are entitled to one license of the ClarisWorks 5.0 application even though you will get two CDs. Each CD has the ClarisWorks 5.0 application, but only the Office CD has the added items. So, if you purchase both the ClarisWorks 5.0 Upgrade CD and the ClarisWorks Office CD, you will receive two copies of ClarisWorks 5.0 (one copy ships on each CD), however, having a second copy of ClarisWorks 5.0 does not constitute the grant of a second software license. You can install from either or both CD's, however, you are allowed legally to use only one version of ClarisWorks 5.0.

To get the benefits of having purchased the Upgrade with the Office content, it is recommended that you follow these procedures:

1. If you haven't already installed ClarisWorks, the best advice is to install from the Office CD, and to put the 5.0 CD away in storage should something happen to your Office CD.

2. If you have already installed from the 5.0 CD, you can do a custom install of ClarisWorks from the Office CD to get just the extra templates. Everything else on the Office CD (Home Page Lite, Internet Service Provider software, trial applications) has its own installer, so you can make individual decisions about which of these items you want to install.

For purchasing information and detailed Spec Sheet of ClarisWorks Office 5 go to the **Apple Store** on line at http://store.apple.com/

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Q & A About DataViz Translators in ClarisWorks 5.0 and the Mac OS

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
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Question: Why are 68k versions of DataViz filters installed when installing to a computer with a PowerPC processor, even when selecting Custom Install and choosing "ClarisWorks for my system"?

Answer: The ClarisWorks Office installer works as designed, including installing the PowerPC-native version of the application on machines with PowerPC processors.

The installer installs the 68k version of the filters we have licensed from DataViz regardless of the machine's processor type. This is deliberate and is due to a problem with the Mac OS that can cause the PowerPC versions of DataViz's filters to crash the system.

Question: What should be done with the versions of the MacLinkPlus Setup Control Panel and MacLinkPlus extension that were previously installed with Mac OS/8? Should these be disabled in favor of the ClarisWorks pair or used in combination with them?

Answer: There is no need to do anything with any previously installed versions of the MacLinkPlus Control Panel or Extension in order for ClarisWorks Office to function properly. The Apple and Claris versions of these Control Panels have overlapping, but not identical settings. Each Control Panel can be used to change the settings unique to that Control Panel. For settings common to both, changes in either Control Panel will be be reflected in both and used by any application translating a file via a DataViz filter.

Question: What about the files in the DataViz folder within the System folder? Should they be merged with the files in the DataViz folder that is inside the Claris folder within the System folder?

Answer: In most cases, the number of filters provided from installations of MacLinkPlus or Mac OS/8 are larger than the subset of filters we have licensed and provide in the ClarisWorks Office installation. Therefore, it is not recommended to delete these filters as it could result in the loss of filters not provided in ClarisWorks Office. ClarisWorks translators are located within the Claris folder in the System folder, but other applications do not look in this location for translators. Therefore, previously installed DataViz translators, and the Claris translators, should be left in their original locations.

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Step Size for the X Axis Tickmarks Won‘t Change

In a ClarisWorks Spreadsheet, you can enter a Step Size value for the tick marks for the X axis, but that axis is for labels and the tickmarks simply delineate the labels

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The tickmarks on the X axis of a line chart in ClarisWorks represent the names of your series. If you have no names for your series it will default to labeling them numerically.

Those numbers are still the names of a series and those names are divided by tickmarks. Therefore ClarisWorks will not change the number of tickmarks that are displayed, even though you have filled in the Step Size box in the Axes dialog.

It looks deceiving because there are numbers and it would look as if you could treat them as numbers. In reality they are names and can't be manipulated.

If you want to achieve this look, you can use a column to put names for the X axis and simply leave some of them blank.

For example if you wanted every fifth one labeled you could enter this column:

1
(blank cell)
(blank cell)
(blank cell)
5
(blank cell)
(blank cell)
(blank cell)
(blank cell)
10

etc.

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New Document Buttons Fail to Use Options (Default) Stationery

Using the buttons will create a standard ClarisWorks file, with none of your custom formatting

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If you create an "options" or default stationery file, the settings you establish in that file will be used every time you create a new file of that type (word processing, spreadsheet, etc.). So, if you create, for example, a word processing options stationery file with the margins set to 1.5 inches, every time you choose Word Processing from the New Document dialog box, an untitled document will be created that has 1.5 inch margins (as opposed to the ClarisWorks default standard of 1 inch margins).

Normally, if you use the New Document Buttons in the Button Bar to create a new file (instead of using the menu command), ClarisWorks will, as would be expected, also use the stationery file to create a new blank file with your preferred settings. However, if you have or had ClarisWorks 3.0 (or an earlier version) on your computer, the buttons in the Button Bar may create new files that do not contain your custom modifications.

This is due to the fact that the button is looking for your options stationery document in a folder called "ClarisWorks Stationery." In ClarisWorks 3.0 and earlier, this folder was stored on your hard drive inside the Claris folder, which is within your System folder. In ClarisWorks 5.0 (and 4.0), this folder is located within the ClarisWorks program folder. If you still have a ClarisWorks Stationery folder in the Claris folder within your System folder, the buttons in the ClarisWorks 5.0 Button Bar will look there for the file, instead of looking for the ClarisWorks Stationery folder within the program folder.

To correct the situation, you can move, rename or delete the ClarisWorks Stationery folder in the Claris folder within your System folder. If you are no longer using your previous version of ClarisWorks, it is recommended that you delete the old ClarisWorks Stationery folder. If you want to continue to have access to these files, you should move the folder out of the Claris folder or give it a different name. If you do either of these, when you use ClarisWorks 3.0 you will no longer see the available stationery files when clicking on the option to "Start with an Assistant or Stationery" in the New Document dialog box. However, if you choose Open from the File menu and navigate to the location of your old ClarisWorks Stationery folder, you will be able to open and use all of the stationery files in that folder. In ClarisWorks 5.0, all of the stationery files will continue to be available in the New Document dialog box, and the New Document buttons will utilize your options stationery file as expected.

NOTE: For more information on creating and using default (options) stationery files, open the ClarisWorks Help Index, type the word "stationery" and select the desired topic, particularly "Set up default fonts and formatting."

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Cannot Re-Open Saved Document

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If a customer is unable to open a previously-saved document, check to see if they have (or have had) Deneba Canvas version 5.0 installed. A problem with the installer for that program makes ClarisDraw files unopenable.

To fix further occurrences of this problem:
1. Download the updater from the Deneba website www.deneba.com
2. Quit the Claris application, then trash the Claris Fonts file.

To fix files that have already been damaged:
Open the file using Norton Disk Editor. In an untouched ClarisImpact or ClarisDraw document, the third "word" (set of 2 characters) will be D0 (that's D-zero). However, in a corrupted file, the third "word" will be 00 (a null value). Simply changing this word back to D0 will fix the problem.

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ClarisDraw 1.0v4 Updater: Important Information

This is the Read Me included as part of the ClarisDraw 1.0v4 Updater.

Important: There is no ClarisDraw 1.0v4 Updater for Windows, the latest update for Windows is ClarisDraw 1.0v3.

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Note: This article mentions software updates. You may search for software updates in the Software Updates Library at following URL: "**http://asu.info apple.com/**"
This article has been archived and is no longer updated by Apple.
This file contains last-minute information that will help you get more from ClarisDraw. You will also find important tips in the "Troubleshooting" section of ClarisDraw's onscreen Help.

Hard Disk Space Needed During Installation
To save hard disk space, the "Easy install" option places all ClarisDraw files and only a minimal set of ClarisArt files on your hard disk. To install all of the ClarisArt files, relaunch the Installer, go to "Custom" install, and select the 'ClarisDraw ClarisArt' option.

During installation, ClarisDraw will temporarily require more hard disk space than it needs after installation is completed. This is because, during installation, the ClarisDraw Installer places compressed copies of the ClarisDraw files on the hard disk, then makes decompressed copies of these files. Once installation is successfully completed, the Installer automatically deletes the compressed files and leaves only the new, uncompressed files for your use.

Power Macintosh Installation
The "Easy Install" option places on your hard disk the appropriate Macintosh or Power Macintosh version of ClarisDraw, depending on the Macintosh being used. If you'd like to install both the Macintosh and Power Macintosh versions on any machine, use the following steps:

* Use the Easy Install option to install one complete set of files, then Quit the Installer.

* Open the 'ClarisDraw Folder' that was just installed and rename the ClarisDraw application appropriately (example: 'CD Macintosh' or 'CD Power Macintosh')

* Open the Installer a second time, choose "Custom" and select either 'ClarisDraw Application Macintosh' or 'ClarisDraw Application Power Macintosh', depending on the version previously installed.

When this installation is completed, both applications will be located in the same folder and will use the same auxiliary files.

Important: The Power Macintosh version will not run on a conventional Macintosh (68K).

Memory
Occasionally in low memory situations an alert will appear stating "There is not enough memory to complete this operation". This is particularly common when working with paint frames, and is typical of any application with a paint feature. We suggest saving your document before continuing. If you are working with large documents and find yourself in this situation frequently, we suggest increasing the application's memory partition as described in the ClarisDraw onscreen help, or your Macintosh User's Guide.

Bad Fonts
ClarisDraw tests for bad fonts when the application is first opened. It also tests for bad fonts when opening the application after fonts have been added to your system. ClarisDraw creates a 'Claris Fonts' file which is used to display fonts in their actual typeface in the Font menu. If ClarisDraw encounters a bad font, or one that it cannot correctly add to the Claris Fonts file, an alert is displayed indicating that some fonts may be bad. These fonts will be listed in a 'Bad Fonts' text file in the Claris Folder, which is located in your System Folder. Additionally, these fonts will be displayed in the Chicago font in ClarisDraw's FONT menu. We suggest removing or replacing these fonts from your system before using ClarisDraw. Refer to the manual that came with your Macintosh for instructions on how to remove or replace these fonts. Once these fonts have been removed or replaced, throw away the 'Claris Fonts' file, also located in the Claris folder, and open ClarisDraw.

There may be some fonts that work properly in ClarisDraw and still fail our tests. The only difference between these and other fonts is that they will be displayed in the Chicago font in the FONT menu. However, we suggest performing the following simple tests on these fonts before using them in the application:

1) Create some text in ClarisDraw and apply the font. If the application unexpectedly quits, this font is bad and should be removed or replaced immediately.

2) If the application does not quit when the font is applied, create multiple pieces of text, apply several different font sizes, and print the file. If the font appears correctly on screen and when printed, then there is no need to replace or remove this font.

Exporting Documents with Bezigons Created from Text
If you create a document that includes bezigons created from text, and then save this document in EPSF, CGM, MacDraw Pro or MacDraw II format, you may see extra lines in the converted document, both onscreen and when printing. This is a limitation of Apple's "QuickDraw" object-drawing technology.

Opening or Saving Color Palettes
ClarisDraw ships with several specialized 256-color palettes. You can access these palettes by opening them from the "Colors & Gradients" dialog box in the LAYOUT menu. Make sure that you select the 256-color palette first; the "Open" and "Save" buttons will then become available.

Illuminated Letters Library
If your drawing includes objects from the Illuminated Letters library, and you need to scale these letters, for best results do not resize a letter by manually stretching it. If you do that, the letter or number background will scale accurately, but the enclosed letter or number will not because it is an actual piece of text. Instead, use the "Scale Selection" feature from the ARRANGE menu, with the "Scale text" option selected.

Claris periodically issues maintenance releases of shipping software applications. A maintenance release is identified by v2, v3, v4, etc. numbering. The improvements made in each new version are included in this package and are detailed below.

ClarisDraw 1.0v4 Detailed Improvements

*Corrected a problem saving files to drives with greater than 2 Gigabytes available space.

ClarisDraw 1.0v3 Detailed Improvements
Better Integration with ClarisDraw for Windows

* ClarisDraw for Windows files (.cdd and .cdt) open directly from the Open File Dialog
* Wrapped text created in ClarisDraw for Windows appears correctly
* Improved import of graphics with rotated and grouped objects from ClarisDraw for Windows
* When ClarisDraw 1.0v3 is launched for the first time, a text file is created in the Claris folder named Claris Font Map, containing the following entries:

- Arial=Helvetica
- Courier New=Courier
- Fixedsys=Monaco
- Modern=Helvetica
- MS Sans Serif=Helvetica
- MS Serif=Times
- Script=Geneva
- Small Fonts=Geneva
- System=Geneva
- Terminal=Geneva
- Times New Roman=Times
- Wingdings=Cairo

A font named on the left in a ClarisDraw for Windows document will be mapped to the corresponding Macintosh font named on the right when opened in ClarisDraw 1.0v3. This list may be edited and augmented as needed by the user.

Improved Translation of MacDraw Pro Files
* Landscape documents import as landscape
* Spell checking imported MacDraw documents works correctly
* Text objects maintain correct text wrap
* Rotated text objects import correctly

System Conflict
* Memory is properly managed so closing Desk Accessories after use no longer causes a operating system conflict.

Miscellaneous
* Resizing multiple lines with arrows at end retains correct arrow orientation
* Fixed a problem printing the ClarisDraw help files to Hewlett Packard printers
* Improved printing multiple documents from the finder
* Drag selecting text now also selects the last character
* In the first row of text, up arrow goes to beginning of line
* In the final row of text, down arrow goes to end of line
* Corrected map of Japan in ClarisArt library

* Corrected images in the code flags and map symbols libraries

ClarisDraw 1.0v2 Detailed Improvements
Improved Translation of MacDraw Pro Files
* Text blocks import with correct size, and without wrapping
* Document size and page orientation information are properly imported
* Extremely fine pen sizes import at ClarisDraw's minimum available size, rather than being imported at a pen width of zero.
* MacDraw II and MacDraw Pro documents with rotated polygons import with all polygons accurately placed
* Objects in MacDraw Pro files opened in ClarisDraw for Power Macintosh print properly to Postscript printers.
* MacDraw Pro files containing PICT objects import completely and with correct size and proportion

Improved compatibility with ClarisImpact
* Imported ClarisImpact files retain correct ruler settings
* ClarisImpact files with rotated models, groups or tables import properly
* ClarisImpact files with all objects locked import properly

Import and Export Improvements
* Text in files saved as a PICT, then reopened and ungrouped, retains its proper color
* Pen size is properly translated when exported to CGM format
* Arrowheads properly export to CGM format
* Inappropriate "insufficient memory" error dialog eliminated when saving large PICTÊfiles as MacDraw II or MacDraw Pro.
* Resolution of bitmapped images properly preserved when exporting to MacDraw II or MacDraw Pro
* Black and white (one-bit) files export to EPSF with only the necessary information, so they remain reasonable in size
* White text, copied to the Clipboard along with colored text, does not change the way colored text is displayed on screen after you switch to the Finder and back
* QuickTime movies export properly

Improved Printing
* Print range settings work properly with slides and handouts
* Rotated, colored text prints properly with the Apple LaserWriter 7.x driver
* Polygons and bezigons print and display properly when exported or copied from ClarisDraw, then imported or pasted into other applications and printed to a Hewlett-Packard DeskWriter printer

System Conflict
* Pop-up tools are now properly available when using System 7.1 on a Macintosh Plus, SE, Classic, PowerBook 100, or Portable

Miscellaneous
* The CommercialPi BT font displays correctly in the Font menu and in text
* ClarisDraw properly launches with a wider variety of corrupted fonts installed
* Proper line spacing is preserved even if a single line of text contains characters of varying point sizes, and line spacing is changed to a measurement other than Lines
* Objects snap correctly to the grid under a wider variety of situations
* Screen objects display properly after using the spellchecker while viewing the Master Slide
* Colors in the gradient editor display properly when in paint mode with a paint frame set for thousands or millions of colors
* Library object "thumbnails" retain their proper size in Name View
* After installing this updater, ungrouping text pasted from external clipboard will no longer change the font to Geneva
* Needed to run the updater are:
- 3 MB of disk space
- 2 MB of RAM

*This version will not update the Canadian version of ClarisDraw.
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Word 6 Translation Problems in ClarisWorks 5.0

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Under certain circumstances, which are currently under investigation, the Word 6 translator does not show up in the ClarisWorks 5.0 Mac translator list, and Word 6 files cannot be opened using File/Open. In most cases, this occurs on machines that have or had Word 6 installed, though there have been unconfirmed reports of this problem manifesting itself on Word-free systems.

Claris Engineering is aware of this issue and is looking into it. In the meantime, the workaround is to drop-launch the Word 6 file onto the ClarisWorks 5.0 application. This will open the file using the correct translator.

Also, though "MS Word 6" does not show up in the Save As dialog box either, using the "MS Word [MacLink]" translator listed in the ClarisWorks 5.0 Save As pop-up will correctly translate the file into Word 6 format.

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Conflict with Instant Organizer and the ClarisWorks 5.0 Installer

YouÕll have to restart your computer after installing ClarisWorks 5.0.

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There is a conflict with Instant Organizer and the ClarisWorks 5.0 installer on machines running System 8.0.

The conflict has two results:
1) At the end of installation, when the installer brings up the continue, quit, restart dialog, you will get a Type 10 error which will force you to restart. In spite of this error, the installation of ClarisWorks is correct and complete.

2) The ClarisWorks installation will finish, but some of the desktop elements will not be displayed. If you quit the installer but do not restart, your machine will be in an unstable state.

Restarting your computer after installing ClarisWorks 5.0 will return your machine to its normal state and allow you to use ClarisWorks and Instant Organizer.

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GIFs with Transparent Background Print or Export as Black

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Problems:
1- GIF images brought into ClarisWorks that have transparent background pixels print as solid black.
2- if you export to a PICT file, then open the PICT file in another program, the images will appear solid black.

An example of how this problem can be created:
1- Open a web page in Netscape 4.03 with a gif image with a transparent background, such as www.claris.com

2- Open a blank ClarisWorks 5.0 drawing document

3- Copy/paste the image from Netscape into ClarisWorks. Or, drag-and-drop the image into ClarisWorks. The image will appear correct on screen. If the image has transparent pixels, you'll see the drawing grid behind the image.

4- Print using either the LaserWriter 8 driver or the HP DJ 800 Series driver. The GIF image prints as solid black.

5- Save the document as a PICT file, then open the PICT file in another program, such as MacDraw Pro. The GIF image appears solid black on screen.

As of this writing, earlier versions of ClarisWorks prior to 5.0 have not been tested for these problems. We have no workaround at this time.

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JIAN BusinessBasics, Claris Edition

These are the additional stationary documents that ship with ClarisWorks Office 5.0.

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JIAN BusinessBasics, Claris Edition comes to Claris customers from the makers of the world's #1 selling business plan software ◆? BizPlan Builder. JIAN BusinessBasics includes essential tools for time-pressured business people. Below are the time-saving letters, documents, checklists forms and templates in the areas business owners need most help:
- Finance and Accounting
- Management and Operations
- Sales and Marketing

These files are all installed with ClarisWorks Office. You can find and use them as you would any Claris stationery document. Simply follow the directions for stationery found in HELP or the User's Guide.

FINANCE AND ACCOUNTING
Financing Your Business (US only)
Personal Loan Guaranty (US only)
Promissory Note (US only)
3 Year Financial Comparison
Accounts Payable Aging
Accounts Receivable Aging
JIAN Balance Sheet
Break-Even Analysis
Cash Receipts Procedure
Cashflow Statement
Check Acceptance Procedure
Credit Acceptance Procedure
Credit Evaluation Table
Fin Ratio Analysis-Historic
Fin Ratio Analysis-Projected

Financial Statement Analysis
JIAN Income Statement
Loan Proposal Summary
Operating Budget-Company
Personal Finance Statement
Schedule of Bus. Debt

MANAGEMENT AND OPERATIONS
Articles of Incorporation (US only)
Choosing a Form of Business (US only)
Commercial Lease (US only)
Commercial Sublease (US only)
Equipment Lease (US only)
Partnership Agreement (US only)
Starting Your Business (US only)
Action Plan
Billing Worksheet
Business Health Checkup
Disaster Recovery Plan
Executive Summary
Invoice
Meeting Agenda
Planning Your Business
Purchase Order
Running Your Business
Top 20 Questions
Trademark Tracking Wksht

SALES AND MARKETING
Dealer Resale Agreement (US only)
Permission to Reprint (US only)

Sales Rep Agreement (US only)
20 Marketing Questions
Company Positioning Wksht
Competitive Checklist
Direct Mail Analysis
Feature-Benefit Wksht
Launch Schedule and Budget
On-Line Marketing Checklist
PR - New Personnel
PR - New Product
PR-Phone Pitch to Reporters
PR-Pitch Letter Worksheet
PR-Planning Worksheet
Product Development Checklist

Product Positioning Wksht
Retail Merchandising Budget
Sales and Marketing Budget
Sales Rep Tracking Report
Telesales Script - Inbound
Telesales Script - Outbound
Tradeshow Planning & Tracking
Travel and Logistics Wksht

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ClarisWorks: Text Pastes With Wrong Font

In ClarisWorks 5.0, the font pasted was not the font copied.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Knowledge Base.
This article has been archived and is no longer updated by Apple.
In some situations in ClarisWorks 5.0, you may find that the font that is pasted is not the same font that was copied. This will occur if the data that you are copying was originally from a ClarisWorks 4.0 document.

An example of how this problem is created:

1. Create a document in ClarisWorks 4.0 using the same font as the default font in ClarisWorks 5.0.
2. Save the document and open it with ClarisWorks 5.0.
3. Copy a selection of text and paste it elsewhere within the document. The text will appear in Helvetica, regardless of what the font should be.

Note: This only occurs in documents created in ClarisWorks 4.0 then opened in ClarisWorks 5.0.

Workaround:
Ignore the font used while pasting text. After editing, choose 'Select All' and change to your desired font.
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Utility Provides an Overview of Files Installed

A handy utility provided by Veritest gives an overview of what files are installed where on a Microsoft Windows OS computer

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
A handy utility provided by Veritest gives an overview (or "snapshot") of your computer's configuration before and after any software installation, including where files were installed and what changes were made to the Registry.

This utility is available as freeware at:

ftp://ftp.veritest.com/ftp/mslogo/Instalze.exe

Published Date: Feb 18, 2012

ClarisWorks Office Stationery Files, Complete List

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This article has been archived and is no longer updated by Apple.

*About Stationery
*Business Tools Index
*Certificate Index
*Classroom Tools Index
*Fax Cover Sheet Index
*Flyer Index
*Home Tools Index
*Invitation Index
*JIAN BusinessBasics Index
*Letter and Letterhead Index
*Memo Index
*Newsletter Index
*Presentation Index
*Resum□ Index
*Web Page Template Index
20 Marketing Questions
3 Year Financial Comparison
Accounts Payable Aging
Accounts Receivable Aging
Action Plan
Annual Report
Articles of Incorporation
Asset Management
B&WStyle1
B&WStyle2
B&WStyle3
B&WStyle4
Balance Sheet
Bid Comparison
Billing Worksheet
Book Shelf
Break-Even Analysis
Brochure
Business Card 1
Business Card 2
Business Classic Web Page
Business Elegant Web Page
Business Health Checkup
Business Hip Web Page
Business Plan
Business Pro Web Page
Busy Bees
Butterfly
Calculator Slide
Calendar
Car For Sale Sign
Cash Receipts
Cash Receipts Procedure
Cashflow Statement
Certificate 1
Certificate 2
Certificate 3
Certificate 4
Certificate 5
Certificate 6
Check Acceptance Procedure
Checkbook and Ledger
Checkbook Balancer

Choosing a Form of Business

Class Seating Chart
Classic Slide
Classroom Icons
Clipboard Slide
Collection
Commercial Lease
Commercial Sublease
Company Positioning Wksht
Competitive Checklist
Contact Database
Course Syllabus
Crayons
Credit Acceptance Procedure
Credit Evaluation Table
Customer Database
Dealer Resale Agreement
Direct Mail
Direct Mail Analysis
Disaster Recovery Plan
Elegant Slide
Employee Leave Forms
Envelope 1
Envelope 2
Equipment Lease
ESL Project
Event Budget
Event Schedule
Event Schedule Database
Executive Summary
Expense Report
Family and Friends List
Family Medical Records
Fax Cover Sheet 1
Fax Cover Sheet 2
Fax Cover Sheet 3
Feature-Benefit Wksht
Feedback Form
Fin Ratio Analysis-Historic
Fin Ratio Analysis-Projected
Financial Statement Analysis
Financing Your Business
Fish Bowl
Flash Card
Flyer 1
Flyer 2
Flyer 3
Flyer 4
Flyer 5
Flyer 6
For Your Information
Frequent Flyer Database
Full Page 1 BW
Full Page 1 Color
Full Page 2
Function Lesson
Garage Sale Sign
Gift Certificate 1
Gift Certificate 2

Gradebook
Hip Slide
Holiday Letter
Home Budget
Home Inventory CWK
Homework To Do List

How Much Home Can I Afford
In Case of Emergency
Income Statement
Investment Tracker
Invoice
JIAN Balance Sheet
JIAN Income Statement
JIAN Invoice
JIAN Meeting Agenda
JIAN Purchase Order
Job Application
Job Search Database
Journal
Lab Report
Language Arts Project
Launch Schedule and Budget
Lease vs Purchase
Letter Apology
Letter Feedback
Letter Follow Up
Letter Interest
Letter Overdue
Letter Referral
Letterhead 1
Letterhead 2
Letterhead 3
Letterhead 4
Letterhead 5
Library Loans
Loan Calculator
Loan Proposal Summary
Mail Merge Stationery
Making a Presentation
Math
Meeting Agenda
Membership Database
Memo 1
Memo 2
Memo 3
Memo 4
Memo 5
Messages
Mobile Phone
Mortgage Analyzer
Music Database
Names and Addresses
News Flash
News Update
Newsletter 1
Newsletter 2
Newsletter 3
Newsletter 4
Newsletter 5
Newspaper Ad
Notebook
Olympic Project
On-Line Marketing Checklist
One-Fold BW
Open Book
Operating Budget-Company
Paper and Pencil 1
Paper and Pencil 2

Parent Letter
Partnership Agreement

Party & Wedding Planning
Permission to Reprint
Personal Classic Web Page
Personal Elegant Web Page
Personal Finance Statement
Personal Hip Web Page
Personal Loan Guaranty
Personal Pro Web Page
Personnel Record
Photo Album
Planning Your Business
PR - New Personnel
PR - New Product
PR-Phone Pitch to Reporters
PR-Pitch Letter Worksheet
PR-Planning Worksheet
Press Release
Price List
Product Brochure
Product Development Checklist
Product Positioning Wksht
Promissory Note
Proposal Generator
Purchase Order
Rain Forest Project
Recipes CWK
Research Paper Presentation
Resum 1
Resum 2
Resum 3
Resum 4
Resum Cover Letter
Retail Merchandising Budget
Running Your Business
Sales and Marketing Budget
Sales Rep Agreement
Sales Rep Tracking Report
Schedule of Bus Debt
Scheduling Form
School Classic Web Page
School Elegant Web Page
School Hip Web Page
School Pro Web Page
Social Studies Project
Starting Your Business
Student Database
Tangram Challenge
Techno Slide
Telecom Quick Reference
Telesales Script - Inbound

Telesales Script - Outbound
Time and Service Billings
Timecards
Timesheet
To Do List
To Do List Database
Top 20 Questions
Trademark Tracking Wksht
Tradeshow Planning & Tracking
Travel and Logistics Wksht
Two-Fold 1 BW
Two-Fold 1 Color
Two-Fold 2
Video Collection

TA43746_ClarisWorks_Office_Stationery_Files_Complete_List.pdf

Weekly Planner
Wine Collection
Writing an Essay
Writing Styles Matrix

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After Installing with OS 8, Computer Loops on Restart

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
If you install ClarisWorks 3.0 on a computer running OS 8, you may run into a problem. After the installation when you click the Restart or Quit button, your computer will start up or try to go back to the Finder, then it will go into an endless loop.

Restart the computer and the computer should start up normally and work correctly. The installed copy of ClarisWorks 3.0 should function correctly (although it has not been tested for compatibility by Claris).

The problem may be an incompatibility between OS 8 and the Installer Cleanup extension that's installed by the ClarisWorks 3.0 installer into the Extensions folder. You can restart the computer with extensions off and delete the Installer Cleanup Extension manually.

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A/UX: Sendmail Problem (9/94)

Configuration

Macintosh IIfx with 8MB RAM
2 HD80 SC (external)
EtherTalk NB Card
A/UX 3.0

The kernal was generated with:

newconfig ae6 bnet appletalk

AppleTalk is connected and functioning; however, the system is not yet connected to an Ethernet network.

Problem

On startup, a core dump file (86016 bytes) is created in the root directory, and a ps -ef shows that "sendmail" is not running. No relevant message appears in the A/UX System Console Window. Using the UNIX command "strings" on /core gives this as the first two lines:

sendmail
/usr/lib/sendmail -bd -q30m

from which I deduced that sendmail has crashed during system initialization. Logged in as root, I issued the command:

/usr/lib/sendmail -bd -q30m

and the system replies:

"Illegal instruction - core dumped"

Can you help?

This article has been archived and is no longer updated by Apple.
During our testing, A/UX 3.0 seems to start the sendmail successfully.

From the error message you got, it seems that the frozen sendmail configuration file (/usr/lib/sendmail.fc) was bad. Have you ever modified the sendmail configuration file (/usr/lib/sendmail.cf) and correctly rebuilt the frozen file?

Note that the /usr/lib/sendmail, /usr/ucb/mailq, and /usr/ucb/aliases files are all hard-linked together with the mode of -rwsr-x-rx root bin 128216 sendmail.

Try to use the "-bt -dX" option to debug the problem. X is the debugging flag list. Each flag has a number and a level; for example, -d3-19.4 sets debugging flags from 3 through 19 and a level 4.

Normally, the sendmail is started up from the /etc/inittab, but to rebuild the frozen file and restart the sendmail:

1) Kill the sendmail process if it is running.
2) Do /usr/lib/sendmail -bz
3) Do /usr/lib/sendmail -bd -q30m

Article Change History:
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
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Exported ClarisWorks 5.0 Outline Styles Import into Other ClarisWorks 5.0 Documents Incorrectly

If you export an outline style from a ClarisWorks 5.0 document, then import it into a different ClarisWorks 5.0 document and choose "replace all styles with same name", the imported outline style will be incorrect.

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Problem:

I modified the outline style called "Harvard" in a ClarisWorks 5.0 document. Now I would like to import that style into other ClarisWorks documents. I exported the style from the original document and then opened other documents and imported the style. Now when I look at the stylesheet after the import, it shows "Harvard" as one of my styles, but when I edit the style I see that where the original had 12 levels, called "Level 1", "Level 2", etc. the newly imported style has 12 levels, each one called "Level 12". I tried the same thing with the "Legal" outline style, and the import yields a style called "Legal" that has 10 levels, each called "Level 10". Each of the 10 "Level 10" options have no style information in them.

Explanation:

This issue only arises if the "replace all styles with same name" checkbox is selected when importing an outline style with the same name as an existing outline style. If this box is deselected and a new outline style is imported, it will contain the correct information for that style.

Published Date: Feb 18, 2012

Out of Memory in ClarisDraw for Windows when Using a ClarisDraw for Macintosh File

An 'Out Of Memory' error message can occur when transferring a file from the Macintosh version of ClarisDraw to the Windows version if a Macintosh desktop picture is included in the file.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisDraw for windows cannot import desktop images that are available in Mac OS 8 from the Macintosh version of ClarisDraw. The only available workaround is to create a paint frame in the original file on the Macintosh and to paste the desktop image into it. Once the file is moved over to the Windows platform the image will be visible.

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The Windows Metafile Translator does not Save Line Widths Correctly in ClarisDraw

When saving a drawing from ClarisDraw as a Windows metafile (.wmf), certain line widths are not saved correctly.

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In ClarisDraw, you have the ability to create a line using the option 'hairline'. A hairline in ClarisDraw has a point size of 0.01, which hypothetically is the narrowest line size than can be created. When saving a copy of a ClarisDraw file as a .WMF file, with any line width lower than 1, it will be converted to a 1 point line. This is due to a limitation of the .WMF translator and currently, there is no workaround.

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ClarisDraw 1.0 ReadMe

This is a full text version of the ClarisDraw 1.0 readme file.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

WELCOME TO CLARISIMPACT 2.0!

Thank you for choosing ClarisImpact¨ 2.0. This Read Me file documents some additional tips that may prove helpful when using ClarisImpact 2.0. This document provides information on:

I. Technical notes and tips
II. Great features of ClarisImpact 2.0

I. TECHNICAL NOTES AND TIPS

A. Installation

Follow the instructions in the installation guide to install ClarisImpact. You can't copy the files to your hard drive using the DOS copy command, because the files are compressed to fit on fewer disks. The setup program decompresses files during installation.

You must be running SMARTDRV.EXE to install ClarisImpact. Claris recommends using default values for SmartDrive.

ClarisImpact is a 32 bit application. Before installing ClarisImpact on a computer running Windows 3.1 or Windows for Workgroups 3.11, you must install Win32s, which is included in this package. Note: If you are using Windows 95, do not install Win32s.

Some virus checking software may interfere with the installer and prevent a complete installation. If you have trouble installing, turn off any virus checking software before starting the ClarisImpact Installer. You can turn virus checking back on after installation is successful.

You cannot start ClarisImpact from a directory whose name contains upper ASCII characters (for example □, ©, £). This is a limitation of Win32.

B. Out-of-memory error messages

If you encounter an error message that indicates there is not enough memory to perform an operation, Claris recommends:

- adjusting your Virtual Memory setting (see Performance tips for Windows 3.1 and Windows for Workgroups 3.11 below)
- removing any unnecessary drivers and TSRs from the CONFIG.SYS file to free up more memory in DOS
- closing other applications and ClarisImpact documents that are running in the background

C. Performance tips for Windows 3.1 and Windows for Workgroups 3.11

32-bit applications such as ClarisImpact 2.0 require that Virtual Memory is on. To improve performance on computers with 8 MB of memory or less, Claris recommends setting virtual memory to permanent and using the suggested size for your virtual-memory setting as displayed in the Virtual Memory dialog box. This value is typically twice the size of physical memory, but should be at least 11,700 K or 11.7 MB.

To set virtual memory:

1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the 386 Enhanced icon.
2. Click Virtual Memory and then click the Change.
3. Select Permanent from the Type pop-up menu.
4. Click the checkbox next to Use 32-Bit Disk Access. Note: This setting is NOT recommended for laptops running on battery power.
5. Click OK.

If the suggested size of virtual memory is less than twice the physical memory installed on your computer, you might need to increase your free disk space by removing unwanted files or defragmenting your hard disk. Note: DOS 6.0 users can use DEFRAG.EXE.

If you are an experienced Windows user and you have adjusted your virtual memory settings as described but still feel your performance could be improved:

- In DOS, run:

DEFRAG

- In DOS, run:

MEMMAKER

- Change the following settings in the CONFIG.SYS file:
FlLES=60
STACKS=9,256

- Add the following line to the CONFIG.SYS file:
BUFFERS=10

- Add the following line to the [WINDOWS] section of the WIN.INI file:
DefaultQueueSize=16

- Add the following lines to the [386enh] section of the SYSTEM.INI file:
DMABuffersize=64
XLatBufferSize=128
MaxBPS=768

- Delete the following lines from the [386enh] section of the SYSTEM.INI file:
EGA80W0A.FON...
EGA40W0A.FON...
CGA80W0A.FON...

CGA40W0A.FON...

- Always use SmartDrive!

D. Printing
If you have trouble printing, try installing an updated printer driver, available from your printer manufacturer or Microsoft Corporation. For instructions on installing a driver and configuring your printer, see the the Control Panel documentation in the Microsoft Windows User's Guide.
ClarisImpact requires a valid default printer driver, NOT the Generic/Text Only driver. To select or change the default printer:
1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the Printers icon.
2. Select a printer from the Installed Printers list and click Set As Default Printer. If no printers appear in the list, see your Microsoft Windows User's Guide for instructions on installing printers.

E. Video cards and drivers
If your screen doesn't display objects correctly, you may have a problem with your video driver. Try changing the resolution to 640x480 or 800x600 or try changing the number of colors displayed (for example, 256, 32K, millions of colors).

To verify a video driver problem, change the video driver to Windows standard VGA and run ClarisImpact. If the problem disappears, contact the video card manufacturer for the latest version of the video card driver or use the driver that is included with the Windows installation.

F. ClarisImpact INI file settings
If you experience either of the problems listed below, make the suggested changes to the [ClarisImpact] section of the CLARIS.INI file in your Windows directory:
- Problem:
Color/gradient palettes do not draw completely, or show up with black or missing colors/gradients
Suggested setting:
Cache Palettes = 0

- Problem:
Tools are not drawn correctly, or display as black
Suggested setting:
BitmapTools=0

G. Fonts

If fonts do not display or scale correctly (for example, they are clipped or overlap), Claris recommends:

- Making certain a valid printer driver is selected as the default
and that is it NOT the Generic/Text Only driver
- Enabling TrueType fonts (see below)
- Making certain the standard Windows fonts, such as Arial, are
properly installed

To delete or reinstall standard Windows fonts, see the Microsoft Windows User's Guide.

To enable True Type fonts:

- In the Program Manager, open the Main Group, double-click the
Control Panel icon, and then double-click the Fonts icon.
- Click TrueType, and then click Enable TrueType Fonts.

H. Sharing files between the Macintosh and Windows ClarisImpact 2.0 for Windows has the same file format, user interface, and features as ClarisImpact 2.0 for the Macintosh. You can create a ClarisImpact document on Windows and edit it on a Macintosh computer, or vice versa. Therefore, if you work with both Macintosh and Windows versions of ClarisImpact, or if you collaborate with colleagues who use ClarisImpact 2.0 for Macintosh, you can work without translating files or learning a

different program.

However, if you want to transfer files between platforms via diskette, you must use a file transfer program that lets you create and use PC-formatted diskettes on a Macintosh. To copy the ClarisImpact files onto a PC formatted disk, follow the directions in the documentation for the file transfer program you are using. When you use a multi-platform server (such as Novell Netware) to transfer files from Macintosh to a Windows computer, you can use the ClarisImpact documents right off the server. No file transfer program is required.

When sharing files with systems running Windows 3.1 or Windows for Workgroups 3.11, make sure that your ClarisImpact filenames follow DOS filename conventions (8 characters or less) and end with the .CID extension. (For ClarisImpact Library files, use the .CLB extension.)

Fonts, margins, page breaks, and some graphics might display differently when transferred between Macintosh and Windows. You might have to adjust the margins and page breaks in the transferred file to restore the original appearance.

You can minimize font problems by installing and using the TrueType fonts that ship with ClarisImpact for both Macintosh and Windows. When a file is opened, ClarisImpact first checks to see if each of the fonts in the document is installed in the current system. If a font is not installed, ClarisImpact checks its font mapping information to substitute an appropriate font. Font mapping information is stored in the Claris Font Map file inside the Claris folder in your System folder on Macintosh and in the [ClarisFontMap] section of the CLARIS.INI file in your Windows directory on the PC. If a font is not listed in the font mapping file, it is mapped to Geneva on the Macintosh and to Arial on the PC. You can manually edit and/or add entries to the font mapping information.

I. Network installation issues
ClarisImpact can be installed and run simultaneously by multiple users off of a server. If Windows is also being run off of the server, Windows must be installed using SETUP /N.

Multiple simultaneous users can share ClarisImpact styles. However, if simultaneous users edit the same style, only changes from the last save are retained. For this reason, Claris recommends that users who access ClarisImpact from a server and who want to customize styles should store their CISTYLES directory on their own hard disks.

Multiple users cannot simultaneously open the same ClarisImpact document or library.

J. Software requirements for the DataDraw templates
If you want to use the database or spreadsheet templates that are installed in the DataDraw directory, you must have FileMaker¨ Pro or Microsoft Excel 5.0 installed on your system. Instructions for using each template are located on the Help screens in the FileMaker Pro and Excel template files.

II. GREAT FEATURES OF CLARISIMPACT 2.0

A. Cross-platform support
ClarisImpact 2.0 is now available for Windows and Windows 95 as well as the Macintosh and the Power Macintosh. You can easily exchange files between platforms, because no file-format translation is needed.

B. Automated data transfer with DataDraw(TM)

You can automatically convert information from FileMaker Pro, Microsoft Excel, or any application that exports data to a text file into a number of supported ClarisImpact business graphics. DataDraw turns names, dates, and numbers into organization charts, timelines, tables, data charts, or calendars. Try it out with the templates provided in the DataDraw directory.

C. Enhanced styles
ClarisImpact styles have been professionally designed to reflect today's business standards. These pre-designed combinations of fonts and color schemes help you quickly communicate your data in an attractive graphic format.

D. Powerful presentation builder
Organize your thoughts before they appear on your slides with the integrated ClarisImpact outliner. Use the slide sorter to view and rearrange your entire presentation at a glance. Include speaker notes that help you give your presentation. Add pizzazz to on-screen presentations with over fifty slide transitions and slide markup.

E. More flowchart symbols
Create a wider variety of flowchart diagrams using nine symbol sets. Symbol sets include: Telecommunication and Transportation networks, Decision Trees, Brainstorming, Root Cause Analysis, Total Quality Management, and Block Diagrams.

F. Symbol creation controls on flowchart connectors The flowchart tool includes an indicator showing connector text placement and autogrow/autoshrink symbols. Create flowcharts quickly and easily with these connectors.

G. Flexible organization charts
Make complex organization charts fit where you need them. Quickly resize an entire organization chart by clicking and dragging while boxes in the chart automatically grow and shrink around text. The new Fit To Page feature prints an organization chart of any size on one page.

H. Versatile scheduling timelines
ClarisImpact timelines work well for planning simple projects and tracking milestones. Grid lines automatically adjust to match your project dates, tasks can be linked to and unlinked from each another, and any task can be designated as a milestone.

I. Easy to use table feature
Create complex tables easily. In addition to organizing text and numbers, tables work like spreadsheets by supporting industry-standard formulas and summations.

J. Many data chart types
ClarisImpact includes 32 data chart types and a simple interface for creating them. Charts can be edited and styled in a variety of ways.

K. Enhanced calendars
Produce business or personal calendars that display week numbers as well as weekday-only calendars. Calendar art makes it easy to highlight holidays and other common events.

L. Create great looking graphics
Get creative with a broader palette of colors and gradients. Get your work done faster using the object Info palette and zooming controls. The ClarisArt libraries contain over 400 new clip art images to increase the variety of high-quality art you can use in your charts and diagrams.

Claris¨ and the ClarisImpact team thank you for your purchase of ClarisImpact 2.0. Your support, comments and suggestions help us to continue to bring you better solutions for your future productivity needs.

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ClarisDraw 1.0v3 Updater Information

This file is contains a full description of the updater, what it does and where the updated files are located.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
ClarisDraw 1.0v3 Updater

Improvements
* Saving a file to a volume with 2 Gigabytes
or more space available works correctly

Overview
Thank you for investing in Claris software. From time to time, we produce maintenance releases of our software. We'll add minor functionality, correct defects, or respond to customer requests. We'd like to make it as convenient as possible for you to obtain these new versions and enjoy their benefits.

Updates, in contrast to upgrades, contain few changes from the previous version. Instead of distributing the full, revised application, we can provide just the files necessary to incorporate the new functionality and fixes. When you run the accompanying Updater, it will combine your original ClarisDraw 1.0v1 or 1.0v2 files with the new changes to create new ClarisDraw 1.0v3 files. The following files are updated with this updater:

DRAW.EXE - ClarisDraw 1.0v3 application
DRAW.RSR - Resources for the ClarisDraw application (v1 only)
CLDRAW.HLP - ClarisDraw help file (v1 only)

README.TXT - Document that describes general release information. (v1 only)
CODEFLAG.CLB - ClarisDraw art library (v1 only)
MAPS4.CLB - ClarisDraw art library (v1 only)
MAPSYMBL.CLB - ClarisDraw art library (v1 only)
GFXICGM.G32 - CGM import file filter (v1 only)
GFXOCGM.G32 - CGM export file filter (v1 only)
RTF.G32 - Rich Text Format file filter
XTDIMDP.G32 - MacDraw Pro import file filter
XTNDGR95.DLL - File filter support DLL

This document describes the steps you take to apply the update. You may want to print it out if this is the first update you've installed.

ClarisDraw 1.0v3 Updater will upgrade U.S. versions 1.0v1 or 1.0v2 to the current U.S. release, 1.0v3. This Updater WILL NOT update any international versions of ClarisDraw.

The information is organized as follows:
1. Guide to updating your ClarisDraw 1.0 files
2. Legal considerations

1. Guide to updating your ClarisDraw 1.0 files

To use the ClarisDraw 1.0v3 Updater your current installation of ClarisDraw 1.0 must be on drive C:. If your DRAW and CLARIS directories are on different volumes, then you will need to move them to drive C:, run the updater, and then move the updated directory to the desired location.

If the update fails during the procedure, it is because an item

was not found where expected. You must perform a full install of ClarisDraw 1.0v1 or 1.0v2, then run the updater again.

1.1 Applying the update

Quit ClarisDraw, if you're using it.

Run the Windows program DRAWUPV3.EXE included in this distribution. The updater will search for your current ClarisDraw 1.0 folder and bring up a dialog for you to select DRAW.EXE. If you have multiple copies of ClarisDraw, navigate to the correct one. Select the file and click OK. The updater will ask you to confirm the location. Click Yes if it's correct or Cancel to start over again if it's wrong.

The updater will then search for your current Claris folder and bring up

a dialog for you to confirm its location. If you have multiple copies of the folder, selecting 'No' in the confirmation dialog will cause the updater to search again for another instance of the folder - continue selecting 'No' until the one you want to update is shown.

1.2 Technical Considerations

Hard Disk Space
You'll need approximately 3.5MB of free disk space.

Virus Detection Software
The Updater makes several changes to the resources in ClarisDraw. Many virus utilities consider this activity improper and may try to prevent it. To avoid this inconvenience, disable all virus detection software before applying the update.

2. Legal Considerations

Legal Considerations
The enclosed .RTPatch updater program is ©1991-1997 by Pocket Soft, Inc. P.O. Box 821049, Houston, Texas 77282.

The software code changes contained within the Updater, the original software, and the software created by the updater program are © 1987-1997 Claris Corporation. All rights reserved. Claris and ClarisDraw are registered trademarks of Claris Corporation. All other trademarks are

property of their respective owners.

The following license agreement applies:

PLEASE READ THIS DOCUMENT CAREFULLY PRIOR TO USING THIS SOFTWARE.

The enclosed computer program is an update (the Update) to ClarisDraw 1.0 (the Software). In order to use and/or copy the Update as authorized by this License, you must have validly licensed at least one copy of the Software. You are required to have a validly licensed copy of the Software for each copy of the Update made hereunder. The Update and the copies authorized herein replace your validly licensed copies of the Software and are not additional copies (i.e., you may not use the Update in addition to the Software the Update is replacing).

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ClarisImpact 2.0 for Windows Read Me file

This is the full text version of the ClarisImpact 2.0 for Windows Read Me file.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

WELCOME TO CLARISIMPACT 2.0!

Thank you for choosing ClarisImpact¨ 2.0. This Read Me file documents some additional tips that may prove helpful when using ClarisImpact 2.0. This document provides information on:

I. Technical notes and tips

II. Great features of ClarisImpact 2.0

I. TECHNICAL NOTES AND TIPS

A. Installation Follow the instructions in the installation guide to install ClarisImpact. You can't copy the files to your hard drive using the DOS copy command, because the files are compressed to fit on fewer disks. The setup program decompresses files during installation.

You must be running SMARTDRV.EXE to install ClarisImpact. Claris recommends using default values for SmartDrive.

ClarisImpact is a 32 bit application. Before installing ClarisImpact on a computer running Windows 3.1 or Windows for Workgroups 3.11, you must install Win32s, which is included in this package. Note: If you are using Windows 95, do not install Win32s. Some virus checking software may interfere with the installer and prevent a complete installation. If you have trouble installing, turn off any virus checking software before starting the ClarisImpact Installer. You can turn virus checking back on after installation is successful.

You cannot start ClarisImpact from a directory whose name contains upper ASCII characters (for example □, ©, £). This is a limitation of Win32.

B. Out-of-memory error messages If you encounter an error message that indicates there is not enough memory to perform an operation, Claris recommends:

- adjusting your Virtual Memory setting (see Performance tips for Windows 3.1 and Windows for Workgroups 3.11 below)
- removing any unnecessary drivers and TSRs from the CONFIG.SYS file to free up more memory in DOS
- closing other applications and ClarisImpact documents that are running in the background

C. Performance tips for Windows 3.1 and Windows for Workgroups 3.11 32-bit applications such as ClarisImpact 2.0 require that Virtual Memory is on. To improve performance on computers with 8 MB of memory or less, Claris recommends setting virtual memory to permanent and using the suggested size for your virtual-memory setting as displayed in the Virtual Memory dialog box. This value is typically twice the size of physical memory, but should be at least 11,700 K or 11.7 MB.

To set virtual memory:

1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the 386 Enhanced icon.
2. Click Virtual Memory and then click the Change.
3. Select Permanent from the Type pop-up menu.
4. Click the checkbox next to Use 32-Bit Disk Access. Note: This setting is NOT recommended for laptops running on battery power.
5. Click OK.

If the suggested size of virtual memory is less than twice the physical memory installed on your computer, you might need to increase your free disk space by removing unwanted files or defragmenting your hard disk. Note: DOS 6.0 users can use DEFRAG.EXE.

If you are an experienced Windows user and you have adjusted your virtual memory settings as described but still feel your performance could be improved:

- In DOS, run:
DEFRAG
- In DOS, run:
MEMMAKER

- Change the following settings in the CONFIG.SYS file:
FILES=60
STACKS=9,256
- Add the following line to the CONFIG.SYS file:
BUFFERS=10
- Add the following line to the [WINDOWS] section of the WIN.INI file:
DefaultQueueSize=16
- Add the following lines to the [386enh] section of the SYSTEM.INI file:
DMABuffersize=64
XLatBufferSize=128
MaxBPS=768
- Delete the following lines from the [386enh] section of the SYSTEM.INI file:
EGA80W0A.FON...
EGA40W0A.FON...
CGA80W0A.FON...
CGA40W0A.FON...
- Always use SmartDrive!

D. Printing If you have trouble printing, try installing an updated printer driver, available from your printer manufacturer or Microsoft Corporation. For instructions on installing a driver and configuring your printer, see the the Control Panel documentation in the Microsoft Windows User's Guide. ClarisImpact requires a valid default printer driver, NOT the Generic/Text Only driver. To select or change the default printer:

1. In the Program Manager, open the Main Group, double-click the Control Panel icon, and then double-click the Printers icon.
2. Select a printer from the Installed Printers list and click Set As Default Printer. If no printers appear in the list, see your Microsoft Windows User's Guide for instructions on installing printers.

E. Video cards and drivers If your screen doesn't display objects correctly, you may have a problem with your video driver. Try changing the resolution to 640x480 or 800x600 or try changing the number of colors displayed (for example, 256, 32K, millions of colors).

To verify a video driver problem, change the video driver to Windows standard VGA and run ClarisImpact. If the problem disappears, contact the video card manufacturer for the latest version of the video card driver or use the driver that is included with the Windows installation.

F. ClarisImpact INI file settings If you experience either of the problems listed below, make the suggested changes to the [ClarisImpact] section of the CLARIS.INI file in your Windows directory:

- Problem:
Color/gradient palettes do not draw completely, or show up with black or missing colors/gradients
Suggested setting:
Cache Palettes = 0
- Problem:
Tools are not drawn correctly, or display as black
Suggested setting:
BitmapTools=0

G. Fonts If fonts do not display or scale correctly (for example, they are clipped or overlap), Claris recommends:
- Making certain a valid printer driver is selected as the default and that is it NOT the Generic/Text Only driver
- Enabling TrueType fonts (see below)
- Making certain the standard Windows fonts, such as Arial, are properly installed

To delete or reinstall standard Windows fonts, see the Microsoft Windows User's Guide.

To enable True Type fonts:
- In the Program Manager, open the Main Group, double-click the

Control Panel icon, and then double-click the Fonts icon.
- Click TrueType, and then click Enable TrueType Fonts.

H. Sharing files between the Macintosh and Windows ClarisImpact 2.0 for Windows has the same file format, user interface, and features as ClarisImpact 2.0 for the Macintosh. You can create a ClarisImpact document on Windows and edit it on a Macintosh computer, or vice versa. Therefore, if you work with both Macintosh and Windows versions of ClarisImpact, or if you collaborate with colleagues who use ClarisImpact

2.0 for Macintosh, you can work without translating files or learning a different program.

However, if you want to transfer files between platforms via diskette, you must use a file transfer program that lets you create and use PC-formatted diskettes on a Macintosh. To copy the ClarisImpact files onto a PC formatted disk, follow the directions in the documentation for the file transfer program you are using. When you use a multi-platform server (such as Novell Netware) to transfer files from Macintosh to a Windows computer, you can use the ClarisImpact documents right off the server. No file transfer program is required.

When sharing files with systems running Windows 3.1 or Windows for Workgroups 3.11, make sure that your ClarisImpact filenames follow DOS filename conventions (8 characters or less) and end with the .CID extension. (For ClarisImpact Library files, use the .CLB extension.)

Fonts, margins, page breaks, and some graphics might display differently when transferred between Macintosh and Windows. You might have to adjust the margins and page breaks in the transferred file to restore the original appearance.

You can minimize font problems by installing and using the TrueType fonts that ship with ClarisImpact for both Macintosh and Windows. When a file is opened, ClarisImpact first checks to see if each of the fonts in the document is installed in the current system. If a font is not installed, ClarisImpact checks its font mapping information to substitute an appropriate font. Font mapping information is stored in the Claris Font Map file inside the Claris folder in your System folder on Macintosh and in the [ClarisFontMap] section of the CLARIS.INI file in your Windows directory on the PC. If a font is not listed in the font mapping file, it is mapped to Geneva on the Macintosh and to Arial on the PC. You can manually edit and/or add entries to the font mapping information.

I. Network installation issues ClarisImpact can be installed and run simultaneously by multiple users off of a server. If Windows is also being run off of the server, Windows must be installed using SETUP /N.

Multiple simultaneous users can share ClarisImpact styles. However, if simultaneous users edit the same style, only changes from the last save are retained. For this reason, Claris recommends that users who access ClarisImpact from a server and who want to customize styles should store their CISTYLES directory on their own hard disks.

Multiple users cannot simultaneously open the same ClarisImpact document or library.

J. Software requirements for the DataDraw templates If you want to use the database or spreadsheet templates that are installed in the DataDraw directory, you must have FileMaker¨ Pro or Microsoft Excel 5.0 installed on your system. Instructions for using each template are located on the Help screens in the FileMaker Pro and Excel template files.

II. GREAT FEATURES OF CLARISIMPACT 2.0

A. Cross-platform support ClarisImpact 2.0 is now available for Windows and Windows 95 as well as the Macintosh and the Power Macintosh. You can easily exchange files between platforms, because no file-format translation is needed.

B. Automated data transfer with DataDraw(TM) You can automatically convert information from FileMaker Pro, Microsoft Excel, or any application that exports data to a text file into a number of supported ClarisImpact business graphics. DataDraw turns names, dates, and numbers into organization charts, timelines, tables, data charts, or calendars. Try it out with the templates provided in the DataDraw directory.

C. Enhanced styles ClarisImpact styles have been professionally designed to reflect today's business standards. These pre-designed combinations of fonts and color schemes help you quickly communicate your data in an attractive graphic format.

D. Powerful presentation builder Organize your thoughts before they appear on your slides with the integrated ClarisImpact outliner. Use the slide sorter to view and rearrange your entire presentation at a glance. Include speaker notes that help you give your presentation. Add pizzazz to on-screen presentations with over fifty slide transitions and slide markup.

E. More flowchart symbols Create a wider variety of flowchart diagrams using nine symbol sets. Symbol sets include: Telecommunication and Transportation networks, Decision Trees, Brainstorming, Root Cause Analysis, Total Quality Management, and Block Diagrams.

F. Symbol creation controls on flowchart connectors The flowchart tool includes an indicator showing connector text placement and autogrow/autoshrink symbols. Create flowcharts quickly and easily with these connectors.

G. Flexible organization charts Make complex organization charts fit where you need them. Quickly resize an entire organization chart by clicking and dragging while boxes in the chart automatically grow and shrink around text. The new Fit To Page feature prints an organization chart of any size on one page.

H. Versatile scheduling timelines ClarisImpact timelines work well for planning simple projects and tracking milestones. Grid lines automatically adjust to match your project dates, tasks can be linked to and unlinked from each another, and any task can be designated as a milestone.

I. Easy to use table feature Create complex tables easily. In addition to organizing text and numbers, tables work like spreadsheets by supporting industry-standard formulas and summations.

J. Many data chart types ClarisImpact includes 32 data chart types and a simple interface for creating them. Charts can be edited and styled in a variety of ways.

K. Enhanced calendars Produce business or personal calendars that display week numbers as well as weekday-only calendars. Calendar art makes it easy to highlight holidays and other common events.

L. Create great looking graphics Get creative with a broader palette of colors and gradients. Get your work done faster using the object Info palette and zooming controls. The ClarisArt libraries contain over 400 new clip art images to increase the variety of high-quality art you can use in your charts and diagrams.

Claris¨ and the ClarisImpact team thank you for your purchase of ClarisImpact 2.0. Your support, comments and suggestions help us to continue to bring you better solutions for your future productivity needs.

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Installation Problem with ClarisWorks 5.0 for Windows Disks

When using the diskette version to install ClarisWorks 5.0 for Windows, the installer prompts for the incorrect path.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
When installing ClarisWorks 5.0 for Windows from diskettes, after the first disk is done, the setup prompts for an incorrect path for the second disk. The path it asks for will incorrectly look something like c:\\dos_istemp0.dir\\ while the correct path is most likely a:\\ (or possibly b:\\).

To correct the problem, type in the correct path before inserting the second disk and clicking the OK button. From then on the installer will correctly ask for the disks in the path you have specified.

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ClarisWorks 5.0 for Windows: Cannot Install With DOS Compatibility Cards

There is a known problem with all DOS compatibility cards (on any computer, with any CD-ROM driver) where the system will not recognize any DOS CD's that are not in ISO-9660 format. This means other disc directory formats (such as High Sierra, Romeo, and Joliet) will not work on any Macintosh or compatible computer with a DOS Compatibility Card.
This article has been archived and is no longer updated by Apple.
The ClarisWorks Office CD is not truly ISO-9660 (because it contains long file names on the PC side of the disc, whereas the ISO standard uses strictly "eight-dot-three" file names) so these discs cannot be used on DOS Compatible systems to install the WINDOWS 95/NT version of ClarisWorks 5.0.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

Note: AppleWorks is the new name for ClarisWorks.

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Claris Discontinues the Publication of the TechInfo Journal

The November 1997 publication is the final issue.

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Sadly, the November 1997 publication of the Claris TechInfo Journal will be the final to be issued. We at Claris have enjoyed publishing this periodical and have learned a great deal about our products while doing the research necessary to write the articles. We are proud of the fact that since the TechInfo Journal's inception in 1993, its articles have been helping customers get the most out of their Claris software. With the proliferation of excellent information via the Web, users groups, books and periodicals, the demand for the journal has fallen off. Consequently, we are discontinuing the journal after this issue.

For those customers who found the journal useful, we recommend four sources for your consideration:

1. Please visit the Claris Web site for answers to frequently asked questions and to gain access to the extensive software libraries used by our technicians to help find solutions. You will also find trial software updaters, templates, product news, technical articles, referrals for trainers and consultants, links to relevant sites, applicable books, and more. The URL is: www.claris.com

2. For our FileMaker Pro customers please see the new FileMaker Pro Advisor magazine. Bob Cusick, Technical Editor, stated in the first edition, 'It's my job to help you get your work done through timely and accurate articles explaining the technical ins and outs of FileMaker Pro.' This excellent bimonthly periodical is ideally suited to both the Windows and Mac OS FileMaker Pro users. To obtain one complimentary issue of this magazine, mention that you are a Claris TechInfo Journal subscriber when you contact:

FileMaker Pro Advisor
PO Box 469003
Escondido, CA 92046-9737
Toll free: (888) 430-7600
Email: advanced@database-systems.com
Web: www.database-systems.com

3. For our ClarisWorks and ClarisWorks for Kids customers, check out the ClarisWorks Journal, published by the ClarisWorks Users Group (CWUG). CWUG is an international association of more than 15,000 members dedicated to supporting ClarisWorks software. CWUG is offering one free issue of their journal to recipients of the Claris TechInfo Journal. To obtain your free copy, please send a copy of the back page of this TechInfo Journal to CWUG at:

ClarisWorks Users Group
Box 701010
Plymouth, MI 48170
Telephone: (313) 454-1969
Fax: (313) 454-1965
Web: www.cwug.org

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A/UX: Working with Tape Cartridges (3/95)

I am having trouble working with A/UX and tape cartridges. Can you give me some tips?

This article has been archived and is no longer updated by Apple.
If you want to boot A/UX from the cartridge don't forget to make a swap partition on it and set the kernel value SWAPCNT to the size of the partition. Don't make eschatology partitions. They are for backup; and you don't need to backup the backup disk.

A good way of copying files to a syquest disk is to mount it as /syquest and do

find /dir -depth -print | cpio -puldma /syquest

which will create /syquest/dir and copy over /dir and all subdirectories to the cartridge. Next time you do it, leave out the "u" in "-puldma" and only files that have changed since the last copy will be copied. Great. This method will also copy over the files in /dev.

You don't need to partition each cartridge. Just format it, make sure block 0 is blank (use dd to check or to clear it) use pname to recognize slice 31 and you can use it as c?d?s31. It won't work under Mac OS, of course. To be able to boot from a cartridge you will need a small Mac OS partition plus root and swap partitions.

If your formatting software does not let you create A/UX partitions then you will have to do them under A/UX using dp. You can also format the cartridge under A/UX using the diskformat command and size 512. I suggest making a script to use dp so that you can do more than one cartridge quickly. An example might be something like:

```
dp /dev/rdsk/c4d0s31 << EOF
I7
a1 8 86662 SyQuest y 0 86662 0 1 y y
wq
EOF
```

Make sure you always unmount the disk before removing it. Otherwise, you will lose data. The SCSI disk driver should be modified so that the cartridge can only be removed when a umount is done. This is a simple modification.

Remember to do a fsck on the device before you mount it each time. It's easy to forget, because it is not done automatically (unless you put the drive into /etc/fstab). The consequences of using a disk that has not been fsck'ed can be serious, if there are filesystem errors on the disk that fsck could have fixed. (That is, these errors can occur if the Macintosh crashes, or if you forget to unmount the disk before removing it).

Article Change History:
31 Mar 1995 - Made minor changes.
31 Aug 1992 - Reviewed for technical accuracy.

Support Information Services
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ClarisWorks Office Extends the Power of ClarisWorks 5.0

ClarisWorks Office, featuring ClarisWorks 5.0, Claris Home Page Lite, JIAN Business Basics templates, additional ClarisWorks templates and Internet connection software, extends ClarisWorks software's integrated tool approach to productivity software.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

ClarisWorks Office, incorporating ClarisWorks 5.0, Claris Home Page Lite software, and JIAN Business Basics templates, allows users of ClarisWorks productivity software to create and combine a wide variety of documents: word processing, spreadsheet, database, drawing, painting, and HTML pages. There are many new and exciting features as well, including the ability extend the scope of documents and presentations by adding hypertextual links to other areas of a single document, other ClarisWorks documents, or even links to pages on the World Wide Web. As with all Claris products, ClarisWorks Office is designed to allow everyone from the novice to the home business professional to be productive and creative. ClarisWorks Office is available for Windows 95/NT 4.0 and Mac OS.

ClarisWorks 5.0

Although those familiar with previous versions of ClarisWorks software will still feel at home, ClarisWorks 5.0 has a new look and feel that should make it easier to accomplish tasks and make changes within your documents. From the prominent Button Bar to the integration of many Internet-savvy new features, ClarisWorks 5.0 is designed to help you get your job done.

Button Bars

The most obvious change is the expansion of the 'Shortcut Buttons palette' into a comprehensive system of predefined and user-customizable Button Bars to meet your specific needs. Providing shortcuts to almost every aspect of ClarisWorks 5.0, this button bar serves as the command center for managing your documents. You can change the size and font of text, open your Web browser to "surf" the Internet, open your email program, email a friend, or launch a different application all from within the same ClarisWorks 5.0 document.

ClarisWorks 5.0 comes with several ready-made button bars, each geared to help you perform different tasks: a Default bar (for standard document management tasks like opening a new file or italicizing text); an Internet bar for Web connectivity; an assistants bar for accessing ClarisWorks assistants (predefined macros designed to make certain normally complicated tasks, like printing an envelope, easier); and a Document bar to hold any document-specific Shortcuts you create.

Links and the Internet

Perhaps the most exciting feature added to Clarisworks 5.0 is the ability to make your documents interactive. Clarisworks 5.0 software allows you to easily create hypertext links with other areas of a particular document, other ClarisWorks 5.0 documents, or even pages on the World Wide Web. Any word processing, draw or spreadsheet document can now contain links that will launch your Web browser (e.g., Netscape Navigator, Microsoft Internet Explorer, etc.) and connect to a specified Web page. Or, say, allow you to create an interactive Table of Contents or glossary, where a single click will bring the reader to a specific location within your document, or readily move from a spreadsheet cell to an explanatory paragraph, and then back again.

Spreadsheets, too, sprout new features

The look and feel of the program were not the only areas that received attention. The ClarisWorks Spreadsheet environment often praised for its simplicity and ease of use, also received a few tasteful upgrades. One highly requested addition is the ability to name cells and cell ranges, greatly expanding the power of calculation formulae while also making it easier to create and maintain complex spreadsheet solutions.

How is this easier? Well, instead of being forced to refer to a range of cells by their addresses (A1..A20, B7, etc.), you can now apply a name to these addresses and reference this name in your various formulas. A range of cells where you've recorded bank deposits, for example, may be identified and referred to as simply "Deposits." By extension, this also means that the limit of 255 characters per formula may be effectively side-stepped, as address ranges may be condensed to a very short reference tag.

When the name or cell range is selected, this name will appear at the top left corner of the spreadsheet where the cell reference normally appears. Once the cell or cell range has been named, it will show at the bottom of the Define Name pop-up menu. From this same pop-up menu, you can edit or replace the name(s) you have created. Their is also an Auto Name feature which looks at titles you have included on your spreadsheet and assumes you want to use them as the name of your cell or cell range.

Another new feature in the Spreadsheet environment is the addition of a new Paste Function button, allowing easier access to the many functions built into ClarisWorks. Also new is the ability to view functions in the Paste Function window by category as well as by name, making it easier to find the correct Date function, for example, when you are not sure exactly what it is called.) With these and other smaller changes, ClarisWorks spreadsheets have never been easier to use.

Doing it in Style(sheets)

Improvements have also been made to the Stylesheet feature to make it both more powerful and easier to use. For those who have not used the Stylesheet window in ClarisWorks, stylesheets are a means of grouping a variety of formatting parameters into a single instruction, and then giving that instruction a name. For example, if you want to make sure that all headings in a report are in 14pt Helvetica, are bolded, and are underlined, you might create a Stylesheet that contains these characteristics, and give it a name like Report Headings. Choosing Report Headings from the

Stylesheets menu (or from the list in the Default button bar) will cause selected text to take on these predefined characteristics.

In previous versions of ClarisWorks, you could only apply one style to a particular text, object or frame. In ClarisWorks 5.0, you now have the option to apply compound styles, a combination of characteristics from two or more styles. For example, using the Report Headings example above, you could also make selected headings formatted as checkboxes, while still preserving the other Report Headings characteristics.

A database for all seasons
The database environment, too, is the recipient of some key improvements. Chief among these is the addition of a multimedia field type, allowing you to display photos, store (and play) sounds, or incorporate QuickTime movies into your ClarisWorks database documents. Supported image types include ClarisWorks Library Picture format, PICT, JPEG, GIF, QuickTime Movie and Sound files and OLE Objects for Windows. Teachers can now include scanned pictures of their students inside each of their students' records, for example. To alleviate the storage burden that QuickTime movies would place on a database, they are stored by reference, while copies of the other image types are actually stored within the file.

An office full of templates
In order to truly make ClarisWorks Office the all-in-one resource for home and business solutions, Claris is including the JIAN Business Basics templates in Claris Office. The JIAN Business Basics, created by JIAN Software, offer tools which you can use to grow your business. JIAN Business Basics are ready-to-use business contracts, letters, checklists, spreadsheets, forms and other frequently used documents which can be used and printed "as-is" or customized for your business needs. There are over 60 tools available which relate to the topics of Sales & Marketing, Finance & Accounting and Management & Operations such as Press Release Documents, Financial Ratio Analysis or Invoice Template. Each tool was created to work in the ClarisWorks environment.

Other new features
There are many other additions and improvements :

* ClarisWorks 5.0 can now specify a default font in the preferences window. Each time you open a new word processing document, the font you chose will be selected. No need to create a stationery document expressly for this purpose.

* The draw and paint environments of ClarisWorks 5.0 sport a new Fill Texture Palette, from which you can fill drawn objects, such as squares or circles, with rich textures and pictures from the palette instead just basic colors or gradients.

* Equation Editor, included with ClarisWorks 5.0, can create complex mathematical and scientific equations, which can be inserted into your document.. Although it is not a calculator, the Equation Editor makes it possible to represent higher mathematical functions, algebraic expressions, even molecular compositions. Equation Editor is a separate software application by Design Science that is installed on your hard drive when you install ClarisWorks 5.0.

Meet the rest of the Office

Internet Connection Software
If you are not already signed up with a particular Internet service provider (ISP), or if you are interested in changing ISPs, ClarisWorks Office provides several choices to get connected. These services include browser software. NOTE: Although ClarisWorks Office includes Internet connection software, you must still sign up with one of these providers to take advantage of their services. Startup fees, account fees and other fees are not included in the purchase of ClarisWorks Office but are, in fact, the responsibility of the user.

Claris Home Page Lite
With Claris Home Page Lite you can quickly create instant Web pages. This easy WYSIWYG (What You See Is What You Get) application allows you to create Web pages without having to type any HTML code!

JIAN Business Basics (Claris Edition)
JIAN, makers of BizPlan Builder, have created over 60 different business solution templates for use with ClarisWorks 5.0. Everything from worksheets and checklists covering sales and marketing to management and operation contracts are included to help your small business grow.

System Requirements
You must meet the following minimum system requirements to use ClarisWorks Office*:

Windows 95/NT 4.0**:
* Intel 386 PC or higher (486 Processor for NT 4.0)
* 8MB of RAM (16MB for NT 4.0)
* ClarisWorks 5.0 requires 21MB (minimal install) to 48MB (full install) of hard disk space.
* Internet Browser requires 3-5MB of hard disk space, 5-10 MB of RAM, a modem and an account with an Internet Service Provider or a direct connection to the Internet.
* Claris Home Page Lite requires 10MB of hard disk space and 8MB of RAM.

Mac OS*:
* Mac OS compatible computer with a 68020 processor or higher

* 8MB of RAM (8MB PowerPC version requires virtual memory on)
* System 7.0.1 or later
* ClarisWorks 5.0 requires 21MB (minimal install) to 58MB (full install) of hard disk space.
* Internet Browser requires 3-5MB of hard disk space, 5-10 MB of RAM, a modem and an account with an Internet Service Provider or a direct connection to the Internet.
* Claris Home Page Lite requires 10MB of hard disk space, 8MB of RAM and a PowerPC processor

* Additional items required for Internet access include a modem (14400 baud or higher recommended) and account with an Internet service provider (may require payment of a separate fee) OR direct connection to the Internet.

** Both Windows 95/NT 4.0 and Mac OS versions require a CD-ROM drive. Also, additional RAM may be needed to operate applications simultaneously.

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ClarisWorks: Row and Column Headers Print Too Dark

In ClarisWorks 5.0, row and column headers print to dark.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Knowledge Base.
This article has been archived and is no longer updated by Apple.

Issue:
When I print my ClarisWorks 5.0 spreadsheet, it prints a dark box where the row and column headers should be, so I can't see the letters and numbers.

Solution:
When printing, in the print dialog box, choose greyscale for the option labeled Image. Color will also work, but Black and White will not.

Explanation:
ClarisWorks 5 uses the new "Apple Platinum Appearance specification," which makes the column and row headings show up as black letters with a grey background. This new appearance will only print as greyscale and color, it will not print as black and white on some printers.
Published Date: Feb 18, 2012

Changing the Color of a Line in a Paint Frame

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

If you wish to change the color of a line in a paint frame, use the lasso tool to select the line, select the desired color from the paint-can palette, then go to the Paint menu and choose Fill. When you click elsewhere in your document, the deselected line will have the new color.

Published Date: Feb 18, 2012

Directions for Setting Up your PC to Boot either Windows 95 or Windows NT

How to set up your system to boot in either Windows 95 or Windows NT operating systems.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Setting up your PC to boot in Windows 95 and Windows NT is a method to use when you only have one machine available and you need to have both operating systems at your disposal.

Your hard drive(s) must be formatted as a FAT(also called FAT16) partition in order to be able to boot in either operating system. Windows NT cannot be installed on any hard drive that is formatted as a FAT32 partition, nor can it view data on drives with that format. Windows 95 cannot view data on a hard drive formatted as an NTFS partition.

With your hard drive(s) formatted as a FAT partition, here are the steps to follow for the dual boot:

1. Install Windows 95. If you already have Windows 95 installed, you don't need to reinstall it unless you need to reformat your drives because you don't have the proper kind of partition.
2. Put in the Windows NT CD-ROM. It should auto-run and bring up a window with a button to "Install Windows NT". If not, go into the /i386 folder and run winnt.exe.
3. NT will start to install and either prompt you for information or run on its own without prompting you. After it is finished the first phase of installation, it will restart your computer.
4. In the second phase of the installation, NT will display your drives and partitions. It will also ask which partition you want NT installed upon. Select any of the partitions that are FAT (you can even select the one that Windows 95 is on). When prompted for the partition reformatted, be sure to select that you want to keep the existing file system intact. NT will install to /winnt, not to /windows, so it won't overlay Windows 95.
5. The installation process will continue, with numerous reboots. NT will automatically set up a dual-boot menu.

Once completed, upon booting the system you'll see a menu that has three entries similar to this:
Microsoft Windows
Windows NT Workstation Version 4.00
Windows NT Workstation Version 4.00 (VGA Mode)

A countdown timer will start, and automatically boot into the first option in 30 seconds unless a key is pressed. Select the option you want and press enter. "Microsoft Windows" will boot your previously-installed Windows 95. "VGA Mode" for Windows NT is much like Windows 95's "Safe Mode".

To change which option is booted by default, boot into Windows NT, right-click on My Computer and select Properties. One of the tabs is "Startup/Shutdown". From that tab you can select which item is booted by default, and how long the default countdown time is set for.
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How To Stop Loading Programs Automatically At Startup In Windows 95.

Here are some possible methods for to stop loading programs automatically at startup in Windows 95.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
There are three places where you can try to stop programs loading automatically:

- The Startup folder
- WIN.INI
- Registry

The Startup folder is the most obvious location for a program reference. To check the contents of the start-up folder, right-mouse click on the Start menu, select Open, double-click on Programs and then double-click on Startup. If you see a shortcut to the program(s) you wish to stop loading automatically, delete it.

To edit the WIN.INI file, select Start, Run, type sysedit and click on OK. Inside the System Configuration Editor, locate the WIN.INI window and make it active. This file typically contains a lot of text. Search the WIN.INI file for a "run=" or "load=" line under the [windows] section. The programs referred to in these lines are the ones that load at startup. To stop these programs from loading at startup, just delete the entire line and save the changes.

* The Registry. Select Start, Run, type regedit and click on OK to open the Registry Editor. Navigate your way to HKEY_LOCAL_MACHINE\\SOFTWARE\\Microsoft\\Windows\\CurrentVersion\\RUN. In the right pane, you'll find programs that load when Windows 95 starts. Right-mouse click on the one giving you grief, select Delete, and close the Registry Editor.
(As always, before editing the Registry, back it up. One way is to zip your System.dat and User.dat files and store them on a floppy disk.)
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Automatic Power-Down at Shutdown

Automatically Power-down your System at Shutdown.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Newer systems (based on the ATX main logic board standard) can automatically power-down when Windows 95 shuts down. Shortly after showing the "It is now safe to turn off your computer" screen, a software signal is sent that powers off the computer.

Windows NT 4.0 is capable of doing the same thing, but does not do so by default. To enable this feature:

1. Start RegEdit (regedt32.exe)
2. Scroll down to HKEY_LOCAL_MACHINE/Software/Microsoft/Windows NT/CurrentVersion/Winlogon
3. Edit the following item: PowerDownAfterShutdown: REG_SZ:0. Change it to PowerDownAfterShutdown: REG_SZ:1.

Published Date: Feb 18, 2012

Converting FAT Partitions to NTFS

Using the command-line Convert utility to convert FAT partitions to NTFS.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
NTFS: NTFS is the Windows NT file system. Unlike FAT, NTFS does not use an allocation table but stores information about any file directly with the file. Other operating systems, including Windows 95, and many applications, such as ScanDisk, cannot read NTFS partitions. However, NTFS files or folders that are shared on a network can be accessed by other operating systems. Advantages of NTFS over FAT include faster access to files, more efficient information storage (for example, through a smaller cluster size), better data recovery, integrated file compression, larger disk partitions, and better file security. NTFS is preferred for Windows NT Server because of its better security and fault tolerance features. NTFS partitions also remain relatively unfragmented for long periods of time.

If you have existing FAT Partitions, you can use the command-line Convert utility to convert them to NTFS. This process is much less destructive than reformatting the partition because it does not destroy the files on the partition. If you convert the boot partition, the conversion will actually take place when you reboot the system. Remember that you cannot convert the active partition on a RISC-based system, because the boot partition on these must be FAT.

The syntax of the Convert utility is as follows:

convert <drive:> /fs:ntfs

Conversion is a one-way process. If you need to convert an NTFS volume to FAT, you must reformat the partition, or delete and recreate it; however, either process will destroy he contents of the partition. To preserve your data, back it up to another drive first. (If you need to re-create the active partition, you must run Windows NT Setup again.)
Published Date: Feb 18, 2012

IEC 950 Standards: All Current Apple Products Meet and Comply

Does Apple design and test equipment to the IEC 950 standard?

This article has been archived and is no longer updated by Apple.
All our latest products (including the Serial NB Card) are designed to meet and comply with IEC 950. Furthermore, compliance of CPUs will be verified via third-party, safety-agency approvals. IEC 950 is a hybrid of the electrical-shock, test side of IEC 380 and the flammability requirements of UL 478. Incidentally, it is also Apple's Safety Specification. Older products were designed to meet IEC 380, but they also met the requirements of UL 478 and, therefore, meet the latest specification (IEC 950).

NuBus cards are in the Safety Extra Low Voltage (SELV) category and, as such, do not contribute to any electrical shock hazard. The PC board is approved to UL 94-V-0. In addition, it does not contain any other hazardous component, like a lithium cell. Therefore, a Macintosh system configured with a Serial NB Card does not pose any safety hazard, and the system meets all the requirements of IEC 950.

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How Windows NT Generates MS-DOS Compatible Filenames

Windows NT generates 8.3 aliases from Long Filenames by using the following algorithm

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Windows NT file system (NTFS) filenames do not have the same limitations that MS-DOS FAT style filenames have. MS-DOS style filenames are limited to eight and three character strings separated by a period. NTFS filenames can be much longer and may contain more types of characters. When Windows NT copies a file from an NTFS partition to a FAT partition, it needs to change the filename for compatibility. The following rules are applied when filenames are converted from NTFS to FAT:

* All disallowed characters (spaces, restricted punctuation, Unicode characters) in the NTFS filename are removed.
* All periods except the last one preceding a character are removed.
* The first three characters following the last period are used for the three-letter extension of the FAT filename.
* All characters that are illegal in FAT but legal in NTFS are replaced with underscore characters ("_").
* The first six characters of the NTFS filename, a tilde character (~), and a single digit are used for the eight letter prefix of the FAT filename.

For the first four files with similar names:
If necessary, truncate the filename to the first six characters in the name and the first three characters in the extension.
Add the suffix ~<number> to the remaining six-character file name.

For Example, Let's say you had a filename called "MYTESTFILE.TXT". This would get truncated to "MYTEST~1.TXT".
If you had several files that were similar in name the results would be as follows"

LFN DOS Name
MYTESTFILE.TXT MYTEST~1.TXT
MYTESTFILE1.TXT MYTEST~2.TXT
MYTESTFILE2.TXT MYTEST~3.TXT
MYTESTFILE3.TXT MYTEST~4.TXT

For successive files:
If necessary, truncate the filename to the first two characters in the name and the first three characters in the extension.
Use a hashing algorithm to generate the next four characters
Append ~1 to the remaining six-character file name
If that fails to generate a unique name, append ~2, and so forth.

LFN DOS Name
MYTESTFILE4.TXT MYDDDA~1.TXT
MYTESTFILE5.TXT MYEDDE~1.TXT

MYTESTFILE6.TXT MYDDDE~1.TXT
MYTESTFILE7.TXT MYEEDA~1.TXT
MYTESTFILE8.TXT MYDDEA~1.TXT

Because the process can generate filenames that are difficult to interpret, it is good practice to keep the unique portion of the filename in the first six characters whenever possible

If this does not result in a unique filename, only the first five characters of the NTFS filename are used, followed by the tilde and two digits.

When filenames are moved from a FAT partition to an NTFS partition, no conversion takes place because NTFS fully supports the FAT file naming convention.

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Removing Dual-Boot after Uninstalling Windows NT

Removing Dual-Boot after Uninstalling Windows NT

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
If you install Windows NT after Windows 95, by default dual-boot will be set up on your PC.
However, if you then delete the /winnt directory to remove Windows NT, your system will still display a boot menu when started.
To remove that menu, back up your files (just to be safe), then boot from a Windows 95 Startup Disk (see Add/Remove Programs in Control Panel to create one), and execute the following command:

sys c:

After it completes you'll see the message "System Transferred". Remove the diskette and reboot, and your system will boot straight into Windows 95.
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Windows NT File System Files

Windows NT File System Files

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.

Following is a list of Windows NT system files organized by location. Following the filenames are short explanations.

WINNT\\SYSTEM32

FATBOOT.BIN FAT boot sector template
HPFSBOOT.BIN HPFS boot cluster template
DISKCOMP.COM Disk comparison utility
DISKCOPY.COM Disk copy utility
FORMAT.COM Disk format utility
TREE.COM Graphical directory display utility
ACLEDIT.DLL Access control list (ACL) editor
CUFAT.DLL FAT file system conversion
CUHPFS.DLL HPFS file system conversion
FMIFS.DLL Interface between File Manager and installable file system
IFSUTIL.DLL Installable file system utility
IOLOGMSG.DLL I/O log
UFAT.DLL Provides FORMAT and CHKDSK support for FAT file system.
UHPFS.DLL Provides FORMAT and CHKDSK support for HPFS file msystem.
ULIB.DLL Provides support for commands: DISKCOPY, SUBST, DOSKEY, ACLCONV, CHCP, KEYB, CONVERT, MODE, XCOPY, REPLACE, MORE, PRINT, RECOVER, COMP, FC, CHKDSK, FIND, TREE, SORT, DISKCOMP, ATTRIB, FORMAT, etc.
UNTFS.DLL Provides FORMAT and CHKDSK support for NTFS file system.
ACLCONV.EXE ACL conversion utility. Converts OS/2 LAN Manager server access control lists. Uses BACKACC data file.
APPEND.EXE Enables programs to open data files in specified directories as if they were in the current directory.
ATTRIB.EXE Attribute utility.
AUTOCHK.EXE Auto check utility. Run automatically by the system at boot to check disks.
AUTOCONV.EXE Auto file system conversion utility. Run automatically by the system when the user has requested a file system conversion of a volume that cannot be locked at run time or during Windows NT Setup.
BACKUP.EXE Backup utility
BACKUP.HLP Backup help
CHKDSK.EXE Check disk utility
COMP.EXE File compare utility
CONVERT.EXE File system conversion utility. Converts FAT or HPFS volumes to NTFS.
DISKPERF.EXE Starts or stops disk performance counters for use by Performance Monitor.
FASTOPEN.EXE Dummy file for backward compatibility
FC.EXE File compare utility
FIND.EXE Find string utility
FINDSTR.EXE Searches for strings in files. Can use regular expressions.
LABEL.EXE Disk label utility
NTBACKUP.EXE Tape backup utility
NTIO.SYS Provides IO.SYS support for MS-DOS-based applications.
PERFMON.EXE Performance Monitor
PERFMON.HLP Performance monitor help
PORTUAS.EXE Utility for UAS to SAM database conversion
RECOVER.EXE File recovery utility
REPLACE.EXE Replace file utility
RESTORE.EXE File restore utility
SETACL.EXE Sets ACLs on directory tree during Windows NT Setup.
SHARE.EXE Dummy file for backward compatibility
WINDISK.EXE Disk Administrator
WINDISK.HLP Disk administrator help
WINFILE.EXE File Manager
WINFILE.HLP File Manager help
XCOPY.EXE Extended Copy Utility

WINNT\\SYSTEM32\\CONFIG

```
SYSTEM          Master copy of partition information.
SYSTEM.ALT      Alternate copy of SYSTEM.
```

WINNT\\SYSTEM32\\DRIVERS

```
ATDISK.SYS      IBM AT (ST506) driver used my most ISA PCs
CDFS.SYS        CD file system driver
CDFS_REC.SYS    Mini-file system recognizer for CDFS
DISKPERF.SYS    Disk performance driver
FASTFAT.SYS     Fast FAT file system driver
FAT_REC.SYS     Mini-file system recognizer for FAT
FLOPPY.SYS      Floppy driver
FTDISK.SYS      Fault tolerance disk driver
HPFS_REC.SYS    Mini-file system recognizer for HPFS
NTFS.SYS        Windows NT file system (NTFS) driver
NTFS_REC.SYS    Mini-file system recognizer for NTFS
PINBALL.SYS     HPFS file system driver
SCSICDRM.SYS    SCSI CD-ROM driver
SCSIDISK.SYS    SCSI disk driver
SCSIFLOP.SYS    SCSI floppy driver
SCSIPORT.SYS    SCSI port driver
```

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Keypad Graphics from Menu Bar Fail to Display for VT102 Mode

The VT102 Keypad graphics fail to display while in a communications document

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
The Keypad graphics, normally displayed as a submenu, fail to display under OS8 in the communications environment. The VT102 tool present (under the Info submenu) is 1.0.2.

Currently we are unsure what is actually causing this problem, but it is being investigated.

A successful workaround is to do the following:
-Under the Connect Menu, select Terminal
-Choose the TTY tool
-Close the dialog box
-Repeat the above process but choose the VT102 tool.

The Keypad graphics will now function properly.

This problem does not affect the operation of the keyboard keypad. It functions properly without the workaround. It has only been tested and verified in ClarisWorks 5.0 under OS8. It has not been tested as yet with other versions of ClarisWorks or System 7.x. This workaround must be implemented each time a communications document is created or opened.
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Special Characters in the Charcoal Font

How to get special Characters in the Charcoal font.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.

Hidden Charcoal Characters

Back in the old days, it was possible to generate such keyboard characters as the Command and Option key symbols only with the Chicago font. Thankfully, these symbols - and more - are available in OS 8's Charcoal font as well. Using the Charcoal font type the following key combinations to get these obscure characters:

Control-q = Command symbol
Control-g = Option symbol
Control-w = Backward Delete symbol
Control-j = Forward Delete symbol
Control-d = Shift symbol
Control-y = Up Arrow symbol
Control-p = Down Arrow symbol
Control-z = Right Arrow symbol
Control-x = Left Arrow symbol
Control-t = Apple symbol

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Text Color and ClarisWorks 5.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
Changing the text color in a word processing document has changed from ClarisWorks 4.0 to ClarisWorks 5.0. Previously, a Text Color command was available in the Style Menu. Under ClarisWorks 5.0, Text Color is an option that can be accessed from the button bar by changing the button bar setup as follows:

Choose Button Bar Setup
Click on Show Popups and Indicators.

For spreadsheet, database, drawing documents, the Text Color command is available in the Format menu.
Published Date: Feb 18, 2012

Incompatibility Between ClarisWorks 5.0 and Spell Catcher 1.5.8 From Casady & Greene

There is a screen refresh issue with ClarisWorks 5.0 and Spell Catcher 1.5.8 from Casady & Greene when doing spell checking.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

This article has been archived and is no longer updated by Apple.
After you have done a spell check in ClarisWorks 5.0 using Spell Catcher from Casady & Greene you will be returned to your ClarisWorks document and the spelling changes will be accomplished if any errors were detected; however, you will notice that your cursor is gone and clicking into the document does not display the cursor.

Solution:
To refresh the screen so that the cursor reappears and you can select words by clicking your mouse you need to switch to the finder or another running application and then back to your ClarisWorks document to get normal control over your document.
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Fixes Included in ClarisWorks for Kids 1.0v2 for Macintosh

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
ClarisWorks for Kids 1.0v2 corrects the following problems which occurred in the 1.0v1 version of the product:

* Can re-save a file to a HD with >2Gb available;
* Font menu appears correctly under System 8;
* New School Text fonts with international characters corrected

NOTE: There is no on-line updater available for this release. To obtain 1.0v2, customers must be sent a replacement CD.
Published Date: Feb 18, 2012

ClarisWorks 5.0: Custom Outline Style Does Not Allow For Proper Custom Indents

Custom outline styles created in ClarisWorks 5.0 do not properly store custom indents.

Note: AppleWorks is the new name for ClarisWorks.

This article has been archived and is no longer updated by Apple.
This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

Steps to reproduce:

1. Create a new Word Processing document.
2. Show the Styles Palette.
3. Create a new stylesheet.
4. Select Type: outline Based on: None
5. Show all levels in the stylesheet window.
6. Select Level 1.
7. Double-click on the line spacing control in the document ruler and change the left indent to .25. Notice the indent is saved into the new style correctly.
8. Select Level 2.
9. Double click on the line spacing control in the document ruler and set the left indent to .50. Notice the indent is saved into the new style as 1.0.
10. Change the left indent to .75. The indent is saved into the new style as 1.75.

This behavior is not exhibited in ClarisWorks 4.0 or earlier.

The ClarisWorks 5.0v2 Update corrects several minor problems with the initial release of ClarisWorks 5.0. Outline styles can now be imported correctly when overwriting an existing style. To see the problems and issues addressed in 5.0v2 .see the Tech Info Library article Number 22214 at http://docs.info.apple.com/article.html?artnum=22214

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ClarisWorks 5.0: Text Field Import Limited to 255 Characters (DB)

When importing into a ClarisWorks or AppleWorks 5.0 database from a text file, the maximum number of characters that can be imported into a text field is 255.

This article has been archived and is no longer updated by Apple.
If you try to import a field with more characters, you'll see an alert and any text after the 255th character is not imported.

Even though the maximum number of characters in a text field is about 1000, the maximum number that can be imported is 255.

Note: AppleWorks is the new name for ClarisWorks.
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ClarisWorks Office: Windows CD Installation Issue

ClarisWorks Office Windows CD installation issue : complete contents are not visible, autorun doesn't work, or the installer quits with a "language not found" error, is definitely a driver compatibility issue.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
We have verified a driver compatibility issue with TEAC CD-Roms with some or all of the following symptoms:

1) Neither the CD-Rom nor the CD-Rom controller are listed under Device Manager in the System Control Panel.
2) The complete contents of the Claris Works Office CD are not visible.
3) Autorun does not work, even with Auto-insert Notification checked (in the properties for the CD-Rom drive).
4) Installer quits with a "language not found" error.

Solution seems to be to update the drivers for the CD-Rom drive. Drivers for desktop CD-Roms can be obtained via the web at http://www.teac.com/dsp/cd/dkcdrom.html. You will need to know the model of your TEAC CD-Rom.

This may or may not happen with other CD-Rom drives, but TEAC is by far the most prevalent.
Published Date: Feb 18, 2012

ClarisWorks 5.0: Database Does Not Scroll To Found Record in List View

In List view in a ClarisWorks 5.0 database, when you use the Find command (command-F or Control-F), the database window may not jump to the found record, under conditions stated below:

This article has been archived and is no longer updated by Apple.

- A text field contains more text than can be displayed on screen.
- You use the Find command and the found text is in the long text field (it doesn't matter if the found text is in the displayed text or not).

When this happens, if the record with the found text is not on screen, the window will not scroll or jump to display the found record.

You need to manually scroll the window to view the found record. ClarisWorks 4 did not have this problem, it would scroll to display the record with the found text.

The above information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.

ClarisWorks 5.0v2 Update corrects several minor problems with the initial release of ClarisWorks 5.0. To see the problems and issues addressed in 5.0v2 . read the Tech Info Library article Number 22214 at http://docs.info.apple.com/article.html?artnum=22214

Note: AppleWorks is the new name for ClarisWorks.

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ClarisWorks: Pictograph Graphics Print Outside the Bar Graph

Pictograph Bar Charts print the repeating graphics outside the top of the bar graph.

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Knowledge Base.
This article has been archived and is no longer updated by Apple.
When Pictograph bar charts are created using a repeating custom graphic, the graphics stay within the bar on the screen, but may print outside the top of the bar. There is no know n workaround to correct this at this time. This has been verified in ClarisWorks 4 and ClarisWorks 5.
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Files Installed with each Installation Option of ClarisWorks for Kids 1.0

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
The CD-based full installation installs the following files:

Activities f
Art f
Blank Activity
Copying
Drawing with Shapes
Hidden Animals
Tracing Animals
Calendars f
Day
Month
Seasons
Week
Year
Cuisenaire Dale Seymour f
Read Me First
Drawing Math Gr. 1 #01
Drawing Math Gr. 1 #02
Drawing Math Gr. 1 #03
Drawing Math Gr. 1 #04
Drawing Math Gr. 1 #05
Drawing Math Gr. 1 #06
Drawing Math Gr. 2 #07
Drawing Math Gr. 2 #08
Drawing Math Gr. 2 #09
Drawing Math Gr. 2 #10
Drawing Math Gr. 2 #11
Drawing Math Gr. 2 #12
Drawing Math Gr. 3 #13
Drawing Math Gr. 3 #14
Drawing Math Gr. 3 #15
Drawing Math Gr. 3 #16
Drawing Math Gr. 3 #17
Drawing Math Gr. 3 #18
Desktop Publishing f
Award
Birthday Banner
Flyer
Menu
Newsletter (1 Page)
Newsletter (2 Pages)
Slide Show
Fairy Tales f
Beauty and the Beast
Cinderella
Country Mouse & Town Mouse
Elves & the Shoemaker
Emperors New Clothes
Goldilocks & the Three Bears
Tom Thumb
Geography f
Asia
Australia
Canada
Europe
Time Zones
USA

Graphs f
Baseball
Basketball
Football
Graph Maker
Plant Growth
World Population
History f
Kings & Queens of Britain
Leaders of Russia
Time Line
US Presidents
Just for Fun f
Launch Pad
Letter to the President
Make a Breakfast
Make Pizza
Moon Walk
Language Arts f
All About Me
Big Book
Book Report
Paragraph
Poem
Math f
Addition to 10
Addition to 100
Addition to 20
Fractions
Multiplication to 12
Party Planner
Percentages
Subtraction to 10
Subtraction to 100
Subtraction to 20
Nursery Rhymes f
Baa Baa Black Sheep
Crooked Man
Georgie Porgie
Hickory Dickory Dock
Humpty Dumpty
Jack and Jill
Jack be Nimble
Little Boy Blue
Little Jack Horner
Mary Mary
Old Woman in Shoe
Pop Goes the Weasel
Ring Around the Rosie
Rub a Dub Dub
Ten Little Monkeys
This Little Piggie
Three Blind Mice
Twinkle Twinkle
Wee Willie Winkle
Science f
Dinosaurs
Make a Face
Solar System
The Skeleton
Under the Sea
Weather Diary
ClarisWorks for Kids (application)
ClipArt f
BIO Amphibians

BIO Arachnids & Spiders
BIO Birds
BIO Dinosaurs
BIO Farm Animals
BIO Fish
BIO Flowers
BIO Insects
BIO Mammals
BIO Marsupials
BIO Mollusks & Crustaceans
BIO Pets
BIO Reptiles
BIO Trees
BIO Water Mammals
DEC Canvases
DEC Cards
DEC Celebrations
DEC Grids
DEC Speech Balloons
DEC Tables & Notes
FUN Launch Pad
FUN Monster Friends
FUN Moon Base
FUN Pizza
GEO Africa
GEO Australia
GEO Canada
GEO Caribbean
GEO Central America
GEO Central Asia
GEO East Asia
GEO Europe
GEO North America
GEO Planet Earth
GEO South America
GEO UK & Ireland
GEO USA
HUM My Body
HUM My Bones
HUM My Face (Female)
HUM My Face (Male)
MOV NASA Rockets
MOV NASA Weather
MOV Saturn Missions
MOV Science Movies
MOV Solar System
MOV Weather 1 Movies
MOV Weather 2 Movies
MOV Weather 3 Movies
SCI Astronomy
SCI Space Shuttle
SCI Technology
SCI Weather Pictures
SND Animal 1 Sounds
SND Animal 2 Sounds
SND English Consonants
SND English Vowels
SND Music 1
SND Music 2
SND Rhythms
SND Sound 1 Effects
SND Sound 2 Effects
SND Sound 3 Effects
SND Spanish Consonants
SND Spanish Vowels

SND Transportation
SOC Breakfast
SOC Buildings
SOC Flags
SOC People
SOC Sports & Activities
SOC US Presidents
SYM Braille
SYM Letters
SYM Numbers
SYM Shapes
Electronic Documentation f
Getting Started.pdf
User's Guide.pdf
License Agreement
Movies f
Altas Centaur Launch
Asteroid Gaspra
Blizzard
Cassini mission
Cassini probe
Clear
Clouded
Drizzle
Earth and Moon
Entomology movie
Flurries
Fog
Gemini launch Movie
Hurricane
Hurricane Andrew
Hurricane Marilyn
Mars Probe
Meteorology movie
Microbiology Movie
Mir Movie
Not Available
Partly Clouded
Pluto Rotation
Rain
Reusable Launch Vehicle
Shower
Snow
STS 79 landing Movie
STS 80 launch Movie
Sunny
Thunderstorm
Titan landing
Titan surface
Tornado
Trajectory
Venus rotation
New Work f
Art Pad f
Blank Canvas
Framed Canvas
Large Square Grid
Large Triangle Grid
Small Square Grid
Small Triangle Grid
Graphing Pad f
Area Graph
Bar Graph
Graph Sheet to 10
Graph Sheet to 20

Line Graph
Pie Graph
List Pad f
My Books
My Collection
My Friends
Things to do
Weekly Words
Writing Pad f
Blank Paper
Composition Paper
Letter
My List
Notebook paper
Paint and Write
Ruled Paper
Side By Side
Things to do
Old Work f
Examples f
Alyssa's Rainforest Report
Example Word List
Homework f
Students f
Teacher f
Plugins f
Application
Cell Interface
Database
Drawing
Horiz Scroll Interface
Library
Painting
Spreadsheet
Stickers
Tab Bar
Tool Palette
Vert Scroll Interface
Writing
Read Me CW4K
Sounds f
a
a (spanish)
Airplane
Aw!
b
b (spanish)
Baseball Catch
Baseball Metal Bat
BassClarinet "C" Scale QT
Big Laugh
Boinnnnggg
Booaaoommmm!
Broken Glass
Bullfrog
c
c (spanish)
Car Beep Beep
Car Horn
Cat
Cello "C" Scale QT
ch (spanish)
Charge!
Clapping
ClarisWorks for Kids Theme

Cow & Bull
Crowd
Cuckoo Clock
d
d (spanish)
Drrrinnng
Ducks
e
e (spanish)
Elephant
f
f (spanish)
Flute
French Horn "C" Scale QT
Frog
g
g (spanish)
Glockenspiel QT
h
h (spanish)
Harp
Horse
Horse race
i
i (spanish)
j
j (spanish)
k
k (spanish)
l
l (spanish)
Lion
ll (spanish)
Loud Dog
Loud Klaxon
m
m (spanish)
Motorcycle
n
n (spanish)
o
o (spanish)
p
p (spanish)
Phone
q
q (spanish)
Quena
r
r (spanish)
Rhythm Pop
Rhythm Rock
Rhythm Samba
Rhythm Swing
Rhythm Techno
Rhythm Tropical
Rooster
rr (spanish)
s
s (spanish)
Sheep
Sonar Pulse
Splat
t
t (spanish)

Timpani QT
TubularBells QT
u
u (spanish)
v
v (spanish)
Violin "C" Scale QT
w
w (spanish)
Wolf
x
x (spanish)
y
y (spanish)
Young Girl Laughter
z
z (spanish)
~n (spanish)
Web Tools f

The CD-based small easy and floppy -based full installations install the following files:

Activities f
Art f
Blank Activity
Hidden Animals
Calendars f
Month
Week
Cuisenaire Dale Seymour f
Read Me First
Drawing Math Gr. 1 #01
Drawing Math Gr. 1 #02
Drawing Math Gr. 1 #03
Drawing Math Gr. 1 #04
Drawing Math Gr. 1 #05
Desktop Publishing f
Award
Birthday Banner
Menu
Newsletter (1 Page)
Fairy Tales f
Beauty and the Beast
Cinderella
Country Mouse & Town Mouse
Emperors New Clothes
Geography f
Time Zones
USA
Graphs f
Baseball
Basketball
Graph Maker
History f
Time Line
US Presidents
Just for Fun f
Letter to the President
Moon Walk
Language Arts f
Big Book
Book Report
Math f
Addition to 10
Addition to 100

Addition to 20
Fractions
Multiplication to 12
Party Planner
Percentages
Subtraction to 10
Subtraction to 100
Subtraction to 20
Nursery Rhymes f
Baa Baa Black Sheep
Old Woman in Shoe
Three Blind Mice
Science f
Dinosaurs
Weather Diary
ClarisWorks for Kids (application)
ClipArt f
BIO Dinosaurs
BIO Farm Animals
BIO Pets
DEC Celebrations
DEC Tables & Notes
FUN Moon Base
GEO Planet Earth
GEO USA
SCI Weather Pictures
SND Animal 1 Sounds
SND Animal 2 Sounds
SOC Sports & Activities
SOC US Presidents
SYM Braille
SYM Numbers
Electronic Documentation f
Getting Started.pdf
User's Guide.pdf
License Agreement
Movies f
New Work f
Art Pad f
Blank Canvas
Framed Canvas
Large Square Grid
Large Triangle Grid
Small Square Grid
Small Triangle Grid
Graphing Pad f
Area Graph
Bar Graph
Graph Sheet to 10
Graph Sheet to 20
Line Graph
Pie Graph
List Pad f
My Books
My Collection
My Friends
Things to do
Weekly Words
Writing Pad f
Blank Paper
Composition Paper
Letter
My List
Notebook paper
Paint and Write

Ruled Paper
Side By Side
Things to do
Old Work f
Examples f
Homework f
Students f
Teacher f
Plugins f
Application
Cell Interface
Database
Drawing
Horiz Scroll Interface
Library
Painting
Spreadsheet
Stickers
Tab Bar
Tool Palette
Vert Scroll Interface
Writing
Read Me CW4K
Sounds f
Bullfrog
Cat
ClarisWorks for Kids Theme
Cow & Bull
Ducks
Elephant
Frog 32K
Horse 99K
Lion 50K
Loud Dog
Rooster
Sheep
Wolf
Web Tools f

The on-line demo version installs the following files:

Activities f
Art f
Blank Activity
Calendars f
Month
Cuisenaire Dale Seymour f
Read Me First
Drawing Math Gr. 1 #01
Desktop Publishing f
Menu
Fairy Tales f
Beauty and the Beast
Cinderella
Country Mouse & Town Mouse
Emperors New Clothes
Geography f
USA
Graphs f
Graph Maker
History f
US Presidents
Just for Fun f
Letter to the President
Language Arts f

Big Book
Book Report
Math f
Addition to 10
Multiplication to 12
Subtraction to 10
Nursery Rhymes f
Baa Baa Black Sheep
Three Blind Mice
Science f
Dinosaurs
Weather Diary
ClarisWorks for Kids (application)
ClipArt f
BIO Insects
DEC Tables & Notes
GEO USA
SCI Weather Pictures
Electronic Documentation f
License Agreement
Movies f
New Work f
Art Pad f
Blank Canvas
Framed Canvas
Small Square Grid
Graphing Pad f
Bar Graph
Graph Sheet to 10
List Pad f
My Collection
Writing Pad f
Blank Paper
Ruled Paper
Side By Side
Old Work f
Examples f
Homework f
Students f
Teacher f
Plugins f
Application
Cell Interface
Database
Drawing
Horiz Scroll Interface
Library
Painting
Spreadsheet
Stickers
Tab Bar
Tool Palette
Vert Scroll Interface
Writing
Read Me CW4K
Sounds f
ClarisWorks for Kids Theme
Web Tools f
Published Date: Feb 18, 2012

Contact List Prints in Incorrect Order

This information was provided by Claris Corporation on 16 March 1998, and incorporated into Apple Computer's Tech Info Library.
This article has been archived and is no longer updated by Apple.
When you choose to print as a Contact List in the Print window, your contacts will print in an incorrect order if the "Which Contacts" popup is set to "All XX Contacts", where XX is the number of contacts.

The workaround is to click on the "Which Contacts" popup and select "XX Contacts in List."
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DOS 3.3: CHAIN

Your DOS master diskette contains a utility called CHAIN. Though described on page 106 of The DOS Manual, there are a few additional things to look out for.
This article has been archived and is no longer updated by Apple.
CHAIN does an effective PR#0 and IN#0 when it is used, disabling an 80 column card or a High-Res character generator in the process. The first program can save four memory locations that, when the second program restores them, leave the input and output vectors unchanged.

```
63000 rem prepare to chain
63010 J = peek (999) + peek (1000) * 256 - 110
63020 for K = 0 TO 3
63030 A(K) = peek (J+K)
63040 next K
63050 rem chain now
```

```
10 rem Program 2 #2
20 for K = 0 TO 3
30 poke J+K,A(K)
40 next K
50 rem rest of the program
```

CHAIN overlays your existing Applesoft program with the new program. Watch out for your programs that use DEF FN and Onerr Goto statements. These statements must be re-executed in the new program if they are to work properly, because both statements contain pointers into the program text, which is different for each program.

EXTENDED TIL INFO - *The following information is for Apple Internal & Support Providers Only*
Published Date: Feb 18, 2012

SMB File Transfer: Troubleshooting Macintosh IIfx Problems

I am having problems with a Macintosh IIfx and SMB File Transfer. I used the 6.0.5 Network Installer disk, and everything seemed to go well. The TokenTalk NB Card is working fine; I can see the zones and devices in the Chooser. Apple File Exchange starts up OK. However, when I try to access the "SMB Servers" choice from the Apple menu, the whole system hangs. I tried using the later versions (1.1.1) of the A/ROSE and TokenTalk Prep files from the MacDFT Golden disk, but I had the same results. Can you help?

This article has been archived and is no longer updated by Apple.
We tested the SMB File Transfer Utility with our Macintosh IIfx, and it worked fine. We did not have to use A/ROSE and TokenTalk Prep from the MacDFT Golden disk. We used the version 1.0 SMB software disk, which installs A/ROSE 1.1, PCSession Prep 1.1, SMB 1.0, and TokenTalk Prep 1.1 in the System Folder.

Here are some troubleshooting suggestions:

Check cable connections. Verify that the SMB server is up. Make sure you are using Apple File Exchange 1.1.2. (Earlier versions of AFE will not work.)

- Ensure that you are using version 2.12 ROM on the TokenTalk NB card.

- Remove any INITs in the System Folder that might cause a problem.

If you are still having problems, please send us more information, specifically:

- Hardware and software configurations and versions, including any network hardware and software.

- Other applications on that system, including INITs, CDEVs, and so on.

Published Date: Feb 18, 2012

Macintosh SE/30,IIfx: Processor-Direct Slot (PDS) Pinouts

Article Change History

04/02/93 - REVISED
* To incorporate SE/30 more fully into the article (and the title).
* Corrected some pinout errors.

I am developing an accelerator board for the Macintosh IIfx and SE/30 and I need pinouts and any other relevant information for the processor-direct slot. Can you help?

This article has been archived and is no longer updated by Apple.
The processor-direct slot (PDS) in the Macintosh IIfx is similar to the PDS in the Macintosh SE/30. It has the same Euro-Din 120 connector as the Macintosh SE/30 PDS and Macintosh IIci cache connector.

Cards in the PDS are accessed at 20MHz. This speed should let developers create PDS cards without using expensive components while still providing access to the processor bus. There are two locations in the memory map for PDS cards. Developers should see the "Cards and Drivers Manual" for information on creating PDS cards. This manual is available from APDA.

The cache connector in the Macintosh IIci may look like the Macintosh IIfx PDS connector, but the pinouts are vastly different.

Note: If a Macintosh IIci cache card is placed in the Macintosh IIfx PDS, it will damage the logic board.

Here is the Pinout for the 68030 Direct Slot used in the Macintosh IIfx and SE/30. SE/30 Descriptions, where they are different, come first, followed by the IIfx description.

A1 - Reserved or GND* Ground
A2 - Reserved or /PDS.MASTER
A3 - /BUSLOCK or Reserved
A4 - /IRQ3 or n.c.
A5 - /IPL2* 68030 IPL2
A6 - /CIOUT* 68030 Cache inhibit out
A7 - /STERM* Sync.cycle termination
A8 - /DSACK1* 68030 Data ack 1
A9 - SIZ1 transfer size bit 1
A10 - /BGACK* 68030 bus grant ack
A11 - FC2 68030 function code 2
A12 - /RESET* System reset
A13 - D0 Data bit 0
A14 - D2 Data bit 2
A15 - D5 Data bit 5
A16 - D8 Data bit 8
A17 - D10 Data bit 10
A18 - D13 Data bit 13
A19 - D16 Data bit 16
A20 - D18 Data bit 18
A21 - D21 Data bit 21
A22 - D24 Data bit 24
A23 - D26 Data bit 26
A24 - D29 Data bit 29
A25 - A31 address bit 31

A26 - A29 address bit 29
A27 - A26 address bit 26
A28 - A23 address bit 23
A29 - A21 address bit 21
A30 - A18 address bit 18
A31 - A15 address bit 15
A32 - A13 address bit 13
A33 - A10 address bit 10
A34 - A7 address bit 7
A35 - A5 address bit 5
A36 - A2 address bit 2
A37 - +5 volts
A38 - CPUCLOCK or Reserved by Apple
A39 - GND
A40 - -12 volts

B1 - Reserved or ECS Early cycle start
B2 - GND or n.c.
B3 - /TM1A or /PDS.BG
B4 - /IRQ2 or /IRQ15
B5 - /IPL1* 68030 IPL1
B6 - /DS* 68030 Data Strobe
B7 - /CBACK* cache burst ack
B8 - /DSACK0* 68030 Data ack 0
B9 - SIZ0 Transfer Size bit 0
B10 - /BG* 68030 bus grant
B11 - FC1 68030 function code 1
B12 - /BERR* Bus error
B13 - +5 volts
B14 - D3 Data bit 3
B15 - D6 Data bit 6
B16 - Ground
B17 - D11 Data bit 11
B18 - D14 Data bit 14
B19 - +5 volts
B20 - D19 Data bit 19
B21 - D22 Data bit 22
B22 - Ground
B23 - D27 Data bit 27
B24 - D30 Data bit 30
B25 - +5 volts
B26 - A28 address bit 28
B27 - A25 address bit 25
B28 - Ground
B29 - A20 address bit 20
B30 - A17 address bit 17
B31 - +5 volts
B32 - A12 address bit 12
B33 - A9 address bit 9
B34 - Ground
B35 - A4 address bit 4
B36 - A1 address bit 1
B37 - +5 volts
B38 - ECLK or n.c.
B39 - GND or /SLOT.E 68030 slot E replace in address map
B40 - -5 volts

C1 - PWROFF or /PFW Shutdown bit
C2 - /NUBUS or n.c.
C3 - /TM0A or /PDS.BR Bus request
C4 - /IRQ1 or /IRQ6
C5 - /IPL0* 68030 IPL0
C6 - /RMC* 68030 read modify cycle
C7 - /CBREQ* 68030 cache burst req
C8 - R/W* 68030 read write

C9 - /AS* 68030 address strobe
C10 - /BR* 68030 bus request
C11 - FC0 68030 function code 0
C12 - /HALT* 68030 Halt
C13 - D1 Data bit 1
C14 - D4 Data bit 4
C15 - D7 Data bit 7
C16 - D9 Data bit 9
C17 - D12 Data bit 12
C18 - D15 Data bit 15
C19 - D17 Data bit 17
C20 - D20 Data bit 20
C21 - D23 Data bit 23
C22 - D25 Data bit 25
C23 - D28 Data bit 28
C24 - D31 Data bit 31
C25 - A30 address bit 30
C26 - A27 address bit 27
C27 - A24 address bit 24
C28 - A22 address bit 22
C29 - A19 address bit 19
C30 - A16 address bit 16
C31 - A14 address bit 14
C32 - A11 address bit 11
C33 - A8 address bit 8
C34 - A6 address bit 6
C35 - A3 address bit 3
C36 - A0 address bit 0
C37 - +5 volts
C38 - C16M or CPUCLK* 20 MHz on the IIfx
C39 - GND
C40 - +12 volts

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AppleTalk Phase 2: Short-Form Versus Extended-Form DDP Headers

Kinetics K-STAR 8.0 supports AppleTalk Phase 2. Under AppleTalk Phase 2, most of the AppleTalk data-link layer changed. Multicast addressing was added, and RTMP was changed quite a bit. Also, the network layer was changed. The short-form DDP header was outlawed. The short-form DDP header is useful only for sending packets within a network, not between networks.

When Kinetics heavily modified K-STAR to support AppleTalk Phase 2, they failed to change the DDP packets their RTMP and ZIP packets were encapsulated in. So, even under K-STAR 8.0, FastPaths send their RTMP and ZIP packets in the short-form DDP header on AppleTalk Phase 1 (non-extended) networks. This seems to work under most circumstances. However, if you run an Apple Internet Router, it expects to see the extended-form DDP headers even on AppleTalk Phase 1 networks. Therefore, even if you use the AppleTalk Phase 2 Upgrade Utility, you still get "Router Version Mismatch" errors.

Why didn't Kinetics switch all their DDP headers to the extended form, which is valid on all networks and always has been? Why would we ever send anything in a short-form header? Why do we even support sending short-form headers since extended-form headers can do everything the short-form ones can?

This article has been archived and is no longer updated by Apple.
In AppleTalk Phase 2, the short-form DDP header is not "outlawed". The short-form DDP header is, and will continue to be, a valid DDP header format.

The extended-form DDP header must be used on all AppleTalk Phase 2 extended networks. Examples of AppleTalk Phase 2 extended networks include EtherTalk 2.x and TokenTalk 2.0.

The short-form DDP header can be used only on non-extended networks, like LocalTalk or EtherTalk 1.x. On a non-extended network, the short-form DDP header can be used for packets whose source and destination nodes have the same network number. The Link Access Protocol (LAP) header for LocalTalk and EtherTalk 1.0 packets contain the source and destination node IDs. Because of this, the source and destination network numbers and node IDs in the extended-form DDP packet are redundant when the packets source and destination nodes have the same network number.

Short-form DDP headers are used solely for efficiency reasons. In fact, an implementation of DDP is permitted to send extended-header DDP packets even when the source and destination nodes are on the same AppleTalk Phase 1 or non-extended AppleTalk Phase 2 network. For example, the AppleTalk Internet Router uses extended-form DDP headers exclusively, even on non-extended networks, like EtherTalk 1.x.

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TA43791_MacintoshtoSytek_Broadband_Connectivity_(TIL05748).pdf

Macintosh-to-Sytek Broadband Connectivity

We use a Sytek broadband network with Novell Netware as a standard. Is there any product that lets the Macintosh participate in such a network?

This article has been archived and is no longer updated by Apple.
You should look into a router that routes from LocalTalk or baseband (EtherTalk) to broadband. One such router is the MultiGate 2000 from Network Resources Corporation, which has the ability to connect AppleTalk networks to EtherTalk, broadband, or fiber-optic networks.

The MultiGate 2000 supports Novell, among other network environments, and would give you the flexibility to use LocalTalk or the EtherTalk NB Card, or such Ethernet interface products for compact Macintoshes (and so on, Macintosh SE/30) as the Kinetics EtherPort SE/30. For more information, refer to the Technical Info Library article called "NRC Series 2000 AppleTalk Routers: Description" or contact: Network Resources Corporation.

Other possible solutions are described in the Technical Info library article "Macintosh-To-Novell Netware With AppleTalk" or can be located by searching on "broadband" in the Technical Info library or in either of the buyer's guides on AppleLink. For contact information, search the Technical Info library under "Technical Info library."

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TA43792_X_Solutions_for_the_Macintosh_(TIL05749).pdf

X.400 Solutions for the Macintosh

Article Change History

1/19/93 - UPDATED
* Touch Communications, Inc. now SAIC.
6/8/1990 - REVIEWED
* For accuracy.

My company has a growing number of customers in Europe, and we need to communicate (E-mail) with them via the Macintosh. Our corporate backbone already has an X.400 gateway, but we need a front-end, much like AppleLink, to facilitate national and international communication. Is there such an application?

This article has been archived and is no longer updated by Apple.
Apple used RetixMail for a Macintosh demonstration in Hanover.

Apple Europe demonstrated the WOPODA developer tool at the last Hanover fair. It is based on the ODA (Office Document Architecture) standard and lets you do conversions from any word processor to ODIF (Office Document Interchange Format), a standardized format for documents. We needed an X.400 product to send the ODIF documents to the other vendors (including DEC, IBM, Sun, HP, and so on) and used RetixMail for the Macintosh. Here is some information about Apple's forthcoming solution:

The Apple X.400 product is an X.400-compliant MTA (Message Transfer Agent) that runs on any modular Macintosh under System 7. It includes the seven layers of the OSI model. It works either over X.25 (on top of the MacX25 product) or over 802.3 (this is the most used link in the U.S.). It lets Macintosh users gain access to public X.400 networks or to connect to their private X.400 backbone.

Note that APDA is the distributor for the Apple X.400 product to give developers the opportunity to write client software for it.

There are two existing X.400 solutions for the Macintosh, to our knowledge, from Retix and SAIC (formerly Touch Communications). They are similar in their design: the MTA (Message Transfer Agent = the X.400 server) runs on a PC and the UAs (User Agents = the clients) run on a Macintosh. So, you need one PC, at least, to access the X.400 backbone.

- Retix did a PC-based MTA and created two versions of their own client: RetixMail for the PC and RetixMail for the Macintosh. You have to buy both client and server software to use it.

- Touch took another approach: they did an X.400 gateway for Microsoft Mail and one for QuickMail. Macintosh users who use Microsoft Mail or QuickMail today can keep their existing client software. They just have to buy a PC with Touch X.400 software plus either the Microsoft Mail gateway or the QuickMail gateway to connect to the X.400 backbone.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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DOS 3.3: RENUMBER and the MAXFILES command

Applesoft RENUMBER doesn't work with MAXFILES other than 3.
This article has been archived and is no longer updated by Apple.
RENUMBER is a machine language program loaded as an Applesoft program, when run, relocates the machine language up to HIMEM in your system. DOS defaults to MAXFILES 3, so HIMEM is on page boundary $9600, in a 48K Apple. Changing MAXFILES moves HIMEM off this page boundary.

RENUMBER's relocator still does the move, but it doesn't relocate the address properly. The usual result is that the system drops into the monitor in the address range of $0200 - $0300.
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A/UX: Trivial File Transfer Protocol (TFTP) Supported

Do any versions of A/UX supports TFTP host and client?

This article has been archived and is no longer updated by Apple.

The TFTP (Trivial File Transfer Protocol) is part of the standard Internet protocols. A/UX B-Net (Berkeley Network) supports most Internet protocols like TCP, IP, FTP, TFTP, SMTP, ICMP, UDP, and so on.

Yes, the TFTP client and server model have been supported since the first release of A/UX (1.0). /usr/bin/tftp and /usr/etc/in.tftpd in A/UX are the TFTP client and server, respectively.

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Macintosh Display Cards: RGB-to-NTSC Converters

Do you know of a device that can convert the color RGB signal (interlaced) from the new video cards to NTSC? Does it have the correct grounding for the sense pins to put the Display Card 8/24 into interlace mode and let the convolution (in 8-bit color) work?

This article has been archived and is no longer updated by Apple.
RasterOps has announced an RGB-to-NTSC converter device. It is mentioned in the RasterOps ad in the June 1990 Macworld (pages 114-115). We have also received a marketing flyer on this converter. The name of the product is the RasterOps Video Expander.

The sense pin issue is normally handled in the cable configuration. This eliminates any concern over the converter having to deal with the card configuration. Engineering has tested an early version of the converter with the new cards. It appears that the shipping converter will work with the Macintosh Display Cards. We have not yet had one to test. However, the Display Card marketing group assures us that everything will be fine.

Another RGB-to-NTSC converter is from Computer Video. Their product, Video NTSC Encoder, provides another solution for converting the High-Resolution 8-Bit Macintosh Video Cards to an NTSC output signal. We believe this converter box will work with the new cards. It uses the configuration of the cable to tell the new Macintosh Display Cards which mode to use.

For more details, search the Technical Info library under "Computer Video" and "RasterOps."

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Mirror Backup Solutions for the Macintosh

I heard that there is a mirror-backup solution for the Macintosh called "Reflections" that is sold by Profyle Computers, Ltd.
This article has been archived and is no longer updated by Apple.
Profyle creates mirror systems, not just the software. They have complete software and hardware systems for doing mirror backups. The drives range from 100MB to 1.2GB. Currently, Profyle has no U.S. distribution. For more details, search the Technical Info library under "Profyle" and "Natural Intelligence."

A similar type of backup utility was recently announced. Natural Intelligence publishes a product called "Shadow", which does automatic backups.

Shadow periodically copies the documents that have changed since they were last backed up. Shadow can back up onto any kind of disk, network server, or Finder-mountable tape drive.

Published Date: Feb 18, 2012

LocalTalk or PhoneNET: Cable Tester

Do you have a recommendation for a LocalTalk circuit tester?

This article has been archived and is no longer updated by Apple.
We found this article in the Redgate Buyer's Guide Library on AppleLink:

"The AT-Tester is a LocalTalk network cable tester that can test both LocalTalk cables (Mini DIN 3) or PhoneNET cables (RJ-11).

"A user can ensure total circuit integrity in Mini DIN 3 cables by plugging the cable into the power unit and plugging the remote end to the test unit. The tester will then show a user what the problem is. The telephone cable is tested the same way, but using the RJ-11 ports mounted beside the Mini DIN 3 port on either side of the unit."

For more details, search the Technical Info library under "AESP, Inc."

Published Date: Feb 18, 2012

ImageWriter II: Text Collides When Printing in Courier 9 and 10

I have a Macintosh SE running System Software 6.0.4. I use several word processing programs, mostly Microsoft Works 2.0. When I print in Courier 9-point, the ImageWriter II runs words together, either by not spacing between words or by printing the first letter of one word over the last letters of the preceding word. In effect, this is a horizontal compression problem.

I was able to duplicate this problem with a different ImageWriter II attached to a Macintosh II. When I ran Microsoft Works, the text was compressed in a number of places. I didn't test other font sizes.

Can you explain what is happening?

This article has been archived and is no longer updated by Apple.
We were able to duplicate the problem when printing in "Best" mode. We tested other fonts in 9-point and found that only Courier showed these problems. Courier 10 is actually worse than Courier 9.

We don't have an explanation and have forwarded print samples and test results to the proper organization.

Published Date: Feb 18, 2012

LaserWriter IINTX & Macintosh IIfx: SIMM Speeds Different (3/94)

Why aren't SIMMs for the Macintosh IIfx and the LaserWriter IINTX interchangeable? What are the differences, and what are the reasons for not interchanging them?

This article has been archived and is no longer updated by Apple.
The pinouts for the Macintosh IIfx and LaserWriter IINTX SIMMs are the same and both have nearly identical SIMM requirements, but the Macintosh IIfx requires SIMMs rated at 80ns or faster, while the LaserWriter IINTX only requires RAM rated at 120ns.

Macintosh IIfx 1MB SIMMs will work in a LaserWriter IINTX, if they fit physically (see Note), but standard LaserWriter IINTX SIMMs will not work in the Macintosh IIfx because the RAM is too slow.

Overall, we recommend that you use Macintosh IIfx SIMMs in Macintosh IIfx systems and LaserWriter IINTX SIMMs in LaserWriter IINTX printers.

NOTE: The LaserWriter II chassis opening limits the height of SIMMs used on the LaserWriter IINTX logic board. We found that some 1MB SIMMs are too tall, and the LaserWriter IINTX logic board will not slide into the chassis when they are inserted.

Article Change History:
31 March 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

TA43802_DOS_RENUMBER_and_the_FRE_command_(TIL00576).pdf

DOS 3.3: RENUMBER and the FRE(0) command

RENUMBER doesn't always reset the variable pointers when it returns to Applesoft, causing the Apple to hang or drop into the monitor when the PRINT FRE(0) command is used.

This article has been archived and is no longer updated by Apple.

To check the amount of free memory left after a RENUMBER operation, CLEAR before using PRINT FRE(0).

Published Date: Feb 18, 2012

Macintosh-to-DEC Printer Solutions

I need to interface a DEC LN03R printer to a Macintosh II. Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
We are assuming that you are talking about the Digital ScriptPrinter LN03R.

To connect the ScriptPrinter directly to the serial port of the Macintosh, you need a cable with the correct pinouts to support all signals between the printer and the Macintosh. Second, even though the ScriptPrinter is PostScript-controlled, you need a driver on the Macintosh so you can select from the Chooser. To our knowledge, there is no such driver. One alternative is to print to a disk file from the application, and send the file to the printer using a terminal emulation program. With the correct cable, you can communicate to the printer using a terminal emulation program, like MacTerminal, over the serial port. This is not very convenient.

Another alternative is to use the printer on the network. With Alisa Digital Printer (ADP) support system, an option for AlisaTalk for VAX/VMS, Macintosh users can print to Digital PostScript devices, such as the LN03R ScriptPrinter and the PrintServer 40. To the Macintosh user, the Digital PostScript device looks like an Apple LaserWriter.

ADP makes use of VMS system queueing and printing. Features include forms and paper-type control, optional job-flag and trailer pages for job identification, paper tray selection, and support for the Adobe system typeface pack. One VMS receiver process handles all Macintosh users; a new process for each job is not necessary. The software uses standard Digital Print symbionts and automatically loads the Laser Prep dictionary to the front of each Macintosh job submitted.

Another product called PacerPrint from Pacer Software, Inc., offers similar features. For more information on the Alisa Digital Printer support system or PacerPrint, search the Technical Info library using keywords "Alisa or Pacer".

Finally, PATHWORKS (formerly LanWORKS) for Macintosh, the new Apple-Digital Alliance product announced May 1, 1990, available later this year, will offer this capability. The service is called VAXshare Print Server, and it will support Digital's LPS20, LPS40, ScriptPrinter LN03R, and Apple's LaserWriter, LaserWriter Plus, LaserWriter IINT, and LaserWriter IINTX.

Published Date: Feb 18, 2012

CD Remote: Controls Only the First of Multiple CD-ROM Drives

How will the desk accessory "CD Remote" act if more than one CD-ROM unit is hooked to a Macintosh, and standard CD audio disks are placed in all drives?

This article has been archived and is no longer updated by Apple.
If more than one Apple CD-ROM device is used on a Macintosh computer, the device with the lowest SCSI number is the unit that CD Remote will control. As an example, two CD-ROM devices are on the SCSI bus. One has a SCSI ID of 2 and the other has an SCSI ID of 5. The CD-ROM device with the SCSI ID of 2 will be the unit accessed by CD Remote. There is no way to change this.

Published Date: Feb 18, 2012

A/UX: Domain Names: Plus Sign (+) not Allowed (9/94)

I have a Macintosh IIx running A/UX that is connected to an Internet consisting of Sun and VAX servers with several kinds of workstations. The problem is that I must begin my domain name with the plus sign (+), and A/UX does not recognize the plus sign as part of the name.

Do you know of a fix for this problem?

This article has been archived and is no longer updated by Apple.
Naming conventions for Domain, Host, Net, and Gateway should follow the rules specified in RFC (Request For Comments) 952. Here is part of RFC-952 regarding the naming convention on the Internet:

A "name" (Net, Host, Gateway, or Domain name) is a text string up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign (-), and period(.). Note that periods are only allowed when they serve to delimit components of "domain style names". No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. The first character must be an alpha character. The last character must not be a minus sign or period.

Apparently, a domain name beginning with the plus sign (+) violates the RFC-952 naming convention. We think that A/UX "BIND" (Berkeley Internet Name Domain) follows the naming convention described in RFC-952; the plus sign (+) is not allowed in the domain name.

We don't think there is a workaround on A/UX, unless the customer name server host follows the RFC-952 naming convention.

Article Change History:
20 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED For technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Floppy Disk Failure: Possible Causes

Our office has experienced what seems to be a high failure rate with diskettes. In what ways can disks be damaged and what can be done to prevent further problems?

This article has been archived and is no longer updated by Apple.

Disk wear results mostly from time in use. Abnormal disk wear is usually caused by unclean environments or misaligned or dirty mechanisms. Cigarette smoke, hair (human or pet), and dust all contribute to disk failure.

You might want to invest in a head-cleaning device. Check the industry periodicals for reviews and pick the least abrasive one.

Published Date: Feb 18, 2012

Everex Backup Problem

Our file server is a Macintosh SE with 4MB RAM and two external 80MB hard drives running System Software 6.0.2. One hard drive is partitioned into two volumes. When I try to backup one of the volumes on the partitioned drive to an Everex 91/60 using Everex Backup Software, I get System Error 28. (The other volumes back up without any problems.) Can you explain this?

This article has been archived and is no longer updated by Apple.

The EMAC engineer we spoke with indicated that Error 28 typically means too many files have been selected for backup. They suggest either starting up from the EMAC Utility disk for the backup or performing multiple backups with a smaller number of files. For more information, contact their tech support.

Published Date: Feb 18, 2012

Shiva/MacTerminal: Shiva Compatibility Issue

I have a problem with a Macintosh Plus connected to our AppleTalk network, which has a Shiva Telebridge. Recently, I purchased MacTerminal and tried to load it onto the Macintosh Plus. MacTerminal will not load if the Shiva Telebridge software is in the System Folder.

This article has been archived and is no longer updated by Apple.

Shiva informed us that MacTerminal and Shiva software can coexist if the customer chooses "set Shiva config" in the Control Panel and selects "emulate modem port". Contact Shiva tech support for more information.

Published Date: Feb 18, 2012

TA43809_DOS_and_APPEND_(TIL00577).pdf

DOS 3.1, 3.2 and 3.2.1: APPEND

The APPEND command opens sequential files, then reads through all of the records until it finds the end. The next WRITE command is then appended to the end of the file. Unfortunately, there are some problems with APPEND.

This article has been archived and is no longer updated by Apple.

When the last carriage return written out is the last byte in the last sector of the file, DOS doesn't allocate another sector for the end of file mark. Therefore, the next APPEND never finds the end of the file, and so the file pointer gets left at the beginning of the file. Consequentially, the next WRITE command writes over the first record.

Try a READ after the APPEND command:

A. When the READ returns an "Out of Data" error, do a normal APPEND, assuming that you're using an ONERR GOTO in Applesoft.

B. A successful READ means that APPEND writes over the file. In this case, the only way to add to the end of the file is to copy the entire file into another, then write your information into the new file. Delete the old file and rename the new file with the old file's name.

Published Date: Feb 18, 2012

Side-by-Side Monitors Can Interfere with each Other

I have a customer who bought an Apple RGB monitor and an Apple Two-Page Monochrome monitor to sit side-by-side. The monitors interfere with each other, so badly that I'm ready to send each of them back and buy third-party products. Anyway, what can be done to have both those monitors side-by-side without any screen warping?

This article has been archived and is no longer updated by Apple.
We found the following in the Technical Information Library using "monitor and interference" as a search string:

Apple Two-Page Monochrome Monitor: Images Vibrate

Interference between two monitors placed side-by-side can cause images on the monitors to vibrate. The reason is that, when placed side-by-side, monitors can magnetically interfere with each other, causing the image on one or both monitors to appear to vibrate slightly. This interference problem is most often seen when an RGB color monitor is placed next to a large-screen monochrome monitor. The amount of interference can also vary depending on the user's environment.

Moving the monitors further apart, especially the rear ends, usually reduces the vibration effect.

Technical Reason For Picture Vibrating

The cause of this shimmering effect lies in the vertical refresh rate, the number of times a monitor repaints the screen each second. When this rate differs significantly between monitors, the interference described above can occur. There is often a large difference between RGB and monochrome monitors. Thus, the vibration effect most often occurs with this combination. Because other factors are involved, it is possible for two monitors with the same refresh rate to exhibit this effect, although this is less frequent.

Shielding monitors so as to prevent this type of interference would add a great deal to the cost of each monitor. Further, by shielding a monitor you can prevent the monitor from interfering with other monitors, but other monitors could still interfere with it. Apple is investigating a number of technologies to prevent this interference in the future and plans to incorporate them as they become feasible.

We are sorry that we cannot solve your problem at this time, but you may see an improvement if:

- the orientation of the monitors is reversed

- the monitors are separated by 8-10 inches

- a metallic plane (foil-wrapped cardboard, for example) is placed between the monitors.

Published Date: Feb 18, 2012

System Folder: ‘Secure INIT‘ Update

This is regarding "RTA/Securing System Folder With 'Secure INIT'." Where can I get the "Secure INIT"?

This article has been archived and is no longer updated by Apple.
Secure INIT was available on commercial services like GEnie and CompuServe, but has been pulled due to potential directory and file damage.

You would be better off with one of the commercially available protection programs, like Empower from Magna.

Published Date: Feb 18, 2012

AppleShare: How To Change Network CDEV to EtherTalk

When using a Macintosh II family machine equipped with EtherTalk cards and running EtherTalk only, as an AppleShare server, how do I change the Control Panel's Network setting to EtherTalk?

Once AppleShare is up and running, the Network CDEV cannot be changed to EtherTalk because AppleTalk is active. The Chooser won't let me turn off AppleTalk.

If I have the AppleTalk Internet Router running on the machine, it's no problem because the ATIR handles the change.

This article has been archived and is no longer updated by Apple.
Here is a simple way to do this:

1) Start up the Macintosh with a floppy, system disk.

2) Set the startup application for the Macintosh hard disk to be the Finder. This prevents AppleShare from starting automatically the next time the Macintosh is started up.

3) Restart the Macintosh from the hard disk. It should boot to the Finder.

4) Use the Network CDEV to change from Built-in to EtherTalk.

5) Open the Server Folder and select the AppleShare File Server application (click it once). Set it as the startup application using the Special menu's Set Startup option. Be sure you don't select MultiFinder in this step, because the AppleShare File Server software is not MultiFinder-compatible.

6) Restart the Macintosh, and it should boot to the AppleShare File Server software, now using EtherTalk instead of LocalTalk.

Note that with EtherTalk version 1.2 and later, you can switch network connections without going through this process. The CDEV alerts you that network services will be disconnected and unavailable until restarting. A cancel option is available.

Published Date: Feb 18, 2012

HyperCard: XCMDs for MacinTalk

Is there anyone out there who has, or knows of, specific XCMDs for HyperCard that make use of the MacinTalk speech synthesis file?

On a similar note, has MacinTalk ever been updated beyond 1.3.1?
This article has been archived and is no longer updated by Apple.
If you can, get copies of the stacks "Talk To Me!" and "HyperMacinTalk." They include XCMDs that convert words and phonemes to MacinTalk speech. Talk To Me! is a ShareWare stack, and HyperMacinTalk is freeware, so they are both usable only for non-commercial purposes.

As for the latest version, MacinTalk 3 version 1.4 is the most recent as of July 1998. For more information on MacinTalk, read Apple Technical Note 268, titled "MacinTalk: The Final Chapter". Also check Technical Note 19, titled "How to Produce Continuous Sound Without Clicking".

The following Tech Info Library article can help you find the Tech Notes mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

TA43816_MacintoshtoDEC_Integration_Issues__(TIL05776).pdf

Macintosh-to-DEC: Integration Issues (1/95)

A new building, with approximately over 400 Macintoshes, is being set up with a full Ethernet-based network. All the workstations will be Macintosh IIci 8/80 systems, with a variety of DEC and Apple file- and data-servers. The cabling system to be used is thin-wire coax, with either thick-wire or fiber risers (ideally FDDI) in the building, leading to two wiring closets on each floor.

From each of the two closets, one strand of star-wired coax will extend to each workstation. Although it may seem strange, this cabling architecture has been decided upon before the network protocol and data distribution method has been finalized. As I understand it, DEC DEMPRs will be used for coax cable distribution, and some form of DEC bridge installed for DECnet traffic isolation, but this is subject to change.

I am unsure what routers/bridges are available for AppleTalk, DECnet, and AppleTalk and DECnet traffic management.

Obviously, the AppleTalk Internet Router is not a major player, as it can only route AppleTalk packets. DECnet packets, and, therefore, AppleTalk packets embedded ("tunneled") within DECnet packets would simply not get through. However, is there something in PATHWORKS for Macintosh that will act as a gateway between AppleTalk and DECnet? If so, how does this work? Layered on top of AppleTalk Internet Router perhaps? What products would you suggest, either from Apple, DEC, or third-party product families, that we should take a look at?

Finally, do you know of any Macintosh-familiar contacts in DEC who we could contact from this end on DEC-specific issues?

This article has been archived and is no longer updated by Apple.
Just so we are together on this, bridges operate at Layer 1 and the Media Access Control (MAC) sublayer of Layer 2 of the seven-layer Open Systems Interconnection model, and they route packets according to the destination address. Bridges, therefore, are protocol-transparent and allow networks to be constructed using multivendor products and multiple protocols.

Routers, on the other hand, operate at the network layer (Layer 3) of the OSI model and use the protocol information contained within the packet to determine how packets should be routed. In the past, routers were limited by their ability to handle only a single protocol. That's no longer the case.

Many of the newer bridges have multiple communications ports and route packets according to protocol, packet type, and packet length. These are often called "routing bridges."

The following routers support both DECnet and AppleTalk:

Cisco Systems's AGS is a self-learning/load-balancing router that connects 802.3 to 802.5 networks. Protocols supported are TCP/IP, OSI, XNS, DDN, X.25, DECnet, AppleTalk, and Novell's Internetwork Packet Exchange (IPX). It supports the Spanning Tree Protocol, source routing, up to 8 local nets and 14 wide-area net interfaces per unit at up to 4M bits/second. It supports RS-232-C, RS-449, and CCITT V.35. Net management supported is Simple Network Management Protocol (SNMP).

Network Equipment Technologies' LANExchange 50 is a self-learning/load- balancing router that connects 802.3 to 802.5 networks. Protocols supported are TCP/IP, DECnet, XNS, X.25, and AppleTalk. It supports the Spanning Tree Protocol, source routing, up to 24 local nets, and 24 wide-area net interfaces per unit at 1200 to 4M bits/second. It supports RS-232-C, RS-449, and CCITT V.35. Net management supported is Simple Network Management Protocol (SNMP).

Wellfleet Communications, Inc.'s Link Node/Concentrator Node is a self-learning/load-balancing router that connects Ethernet Versions 1 and 2; 802.3 to same local net. Protocols supported are TCP/IP, XNS, IPX, OSI, and AppleTalk. It supports the Spanning Tree Protocol, up to 26 local net on Concentrator Node; 8 on Link Node and up to 52 wide-are interface on Concentrator Node; 16 on Link Node. It supports RS-232-C, RS-449, CCITT V.35, T-1 DS1. Network management supported is SNMP and 802.1.

The AppleTalk/DECnet Transport Gateway in PATHWORKS for Macintosh allows users on one network to access services on the other network. It performs transport relay from DECnet NSP to and from AppleTalk Data Stream Protocol (ADSP). An example of use is running MacX on a Macintosh using a VAX DECwindows client. Without the gateway, the Macintosh needs to run DECnet protocol to talk to DECwindows on the VAX. With the gateway, the Macintosh can run AppleTalk and still can use the VAX DECwindows as its client.

With AppleTalk for VMS 3.0, one can use the VAX as a DECnet and AppleTalk router. With DECnet routing and AppleTalk routing turned on, the VAX can be used to route traffic between two AppleTalk networks. Network management is done via a new management utility called ATK$MANAGER.

For any DEC-specific issues, you may try the AppleLink address DIGITAL.SELL, Apple's DEC team.

For more details, search the Technical Info library under "Cisco Systems," "Network Equipment Technologies," and "Network Resources Corp."

Article Change History:
30 Jan 1995 - Reviewed for technical accuracy.

Support Information Services
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Display Card 8/24 GC: Compatible Third-Party Monitors

I ordered a Macintosh IIfx with the Display Card 8/24 GC. I am also considering a Radius or RasterOps monitor. Do our 24-bit video cards support third-party, large, color monitors?

This article has been archived and is no longer updated by Apple.
SuperMac is the only company that we are aware of that makes monitors that work with the Display Card 8/24 GC. SuperMac is selling two new monitors that work with the new Apple video cards. One is the "Color Two-Page Display" and the other is the "Platinum Two-Page Display."

Both these monitors have a display resolution of 1152 x 870 pixels. The Display Card 8/24 GC will support up to 8 bits per pixel on these monitors.

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TA43820_DOS_Volume_number_(TIL00578).pdf

DOS 3.3: Volume number

A DOS diskette's volume number is recorded in the address field of every sector on the diskette.
This article has been archived and is no longer updated by Apple.
The only way to change this information is to reinitialize the diskette.
Published Date: Feb 18, 2012

MacX25: List of Supported X.25 Functions

I need the facts for the following MacX25 categories:

- Packet retransmission support
- Closed user group with in- and outgoing access
- In- and outbound calls barred
- In- and outbound calls carred with a c.u.g.
- One way logical channel incoming and outgoing
- Multi-link procedures
- Direct call
- Hunt group
- Flow control parameter negotiation
- Abbreviated address calling

This article has been archived and is no longer updated by Apple.
Much of this information is in the manual. We assume you want to know if
MacX25 "supports" the following X.25 functions:

Packet retransmission support	No
Closed user group with in- and outgoing access	Yes
In- and outbound calls barred	Yes
In- and outbound calls carred with a c.u.g.	Yes
One way logical channel incoming and outgoing	Yes
Multi-link procedures	No (No X.25 "MultiLink Operation")
Direct call	N/A (but does have Call Redirection Notification)
Hunt group	N/A
Flow control parameter negotiation	Yes
Abbreviated address calling	Yes (implimented via configurable address files)

Published Date: Feb 18, 2012

DOS 3.3: Disk Layout

This article discusses the layout of the DOS 3.3 diskette.
This article has been archived and is no longer updated by Apple.
DOS reserves the first three tracks (0,1,2) of every disk for the boot image of itself, while track 17 ($11) is reserved for the directory and VTOC. Tracks 1 and 2 can be freed by modifying the bit map in the VTOC; however, the disk won't be able to boot properly.

Expanded the directory by changing the link bytes in bytes 1 and 2 of the last sector of the directory.

The number of sectors required for a DOS file can be calculated: Sectors = length / 256 + length / 256 / 122

The physical number of sectors required to hold the data is recorded in the first part of the expression. It's 2 bytes higher for a program and 4 bytes higher for a binary file. The second part contains the track/sector information, even when there is no data. Thus, the minimum number of sectors for a file is two.

Random access files, as are all files, are maintained through the track/ sector list at the beginning of the file. DOS:

- Locates the start of the record
- Determines which sector that byte would be in, relative to the start of the file
- Determines with the track/sector list in which sector the record is located
- Calculates the offset into the sector
- Writes data.

DOS allocates enough sectors in the track/sector list to access the required sector; however, DOS dosen't allocate any sectors when there hasn't been any data written to the records of that sector.

Example:
```
10 D$ = chr$(4)
20 print D$;"open test, L500"
30 print D$;"write test, R65"
40 print "hello"
50 print D$;"close test"
```

This program creates;

- 65 records * 500 bytes = 32500 bytes = 126 sectors
- 126 sectors = 2 track/sector list sectors

for a grand total of:

1 sector of data
2 sectors of track/sector list

No data sectors are allocated for records 0 through 64.
Published Date: Feb 18, 2012

Retrospect: Incompatible with "Tape Disk" Init

I got a copy of Dantz Development Corporation's Retrospect backup software to use with my Apple Tape Backup 40 SC drive, but it doesn't seem to work.

This article has been archived and is no longer updated by Apple.
Dantz Development Corporation, the makers of Retrospect (the site licensed archival/backup software) have found an init conflict between Retrospect and the Apple Tape Backup 40 SC drive's "Tape Disk" INIT.

Essentially, "Tape Disk" is an init that lets the user mount any tape inserted into the Apple Tape Backup 40SC drive onto the desktop. However, Retrospect also has an INIT called "Retro.SCSI" that has been optimized for use with the Apple Tape Backup 40 SC unit.

Thus, if "Tape Disk" is present in your System Folder and loads at startup, Retrospect will be unable to recognize the Apple Tape Backup Unit, (even if Retro.SCSI is not present in your System Folder) whether or not it can be seen using a diagnostic SCSI utility, such as the "SCSI probe" CDEV.

To fix this problem, remove the "Tape Disk" init from your System Folder and restart your Macintosh. Retrospect should recognize your Apple Tape Backup 40 SC unit at that point.

Published Date: Feb 18, 2012

Macintosh SE: Video Display Linearity Adjustments

Using a Macintosh SE, I have drawn three circles of equal size on the same horizontal axis. The circles are touching. When I measure the diameter of the circles on the screen, I find that although the right-hand one is OK, the left-hand one is 1/8 of an inch too narrow.

What's the official way of measuring screen linearity? What is the acceptable tolerance? Does Apple set up the CRT magnets or are they set up by the CRT supplier? How do I have them reset?

This article has been archived and is no longer updated by Apple.
Acceptable tolerance for linearity is approximately 10 percent (horizontal and vertical). That is, an object moved from one place to another will grow or shrink by no more than 10 percent. The CRT magnets, installed by the supplier, are extremely difficult to adjust and should not be moved, even by a service representative. There is no way to adjust linearity of the Macintosh SE display. Apple Manufacturing has developed test patterns to measure linearity.

If the user is dissatisfied with the appearance of the display, the analog sweep PRINTED CIRCUIT BOARD should be replaced by an authorized service provider.

Published Date: Feb 18, 2012

Display Card 8■24 GC: Using With Different Monitors

With a Macintosh Display Card 8*24 GC installed for one monitor, and a number of other cards for other monitors (Apple or third party), will all the monitors benefit from the Macintosh Display Card 8*24 GC? Will if accelerate QuickDraw for the other monitors as well.
This article has been archived and is no longer updated by Apple.
When multiple display cards are installed, the Macintosh Display Card 8*24 GC accelerates drawing in frame buffers of the Macintosh Display Card 4*8, Macintosh Display Card 8*24, and other frame buffer cards.

The Macintosh Display Card 4*8 and Macintosh Display Card 8*24 show the most improvement because they support slave NuBus block transfers and many other display cards do not.

Acceleration for frame buffers other than the one resident on the Macintosh Display Card 8*24 GC would not be as dramatic because of the greater amount of NuBus traffic required.

Only one Macintosh Display Card 8*24 GC may be used for graphics acceleration in a system. If two cards are present, one must have its acceleration function disabled.

Published Date: Feb 18, 2012

AppleWorks: Settings and Codes for Star Dot Matrix Printer

This article gives the settings and codes for the Star Dot Matrix Printer.
This article has been archived and is no longer updated by Apple.
Do not change the default settings of the Custom printer except -- for Platen Width, which should be changed to 13.2 inches in case the printer has a wide carriage.

Menu Item	Value	Entry
1. Characters per inch	5	[ESC]B[CTRL-A][ESC]W[CTRL-A]^
1. Characters per inch	6	[ESC]B[CTRL-B][ESC]W[CTRL-A]^
1. Characters per inch	10	[ESC]B[CTRL-A][ESC]W[CTRL-@]^
1. Characters per inch	12	[ESC]B[CTRL-B][ESC]W[CTRL-@]^
1. Characters per inch	17	[ESC]B[CTRL-C][ESC]W[CTRL-@]^
2. Lines per inch	6	[ESC]2^
2. Lines per inch	8	[ESC]0^
3. Boldface	begin	[ESC]G^
3. Boldface	end	[ESC]H^
3. Subscript	begin	[ESC]S[CTRL-A]^
3. Subscript	end	[ESC]T^
3. Superscript	begin	[ESC]S[CTRL-@]^
3. Superscript	end	[ESC]T^
4. Underlining	begin	[ESC]-[CTRL-A]^
4. Underlining	end	[ESC]-[CTRL-@]^

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Published Date: Feb 18, 2012

LaserWriter 2.0 ROM: Parity & Hardware Handshaking Change (2/95)

This article has been archived and is no longer updated by Apple.
The LaserWriter's serial communication capability has been enhanced. The DTR flow control protocol has been introduced as an alternative to the XOn/XOff protocol.

DTR flow control makes use of a control signal, Data Terminal Ready, which is available through the DB-25 connector (but not through the DB-9 connector). Normally the LaserWriter leaves this signal turned on. However, when it needs to stop the flow of characters from the host, it turns DTR off. The host must immediately stop sending characters until the LaserWriter turns DTR back on again. Similarly, another signal, Data Set Ready, (DSR) may be used by the host to control the flow of data sent to it from the LaserWriter.

Failure of the host to conform to the selected flow control protocol may result in unexpected occurrences of 'ioerror', caused by overflow of the LaserWriter's input buffer. Note that only one flow control protocol can be used at a time, and for flow control to work correctly, the LaserWriter and the host must agree on which protocol is in use.

The parity parameter of 'setsccbatch' or 'setsccinteractive' has been changed to an options parameter that encodes both the treatment of the parity bit (as before) and the choice between Xon/Xoff and DTR flow control. The values of the options parameter now have the following meanings:

Xon/Xoff Flow Control

0 Ignore parity: (RCV high order bit ignored, XMIT high order bit is zero).
1 Odd parity: (RCV checked for odd parity, XMIT each character has odd parity)
2 Even parity: like odd but for even parity.
3 No parity: all eight bits are data and no checking is performed.

DTR Flow Control

4 Ignore parity (see 0 above)
5 Odd parity (see 1 above)
6 Even parity (see 2 above)
7 No parity (see 3 above)

The 9 pin connector's signal pin assignments are unchanged from before.
The set of signals on the DB-25 have been slightly expanded as follows:

2 Transmit Data
3 Receive Data
4 Request to Send (RTS) (optional)
6 Data Set Ready (DSR) (optional)
7 Signal Ground
20 Data Terminal Ready (DTR) (optional)

A cable diagram for connecting a LaserWriter to an RS-232 port might look
like this:

. RS-232 Port Pin -- Pin on LaserWriter

. 2 2
. 3 3
. 6 6
. 7 7
. 20 20

The optional signals need to be connected only if the host computer requires them. If DTR flow control is used, the DTR and DSR lines must be connected.

Availability of DTR flow control considerably simplifies use of the LaserWriter from some computer systems, including the IBM PC. To set up the IBM PC for communication with the LaserWriter over serial port 1 using DTR flow control, issue the commands:

MODE COM1:9600,n,8,1,p

MODE LPT1:COM1

To set up the LaserWriter, connect your serial cable from the LaserWriter to the RS-232 port, set the server mode switch on the LaserWriter to the '9600' position and send from the host computer to the LaserWriter the following
PostScript Code:

Caution:

If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

```
%=============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin
25 9600 4 setsccbatch
end
%
% end PostScript Code
%=============================================================
```

This changes the LaserWriter over to DTR flow control when executing in PostScript batch mode over the 25 pin connector. The LaserWriter will now be communicating with the RS-232 port using DTR (hardware) handshaking. This status is written into EEROM and will be permanent until changed.

To set up the LaserWriter to use DTR flow control during Diablo 630 emulation, send it the same program with 'setsccinteractive' substituted for 'setsccbatch'.

To change back to Xon/Xoff (software) handshaking, send this PostScript code to the printer:

```
%=============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin
25 9600 0 setsccbatch
end
%
% end PostScript Code
%=============================================================
```

These programs need to be sent to the LaserWriter with the server mode switch set to '9600' even if setting up Diablo mode communications protocols. Once the handshake mode is changed, the user may then switch to Diablo mode (switch in 'Special') if desired.

Article Change History:
23 Feb 1995 - Reviewed for technical accuracy. Added PostScript caution.

Support Information Services

Published Date: Feb 18, 2012

5208 Protocol Converter: Macintosh Substitute For Dial3X

I use "Dial3X" to access my IBM AS400 via the IBM 5208 protocol converter.

Dial3X is full 5250 emulation using the 5208 FILEXFR protocol. I'm looking for a Macintosh software solution. Do you know of any software for the Macintosh that is equal to Dial3X?

This article has been archived and is no longer updated by Apple.
The 5208 Protocol Converter provides support for "non-IBM ASCII terminals", meaning that it supports VT100, and probably other terminal types too.

After you find out which terminals are supported, you can choose from a wide range of emulators available for the Macintosh, or merely use a VT100 emulator such as MacTerminal or MicroPhone II. You will also need to verify what kind of file formats are being used, and what file transfer methods are provided by the 5208, but one or more of the commonly used generic types of transfer programs will likely be supported by the 5208 and terminal emulators.

Published Date: Feb 18, 2012

LaserWriter 8500: Actual Versus Specified Line Length

I own a LaserWriter 8500 that I use in my publishing business for outputting single color separations. I require a high-level of printing accuracy for this type of work. On some of my printed output I have observed that the specified output length for lines does not always match the actual output length when printed to the LaserWriter 8500. The actual output length can be up to 1/16" shorter than expected. Is this normal?
This article has been archived and is no longer updated by Apple.
As you require extreme output precision, you may observe that the specified output doesn't match the actual output in the scanning direction. For example, an 8x8 inch square drawn in a graphics application and then printed to the LaserWriter 8500 may have sides whose length varies from the specified 8 inches. The side of the rectangle parallel to the feed direction (vertical) is typically the specified length, yet the side parallel to the scanning direction (horizontal) may be slightly shorter.

The printed output from the LaserWriter 8500 is within specifications and is not a cause for concern for the majority of customers. If you require precision output, Apple has released a modified PPD file which provides a method for fine-tuning the printed output. The PPD provides 8 adjustment settings from which to choose until appropriate output is realized.

The modified PPD file titled LaserWriter 8500 PPD 1.2 can be downloaded from the Apple Software Updates web site at **http://www.apple.com/swupdates**. A Read Me file is included with the update which provides detailed installation and usage instructions.

Published Date: Feb 18, 2012

AppleVision 1710: Repair Program Ended

My AppleVision 1710 display is showing a black screen. The green LED on the front is on but the image is all black. Is there a special repair program to fix this problem?
This article has been archived and is no longer updated by Apple.
There are no special warranty repair programs available for the AppleVision 1710 and 1710AV displays. The last repair program ended December 31, 1998.

The following instructions will help you perform a display reset if the LED is on but no video is displayed:

1. Connect the display to a Power Macintosh computer running the AppleVision software version 1.5.5 or later*.
2. Connect the power, video, and ADB cables to the Power Macintosh.
3. Power on the computer while holding down the Command-Option-A-V key combination until you hear the system beep sound.
4. The system beep indicates that the display has been reset.

If the image does not return, contact an Apple Authorized Service Provider to facilitate the repair of your display for you. To locate a dealer near you call 1-800-538-9696.

*Apple Displays 1.5.5 previously known as AppleVision software includes several changes from AppleVision 1.5.3. and can be downloaded from the Apple Software Updates Web site at http://www.apple.com/swupdates.
Published Date: Feb 18, 2012

iMac: What‘s That Covered Oval Hole Behind the I/O Door?

There is a small access cover behind the I/O door on iMac. What's behind the cover?

This article has been archived and is no longer updated by Apple.

The covered hole was only present in first generation iMac computers. It provided access to the logic board for Apple's development team.

Published Date: Feb 18, 2012

PowerBook 3400 & G3: Installing Memory

Can I install additional memory in my PowerBook 3400 computer?
This article has been archived and is no longer updated by Apple.
Installing memory in the PowerBook 3400 and G3 computer is possible if you are familiar with electronic components. If you attempt installation, any damage caused by the installation will not be covered by the Apple Limited Product Warranty.

In order to accomplish the installation you will need a Torx T-8 screwdriver and a soft cloth to protect the display. The RAM card must use TSOP low-profile RAM chips only. A card with high profile chips may damage your computer. Verify with the memory vendor that the card is specifically designed for use with a PowerBook 3400 or G3 computer.

All instructions presume you are facing the PowerBook as if you were typing.

First, disconnect all cables from the unit, close and latch the display, and remove the battery. On the bottom side of the PowerBook are three screws which attach the keyboard, remove all three screws. Turn the computer back over to drop the screws out.

Next, open the display and remove the keyboard. You may have to use a small tool to gently lift the keyboard from the PowerBook. Lift the front edge of the keyboard up above the palmrest and gently pull it towards you approximately 3/8 of an inch to release it from the computer. There are two cables which attach the the keyboard to the logic board, pulling more than 3/8 of an inch can damage the cables.

Place a soft cloth over the display to protect it and lay the keyboard face up on the cloth.

Touch the metal area inside the PowerBook to dissipate any static electricity you may have built up on your body before handling the RAM card.

If you are replacing an existing RAM card, remove it by gently lifting up on the lower right corner of the card and rocking it out. The new card will take its place. Align the new card on the socket and press down firmly until you feel the card seat into the connector. Be sure the card is level and firmly installed into your PowerBook to ensure reliable operation.

To reinstall the keyboard, insert the back edge under the speaker grille and press down on the front edge to seat the keyboard into the PowerBook. Adjust the display so it is at a 90 degree angle to the computer and rest the PowerBook display on a table top. In this orientation the bottom of the PowerBook will be facing you, then replace the three screws securing the keyboard. Gently squeeze the keyboard and PowerBook to ensure a close fit while replacing the screws. Be careful not to overtighten them, stop when they are snug.

Turn the PowerBook back over, reinstall the battery and power it on to ensure the PowerBook is functioning properly. Once booted up, choose About This Computer from the Apple menu and check the total amount of memory installed. It should be 16MB plus the size of the card installed. If it is not or if the PowerBook makes the sound of breaking glass or get a memory error message during bootup, there could be a problem with the RAM card and it should be removed.

Note: Macintosh PowerBook G3 Series computers should not be confused with Macintosh PowerBook G3 computers. Though the names are similar, there are significant differences. To visually identify which type of computer you have, close the display and inspect the display case. A Macintosh PowerBook G3 has a small, six-color Apple logo on the display case. A Macintosh PowerBook G3 Series computer has a large Apple logo on the display case that is not six-colored.

Published Date: Feb 18, 2012

Mac OS 8.5: Keyboard Commands Disabled by Simple Finder

After installing Mac OS 8.5, I have noticed that when I am in the Finder, none of the traditional keyboard commands seem to work (Command-W, Command-N, etc.).
This article has been archived and is no longer updated by Apple.
If you enabled the Simple Finder option during or after the install, keyboard commands, among other things, are disabled. This is a feature introduced with Mac OS 8. To undo this option, go to the Finder and select Preferences from the Edit menu. Uncheck the Simple Finder option and close the Preferences window. This will re-enable features disabled by Simple Finder.

The following are disabled when Simple Finder is active:

- get info (including setting up sharing)
- label
- add to favorites
- make alias or show an original
- put away a desktop item
- print from the Finder
- select all items
- get to the clipboard
- make pop-up windows
- clean up, arrange or sort items in a view
- access view options
- erase a disk
- sleep or restart
- Command keys are not displayed in the menus and do not work for those items present. Command keys also do not function for commands that have been removed
- Pop-up windows and context menus are not available
- Folders that are being viewed as pop-up windows return to windows
- Settings in Preferences and View Options remains persistent when switching between short and long menus

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Disk First Aid 8.2.1: Restarts iMac When Quit

Disk First Aid version 8.2.1 or later will automatically restart an iMac when you quit the application.
This article has been archived and is no longer updated by Apple.
To repair some hard drives safely, Disk First Aid needs to quit all applications, including the Finder. With Disk First Aid version 8.2, occasionally icons on the Desktop would not reappear until after the computer was restarted.

Disk First Aid version 8.2.1, running on iMac, automatically restarts the computer after quitting. Future versions of Disk First Aid will not require the restart. Currently Disk First Aid version 8.2.1 ships only with iMac, however, similar behavior could be expected on a different computer running this version.
Published Date: Feb 18, 2012

Mac OS 8.5: PowerBook 3400/G3 Modem Extension Required

I am using a non-Apple modem with my PowerBook 3400 so I removed the Apple Modem extension. Now ethernet does not work.
This article has been archived and is no longer updated by Apple.
For ethernet to work properly on either a PowerBook 3400 or a PowerBook G3 (not G3 Series), the PowerBook 3400/G3 Modem extension must be installed. The extension is installed on both of these PowerBooks with Mac OS 8.5, do not remove it, even if other modem software is installed. Removing this extension will result in the loss of the ability to use ethernet connections.

Note: Macintosh PowerBook G3 computers should not be confused with Macintosh PowerBook G3 Series computers. Though the names are similar, there are significant differences. To visually identify which type of computer you have, close the display and inspect the display case. A Macintosh PowerBook G3 has a small, six-color Apple logo on the display case. A Macintosh PowerBook G3 Series computer has a large Apple logo on the display case that is not six-colored.
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Mac OS 8.5: Setup Assistant Not Recognizing CSW 4xxx Drivers

Mac OS Setup Assistant, under Mac OS 8.5, does not seem to recognize my Color StyleWriter 4100.
This article has been archived and is no longer updated by Apple.
The Mac OS Setup Assistant does not recognize, and is unable to configure the Color StyleWriter 4000 Series drivers and therefore, the Apple Color StyleWriter 4100 or Color StyleWriter 4500. To configure one of these printers, you will need to do so through the Chooser.

If you use the Mac OS Assistant to configure your computer, after responding to all of Mac OS Setup Assistant questions, quit the assistant and open the Chooser. Then select the Color StyleWriter 4000 Series driver to setup your printer for use on the appropriate serial port.
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Mac OS 8.5: Menu Background Appears White

With Mac OS 8.5, some applications draw menus with the Platinum appearance setting, while other application menus appear with a white background.
This article has been archived and is no longer updated by Apple.
This issue resides within the third party applications. If an application uses an non-Appearance savvy menu definition (MDEF resource), it will get white menus.

Another possible, but less frequent, cause of this appearance, might be an MDEF virus.

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Mac OS 8.5: Enhanced Auto-Routing Folders Inside System Folder

What are auto-routing folders in the Mac OS, and are there new ones for Mac OS 8.5?

This article has been archived and is no longer updated by Apple.
Auto-routing folders are those folders within the System Folder that appropriately receive items dropped onto the System Folder. This relieves the user of having to know into which sub-folder within the System Folder a new item needs to be placed. To utilize this feature, simply drop any System Folder addition(s) onto the closed System Folder. A dialog will appear indicating which inner folder will actually receive the dropped item(s).

Auto-route folders are sometimes referred to as magic folders, because of the intrinsic ease of their access though the top level System Folder.

The Finder in Mac OS 8.5, now uses the Folder Manager for auto-routing items dropped into the System Folder into folders that have been registered with the Folder Manager for auto-routing.

Some examples of new folders within the System Folder support auto-routing of items are:

- Preference files (with type "pref") - now correctly routed to the Preferences folder
- ColorSync Profiles - routed to the ColorSync Profiles folder
- Theme files - routed to folder Theme Files in the Appearance folder
- Theme Sound files - routed to folder Sound Sets in the Appearance folder
- Picture files (JPEGs) - routed to folder Desktop Pictures in the Appearance folder
- Find file search engines - routed to the Internet Search Sites folder
- Compiled scripts - routed to the Scripts folder (Note: this may not be the appropriate place due to the organization of sub-folders within the Scripts folder.

There are other enhancements to auto-routing that are of more interest to developers installing their products. These are detailed in the Tech Note for Mac OS 8.5.

Published Date: Feb 18, 2012

AppleScript: Trademark Symbol Removed from Folder

Why was the trademark symbol dropped from the AppleScript folder in Apple Extras folder?
This article has been archived and is no longer updated by Apple.
This was done to simplify localization of folder names for international software. Other products, such as QuickTime, have also had the trademark symbol removed from file and folder names.

After installing Mac OS 8.5, there will be two AppleScript folders in the Apple Extras folder, the old folder with the trademark symbol and a new folder without. The old AppleScript folder is left in the Apple Extras folder, in case you have moved other material to this folder. The old Script Editor is deleted from the old AppleScript folder, and the new Script Editor placed in the new AppleScript folder.

If there is nothing in the old AppleScript folder that you wish to save, then you may safely move it to the Trash.

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Mac OS 8.5, 8.6, 9.0: Keyboard Shortcuts

What keyboard shortcuts are available in Mac OS 8.5, 8.6, and 9.0?
This article has been archived and is no longer updated by Apple.
Here are the keyboard shortcuts for Mac OS 8.5, 8.6, and 9.0 a plus sign (+) means keys are held down together.

Getting out of freezes
If your computer freezes while you are using it, the following key combinations may help to recover from the freeze.

- - Turns your computer on and off. Your work will be saved before the computer shuts down.

- - Cancels an operation in progress.

- - Forces a program to quit. Unsaved work will be lost.

- - Restarts or shuts down the computer (on some models). Unsaved work will be lost.

- - Forces the computer to restart. Unsaved work will be lost.

Starting up
Holding down the individual key or key combination during startup will provide the described results.

- - Rebuilds the Desktop file.

- - Turns off extensions in the Extensions folder.

- - Closes all open windows in the Finder.

- - Resets Chooser and control panel settings stored in parameter RAM.

- - Starts up the computer from a CD.

- - Bypasses the startup disk when starting up.

Working with icons

Arrow Keys - Selects the icon above, below, to the left, or to the right of the selected icon.

Letter keys - Selects the icon whose name begins with the letters typed.

- - Selects the next icon alphabetically.

- + Click icon - Selects all of the icons clicked.

Drag across icons - Selects all icons in the group.

- + Double-click icon - Opens the icon and closes the window the icon is in.

- + Drag icon to folder - Copies the icon to the folder.

- - Highlights the name of the selected icon.

- + Drag icon(s) - Aligns selected icon(s) to the nearest gridpoint.

- +Drag icon - Creates an alias of the icon.

- - Moves selected icons to the Trash.

Working with windows

- +Click close box - Closes all disk and folder windows.

- +Click collapse box - Collapses all disk and folder windows.

- - Closes the frontmost window, or collapses a pop-up window to its tab state at the bottom of the screen.

- - Closes the frontmost window and converts it from a pop-up window to a normal Finder window.

- - Closes all open windows and converts them from pop-up windows to normal Finder windows.

- +Click zoom box - Enlarges a window to the full size of the screen.

- +Switch programs - Hides the windows of the previous program.

- +Drag window - Moves a window without making it active.

- +Press window's title - Displays a pop-up menu of folders to which the current folder belongs.

- - In a list view, expands the contents of the selected folder(s).

- - In a list view, collapses the contents of the selected folder(s).

- +Expand folder - In a list view, expands the contents of the folder and all folders contained within it.

- +Collapse folder - In a list view, collapses the contents of the folder and all folders contained within it.

Saving files
These shortcuts work in Save dialog boxes. A plus sign (+) means keys are held down together.

- - Selects the item above or below the selected item.

Letter keys - Selects an item in the active list whose name begins with the letters typed.

- - Moves to the next keyboard focus item.

- - Moves to the top of the scrolling list.

- - Moves to the bottom of the scrolling list.

- - Scrolls the list up one screen.

- - Scrolls the list down one screen.

- - Moves up one level in the file hierarchy.

- or - Changes current location to the desktop.

- or - Opens the selected folder or volume.

- or - Selects the original of an alias.

- - Creates a new folder.

- - Clicks the Save button (if it is active).

- or - Clicks the default button (usually Save or Open).

- or - Closes the dialog box.

Additional keyboard shortcuts for the new Save dialog box
The following keyboard shortcuts also work in the new Save dialog box.

- - Displays the next location in a historical sequence (similar to the "Forward" command in Web browsers).

- - Displays the previous location in a historical sequence (similar to the "Back" command in Web browsers).

Opening files
These shortcuts work in Open dialog boxes. A plus sign (+) means keys are held down together.

- - Selects the item above or below the selected item.

Letter keys - Selects an item in the active list whose name begins with the letters typed.

- - Moves to the top of the scrolling list.

- - Moves to the bottom of the scrolling list.

- - Scrolls the list up one screen.

- - Scrolls the list down one screen.

- - Moves up one level in the file hierarchy.

- or - Changes current location to the desktop.

- or - Opens the selected folder or volume.

- or +Open alias - Selects the original of an alias.

- or - Clicks the Open button.

- or - Closes the dialog box.

Keyboard shortcuts for the new Open dialog box
The following keyboard shortcuts also work in the new Open dialog box.

- - Selects all files that can be opened (if the Edit menu is active).

- - Expands the selected folder or volume.

- - Collapses the selected folder or volume.

- - Displays the next location in a historical sequence (similar to the "Forward" command in Web browsers).

- - Displays the previous location in a historical sequence (similar to the "Back" command in Web browsers).

Taking pictures of your screen
To create a picture file of all or parts of your screen, hold down these keys. (The file is saved on your startup disk.) A plus sign (+) means keys are held down together.

- - Creates a picture file of the entire screen.

- - Creates a picture file of a rectangular section of the screen. (After pressing and releasing the key combination, drag across the part of the screen you want to take a picture of.)

- - Creates a picture file of a window. (After pressing and releasing the key combination, click the window you want to take a picture of.)

Note: To copy a section of the screen or a window to the Clipboard instead of saving it as a file, press the Control key as you select the part of the screen or window.

Working with languages
These shortcuts work on computers with WorldScript installed. WorldScript is software that lets you use other languages on your computer, and is installed by Apple language kits.

- - Rotates to the default keyboard layout or input method in the next script.

- - Rotates to the next keyboard layout or input method in the active script.

Note: This shortcut is available, even without WorldScript installed, by selecting this option in the Keyboard control panel.
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MacX: Can‘t Start Remote VAX Applications on MultiNet (1/95)

This article discusses why MacX is unable to start up remote applications on VAX systems running MultiNet.

This article has been archived and is no longer updated by Apple.
We have been testing MacX in a DECwindows, VMS/Multinet environment and were never able to get it to work successfully.

We have been working with TGV technical support to find out why MacX is unable to start up remote applications on VAX systems running MultiNet. We were able to get DECwindows applications to display on the MacX server using TCP/IP transport (no DECnet transport, since we don't have that connection tool on my Macintosh), only if we started the application manually on the VAX. We were unable to use the MacX "Remote" menu to start the applications from the Macintosh. The problem was traced to a problem in the rexec server on the VAX.

MultiNet is based on the UC Berkeley implementation of TCP/IP. This is a fairly robust implementation of TCP, since it has been around since about 1982 and has been tuned significantly over the years. However, the Berkeley people added the notion of "privileged ports" to their implementation of TCP.

A TCP port number is a 16-bit integer which identifies individual applications on the same host. In the UCB world, port numbers 1-1023 are considered "privileged," and only the superuser is allowed to access them. The UCB rshell and rlogin protocols use this concept to do remote authentication without sending passwords over the network. The basic idea is that if a request comes in from a privileged port on the remote host, then it must be the superuser making the request, so the server "trusts" the requester. The authentication procedure then proceeds without the use of passwords (I'll not bore you with the details). If the requester is not using a privileged port, then the request is denied (i.e. the server closes the connection). (Aside: if the host on which the requester resides does not have the concept of a privileged port, then it could conceivably allow anyone to open a port in the range 1-1023 and thus spoof the UCB rshell/rlogin servers. This makes the privileged port concept a bad idea.)

MacX does not use the rshell protocol; it uses the rexec protocol instead. Rexec does not use the privileged port authentication scheme, but instead relies on the username and password being sent over the network. The MultiNet rexec server erroneously checks to make sure that the requester is using a privileged port and closes the connection if it is not. This behavior is incorrect. Rexec does not use the privileged port number scheme, so it should not do this check. The rexec server distributed with UCB-based UNIX systems (like Ultrix and SunOS) is implemented properly, so it does not do the check. That is why MacX interoperates well with UNIX, but not with VMS/MultiNet. I do not know if other TCP/IP implementations for VMS have this problem or not. Oh yeah, since A/UX contains the UCB networking code, including the r-utilities, it works fine as well.

Please note that the problem is not in VMS DECwindows, nor is it in the interaction between DECwindows and the TCP/IP transport provided by MultiNet. We know this because we were able to start up DECwindows clients from the VAX and that worked properly. The problem is only with the MultiNet rexec server erroneously checking for a privileged port from the requester, and TGV has indicated to me that the problem will be fixed in MultiNet V2.2. This problem will not affect using MacX with the DECnet connection tool, since DECnet obviously doesn't use the rexec protocol. It will also not have any affect on other implementations of TCP/IP for VMS, unless they have the same problem.

Article Change History:
30 Jan 1995 - Reviewed for technical accuracy.

Support Information Services
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Mac OS 8.5: What is the Installation Report

What information is stored in the Installation Report?

This article has been archived and is no longer updated by Apple.
Selecting the Create Installation Report option (enabled by default) will generate a text file that records the date and time of installation, the location of files added, removed, and replaced during the installation, and whether the installation was successful. This file will be saved in a folder on the hard disk called Installer Logs.
Published Date: Feb 18, 2012

External SuperDrive: Macintosh Compatibility Listing (3/94)

Which Macintosh models support the External Apple SuperDrive (M0112)?

This article has been archived and is no longer updated by Apple.
The Apple External SuperDrive (formerly Apple FDHD) is compatible with:

* SuperDrive-capable Macintosh SE
* Macintosh SE/30
* Macintosh IIcx
* Macintosh IIci
* Macintosh Classic and Classic II
* Macintosh IIsi
* Macintosh Portable

Article Change History
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18 Jul 1994 - Revised topic wording.
31 Mar 1994 - Reviewed for technical accuracy, updated formatting.
17 Mar 1993 - Revised to include all applicable Macintosh models.

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Mac OS 8.5: What Web Information is Contained in Internet Control Panel?

What kinds of web-related information goes into the Internet control panel?

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The web section contains the selection for a default home and search page, where you want files downloaded to, the color of read and unread links, and your default web browser.

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Mac OS 8.5: Register With Apple

What is the purpose of "Register with Apple"? What is a workaround if it does not work?
This article has been archived and is no longer updated by Apple.
Mac OS 8.5 includes an application called Register with Apple, first introduced with the Apple iMac computer.

This is an automated AppleScript which checks to see if the customer has a valid Internet Setup already configured. If not, it launches Apple Internet Assistant. The whole process proceeds until the user either cancels or has a valid Internet dial-up connection configured. Then the software launches the iMac's default browser and attempts to connect to Apple's Online Product Registration site.

Workaround

If you are unable to successfully register using the Register with Apple application, you can also register by:

- Using your web browser to open " http://www.apple.com/register/ "
- Complete the product registration card included with the product you purchased

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LaserWriter: "Prepping" a LaserWriter on a Mixed Network

Is it possible to prep an Apple LaserWriter II without a Macintosh on the network?

I have mixed PCs, UNIX, and Macintoshes on LocalTalk network. I turn off the LaserWriters at night but in the morning a Macintosh user may not be the first person that prints. Does AppleShare PC handle this? Is there a TEXT PostScript version of the LaserWriter prep we can download via other types of CPU? Any idea on this

This article has been archived and is no longer updated by Apple.
AppleShare PC does not require that a LaserWriter be "prepped" by a Macintosh, or by sending a prep file from the PC before printing. It is capable of printing to a LaserWriter without any Macintosh assistance.

Some programs do require features that are only available in downloaded dictionaries, but these products typically include their own LaserWriter driver that handles this. If a user writes PostScript code on the PC that requires features provided by Laser Prep, they can extract the substance of Laser Prep from a Macintosh, and then download it from the PC along with their code.

Capturing the Laser Prep code on a Macintosh can be done by separating it from any PostScript file that has been generated, by holding down Command-K at print time. Here is the procedure:

1) Use the Chooser to select a LaserWriter, and turn off Background Printing.

2) Open a word processor and create an empty document.

3) Choose the Print... command in the File menu.

4) Click OK.

5) Immediately hold down the Command and k keys.
- the k key dumps a PostScript image with Laser Prep
- the f key would dump a PostScript file without Laser Prep
Hold the keys down until you see the Print Status dialog box.

The Print Status dialog box will say "Creating PostScript File." When the program is through printing, you will find a text file in the current application's folder called "PostScriptn," where n is a number that increments from 0 for each print job. If this is your first try, the file should be named "PostScript0."

Now that you have the PostScript file, you can extract the Prep section by editing it with your word processor. Cut out the section at the end that represents the empty print job. It should begin after the file's first blank line and look something like this:

T T 0 0 730 552 -31 -30 761 582 100 72 72 1 F F F F T T T F psu
(Bill's Macintosh IIx; document: Untitled)jn
...and so on...

What remains can be transferred to the PC, and downloaded from there to the LaserWriter whenever needed (along with the user's code).

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TA43852_Business_BASIC_III_Numerics_(TIL00581).pdf

Business BASIC III: Numerics

This article has been archived and is no longer updated by Apple.
Apple III Business BASIC uses the same floating point math package that Applesoft uses internally. However, Business BASIC only display a maximum of 6 decimal digits when it prints. This limitation was built in because the last three digits of Applesoft's math package develop errors that can seriously affect some applications.
Published Date: Feb 18, 2012

MacTCP: List Of Applications

Is there a list of all commercial and public domain programs that use the Apple MacTCP driver or that allow the Macintosh onto a TCP/IP network (either through a DDP/IP gateway or directly onto Ethernet)?

This article has been archived and is no longer updated by Apple.
The following is a substantial, but by no means complete, list of programs that use MacTCP:

Commercial Products that use MacTCP

MacX from Apple

HyperCard MacTCP Toolkit from Apple (APDA)

TCP/Connect (Telent: VT240,TN3270, TEK 4014, FTP, Mail, News) from InterCon

MacPathWay Access (Telent: VT240, TN3270, FTP, SMTP mail) from Wollongong

NetOne TCP for Macintosh (FTP, Telnet) from Ungermann-Bass

TCPort Host Access (FTP, Telnet) from Novell

Database access from Oracle and Informix (WingZ)

TGRAF (Tektronix 4017) graphics emulator from Grapoint

Mathematica (mathematical modeling) from Wolfram Research

GatorMail SMTP gateway from Cayman Systems

Exodus (X window server) and a VT 220, 240, 241 emulator from White Pine Software

Non-commercial Products that use MacTCP

MacIP, MacMH (FTP, Telnet, Mail) from Stanford University

NCSA Telnet from NCSA, University of IL

3270 emulator from Brown University

BeaverGate SMTP gateway for QuickMail

For more information, search the Technical Information Library under the names of the various vendors.

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Mac OS 8.5: Apple System Profiler 2.1.1 Features

What are the features of Apple System Profiler 2.1.1?
This article has been archived and is no longer updated by Apple.
The Apple System Profiler (ASP) is a software application that gathers and displays information about the Macintosh computer on which it is run. This information includes data such as system software version, memory installed, types and number of hard disk volumes attached, and information on installed control panels, extensions, and applications. The goal of Apple System Profiler is to provide all who service and support Power Macintosh systems with an easily understood, consistently available, extensible, scalable and accurate profile of the computer they are working with.

Apple System Profiler version 2.1.1 provides many new features and enhancements over previous versions. Some of the overall goals for version 2.1.1 are to add features that have been requested, to support new Power Macintosh models, and to match the Mac OS 8 appearance "look and feel" more closely.

Features
ASP v2.1.1 adds many changes since the v1.4 release:

- ASP 2.1.1 supports AppleScript scripting and some, but not all, features are recordable with the Apple Script Editor. AppleScript support includes:
- Querying or setting which data options to gather in a system profile report
- Creating a system profile report (document)
- Saving a report to disk
- Printing a report
- Retrieving the text of a report

ASP 2.1.1 uses the Mac OS 8 Finder's "look and feel" to present its Control Panels, Extensions, and Applications file information. Additional information is provided when an item is selected (similar to the Extensions Manager). The Devices and Volumes Information now links volumes with associated drive devices, displaying this information in a graphical format.

ASP 2.1.1 adds significantly more information, such as drive serial numbers and RAM configuration, to further assist end users and support technicians in the troubleshooting process. Compared to earlier ASP versions, ASP 2.1.1 displays the following additional information:

- RAM configuration (location, size, and type)
- Lists of machine names (earlier versions only said "Power Macintosh" if there were multiple versions of the same machine)
- Device information (as applicable):
    - USB
    - SCSI and Internal ATA
    - SCSI and ATA device serial numbers, if available
    - PCI
    - NuBus
    - PC Card and Media Bay
    - Personality card name
    - Network volumes
    - Internal RAM Disk
    - Floppy
- Additional information about cards, such as Ethernet card's hardware Ethernet addresses
- Keyboard type
- Driver version numbers for drives with media
- File sharing status for each volume
- Volume partition and disk sizes (and % full)
- Cache sizes (backside and external)
- Matches drives/devices to volumes
- Desktop printer information
- File creation, modification, file size, memory size, and "balloon help" info
- Looks for file information on multiple volumes of the user's choice
- Web sharing status (on/off--doesn't indicate whether installed or not)
- QuickTime version (does indicate whether installed or not)
- Matches display information with built-in video or display cards
- Open Transport settings:
    - AppleTalk, TCP/IP
    - Whether single-link multihoming (Open Transport 1.3 or later) is active or not
- Drag and Drop information onto the Finder desktop (text-clipping file), and other applications

Additionally, ASP 2.1.1 no longer displays the OpenDoc version or the customer care code.

System Requirements
Minimum Hardware Requirements:

- iMac or PowerPC Macintosh or Macintosh computer with a PowerPC Upgrade Card
- Mac OS 8.5 memory requirements: 16 MB installed RAM, total of 24 MB through Virtual Memory

Minimum Software Requirements

- 4 MB memory free
- Mac OS 7.6 or later
- 1.4 MB free disk space

Recommended Requirements for Maximum information:

- Open Transport installed
- Startup with all extensions on

For additional information on how to use this feature, click the Help button or open the Help Center (from the help menu) and type the name of the feature. Balloon Help can also answer questions about window contents, window controls and menu items in the Finder, Control Panels and Applications, where supported. To turn on Balloon Help, choose "Balloon Help" from the Help menu in the Finder.

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Mac OS: Using Text to Speech and Speech Recognition

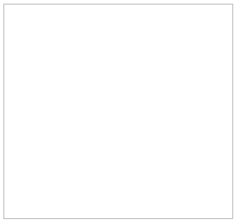
How do I use the Text to Speech and Speech Recognition functionality of the Mac OS? I have Mac OS 8 installed on my PowerPC Macintosh.
This article has been archived and is no longer updated by Apple.

Using Text to Speech

The TTS software running on the your Macintosh allows speech-enabled applications to speak selected text. The way this typically happens is you select some text (or an entire document), then select the application's Speak command. The TTS software in the System Folder then takes over and reads the text aloud. That's it!

Generally speaking, the Speech command will likely be in a menu or tool bar if the application supports TTS. The voice menu or list of available voices will usually be close by.

In SimpleText, use the Sound menu:



Other applications may or may not support speech. If youare not sure if your application support TTS, you should contact the developer of the application.

Mexican Spanish TTS uses the same menus and control panel as English TTS. To change from an English voice to a Mexican Spanish voice, simply select Carlos or Catalina from the list of available voices.

Using English Speech Recognition (SR)

This section explains how English SR works. As we progress through the process, remember SR can only recognize commands that are in the Speakable Items folder (with one exception: the OK/Cancel check box in the Speech control panel allows button names to be understood by SR).

Introduction to Speech

The first time the computer starts up after SR has been installed, the Apple Guide-based Introduction to Speech tutorial automatically opens:

This tutorial walks the SR user through the basics of turning on and configuring SR, how to speak to the computer, how to read the SR indicators, how Speakable Items works, etc. If novice SR customers call you with basic SR problems, it's a good idea to have them run through this tutorial. As a support rep for Apple, make sure you go through it when you work on the PlainTalk hands-on lab (a companion to this self-paced training).

So How Does It All Work, Then?

The Feedback Window

When your SR-enabled computer starts up, in addition to your normal desktop, you'll see a floating SR feedback window:

The face you see above corresponds to the feedback character previously selected (in the Speech control panel). In this example, "Tiki" is the SR name of the computer. "Speakable Items is ready" indicates the SR software and hardware have started up and are waiting for the user to speak a known command.

Speakable Items

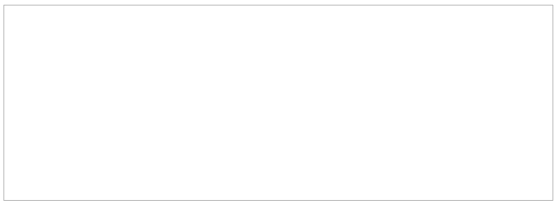
So what counts as a valid command? Any item in the Speakable Items folder. This is a special folder installed by the SR installer in the Apple Menu. Any item in Speakable Items can be used as a command. For example, a user can put an alias of the Indigo beep sound in to the Speakable Items folder, issue the spoken command "Indigo" (or "Open Indigo"), and SR will play that sound, just as if the user had double-clicked that icon.

Simply put, any item in Speakable Items can be opened by speaking its name. That is how SR works.

The Speakable Items folder comes with a set of commands pre-installed. There is a More Speakable Items folder in the Apple Extras: Speech Technology folder. Not surprisingly, it contains additional commands you can drag into your Speakable Items folder.

What Happens When You Speak

When you speak, the PlainTalk microphone picks up your sound input and sends it to the SR hardware and software for recognition processing. How can you tell if your microphone is working and SR is listening? You'll see sound waves like these:



These sound waves to the left of the character indicate that computer can hear you. Sound waves are important indicators when troubleshooting SR. If you do not get any sound waves, you either don't have the mic connected, you don't have the right type of CPU, or the SR software is off or misconfigured.

To tell the computer you are ready to speak to it, speak its name. Look at the feedback character; if its eyes are open and you see sound waves, it is trying to interpret your speech. If its eyes are closed, SR is in standby, and nothing will happen until you wake up SR by using the keystroke set in the Speech control panel, above.

When the computer recognizes its name and is ready for your command, you will see its name ("Tiki" in this example) disappear from the feedback window. Whatever you say next will be interpreted. If it is correctly interpreted AND matches up with a speakable item, SR will open (execute) that item (command).

Adding Speakable Items

Simply put, adding icons of any kind to the Speakable Items folder adds commands to your SR system. As you may have noticed in the Speakable Items folder window, many commands are AppleScript macros. You can use the standard AppleScript Script Editor to create you own macros or edit existing ones.

Both English and Mexican Spanish TTS read aloud selected text when used with applications that support speech. Basically you simply highlights text, then select the application Speak command.

Speech Recognition is more complex. To speak commands and have SR execute them, you speak the computer's name, then the command. Commands are limited to what's in the Speakable Item folder. Add items to that folder to increase the number of commands you can have understood.

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Mac OS 8.5: Apple Help Refers to Find Instead of Sherlock

The Find application has been replaced by Sherlock. This article discusses why Apple Help refers to Find instead of Sherlock.
This article has been archived and is no longer updated by Apple.
The Find application has been renamed Sherlock since in addition to Find File, it now provides additional capabilities of Find By Content and Search Internet.

Due to this late name change, Apple Help was not able to be updated to remove references to the Find application. The information about Find in Apple Help is accurate otherwise and previous methods of accessing the Find application, such as pressing the Command-F keys or selecting Find from Finder's File menu will open the Sherlock application. You can also select Sherlock from the Apple menu.
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Mac OS 8.5: Map Control Panel No Longer Supported

I have installed Mac OS 8.5 and I can't seem to find the Map control panel and I want to set my particular time zone. Where is it?

This article has been archived and is no longer updated by Apple.

The Map control panel is not supported in Mac OS 8.5 and should not be used. Time zones are now set using the Date and Time control panel instead.

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A/UX: TCP/IP & AppleTalk Packets Can Coexist

Is it possible to have both TCP/IP and EtherTalk available and active at the same time under A/UX? If so, what is the procedure for doing this?
This article has been archived and is no longer updated by Apple.
AppleTalk (via either EtherTalk card or LocalTalk serial port) is supported under A/UX. AppleTalk printing and File Sharing services are two examples of this. A/UX also supports TCP/IP networks, so that A/UX users can connect to networks of computers running a variety of UNIX-based operating systems. Both EtherTalk and TCP/IP use the Ethernet hardware, and they can use the same Ethernet card. AppleTalk and TCP/IP are not mutually exclusive. That is, a computer running A/UX can be connected to a TCP/IP network at the same time that it is connected to an AppleTalk network.

You can connect a computer that is running A/UX to a LocalTalk network or to an EtherTalk network. Earlier versions of A/UX required a user who logged in as root to modify the /etc/appletalkrc file to select LocalTalk or EtherTalk. With A/UX 3.0, any user who can log in by using the Finder control panel to select LocalTalk or EtherTalk. The /etc/appletalkrc file is no longer provided.

For TCP/IP, once you have determined the values of the TCP/IP configuration parameters for your Macintosh, you can run newconfig to make a kernel that supports the TCP/IP networking software. To run newconfig, log in as root in the Finder environment and open a CommandShell window, or log in as root in the Console Emulator.

Type the command: newconfig bnet

Respond to the prompts that newconfig displays. When you have finished, restart the computer.

You can get additional information on this process by referring to the A/UX Network System Administration manual chapter on Configuring and Managing a TCP/IP Network.

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Mac OS 8.5: Appearance Control Panel-Changing Smart Scrolling

When I enable the Smart Scrolling feature in the Appearance Control Panel under Mac OS 8.5, I get proportional scroll bars and dual scroll arrows at one end. I only want one of these features.
This article has been archived and is no longer updated by Apple.
It is possible to enable either one of these features by writing a simple AppleScript. Sample scripts follow:

1. Open the Script Editor from the AppleScript folder in the AppleExtras folder.

2. Make sure that "Smart Scrolling" is NOT checked on the options tab of the Appearance control panel.

3.

A. To enable dual scroll arrows only, type the following:

tell application "Appearance"

set scroll bar arrow style to both at one end

end tell

B. To enable the proportional scroll bar only, type the following:

tell application "Appearance"

set scroll box style to proportional

end tell

4. Click on "run". If you get an error, check for typographical errors and verify you are running Mac OS 8.5.

5. If there is no error, then the finder windows should now have the new feature. Save the script as a compiled script or application for future use.

To learn more about AppleScript, see AppleScript help in the help center or **http://www.apple.com/applescript/**.

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iMac: Improper Repacking Can Cause Damage

How to avoid damaging an iMac during shipping or transport resulting from improper seating in the original Styrofoam packaging material.
This article has been archived and is no longer updated by Apple.
The difference between an improperly and properly packaged iMac computer is ensuring the computer is sitting flush with the bottom corners of the packaging.

Improperly Seated
This image shows an iMac which is not fully seated in the packaging. Notice the iMac corner is not flush with the Styrofoam. See Figure 1.

Figure 1 Improperly seated iMac

Properly seated
When repacking an iMac using the original packaging material, ensure the front bottom corners are fully seated to avoid damage during shipping or transport. See Figure 2.

Figure 2 Properly seated iMac
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Mac OS 8.5: Installing Mac OS 8.5 Read Me

The following is the Installing Mac OS 8.5 Read Me.
This article has been archived and is no longer updated by Apple.

Installing Mac OS 8.5

This document describes how to install Mac OS 8.5. It includes compatibility information, instructions for the Install Mac OS application program, and basic installation troubleshooting.

For more detailed information, the Mac OS 8.5 installation manual can be viewed at:

ftp://manuals.info.apple.com/Apple_Support_Area/Manuals/mac_os/0340643MOS85IM.PDF

Before you install

· Turn off any security software that you may have installed on your computer.

· If you have a PowerBook, make sure that it is plugged into AC power and set not to go to sleep.

· Start up your computer using the Mac OS CD-ROM disc. See your installation manual for instructions.

Note: If you're installing the Mac OS from a network, you won't be able to start up using the CD. Before installation make sure your computer has AppleShare software version 3.6.4 or later. See the document in the AppleShare folder in the Utilities folder for instructions.

If you can't start up with the Mac OS CD, or you're installing from a network, be sure to do the following additional steps:

· Turn off any virus-protection software that you may have installed on your computer.

· Disable all non-Apple extensions and control panels. See the installation manual for more details.

· Restart your computer before installing Mac OS 8.5.

Although compatibility problems are not expected, you can ensure a smooth upgrade by checking with the manufacturers of any non-Apple software you use to make sure it is compatible with Mac OS 8.5. If you do experience a problem, see the troubleshooting chapter in your installation manual for information on isolating compatibility problems.

Compatibility information

· Installing Mac OS 8.5 on computers with Ultra Wide SCSI cards

Some older Ultra Wide SCSI cards require a firmware update before they will work with Mac OS 8.5. If the card's firmware is not compatible, your computer will crash during installation or when you start up from the CD. Before installing Mac OS 8.5, contact the manufacturer of your Ultra SCSI card to determine if a firmware update is necessary.

· Internet Setup Assistant and LAN connections

If you connect to the Internet through a local area network, select the "add a new Internet configuration" option when you use the Internet Setup Assistant. Selecting the option to modify the default configuration will not correctly configure your TCP/IP settings.

· Third-party Finder and utility software

Some third-party programs that extend or add features to the Mac OS may be incompatible with Mac OS 8.5. Examples include programs that change the way menus work, change how files are stored, or alter the way you work with files in the Finder. Contact the software's manufacturer for information about using such programs with Mac OS 8.5. This is especially important if you're using a program that automatically alters the way files are stored (such as compressing them) because you might not be able to access those files until you obtain updated software for use with Mac OS 8.5.

· Computers with DOS Compatibility cards

Apple DOS Compatibility cards do not work with Mac OS 8.5. After you install the software, you will no longer be able to use your DOS Compatibility Card to run DOS or Windows software.

· Computers with PowerPC processor upgrade cards

You cannot use Mac OS 8.5 on a computer with a 680x0 processor that has been upgraded with a PowerPC processor upgrade card.

· 400K floppy disks and Mac OS 8.5

The 400K MFS disk format is not supported by Mac OS 8.5. If you have information or programs on 400K disks that you want to access, copy the files to your hard disk, an 800K floppy disk, or a 1.44MB floppy disk before installing Mac OS 8.5.

· PowerTalk and Mac OS 8.5

PowerTalk is not compatible with Mac OS 8.5. After you install Mac OS 8.5, you won't be able to access your PowerTalk mail or catalogs, nor will you be able to use your PowerTalk keychain or other services.

· QuickDraw GX and Mac OS 8.5

Application programs that use QuickDraw GX may not be able to print due to changes in the version of QuickDraw GX included with Mac OS 8.5. See the file About QuickDraw GX on the CD for more information.

· MacODBC and Mac OS 8.5

If you use MacODBC, you should either install it before installing Mac OS 8.5, or perform a custom install of MacODBC and make sure the ASLM extensions are not selected. The MacODBC installer installs older versions of ASLM extensions that are incompatible with Mac OS 8.5.

· Installing Mac OS 8.5 on accelerated NuBus PowerPC computers

If you have a Power Macintosh 6100, 7100, 8100, or 9150 with a third-party accelerator that increases the clock speed of your computer, the Installer might refuse to install Mac OS 8.5 because it doesn't recognize your system. Contact the accelerator's manufacturer for help.

· Performa or Power Macintosh 5000 and 6000 series computers

Some Performa or Power Macintosh 5200 series, 5300 series, 6200 series, and 6300 series models cannot use Mac OS 8.5 until a hardware problem is fixed. The repairs are covered under the Apple repair extension program. To see if your computer has this hardware problem, use the 5xxx/6xxx Tester utility in the Utilities folder on the CD before installation.

IMPORTANT The Power Macintosh or Performa 5260, 6320, and 6360 do not have this hardware problem and do not need to use the tester program.

Troubleshooting suggestions

Some Apple-branded disks manufactured by third parties, including the Apple 365 MB external hard disk, are not supported by the Apple disk utilities. If your disk cannot be updated with the Apple utilities, you'll need to use a third-party disk utility to update the driver.

If you see a message that your disk has problems and cannot be repaired, make sure file sharing is off, then try installing again. If that doesn't work, try using another disk-repair utility. If you don't have another utility, or if that utility also doesn't work, you may need to reinitialize the disk. Copy all your files to another disk first, as reinitializing erases the disk. For more information about reinitializing, see the manual that came with your computer.

If you experience problems during installation, be sure to start up with the Mac OS CD. See your installation manual for instructions.

If you're installing over a network, or if you have a non-Apple CD-ROM drive and can't start up with the CD, turn off all extensions that weren't provided with your system software. Then restart the computer. See your installation manual for instructions.

Additional troubleshooting information is available in the installation manual.

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Updated August 17, 1998

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How IIGS Network Can Print From Single 3.5 Drive

I want to assemble an Apple IIGS system disk with the Chooser and other associated AppleTalk software that can use AppleWorks 3.0 on an Apple IIGS with a single 3.5 drive and networked ImageWriter II.

Here's what I need to know: What's the minimum ProDOS 8 system configuration that will allow this? Where do I get the required files, and how will I know if I've got the right versions?
This article has been archived and is no longer updated by Apple.
Since the associated AppleTalk software is contained within GS/OS for the Apple IIGS computer, start by using the GS/OS Installer to make a GS/OS boot disk. Install the "AppleShare on a 3.5 Disk" script. Once this has installed successfully, select the "AppleShare" script (NOT the "AppleShare on a 3.5 Disk" again) and press the "Remove" button. After this step is finished, select the "AppleTalk ImageWriter" script and press the install button.

This disk will be the boot disk for providing access to the networked ImageWriter. Contained on this disk will be all the needed system files to run both GS/OS applications and ProDOS 8 applications. Chooser.II is not needed because the Graphic Control Panel will be used.

Once the Apple IIGS has booted to the Finder, use the Graphic Control Panel's AT ImageWriter CDEV to select the desired network ImageWriter. This will leave the selected printer stored in RAM for use by AppleTalk protocols. It will also write the selected printer into the CDEV's resource file for use on the next bootup. Thus, if the same printer is desired, it will not need to selected again. Eject (with the drive button) the GS/OS boot disk, insert the AppleWorks disk, and double-click on the AppleWorks application icon. Be sure to specify the correct slot information about the printer within AppleWorks (slot 1 for O3 ROMs or slot 7 for 01 ROMs). AppleWorks will then work as Claris has designed it to work in a one-drive environment. When you exit AppleWorks, the system will return to the Finder.

If this operation is performed with the GS/OS 5.0.2 System.Disk and System.Tools, all the correct versions will be automatically installed.
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Mac OS 8.5: Importing Existing Internet Configurations

I am upgrading to Mac OS 8.5 from Mac OS 8.1 which is already setup for accessing the internet through my ISP. Do I have to install and use the Internet Setup Assistant from Mac OS 8.5?
This article has been archived and is no longer updated by Apple.
If you are comfortable working with the AppleTalk, TCP/IP, and Modem control panels, you can bypass the Internet Setup Assistant to configure your computer for internet access. If you are not comfortable, Apple recommends that you use the Assistant to get your computer set up.

There are two methods for reconfiguring Mac OS 8.5 for internet access without using the Internet Setup Assistant; re-enter the information from scratch, or export your current configurations and import them back in after the Mac OS 8.5 install.

The following steps will guide you through exporting your current configurations and importing them back in after you upgrade.

1. Open the TCP/IP control panel.
2. Select Configurations from the File menu, or use the Command-K key command to open the Configurations window.
3. Select a configuration you wish to export then click the Export button, this will save the configuration to the folder of your choice. Do this for each configuration you wish to export.
4. Close both the Configuration window and the TCP/IP control panel.
5. Do the same with your AppleTalk control panel if you have different configurations.
6. Install Mac OS 8.5 without the Internet Setup Assistant.
7. After restarting, open the TCP/IP control panel and then the Configurations window.
8. Select Import and navigate to the folder containing the configurations you just exported.
9. Import each configuration, select the one you want to be active, then close the Configuration window.

Your TCP/IP control panel is now properly configured to access the internet. You will also have to export and import your PPP configuration information. This information will be in the PPP control panel or in the Remote Access control panel depending on if you were using Open Transport PPP or Remote Access to dial your ISP.
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Windows 98: Not Supported on Apple DOS Cards

Does Windows 98 work with Apple DOS Compatibility Cards or PC Compatibility Cards?
This article has been archived and is no longer updated by Apple.
Windows 98 is not supported for use on either the Apple DOS Compatibility Card or PC Compatibility Card.
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Mac OS X Server 1.x: Password not Working After Keyboard Layout Change

I'm trying to type in my password, which I know to be correct, but I am unable to log in. One of the changes I made during my previous session was changing the keyboard layout. Does changing the keyboard layout affect password entry?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The keyboard layout effects not only what is typed, but how the data is sent to the computer. It may appear that you have typed the same information, but the computer thinks it is different.

If a password is typed using the USA keyboard layout and then the layout is switched in the Localization preference panel passwords will no longer work. This is also true if you FTP, Telnet, or rlogin to a computer using a different keyboard layout than what was used to create password.

The only way to fix this problem is to change your password. Select the keyboard layout that your password was typed with in the Localization preferences. In the Password preferences type in the original password when prompted. Go to the Localization preferences again and change the keyboard layout to the new layout. Go back to the Password preferences and type in the new password.

If you are trying to remote login (via FTP, Telnet, etc) to your computer, the computer you are on will also have to have the same keyboard layout selected. If you are on a Mac OS X machine you can use the Preferences, as described, to change to layout. If you are running on a non Mac OS X machine, contact the manfuacturer of the operating system. Note: this probably will not work. The layout may be operating system specific.

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Mac OS 8.5: Token Ring Cards No Longer Supported

This article provides an alternate source for Token Ring products for Mac OS computers.
This article has been archived and is no longer updated by Apple.
Apple has exited the market as a vendor for Token Ring products. Apple has no plans for any new Apple-branded Token Ring products for Mac OS. The company also does not plan to offer any additional driver updates or hardware/software fixes for Apple's NuBus or PCI Token Ring cards. We will not be testing or shipping legacy Token Ring software in new releases of the Mac OS.

Even though no further products, updates, or fixes are planned, Apple continues to recognize that selected Mac OS users have an ongoing requirement for Token Ring products. Towards this end, Apple has been closely working with Madge to ensure the availability of 3rd party Token Ring products that are compatible with the latest Apple hardware and the Mac OS operating system.

Madge Token Ring products are available through authorized Madge resellers. Visit their web site at http://www.madge.com for more information.
Published Date: Feb 18, 2012

TA43870_Macintosh_Portable_Developer_Issues_on_MIDI_Support_(TIL05815).pdf

Macintosh Portable: Developer Issues on MIDI Support

I was told there were some problems with MIDI software on the Macintosh Portable at introduction. What is the current status of this? What is Apple doing to fix the problems? What must a developer do?

This article has been archived and is no longer updated by Apple.
The only change since introduction is that most developers have provided an update to their software or have begun using Apple's MIDI Manager, or both. There are two support issues to be aware of when using an older version of MIDI Manager (1.1) and the Macintosh Portable. Both issues relate to the implementation of the serial ports of the Macintosh Portable.

1) Version 1.1 of the MIDI Management Tools does not support the Macintosh Portable.

MIDI Management Tools version 1.1 required changes to work correctly with the serial ports of the Macintosh Portable. These changes were implemented in version 1.2 of the MIDI Management Tools.

2) Some older versions of third party MIDI applications will have difficulty with the Macintosh Portable.

Until the introduction of Apple's MIDI Manager, all MIDI software had to write to the serial port hardware directly, bypassing the Macintosh Toolbox, to obtain acceptable performance. Writing to the hardware is not an ideal procedure for developers; Apple changes things about the hardware from one Macintosh model to the next. This forced MIDI software developers to revise their programs every time a new Macintosh model was introduced.

With the changes in design of the Macintosh Portable, these direct hardware calls and Toolbox workarounds no longer perform as they would on earlier models of Macintosh. Fortunately, Apple resolved this issue by providing the MIDI Manager. If developers use the MIDI Manager, they will not need to revise their programs as a result of any serial port changes in future computers. MIDI Manager will be revised as needed to deal with changes in serial ports. With MIDI Manager 1.2 or later, applications supporting MIDI Management Tools work correctly on the Macintosh Portable.

Make sure to use the most current version of the MIDI Manager to ensure that a program will communicate successfully with the serial port, regardless of Macintosh model.

Published Date: Feb 18, 2012

Mac OS 8.5: Disabling Network Services Location Registry

Mac OS 8.5 includes Personal Web Sharing 1.5.1 which has a new option to register my web server on my network using the Network Services Location (NSL) technology. Can the NSL registry feature be disabled?
This article has been archived and is no longer updated by Apple.
Personal Web Sharing 1.5.1, by default, turns Network Services Location registry on. You may turn off the NSL feature by disabling the Mac OS 8.5 provided DNSPlugIn and SLPPlugIn extensions located in the System folder's Extensions folder. You can disable these extensions using the Extensions Manager control panel.

If you want Network Services Location activated for another application but want to turn it off for Personal Web Sharing, use ResEdit to open both the Web Sharing control panel and Web Sharing extension. Set string number 28 to zero for Str# 300. The Personal Web Sharing server should be stopped through its control panel before attempting to use ResEdit.

After this change has been made, you need to throw away the Web Sharing folder in the active System folder's Preference folder. Restart the server within the Personal Web Sharing control panel and the NSL registry will be off just for this Web Sharing server.

Note: Apple does not provide technical support for ResEdit. When using ResEdit, always work on a copy of a file rather than the original. Caution should be heeded prior to using ResEdit to modify any files.

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AppleScript 1.3.2: Memory Leak Affects "Stay Open" Scripts

This article describes a known condition relating to AppleScript version 1.3.2 distributed with Mac OS 8.5.
This article has been archived and is no longer updated by Apple.
Apple is aware of a memory leak involving AppleScript 1.3.2 which ships with Mac OS 8.5. AppleScript scripts saved as "stay open" applications, and which make calls to Scripting Additions (OSAX), will experience a memory leak over time leading to their ceasing to function. We are investigating this problem and will provide more information as it is available.

Note that Mac OS 8.5.1 resolves this issue. The Mac OS 8.5.1 Update is available for download from Apple Software Updates sites.

For Mac OS 8.5 users, a workaround follows:

The work-around for the applet shell memory leak is to put all scripting addition commands inside a "Tell" block targeting an application. Since the Finder is always running, it is a good candidate for this purpose. For example, to use the "beep" command without leaking memory, you would write:

```
tell application "Finder"
beep
end tell
```

Please see the following articles for additional information:

Article 26165: "**About Mac OS 8.5.1 Update**"
Article 30865: "**Mac OS: What is a Memory Leak?**"

This article can help you locate the software update mentioned here:

- Article 14724: "**Where To Find Apple Software Updates**" - Lists online services for free Apple software updates.

Published Date: Feb 18, 2012

Mac OS 8.5: Multilingual Internet Access and Language Kit Updater

Information on the Multilingual Internet Access and Language Kit Updater included with Mac OS 8.5.
This article has been archived and is no longer updated by Apple.

Multilingual Internet Access

Multilingual Internet Access is an optionally installable component with Mac OS 8.5. It provides some of the previous features of Apple's Language Kits, including reading Web pages on the Internet. The language scripts supported are Arabic, Hebrew, Devanagari, Gurmukhi, Gujarati, Traditional Chinese, Simplified Chinese, Korean and Japanese.
Multilingual Internet Access does *not* replace Apple's Language Kits:

- In most cases, Multilingual Internet Access only includes one font for each of the language scripts. The Apple Language Kits include multiple fonts per language script.
- The 2-byte input methods for Traditional Chinese, Simplified Chinese, Korean and Japanese are not included, therefore text input is not possible in those languages without the use of language kits. Although text input is possible using the 1-byte language scripts, Apple will not be supporting this, due to the limited fonts included with Multilingual Internet Access.

Please see the "About Multilingual Internet Access" Read Me for more information.

Language Kit Updater for Mac OS 8.5

You must install the Language Kit Updater for Mac OS 8.5 (LKU8.5) in the following circumstances:

- After upgrading to Mac OS 8.5 from an earlier version of the Mac OS, with Language Kits already installed.
- Every time you install or remove one or more of the the following current Language Kits:
  - Arabic Language Kit 1.0.1
  - Chinese Language Kit 2.0, 1.2
  - Cyrillic Language Kit 1.0
  - Hebrew Language Kit 1.0.1
  - Indian Language Kit 1.0
  - Japanese Language Kit 1.2
  - Korean Language Kit 1.0
- If you custom remove a language kit or part (or all) of Multilingual Internet Access, you may also remove some files needed by your remaining language kits or Multilingual Internet Access language scripts. This is because of shared files. If this should occur, it is recommended that you reinstall either the language kit or the Multilingual Internet Access language script which does not work properly, after the custom removal. Again, remember to install the LKU8.5 each time a language kit is installed.
- Since LKU8.5 will update any of the above listed Apple Language Kits, there is no required order for the installation of multiple language kits, as long as the Language Kit Updater 8.5 is installed last.

The LKU 8.5 is located in the Language Kit Update folder in the CD Extras folder on the Mac OS 8.5 CD. Also included is a Read Me with further information. Any attempt to use the LKU8.5 with previous versions of the above Language Kits is not supported and therefore not recommended.

For further information, please see www.apple.com/support.
Published Date: Feb 18, 2012

Mac OS 8.5: Sherlock and HTTP Proxy Settings

Does Sherlock honor the entries of HTTP proxies in the Internet Control Panel of Mac OS 8.5?

This article has been archived and is no longer updated by Apple.

Sherlock will use HTTP proxy entries from the Internet control panel. It honors both the HTTP proxy setting, and the bypass domains. Sherlock does not support SOCKS firewalls with this release. Sherlock also does not support HTTP Proxies that require user authentication, since there is no code to put up a dialog for the username and password.

Published Date: Feb 18, 2012

Mac OS 8.5: Modifying Number of Hits from Sherlock Search

When doing an Internet search using Sherlock, I notice the number of hits returned varies depending upon the search engine used. The number of hits also seems to be less than if I do the search at the web site itself rather than through Sherlock. Why is this?
This article has been archived and is no longer updated by Apple.
The Search Internet feature in the Sherlock application allows users to perform Internet searches using one or more Internet search engines. The Sherlock application itself contains no information about the exact data formats expected or generated by individual Internet search engines; when accessing any particular Internet search site, the Sherlock application uses a search plug-in file that describes the data formats both expected by the site for queries and produced by the site in its responses to queries.

Within the plug-in for a specific search engine are parameters for, among other things, the maximum number of hits returned on a search. If the plug-in specifies the maximum number of hits returned, that value can be altered by modifying the plug-in using your favorite text editor.

In most search plug-ins, the number of hits is signified by the "nh" input name. nh specifies the number of hits that should be returned in a response to a query. In the example below, the number of hits to be returned from a search is 25.

<input name="nh" value="25">

Not all search engines use the "nh" to signify the maximum number of hits returned on a search. For example, the Excite search plug-in uses "perPage" instead. Changing the value from "perPage" to some number will return up to that number of hits.

<input name="perPage" value="perPage">

For a plug-in which does not specify a value, it is possible to add one but you will need to first determine what input name is used to signify the maximum number of hits. To find the input name, begin by logging into the search engine through the web, we will use Lycos for this example. On the Lycos home page click on Pro Search and set the number of hits to be returned at 30, this number will be easy to recognize in the URL.

Perform a search on any topic. Once the search finishes, look in the URL string in your browser for the number of hits you selected, in this case, 30. That number will be preceeded by some text then the ampersand symbol (&). You will need the text back to the ampersand to enter into the Sherlock plug-in for that search engine.

In this case, Lycos uses "maxhits" as the term for the number of hits returned in a search. Now you are ready to edit the search plug-in. Open the Lycos plug-in in your text editor. You will see a number of lines beginning with <input name=... You will be creating one more line which should be exactly as follows:

<input name=maxhits value=30>

Close and save the Lycos plug-in and now when you search Lycos from Sherlock, the maximum number of hits returned will be 30.

More information regarding the modification, and creation of Sherlock search plug-ins can be found on the Sherlock web site; **http://www.apple.com/sherlock**. Clicking the Developer button will bring you to more detailed information relating to plug-in development and/or modification.

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Mac OS 8.5: Adobe PSPrinter 8.3.1 Driver Conflict

Installation and use of the AdobePS 8.3.1 PostScript printer software on your Macintosh running Mac OS 8.5 can cause a system freeze or other printing related errors. For best performance, remove AdobePS 8.3.1 from Macintosh computers running Mac OS 8.5 and use LaserWriter 8.6 instead.
This article has been archived and is no longer updated by Apple.
Note: AdobePS 8.3.1 print software may get installed via the AdobePS 8.3.1 Installer, or via other installers that accompany some 3rd party printers and applications.

After removing AdobePS 8.3.1 from your Extensions folder, check that the proper PPD for your printer is located in the Printer Descriptions folder. Apple printer PPDs may be restored by reinstalling LaserWriter 8.6 from your Mac OS 8.5 Installer.

PPDs for 3rd party PostScript devices are usually included in the software that accompanied the product. Alternate sources for PPD files include the product vendor web site, or from the Adobe web site at http://www.adobe.com/ .
Published Date: Feb 18, 2012

Mac OS 8.5: Error Opening Internet Control Panel or File Exchange

When opening the Internet control panel, I get an error stating "To use the Internet control panel, you must first install Internet Config Extension version 2.0, or later."

Also, opening the File Exchange control panel gives an error sating "Internet Config is not installed properly."
This article has been archived and is no longer updated by Apple.
Both the Internet control panel and the File Exchange control panel in Mac OS 8.5 use version 2.0.2 of the Internet Config Extension. However, several installers (typically web browsers and email programs) may automatically replace that extension with an older version.

To resolve, use the Mac OS 8.5 Installer and do a custom install of the Internet control panel. The installer will automatically reinstall the Internet control panel as well as the latest version of the Internet Config extension.
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ASIP 6.0: Incorrect Date and Time in SMB File Properties

When I get Properties on a file on an AppleShare IP (ASIP) 6.0 server from a Windows client, the Modified and Accessed dates are not correct.
This article has been archived and is no longer updated by Apple.
Several Date and Time issues for SMB clients have been addressed in AppleShare IP 6.1.

In addition, please note the following items:

- Make sure that the date, time, time zone, and Daylight Saving Time options are correct on all client computers and on the AppleShare IP server.

- The Mac OS does not maintain an "Accessed Date" attribute, so this field is always set to the same value as the Modified Date attribute.

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Mac OS 8.5: Obtaining QuickTime Pro Upgrade Key

Update and overview of the QuickTime Pro upgrade process.
This article has been archived and is no longer updated by Apple.

Background

The Mac OS 8.5 retail package includes QuickTime Pro; however, QuickTime Standard Edition is automatically installed with Mac OS 8.5. To get QuickTime Pro, you must register your copy of Mac OS 8.5 by double-clicking the "Register with Apple" icon on your desktop, or by visiting Apple's online registration web site at:
http://www.apple.com/register/

During the registration process, you will be asked to provide your e-mail address (twice, to eliminate typing errors) and a valid SKU number from the registration card included with Mac OS 8.5. If you enter an invalid SKU, you will not be able to complete the registration process.

Within one day after registration, you will receive an e-mail thanking you for registering and informing you that the QuickTime Pro upgrade key will be sent by e-mail within 7 days.

Customers Outside of the United States

Instructions for the registration process and data entry forms have been localized for European customers. At the initial registration screen, select a country from a pull-down list. At this time, some countries, including France, are missing from this list. Apple expects to have the remaining countries added shortly. In the meantime, you can select "other" from the list although the instructions will be in English.

If You Don't Receive Your Upgrade Key

If you have not received your upgrade key, you should verify that:

- you completed the registration process, and entered a valid SKU
- you entered a valid e-mail address that accepts e-mail from apple.com accounts
- it has been seven days since you registered your product

If it has been less than seven days since you registered, be aware that it may take as long as seven days before you receive the upgrade key. Otherwise, you may re-register, being sure to provide a valid email address that accepts email from apple.com accounts.

Customers Who Did Not Purchase A Retail ("Shrink-Wrapped") Copy Of Mac OS 8.5

Customers who did not purchase a retail ("shrink-wrapped") copy of Mac OS 8.5 but who wish to upgrade to the latest version of QuickTime should refer to Apple's QuickTime web site at:
http://www.apple.com/quicktime/upgrade/index.html

You can find answers to your questions about QuickTime at: **http://www.apple.com/quicktime/**

Note: Those who qualified to receive Mac OS 8.5 for $19.95, do not qualify for the free upgrade key.
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Mac OS 8.5, Mac OS 9: Performing a Clean Installation

This technical document describes the clean installation procedure for Mac OS versions 8.5 to 8.6 and 9.0 to 9.2.2.
This article has been archived and is no longer updated by Apple.
Performing a clean installation creates a new System folder on your hard disk. The old System folder is renamed Previous System Folder. You may want to perform a clean installation if you are having persistent difficulties with your computer that a normal reinstallation does not solve.

Important: Because your computer has a new System Folder, after a clean installation you must reinstall third-party fonts, extensions, and control panels that you have added to your system or that came with programs you have installed.

The steps below assume that you are accepting the default choices for installing system software. You may customize what gets installed by manually selecting the various system software components after clicking Customize.

To perform a clean installation:

1. Start up your computer from the system software CD. You should use a version of system software that came with your computer, or later.
2. Open the Mac OS Installer application.
3. In the Welcome dialog box, click Continue.
4. In the Select Destination dialog box, click Options.
5. Select the Perform Clean Installation option, then click OK.
6. Select the destination hard disk, then click Select.
7. Click Start to begin installation.

After you're sure you've copied all the items you want to save into your new System Folder, delete the Previous System Folder from your hard disk.

Related documents

26055 Mac OS 8.0 & 8.1: Clean Installation Instructions
25517 Mac OS: Versions, builds included with computers (since 1998)

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Macintosh Display Cards Overview (3 of 3)

(This is a continuation of, "Macintosh Display Cards Overview (2 of 3)")
This article has been archived and is no longer updated by Apple.
- NuBus Block Transfer

One important display card acceleration feature is the NuBus block transfer function. Macintosh Display Card 8/24 GC supports both master and slave NuBus block transfer. Macintosh Display Card 4/8 and 8/24 support NuBus block transfers in slave mode only.

Most Macintosh systems do not support NuBus block transfer so this function is primarily a factor between NuBus cards with block transfer abilities. However, the Macintosh IIfx does support block transfers in slave mode only.

NuBus block transfer facilitates faster movement of data. Normally data is moved across NuBus in 32-bit words, 16-bit half-words, or bytes. Bus availability must be arbitrated between each word transferred. Under NuBus block transfer, the bus is arbitrated by the master, and then held while one address word and 16 data words are transferred to the addressed NuBus slave. Block transfer mode significantly accelerates the flow of data between the new display cards.

Because the Macintosh and many other NuBus cards lack NuBus block transfer support, another scheme is used to speed up data transfer between the Display Card 8/24 and other NuBus clients. Pseudo-block transfer is similar to block transfer in that it claims the bus for a 16 NuBus data word transaction; however, it must send an address word for each data word that it sends. The extra transfer activity makes pseudo-block transfer slower than block transfer but still an improvement over normal NuBus access times.

- Multiple Display Cards in One System

When multiple display cards are installed, the Macintosh Display Card 8/24 GC accelerates drawing in frame buffers of the Macintosh Display Card 4/8, 8/24, or other frame buffer cards. Display Cards 4/8 and 8/24 show the most improvement because they support slave NuBus block transfers and many other display cards do not. Acceleration for frame buffers other than the one resident on the Display Card 8/24 GC card would not be as dramatic because of the greater amount of NuBus traffic required. Only one 8/24 GC may be used for graphics acceleration in a system. If two cards are present, one will have its acceleration function disabled.

- Upgrades

The Macintosh Display Card 4/8 can be upgraded to Display Card 8/24 by using the Macintosh Display Card VRAM Kit.

The Macintosh Display Card 8/24 GC can be upgraded with the Macintosh Display Card DRAM Expansion Kit, which improves the performance of applications that use large off-screen bitmaps and other imaging methods.

System Software

System Software Version 6.0.5 or greater is required with Display Cards 4/8, 8/24 and 8/24 GC. Macintosh II, IIx ,and IIcx systems require the 32-bit QuickDraw patch file. Macintosh IIci and IIfx systems have 32-bit QuickDraw in ROM and require only System 6.0.5 or greater.

System Requirements

To use the Macintosh Display Card 4/8, 8/24, or 8/24 GC you need:
- A modular Macintosh II personal computer with an available NuBus slot
- System Software Version 6.0.5 or greater
- For Macintosh II, IIX and IIcx: the 32-bit QuickDraw software file is needed to run 24-bit color applications.
- To take advantage of full 24-bit color, a minimum of 2MB of memory is recommended.

Support Issues

- Cables For Current Portrait and Two-Page Display Customers

Current Portrait and Two-Page display customers must purchase a DB-15 to DB-25 adaptor when connecting any of the new display cards. Customers buying new Portrait and Two-Page displays will receive the proper cable.

- A/UX

The Display Card 8/24 GC will not initially work with A/UX. A/UX 2.0 compatibility is planned.

- Power Consumption

The Display Card 8/24 GC uses up to a maximum of 20 watts. In systems with all NuBus slots utilized, the power requirements of all cards installed should be added together to ensure that the NuBus power draw is not exceeded. Six-slot Macintosh modulars provide 90 watts for nuBus, 3-slot Macintoshs provide 45 watts.

- Macintosh II ROMs

The original Mac II ROMs had several problems that will not allow the Display Cards to function properly. There is a service program in place that will replace the original ROMs with new ones.

Connector Pinouts

DB-15 Monitor Video Connector for Display Cards 4/8, 8/24 and 8/24 GC.

PinSignal Description
1 RED.GND Red Video Ground
2 RED.VID Red Video
3 CSYNC~ Composite Sync.
4 MON.ID1 Monitor ID, Bit 1
5 GRN.VID Green Video
6 GRN.GND Green Video Ground
7 MON.ID2 Monitor ID, Bit 2
8 nc (No Connection)
9 BLU.VID Blue Video
10 MON.ID3 Monitor ID, Bit 3
11 C&VSYNC.GND CSYNC & VSYNC Ground
12 VSYNC~ Vertical Sync.
13 BLU.GND Blue Video Ground
14 HSYNC.GND HSYNC Ground
15 HSYNC~ Horizontal Sync.
Shell CHASSIS.GND Chassis Ground

the Portrait and Two-Page Displays.

DB-15 Signal D-25
1 RED.GND A3 (Outer)
2 RED.VID A3 (Center)
3 CSYNC~ 5
4 MON.ID1 9
5 GRN.VID A2 (Center)

6 GRN.GND A2 (Outer)
7 MON.ID2 8
8 nc
9 BLU.VID A1 (Center)
10 MON.ID3 3
11 C&VSYNC.GND 4, 7,10
12 VSYNC~ 2
13 BLU.GND A1 (Outer)
14 HSYNC.GND 1
15 HSYNC~ 6
Shell CHASSIS.GND Shell

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Power Macintosh G3 (Blue and White): Enabler Built Into Software ROM and Mac OS

The enabler file is now merged with the Mac OS ROM file.

This article has been archived and is no longer updated by Apple.
There is no longer a stand-alone enabler. The Power Macintosh G3 OS is 8.5.1 (or newer) with modifications for the hardware.
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Power-On Self-Test Beep Definition - Part 1

What do the beeps during the Power-On Self-Test (POST) mean?

Refer to article 58442: "**Power On Self-Test Beep Definition - Part 2**" for information on more recent Macintosh computers.
This article has been archived and is no longer updated by Apple.
The power-on self-test resides in the ROM of the computer. Only computers that are based on the ROM-in-RAM (New World) technology, such as the iMac, Power Macintosh G3 (Blue and White), Power Mac G4 (PCI Graphics), PowerBook (FireWire) and PowerBook G3 Series (Bronze keyboard) will generate these beeps. This test runs whenever the computer is powered on after being fully shut down (the power-on self-test does not run if the computer is only restarted).

If a fault is detected during the test, you will not hear a normal startup chime. Instead, the system will beep as explained below. If you experience one of these beeps, you should call your Apple-authorized service provider for additional troubleshooting assistance.

1 beep = No RAM installed/detected
2 beeps = Incompatible RAM type installed (for example, EDO)
3 beeps = No RAM banks passed memory testing
4 beeps = Bad checksum for the remainder of the boot ROM
5 beeps = Bad checksum for the ROM boot block
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Power Macintosh G3 (Blue and White): Modem Not Available Separately

This article discusses the internal modem in Power Macintosh G3 (Blue and White).
This article has been archived and is no longer updated by Apple.
The user-installable retail upgrade kit for the modem is no longer available for purchase directly from Apple. It may be available for purchase from your Apple dealer.

Product Name: 56K Internal Modem Kit

Product Number: M7405LL/A

Should any part of the modem require servicing, Apple Authorized Service Providers will perform the repair.

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Power Macintosh G3 (Blue and White): Behavior of Power Button Varies

This article lists the different ways the Power Macintosh G3 (Blue and White) responds when the Power button on the front panel is pushed.
This article has been archived and is no longer updated by Apple.
The response to the front panel button varies depending upon the current state of the Power Macintosh G3:

If the system is off it turns on.
If the system is asleep it wakes up and presents the Shutdown dialog box.
If the system is on and running it presents the Shutdown dialog box.
If the system is in a hung state it powers down the system (this may take up to 7 seconds to occur).

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Power Macintosh G3 (Blue and White): IDE Bus Configuration for Zip Drive and CD-ROM Drive

This article tells how the Zip and CD/DVD drives are configured for use.

This article has been archived and is no longer updated by Apple.
Unlike SCSI, the IDE/ATA bus supports only two devices. One device is set as the master, the other as the slave. In this case, the CD/DVD is set as master and the Zip drive, if installed, as slave. If you install a Zip drive, make sure that it is set to slave.

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Power Macintosh G3 (Blue and White): Handles on Enclosure are Functional

This article discusses the handles on the enclosure of the Power Macintosh G3 (Blue and White).

This article has been archived and is no longer updated by Apple.
While the handles are a significant design element of the Power Macintosh G3, they have been tested to 4 times the weight of the unit so feel free to use them when you have to move your Power Macintosh G3.
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Power Macintosh G3 (Blue and White): Support for Non-USB Displays

The Power Macintosh G3 has both ADB and USB connectors on it to ensure compatibility with previous Apple displays which relied on ADB for full functionality.

This article has been archived and is no longer updated by Apple.
In some cases you may need the video adapter to connect a Macintosh style video cable on the display to the VGA style connector on the video card. The adapter is included in the Accessory Kit of certain Apple displays.
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TA43890_Business_BASIC_III_Turnkey_Operation_(TIL00582).pdf

Business BASIC III: Turnkey Operation

This article has been archived and is no longer updated by Apple.
The Apple III, after booting Business BASIC III, automatically runs a program named Hello.
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Power Macintosh G3 (Blue and White): Speech Recognition Now Supported

Is speech recognition supported on the Power Macintosh G3 (Blue and White)?
This article has been archived and is no longer updated by Apple.
PlainTalk version 1.5.4 provides compatibility with the Power Macintosh G3 (Blue and White), iMac, and Power Macintosh G3 with the DVD drive. Refer to article 60339: "**PlainTalk: Using Speech Recognition 1.5.4**" for additional information.
Published Date: Feb 18, 2012

Power Macintosh G3 (Blue and White): No Upgrade for Processor Cache

The processor cache of the PowerPC G3 microprocessor used in Power Macintosh G3 (Blue and White) computers cannot be expanded.

This article has been archived and is no longer updated by Apple.

The back-side L2 cache is integrated into the desgn of the PowerPC G3 microprocessor module used in the Power Macintosh G3 (Blue and White). Therefore, the cache cannot be expanded unless the entire module is replaced.

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DAL: Client O.S. Runtime Environments

This article discusses DAL client operating system runtime environments.
This article has been archived and is no longer updated by Apple.

Macintosh

Data Access Language (DAL, formerly known as "CL/1") supports the Macintosh Operating System version 6.0.5 or later on all Macintosh hardware platforms with at least 2MB of RAM. The API is available in MPW C and Pascal object format, Think's Lightspeed C object format, and HyperCard XCMD/XFUNC format (embedded in DAL-HyperCard Help stack) for support of HyperCard 1.2 or later.

Host Servers

DAL supports the VAX/VMS operating system across the VAX hardware platform. This server supports the following DBMSs:

* Oracle
* Sybase
* Informix
* Ingres
* Rdb

DAL Server for A/UX supports the following DBMSs:

* Oracle
* Informix
* Ingres

DAL Server for VM/CMS supports the SQL/DS DBMS on VM/CMS systems.

DAL Servers for MVS/TSO and MVS/VTAM support the DB2 and Teradata DBMSs on MVS/XA and MVS/ESA systems.

Network Adapters (Communication Drivers)

Asynchronous

DAL supports async communications for VAX and A/UX with appropriate supporting hardware.

AppleTalk (ADSP)

DAL supports the AppleTalk Data Stream Protocol (ADSP) on Macintosh client systems running the ADSP driver software over the built-in AppleTalk connection or EtherTalk supporting hardware to VMS host systems running the DAL Server and AppleTalk for VMS.

ADSP Tool

DAL supports the Comm Toolbox AppleTalk Tool to VMS hosts running the DAL Server and AppleTalk for VMS.

Async CTB

DAL supports the Comm Toolbox async tools to VAX and A/UX DAL Servers.

3270 Connections

DAL supports 3270 connections on Macintosh systems equipped with hardware that supports the following 3270 solutions:

Apple MacDFT 1.1 running on:

* Coax/Twinax Card
* TokenTalk Card
* Serial NuBus Card

Tri-Data - Netway 1000, Netway 2000 - uses the Tri-Data API
Avatar - MacMainFrame - uses the Avatar API
DCA - MacIRMA Card - uses the MacIRMA API

SNA*ps Gateways running on:

* Coax/Twinax Card
* TokenTalk Card
* SDLC Card

APPC Connections

SNA*ps APPC Gateways running on any of the above NuBus cards.

Protocol Converters

Asynchronous access to protocol converters (front-ending MVS or VM) that access VT100-type output.

Published Date: Feb 18, 2012

Apple Studio Display 17 and 21: Using VGA-to-Mac Adapter

This article provides information on connecting the Apple Studio Display 17 and 21 to computers with the standard Macintosh DB-15 video connector.
This article has been archived and is no longer updated by Apple.
The connector on your display cable is a VGA video connector (3-row D-Sub 15 connector shown below). To connect your display to a computer or graphics card with a Macintosh-type connector (2-row DB-15 connector), or to a graphics card with both VGA and Macintosh connectors, you need to use the VGA-to-Mac adapter that came with your monitor.

1. Turn off the power to your computer and connect the Macintosh (2-row DB-15) end of the adapter to your video card and tighten the thumbscrews.

2. Connect the monitor cable to the VGA end of the adapter and tighten the thumbscrews as shown below.

3. Power on the computer.

The viewable image size of the Apple Studio Display 21 is 19.8 inches, the Apple Studio Display 17 has a viewable image size of 16.0 inches.

Important: When using the Apple Studio Display 21, the USB connector is needed for your computer to work correctly with your monitor. If the connector is not attached properly, the software controls are not available.

Published Date: Feb 18, 2012

Apple Displays: Changing the DDC Setting

This article defines the DDC setting and tells how to change it.
This article has been archived and is no longer updated by Apple.
DDC stands for "Display Data Channel," a communication protocol used by many displays for display/CPU connections. If the DDC setting is not correct, you will not be able to access all the resolution settings that your monitor and system will support.

You can change the DDC setting of the Apple Studio Display 17 and Apple Studio Display 21 by using the On-Screen Display controls (described in your Users Manual).

Most newer Macintosh computer models support DDC, so the default DDC setting on the display is ON.

Important: If you have reset the DDC control, turn the monitor off and then on again by pressing the power button at the lower right corner of the monitor's front panel, then restart your computer. Doing this ensures that the new DDC setting is enabled.

The viewable image size of the Apple Studio Display 17 is 16.0 inches.

Published Date: Feb 18, 2012

DAL: Overview and Goals

Overview

Data Access Language (DAL, formerly known as "CL/1") is a host database access tool that provides a connectivity language and a set of supporting software components that link personal computer applications to host databases. The connectivity language conforms to the Structured Query Language (SQL) standard. DAL can be used to access host database data from the desktop, where it can be manipulated and presented using familiar personal computer applications. Host databases can only be relational in nature.

DAL provides uniform access to host database data across a wide range of host hardware platforms, operating systems, database management systems, and network connections. The role of DAL is to insulate the desktop application from these details and differences, allowing it to concentrate instead on providing better interaction between "personal" processing on the desktop and organizational computing on the host system.
This article has been archived and is no longer updated by Apple.

Goal of DAL

The goal of DAL is to provide an open, standard, host database access language that enables plug and play connectivity between desktop applications and organizational data. That is, a desktop application using DAL should be able, "out of the box," to access database data on a DAL-supporting host system and make that information an integral part of the data available to the desktop application user.

DAL gives software developers access to a broad range of shared database data through a single programming effort. DAL provides communications as a built in part of the runtime environment in the form of network adapters (communication drivers), thereby relieving the programmer from the burdensome task of communications programming. Because DAL lets packaged application software uniform access different host operating systems, database management systems (DBMSs), and networks, DAL lets software developers focus on integrating corporate data into their applications, rather than low-level networking and programming tasks.

Using DAL, the desktop application can describe a host data access request in a uniform, high-level way. The DAL server for the host system then carries out the request and returns the results to the desktop application. DAL provides automatic data translation when transferring data between the client and host systems. The language supports a set of standard data types
which are used to represent all data manipulated by DAL programs. Data from a host data source is automatically mapped into these standard data types when data is accessed. Descriptions of the host data source are also expressed in terms of the standard DAL types.
Published Date: Feb 18, 2012

Apple Studio Display 21: May Be Difficult to Tilt

This article explains why it may take some force to tilt my Apple Studio Display 21 upwards.
This article has been archived and is no longer updated by Apple.
There is a detent when the display is sitting level in the tripod stand. The weight of the display provides resistance to upward movement from that detent.

Lift the front of the display by the small indentations on the left and right underside to tilt the display to an appropriate viewing angle.

Published Date: Feb 18, 2012

Power Macintosh G3 (Blue and White): ADB and USB Devices Simultaneously Supported

It is possible to use both USB and ADB input devices on the Power Macintosh G3 (Blue and White).
This article has been archived and is no longer updated by Apple.
Be aware that if you have two similar input devices, such as a USB mouse and an ADB mouse connected simultaneously, the results are unpredictable and it is not recommended. However, using a USB mouse with an ADB keyboard, or vice versa, is fine.
Published Date: Feb 18, 2012

At Ease: Cross-Linked Aliases

It is possible that when clicking an application in an At Ease pane a different application opens.
This article has been archived and is no longer updated by Apple.
There was an issue with At Ease that would cause it to occasionally open the wrong application. This has been fixed with At Ease version 5.0.2.

You can download the 5.0.2 update from Article 30864 **At Ease 5.0.2 Updater: Read Me**, which also contains information on additional fixes to At Ease.

If the aliases still do not function properly after the installation of version 5.0.2, one of the following suggestions should resolve the issue. Try them one at a time in the order shown below.

- Hold down the Command and Option keys while selecting your Panels workgroup. This gives you a dialog that says "Are you sure you want to rebuild the items for the workgroup". Select "Yes".
- From the Finder, throw away the At Ease Items WG 5.0 folder from the workstation, not the server. The At Ease Items WG 5.0 folder is recreated upon the next At Ease login.
- Remove and re-add the applications in At Ease Administration for the Panels workgroup which is opening the wrong application. Then repeat the previous step.

Related Articles

30864 At Ease 5.0.2 Updater: Read Me

Published Date: Feb 18, 2012

Apple Portrait Display: Specs and Pin Assignments

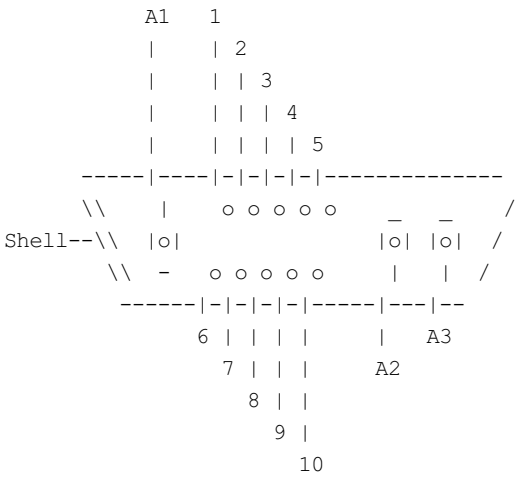
This article gives the specifications for the Apple Portrait Display monitor along with pin assignments for input signal jack.
This article has been archived and is no longer updated by Apple.

Picture Tube	15-inch (38.1 cm) diagonal Phosphor EIA Type B4 (White) High-contrast antiglare
Input Signal	Video: RS-343 standard Sync: Separate sync, negative going, TTL
User Controls	Power Switch (back panel) Brightness, with detent reference (right side) Contrast (right side)
Scanning Frequencies	Horizontal 68.85 kHz Vertical 75.0 Hz Dot Clock 57.2832 MHz
Resolution	640 (H) dots by 870 (V) lines
Active Video Display Area	Adjusted at the factory to produce an active video area of 8.0-inch (203.2 mm) horizontal by 10.8-inch (276.1 mm) vertical. The remainder of the screen is used for the dark border around the display.
Weight	35 lbs (16 kg), approximately
Power Requirements	75 watts maximum, all line conditions
Input Voltage	Operating range 85-270 Vrms, self-configuring Frequency 50-60 Hz
Operating Ambient Temperature	10 degrees C to 35 degrees C (50 degrees F to 95 degrees F)
Operating Humidity	90% maximum, non-condensing
Operating Altitude	10,000 feet (3,000 m) maximum
Fuse Protection	The monitor contains internal power line fuse protection. This fuse should be replaced with the same type be a qualified service technician.
Warm-up Time	20 minutes to meet all specifications

Pin Assignments For Input Signal Jack (D-25 Shell Style)

Pin	Function
A1	Monochrome video
A2	75 Ohms #1
A3	75 Ohms #2
1	Hsync return
2	Vsync
3	Sense #3
4	Sense return
5	Csync
6	Hsync

7	Vsync return
8	Sense #2
9	Sense #1
10	Csync return
Shell	Shell ground



Published Date: Feb 18, 2012

Macintosh Server G3: Technical Specifications

This article provides the technical specifications for the Macintosh Server G3.
This article has been archived and is no longer updated by Apple.

Technical Specifications

Processor

- 350- or 400-MHz PowerPC G3 processor
- 1MB backside level 2 cache on processor, running at 175 or 200 MHz depending on processor speed
- 100-MHz system bus

Memory

- 128MB or 256MB of PC100 SDRAM (3.3-volt, unbuffered, 64-bit-wide, 168-pin, running at 100 MHz)
- Four DIMM slots support up to 1GB of PC100 SDRAM using the following DIMMs:
  -32MB, 64MB, or 128MB DIMMs (64-bit-wide, 64-Mbit technology)
  -128MB or 256MB DIMMs (64-bit-wide, 128-Mbit technology)

Storage*

- One of the following hard disk drive configurations:
  -One 9GB 7,200-rpm Ultra2 LVD SCSI drive with PCI card
  -Two 9GB 10,000-rpm Ultra2 LVD SCSI drives with PCI card
- 24x-speed (maximum) CD-ROM drive
- One or two expansion bays for additional Ultra Wide SCSI or Ultra2 LVD SCSI drives

Interfaces

- **Connectivity**
  -Two 400-Mbps FireWire ports
  -Two 12-Mbps Universal Serial Bus (USB) ports
  -Apple Desktop Bus (ADB) port (maximum current draw for all ADB devices is 500 mA)
- **Communications**
  -Built-in 10/100BASE-T Ethernet connector (RJ-45)
- **Expansion**
  -Four PCI slots: three 64-bit, 33-MHz slots (one of which contains the Ultra2 LVD SCSI card) and one 32-bit, 66-MHz slot (dedicated to the ATI RAGE 128 graphics card)
- **Video**
  -15-pin mini D-Sub VGA connector and Macintosh-to- VGA adapter
- **Sound**
  -Minijacks for 16-bit stereo audio input and output; 44.1-kHz sampling rate
  -Built-in speaker

Keyboard and mouse

- Apple USB Keyboard and Apple USB Mouse

Electrical requirements

- Line voltage: 115V AC (90V to 132V AC) or 230V AC (180V to 264V AC)
- Frequency: 47 to 63 Hz, single phase
- Maximum continuous power (not including display): 200W

Environmental requirements

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: -40° to 116° F (-40° to 47° C)
- Relative humidity: 10% to 90% noncondensing
- Maximum altitude: 10,000 feet (3,048 m)

Size and weight

- Height: 17.0 inches (43.2 cm)
- Width: 8.9 inches (22.6 cm)
- Depth: 18.4 inches (46.7 cm)
- Weight: 28.7 pounds (13.0 kg)**

*Storage devices and number of available expansion bays vary among configurations; see Available Configurations chart for details. Other configurations are available as build-to-order options from the Apple Store.

** Varies depending on configuration. Example includes CD-ROM drive and Ultra2 LVD SCSI hard disk.

Published Date: Feb 18, 2012

SDRAM: Difference Between 64 Mbit and 128 Mbit Technology

This article describes the difference between 64 and 128 megabit (Mbit) SDRAM technology.
This article has been archived and is no longer updated by Apple.

Symptom

Apple Specifications support 128 megabyte (MB) SDRAM DIMMs using both 64 and 128 megabit (Mbit) technology on certain computers. However, the difference isn't explained.

Affected Products

- Power Macintosh G3 (Blue and White)
- Power Mac G4 (PCI Graphics)

Solution

As of the writing of this document, high capacity memory modules were possible by stacking two 64-Mbit chips placed together in the same package. Higher capacity SDRAM DIMMs would eventually be out of specification due to the number of lower density chips.

However, using 128-Mbit devices allow higher density memory DIMMs that meet the specification for power consumption, size, and performance.

In the case of the Power Macintosh G3 (Blue and White) and Power Mac G4 (PCI Graphics) 128 MB DIMM, that memory size is the point where either 64- or 128-Mbit technology memory devices can be used.

Important: 256 MB DIMMs must use 128-Mbit technology in order to be functional in the Power Macintosh G3 (Blue and White) and Power Mac G4 (PCI Graphics).

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Fiber Distributed Data Interface (FDDI): Description (9/94)

What exactly is FDDI?

This article has been archived and is no longer updated by Apple.

FDDI stands for Fiber Distributed Data Interface and is an American National Standards Institute (ANSI) standard. Their fiber optic LAN standard is for a token-passing, counter-rotating ring that sends data at 100MB per second.

The ANSI X3T.9 committee took IEEE 802.5's token-ring standard and optimized it for fiber. The services provided on an FDDI network are a superset of the services that 802.5 provides; in general, any software that runs over 802.5 should run over FDDI, only faster. This speed is at least six times greater than the three IEEE 802 LAN standards. Even though 802.3 (Ethernet), 802.4 (token bus and MAP), and 802.5 (token ring) all can be implemented with fiber, they do not take advantage of fiber's capacity.

A FDDI network counter-rotating ring means you have two fiber cables instead of one. Normally only one cable will carry data; the second is used when a cable fault occurs to the first. A station is either single attached (connected to a concentrator which is connected to the ring) or dual attached (connected to both fiber cables directly onto the ring). When two neighboring dual attached stations detect a fault, they bring up the secondary data path. Hence the need for every dual attachment device to have management capabilities built in. Dual attached concentrators are used to interface single attached nodes to the ring. Concentrators will have multiple ports to accommodate multiple single attached devices. Concentrators may also be single attached, but will always be on a link that is eventually connected to a dual attached concentrator attached to the ring. With concentrators, you can build a physical star topology offshoot to the ring network.

The maximum circumference of an FDDI network is 100 kilometers (or 200 kilometers if you count both rings), and supports up to 500 stations (1,000 physical connections to both rings). The maximum distance between two active nodes cannot exceed 2 kilometers, so unless all nodes are active all of the time, the FDDI network will probably be less than the 100-kilometer maximum.

Though the recommended transfer rate is 100MB per second, you could send data on both rings simultaneously for a 200MB transfer rate. Although the data rates on the FDDI ring remain constant when loaded, a station's access time to the network may decrease depending upon the station's priority. Sustained data transfer rates for a 100MB implementation is approximately 80MB per second, due to overhead bits, token passing times, and so on.

FDDI is implemented at the Data Link and Physical layers of the Open Systems Inconnection (OSI) seven-layer model. The basic fiber-optic link consists of an optical transmitter, optical receiver, fiber-optic cable, and optical connection.

The next generation of fiber-based high-speed LANs is already being looked into by the ANSI X3T9.5 committee. One that is upwardly compatible with FDDI, that adds voice and video capability, is FDDI-2. FDDI-2 specifies a time-division multiplex approach to divide the available network bandwidth between voice and data.

Article Change History:
8 Sep 1994 - Reviewed for Accuracy.

Support Information Services

Published Date: Feb 18, 2012

Power Macintosh G3 (Blue and White): SCSI Card Compatibility with Apple Scanners

On a Power Macintosh G3 (Blue and White) with an Apple SCSI card installed, the scanner driver may not load; its icon appears during startup with a red X through it. Further, scanning software does not recognize the scanner.

This article has been archived and is no longer updated by Apple.

The Apple Scanner extension version 4.2 does not support the Apple PCI SCSI cards available for the Power Macintosh G3 (Blue & White).

Apple has released Apple Scanner version 4.3 to address this issue available from the Apple Software Updates Web site at http://www.apple.com/swupdates/ .

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Convert2DOS Read Me

This article is comprised of the Read Me for Convert2DOS. This software was released by Apple on January 21, 1999 and is available for downloading from Apple Software Updates Online. Click here to access this update: **Download**

Name: Convert2DOS

Version: 1.0

Released: May 26, 1998

Requires:

Convert2DOS has been tested on US versions of MacDraw Pro, and requires a Mac or equivalent with a 68030 or better, a high-density floppy drive, System 7.x, PC Exchange or Apple File Exchange, 50 K of free disk space plus space for converted files, 2.5 MB of RAM (more for optimum performance)

Description:

Convert2DOS is a Macintosh application that takes MacDraw Pro files and creates a set of files in IBM-compatible format so you can open your MacDraw Pro files in ClarisDraw for Windows or ClarisImpact for Windows without altering your original MacDraw Pro files.

Instructions:

This software consists of a self-extracting archive. To use, download it to your hard drive and then double-click it to decompress the software.

This article has been archived and is no longer updated by Apple.

Convert2DOS - Macintosh to Windows

Convert2DOS takes MacDraw Pro® files and creates a set of files in IBM-compatible format so you can open your MacDraw Pro files in ClarisImpact® for Windows. Convert2DOS does this without altering your original MacDraw Pro files.

What you need

To use the Convert2DOS, you need the following equipment and software:

- a Macintosh computer or equivalent with a 68030 processor or better
- a 3.5-inch high-density floppy disk drive
- Macintosh System Software 7.0 or later
- PC Exchange or Apple File Exchange
- approximately 50 K of free disk space plus space for the converted files
- 2.5 MB of RAM (more for optimum performance)

Converting MacDraw Pro files

You can convert MacDraw Pro files by dragging them onto the Convert2DOS application icon, or by opening them from within Convert2DOS. If you drag a file onto the application icon, Convert2DOS automatically creates the necessary converted files and names them according to a standard set of rules. If you open a file from within Convert2DOS, you can name the converted files yourself.

Converting MacDraw Pro files automatically

To convert MacDraw Pro files automatically:

1. In the Finder, select the MacDraw Pro file you want to convert. Shift-click any additional MacDraw Pro files you want to convert.
2. Drag the file or files onto the Convert2DOS application icon.

In the Save Converted Files dialog box, select the name of the directory (folder) where you want to save the converted files and click Select Directory.For each MacDraw Pro file you convert, Convert2DOS creates two files in the directory you select, one with the extension .MDP and one with the extension .RES. Convert2DOS creates the eight-letter roots of these file names based on the name of the original MacDraw Pro file. (For more information on how Convert2DOS automatically names converted files, see "File Naming Rules" later in this file.)

Converting MacDraw Pro files from within Convert2DOS

To convert MacDraw Pro files from within Convert2DOS:

1. Start Convert2DOS by double-clicking the Convert2DOS icon.

2. In the Choose File dialog box, select the name of the MacDraw Pro file you want to convert.

3. In the Save Converted Files dialog box, select the location where you want the converted files saved. You can also change the name of the converted .MDP file, if necessary. (Convert2DOS automatically provides a name based on the name of the original MacDraw Pro file. For more information, see "File Naming Rules" later in this file.) If you change the name of the converted file, be sure to keep the .MDP extension as part of the name and to follow standard DOS file naming conventions (roots of file names can contain no more than eight characters and you cannot use invalid characters in the name, such as commas, spaces, and colons.)

4. After you select a location and a name for your converted files, click Save.Convert2DOS creates a converted .MDP file and a converted .RES file. You need both files in order to recreate the MacDraw Pro file in ClarisImpact for Windows. The name of the .RES file Convert2DOS creates is the same as that of the .MDP file except for the ".RES" extension. For example, if you enter the name MADRID.MDP in the Save Converted Files dialog box, Convert2DOS creates a file named MADRID.MDP and a file named MADRID.RES.

5. If you want to convert another MacDraw Pro file, select Convert from the File menu and return to step 2 of this procedure.

Disk Compatibility

If you are going to transfer the file between a Macintosh and a Windows machine or vice versa, you will need to overcome a floppy disk incompatibility hurdle. Macintosh and Windows machines format a 3.5 inch floppy disk differently, but there is software available that can read the opposing format. The Macintosh MUST be able to read and write to a 1.44 MB size floppy disk, which is also called a High Density floppy disk. A Macintosh disk drive that can read a 1.44 MB floppy disk is referred to as a FDHD floppy drive, a superdrive, or a high density floppy disk drive. The Windows machine must also have a 3.5 inch floppy disk drive.

a) The Macintosh can read and write files on and off of a Windows / DOS formatted floppy disk using file transfer software such as Apple File Exchange or PC Exchange, both made by Apple Computer, or third party products such as DOS Mounter. Apple File Exchange has shipped with Macintoshes for years and can be found on your set of original System 7 disks, in particular the Tidbits disk. PC Exchange came out in June of 1992 and is currently being bundled with Macintoshes such as the Performa models. For information on PC Exchange or Apple File Exchange, see your Macintosh User's Utilities Guide or visit the Apple Tech Info Library* on the World Wide Web.

*See PC Exchange/Apple File Exchange Info at the end of this document.

b) The Windows machine can read and write files on and off of a Macintosh formatted floppy disk drive using third party file transfer software such as Conversions Plus for Windows, made by Data Viz,Inc., or MAC-in-DOS.

Opening converted files in ClarisImpact for Windows

Important: Convert2DOS creates a pair of files for each original file you convert, one with the extension .MDP and one with the suffix .RES. You must keep each pair of files together in the same directory. If you change the name of an .MDP or .RES file, you must change the name of the other file in the pair so it matches. For example, if you change the name of the file MADRID.MDP to SPAIN.MDP, then you must also change the name of the file MADRID.RES to SPAIN.RES. Also, the new names you give to the files must end in ".MDP" and ".RES".

To open converted files in ClarisImpact for Windows:

1. Start ClarisImpact.

2. Choose Open from the File menu.

3. Find and select the appropriate .MDP file, and click OK. Your MacDraw Pro file opens in .CID format.

4. In ClarisImpact, save the file in .CID format. Once you save the file in .CID format, you can delete the corresponding .MDP and .RES files.

File naming rules

When Convert2DOS automatically assigns a name to converted files, it uses the first eight characters of the original MacDraw Pro file. If the name generated isn't compatible with Windows or is the same as a that of another file in the same directory, Convert2DOS changes the name. Here are some examples:

Original MacDraw Pro filename	**Translated filenames**
France:Paris	FRANCEPA.MDP, FRANCEPA.RES

LondonTownOne	LONDONTO.MDP, LONDONTO.MDP
LondonTownTwo	LONDONT1.MDP, LONDONT1.RES
LondonTownThree	LONDONT2.MDP, LONDONT2.RES

PC Exchange/Apple File Exchange Info

Additional information on PC Exchange and Apple File Exchange is available in the Apple Tech Info Library on the World Wide Web at **http://www.info.apple.com/til.html.**

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Power Macintosh G3 (Blue and White): Internal Modem Technical Specifications

This article provides technical specifications for the Power Macintosh G3 (Blue and White) internal modem option.
This article has been archived and is no longer updated by Apple.

Hardware specifications

Operating voltage and current

+5 volts (V) at 435 milliamperes (mA); +12 V at 30 mA

Operating temperature

0° C to 40° C (32° F to 104° F)

Operating humidity

20 percent to 90 percent noncondensing

Operating altitude

0 to 3084 meters (0 to 10,000 feet)

Storage temperature

-40° C to +65° C (-40° F to +149° F)

Data communication standards

56,000 bits per second (bps) - K56flex V.90

33,600, 28,800, 26,400, 24,000, 21,600, 19,200, 16,800 bps - ITU V.34/V.FC

9600, 4800 bps - ITU V.32

2400 bps - ITU V.22 bis

2400 bps - Bell 212A

1200 bps - ITU V.22

1200/75 bps - ITU V.23

300 bps - ITU V.21

300 bps - Bell 103

Group 3 fax communication standards

14,400, 12,000 bps - ITU V.17

9600, 7200 bps - ITU V.29

4800 bps - ITU V.27 ter

2400 - ITU V.21

Miscellaneous specifications

AT command set

Extended Hayes AT command set

Error control

ITU V.42 (LAP-M), MNP Classes 2-4

Data compression

ITU V.42 bis

Data transmission and format

Full- or half-duplex operation, synchronous or asynchronous modes

Dialing capability

Tone or pulse dialing, automatic dialing

The International Telecommunications Union (ITU), one of the organizations working on forming international standards for communications, announced the ratification of the V.90 standard for 56K modems. Before the ratification of the V.90 standard, there were two proposed standards for 56K modems, x2 and k56flex. The optional internal 56K modem supports both the V.90 and k56flex standards.

Published Date: Feb 18, 2012

System 7.5 Version 7.5.3: Available for Download

This article announces the availability of System 7.5, Version 7.5.3 for downloading. This software was released by Apple on January 30, 1999 and is available for download from the Apple Software Updates Web site at http://www.apple.com/swupdates.
This article has been archived and is no longer updated by Apple.
Requires:

System 7.5.3 requires an Apple Macintosh or PowerBook computer with at least 4MB of RAM. Note: newer Macintosh and PowerBook computers require versions of System software higher than version 7.5.3 in order to operate. See TIL article 8970 for information on which CPUs support System 7.5.3.

Description:

This is the North American English version of System 7.5 version 7.5.3, which includes the following system updates: System 7.5 Update 2.0 and System 7.5.3 Revision 2. For further information on System 7.5.3, please consult the Technical Information Library.

Instructions:

This software is available as 19 parts of a self-mounting Disk Copy image. Download all 18 parts to your hard drive and then double-click on the first part to mount the compressed disk image on your desktop.

Note: The self-mounting Disk Images require Mac OS version 7.0.1 or later. If you are using a version of Mac OS prior to this, you can download the System 7.5 Network Access floppy disk and boot your Macintosh from that to use this software.

Additional Information

The following Knowledge Base articles provide additional information on the installation and use of System 7.5 version 7.5.3:

Article 20060: "**Installing System 7.5, version 7.5.3 Read Me**"

Article 20242: "**Macintosh System 7.5, version 7.5.3: Description**"

Article 20243: "**Macintosh System 7.5, version 7.5.3: Specifications**"

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Read/Write Optical Discs: Using for CD-ROM Emulation

I have an optical disc with data stored on it. I am considering putting the data on a CD-ROM, but am unsure of the performance I will get in a CD environment.

If I use a write lock on the optical disc, would this be a suitable emulation of a CD-ROM? If not, what do I need to do in order to emulate the performance of a CD-ROM with the optical disk?

This article has been archived and is no longer updated by Apple.

Using the optical disc in a write-lock mode is the best simulation of a CD-ROM that is available. However, note that some optical discs may have a slightly better performance than a CD-ROM.

Using the write-lock mode will help locate any possible write attempts prior to the pressing of the CD-ROM.

Most CD-ROM pressing facilities provide "one-off" CD-ROMs, which are actual CD-ROMs (but only one is created). This may be an additional expense, although the "one-off" provides an actual CD-ROM to see if all is correctly laid out. The "one-off" is created after using the data in the optical disc environment, prior to pressing the final CD-ROM.

Published Date: Feb 18, 2012

Power Macintosh G3 (Blue and White): How do I Open the Special Offers File?

This article tells how to open the file named "Special Offers" that is located in the Apple DVD Player folder.
This article has been archived and is no longer updated by Apple.
Drag the Special Offers document onto any Web browser icon, including Internet Explorer, Netscape Navigator, or Help Viewer to display the information.
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Power Macintosh G3 (Blue and White): AppleWorks 5 Redraw Issue

When using AppleWorks 5 to create a shape in a word processing document using the circle tool, if you move the circle to a different location on the page the circle doesn't seem to redraw properly, leaving trails all over the document. If you disable the ATI Graphics Accelerator extension, the redraw behavior goes away.
This article has been archived and is no longer updated by Apple.
There is an issue with the ATI software installed on the Power Macintosh G3 (Blue & White) which can cause cosmetic redraw symptoms in AppleWorks, and possibly other applications. This issue is resolved in the ATI RAGE 128 Update 1.0, which is available on the Apple Software Updates web site.

This article can help you locate the software update mentioned here:

- Article 14724: "**Where To Find Apple Software Updates**" - Lists online services for free Apple software updates.

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PowerBook 5300 System Software Update Removed

Apple has removed the software update for the PowerBook 5300 computer which included System Enabler 1.2.1. This article documents what to install in its place.

This article has been archived and is no longer updated by Apple.

In place of the PowerBook 5300 System Software Update with System Enabler 1.2.1, you can use System 7.5 Version 7.5.3 available from the Apple Software Updates Web site at http://www.apple.com/swupdates.

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System 7.5.5 Update: Frequently Asked Questions (2 of 2)

This article contains part 2 of the answers to frequently asked questions (FAQ) about System 7.5.5 Update.

Part one is available at the following URL:

Article 20408: **System 7.5.5 Update: Frequently Asked Questions (1 of 2)**

Questions in this FAQ

1. When will System 7.5.5 Upda te be available in other languages beside U.S. English?
2. If I have any system running System 7.5.3, will I have all of the latest system software improvements after installing System 7.5.5 Update?
3. How can I tell if my system has been updated with System 7.5.5 Update?
4. How can I tell if a product which I purchased from Apple has the enhancements provided by System 7.5.5?
5. Along with the announcement of System 7.5.5 Update, it has been stated that this is the last system software release for the Macintosh Plus, SE, Classic, Portable, PowerBook 100, SE FDHD, SE/30, LC, II, IIx, and IIcx systems. Why are future versions of the Macintosh system software not supporting these systems?
6. If I have installed MODE32 on a Macintosh II, IIx, IIcx, or SE/30, does this mean my system will be supported by future releases of the Macintosh system software?
7. Are there any known problems with installing this update which I should be aware of?
8. What happened to System 7.5.4?
9. Where can I get System 7.5.5 Update?
10. What are the system requirements for System 7.5.5 Update?
11. Where can I get more information about the Mac OS?

This article has been archived and is no longer updated by Apple.

1) Question: When will System 7.5.5 Update be available in other languages beside U.S. English?

Answer: Apple expects localized versions of System 7.5.5 Update to be available in many countries within 90 days after the U.S. introduction. Please contact your local Apple support center for local availability.

2) Question: If I have any system running System 7.5.3, will I have all of the latest system software improvements after installing System 7.5.5 Update?

Answer: Yes.

3) Question: How can I tell if my system has been updated with System 7.5.5 Update?

Answer: If you have installed System 7.5.5 Update on to your system, there is a very easy way to verify that it has been installed. Choose "About This Macintosh" from the Apple menu. In the top right-hand side of this window will be the system software information. Your system has System 7.5.5 Update installed if it reads:

System Software 7.5.5

4) Question: How can I tell if a product which I purchased from Apple has the enhancements provided by System 7.5.5?

Answer: If you purchased a system from Apple which has the System 7.5..4 Update enhancements already included, the "About This Macintosh" window will read:

System Software 7.5.5

5) Question: Along with the announcement of System 7.5.5 Update, it has been stated that this is the last system software release for the Macintosh Plus, SE, Classic, Portable, PowerBook 100, SE FDHD, SE/30, LC, II, IIx, and IIcx systems. Why are future versions of the Macintosh system software not supporting these systems?

Answer: Future Mac OS releases will require a 68030, 63040, or PowerPC-based system which support 32-bit memory addressing, this includes all other Macintosh models. However, while future system software releases will not install on these older systems, Apple will still fully support

customers with these systems by providing telephone assistance.

6) Question: If I have installed MODE32 on a Macintosh II, IIx, IIcx, or SE/30, does this mean my system will be supported by future releases of the Macintosh system software?

Answer: No. System 7.5.5 Update is the last release which will support these hardware systems, regardless if MODE32 is installed.

7) Question: Are there any known problems with installing this update which I should be aware of?

Answer: Customers are encouraged to read the document which accompanies the update, titled "About System 7.5.5 Update". It has a "known problems section" which documents issues which Apple wants to make sure are brought to our customers' attention.

8) Question: What happened to System 7.5.4?

Answer: System 7.5.4 Update, which delivers System 7.5.4, was released by Apple Computer to a limited distribution, prior to an anticipated general release. Shortly after this limited distribution, a bug in the software was found which required a revision. This revision was named System 7.5.5 and replaces System 7.5.4. System 7.5.5 Update will install on computers which have System 7.5.4 installed.

Since System 7.5.4 was released to a limited audience, there needs to be a way to easily identify this release in the event one of our customers installed it and are having specific problems. In order to make identification of 7.5.4 easy, the version number was incremented to System 7.5.5.

9) Question: Where can I get System 7.5.5 Update?

Answer: System 7.5.5 Update is available electronically via:
* Apple ftp and World Wide Web sites
- **ftp://ftp.info.apple.com/**
- **http://www.apple.com/swupdates**

10) Question: What are the system requirements for System 7.5.5 Update?

Answer: In order to install the update, you must have System 7.5.3. System 7.5.5 Update cannot be installed on earlier versions of System 7.5.

11) Question: Where can I get more information about the Mac OS?

Answer: More information can be obtained about the Mac OS on the Internet at: **http://www.apple.com/macos**

Published Date: Feb 18, 2012

Mac OS: Relationship of Desktop Icons to Storage Media

I noticed that after ejecting a Zip cartridge from my Macintosh, a few document icons also disappeared from my desktop. Why is that?
This article has been archived and is no longer updated by Apple.
This is normal behavior for the Macintosh Operating System. In this example, the documents that disappeared when you ejected the Zip disk are stored on the Zip disk itself, not on hard drive. When you ejected the disk, the icons went with it. They remain on the Zip disk and will reappear on the desktop when you re-insert the Zip disk.

This will hold true for any storage media, be it a floppy disk, CD-ROM, or hard drive.

If you wish to work with that document without the Zip disk inserted, copy the document to your computer's hard drive.

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Power Macintosh G3 (Blue and White): Bus Error After Installing Displays Software 1.7

Installing the Apple Displays software version 1.7 included with the Apple Studio Displays can cause a bus error after restart. This article describes how to resolve the issue.

This article has been archived and is no longer updated by Apple.

Bus errors and/or freezing upon restart after installing the Apple Displays software version 1.7 are caused by corrupted PRAM. Resetting PRAM by holding down the Command-Option-P-R keys at restart until the computer chimes twice, appears to resolve the issue.

Apple Displays software version1.7.1 is available for download from the Apple Software Updates web site at **http://www.apple.com/swupdates**.

Published Date: Feb 18, 2012

AppleShare IP: Idle User Disconnect Message Not Shown

If an AppleShare IP server has been configured to disconnect idle users after a certain period of time, and is configured to send a message to them when they are disconnected, some users may not receive this message when they are disconnected.

This article has been archived and is no longer updated by Apple.
Workstations using AppleShare client 3.7.4 and earlier receive the idle disconnect message. Workstations using AppleShare client 3.8 and later do not receive the message, but they are disconnected as scheduled. These clients receive other messages sent by the AppleShare IP administrator.
Published Date: Feb 18, 2012

"File Server Uses Incompatible Version of the AFP Protocol" Error Resolution

When attempting to select a server in the Chooser, an error occurs saying "This file server uses an incompatible version of the AFP protocol. You cannot connect to it. Please contact the server's administrator." The server is using Personal File Sharing.
This article has been archived and is no longer updated by Apple.
This is the result of a network protocol communication error using AppleTalk Session Protocol.

When a file sharing client connects to a server, an AppleTalk Filing Protocol (AFP) connection is established. To initiate this connection, the client queries the server using AppleTalk Session Protocol (ASP).

Personal File Sharing servers and early version of AppleShare 3.0 had an issue, where they could send a zero length reply to a ASP Get Status. The client would interpret this as the server not having an AFP that it understands. (The versions of AFP that the server supports is part of the data returned in the ASP Get Status reply.) The result is that the client posts the specified error message.

This issue was fixed in 1993. If this issue occurs repeatedly, using recent modern Mac OS, the suspicion would be that the server software has become corrupted in memory somehow. Turning Personal File Sharing off and then back on had been reported to clear up this situation.

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Business BASIC III: Finding what volume is in what drive

This article has been archived and is no longer updated by Apple.

The following program determines the volume name of the diskette in drive two.

```
10 temp$ = prefix$
20 prefix$ = ".D1"
30 D1$ = prefix$
40 prefix$ = ".D2"
50 D2$ = prefix$
60 prefix$ = temp$
70 print ".D1 contains ";D1$;" and .D2 contains ";D2$
```

Published Date: Feb 18, 2012

LaserWriter 8.6: Before You Install

This article comprises the Before You Install document for the LaserWriter 8.6 printer driver. This software was released by Apple on March 24, 1999 and is available for downloading from the Apple Software Updates Web site at http://www.apple.com/swupdates.

Description:

This software includes version 8.6 of the LaserWriter printer driver, which is included with Mac OS 8.5.

This article has been archived and is no longer updated by Apple.

Before You Install

This document contains important information about the LaserWriter version 8.6 software. You may want to print this document and keep it for future reference.

Installing the Printer Driver Software

Compatible Systems and System Software

You must use the Installer program to install the LaserWriter software. This version of the LaserWriter software is only supported on the Macintosh systems with the 68040 or Power PC family of Microprocessor. This software will only install on Mac System 7.6.1, Mac OS 8.1 and Mac OS 8.5 or later. If you are using a version of the Mac OS not listed, you must first upgrade your OS to use this software.

Installation notes: The LaserWriter 8.6 Read Me file will be installed into the Mac OS Read Me Files folder (located on your startup disk). Please refer to this file for additional tips on using your LaserWriter software.

If you are installing from floppy disks, before installing the printer software, restart your system with all extensions turned off. To do this, hold down the Shift key while you restart your computer. Hold the Shift key down until you see the message Extensions off, or until your normal desktop appears.

If you are installing from a CD-ROM, you may want to turn off or remove individual extensions which may conflict with the Installer. Do not turn off or remove the extension for the Apple CD-ROM.

The Installer does not remove versions of the LaserWriter printer driver earlier than version 8.0. If you no longer need these files, you may remove them from your System Folder.

The Installer does remove earlier versions of the LaserWriter 8 driver (for example, LaserWriter 8.0) and replaces the PPD files for Apple LaserWriter printers with the latest versions. You may want to archive your current LaserWriter 8 driver and PPDs before installing this software. To do this, drag the LaserWriter 8 and PrintingLib files from the Extensions folder to another folder. Drag your current PPDs from the Printer Descriptions folder to another folder.

LaserWriter Driver and Related Components

When you install this software, the Installer places the following files on your hard disk:

In the Extensions folder in the active System Folder:

- CFM-68K Runtime Enabler version 4.0 (System 7.6.1 w/68040 Microprocessors)
- Desktop Printer Extension version 2.1 (System 7.6.1 Only)
- Desktop Printer Menu version 2.1 (System 7.6.1 and Mac OS 8.1) or 2.2.1 (Mac OS 8.5 and Later)
- Desktop Printer Monitor version 2.1 (System 7.6.1 and Mac OS 8.1) or 2.2.1 (Mac OS 8.5 and Later)
- Desktop Printer Spooler version 2.1 (System 7.6.1 and Mac OS 8.1) or 2.2.1 (Mac OS 8.5 and Later)
- LaserWriter 8 version 8.6
- PrintingLib version 8.6
- PrintMonitor version 7.1.2f1
- NuQuickTimeLib.slb version 2.0.1 (System 7.6.1 w/68040 Microprocessors)
- NuThreadsLib.slb version 2.1.1 (System 7.6.1 w/68040 Microprocessors)
- ObjectSupportLib version 1.2 (System 7.6.1)
- IrDALib version 1.1.5 (IrDA Capable PowerBooks Only)*
- IrDA Tool version 1.1.5 (IrDA Capable PowerBooks Only)*
- IrDALanScannerPPC version 1.1.5 (IrDA Capable PowerBooks Only)*

In the Control Panels folder in the active System Folder:

- Infrared version 1.1.5 (IrDA CapiableSystems Only)*

In the Control Strip Modules folder in the active System Folder:

- Print Selector version 2.1 (System 7.6.1 and Mac OS 8.1) or 2.2.1 (Mac OS 8.5 and Later)

In the Scripting Additions folder in the active System Folder:

- Desktop Printer Manager version 1.0 (Mac OS 8.5 or Later)

In the Printer Descriptions folder in the Extensions folder in the active System Folder:

- PostScript Printer Description (PPD) files for Apple LaserWriter printers (Various versions)

In the Apple LaserWriter Software Folder:

- Desktop Printer Utility version 1.1

In the Mac OS Read Me Files Folder in the Start-up Disk:

- LaserWriter 8.6 Read Me version 1.1

* IrDA Capable PowerBooks are: Apple PowerBook 2400, Apple PowerBook 3400, Apple PowerBook G3, and all Apple PowerBook G3 Series PowerBooks.

Note: If the Installer is unable to remove old files from your hard disk, it will terminate the installation procedure. If this happens, remove old copies of the files listed above from their respective folders and try the install again.

Other Issues and Tips

Desktop Printer Icons Appear Inactive - When switching Mac OS systems, Desktop Printers may appear inactive when they should be active. This can be resolved by rebuilding the desktop printer database. The desktop printer database can be rebuilt by restarting your Macintosh with the Command and Option keys pressed down until the desktop has been rebuilt.

After Install, If No Default Desktop Printer Is Selected - After the software installation is complete and your system has restarted, check that you have a default desktop printer selected. The default desktop printer has a bold line surrounding it. If you do not have a default desktop printer, highlight the Desktop Printer icon that you want to use as the default printer and press the Command and L keys at the same time, or from the Printing menu, select "Set Default Printer".

Printer Descriptions Folder Alias - If the Printer Descriptions folder has been moved to somewhere other than the Extensions folder, and an alias is in its place, be sure to remove the Printer Descriptions alias before running the Installer.

Removing Unneeded PostScript Printer Descriptions - This software installs over thirty LaserWriter PostScript Printer Descriptions (PPD). To remove unwanted PPDs, open this folder on your system after you are finished installing the software: System Folder: Extensions: Printer Descriptions. You will see displayed all the currently existing PPDs. PPDs are listed by printer model name. If you see PPDs that you will not be using, drag them to the trash.

Published Date: Feb 18, 2012

Sherlock: What Search Operators Are Supported?

Does Sherlock support any specific search operators?

This article has been archived and is no longer updated by Apple.
Because Sherlock has the capability to search across multiple search engines simultaneously, no specific search operators are supported. Sherlock will pass the exact words you type in to all selected search engines and they will act upon the search string depending upon their own criteria.

A search operator is used to help narrow down a search. The most common operators are: and, or, not, adjacent.

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Data Modem 2400: Configuring for Credit Card Dialing

I have a Macintosh Portable which is now equipped with an Apple Macintosh Portable Modem. When used to dial local numbers or when dialing direct, it works just like a Hayes modem is supposed to.

In my use of the Portable however, I often dial long distance numbers. My technique for doing this is to dial with a 0 (instead of a 1) and then dial my credit card number. On a normal Hayes modem, this is done as follows:

ATDT013012869000;

Notice the semicolon at the end of the dial string, which tells the modem to return to command mode when done with the phone number.

As the call is completed, AT&T will come around and ask for a credit card number. Since the modem is still in command mode, I give the following command:

ATDT1234567890

This command tells the modem to send my credit card number. After this, the call is typically completed and I can do my stuff.

The trouble with the Macintosh Portable modem is that when it is given the second command string, it hangs up the phone before doing the credit card number. This is not good. I need a solution.

This article has been archived and is no longer updated by Apple.
Your problem is caused by a feature of the Macintosh Portable Data Modem 2400 and its use of the dial command. The feature in question is dial tone sensing -- waiting for a dial tone before actually dialing the requested number. It is a common feature of many, but not all, Hayes and Hayes-compatible modems and actually originated with another modem manufacturer.

When you issue the first dial command, the modem goes off-hook, waits for a dial tone, and then dials the number. After the second dial command, the modem (which is already off-hook) again waits for a dial tone. Since there is no dial tone present at this stage of a credit card call, the modem waits 2 seconds as specified by modem register S6 and goes on-hook without dialing the credit card number. It should also alert the user with a NO DIALTONE message.

There are a couple of ways to get around the problem. The first and probably most acceptable way is to use additional dial command options designed just for this kind of situation.

The W modifier can be put in the middle of a dial string to cause the modem to wait for a "secondary" dial tone such as that generated by AT&T "dial 0 first" calls.

ATTD 0 123 456-7890 W 12345678901234

The above command dials the destination number, and then pauses at the W for a secondary dial tone. When the secondary dial tone is detected, the rest of the number is dialed -- in this case, the credit card number. The number of seconds the modem will wait for the secondary dial tone is controlled by the value of modem register S7.

Some long distance services do not generate this secondary dial tone, and in these cases a different modifier must be used. The @ symbol causes the modem to wait for a 5-second silence before continuing, and is one alternative.

ATDT 0 123 456-7890 @ 12345678901234

This dials the destination number and then waits for a 5-second silence before dialing the credit card number. If the 5-second silence isn't detected within the number of seconds in modem register S7, the modem will go on-hook and display the message NO ANSWER.

Another useful modifier is the comma character. It will generate 2-second pauses (controlled by modem register S8) while dialing. Two in a row would cause a 4-second pause.

ATDT 0 123 456-7890 ,, 12345678901234

This dials the destination part of the number and pauses 4 seconds before dialing the credit card number.

The 5-second delay usually works, but is often excessive. Combinations of commas can generate just the right amount of delay, depending on the long distance carrier being used.

One last item to note is that the dial tone sensing is only active when result code set 2 or 4 is used. This is controlled by the ATXn command, where n is a value from 0 to 4 inclusive. If 0, 1, or 3 is used, your original method of dialing would work.

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Power Macintosh G3 (Blue and White): Which Zip Drive to Use For Upgrade

Upgrading your Power Macintosh G3 does not require a specific Zip drive from Apple, so you can obtain an ATAPI Zip drive from your favorite vendor.

This article has been archived and is no longer updated by Apple.
Apple has an upgrade kit available from the Apple Store online at http://www.store.apple.com, or through your local Authorized Apple Reseller. The part number is M7551LL/A.

If your computer did not come with a Zip bezel, you may obtain one from your Apple Authorized Service Provider or a third party company. The Apple part number is 076-0762.

Published Date: Feb 18, 2012

USB Enabled Macintosh: ADB AppleVision Display Support

Using an older AppleVision or Apple Studio display that required ADB for certain features is not directly supported on newer Power Macintosh and PowerBook computers that lack an ADB port. This article provides further information on using older ADB based displays on newer computers such as the PowerBook (FireWire) or the Power Mac G4.
This article has been archived and is no longer updated by Apple.
While not explicitly supported, displays that require ADB can function provided the appropriate video card or port is available. However, certain features that rely on ADB, such as ColorSync and on-screen geometry adjustments, do not.

There are ADB to USB adapters available that may return the ColorSync and on-screen geometry adjustment functionality. To locate available adapters, go to the Apple USB products page at **http://guide.apple.com**. From there you can search for USB adapters.

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze Keyboard): Battery and Expansion Bay Compatibility

This article describes the battery and expansion bays used in the PowerBook G3 Series (Bronze Keyboard).
This article has been archived and is no longer updated by Apple.
The PowerBook G3 Series with Bronze keyboard has two battery bays similar to earlier PowerBook G3 Series computers. However, the left bay works with a battery only, while the right bay works with a battery or expansion bay device like a CD-ROM drive, or Zip drive.

The battery and expansion bay devices from the earlier PowerBook G3 Series do not work with the PowerBook G3 Series (Bronze keyboard) because they are too tall. The proper battery model number for the PowerBook G3 Series (Bronze keyboard) is M7385G/A.

Apple ships the PowerBook G3 Series (Bronze keyboard) with a expansion bay blank (weight saving module) which takes the place of either a battery or expansion bay device. This module protects the expansion bay from foreign material when an expansion bay device is not installed.

Apple does not provide a floppy drive module for the expansion bay.

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ALERT: "Steroid" Trojan Horse

This article discusses the effects of a Trojan Horse called "Steroid", and some suggestions on repairing the losses it can cause.

This article has been archived and is no longer updated by Apple.
The Trojan Horse called "Steroid" is an INIT that claims to speed up QuickDraw on Macintosh computers with 9-inch screens. The INIT contains code that checks for the date being greater than June 6, 1990. If it is, it erases all mounted drives.

We have performed some tests on a Macintosh SE. Having Comm Toolbox installed seemed to interfere with the INIT and kept the erase from happening: the Macintosh SE simply crashed instead.

We then installed the INIT on a floppy disk and booted the Macintosh SE. The floppy and hard disk were promptly erased. NOTE: We had set the date to one LATER than June 6, 1990.

So far, we know that the code does the following operations at restart:

Operations at Restart

DATE & TIME CHECK (Loop)
SYSENVIRONS CHECK
GETS VOLUME INFORMATION (probably checking for HFS)
GETS SOME ADDRESSES (Toolbox traps)
DOES SOME HFS DISPATCH OPERATIONS
VOLUME IS REINITIALIZED to "Untitled"

Information

TYPE: INIT
CREATOR: qdac
CODE SIZE: 1080
DATA SIZE: 267
ID: 148
Name: QuickDraw Accelerator
File Name: " Steroid" (first two characters are ASCII 1)

What To Do

If your disk becomes erased, you can use SUM II Disk Clinic to recover the deleted files. We have tried this and it seems to work.

Published Date: Feb 18, 2012

PowerBook (Bronze keyboard and FireWire): No Traditional Serial Ports

Does the PowerBook G3 Series (Bronze keyboard) or PowerBook (FireWire) support ADB or traditional serial devices?
This article has been archived and is no longer updated by Apple.
No, there are no ADB or serial ports on the computer. Instead, the computers have two USB ports for connecting keyboards, mice, or other USB peripherals. The PowerBook (FireWire) adds two 400 Mbps FireWire ports for connecting FireWire devices such as DV cameras or hard drives.

If you have need to connect serial or ADB devices, there are a number of third party adapters for using serial devices on the USB port. Refer to the Apple USB homepage for additional information on USB adapters and products at **http://www.apple.com/usb**.

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): How to Determine if DVD Decoder is Present

This article tells how to use Apple System Profiler to determine whether the DVD decoder is present on the logic board of your PowerBook G3 Series (bronze keyboard) computer.

This article has been archived and is no longer updated by Apple.
The most reliable way to determine if the DVD decoder is present on the logic board is by using the Apple System Profiler. Under the Hardware Overview tab the following appears if the DVD decoder is installed:

Figure 1, Apple System Profiler Hardware Overview tab

You can also look on the underside of the PowerBook; the product ID label has DVD on it if the decoder is installed.

Note: If the PowerBook G3 Series (Bronze keyboard) did not come pre-configured for DVD decoding, there is no upgrade available from Apple to provide that capability.

Published Date: Feb 18, 2012

PowerBook (Bronze keyboard or FireWire): Drive Height Specification

This article provides the drive height specification for the PowerBook G3 Series (bronze keyboard) and PowerBook (FireWire) computers.

This article has been archived and is no longer updated by Apple.
The hard disk drive must be no taller than 12.7mm or 0.5 inch for either PowerBook.

Published Date: Feb 18, 2012

AppleShare 2.0 & Older Versions: Recommended Memory Use (8/95)

Extra memory in an AppleShare file server is automatically given to RAM cache. But because of the algorithms used by Macintosh RAM cache, some have told me that a 2MB server is actually FASTER than a 5MB server.

Is this the case? Are there any recommendations for memory size for:

File Server Only
File Server and Print Server
File Server with Internet Router
File Server and Print Server with Internet Router

If I'm using a Macintosh II as a file server with 2MB of memory (and under the maximum of 50 users) what's the benefit of another 3MB of memory for the file server? I know that the RAM cache will increase (it's at 1024K already, though with 2MB) and that will (theoretically) speed things up, but I've switched back and forth, and don't see much of a difference.

This article has been archived and is no longer updated by Apple.
AppleShare File Server runs in about 1MB of RAM. Any memory beyond this 1MB is given to RAM cache, to cache directory structures, user data files, and so on. Thus, in a 2MB machine, 1MB will be used for caching. As cache size increases, more of the disk directory can be maintained in memory. This results in fewer disk accesses and faster response. Users' data files are also maintained in cache when there is room. This is effective with multi-user applications when several users access the same data file.

In general, 1MB of cache memory is quite adequate. Any more memory beyond this will not buy you much -- and can degrade performance, as you were told. This is why you did not see the difference between a 3MB and a 5MB machine.

For a File Server only, 1MB to 2MB memory is recommended. A 1MB Macintosh server can support 25 concurrent users. A 2MB Macintosh II can support 50 concurrent users.

To run the AppleShare File Server with the Internet Router or the AppleShare Print Server, or both, the minimum memory requirement is 2MB. You should run about 4MB to achieve better performance.

For more information about memory requirement when running the Internet Router with the File Server and the AppleShare Print Server, search the Tech Info Library using keywords "Internet Router" and "memory".

Article Change History:
21 Aug 1995 - Change title to reflect the subject.

Support Information Services
Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): Modem Compatibility

The modem in the original PowerBook G3 Series does not work in the PowerBook G3 Series (Bronze keyboard).

This article has been archived and is no longer updated by Apple.
The new PowerBook G3 Series uses a new modem design that places the modem and RJ-11 jack on two separate boards. The modem ports are also in different locations on the two computers.

On the PowerBook G3 Series the modem port is on the left side next to the PC card slot. On the PowerBook G3 Series (Bronze keyboard), the modem port is at the rear of the computer.

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): Physical Ports, Controls, and Connectors

This article provides a description of the physical ports, controls, and connectors used in the PowerBook G3 Series (Bronze keyboard).
This article has been archived and is no longer updated by Apple.

Rear ports and connectors

Figure 1, Locations of ports and connectors

Legend

A Power adapter connector
B USB ports
C Audio input and output ports
D Ethernet port
E TV out port
F External video (VGA port)
G PowerBook reset button
H Infrared (IrDA) window
I Connector for internal modem
J PC Card slot
K PowerBook battery
L SCSI (HDI-30) port
M Keyboard locking screw

Front components and controls

Figure 2, Front component and control locations

Legend

A Sleep indicator light
B Volume controls
C Brightness controls
D Keyboard release tabs
E Battery bay release lever
F Expansion bay release lever
G CD-ROM or DVD-ROM drive
H Security lock
I Mute key
J Num Lock key
K Color display
L Internal microphone

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): Occasional Lack of Audible Feedback from Volume Buttons

I have noticed that on my PowerBook G3 Series (Bronze keyboard) sometimes the volume buttons don't make an audible beep unless I increase the volume to the maximum. Why is this?

This article has been archived and is no longer updated by Apple.

In certain circumstances the system software may think that a CD is playing when in fact it's not. For example this can happen after a CD has played all the way to the end and stopped on its own. In this condition, the volume buttons will not make beep sounds when pressed unless the volume is increased to the maximum. Visual feedback is still provided, however.

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): Difference Between PowerBook SCSI Control Panels

I did a Universal Install of Mac OS 8.6 and I have two similar control panels. One is called PowerBook SCSI Disk Mode and the other is called PowerBook SCSI Setup. What's the difference?
This article has been archived and is no longer updated by Apple.
Although the control panels have similar names, they have slightly different functions and should not both be used on the same model of PowerBook.

The PowerBook SCSI Disk Mode control panel should be used with any PowerBook model available before the PowerBook G3 Series (Bronze keyboard). It allows you to set the SCSI Disk Mode address on the PowerBook when you connect the PowerBook to another Macintosh as a SCSI disk drive.

The PowerBook SCSI Setup control panel should be used on the PowerBook G3 Series (Bronze keyboard). It allows for the same functionality but in addition it also offers the option to scan for and mount SCSI devices when coming out of sleep.

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): NetBooting with Mac OS 8.5.1 Not Supported

My PowerBook G3 Series (Bronze keybard) came with Mac OS 8.6 pre-installed but I'm able to NetBoot with the default Mac OS 8.5.1 NetBoot HD.img.
This article has been archived and is no longer updated by Apple.
The NetBoot HD.img must be updated to Mac OS 8.6 by the NetBoot Server administrator in order to properly support NetBooting PowerBook G3 Series (Bronze keyboard) computers.

The NetBoot Server Administrator should additionally install the Battery Module Control Strip module and the ATI Resource Manager extension contained in the Important Extra System Software folder on the PowerBook Install CD, the contents of which are shown below.

The third component, the Modem Sound TuneUp extension, should only be installed on the image when PowerBook G3 Series computers are intended to be the only NetBoot clients. The Modem Sound TuneUp extension should not otherwise be installed as it is not appropriate for use with the modems in iMacs and Power Macintosh G3s (Blue & White).

Figure 1, Modem Sound TuneUp icon (bottom right)

While Mac OS 8.5.1 may boot a PowerBook G3 Series (Bronze keyboard), it does not represent a supported configuration. Mac OS 8.6 and its corresponding Mac OS ROM file were developed in part to support certain hardware features of the PowerBook G3 Series and, as such, is the minimum supported version of the Mac OS on this computer.

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): Sleep Indicator LED Glows Steadily at Startup

When waking a PowerBook G3 Series (Bronze keyboard) from sleep, the sleep indicator light glows steadily for a short time before the computer wakes up.

This article has been archived and is no longer updated by Apple.
This is normal behavior for the PowerBook. While the LED is on the computer is reloading the power manager code. This provides the information to the computer relative to power management and battery charging. It should not happen every time you wake the computer from sleep but it happens occasionally and is not considered a fault.

Published Date: Feb 18, 2012

MacDFT: IBM Environment Printing Support

DCA MacIrma supports printing with the IBM standard $IND file transfer mechanism.

MacDFT doesn't seem to support that function. Why?

This article has been archived and is no longer updated by Apple.
We are not clear how you are using file transfer service IND$ for printing. DCA MacIrma supports printing via LU Type 3 devices to IRMAPrint attached printers. Tri-Data Systems, Inc.'s Netway supports printing via LU Type 3 device to LAN-based LaserWriters.

In the IBM environment, Local copy means sending a snapshot of your screen to the control unit, which prints it on a 3287 printer. Host Local copy printing means printing a host file on a 3287 printer connected to the terminal. MacDFT version 1.1 does not support host or terminal local copy. However, you can create a screen image that you can save to disk or print from the Macintosh II computer during a MacDFT session.

You can print documents and files produced during your MacDFT session on an Apple printer that is connected to your Macintosh. You can print host-resident documents to an IBM printer that is connected to your control unit or host. Use the print commands that are supported in your IBM environment.

Published Date: Feb 18, 2012

PowerBook (Bronze keyboard and FireWire): No Ethernet Cable in Accessory Kit

My computer did not come with an Ethernet cable in the accessory kit. Was it supposed to have one?
This article has been archived and is no longer updated by Apple.
No, an Ethernet cable is not included in the PowerBook G3 Series (Bronze keyboard) or PowerBook (FireWire) accessory kit..

If you are going to connect your computer to an Ethernet network you will need to purchase the appropriate cable. If you are planning to connect to a 100 base Ethernet network, is important that the cable be rated as a Category 5 (Cat 5) cable .

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): About Important Extra System Software Folder

My PowerBook G3 Series (Bronze keyboard) CD has an Important Extra System Software Folder. What is it for?
This article has been archived and is no longer updated by Apple.
About the contents of the Important Extra System Software Folder.

This folder contains:

Read Me entitled "Important Extra System Software".

ATI Resource Manager

Battery Monitor

Modem Sound TuneUp

Mac OS ROM

Your computer came with all necessary system software already installed. However, if you use the Mac OS Install program on the PowerBook G3 Series CD to reinstall your system software you will need to install the items in the Important Extra System Software folder separately.

To install the extra system software:

1. After reinstalling the Mac OS, drag and drop the items from this folder on top of a closed system folder on your hard disk.
2. Click OK when asked to put the items in their proper location.
3. Restart your computer.

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): Important Information About the PowerBook G3 Series CD

This article comprises the Important Information About the PowerBook G3 Series CD Read Me.
This article has been archived and is no longer updated by Apple.

Important Information About the PowerBook G3 Series CD

Some of the items on your PowerBook G3 Series CD have been preinstalled on your computer's hard disk. You can find out about each of these programs or documents by opening its folder and reading the Read Me file.

Backing Up Software

The PowerBook G3 Series CD contains a copy of all the software that was originally installed on your hard disk. You can restore the complete set of software to the hard disk (or make a copy on another disk) using the Apple Software Restore program on the CD. See the file Restoring PowerBook Software for instructions.

You cannot use the restore program to make floppy disks.

Starting Up from the CD

If you are not able to start up the computer from the hard disk, you can use the CD as your startup disk. To start up from the CD, hold down the C key after you press the Power key.

The PowerBook G3 Series CD contains a minimal System Folder. Consequently, you cannot run the programs included on the CD until you restart the computer with another startup disk. Also, when the CD is the startup disk, you cannot install some programs from the CD to your hard disk.

Published Date: Feb 18, 2012

Macintosh: Controlling Multimedia Peripheral Devices

1) Is there any product available that allows peripherals like the video cassette recorder, LaserDisc player, large screen projector, slide projector, sound system, lighting system, and so on, to be controlled from the Macintosh? How about a product that can control the VCR and get it to go to certain frames on the video cassette (just like the way the Macintosh can control the LaserDisc player).

2) Are there any products around that can record the Macintosh screen display into PAL video format?

This article has been archived and is no longer updated by Apple.

1) We do not know of one commercial product that can control all of the listed peripherals. However, there are products for controlling most of the individual peripherals separately.

- VCRs, camcorders and still video cameras with Control-L (Sony's video control standard) can be controlled via VidClip XCMDs for HyperCard, which are available from APDA. At this point, it appears that only Sony equipment uses the Control-L protocol. Sony does have 8mm VCRs, VHS VCRs, and still video cameras/players that support the Control-L protocol.

- There are XCMDs for HyperCard that can control many of the laser disc players. These XCMDs are available from Voyager.

- Sound systems and lighting systems can be controlled via MIDI. Audio mixing boards, audio equalizers, audio delay and reverb devices, and lighting control boards exist that have MIDI connections built in. A visit to a professional musicians' store should provide an array of possibilities for MIDI-controlled sound and lighting systems.

- Slide projectors usually have a cable-attached button controller for advancing/reversing slides. These button controllers can be replaced with a MIDI-controlled device from Peavey Electronics. Peavey is a music instrument manufacturer that recently produced a line of MIDI-controlled devices for controlling various items used in live performance music. One of these devices can replace the slide projector's remote control. Again, a professional musicians' store that carries Peavey products can supply this device.

- VidClip provides the control access to go to certain locations on tape. However, going to a specific frame on tape is not as easy as on disc. It is possible to get within about 5 frames with the typical Control-L VCR. Since recording single frames on low- to moderate-cost VCRs is not possible, the usual expectation with VCRs is to get close to (and in front of) the beginning of a video segment, start the playback, finish the segment, and stop the playback. Then cue to the next segment and continue.

- In addition to the list of media devices you have, audio CDs can also be controlled from HyperCard XCMDs. This would allow the addition of CD quality music and/or speech from audio CDs to the presentation. (Please be sure to check copyright issues when using material with copyrights.)

There are a variety of ways to integrate all of these various controllers into one application on the Macintosh. HyperCard XCMDs exist for the VCRs, laser discs, and for MIDI. Using a HyperCard stack that has access to all of the XCMDs would be able to control all of the devices at the click of a HyperCard button.

MacroMind Director 2.0 can use XCMDs from HyperCard, as well as its own XObjects. Thus, you can control the list of devices from within a Director movie, much like you would from within a HyperCard stack.

2) Many of the video boards can send Macintosh images to videotape in the PAL format. Truevision NuVista cards, several RasterOps Cards, and Mass Microsystems cards are all capable of providing PAL output. Some of these cards require an external encoder box to provide the PAL connection. Please check with the manufacturer for exact configurations. The Display Cards 8/24 and 8/24 GC will be able to provide PAL output via Truevision's VIDI/O Box. Eventually, RasterOps will have a PAL version of their Video Extender that will provide PAL.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:

22 Dec 1995 - Updated LaserDisc XCMD availability, updated format.

Support Information Services

Published Date: Feb 18, 2012

QuickTime Streaming: Server Requirements

This article provides the hardware and software requirements for the QuickTime Streaming server and the client workstations.
This article has been archived and is no longer updated by Apple.
QuickTime Streaming is very processor intensive. Therefore, the computer being used as the server should be dedicated as much as possible to streaming. It should also be the highest performance processor available for use.

The minimum configuration is:

- Power Macintosh G3 or Macintosh Server G3
- At least 256MB of memory
- At least 1GB of free disk space
- Software update to Mac OS X
- QuickTime Streaming Server 1.0

The recommended configuration is:

- 400 MHz Macintosh Server G3
- 1GB of memory
- 9GB of free disk space (three ultra-wide SCSI disk drives)
- 4-port Ethernet card
- Software update to Mac OS X
- QuickTime Streaming Server 1.0

AAdditional information is available from the Mac OS X Web site at **http://www.apple.com/macosx/server/qtstreaming.html**

Client workstations should be a PowerPC-based computer with at least 32 MB of memory, running Mac OS 8.0 or higher, and have QuickTime 4.0 or later installed. A static IP or DHCP address is also required because MacIP is not supported.

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DHX User Authentication Module 1.0: Read Me

This article comprises the DHX User Authentication Module 1.0 Read Me.
This article has been archived and is no longer updated by Apple.
DHX User Authentication Module 1.0 Read Me

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Introduction

Requirements for Running the DHX UAM 1.0

Installing the DHX UAM 1.0

Using the DHX UAM 1.0 Algorithms used

Known Incompatibilities and Limitations

Introduction

The DHX (Diffie-Hellman Exchange) UAM provides a relativly secure way to transport cleartext passwords of up to 64 characters to the server for further processing.

Requirements for Running the DHX UAM 1.0

AppleShare Client: 3.8.1 or later

Installing the DHX UAM 1.0

The UAM should be placed in a folder titled "AppleShare Folder" within the extensions folder on the current System Folder. No reboot is needed, though you must close the Chooser & Network Browser and reopen them before the new UAM will be noticed.

Using the DHX UAM 1.0 If the server you are connecting to, supports the DHX UAM, the AppleShare Client will put up a dialog allwing you to choose "Encrypted Password" as a login mechanism. Select this UAM and fill in your password and username just as you would for the standard AppleShare login dialog.

Algorithms Used

```
password is padded with nulls to 64 bytes

username is a pstring, padded to even byte length (odd number of chars)

ServerSig is obtained from the AFPSrvrInfo reply from the server.

first message from client to server:
| login (2 bytes)  | AFP Vers | UAMName "DHCAST128" | Username (padded) | Ma (16 bytes) |

reply (server to client)
| ID (2 bytes) | Mb (16 bytes) | (16 byte nonce, ServerSig)K |

login continue (client to server)
| logincontinue (2 bytes) | ID (2 bytes) | (16 byte nonce + 1, password)K |

reply (server to client)
pass / fail

(data)K = Encrypt data using CAST 128 CBC with key = K

The Key is generated with a Diffie-Hellman key exchange as follows:

Ma - first message = g^Ra mod p  (sent by the Client to the Server)

Mb - second message = g^Rb mod p (sent by the Server to the Client)

K - Key = Mb^Ra mod p = Ma^Rb mod p

We are using CAST 128, (the implementation from SSLeay) in CBC mode with the IV in the second message being
the bytestring "CJalbert" and the IV in the third message being the bytestring "LWallace".
```

Known Incompatibilities and Limitations

TA43945_DHX_User_Authentication_Module_Read_Me.pdf

- There seems to be a problem between Norton Antivirus and the DHX UAM. The client Mac will crash with an illegal instruction when the user types into the username or password fields. Workaround is to turn off Norton Antivirus.
- For debugging purposes, there is a debug break before each Alert put up by the UAM, just type g and return in MacsBug. If an alert does not come up, please report it as a bug.

Published Date: Feb 18, 2012

TCP/IP Options: Can‘t Turn Off "Don‘t Retain DHCP lease"

The TCP/IP Options control panel that comes with MacOS 8.6 contains a new check box for "Don't retain DHCP lease on shutdown." This article provides a workaround for a situation where once you turn this on, you can't turn it off.
This article has been archived and is no longer updated by Apple.
TCP/IP Options is an additional control panel that adds functionality not in the standard TCP/IP control panel. For full information on the options available in this control panel, refer to the following TIL articles:

Article 21075: "**TCP/IP Options Control Panel Read Me**"

Article 30994: "**TCP/IP Options: What does "Don't retain DHCP lease on Shutdown" do?**"

There is a known issue with the current version of the control panel which makes it impossible to disable the checkbox for "Don't retain DHCP lease on shutdown." Once the check box is turned on and saved, you will be able to uncheck it, but the changes are not saved. If you close the control panel and reopen it, the check box is still checked.

To revert to the original 8.6 behavior of maintaining lease information across reboots, you will need to do one of the following:

- Trash the TCP/IP Preferences in the Preferences folder.
- To save other TCP/IP configurations you may have, use the "Configurations" dialog box to delete the configuration with the changed prefs and create a new DHCP configuration.

If you wish to change between the two different settings often, create two different configurations in TCP/IP, one for each setting. Then, simply switch between the two TCP/IP configurations rather than using the TCP/IP Options control panel.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: How to Repair an HFS Plus File System

This article details the method to run DiskFirstAid.app to repair Mac OS Extended format (also known as HFS Plus) file systems.

This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

If the computer has an abnormal shutdown you should first check all file systems that are attached to the computer. For more information on how to repair the UFS filesystems, please see article 24501: "**Mac OS X Server: Why, When, and How to Run fsck for File System Maintenance**"

Mac OS X Server comes with a program named DiskFirstAid.app that can be used to repair an Mac OS Extended format file system. The program is started from the Workspace Manager by selecting it from the Apple Menu under Server Administration. When the program starts, you simply select the file system graphically and then choose either Verify or Repair.

The most common difficulty that is encountered when running DiskFirstAid.app is that an error message appears stating that the file system could not be unmounted because files are open. If you get this error, make sure you quit all active applications and then use the Remote Admin to stop the Apple File Server. At this point you should be able to successfully run DiskFirstAid.app and then restart the services you shut down.

Published Date: Feb 18, 2012

Novell Netware: AARP Packet Size Error Fix Available

I am running AlisaShare and, on another part of the network, Novell File Servers with Netware 2.15c and the Mac VAP 1.1.

The problem is with the AARP packet size that the Novell file servers are sending. AlisaShare is reporting an AARP packet size error.

I have checked out the AARP packet sizes with a sniffer. AlisaShare thinks the only valid AARP size is 60 bytes. Netware is sending AARPs that are 74 bytes in size. The old versions of Netware (2.15a with Mac VAP 1.0) send ARPs with a packet size of 60 bytes. They work fine with AlisaShare.

This article has been archived and is no longer updated by Apple.
There is a maintenance release of Netware for the Macintosh specifically designed to resolve the AARP packet length problem. You can get it by calling Novell Tech Support and asking for maintenance release 1.11 of Netware for the Macintosh.

For more information, search under: "Novell"

Published Date: Feb 18, 2012

Mac OS X Server 1.x: Manually Configuring for IP Routing

This article tells how to configure Mac OS X Server to route IP among several interfaces.
This article has been archived and is no longer updated by Apple.
Routing is active when the /etc/routed daemon is running. This daemon is start by the /etc/startup/0800_Network script if the proper settings are made in the /etc/hostconfig file.

When you run the Setup Assistant and configure multiple IP interfaces, it asks for an IP address for a router. You should enter the IP address of your router in this space, but then must manually replace it by editing the /etc/hostconfig file.

After the computer has restarted, open a Terminal window and use vi to edit the /etc/hostconfig file. The file this line:

```
ROUTER=1.2.3.4
```

If you have followed the steps above it should be set to point at the IP address of the router you entered in the Setup Assistant. Change the line to look like this:

```
ROUTER=-ROUTED-
```

Now when you restart the computer the startup scripts automatically start routed. If you want to change to parameters that are supplied to routed you must edit the /etc/startup/0800_Network script and change the -q parameter in this section:

```
case ${ROUTER:=-NO-} in

     -ROUTED-)
       # Set the 'q' (quiet) flag by default to avoid broadcasting routes.
       echo "     Using routed"
       routed -q
       ;;
```

For example if you wanted to have a -s parameter you would change the -q to -s and the final result would look like this:

```
case ${ROUTER:=-NO-} in

     -ROUTED-)
       # Set the 's' flag to force routed to supply routing information
       echo "     Using routed"
       routed -s
       ;;
```

A description of the valid parameters to routed and how what they mean is available in the routed man page. Access this page through the Terminal.app with the command 'man routed'.

Published Date: Feb 18, 2012

Power Macintosh G3 (Blue and White): Not Energy Star Compliant

The Power Macintosh G3 Blue and White is not Energy Star Compliant.
This article has been archived and is no longer updated by Apple.
The Power Macintosh G3 (Blue and White) is not Energy Star Compliant.
Published Date: Feb 18, 2012

Power Macintosh G3 (Blue and White): Mac OS Version Misprinted on Some CDs

Some Software Install or Restore CDs that came with Power Macintosh G3 (Blue and White) computers mistakenly state the system software version as 8.6.1.
This article has been archived and is no longer updated by Apple.
This is a misprint on a limited number of the CD-ROM discs, part number 691-2321. The actual version of the Mac OS on the CD is 8.6, there is no version 8.6.1.

This misprint also affects the Macintosh Server G3 CD part number 691-2322, as well as the SoftRaid CD part number 691-2329.

New CDs are being introduced into the Accessory Kits with the correct Mac OS version listed.

Published Date: Feb 18, 2012

Business BASIC III: Error codes not in the manual

This article has been archived and is no longer updated by Apple.
Here are some error codes that aren't in the manual:

37 device disconnected
38 resource unavailable
39 directory full
40 duplicate volume

These messages print on the screen when the program does not have ONERR enabled. Error #39 only shows up in the root directory under SOS 1.1.
Published Date: Feb 18, 2012

Apple HD160 SC Drive: Seagate Model Number is 94221-209

I need information on the Apple HD160 SC hard disk drive mechanism.

What is the relationship between the CDC/Imprimis model number and (following Seagate's take-over of Imprimis) the new Seagate number?

This article has been archived and is no longer updated by Apple.
Service Engineering provided us with the following information:

Imprimis 160MB Apple drive = Seagate model number: 94221-209

Seagate P/N are:
77748206 for Apple internal drive.
77748226 for Apple external drive

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): Sources for Additional Assistance

My PowerBook G3 Series (Bronze keyboard) came with two manuals. Where do I go to find answers to common questions that are not answered in these manuals?

This article has been archived and is no longer updated by Apple.

The PowerBook G3 Series (Bronze keyboard) comes with two printed manuals; Getting Started With Your PowerBook and Troubleshooting Handbook. If you cannot find your answer in these two manuals, here are some additional resources available to you.

Help Center

Selecting Help Center in the Help menu will present you with the available Help Guides installed on your PowerBook. At a minimum you should see "About Your PowerBook" and "Mac OS Help."

About Your PowerBook

The About Your PowerBook guide will give details about your specific computer. It will help you find out how to use features, connect external peripherals, install memory, and more.

Mac OS Help

The Mac OS Help guide will help you with such tasks as connecting to the Internet, setting up to print, and learning what's new in the Mac OS.

Internet

Other help systems are available via the Internet. The Apple Support Web site problem solving page is availabe at http://www.info.apple.com/support/powerbook/solve.html.

For news and specifications specific for PowerBook users go to http://www.apple.com/powerbook. For information on Macintosh products by Apple and other companies see http://www.apple.com/guide.

Published Date: Feb 18, 2012

Mac OS 8.6: USB Printer Compatibility

This article discusses the enhanced USB printer support in Mac OS 8.6, as well as listing various USB printer models.

You may also wish to review article 43027: "**Connecting a Serial Printer to a USB Capable Macintosh**" for more information on connecting a variety of printers to a USB enabled Power Macintosh or PowerBook.
This article has been archived and is no longer updated by Apple.
Mac OS 8.6 running on USB-equipped Macintosh computers, such as the iMac, iBook, PowerBook G3 Series (Bronze keyboard), Power Macintosh G3 (Blue and White) and Power Mac G4, supports printing to both USB inkjet and now USB-compatible PostScript printers. Below is a list of printers the printer manufacturers informed Apple were compatible with Mac OS 8.6 at the time Mac OS 8.6 was released.

Many of these printers have USB ports built-in, whereas others do not and require an adapter. Inkjet printers require printer drivers from the printer manufacturer.

Note: Mac OS 8.6 includes LaserWriter 8 version 8.6.5 which adds support for printing to USB-compatible PostScript printers. LaserWriter 8.6.5 provides support for PostScript printers that have USB ports built-in, and those that have IEEE 1284 parallel compatible ports. IEEE 1284 compliant printers may be connected to your Macintosh via a USB-to-Parallel adapter cable. The Infowave PowerPrint adapter is an example of such an adapter cable that may work with your PostScript printer having a parallel port.

The following list is not inclusive of all available compatible USB printers. Please check with your printer manufacturer for updated drivers and current compatibility information.

Printers

Vendor	Model Number	Adapter or Direct Connect?
ALPS	MD1000	USB kit
	MD1000	USB kit
	MD1000	USB kit
Brother	1040	Adapter
	1050	Adapter
	1040iM	Adapter
CANON	BJC6000	Adapter
	430J	Direct
EPSON	Stylus Color 740	Direct
	Stylus Color 740i	Direct
	Stylus Color 750	Direct
	Stylus Color 900	Direct
	Stylus Color 1200	Direct
	Stylus Color 600	Adapter
	Stylus Color 440	Adapter
	Stylus Color 640	Adapter
	Stylus Color 800	Adapter
	Stylus Color 850	Adapter
	SP700	Adapter
	SPEX	Adapter
	Stylus Color 1520	Adapter
	Stylus Color 3000	Adapter
HP	DeskJet 880	Direct
	DeskJet 882c	Direct
	DeskJet 895cxi	Direct
	DeskJet 1120c	Adapter
	DeskJet 1120cse	Adapter
	DeskJet 1120cxi	Adapter
	DeskJet 695c	Adapter

	DeskJet 697c	Adapter
	DeskJet 340	Adapter
LEXMARK	Optra E310	Direct
TEKTRONIX	Phaser 840	Direct

Adapters

Infowave	PowerPrint	Adapter

Knowledge Base Article 17159: "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

Macintosh Server G3 (Blue and White): Unsupported Monitor Resolution

My Macintosh Server G3 (Blue and White) with Mac OS X Server Technical Information manual states that the highest monitor resolution supported is 1920 x 1200. However, this resolution does not show up in my Monitors & Sound control panel. Is this a supported resolution?
This article has been archived and is no longer updated by Apple.
The 1920 x 1200 monitor resolution is not supported by any of the Macintosh Server G3 (Blue and White) models.
Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): SCSI ID Setting in PowerBook SCSI Setup Control Panel

When using HD Target Mode after performing a clean installation of system software on a PowerBook G3 Series (Bronze keyboard), the SCSI ID of the PowerBook is set to 2 regardless of the setting in the PowerBook SCSI Setup control panel.
This article has been archived and is no longer updated by Apple.
This issue arises in the Mac OS ROM file version 1.4 which is part of the Mac OS Install on the Restore CD included with your PowerBook. Since Apple has shipped all PowerBook G3 Series (Bronze keyboard) computers with Mac OS ROM version 1.6 pre-installed, this situation arises only after performing a clean installation.

If you run the Mac OS Install instead of the Apple Software Restore, you must install the 1.6 version of the Mac OS ROM. The Mac OS ROM version 1.6 file is contained in the Important Extra System Software folder on your PowerBook G3 Series CD that accompanies your computer.

After performing a clean installation using the Mac OS Install, copy the Mac OS ROM file, along with the other items in the folder, into your System Folder and restart. After restarting, you can set the SCSI ID in the PowerBook SCSI Setup control panel as you normally would.

For additonal information on this folder see the following:
Article 58352: "**PowerBook G3 Series (Bronze keyboard): About Important Extra System Software Folder**".
Published Date: Feb 18, 2012

DayStar FastCache: Incompatible with Apple Tape Backup

Apple Tape Backup 2.0.1 crashes when running on my Macintosh IIci whenever a DayStar Digital FastCache card is physically installed in the Macintosh.

This article has been archived and is no longer updated by Apple.
DayStar Digital confirmed that Apple Tape Backup does not run with cache turned on. The only current workaround (June, 1990) is to turn the cache off when running Tape Backup.

Please note that removing the DayStar FastCache Macintosh IIci CDEV will not turn cache off, since it is controlled in ROM. The correct way is to leave the DayStar CDEV in the System Folder, choose Control Panel from the Apple menu, click the DayStar FastCache Macintosh IIci CDEV, and turn the cache off.

Published Date: Feb 18, 2012

Power Mac G4 (AGP Graphics): Maximum Energy Savings Depends on PCI Cards

This article explains how Power Manager 2.0 can save energy by turning off Peripheral Component Interconnect (PCI) cards installed in a Power Mac G4 (AGP Graphics) computer.

This article has been archived and is no longer updated by Apple.

Power Manager2.0 can turn off the PCI cards installed in a Power Mac G4 (AGP Graphics) computer. Turning off the PCI cards when the computer is in sleep allows it to save energy. With all the PCI cards turned off, the cooling fan can also be turned off providing more power savings.

To get the most energy savings, all PCI cards installed in the computer must allow Power Manager2.0 to turn them off. Some PCI cards are designed to be turned on when the computer is turned on. If one of these kinds of cards is installed, Power Manager2.0 does not turn it off, and the computer's cooling fan continues to run when the computer is in sleep.

If your Power Mac G4 (AGP Graphics) does not turn off its cooling fan when in sleep, check with the vendors of the PCI cards installed in your computer to find out if they are compliant with Sleep Manager 2.0, or if they can be upgraded to be compliant.

Published Date: Feb 18, 2012

Power Mac G4: Final Cut Pro Compatibility

Final Cut Pro 1.0 and Final Cut Pro 1.01 are not compatible with Power Mac G4.

This article has been archived and is no longer updated by Apple.
To take advantage of hardware and software updates, including the Power Mac G4, Apple shipped a newer release of Final Cut Pro. Final Cut Pro customers should not attempt to run versions of Final Cut Pro on any hardware or software that is not certified. A list of certified software and hardware, as well as information on how to obtain an update to Final Cut Pro 1.2 is available from http://www.finalcutpro.com

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Power Mac G4: Description of Velocity Engine

This article describes the Velocity Engine, also known as AltiVec, which is incorporated into the new PowerPC G4 processors in the Power Mac G4 computer.
This article has been archived and is no longer updated by Apple.
The Velocity Engine can process data in 128-bit chunks, instead of the smaller 32-bit or 64-bit chunks used in traditional processors (it's the 128-bit vector processing technology used in scientific supercomputers--except that we've added 162 new instructions to speed up computations). In addition, it can perform four (in some cases eight) 32-bit floating-point calculations in a single cycle--2-4 times faster than traditional processors.

The PowerPC G4 with Velocity Engine works with the PowerPC architecture to accelerate the data-intensive processing required by next-generation video, voice, and graphics applications. Among the G4 key features is a vector permute function capable of rearranging data in the registers--a priceless benefit when converting data from one format to another (often necessary with voice, video and graphics apps, which typically need to save data in a number of different formats). These vector processing acceleration advantages give the G4 microprocessor a significant edge when it comes to fast visualization of large data sets, and intensive math for real-time simulations. Making the G4 perfect for everything from graphics and 3D games to astronomy, the biosciences, and predictive modeling.

For an in-depth discussion of the technology, refer to the Motorola Web page on AltiVec at
http://www.mot.com/SPS/PowerPC/AltiVec/index.html

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Macintosh Communications Toolbox: Where to Find Information

I am interested in making some tools for the commtoolbox. Where can I find guidelines, sample source, and so on?

This article has been archived and is no longer updated by Apple.

You might consider purchasing the "Macintosh Communications Toolbox," and the "Communications Tools, Basic Connectivity Set" from the Apple Programmer's and Developer's Association (APDA).

Published Date: Feb 18, 2012

TA43965_Power_Mac_G_PCI_Graphics_USB_Audio_Requires_Mac_OS_.pdf

Power Mac G4 (PCI Graphics): USB Audio Requires Mac OS 9

In order for USB audio devices to function on the Power Mac G4 (PCI Graphics), Mac OS 9 or later is required.

This article has been archived and is no longer updated by Apple.
The necessary software components are not present in the version of Mac OS 8.6 that ships with the computer.

Published Date: Feb 18, 2012

iBook: AppleWorks Serial Number Not Required

There is an error in the printed iBook Users Guide regarding the serial number requirement for AppleWorks.
This article has been archived and is no longer updated by Apple.
The version of AppleWorks which ships with iBook does not require a serial number for functionality. This information was not available before the iBook documentation was finalized.

It will be corrected in a future version of the documentation.
Published Date: Feb 18, 2012

TA43967_LaserWriter_IINTX_ROMs_Are_v_as_of_June__(TIL05845).pdf

LaserWriter IINTX: ROMs Are v3.0 as of June, 1990

Have the LaserWriter IINTX ROMs been updated to allow software switching back from LaserJet to PostScript? My LaserWriter IINTX manual says you can get the software to switch back, but I am unable to make it work.

This article has been archived and is no longer updated by Apple.
LaserWriter IINTXs (controller board Apple part #M6004/A) are currently shipping with version 3.0 ROMs. The major differences between these and older ROMs are:

- Software switching from LaserJet emulation to PostScript
- Font cleanup in LaserJet emulation
- Better disk management routines
- PostScript 51.8.

The upgrade kit (Apple part #M0445LL/A) is expected to ship (in very small numbers) in the third week of June.

Support Readiness will send upgrade kits (including the new manual) on a one-per-site basis as soon as they are available.

Published Date: Feb 18, 2012

Newer FireWire 2 Go PC Card: Disable PowerBook Energy Saver Before Use

This article provides two workarounds when using the Newer Technology FireWire 2 Go with Final Cut Pro. In some instances, when the PowerBook G3 Series goes to sleep while capturing digital video, the video image in the Log and Capture window is lost.
This article has been archived and is no longer updated by Apple.
There are two workarounds for this issue.

- Disable sleep in the Energy Saver control panel.
- Close and reopen the Log and Capture window to bring the video image back into view.

Note: This article provides information about a non-Apple product available on the online Apple Store. Apple Computer, Inc. is not responsible for its content and mention of this product should not be interpreted as a recommendation by Apple. Please contact the vendor for additional information.
Published Date: Feb 18, 2012

Newer FireWire 2 Go PC Card: Do Not Put Away While Final Cut Pro is Active

When using the Newer FireWire 2 Go PC card in the PowerBook G3 Series, do not put the card away while Final Cut Pro is active.
This article has been archived and is no longer updated by Apple.
When using the card in either the PowerBook G3 Series or PowerBook G3 Series (Bronze keyboard), using the Put Away (Command - Y) command, the PowerBook appears to become unresponsive and you are forced to restart the computer.

If you need to eject the FireWire 2 Go card, quit Final Cut Pro first, then eject the card.

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Published Date: Feb 18, 2012

Newer FireWire 2 Go PC Card: Does Not Provide Power to FireWire Devices

Unlike built-in FireWire, the Newer FireWire 2 Go PC card does not supply power to FireWire devices.
This article has been archived and is no longer updated by Apple.
When you connect a FireWire device to the FireWire 2 Go card, make sure you have the appropriate power adapter for the device. If the FireWire device is not self powered, it cannot be used.

Note: This article provides information about a non-Apple product available on the online Apple Store. Apple Computer, Inc. is not responsible for its content and mention of this product should not be interpreted as a recommendation by Apple. Please contact the vendor for additional information.

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Mac OS 8.6: Computer Stops Responding After Opening Drive Setup

Your computer may stop responding if you open a version of the Drive Setup application that is earlier than the one that came with your computer

This can happen with the iBook, Power Mac G4, and PowerBook G3 Series (Bronze keyboard) computers.
This article has been archived and is no longer updated by Apple.
Only use the version of Drive Setup that came with your computer, or a later version.

Drive Setup 1.8 is part of the Mac OS 8.6 system softare that came with the Power Mac G4 (AGP Graphics) computer. Drive Setup 1.7.3 is part of the Mac OS 8.6 system software that came with the Power Mac G4 (PCI Graphics) computer.
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PowerBook 5300 and 190: Troubleshooting No Power On Symptom

This article provides some basic troubleshooting steps for a PowerBook 5300 or 190 that does not power on.
This article has been archived and is no longer updated by Apple.
This process resets both the Power Manager and revives PowerBook 5300 and 190 computers which do not initially turn on.

1. Unplug AC adapter and remove battery.
2. Press and hold the Reset button on the back of the machine for about 45 seconds. (See chart below for location of the reset button.)
3. Plug the AC Adapter into the AC (wall) outlet.
4. Attach only the AC adapter to the PowerBook (don't put in the battery).
5. Press the Reset button one more time and the PowerBook should startup after a brief pause.

PowerBook	**Reset Button Location (on rear of computer)**
190 Series	Below the video out port
5300 Series	Below the video out port

Note: The Power Manager code can be fully purged by having an authorized service technician disconnect the internal backup battery and let the unit sit for 1 minute with all power removed (including the main battery and the AC Adapter). This forces the PowerBook to reload the code from the system software.

Authorized Apple Service technicians may remove the internal back up battery to reset the Power Manager. If you are not an authorized Apple Service technician, please note that removing the internal backup battery is not a simple procedure and is not recommended. If anything is damaged in your attempt to remove the battery, it will not be covered under warranty.
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iMac (Slot Loading): Sound Out Volume Lower When 3D Sound Is Selected

Is it normal for the speaker volume to be lower when 3D Sound is selected in the Sound control panel?

This article has been archived and is no longer updated by Apple.

Yes, when 3D sound is selected, the sound level is slightly lower than when 3D sound is not selected. Selecting 3D sound simulates a wider sound field, which results in a slightly lower volume.

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iMac (Slot Loading): Read Me

This article consistes of the Read Me file for the iMac (Slot Loading).
This article has been archived and is no longer updated by Apple.

Important Information About Your iMac

This document contains important late-breaking information about your iMac. For additional information, refer to the printed documentation that came with your computer, the online help for your iMac (Mac Help), and information located in the Help menu of most applications. Apple also provides substantial information on the Internet. If you have access to the Internet, you can find the latest information about iMac in the support area at www.apple.com/support/imac

The following topics are covered in this document:

Using your iMac
About the Apple DVD Player
Playing and recording from audio CDs
Adjusting and testing external USB (Universal Serial Bus) speakers
Connecting to a 10/100Base-T network
Connecting your computer directly to an Ethernet switch
Ethernet performance
Formatting external USB hard disk drives
Improving startup time
Setting the resolution when using an external monitor for video mirroring
Using additional alert sounds
Copying and pasting alert sounds
Using your computer with a NetBoot server

Third-party software
Using the internal modem with third-party software
Preserving Bookmarks and Favorites files when reinstalling Internet Explorer and Netscape Communicator
Setting up AOL when the Palm Desktop Software 2.5 is installed
Using EdViewInternet Safety Kit

Hardware compatibility
Using a digital video (DV) camcorder
Using USB devices with software applications
Connecting and disconnecting USB devices while the computer is asleep
Mounting and disconnecting USB storage devices
Using ADB copy-protection dongles
Using USB-to-serial converters

Documentation changes
Mac Help instructions for modifying a remote access configuration
References to Monitors & Sound Control Panel in Mac Help

Using your iMac

About Apple DVD Player
Apple included a preview version of Apple DVD Player software on iMacs that include a built-in DVD-ROM drive. This software ships as part of the Mac OS 8.6 version included with your iMac computer and is not compatible with the DVD hardware found in the Power Macintosh G3, PowerBook G3, and Power Mac G4 (PCI graphics) series computers. Apple expects to make an updated version available soon. For the latest information about the Apple DVD Player software and answers to support questions, go to Apple's Support Web site at www.apple.com/support

Playing and recording from audio CDs
Audio CD playback is now digital for increased fidelity and use with digital audio peripheral devices. When you play audio CDs, you no longer need to select "Internal CD" in the Input section of the Sound control panel or the Sound section of the Control Strip. However, to record from an audio CD, you may still need to select "Internal CD" in the Input section of the Sound control panel or the Sound section of the Control Strip.

Adjusting and testing external USB (Universal Serial Bus) speakers
The Speaker Setup section of the Sound control panel allows you to select and change the settings of the USB speakers connected to your computer. Use the Speaker Setup panel to select which speakers you want to use and to adjust the relative volume for each speaker. For example, if you have a subwoofer connected to your computer and want to adjust the volume for the subwoofer only, use the slider underneath the subwoofer to change the volume.

You can also test the speakers connected to your computer by clicking Start Test in the Speaker Setup section. The computer plays a "white noise" test tone on each speaker, allowing you to adjust the relative volume of that speaker. The "white noise" test tone contains sound for all

frequencies and sounds like static. You may want to reduce the overall sound volume for your computer using the Output section of the Sound control panel before testing your speakers, as the test tone can be quite loud on some speakers.

Connecting to a 10/100Base-T network
When you connect your iMac to an Ethernet network, the computer automatically senses whether it is connected to a 10Base-T network or to a 100Base-T network. Some (possibly all) ports on some network hubs/switches support both speeds. If you're using this type of hub/switch, there may be a delay in establishing a network link. The delay may last for several seconds after you start or restart the iMac and a message may appear saying the network is not available or that the network has only just become available. If you don't want a delay, connect your computer to an Ethernet network port that is not auto-sensing (10 or 100 megabits per second (Mbps) only). For more information, contact the manufacturer of the Ethernet hub/switch or your network administrator.

Connecting your computer directly to an Ethernet switch
If you connect your iMac directly to an Ethernet switch, you must disable spanning tree on that port. Otherwise your computer could duplicate the AppleTalk address of another computer on the same network and both network connections would become unreliable.

Ethernet performance
Your computer performs best when the Ethernet port is set to auto-negotiate. If you experience performance problems on your Ethernet network, check with your network administrator.

IMPORTANT The duplex mode of an Ethernet link to a switch is not detected if the port is not auto-negotiating. In this case, your computer will detect the appropriate speed but will default to half-duplex. If the port at the other end of the link is configured for full-duplex, a large number of late events can occur on the link. Set the switch's port to auto-negotiate where possible. If this isn't possible, then set the switch's port to half-duplex. For more information, see the documentation that came with the Ethernet switch.

Formatting external USB hard disk drives
Many USB hard disk drives are preformatted for use with DOS. You can use DOS-formatted USB hard drives with your computer, but you can get better performance if the USB hard drive is reformatted using Mac OS Extended or Mac OS Standard formatting.

Improving startup time
For best performance, make sure that a valid startup disk is selected in the Startup Disk control panel. If an invalid startup disk is selected (one your computer cannot start up from), your computer could take as long as two minutes to locate a valid startup disk and properly start up. PC card devices and RAM disks are examples of invalid startup devices, even though their icons may appear in the Startup Disk control panel.

If you have selected a CD as the startup disk in the Startup Disk control panel, and you start up your computer without a CD, or with a CD other than the software install or software restore CD that came with your computer, a single folder with a reappearing question mark appears on the screen. The computer will search for a System Folder and start up. If no System Folder is available, you must insert the software install or software restore CD that came with your computer and restart your computer. If you don't want to start up from a CD, make sure you choose another disk, such as the hard disk, as the startup disk in the Startup Disk control panel.

Selecting the Network Disk icon in the Startup control panel without having a Netboot server properly set up will also significantly delay the time it takes your iMac to start up.

Setting the resolution when using an external monitor for video mirroring
When you connect an external monitor to your computer for video mirroring, the external monitor uses the same resolution and timing as your computer. In order to properly view what's on the computer's screen on the external monitor, you must use one of the following resolutions:
Mode/Vertical refresh rate
- 640 x 480, 117 Hertz (Hz)
- 800 x 600, 95 Hz
- 1024 x 768, 75 Hz

To change the resolution:
1. Open the Apple menu, select Control Panels, then choose Monitors.
The Monitors control panel opens.
2. If necessary, click the Monitors button.
3. Click the desired resolution on the right, then click the close box to close the control panel.
Your computer and the external monitor are set to the desired resolution.

Note: If the external monitor isn't working, try changing the resolution to 1024 x 768, 75 Hz.

Using additional alert sounds
Your iMac includes resampled sounds which take advantage of the high-quality speakers in your computer. These sounds are located in the Additional Alert Sounds folder within both the Apple Extras folder on the hard drive and the CD Extras folder on the iMac software install CD. To install the alert sounds, quit all applications, and drag the desired files from the Additional Alert Sounds folder, onto the System Folder on your hard disk. The files will automatically be installed into the System file and available for use by all applications.

Copying and pasting alert sounds
Long alert sounds require large amounts of memory. If you have difficulty copying and pasting long alert sounds into the Sound control panel, you may need to adjust memory requirements for the control panel. To do this, open the Control Panels folder within the System Folder. Select the

Sound control panel, choose Get Info from the File menu, and then choose Memory in the Show pop-up list. Increase the preferred memory size, close the Get Info window, and try again until the preferred memory setting allows you to copy and paste the long alert sound.

Using your computer with a NetBoot server
If you want to use your iMac as a NetBoot client, you will need to update the system on the NetBoot server. For more information and instructions, go to the Mac OS X Server Web site at www.apple.com/macosx/server or the Apple Support Web site at www.apple.com/support.

Third-party software

Using the internal modem with third-party software
Some third-party software, such as FaxSTF or Total Access, have different modem selections than the ones found in the Modem control panel. Using these selections can slow down your connection speed. To use these programs with your computer's internal modem at its highest speed, make sure you select Apple Internal 56K Modem (V.90) in the Modem control panel.

Preserving Bookmarks and Favorites files when reinstalling Internet Explorer and Netscape Communicator
If you inadvertently delete the Internet Explorer or Netscape Communicator applications, you can reinstall the applications using the software install CD that came with your computer. Apple recommends that you move the file that contains your Internet sites list to a different location, such as the desktop, so that you can restore it after reinstalling the software. For Internet Explorer, this file is Favorites.html; for Netscape Communicator, the file is Bookmarks.html. When you reinstall Internet Explorer or Netscape Communicator, the program overwrites the sites list file; any locations or bookmarks that you added or that were preinstalled will be lost.

Setting up AOL when the Palm Desktop Software 2.5 is installed
If you installed the Palm Desktop Software 2.5 on your computer and you attempt to setup AOL, there is a conflict and a message may appear saying you have a "port in use" error. You need to disable HotSync so you can properly set up AOL. To do this, open HotSync Manager (click the icon next to the Applications menu, choose HotSync, and in the pop-up menu, select Setup). If necessary, click the HotSync Controls tab. In the HotSync section, click the button next to Disabled. AOL is aware of this issue and expects to make an update available soon. For the latest information about AOL updates, log into AOL and enter the keyword UPDATE.

Using EdView Internet Safety Kit
The version of EdView Internet Safety Kit that comes with your iMac is not compatible with the current version of Sherlock. Using Sherlock with EdView may cause a system freeze that will require you to force restart your iMac. To force your iMac to restart, simultaneously hold down the Control and Command keys, then press the Power button on the front of the computer.

Hardware compatibility

Using a digital video (DV) camcorder
Some DV camcorders may not be recognized immediately when you connect them to one of your iMac's FireWire ports. If your computer does not recognize your DV camcorder, try turning the camcorder off and then on again to establish a connection. If you continue to have problems, contact the manufacturer of the DV camcorder.

Using USB devices with software applications
Some applications don't recognize a USB device if the device is plugged in while the application is already running. To use the USB device with that application, quit the application, make sure the device is properly plugged in, then start the application again.

Connecting and disconnecting USB devices while the computer is asleep
When you connect and disconnect a USB device to and from your computer while the computer is in sleep mode, your computer automatically wakes up.

Mounting and disconnecting USB storage devices
To mount or remount a USB storage volume on the desktop, disconnect and then reconnect the device that contains the volume to a USB port on the computer, or to a USB hub attached to your computer. The volume should appear on the desktop in a few seconds. If the device uses removable media, the volume will not appear until the removable media is reinserted into the USB storage device.

Before you disconnect a USB storage device from your computer, close all open windows and quit all running applications that are stored on the USB storage device. If the device has a manual eject drive (you eject the removable media from the device yourself), make sure you eject the removable media first. Do not disconnect the device from your computer until a message appears saying it is safe to do so. Drag the device's icon to the Trash on the Desktop, then disconnect the device from your computer.

Using ADB copy-protection dongles
Some applications require the use of a ADB (Apple Desktop Bus) adapter for security purposes to prevent software piracy. The iMac uses Universal Serial Bus (USB) technology. You may be able to use a USB-to-ADB adapter with these applications in order to use an ADB copy-protection dongle. For more information, contact the software manufacturer.

Using USB-to-serial converters
You may be able to use some serial devices such as modems, printers, and digital camcorders with your iMac using a third-party USB-to-serial converter adapter. However, not all serial devices may be compatible with such an adapter. For more information, contact the adapter manufacturer.

Documentation changes

Mac Help instructions for modifying a remote access configuration
The instructions for editing Remote Access settings provided in Mac Help are incorrect. When you are asked to choose Automatic, you must select PPP or ARAP, because there is no longer an Automatic setting.

References to Monitors & Sound Control Panel in Mac Help
There are several references to the Monitors & Sound control panel in the online help (Mac Help). In the current version of Mac OS installed on your computer, the Monitors & Sound control panel has been divided into two separate control panels-a Monitors control panel and a Sound control panel. For specific help, click the question mark button in either control panel.

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iMovie 1.0: Read Me

This article contains the Read Me for iMovie.
This article has been archived and is no longer updated by Apple.
Editor's Note: iMovie 1.0 only comes with iMac DV computers. iMovie 1.0 is not a separate retail product. It is only supported on iMac DV computers.

About iMovie 1.0
Welcome to iMovie, an application that integrates Digital Video (DV) capture, scene editing, titling, transition effects, and audio to create broadcast-quality movies. For a list of qualified camcorders and DV devices, see the Device Compatibility section below. For the latest news and information about iMovie, visit the iMovie web site at www.apple.com/imovie

System Requirements

- A Power Macintosh computer with a PowerPC G3 300 MHz or faster processor*
- Mac OS 8.6 or later
- QuickTime 4.0 or later
- 64 megabytes (MB) of random access memory (RAM). iMovie requires a minimum of 16 MB free. On systems with 64 megabytes, be sure Virtual Memory is turned on in the Memory control panel.
- A CD-ROM drive
- 2 gigabytes (GB) of available hard disk space highly recommended
- A display that supports 800 x 600 resolution and thousands of colors (1024 x 768 in millions recommended)
- A built-in FireWire (IEEE1394) port
- A 4-pin to 6-pin FireWire cable (for use with DV camcorder)

*Compatibility with older computers is limited.

Getting Started
When you first open iMovie, create a new project. If you want to take a tutorial to get familiar with iMovie, Open the Help menu and choose iMovie Tutorial.

Reinstalling iMovie
To reinstall iMovie, open the installer on the iMovie CD and follow the instructions on the screen. The application and components will be placed in a folder named iMovie on the main level of your hard disk.

Note: iMovie was installed on your computer in the Applications folder on your hard disk. The Installer will put an iMovie folder containing the iMovie application folder and or the iMovie Tutorial folder on the main level of your hard disk. After installation, drag this folder and its contents into the Applications folder to restore it to the original location.

Application Notes

For Optimal Performance When Running iMovie
Quit any applications that may be running in the background. iMovie should be the only active application. On 64 megabyte computers, be sure Virtual Memory is turned on in the Memory control panel. Do not switch monitor resolutions while rendering is active.

These file formats are supported for input:
Still images: PICT, JPEG, GIF, BMP, and Photoshop
Audio files: AIFF and CD audio tracks
QuickTime movies: DV Stream format only

These file formats are supported for output:
QuickTime movies
Still images: PICT and JPEG
Video to DV tape
Do not unplug DV devices during import or export processes.

Font support:
The titling feature in iMovie supports TrueType as well as Adobe PostScript fonts.

16:9 Format
iMovie does not work with clips with a 16:9 aspect ratio.

Capturing Live Video From a Camera
If you intend to capture live video from a camera:

1. Switch the camera to Camera mode and set the Lock/Standby switch to Standby.
2. Remove any tape cassettes in the camera. A tape in the camera will cause the camera to time out and go into sleep mode. If the camera requires a tape to be in the camera but does not play video through to iMovie, check that the tape's write protection tab is unlocked.
3. Make sure the camera's demo mode is disabled. Some cameras switch to a demo mode when left on standby without a tape inserted. Check for a demo function in your camcorder's settings menu and disable it.

Renaming Clips
You can rename clips within iMovie. However, do not change the name of clips in your project folder. This will break links to the media in your project file.

Ejecting DVDs and CD-ROMs
Eject DVDs or CD-ROMs prior to running iMovie by dragging the disc icon on the Desktop to the Trash. If you are in iMovie, choose Hide iMovie from the Application menu in the upper right corner of your screen to switch to the Finder. Eject your DVD or CD-ROM while in the Finder, then choose iMovie from the Application menu to resume editing.

Maximum Movie and Clip Size
The maximum length of a movie is limited only by the available disk space on your computer. There is no limit to the number of clips that can be combined to create a single movie. However, the maximum file size of an individual movie clip is 2 gigabytes. If you exceed this 2 gigabyte limit during an extended duration capture, iMovie will continue the capture into a second clip.

Working While Rendering
You can continue working in a project while rendering transitions or titles. Performance may decline if you have more than two render processes working simultaneously.

Emptying the Trash Resets the Undo Command
If you empty the trash in iMovie, you will not be able to undo any actions taken prior to emptying the trash.

Sound Input
Do not change the sound input device while iMovie is running. iMovie uses an external or built-in microphone as the sound input device to record your voice. If you need to switch to one of these devices, quit iMovie then select the device in the Sound control panel or from the Control Strip.

Do Not Capture Video to Storage Devices Over A Network
Capture video to projects on local hard disks. Do not capture video to projects saved on a server. Video cannot be reliably captured over a network to a project stored on a server.

Simultaneous Use of Multiple DV Devices is Not Supported
iMovie will not work with more than one DV device connected to your computer with FireWire.

QDesign Music Codec 2 Professional Edition Sound Compression
If you plan to use this sound compression software with iMovie, you must first export a movie through QuickTime Player using this codec and register the software with its serial number when prompted. You can then proceed to export movies with QDesign Music Codec 2 sound compression through the Expert export settings in iMovie.

Tutorial Notes

Removing and Restoring the Tutorial Project and Media Clips
You can reclaim hard disk space by removing the Tutorial project and media. Drag the iMovie Tutorial folder to the Trash in the Finder and choose Empty Trash from the Special menu. To restore the Tutorial project with its source media, insert the iMovie CD into your CD-ROM drive. Double-click the Install iMovie icon. Follow the onscreen instructions and when you reach the Custom Installation and Removal panel, choose iMovie Tutorial (160 MB).

Leave the box labeled iMovie (20 MB) unchecked. After completing the installation, open the iMovie folder on your hard drive and drag the iMovie Tutorial folder onto the iMovie folder in the Applications folder. Throw away the iMovie folder on the main level of your hard disk.

Note: The iMovie Tutorial folder must be inside the iMovie folder, alongside the iMovie application folder, in order to work with the tutorial instructions in the Help menu.

PAL Support for the Tutorial
iMovie supports PAL format video. However, the media created for the tutorial is in NTSC format and cannot be exported to PAL format DV devices.

Troubleshooting
Audio Dropout in Movies Exported to Tape
If you experience audio dropout in a movie that you have exported to tape, return to your project and lower the volume level of the affected clip with the volume slider in the audio viewer. Then re-export your movie.

Lack of Video in Capture Mode
If you can control your camera, but do not receive a video feed to the monitor in camera mode, disconnect the FireWire cable while your camcorder is still on, then reconnect the cable.

PAL Support - Video Standard of Camera Doesn't Match Video Standard of Project
Before you create a project, connect and turn on your camcorder. If you are using a PAL format DV camcorder, iMovie will recognize the device and create the project in PAL format.

Cannot Export a Movie to a PAL Camcorder
If you can not record to your PAL camcorder, check the manufacturer's specifications for your device. Certain PAL devices have FireWire (IEEE1394) input disabled.

Device Too Slow Alert When Using FireWire Storage Devices with iMovie
Go to the manufacturer's website and download the latest device driver. Install and restart your computer, then restart iMovie.

Running Low on Memory
On computers with 64 megabytes of memory, be sure Virtual Memory is turned on in the Memory Control Panel. Quit any applications that may be running in the background other than iMovie. Increase the amount of memory allocated to iMovie by doing the following.
1) Quit iMovie.
2) Locate the iMovie application (not the alias) and click once on the iMovie application icon.
3) Open the File menu and choose Memory from the Get Info submenu.
4) Increase the number in the Preferred Size field to 30720 then close the window and restart iMovie.

Discrepancy Between Playhead Reading at End of Clip and Clip Duration
There is a one-frame difference between the duration of a clip and the playhead reading when the playhead is parked on the last frame. This is normal and will not affect your project.

Cannot Throw Away iMovie Resource Files
If you experience trouble throwing away iMovie resource files, select the files and choose General Information from the Get Info sub menu in the File menu. Check the box labeled Locked at the bottom left corner of each window then close each info window. Choose Empty Trash from the Special menu.

Device Compatibility
The following DV devices have been qualified for use with iMovie. For the latest information on DV device compatibility, visit the iMovie web site at www.apple.com/imovie

Sony Models
DVMC-DA1 and DVMC-MS1 AV adapters (Allows use of non-DV devices such as Hi8 and other analog camcorders. However, these devices do not allow iMovie to control the camcorder.)
DCR-PC1
DCR-PC10
GV-D300
DCR-TR7000
DCR-TRV103
DCR-TRV110
DCR-TRV310
DCR-TRV310E
DCR-TRV5E
DCR-TRV510
DCR-TRV7
DCR-TRV8
DCR-TRV9
DCR-TRV9E
DCR-TRV900
DCR-TRV900E

*Canon Models
Elura
Optura
Ultura
Vistura
ZR

*Panasonic Models

AG-EZ20
AG-EZ30
PV-DV710
PV-DV910

*Sharp Models
VL-PD3

***Tips For Camcorders With Compatibility Issues.**

Canon Camcorders
If you cannot pause the camera during rewind or fast-forward in iMovie, try again, or press the Stop button instead of the Pause button.

Panasonic Camcorders
If you attempt to export to tape and the camcorder LCD flashes the message "Check DV Input" then enters REC/Pause mode, but never actually starts recording, do the following:
1. Stop the camcorder and cancel the export.
2. Add a few extra seconds of black before the recording, or increase the time to wait for the camera in the Export Movie window.
3. When you export to tape, watch for black frames being sent to the camera on the LCD then press the "Still" button on the camcorder's VTR controls to begin recording.

Sharp VL-PD3
If you attempt to export to tape and the camcorder goes into record/pause mode, but never actually starts recording, do the following:
1. Stop the camcorder and cancel the export.
2. Add a few extra seconds of black before the recording, or increase the time to wait for the camera in the Export Movie window.
3. When you export to tape, press the Play button on the camcorder's VTR controls to begin recording.

Storage Device Speed
iMovie needs fast hard disks. When adding more storage devices, you will need disk drives with a sustained transfer rate of 3.6 MB or higher. The following storage devices do not meet the minimum transfer rate or capacity requirements to work with iMovie.
SuperDisk drives
Floppy disk drives
Zip drives
AppleShare or IP mounted file servers
Published Date: Feb 18, 2012

LaserWriter IINTX: Use Font Utility 2.0 with Rev 3.0 ROMs

System: LaserWriter IINTX with Rev 3.0 ROMs (PostScript Version 51.8) and 20MB hard drive attached to SCSI port. Apple LaserWriter Font Utility Version 1.0/ System Software 6.0.5

Problem

When using the Apple Font Utility to download fonts, I downloaded some fonts, stopped and then restarted the process again in the morning. The Apple Font Utility did not show any fonts previously downloaded as appearing on the hard drive. The start-up test page does show that there were 46 fonts available. The Adobe Font Utility also lists all of the available fonts. Only the Apple Font Utility doesn't show them.

I then installed another font and it showed as being there, but none of the others did (this was done without quitting the Apple Font Utility). After quitting the Apple Font Utility and restarting, the fonts don't show. Adobe's utility does show the additional font, as does the startup page.

The fonts do print correctly and the LaserWriter goes to the hard drive and gets the fonts as needed; that is, they DO NOT get downloaded over LocalTalk.

Is there a problem with the Apple LaserWriter Font Utility Version 1.0 and the new LaserWriter IINTX board? Is there a problem with the 1.0 Font Utility and System Software 6.0.5?

This article has been archived and is no longer updated by Apple.
A new version of the LaserWriter Font Utility ships with the new LaserWriter IINTX board. If you have the new board, you should be using version 2.0 of the LaserWriter Font Utility.

Published Date: Feb 18, 2012

iBook & iMac: Improper Wakeup When Started Up From Mac OS 8.6 CD

When an iBook or iMac (Slot Loading) has been started up from the Mac OS 8.6 CD, it will not wake from sleep properly.
This article has been archived and is no longer updated by Apple.
If you start up from the Mac OS 8.6 CD and then put the iBook or iMac (Slot Loading) to sleep (or let it go to sleep by itself), it will not come out of sleep properly. Instead, the hard drive spins up but the screen remains black.

On an iBook you can press Command-Control-Power or press the reset button to recover. On the iMac (Slot Loading), press the reset button on the side of the computer, or press the power button on the computer itself for at least 5 seconds to recover.

This behavior does not occur when starting up from the Mac OS 9 CD.
Published Date: Feb 18, 2012

Power Mac G4: Boot Issue When 1 GB or More of RAM Installed

Apple has identified an issue affecting Power Mac G4 computers with 1 GB or more of RAM installed. After installing the memory, the computer will fail to produce a startup chime and hang during the start up process. This article provides a workaround to this issue.
This article has been archived and is no longer updated by Apple.
When starting up the computer from a powered-off state (such as directly after installing RAM) the computer will fail to produce a startup chime and hang during the start up process. At that point, perform a warm restart by pressing the reset button on the front of the computer and it will reboot successfully.

Note: The startup chime will still not be audible.

Apple is investigating the issue in order to provide a permanent resolution. In the interim, this issue can be avoided by putting the computer to sleep instead of shutting it down.

Published Date: Feb 18, 2012

Power Mac G4 (PCI Graphics): Extended Net Boot Start Up Time

When Net Booting the 350 MHz version of the Power Mac G4 (PCI Graphics), the computer may appear hung due to an extended period of time to start up.
This article has been archived and is no longer updated by Apple.
Note: This issue only affects Net Booting, booting from the internal hard drive is not affected.

When using Net Booting, the computer will display the small system folder icon indicating it is looking for valid system software from which to start up. This icon may be displayed for two to five minutes before the start up process continues.

You may workaround this issue by starting the computer from the internal hard drive instead of using Net Booting.

The root cause is within the BootROM and will be fixed in a future update. This article will be updated at that time, or you may refer to the Apple Software Updates Web site at http://www.apple.com/swupdates.

Published Date: Feb 18, 2012

Mac OS 8.6: Save Name and Password Dimmed in the Chooser

When connecting to an AppleShare file server through the Chooser, the option to save your name and password is dimmed. This condition only occurs on a Power Mac G4 (AGP Graphics), iBook, or iMac (Slot Loading) computer with Mac OS 8.6 and AppleShare client version 3.8.4 .

This article descirbes this issue in detail and provides two workarounds.
This article has been archived and is no longer updated by Apple.
In the Chooser window that reads: "Select the items you want to use:" there is a checkbox to the right of every available volume. When you click the checkbox for any volume, you are given the options to save your name, or save your name and password, as shown in Figure 1. These options save your user log-on information so you do not have to re-enter it each time you automatically connect to the server at system startup time.

Note: The AppleShare file server administrator must allow users to save their names and passwords for that option to be available.

Figure 1 Chooser Window with AppleShare 3.8.3

When using Mac OS 8.6 and AppleShare client version 3.8.4, the second option is "Save My Name and Password in the Keychain" as shown in Figure 2. The name and password option was changed in anticipation of Mac OS 9, but because the Keychain is not installed with Mac OS 8.6, the option to save your name and password is dimmed.

Figure 2 Chooser Window with AppleShare 3.8.4

There are two possible solutions for this issue:

1. Install an earlier version of the AppleShare client software. Version 3.8.3, for example, is available for download from the Apple Software Updates Web site at http://www.apple.com/swupdates.

2. Upgrade to Mac OS 9.

Published Date: Feb 18, 2012

Business BASIC III: RENUMBER -- Unreferenced Lines

This article has been archived and is no longer updated by Apple.

Business BASIC's RENUMBER program isn't able to properly renumber the sample program:

```
10 GOTO 20
```

Though it's obvious that GOTO 20 references a line that doesn't exist, it won't always be obvious in a large program. One way to check that there are no "phantom" line numbers is to use the XREF function in the RENUMBER program before you actually renumber your program.

Published Date: Feb 18, 2012

Radius Pivot Card: Display Card 8/24 GC Compatibility

Can the Radius Pivot Video Card coexist in a Macintosh with Apple's Display Card 8/24 GC?

This article has been archived and is no longer updated by Apple.
Radius Tech Support assures us that there should be no problem running a Macintosh system with both cards installed.

For more information, search under: "Radius"

Published Date: Feb 18, 2012

PowerBook Video Mirroring: Screen Anomaly When Scrolling

When using video mirroring on a PowerBook, scrolling through a window may produce video anomalies in some applications.
This article has been archived and is no longer updated by Apple.
Apple has determined that some developers treat video mirroring mode incorrectly causing image distortion, particularly when scrolling.

The application understands that two monitors are connected and copies pixels into each monitor separately. Since the displayed images overlap, the pixels are copied twice and the image gets distorted especially when scrolling.

If you experience this anomaly only in certain applications, contact the developer of the application for a fix.

Developers can reference the following Apple Developer Services information on how to deal with overlapped graphics devices: **http://developer.apple.com/dev/techsupport/develop/issue26/graphicaltruffles.html**.

Published Date: Feb 18, 2012

Power Mac G4: Purpose of Accessory Kit Screws

What are the 4 small screws included in the Power Mac G4 accessory kit used for?
This article has been archived and is no longer updated by Apple.
The four screws included in the accessory kit are used to fasten an additional hard drive to the Power Mac G4 hard drive mounting bracket.

Specific installations can be found in the Installing a Hard Disk or Other Internal Storage Device section in the Setting Up Your Power Mac manual.

Published Date: Feb 18, 2012

MacDFT 1.1: Configuring in NON-SNA Mode

I have a problem configuring MacDFT 1.1 for NON-SNA.

Configuration
MacDFT 1.1
Coax/Twinax NB Card
Cluster Controller 3274 61C - configured for DFT modem to an IBM host

I tried to configure MacDFT 1.1 for NON-SNA. During the startup of MacDFT an error window opened and told me to re-configure MacDFT to SNA-mode because NON-SNA was not a valid configuration. Then I tried to configure MacDFT for SNA and the same error message told me to configure MacDFT to NON-SNA.

Why can't I configure MacDFT 1.1 for NON-SNA?
This article has been archived and is no longer updated by Apple.
It looks like your cluster controller is configured for Bisynchronous communications. If this is the case, MacDFT can provide CUT support only over Bisynchronous, so switching the coax CDEV setting to CUT mode should work.

The significance of the "DFT (NON-SNA)" setting is to support non-SNA channel protocols for locally attached controllers such as the old 41D models. Since your 61C is designed for remote connections, it isn't prepared to handle channel protocols, and MacDFT notifies you of the conflict.

If you're not trying to maintain Bisynchronous communications, and SDLC communications are OK, then you will need to check your controller's customization; if it is set for Bisynchronous, you will need to change it to SDLC in order for MacDFT to provide full DFT capabilities. The attach option is configured in customization question 101 on the "Model/Attach" panel of the customization utility (see the 3174 customization manual for further reference).
Published Date: Feb 18, 2012

iBook: No Networking Services When Booted From CD

When booted from the Mac OS 9 CD, my iBook with 32 MB (megabytes) of RAM (random-access memory) does not see the network. Why is this?
This article has been archived and is no longer updated by Apple.
32 MB is not enough memory for the iBook to run diagnostic and utility applications included on the CD and load the extensions needed for network services. To conserve memory, networking extensions are disabled to free up memory for those utility applications on the CD.

Note: Virtual memory cannot be enabled when the iBook is started from a CD.

When started up from the Mac OS 9 CD you will get an error when opening the AppleTalk control panel, choosing AppleShare in the Chooser, or opening the Network Browser.

If you need to have network access while your iBook is started from CD, start up from the Mac OS 8.6 iBook CD, or upgrade to 64 MB of memory.

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AirPort 1.0: About Airport

This article is the About Airport document included with the AirPort software version 1.0.

Note: AirPort 1.2 was released by Apple on 12 June 2000. It is available for downloading from the Apple Software Updates Web site at http://www.apple.com/swupdates/ .

Click the following link to download the English-North American version of AirPort 1.2:
http://asu.info.apple.com/swupdates.nsf/artnum/n11570 .
This article has been archived and is no longer updated by Apple.

About AirPort

Requirements
System Requirements
This version of the AirPort software requires the following:
AirPort capable computer (iBook, iMac, or Power Mac G4) with an internal AirPort Card installed.
Mac OS 8.6 or greater.

Notes about using the AirPort software

Reconnecting to networks after wake from sleep

Remote servers mounted on your computer's desktop will not reappear after waking from sleep if the connection is made using AirPort.

Using BootP

The current version of the AirPort software only supports obtaining an IP address through a fixed IP address or using DHCP. Do not set your TCP/IP control panel to BootP when using AirPort. Setting TCP/IP to BootP may cause unexpected results.

Notes about the AirPort application and Control Strip portion

Switching networks

Switching wireless networks will interrupt any network services currently in progress. For example, if you switch networks while transferring a file, the file transfer process will be interrupted.

You may also notice a slight delay when switching between wireless networks.

Display of AirPort networks

In the AirPort application and the AirPort Control Strip module, AirPort networks are displayed in order of the network signal strength.

Disconnecting the AirPort Base Station

The manual that comes with the AirPort Base Station incorrectly states that you can disconnect the AirPort Base Station from the Control Strip. The only way to manually disconnect the AirPort Base Station is to use the AirPort application.

Notes about Internet access

Setting up an AirPort Base Station for Internet access

To use AirPort to access the Internet, you must have an Internet account with an Internet service provider (ISP). In addition, you need to have a traditional way to access the Internet, either through a phone line, cable, or DSL modem. Before using the AirPort Setup Assistant, make sure that the Internet connection on the computer that you are going to use to configure the base station is functioning properly. As part of the setup process the assistant will transfer your existing Internet settings from your computer to the AirPort Base Station.

Obtaining an Internet account

You cannot use the AirPort Setup Assistant to obtain an Internet account. Because the AirPort Setup Assistant uses your computers existing Internet settings to configure an AirPort Base Station, you must already have an Internet account. If you have not set up your computer to access the Internet, open the Assistants folder on your hard disk and double-click the Internet Setup Assistant.

Connecting to the Internet

When connecting to the Internet using the AirPort Base Station, you may notice that the initial request for a web page fails. This is because the AirPort Base Station has not completed the dial up process with your ISP. If you notice that the first connection fails, wait a few minutes until the base station completes its connection with your ISP.

Internet Service Provider (ISP) Compatibility

The following ISPs are not compatible with the current version of the AirPort software

CompuServe
America Online

For more information on ISP compatibility see the Apple Support Web Site at www.apple.com/support.

ISPs that use DNS addressing

The AirPort Base Station is not compatible with ISPs that use server assigned DNS addressing.

ISPs that provide IP addresses using DHCP

Due to differences in the ways that IP addresses are provided using DHCP you may encounter problems using your AirPort Base Station. If you are unable to use the AirPort Base Station and find that it has an IP address of "00.000.00.0" in the AirPort Utility, contact your ISP and ask to get a static IP address assigned to your account.

Notes about the AirPort Utility

Configuring an AirPort Base Station

The AirPort Utility is designed for advanced base station configuration. Most users will be able to configure all of the necessary base station settings using the AirPort Setup Assistant.

Configuring a third party base station

The AirPort Utility cannot be used to configure a non-AirPort Base Station.

Notes about base stations

Monitoring the AirPort Base Station Modem Status

Your AirPort software only provides "connected" or "disconnected" status information for the modem. If you want to monitor additional status information for the modem in order to troubleshoot a problem you can use one of the following programs.

Syslogd 2.1.3 available at http://www.classicalguitar.net/brian/apps/syslogd/

MacNetLogger 0.96b8 available at http://www.laffeycomputer.com/netlogger.html

Using Multiple AirPort Base Stations on the Same Network

You can connect multiple AirPort Base Stations to the same Ethernet network. However, each base station should have a unique network name. For example, if you wanted to connect several base stations to a network in a school, you could place a base station in each building. Then the user would see the following as available networks:

Science building wireless network
History building wireless network
Language building wireless network

The AirPort Base Station cannot be used to extend the size of an existing network.

IMPORTANT If you have multiple AirPort Base Stations on your network and one of them is using DHCP to assign IP addresses, do not set the other base stations to obtain their IP addresses from DHCP.

Resetting your AirPort Base Station password

The manual that came with your AirPort Base Station incorrectly states the process for resetting your AirPort Base Station password. If you forget the password to your base station or network, you will need to do a forced reload of the AirPort Base Station firmware. See the Reloading Base Station Firmware read me file located in the Base Station Extras folder on your AirPort CD for more information.

Notes about an AirPort Software Base Station

Using a computer as an AirPort software base station

In the documentation that came with your AirPort Card or new computer, you may find a reference to setting up your computer as a base station (also known as a software base station). This feature is not available in the current version of the AirPort software.

Notes about using non-AirPort equipped computers

Connecting non-AirPort equipped computers to an AirPort Base Station

You can attach a computer with Ethernet to an AirPort Base Station. If you want that computer to share the single Internet connection provided by the base station you will need to use the AirPort utility to turn on DHCP on the Ethernet portion of the network.

IMPORTANT You should not turn DHCP on the Ethernet portion of your network if you are on a larger network where there is a possibility that a DHCP server already exists or if you are using a cable or DSL modem. For more information contact your system administrator or Internet service provider.

To turn on DHCP for the Ethernet portion of your network do the following:

1. Open the AirPort Utility
2. Select your base station
3. Click the Internet tab
4. Make sure that the "Use DHCP to also provide IP addresses on Ethernet" checkbox is selected.

For additional information on configuring non-AirPort equipped computers see the documentation that came with your base station or look in the wireless Internet and networking section of Mac Help, available from the Help menu.

Notes about compatibility

Communication programs that use terminal windows

Communication programs that use terminal windows for login are not supported by the current version of the AirPort software.

Applications not compatible with network address translation (NAT)

The following applications are not compatible with NAT (the process used by the AirPort Base Station to share a single IP address.)

StarCraft
ICQ
Retrospect Remote
DAVE

For more information on application compatibility see the Apple Support Web Site at http://www.apple.com/support. For information on NAT see Mac Help (available from the Help menu).

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Easel-Type Programs are Available for Macintosh

I need to find out about a product called Easel, currently available for MS-DOS systems. Is there anything equivalent for the Macintosh?

This article has been archived and is no longer updated by Apple.
Easel is a front-end package that allows you to build a better interface to what may perhaps, from a GUI standpoint, be a more complex or inelegant system interface.

Proven programs for the Macintosh that perform similar functions include HyperCard and MitemView.

For more information, search under: "MITEM"

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About the NetBoot Image Pieces Package

This article describes the NetBoot Image Pieces package included in the installers of the iMac (Summer 2000), Power Mac G4 (Gigabit Ethernet), and Power Mac G4 Cube computers.
This article has been archived and is no longer updated by Apple.
The NetBoot Image Pieces is for use with NetBoot clients that have internal Zip drives, such as the Power Macintosh G3 or Power Mac G4 computers. When updating the NetBoot image to work with these computers, be sure to select and install this package.

If you do not install this software, your other NetBoot clients will still start up from the NetBoot server, but they may not have software to access their Zip drives.

The pieces installed by NetBoot Image Pieces are:

- Apple Extras: Iomega: Tools
- Apple Extras: Iomega: Tools Help

Published Date: Feb 18, 2012

Macintosh: 24-bit Image Copying Problem Caused By Heap Space

I'm having trouble copying and pasting between Microsoft PowerPoint and Solutions International's SmartScrap. I tried to copy several 24-bit images from the PowerPoint document (they occupy a total of about 2.5MB), but when I tried to paste them, the first couple pasted OK but the rest didn't, and the machine hung.

This article has been archived and is no longer updated by Apple.
We solved the problem by increasing the system heap space.

Normally the system has a small amount of heap space available. We increased the space using CE Software's Heapfixer, and all the problems went away.

We also checked with both Solutions International and Microsoft, and neither was aware of any other conflicts.

Microsoft, however, strongly recommends that anyone using 24-bit graphics in PowerPoint upgrade to version 2.0.1d.

For more information, search under: "CE Software"

Published Date: Feb 18, 2012

PowerBook (FireWire): Expansion Bay Device Compatibility

This article provides expansion bay device compatibility information for the PowerBook (FireWire) and previous PowerBook G3 computers. This article has been archived and is no longer updated by Apple.

DVD Drives

The DVD expansion bay device that ships with the PowerBook (FireWire) does not work with any previous PowerBook G3 Series model. The previous model DVD module does not work with the PowerBook (FireWire).

Battery

The PowerBook (FireWire) uses a battery similar to the PowerBook G3 Series (Bronze Keyboard). The two batteries are interchangeable between these two computers only.

Other expansion Bay Devices

Expansion bay modules for the PowerBook G3 Series (Bronze keyboard) will function properly in a PowerBook (FireWire). It is possible that some third party expansion bay devices made for the PowerBook (FireWire) will not work with older PowerBook models. You should consult with the third party vendor before purchasing if this is of concern.

Published Date: Feb 18, 2012

PowerBook (FireWire) and G4: Connecting Non-USB or Non-FireWire Peripherals

This article provides direction on how to connect SCSI, ADB, and mini-DIN 8 serial peripherals to the PowerBook (FireWire) and PowerBook G4.
This article has been archived and is no longer updated by Apple.
There are a multitude of adapters available that will enable older peripherals that relied on SCSI, ADB, or serial ports to be connected to the PowerBook (FireWire) and PowerBook G4.

For more specific information, search the Apple Products Web page at http://www.apple.com/products. Or, visit the Macintosh Products Guide at http://guide.apple.com .

Published Date: Feb 18, 2012

Macintosh Display Card 8/24: NTSC Video Encoding

I am very interested in getting a decent video signal from Macintosh II systems. I'm interested in Apple's Display Card 8*24 because of the convolution filter that (as far as I know) has no equivalent in third-party products.

Will the Display Card 8*24 ship with a CDEV like the Macintosh II video card utility to step the board down to interlaced NTSC scan rates? If not, how can I get such a utility/application?

Currently, I'm using a Truevision VIDI/O box to do the RGB encoding. Has anyone tried the Truevision product with the Display Card 8/24?

This article has been archived and is no longer updated by Apple.
The Display Cards 8*24 and 8*24 GC do not use software for switching to the NTSC interlaced mode. To put the Display Card 8*24 GC into the NTSC mode, a properly configured cable is all that is required. For more information, search under "NTSC output without converter".

To acquire a color NTSC signal from any Apple Macintosh display card, an RGB-to-NTSC converter will be required.

RasterOps and Truevision both have RGB-to-NTSC converters. RasterOps' Video Expander and Truevision's VIDI/O Box accept the RS-170-A output of the Display Card 8/24 and 8/24 GC and generate a full color NTSC interlaced video signal. Both of these interface boxes also provide S-Video (also known as Y/C component video) output via the standard 4-pin mini-DIN connector. S-Video connections are used by S-VHS, HiBand 8mm, and ED Beta video devices.

Another device for RGB-to-NTSC conversion is ComputerVideo's Video NTSC Encoder. This was designed for the older Macintosh video card; however, it should work with the new display cards when the correct cable is used (see above).

For cable requirements for these interface devices, please check with the appropriate interface manufacturer.

For 8-bit video, Apple's convolution provides one of the finest methods for eliminating the single-pixel flicker that NTSC produces. When using 24-bit color, a different approach is required to address the NTSC flicker issue, since Apple convolution works only to the 8-bit level. Scan converters, like RGB/Videolink 600A, have been used for many years in the professional computer graphics companies to address NTSC flicker.

Scan converters would be used for television broadcast-quality 24-bit images. Scan converters not only convert the RGB signal to NTSC, they also eliminate the flicker associated with horizontal single-pixel lines and provide aspect-ratio conversion, color-bar generation, video transitions, freeze frame, and video mixing.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

Mac OS X Server 1.2v3: Starting Up on a Power Mac G4 (Gigabit Ethernet) With ADC Display

This article provides instruction on getting Mac OS X Server 1.2v3 to start up on a Power Mac G4 (Gigabit Ethernet) computer when an Apple Display Connector style display, such as the Apple Cinema Display (ADC) or the Apple Studio Display LCD (ADC), is used.
This article has been archived and is no longer updated by Apple.

Symptom

The computer fails to respond or "freezes" at the "Starting Mac OS X Server" screen, before the progress bar is drawn. If starting up the computer in verbose mode, the system fails to respond after init posts a message about an unrecognized option.

Solution

1. Make sure the keyboard is connected to USB port 1 on the back of the computer
2. Connect the mouse to the keyboard.

For all versions of Mac OS X Server, the mouse must be daisy-chained to the keyboard which must be connected directly to the computer.

Either USB port can be used if using the VGA video connector.

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Business BASIC III: Swap

This article has been archived and is no longer updated by Apple.
The Swap command exchanges the values of two variables of the same type; however, there are several reserved variables, like HPos and VPos, that Swap does not work with properly.

```
10 Swap A%,B% works
20 Swap A%,HPos does not work
30 Temp% = A%: A% = HPos: HPos = Temp% works
```

Published Date: Feb 18, 2012

Display Card 8/24: RS-170 External Sync

Do the Apple Display Cards 8/24 and 8/24 GC accept an external sync signal when in RS-170 mode? How is RS-170 external sync mode enabled?

This article has been archived and is no longer updated by Apple.
The video cards alone do not except external sync -- however, if the video cards are being used in an environment where external sync is an issue, an RGB-to-NTSC converter is very likely in use. Truevision's VIDI/O Box and RasterOps' Video Expander can be used with either video card to allow external sync ability.

The specifics of using external sync are provided in each converter manufacturer's documentation.

At announcement, many references were made to the Display Card 8/24 being RS-170. In actuality, the production video cards meet the full RS-170-A specifications -- RS-170 being the original black and white specification; RS-170-A is the color extension to the original specification.

Without one of the above converters, the interlaced signal coming from the Display Card 8/24 and 8/24 GC will still be in black and white. With one of the converters, the Display Card 8/24 and 8/24 GC will provide full RS-170-A color.

Published Date: Feb 18, 2012

Macintosh: "Rounding Errors"

I'm having trouble doing a simple math calculation with FileMaker II. All subsequent programs I tried produced the same mathematical "error" (Excel and the Calculator desk accessory are a couple).

The calculation is very simple: 1194.6 - 500 - 640 - 54.6 = X

The result should be 0; however, all software produced the result -2.428612866E-17.

I can cure this problem in FileMaker II by rounding the result to two decimal places, but I am very interested in why the result does not go to zero. My IBM PC produced the same result. I gather the answer lies in the way personal computers handle subtraction.

This article has been archived and is no longer updated by Apple.
The rounding errors you have run into on the Macintosh and IBM PC have been around since the beginning of personal computers (and longer!).

Computers must convert from a floating point decimal number to binary in order for the CPU to do math operations. To make the conversion process perform at a user-tolerable rate, past computer designers came up with "short cut" processes to do the conversion. These short cuts cause slight rounding errors.

In the example you describe, the error is .00000000000000002486.... This can be annoying, but is a good trade-off for the amount of time that is saved when doing math functions.
Published Date: Feb 18, 2012

Apple Hardware Test 1.0: PowerBook Read Me

This article comprises the PowerBook Read Me for Apple Hardware Test 1.0.

This article has been archived and is no longer updated by Apple.

About Apple Hardware Test

To use the Apple Hardware Test CD, restart your computer while holding down the C key until the "Loading..." icon appears, then you may release the C key. Loading will take approximately 45 seconds. Apple Hardware Test's main screen will appear. Follow the on-screen instructions and recommendations.

Apple Hardware Test is a diagnostic tool for detecting issues with your computer's internal hardware components such as the logic board, memory, modem, video RAM, and Apple's AirPort card. It does not check externally connected hardware components such as USB drives or FireWire devices; it does not check non-Apple devices such as PCI cards from other vendors.

Apple Hardware Test does not check your computer for issues with the Operating System (OS) or other software related issues such as application or extension conflicts.

Apple Hardware Test for PowerBook version 1.0 is distributed only with the Apple PowerBook (with FireWire), and will not work with any other computer. References to AppleCare recommendations are intended for U.S. customers only. Future versions of Apple Hardware Test may be distributed for other Apple products and for use in locations outside of the United States.

If you suspect your computer has a hardware issue, the information provided by Apple Hardware Test can help identify the issue. If Apple Hardware Test detects a failure, an error code will be displayed. Please make a note of the error code before pursuing support options. If no hardware failure is detected, the issue may be software related.

Known issues

Apple Hardware Test cannot be used with an external input device (such as a mouse) attached directly to the USB port on the PowerBook (with FireWire). Please disconnect the external device, and use the integrated track pad to move the cursor while running Apple Hardware Test.

AppleCare Recommendations

Apple Hardware Test is one of several tools and procedures you can use when your Macintosh is having trouble. Here are some steps you can follow to help resolve issues. Please back up your data before performing any of these steps.

1. Turn the computer off and on.
You can often eliminate issues by shutting down and restarting your system.

2. Check cables, peripherals, and user controls.
Shut down your computer. Then disconnect and reconnect all cables. Disconnect all peripherals (such as printers, scanners, cameras and external mass storage devices) to see if they are causing conflicts with your system. Adjust user controls on your monitors and other peripherals to see if this helps.

3. Turn off system extensions.
Restart your system while holding down the Shift key until the following message appears: "Extensions disabled." Then release the key. This turns off system extensions that often cause conflicts. If this solves your issue, use the Extensions Manager to turn off extensions that may be causing the issue.

4. Rebuild the desktop.
Restart your system while holding down the Option and Command keys. Click OK when asked if you want to rebuild the desktop.

5. Start up from the system CD that shipped with your computer.
Start your system from the system CD by holding down the C key until you see the smiling Mac face. If the system works properly when started (booted) from the system CD, you can generally assume that the issue relates to the software which is installed on your computer.

6. Start up from the Apple Hardware Test CD, and run the Quick and Extended Tests.
If the system does not work properly when started (booted) from a known-good system CD (Step 5), you can generally assume that the issue relates to your computer's hardware components. The Apple Hardware Test CD can often be used to start up your computer even if it will not boot into the Mac OS. If Apple Hardware Test passes both the Quick Test and the Extended Test, the issue may be software related. If Apple Hardware Test fails, make a note of the error code and contact Apple (Step 10).

7. If you are an Apple Protection Plan customer, run TechTool Deluxe from Micromat, provided with the Protection Plan.
This diagnostic tool can help identify and repair issues with your system, such as hard disk corruption. Please read the user manual on the CD for

more information.

8. Re-install Mac OS.
In many cases, a clean installation of the Mac OS will fix recurring issues. Please follow the instructions in your user manual or on your Restore CD to reinstall the Mac OS. Back up any data before reinstalling.

9. Refer to online help and the Internet for assistance.
The Mac OS help system under the Help menu in the Finder includes a wealth of technical information. Apple's Knowledge Base, Apple Discussions, and other resources for technical help and support are available 24 hours a day at http://www.apple.com/support/protection .

10. Call the Apple Service and Support line for assistance.
If these steps don't help resolve the issue, please call the following number for more assistance. In the United States 800-500-7078 seven days a week (excluding holidays) 6 a.m. to 6 p.m. PST. Telephone hours may vary. Apple reserves the right to change telephone hours at any time.
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Final Cut Pro 1.2.1: Audio Blast at End of Video Clip

There is an issue that occurs when capturing clips with Final Cut Pro 1.2.1 and Mac OS 8.6 with QuickTime 4.1 (or later). After capture, there will be an audio blast at the end of the captured clip. This article describes how to resolve this behavior.
This article has been archived and is no longer updated by Apple.
When capturing clips with Final Cut Pro 1.2.1 and Mac OS 8.6 with QuickTime 4.1 (or later), an audio blast will occur at the end of the clip. To resolve this behavior, use one of these two possible workarounds:

- Preferably, upgrade to Mac OS 9.0 or later (Final Cut Pro 1.2.5 will require Mac OS 9.0 or later)
- If this is not possible, install QuickTime 4.0.3 available at http://www.apple.com/quicktime/download/support/68k/

Note: In order to install QuickTime 4.0.3 over QuickTime 4.1 or later, you must follow these steps:

1. Remove all QuickTime extensions and control panels from their respective folders.
2. Restart the computer.
3. After restarting, install QuickTime 4.0.3.

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Final Cut Pro: Allocating Memory

The amount of memory allocated to Final Cut Pro can make a big difference in performance. This article discusses how much memory should be allocated, as well as how to do it.
This article has been archived and is no longer updated by Apple.
While the minimum system requirements for Final Cut Pro specify 128MB of RAM, serious users are advised to have at least 256MB of RAM installed in their machine. While Final Cut Pro will run with the default 65MB of RAM allocated to it, it is preferable to have anywhere from 80 to 150MB of RAM allocated exclusively to Final Cut Pro. A larger RAM allocation will allow higher performance for longer projects, as well as for those with numerous layers.

To allocate more memory to Final Cut Pro, users should first know how much free memory they have available to them. Follow the steps below:

1. Quit out of Final Cut Pro

2. From the Finder, with no other applications running, go to the Apple menu and select "About this Computer"

3. In the resulting dialog box, note the "Largest Unused Block" in megabytes. This is the total amount of memory not used by the System, and is the most you can possibly allocate to Final Cut Pro. Note: It is not prudent to allocate all of your free memory to Final Cut Pro. Instead, subtract 15 from this total, and write this number down as your maximum memory allocation.

4. Close this window

5. Now, select the Final Cut Pro application icon

6. In the File menu, select Get Info>Memory

Figure 1 Memory Sub-menu

7. In the resulting dialog box, set the Preferred Size to be at least 80MB, preferably closer to 150MB if you have this much RAM free (especially important for longer projects)

Figure 2 The Memory Info Box for Final Cut Pro. Note that Virtual Memory is Disabled.

8. Optionally: Users may also set the Minimum Size to match the Preferred Size. This will insure that Final Cut Pro allocates all the memory you've specified every time it launches. If memory is not available, a warning will be issued and Final Cut Pro won't launch. In this case, users may either quit out of other currently running applications, or allocate less memory to Final Cut Pro in both Minimum and Preferred boxes.

Doing this will make sure that Final Cut Pro always has the amount of memory allocated that you expect it to, even in cases where users have multiple applications running simultaneously.

Figure 3 Changing Minimum Size last

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Resolving poor image quality in DV QuickTime movies

QuickTime movies imported into Final Cut Pro, Final Cut Pro HD, and Final Cut Express with the DV codec and played with another QuickTime aware application may appear to be of lower resolution. Learn how to force QuickTime to display DV movie clips at their highest resolution.
This article has been archived and is no longer updated by Apple.
When DV QuickTime files are opened with either the QuickTime Player or some other QuickTime aware application, the opened DV movie may look as if it is jagged or at low resolution. This is not an indication that something is wrong with your DV movie.

When DV movies are rendered or imported, they are created with a default High Quality setting turned off. This setting allows these movies to be played back at higher framerates with no additional decompression hardware by lowering the apparent video quality displayed by the monitor. This is only a display setting. The full resolution of the video track remains untouched, and can in fact be toggled to display the movie's full resolution, although playback with the High Quality setting turned on will result in dropped frames.

This setting can be accessed by anyone with QuickTime Pro (users of Final Cut Pro already have this license, others may purchase one at the QuickTime web site). With your clip open in the QuickTime player:

1. From the **Movie** menu, choose **Get Movie Properties** (the clip we use in this example is called "Outside 001")

2. In the resulting dialog box, from the left-hand pop-up menu, choose **Video Track** and then from the right-hand pop-up, choose **Quality**.

3. Select the High Quality Enabled check-box to enable or disable this setting

   As you toggle back and forth, notice how the movie goes from jagged to sharp.

   If you leave High Quality toggled on, you may be asked if you want to save this clip when either closing it or quitting out of the QuickTime Player. Saving at this time will only preserve this setting internally to the file, and will not do anything to change the video track itself.

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Final Cut Pro: Explanation of "Servo Can‘t Lock" Error message

The Servo Can't Lock message indicates that the tape transport mechanism in the video tape recorder is not able to sync up as Final Cut Pro expected. This article covers the two most common causes of this, and how to eliminate them.
This article has been archived and is no longer updated by Apple.
The two most common sources of the Servo Can't Lock message are:

1. The tape transport of your VTR requires more time to sync up to where the computer thinks it is. Try increasing the Pre-Roll time in the Device Control Preferences tab.

Figure 1 The Pre-roll field of the Device Control tab

2. If you are using Firewire, try switching over to Firewire Basic, also in the Device Control Preferences tab.

Figure 2 Switching to the Apple Firewire Basic protocol in the Device Control tab

You may consult the Final Cut Pro Device Qualification page for more information on interoperability with your particular video device at http://www.apple.com/finalcutpro/techspecs/qualification.html

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Installer Software: Where to Find Documentation

I'm interested in creating an install program (perhaps in C or Pascal) that will automatically install software and utilities on Macintosh systems.

Is there an easy way to write installer scripts for applications? It is becoming more time-consuming, as my Macintosh network has expanded, to update software on every machine.

Is there a way to produce installer scripts similar to what Apple offers with the operating system software -- without getting into Macintosh programming?

This article has been archived and is no longer updated by Apple.

You can use Apple's Installer software. Documentation on the software and its scripts is available on the Developer web site. Use the following path to find it:

Developer Support
Developer Services
Tool Chest
Developer Utilities
Installer 3.4
Installer.sit (StuffIt)

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Final Cut Pro 1.2.5: ProMax DV Toolkit Interferes With New Apple DV Codec

Final Cut Pro 1.2.5 has new YUV rendering capabilities that, along with the Apple DV codec, supersede the use of the DV codec that comes with the Promax DV Toolkit. Despite this, having both installed on the same computer disables this new feature. This article describes how to resolve this issue by uninstalling the Promax DV Toolkit.

This article has been archived and is no longer updated by Apple.

If you have the Promax DV Toolkit 3.0 installed, the option to render in YUV when using Final Cut Pro 1.2.5 is not available. Even if the Promax codec is not in use in favor of the Apple DV codec, the "Always Render in RGB" checkbox is checked and dimmed as long as the Promax codec remains installed.

The solution is to remove all of the DV ToolKit extensions. The uninstaller does not do this, so you must remove them individually by dragging the necessary files to the Trash.

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Final Cut Pro 1.2.5: PAL Digital Hi-8 Camcorders Recognized as NTSC

This article describes an issue that arises when using PAL Digital-8 cameras with analog Hi-8 tapes, FireWire and Final Cut Pro 1.2.5
This article has been archived and is no longer updated by Apple.
Digital-8 camcorders are capable of playing back from both Digital-8 and analog Hi-8 videocassettes. If you connect to a PAL Digital-8 camcorder via FireWire when a Hi-8 tape is inserted, you will find that the camcorder is inappropriately recognized as NTSC instead of PAL.

As a result, a PAL setting will not show up in the Source popup, accessed by the Video button in the Capture Preferences tab.

To avoid this situation, use Digital-8 tapes instead.

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PrintMonitor: LaserWriter Timeout Messages

If a few users are on the same network sharing a LaserWriter and one of them has sent a print job of many (say 100) pages to the LaserWriter, then the others have to wait for that job to be finished to capture the LaserWriter for their print job.

If they work under MultiFinder, and background printing has been activated in the Chooser, during the large print job, the print jobs of others will be spooled to their local disks without being canceled because of a timeout error.

Perhaps you can tell me if PrintMonitor has its own timeout mechanism and if so, is it possible to alter the timeout values by patching some code/resource?

This article has been archived and is no longer updated by Apple.
PrintMonitor returns the message in question after the LaserWriter returns a timeout error. We occupied a system for over two hours, and, after releasing it, PrintMonitor printed the file that had been spooled.

If you are seeing excessive timeout errors, we suggest changing the timeout limits. To do this, see the Tech Info Library article, "LaserWriter: How to Change the Manual Timeout".

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RMS and DATATRIEVE: Macintosh File Access

Are you aware of a product for the Macintosh that allows direct access to RMS flat files? I am looking for programs that also support DATATRIEVE.

Also, is DATATRIEVE -- which was supported under CDD (Common Data Dictionary) -- supported under CDD+?

This article has been archived and is no longer updated by Apple.

1) We are not aware of a product for the Macintosh that provides an interface to a flat file system such as RMS. Although the capability does exist in the Data Access Language (formerly CL/1) architecture, it would require development efforts on the host, since no such host services have been developed to our knowledge.

   One option would be to develop your own environment on the host using MacWorkStation. Since the interface to the RMS file system is provided through VMS run time libraries, you could write a MacWorkStation application that accessed those libraries and presented them on the Macintosh. However, this would restrict the presentation on the Macintosh to MacWorkStation, and you would have to use Copy and Paste to transfer the information to other applications.

2) We are not aware of any product for the Macintosh that supports VAX DATATRIEVE. Please note the VAX DATATRIEVE is a query and report system and is a uniform access method for data stored by RMS, VAX Rdb, and VAX DBMS files; it does not have its own file architecture. Programmable softkeys such as ones provided by PacerLink can be used to program DATATRIEVE commands. If you are looking for products to access RMS files, then the answer is the same as in (1) above.

3) According to DEC's Pre-purchase Technical Assistance, VAX DATATRIEVE version 5.0 will work with VAX Common Data Dictionary/Plus (VAX CDD/Plus version 4.2) and VAX CDD as long as you run VAX/VMS 5.2 or 5.3.

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Power Mac G4 (Gigabit Ethernet): How to Determine if Multiple Processors Are Functioning

This article describes how to determine if the multiple processors in a Power Mac G4 (Gigabit Ethernet) computer are functioning.
This article has been archived and is no longer updated by Apple.
Follow these steps to determine if the multiple processors are functioning:

1. Open the Apple System Profiler application.
2. If necessary, click the disclosure triangle to reveal the Hardware overview section.
3. Compare the Hardware overview section to Figure 1.

Figure 1 Apple System Profiler Hardware Overview section
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TA44016_Apple_II_Transferring_Data_to_the_Macintosh_(TIL05867).pdf

Apple II: Transferring Data to the Macintosh

Can the Apple 5.25 PC Drive (and card) read ProDOS 5.25-inch disks under AFE?

This article has been archived and is no longer updated by Apple.
Apple 5.25 PC Drive only supports disks that are formatted using the MFM encoding methods. Therefore, it does not read ProDOS-formatted disks, which use GCR. Alternative ways to move data from the Apple II to the Macintosh include AppleShare, a serial link (cable and/or modem), and by first moving the ProDOS data to 3.5-inch disks, which any Macintosh will mount.

You may find the AFE Works-Works translator helpful when actually translating the files. It is on the InfoSource CD-ROM available from Apple.

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Power Mac G4 Cube: Correct Position for Adequate Cooling

This article explains how to position the Power Mac G4 Cube computer so that is adequately cooled during normal use.
This article has been archived and is no longer updated by Apple.
The Power Mac G4 Cube computer does not have a cooling fan. Heat generated by the computer--a normal part of its operation-- escapes through cooling vents. To provide adequate cooling for the computer's internal components, it must be positioned vertically with the DVD disc drive facing up.

Do not place anything on top of the computer that would prevent its normal ventilation.

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Power Mac G4 Cube: Release Latch Not Designed as a Handle

The core release latch on the Power Mac G4 Cube computer is not a handle.
This article has been archived and is no longer updated by Apple.
The core release latch on the Power Mac G4 Cube computer is not designed to function as a handle. Always hold the computer in an upright position if you need to move it.

Warning: When the release latch is pressed, the core is separated from the computer's enclosure. If you use the release latch as a handle in this state the enclosure could slide from the core and be damaged.

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Power Mac G4 Cube: Delay Before Startup Sound is Heard

When you start up a Power Mac G4 Cube computer there is a slight delay before the startup sound is heard through the Apple USB Speakers.
This article has been archived and is no longer updated by Apple.
When you start up a Power Mac G4 Cube computer there is a delay of approximately five to seven seconds before the startup sound is heard through the Apple USB Speakers. This is normal. The Power Mac G4 Cube computer does not have an internal speaker, so the startup sound is routed through the Universal Serial Bus (USB) whose drivers are not available until after the computer is turned on.

If no speakers are connected to a USB port, only the power light indicates that the computer has been turned on.

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Business BASIC III: Print Using

This article has been archived and is no longer updated by Apple.
The string specification in Print Using takes only as many characters of a long string as are required to fill its field length; hence, the rest of the string is ignored. This example:

```
A$ = "abcdefghijklmnopqrstuvwxyz"
Print Using "3X,10A,3X";A$
```

returns:
abcdefghij

A$ is truncated to 10 characters. Use the MID$ function to split up a string into multiple lines.
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PostScript Fonts: How to Determine ASCII Assignments

Users with typesetting equipment and LaserWriters have run into the problem that the fonts generated by the LaserWriter are not quite the same as those from the typesetter being used. This is causing some problems when documents are printed on machines other than the LaserWriter.

This article describes a method for determining the ASCII assignment of any font.
This article has been archived and is no longer updated by Apple.
By sending a PostScript program (listed below) to a LaserWriter, a user can determine which character is encoded to what ASCII assignment for any laser font. For example, this specific program gives all ASCII codes and their respective characters for the Times-Roman font. By changing the name of the font, where noted with the % and comment, the ASCII assignment and character can be determined for any laser font.

```
/Times-Roman findfont
[12 0 0 -12 0 0] makefont setfont
60 47 moveto
(ASCII Code - Character Times-Roman) show %Change the font name
here.
60 59 moveto
500 59 lineto
500 762 lineto
60 762 lineto
60 59 lineto
stroke
/Times-Roman findfont %Also, change the font name
here.
[12 0 0 -12 0 0] makefont setfont
/char 1 string def
/nstr 3 string def /newline
{ currentpoint 14 add
exch pop LM
exch moveto } def
/prt-n
{nstr cvs show} def
/prtchar
{ char 0
3 -1 roll put
char show } def
/PrintCodeandChar
{ dup prt-n
( - ) show
prtchar newline } def
/LM 72 def
LM 72 moveto
0 1 49 {PrintCodeandChar} for
/LM 144 def
LM 72 moveto
50 1 99 {PrintCodeandChar} for
/LM 216 def
LM 72 moveto
100 1 149 {PrintCodeandChar} for
/LM 288 def
LM 72 moveto
150 1 199 {PrintCodeandChar} for
/LM 360 def
LM 72 moveto
200 1 249 {PrintCodeandChar} for
/LM 432 def
LM 72 moveto
250 1 255 {PrintCodeandChar} for
showpage
```

This PostScript program can be sent to the LaserWriter with the LaserWriter Utility that can be located on the LaserWriter Utility Disk. Put the text of this program into a text file (you can use TeachText) and send it to the printer with the LaserWriter Utility.

For additional information on PostScript, refer to the Adobe PostScript Language Reference Manual, 2nd Edition, by Adobe Systems, Inc.

To locate a vendor's address and phone numbers, use the vendor name as a search string.
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Power Mac G4: Overview of Multiprocessing

This article describes the type of multiprocessing operating mode used by the Power Mac G4 (Gigabit Ethernet).
This article has been archived and is no longer updated by Apple.
Multiprocessing refers to the function of a computer using more than one processor to perform a computing task. The Power Mac G4 (Gigabit Ethernet) uses symmetric multiprocessing.

Symmetric multiprocessing means the workload of the overall system can be spread equally among the processors available in the computer. Any processor can do any task. The operating system has to be specifically designed to take advantage of multiple processors but the applications do not need to be. However, applications that are written to take advantage of them will experience a performance increase.

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AppleShare for Windows: Installing Unsupported Network Card

Although no longer distributed by Apple, this article provides information on configuring an unsupported network interface card with AppleShare for Windows.
This article has been archived and is no longer updated by Apple.
If you are using Windows for Workgroups Windows 3.11 or Windows 3.1 without Windows networking software, and you have an a vendor-supplied ODI driver for your unlisted network adapter, you may be able to use the procedures in this section to install AppleShare Client for Windows.

WARNING: Installing your system for networking requires that you manually install the network adapter driver and edit your driver configuration file and your DOS startup batch files. Performing these procedures incorrectly can cause your computer to fail.

Before performing the following procedures, you should locate the software and documentation that came with your network adapter. As you perform the procedures, you will need information from the documentation.

1. If your network adapter is not already installed, install and test it, following the instructions in your network adapter documentation.

2. Restart your computer and run Windows.

3. Run the INSTALL.EXE program on the AppleShare Client for Windows Disk 1.

4. In the Installation Options dialog box, choose the Standard Installation option and click Continue. The Select Adapter dialog box appears.

5. Select the line at the end of the adapter list that reads "[Other] Unlisted Adapter Option," and click OK. The Network Adapter Settings dialog box appears.

6. Enter the configuration settings for your network adapter. If possible, select values that match the adapter configuration settings you used in completing step 1 above. If no matching settings are displayed, simply continue with step 7. If you are already running ODI-based networking software, AppleShare Client for Windows Installer will use your existing network adapter configuration settings.

7. Complete the AppleShare Client for Windows installation.

8. Exit Windows and estart your computer as instructed by the Installer. If your computer was not already running ODI-based networking software, continue with step 11.

9. If your computer was already running ODI-based networking software using your network adapter card, edit the file ATDRIVER.BAT (in the C:\\APPLE\\A_SHARE directory by default). Remove the word "REM" from the beginning of the last line so that it reads "C:\\APPLE\\A_SHARE\\ODI.EXE".

10. Restart your computer. AppleShare Client for Windows is completely installed and should run when you start Windows. Skip the rest of this procedure.

11. Use DOS to copy the ODI driver and any supporting files for your network adapter to your AppleShare Client for Windows directory. The default directory path is C:\\APPLE\\A_SHARE.

Note: Since Novell developed the ODI arcitecture, the ODI driver found on the installation disk will often be in a "Novell" or "NetWare" directory. And the actual driver may be referred to as "NetWare driver".

12. Edit the NET.CFG file in the C:\\APPLE\\A_SHARE directory. First, replace all strings of four consecutive X characters (that is, XXXX) with the file name of your driver, excluding the .COM extension for the file. Next, change any parameters that do not match your adapter configuration settings.

Check the values for the following parameters:
- the interrupt request level, a one- or two-digit number preceded by INT #1
- the I/O port number, a 3-digit value such as 300, preceded by PORT #1
- the direct memory access channel, a value of 1 or 2 preceded by DMA
- the memory access address, a data address value such as D8000, preceded by MEM You should consult your network adapter card documentation to determine if other parameters are required for your system.
Finally, save the NET.CFG file.

13. Edit the file ATDRIVER.BAT (in the C:\\APPLE\\A_SHARE directory by default). First, remove the word "REM" from the beginning of every line. Next, replace the string "XXXX" in the second line of the file with the filename of your network adapter driver. Be sure to include the filename extension.

14. Save the ATDRIVER.BAT file.

15. Restart your computer by turning it off.and on. AppleShare Client for Windows is completely installed and should run when you start Windows. If you experience any problems after completing these instructions, see the file C:\\APPLE\\A_SHARE\\PROBLEMS.WRI.

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Installing AppleShare Client for Windows

This article is a guide to installing AppleShare Client for Windows with other network software such as Novell Netware and Microsoft Windows for Workgroups.
This article has been archived and is no longer updated by Apple.

Novell NetWare

ODI ARCHITECTURE

ODI (Open Datalink Interface)

Novell and Apple co-developed the ODI architecture. The ODI architecture refers to a series of network drivers loaded in DOS and the order in which they are loaded. ODI was developed in order to be able to use any vendor's network card with NetWare by simply installing the MLID driver provided by the vendor. NetWare, Novell's primary product, running its native IPX protocol, loads 4 drivers into memory:

LSL.COM-Link Support Layer

This driver loads first. It provides an interface between network hardware and network software. LSL.COM, along with its configuration file (NET.CFG) tell the network card driver what type of network is being used and also includes settings such as IRQ, memory address, buffers, and others.

XXXX.COM-MLID (Multi Link Interface Driver)

The name of this driver is specific to the type of network card being used, but always contains the .COM file extension. For example, if an NE2000 ethernet card is being used, the driver is called NE2000.COM. This driver relies on the LSL.COM for its configuration.

IPXODI.COM-Protocol driver

This is a driver which only NetWare uses. It is a protocol driver for the IPX protocol

VLM.EXE-Virtual Loadable Module

Provides network services such as file and print capabilities in a NetWare environment.

NetWare 3.11 vs 3.12

NetWare 3.11 and earlier used a driver called NETX.EXE instead of the current VLM.EXE which is used with 3.12 and later. When working with NetWare, it is important to determine if NETX or VLM is being used. 3.12 is backward compatible with NETX, meaning that NETX.EXE can be substituted for the VLM.EXE in version 3,12 and later.

NETWARE USING NETX (3.11)
LSL.COM
XXXX.COM
IPXODI.COM
NETX.EXE

NETWARE USING VLM (3.12)
LSL.COM
XXXX.COM
IPXODI.COM
VLM.EXE

Using AppleShare and NetWare simultaneously

AppleShare and NetWare are both ODI stacks, and therefore install very similar files. The key to getting them to run simultaneously is to integrate these files into one set which can be used by both applications. If NetWare is already installed, a standard installation of AppleShare should automatically make the proper changes.

DOS-level Files installed by NetWare
C:\\NWCLIENT\\STARTNET.BAT-->batch file which loads the netware drivers listed above
C:\\NWCLIENT\\NET.CFG-->configuration file for LSL.COM
C:\\NWCLIENT\\LSL.COM
C:\\NWCLIENT\\XXXX.COM-->MLID
C:\\NWCLIENT\\IPXODI.COM-->ipx/spx protocol driver
C:\\NWCLIENT\\NETX.EXE or VLM.EXE

DOS-level Files installed by AppleShare
C:\\APPLE\\A_SHARE\\ATDRIVER.BAT

C:\\APPLE\\A_SHARE\\NET.CFG
C:\\APPLE\\A_SHARE\\LSL.COM
C:\\APPLE\\A_SHARE\\XXXX.COM-->MLID
C:\\APPLE\\A_SHARE\\ODI.EXE-->AppleTalk protocol driver

AUTOEXEC.BAT with NetWare+AppleShare
The AUTOEXEC.BAT should start with the following 2 lines:

call C:\\NWCLIENT\\STARTNET.BAT
call C:\\APPLE\\A_SHARE\\ATDRIVER.BAT

They need to be loaded in this order, or AShare will not be able to find the LSL.COM

ATDRIVER.BAT with NetWare installed

rem C:\\APPLE\\A_SHARE\\LSL.COM
rem C:\\APPLE\\A_SHARE\\XXXX.COM
C:\\APPLE\\A_SHARE\\ODI.EXE

The first 2 lines are remarked because these files are already being loaded by the STARTNET.BAT for NetWare. Thus, we end up with the combined drivers loading in the following order:
C:\\NWCLIENT\\STARTNET.BAT
C:\\NWCLIENT\\NET.CFG
C:\\NWCLIENT\\LSL.COM
C:\\NWCLIENT\\XXXX.COM-->MLID
C:\\NWCLIENT\\IPXODI.COM
C:\\NWCLIENT\\NETX.EXE or VLM.EXE
C:\\APPLE\\A_SHARE\\ODI.EXE

Another way to go about it is to completely remove the ATDRIVER.BAT and the corresponding call statement in the AUTOEXEC.BAT and add the C:\\APPLE\\A_SHARE\\ODI.EXE line to Novell's STARTNET.BAT

Sample NET.CFG with NetWare installed

Note: when NetWare is installed, AppleShare uses the LSL.COM and its configuration file (NET.CFG) from the C:\\NWCLIENT directory, not the C:\\APPLE\\A_SHARE\\ directory.

Sample:

```
#
# Configuration file for xxxx
# Unknown NIC
#
Link Support
  Buffers 10 628
   MemPool 16K
Protocol AppleTalk
   DEFAULT xxxx
  AARP xxxx H(0001) L(6) B(090007FFFFFF)
Link Driver xxxx
  FRAME ETHERNET_SNAP
   FRAME ETHERNET_802.3
   PROTOCOL IPX 0 ETHERNET_802.3
   PROTOCOL APPLETALK 80007809B ETHERNET_SNAP
  PROTOCOL AARP 80F3 ETHERNET_SNAP
   INT 10
   PORT 300
```

This sample is the same as the default NET.CFG that AShare uses when no other network software is involved. The NET.CFG for NetWare will contain additional sections which are only for use by NetWare. One of these sections is titled "NetWare DOS Requester". Installation of Ashare will not affect these sections, and thus they are not of concern when installing AppleShare. The important lines to look for in here are the Ethernet_SNAP frame statement and the Appletalk protocol statement.

Apple Share and NETX.EXE

There is an error in the PROBLEMS.WRI file for AppleShare client in regards to using Ashare with Novell 3.11 or earlier, which uses NETX.EXE.

It says: NETX.EXE, the NetWare connection utility, does not work with AppleShare Client for Windows. NETX, and similar network connection utilities, are written for other networks and are specific to their respective networks. These utilities cannot be used for connecting to a server of another type, such as an AppleShare server.

First of all, AShare does not even use NETX. It only uses the LSL and the MLID from the STARTNET.BAT file. Ashare uses its own ODI.EXE to connect to an AppleShare server.

In most cases, NetWare clients will have a line in the autoexec.bat which reads F:login. When NETX is loaded, it automatically connects to the first available server, unless otherwise specified. Then the login program on the server (F:) must be run in order to access files. NetWare mounts drives on drive letters which fall after the drive specified in the lastdrive statement. Therefore, lastdrive has to be set to E in order for the first NetWare server to mount on drive F:.

When AppleShare is installed it changes the lastdrive to z. This leaves no drives after the lastdrive to mount the netware server. Simply changing the lastdrive to E will not really work, because that only leaves drives D: and E: for use with ashare, and if they have a cd rom, only one of these will be available. What must be done is to change the lastdrive to something like m. This will cause the netware server to attach to drive N:. At this point, if they have F:login in the autoexec, it will give the message "bad command or file name." Simply change the F to whatever drive the server has used--in this case N:.

MemPool

This line (in net.cfg) specifies the amount of memory which is allocated to the network card driver (MLID). In some cases, increasing the amount of memory allocated can solve problems involving multiple protocol stacks. By default , the mempool line in the link support section reads," MemPool 16k". this value can be set as high as 64k. If it is set to a value higher than this, it will only allocate 64k.

Windows for Workgroups

NDIS

NDIS (Network Driver Interface Standard)

Microsoft networks (Windows for Workgroups and Windows NT) use NDIS-type drivers instead of ODI. All of the network drivers involved with Windows for Workgroups load when Windows starts. Windows for Workgroups can also be configured to use ODI drivers which load at the DOS level.

Aside from Microsoft products, many TCP/IP stacks use NDIS. AppleShare, however, can only be configured to work with Windows for Workgroups NDIS. It will not recognize any other NDIS- type drivers during installation. If AppleShare is to work with these TCP/IP stacks, the TCP/IP must be configured to work with ODI.

Installing AppleShare to work simultaneously with a Windows for Workgroups network

There are 2 ways to install AppleShare so that it will co-exist with Windows for Workgroups networking software.

1. Install AppleShare over an existing Windows network so that AShare uses NDIS.

2. Install AppleShare while no windows network is configured and then configure windows to use the ODI drivers which AShare installed. Installing AppleShare using NDIS is covered in the AppleShare manual.

Configuring Windows for Workgroups to use ODI

1. Install AppleShare using standard installation while no WFWG net is configured

2. Make sure that AppleShare is working properly

3. Go to the Network group from the program manager and choose Network Setup

4. In the window that follows, click on the "Networks" button.

5. Select "Install Microsoft Windows Network" and click "ok"

6. On the next screen, choose "drivers"

7. choose "add adapter"

8. Choose the approprate network card from the list and click OK NetBeui and IPX/SPX compatible transport protocols are installed. TCP/IP software can also be obtained from Microsoft and installed.

9. Highlight the adapter name shown in the window and click "setup"

10. Change the driver type to "ODI Driver" and click OK . When finished, click "close". Then click OK

11. Windows will prompt you to insert a username and password for the network and then ask for the necessary Windows disks.

12. When finished, Windows will prompt you to restart your computer.

13. While DOS is booting, you will receive a message which reads "ERROR: cannot find LSL". Press any key to continue.

14. Use the edit command to edit the autoexec.bat. The first three lines in the AUTOEXEC.BAT will read:
C:\\WINDOWS\\net start
C:\\WINDOWS\\odihlp.exe
call C:\\APPLE\\A_SHARE\\ATDRIVER.BAT
The order of these lines needs to be changed so that it reads:
C:\\WINDOWS\\net start
call C:\\APPLE\\A_SHARE\\ATDRIVER.BAT
C:\\WINDOWS\\odihlp.exe

15. Save this file and restart the computer.--installation is complete. If an error 58 occurs while starting windows, the incorrect adapter is chosen in windows.

MemPool

This line (in net.cfg) specifies the amount of memory which is allocated to the network card driver (MLID). In some cases, increasing the amount of memory allocated can solve problems involving multiple protocol stacks. By default , the mempool line in the link support section reads," MemPool 16k". this value can be set as high as 64k. If it is set to a value higher than this, it will only allocate 64k.

TCP/IP

TCP/IP packages come in 2 varieties--NDIS and ODI. AppleShare client for windows will only work with ODI-based TCP/IP. Normally, TCP/IP software which uses NDIS drivers can be configured to work with NetWare, or ODI drivers. This is the key to getting NDIS TCP/IP to work with Ashare.

Some examples of NDIS TCP/IP packages:

- Artisoft LANtastic
- Banyan Vines
- DEC Pathworks
- Microsoft TCP/IP for Windows for Workgroups

Some examples of ODI TCP/IP packages (these are configured for ODI by default and will easily work with AShare):

- Novell's LAN Workplace for DOS
- NetManage's Chameleon/NFS installation
- Trumpet Winsock
- TCP/connect II

Sample batch file (atdriver.bat) for loading AppleShare with an ODI-based TCP/IP stack:

C:\\apple\\a_share\\lsl.com
C:\\apple\\a_share\\XXXX.com (mlid driver)
C:\\odipkt.com (or whatever the TCP/IP driver name is)
C:\\apple\\a_share\\odi.exe

Typical LINK SUPPORT AND LINK DRIVER of NET.CFG for tcp/ip follows:

```
LINK SUPPORT
  MEMPOOL 64k
  BUFFERS 6 1600
  MAX STACKS 6
LINK DRIVER 3C5X9
  INT 10
  PORT 300
  FRAME ETHERNET_II
  FRAME ETHERNET_SNAP
  PROTOCOL IP 800 ETHERNET_II
  PROTOCOL ARP 806 ETHERNET_II
  PROTOCOL RARP 8035 ETHERNET_II
  PROTOCOL APPLETALK 80007809B ETHERNET_SNAP
```

PROTOCOL AARP 80F3 ETHERNET_SNAP

Binding TCP/IP protocols in the net.cfg

The following lines must be added to the link driver section of the net.cfg in order to use TCP/IP:

Link Driver XXXX
  Frame Ethernet_II
  Protocol IP 800 Ethernet_II
  Protocol ARP 806 Ethernet_II
  Protocol RARP 8035 Ethernet_II
Without these lines, the tcp/ip software will load, but will not be functional on the network.

Max Stacks

This line allows multiple protocol stacks to access the same ethernet card. Without fail, the Max Stacks line must be added to the Link Support section of the net.cfg in order to get appleshare and tcp/ip to work simultaneously. If the Max Stacks line is absent, the resulting error will read, "LSL out of resources" when either the ODI.EXE or the tcp/ip packet driver loads. The line should read: "Max Stacks 6" or "Max Stacks 8"

MemPool

This line (in net.cfg) specifies the amount of memory which is allocated to the network card driver (MLID). In some cases, increasing the amount of memory allocated can solve problems involving multiple protocol stacks. By default , the mempool line in the link support section reads," MemPool 16k". this value can be set as high as 64k. If it is set to a value higher than this, it will only allocate 64k.

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Apple IIe: Printing to Networked Printers

I have an Apple IIe network problem. I have a printer network only with no file server. The school district wants to use the printer network with its 5.25-inch disk drives. There are about 50 labs with 20 to 25 Apple IIe systems in each lab.

I created a Chooser and Menu program "startup disk". I copied the necessary files and ATINIT to let the startup disk auto-select the networked printers. We found a public-domain menu program that requires only 1.5K. This lets the Chooser be part of the menu and lets teachers and students (especially K-3) select program without using pathnames.

I understand the AppleTalk network process and the need for the 3.5-inch drive. However, why can't we also provide support for the Apple IIe and the 5.25-inch drives?

This article has been archived and is no longer updated by Apple.
The only issue with using 5.25-inch drives for the described environment concerns disk space. After adding ProDOS 8, Chooser.II (with associated files), and ATINIT, the remaining space is all that is available for applications and data files on the startup disk. This means that there is approximately only 60K available for applications on a disk configured with the needed resources for network printing.

For a printer choice to be retained, you need run Chooser.II only once, as long as the selected printer maintains the same name and stays available on the network. The selected printer is stored in the ATINIT file of the disk that contains Chooser.II. On subsequent startups with that disk, the printer that was previously selected becomes the default printer. Thus, Chooser.II is not required to be run every session.

If only one 5.25-inch drive is available and if applications and/or data files larger than 60K are to be used, it is possible to start up with the disk described above, then switch (without restarting) to a second disk containing the larger application or data file. We do not know of any menu programs that can launch an application on a second disk, although such a program would not difficult for an Apple II programmer to write.

However, since Chooser.II needs to run only once (unless something about the printer changes), alternate methods of launching an application from the second disk can be considered. One example would be an Applesoft program that launched the menu program. By giving the Applesoft program a simple name (like MENU) and placing it in the main directory, the students would be able to switch disks, type RUN MENU, and then select the application desired.

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Apple Display Connector: Pin Assignments

This article provides the pin assignments, also known as pinouts, for the Apple Display Connector (ADC) used on the Power Mac G4.
This article has been archived and is no longer updated by Apple.

Digital signals on the Apple Display Conector

Pin	Signal name
1	28 V Supply
2	28 V Supply
3	LED
4	TMDS Data0-
5	TMDS Data0+
6	TMDS Data0/5 Shield
7	TMDS Data5-
8	TMDS Data5+
9	DDC Data
10	Vsync 25 TMDS Data2+
11	28 V Return
12	28 V Return
13	Soft Power
14	TMDS Data1-
15	TMDS Data1+
16	TMDS Data1/3 Shield
17	TMDS Data3-
18	TMDS Data3+
19	DDC CLock
20	Clock Return
21	USB Data+
22	USB Data-
23	USB Return
24	TMDS Data2-
26	TMDS Data2/4 Shield
27	TMDS Data4-
28	TMDS Data4+
29	Clock+
30	Clock-

Analog signals on the Apple Display Conector

Pin	Signal name
C1	Analog Blue Video
C2	Analog Green Video
C3	Analog Horizontal Sync
C4	Analog Red Video
C5	Analog RGB Return and DDC Return

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iTunes 1.0: Sony PlayStation Discs May No Longer Appear After Installing iTunes

After installing iTunes 1.0, Sony PlayStation and other discs may no longer appear on the desktop due to the version of Foreign File Access included with Mac OS 9.0 or 9.0.4, and the Apple CD/DVD Driver installed by iTunes.
This article has been archived and is no longer updated by Apple.

Symptom

When you insert a Sony PlayStation disc a dialog box appears with a message that asks if you want to initialize the disc. After clicking Eject, the audio partition of the disc appears on the desktop.

Solution

Download and install Mac OS 9.1 to get the latest version of Foreign File Access.
Published Date: Feb 18, 2012

LaserWriter IINTX: Setting Baud Rate to 19.2Kb

I have a LaserWriter IINTX on an Apollo workstation network. Initially, I direct-connected (9600 baud) the LaserWriter to a print server to download the PostScript file that sets the printer to 19.2K baud.

Is a hardware setting available for this 19.2K baud setting, perhaps a jumper inside the LaserWriter IINTX or switch settings? This would eliminate the need to download the file.

This article has been archived and is no longer updated by Apple.
The only way to set the baud rate of the LaserWriter IINTX to 19.2K baud is by sending a PostScript program to the LaserWriter. For reference, here is the PostScript program:

```
serverdict begin 0 exitserver
statusdict begin 25 19200 64 setsccbatch
```

For a more detailed description of this program and the options it can change, see page 122 of the "LaserWriter IINT/NTX Owner's Guide."

Published Date: Feb 18, 2012

Macintosh: "Problem With Target Device. Error Code -7932" Alert

You should choose a slower burn speed if an alert box with a -7932 error message appears.
This article has been archived and is no longer updated by Apple.

Symptom

When you try to burn a CD an alert box with this error message appears:

> "There was a problem with the target device. Error code -7932."

Figure 1 Alert box with error message

Solution

This alert may appear if you are using media of marginal quality, or if you have a slower CD-R drive set to burn at maximum speed.

Try a different kind of disc, or a different brand or manufacturer of disc.

In iTunes, set the burn speed to something lower than the maximum setting, for example 4X or 6X.

If using CD-RW discs, only use CD-RW discs that are rated from 1x to 4x speed. The CD-RW drive in your computer cannot write to High Speed CD-RW discs (4x to 10x speed). Although the drive cannot write to High Speed CD-RW discs, it can read them.

Related documents

61102: "**iTunes 2: Unable to Burn a CD**"
61097: "**iTunes 2: How to Change the CD Burning Speed**"
58770: "**CD-RW and SuperDrive: Specifications and Usage Information**"

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iMac (Early 2001): What‘s New and Different

This article describes what is new and different with the iMac (Early 2001) computer.

This article has been archived and is no longer updated by Apple.

- CD-RW in 500 and 600 MHz models
- Two FireWire ports on all models
- Faster processors, up to 600 MHz
- Larger hard drives, up to 40 GB
- New styles including Blue Dalmatian and Flower Power, in addition to Indigo and Graphite.
- Theater mode now available in individual windows, as well as full screen

Published Date: Feb 18, 2012

Macintosh SE: Models After July 1988 Can Take DIP SIMMs

Concerning the Macintosh SE, are we using (or have we ever used) DIP SIMMs? I was wondering ifthere might be a physical interference problem with some Ethernet cards if this were the case.

This article has been archived and is no longer updated by Apple.
Originally, Apple did not use DIP SIMMs in the Macintosh SE, because they did not fit. However, in July 1988, we revised our SIMM strategy for the Macintosh SE and began shipping the DIP SIMMs with the Macintosh SE. The Macintosh SE logic board was revised, and a jumper added that lets you put DIP SIMMs in banks 3 and 4 (the two frontmost banks), and still have room to install an option board.

This information is documented in the "Technical Procedures" manuals and in a service notice sent to Apple dealers in July 1988.

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Macintosh: Front End for Telemail or MCI Mail

I am looking for a Macintosh software package, besides Desktop Express, that can act as a front end for either Telemail or MCI Mail.

This article has been archived and is no longer updated by Apple.
You might be interested in Software Ventures' MicroPhone II (which has an MCI Mail CCL). Prometheus offers Acknowledge (a toolkit for programming an interface for MCI Mail and Telemail) and Macknowledge, software for end users with scripting capabilities. Macknowledge comes with an MCI Mail button ready to use.

For more information, search on "Software Ventures" or "Prometheus Products".

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Mac OS 9: How to Burn a CD and Choose a Format

This document explains how to burn a CD using a CD-R or CD-RW drive and explains which disc format may be most appropriate for your needs.
This article has been archived and is no longer updated by Apple.
Important: The information in this document assumes you have installed iTunes 2 or Authoring Support 1.1.3 or later and are using Mac OS 9. Both are available for download from Apple Software Downloads (http://www.apple.com/swupdates/). If you are using Mac OS X, see technical document 61339 "**Mac OS X: About Burning Data Onto CDs**"

Creating CDs

If your Mac has a recordable disc drive, you can create your own CDs in several different formats.

You use blank CD-R or CD-RW (read/write) discs to create your own CDs. Once a CD-R disc has been recorded, or "burned," you cannot modify the disc or any of the files on it. The discs you create are "single-session" CDs. You can burn CD-R discs only once; any extra space on the disc cannot be reused or recovered.

If you want to use a CD-RW disc that already has files on it, you must erase it first. Many CD drives in earlier computers cannot reliably read CD-RW discs. For better compatibility, use CD-R discs instead.

How to Burn a CD

1. Insert a blank disc into the CD recording drive. A dialog box appears.
2. Type a name for the disc in the Name field.
3. Choose a disc format from the Format pop-up menu. For information about the formats, see the "Choosing a Disc Format" section, below.
4. Click Prepare. A disc icon appears on the desktop.
5. Drag the files and folders you want to save on the disc to its icon. See Note 1.
6. When the files and folders are finished copying to the disc icon, arrange them exactly as you want to see them when the disc is burned**.** Once you burn a disc, you cannot change the placement of files or folders or their names. See Notes 2 and 3.
7. Click the disc icon, then choose Burn CD from the Special menu. See Note 4. A dialog box appears.
8. Click Burn. The disc is initialized and the files and folders are saved on the disc. This process takes several minutes. See Notes 5, and 6.

Choosing a Disc Format

You can choose from three disc formats when you create a CD. Each has a purpose, which is outlined here.

Standard (HFS+/ISO 9660)

Choose Standard format if you plan to use the disc with Macintosh computers or with both Macintosh and non-Macintosh computers. This format may also work with some later MP3-CD players.

Standard format is a hybrid of both Mac OS Extended (HFS Plus) and ISO 9660 formats. When read on most Macintosh and Windows-compatible computers, filenames appear as they do on any other disk. See Note 7. When read as an ISO 9660 disc on other computers, filenames appear in all uppercase characters, and they may also be shortened to fit the ISO 9660 level 1 standard (eight characters followed by a period followed by three characters, or 8.3).

CD-R or CD-RW media can be used with this format, though some earlier computers may not be able to read a CD-RW disc.

iTunes (Audio CD)

Choose iTunes format if you want to play the disc in a CD player. The CD should also work in any computer that can play audio CDs.

The iTunes application program opens when you choose this format so you can create your audio CD using music from your music library.

You should only use CD-R discs when creating audio CDs. Few CD players can read CD-RW discs.

MP3 CD (ISO 9660)

Choose MP3 CD format if you plan to use the disc only with non-Macintosh computers or if you have an MP3-CD player. See Note 8.

You generally only choose this format to save MP3 files on a disc, but you could use it to save any data file. Most computers and MP3-CD players can read discs that use the ISO 9660 format. If you plan to use the disc only with Mac OS or Windows-compatible computers, you

should use the Standard format instead.

On computers using Mac OS X, and on Windows-compatible computers, filenames on these discs appear as they do on any disk. On computers using Mac OS 9 or on earlier computers, filenames appear as all uppercase characters. They may also be shortened to fit the ISO 9660 level one standard (eight characters followed by a period followed by three characters, or 8.3).

CD-R or CD-RW media can be used with this format, though earlier computers and MP3-CD players may not be able to read CD-RW discs.

Notes

1. Files written to the CD are temporarily stored on your hard disk. Depending on the size of the blank CD, your files, and your hard disk, you may need as much as twice the capacity of the CD in free space on your startup disk. For example, if you are using a 650 MB CD-R disc you should make sure that your startup disk has at least 1.3 GB of available space.

2. When you create a Standard format CD, the size and location of the disc's window, whether or not the disc's window is open, and the position of all the icons are recorded on the disc. Make sure the disc is how you want it before recording it. If you choose to create an MP3 (ISO-9660) or iTunes audio disc, this extra information is not retained.

3. The names of files and folders on the burned disc may be different from what you see when you prepare the disc. Depending on the disc format you choose, files and folders may have truncated names, or be in all uppercase characters.

4. If you decide not to burn a CD that you have prepared in step 6, drag the disc icon to the Trash instead of choosing Burn CD from the Special menu.

5. If you cancel while the disc is being burned, the CD will be incomplete and unreliable. You should not use it.

6. The length of time it takes to create a disc depends on the blank media you use, and the size and number of files on the disc.

7. On earlier versions of the Mac OS or Windows a Standard format disc may appear only as an ISO 9660 disc.

8. The MP3 CD format may not work on some earlier MP3 players.

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TA44039_iMac_Early_Applications_Disc_Contents.pdf

iMac (Early 2001): Applications Disc Contents

This article documents the contents of the Applications disc included with the iMac (Early 2001) computer.
This article has been archived and is no longer updated by Apple.

Figure 1 Top level of Applications CD

Figure 2 Application icons

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Rip, Mix, Burn Defined

This article defines the terms Rip, Mix, and Burn as used in relation to creating CDs using iTunes.
This article has been archived and is no longer updated by Apple.
Rip: The process of importing a track from an existing CD into iTunes.

Mix: In the context of iTunes, the act of arranging the tracks that will make up the CD into some order.

Burn: The process of writing the playlist of tracks from iTunes onto a CD.

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PrintMonitor: Setting PrintMonitor Window Preferences

This article explains how to make the PrintMonitor window appear when printing under Mac OS 9 and earlier.
This article has been archived and is no longer updated by Apple.
Some third-party printer drivers may not work with the Desktop Printers feature of the Mac OS, which can provide a listing of queued print jobs.

If you need to view queued print jobs, disable desktop printing and set the PrintMonitor window to appear automatically when printing, as outlined below:

1. Use the Extensions Manager control panel to disable the Desktop PrintMonitor and Desktop Printer Spooler system extensions.

Figure 1 Extensions Manager control panel

2. Open PrintMonitor, located in the Extensions folder.

3. Choose Preferences from the File Menu.

Figure 2 PrintMonitor preferences

4. Click Yes to enable the "Show the PrintMonitor window when printing" option, then click OK.

5. Restart the computer.

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Macintosh: RGB-To-NTSC Video Conversion Options

I work at a TV station and am researching the best solution for recording 24-bit images from my Macintosh IIcx to videotape. I am interested in the Display Card 8/24 GC as a solution.

I have also considered the RasterOps 364 board that lets the Macintosh display real-time, 24-bit images on the Macintosh monitor from a video source. However, I do not know if this card offers the ability to record Macintosh video onto tape.

I am aware that the cards from Orange Micro, TrueVision, and Mass Micro may also be solutions. However I am not familiar with these cards and their features. If you can provide me with any info (or an opinion) I would appreciate it.

This article has been archived and is no longer updated by Apple.
There are three approaches to placing Macintosh images into the NTSC world:

- A video card with onboard NTSC output. RasterOps, SuperMac, Orange Micro, Computer Friends, Mass Micro, and others make Macintosh video cards that provide NTSC output directly from the cards.

- An RGB-to-NTSC converter box. RasterOps and ComputerVideo make RGB-to-NTSC converter boxes that work with Apple's color video cards, both the new ones and the original 8-bit video cards. RasterOps' converter also works with their 208, 264, 364, and 16PC cards. TrueVision also provides a RGB-to-NTSC converter box for their video cards. However, it does not work with the Apple video cards.

- A scan converter. RGB Spectrum builds a scan converter that works with most Macintosh 640x480 video cards.

The card providing onboard NTSC output must have all the necessary circuitry built on the NuBus video card. These are the simplest to install and use. There are connections on the cards for connecting the NTSC video signal coming from the card directly to the NTSC destination device. This usually uses an RCA-type phono-plug-to-phono-plug connection. The various cards provide a variety of features, from only video out to video overlay to frame grabbing to special video effects.

Note: In this article, the reference to frame grabbing indicates the ability to grab a frame of video in 1/30 of second. Scanning indicates the need for more time to acquire the image. This generally requires using a video camera for input, because most freeze-frame images are not usable for source material. The issue concerns the lack of video sync during freeze-frame mode.

There is currently one RGB to NTSC converter box available. Tech Comm has not been able to test this box, so we are unable to provide additional details. However, it appears that it should work correctly with the new video cards when the correct cable is used. It does work with the older 8-bit Macintosh color video cards when used with the interlace utility Apple has made available. The box is from ComputerVideo and is called Video NTSC Encoder.

RasterOps has announced The RasterOps Video Expander box, which is listed as compatible with the new Apple video cards. The RasterOps box provides both composite and S-Video (for S-VHS, HiBand 8mm and ED Beta) output signals. This converter also requires the correct cable to be used. Again, Tech Comm has not had the opportunity to test this card with the new video cards. Beyond the conversion to NTSC, these converter boxes do not provide any additional features to the video card that is used. These boxes require the signal coming from the cards to be in the NTSC interlaced mode.

For the finest conversion of RGB to NTSC, a scan converter is required. They are far more expensive than the converters mentioned above. Scan converters are used to create the highest-quality broadcast image. Scan converters not only convert the RGB signal to NTSC, they also eliminate the flicker associated with horizontal single-pixel lines and provide aspect-ratio conversion, color-bar generation, video transitions, freeze frame, and video mixing--all at the best available quality. The scan converters take the high scan rate RGB signal directly from the video cards, convert it to a digital frame buffer, do their functions digitally, and reconvert the image in an analog NTSC signal. This lets you do a function similar to Apple's 8-bit convolution on 24-bit images.

The RasterOps 364 does not provide NTSC video output without the use of the Video Expander box. In this respect, it is the same as the Display Card 8/24 GC. The frame grabbing ability and the live video on the Macintosh RGB display, however, do set it apart from the Display Card 8/24 GC. The 364 card does not provide the ability to overlay computer graphics on top of the live video. The live video window can be placed on top of a graphic background. None of the background will be seen through the live video image. The live video window is resizable.

The NuVista cards from TrueVision also provide frame grabbing from a video source. To lay the image back to videotape, the TrueVision VIDI/O converter box is required. The NuVista are not designed to provide live video images on the Macintosh RGB screen. Instead they provide the ability to overlay the Macintosh graphics on top of the video image. This composited image must be viewed on an NTSC screen.

Mass Micro provides a two-card set, the ColorSpace III and ColorSpace F/X cards. The ColorSpace III provides NTSC output of a Macintosh 8-bit image. It can also overlay the Macintosh graphics on top of video fed into the card. This composited image will appear on the NTSC device. Limited, non-real-time scanning can be accomplished. With the addition of the F/X card, a variety of video special effects can be achieved with the video signal being sent to the Macintosh.

The video image can be compressed, stretched, flipped, and so on in real time for use in the NTSC world. The F/X card can also frame grab from the incoming video in 24-bits. With the ColorSpace IIi and F/X cards the single-pixel line flicker problem is addressed. They do not use convolution as Apple does. Rather, they have devised their own method of addressing this NTSC issue.

The Orange Micro Personal Vision card offers frame grabbing and the ability to display incoming video on the Macintosh RGB screen. The Personal Vision card does not have an NTSC video output on the card. This cards relates most to the RasterOps 364 card. However, we don't know of any RGB-to-NTSC converter box for the Personal Vision card.

Some of the video cards that have onboard NTSC video output also offer the ability to overlay the Macintosh graphics on top of incoming video to provide a composite image at the NTSC output. This feature needs to be checked for any card being considered for combining video sources with Macintosh graphics.

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Mac OS 9.2: Availability

This article provides availability information for Mac OS 9.2.
This article has been archived and is no longer updated by Apple.
Mac OS 9.2 is only available with the Power Mac G4 (QuickSilver) computer.
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Power Mac G4: iMovie and iDVD Restore or Reinstall

iMovie and iDVD are preinstalled on the computer's hard disk, and are included on the Apple Software Restore discs that come with the computer.
This article has been archived and is no longer updated by Apple.

Symptom

There are no installation discs for iMovie or iDVD.

Solution

For Power Mac G4 (QuickSilver) and (QuickSilver 2002) computers

iMovie and iDVD are preinstalled on the computer's hard disk. If you delete iMovie, iDVD, or parts of these applications, and then later decide you want to use either of them, you may restore the hard disk by using the Apple Software Restore discs that came with the computer.

Instructions for using this software are available in the "Restoring Your Computer's Software" section of the "Setting Up Your Power Mac G4" manual.

Reinstalling iMovie, iTunes, or iDVD Without Erasing

For more information on installing this software, refer to technical document 106451: "**Apple Software Restore: How to Install Reinstall Parts Without Erasing the Hard Disk**"

For Power Mac G4 (Mirrored Drive Doors)

iMovie, iTunes, and iPhoto are included as part of the Mac OS X 10.2 Installation disc. If you delete any part of these applications and then later decide you want to use them you can reinstall them by following these steps:

1. Insert the Mac OS X Installation disc 2.
2. Double-click "AdditionalApplications.pkg".
3. Type in your password, and click OK.
4. Click Continue at the Welcome to the Additional Applications Installer.
5. Select the destination disk, and click Continue.
6. Click Install.

Note: The additional applications cannot be selectively installed. This will reinstall iMovie 2.1.2, iPhoto 1.1.1, iTunes 3 and Acrobat Reader 5.0.5.

Published Date: Feb 18, 2012

Modula 2: Available for the Macintosh (6/97)

Is there a Modula 2 vendor for the Macintosh?
This article has been archived and is no longer updated by Apple.
We found two sources of Modula-2 Power System-Modula 2 and MetCom Modula-2.

Pecan Software Systems's Power System-Modula 2 is a complete development environment with powerful programming tools along with a Modula-2 compiler. Power System-Modula 2 adheres to Wirth's Third Edition, separate compilation of modules, conditional compilation, nested include files, process synchronization, sets with up to 4080 elements, access to low-level system calls, extensive module library (source available) support packages available (including Pascal to Modula-2 translator, software tools), integratable with other languages (UCSD Pascal, Fortran-77, BASIC).

MetCom Modula-2 from Metropolis Computer Networks is an integrated Modula-2 development system comprised of a text editor, native code compiler, dynamic liner and source debugger.

Published Date: Feb 18, 2012

A/UX: Porting C Code from SUN (9/94)

I have a question about Berkeley UNIX type compilers that run on a SUN/3 and similar machines. Would code compiled on a typical C compiler on a SUN run relatively unaltered (assuming recompilation) under A/UX?

Because we don't implement full Berkeley, would a program for a SUN system have to be radically re-written to run on a Macintosh running A/UX?

This article has been archived and is no longer updated by Apple.
A/UX is based on AT&T System 5.2.2. All C codes written on any System V.2.2 based system (use of standard System V.2 C compiler) should compile and run under A/UX without any change.

Since SUN/3 is based on BSD 4.[23] UNIX, there are differences between AT&T System V.2.2 and BSD UNIX 4.[23]. The area of difference includes ioctl() system call, signal handling, directory structure, and so on. Therefore, if the C code involves these differences, it needs to be modified to run on A/UX.

A/UX also supports UNIX 4.2BSD-style signals (software interrupts) and Berkeley UNIX 4.2-style network systems. For example, A/UX includes set42sig() so you can use the 4.2BSD signals. The Berkeley TCP/IP networking facilities like socket(), bind(), connect(), and so on are supported.

Now that the A/UX 2.0 and 3.0 kernel implements Berkeley file system (UFS), the system calls for UFS file system structure are available and supported.

Be aware that if the C code contains SUN specific (non-Berkeley or non-standard UNIX calls), it has to be re-written for A/UX. In short, porting C code to A/UX should not be a difficult task, although there are differences between System V.2.2 and BSD UNIX.

Article Change History:
19 Sep 1994 - Reviewed for technical accuracy.
31 Aug 1992 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Business BASIC III: IF...THEN...ELSE

This article has been archived and is no longer updated by Apple.
The IF/THEN statement can give some unexpected results. The rules for IF/THEN are:

1. When the logical expression is true, the rest of the line is executed, except:

A. When there is an ELSE on the same program line, execution continues to the ELSE, then goes the next numbered program line.

B. If there is an implicit or implied GOTO, execution continues at the target line.

2. When the logical expression is false, execution continues on the next numbered program line, except:

A. When there is an ELSE on the line, execution continues after the ELSE.

The following examples might help explain some of these special cases:

Example 1:

```
10 if A = 0 then print "1" : print "2"
20 print "line 20"
```

Assuming A = 0 A <> 0

```
Results 1 line 20
2
```

If A equals 0, then the Print statements in line 10 are executed (rule 1). If A doesn't equal 0, then line 20 is executed (rule 2).

Example 2:

```
10 if A = 0 then 500 : print "1" : print "2"
20 print "line 20"
500 print "end"
```

Assuming A = 0 A <> 0

```
Results end line 20
end
```

If A equals 0, the Print statements in line 10 are never executed; then execution transfers to line 500 (rule 1B). If A doesn't equal 0, then line 20 is executed (rule 2).

Example 3:

```
10 if A = 0 then print "1" : goto 500 : print "2"
20 print "line 20"
500 print "end"
```

Assuming A = 0 A <> 0

```
Results 1 line 20
end end
```

If A equals 0, then the first Print is executed, then the execution is transfer to line 500 (rule 1A). If A doesn't equal 0, then line 20 is executed (rule 2). The last Print statement in line 10 is never executed.

Example 4:

```
10 if A = 0 then print "1" : print "2" : else print "3" : print "4"
20 print "line 20"
```

Assuming A = 0 A <> 0

```
Results 1 3
2 4
line 20 line 20
```

This is a classic example of how ELSE is used. Either execute Print 1 and 2 or execute Print 3 and 4 (rules 1A, 2A).

Example 5:

```
10 if A = 0 then 500 : print "1" : print "2" : else print "3"
20 print "line 20"
500 print "end"
```

Assuming A = 0 A <> 0

```
Results end 3
line 20
end
```

Print 1 and 2 in line 10 is never executed, because if A equals 0, then execution transfers to line 500 (rule 1B). If A doesn't equal 0, then the statements after the ELSE is executed (rule 2A).

Example 6:

```
10 if A = 0 then print "1" : goto 500 : print "2" : else print "3"
20 print "line 20"
500 print "end"
```

Assuming A = 0 A <> 0

```
Results 1 3
end line 20
end
```

If A equals 0, then Print 1 is executed, then execution is transfer to line 500 (rule 1B). If A doesn't equal 0, then the statements after the ELSE is executed (rule 2A). Print 2 statement is never executed.

Published Date: Feb 18, 2012

A/UX: X Window System Symbolic Links

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I am installing X Windows. I have installed the software without problems, but when I run it, I get "X11BINDIR ENVIRONMENT ERROR". This is because I am using a second partition mounted under my own directory. I know that I need to do a symbolic link for some files, but I don't know to which ones and the manual has nothing about accessing X Windows under another directory.

When there is no room to install X in the root directory, why isn't this information included in the manual?

This article has been archived and is no longer updated by Apple.
If you installed X11 Window System (the Native X) on a separate partition, make sure the following files and directories are symbolically linked or copied to the right places:

```
ln -s /.../bin/X11 /usr/bin/X11
ln -s /.../lib/X11 /usr/lib/X11
ln -s /.../include/X11 /usr/include/X11
ln -s /.../lib/lib*X*.a /usr/lib
cp /usr/lib/X11/xterm* /usr/lib/terminfo/x
cp /usr/lib/X11/.x11start /
cp /usr/lib/X11/Sample.twmrc /.twmrc
```

Also, edit the .profile (for Bourne or Korn shell) or the .login file (for Csh shell) to include the /usr/bin/X11 directory in the search PATH.

The X Window System installation document does mention it requires 12MB of free disk space, and the Xinstall shell script also checks the available disk space before actually performing the installation.

For more information, refer to "Chapter 3 Install X11" in the "Getting Started With X Window System for A/UX" documentation.

Published Date: Feb 18, 2012

A/UX 2.0: Macintosh Applications Can Use 32-Bit Addressing

Does A/UX 2.0's 32-bit addressing extend to the "MultiFinder" process? That is, if I am running "normal" Macintosh applications under A/UX 2.0, do I have access to more than 8MB of memory space?

This article has been archived and is no longer updated by Apple.

Yes, A/UX 2.0's 32-bit addressing capability can be extended to the Macintosh applications which run under A/UX 2.0 MultiFinder Environment. However, the Macintosh application can access up to 16MB, because this is the maximum memory size allowed in Macintosh OS.

The size of the Macintosh application's memory address space can be changed via either ResEdit or Get Info. Note that there is a limitation on using the "Get Info" method; it lets you key no more than four digits. Therefore, use ResEdit if you require a change of more than 9999K.

To have your Macintosh applications run in the A/UX 2.0 32-bit environment, make sure you have sufficient virtual memory allocated before the session is started. There are two ways of controlling the size of the virtual memory allocation:

1) By assigning a value to an environment variable TBMEMORY. For example, "TBMEMORY=16m; export TBMEMORY" (or put them in the .profile file or .login file), logout then login again. This will create a 16MB virtual memory for MultiFinder.

2) By passing a flag when starting the "startmac" process. For example, edit the /mac/bin/mac32 file to have the "startmac" command line to read "/mac/bin/startmac -m16m &". This will create a 16MB virtual memory for MultiFinder.

The maximum feasible size for virtual memory is dependent on the environment (24-bit or 32-bit), and of course the size of the Swap space on the disk. For the 24-bit environment, the maximum virtual memory is 8MB; for the 32-bit environment the maximum virtual memory is 256MB.

System performance, however, will degrade if the virtual memory is much larger than the physical memory present in the system because a lot of paging and swapping activities will take place. A good rule of thumb is to keep virtual memory no larger than twice the size of physical memory present in the system.

Published Date: Feb 18, 2012

A/UX 2.0: How to Escape from a Hung Login Under X Windows

I created an interesting problem for myself. I was preparing a Macintosh IIfx with X Window and mistyped a line into the PATH variable. When I tried to log in, I hung. I was finally able to break out of the login process, but it was time-consuming and not very intuitive. The typo was /usr/lib/X11, instead of /usr/bin/X11. Obviously, this didn't let the process look in the right place for the software, so it wouldn't boot properly.

Do you have any suggestions?

This article has been archived and is no longer updated by Apple.

As we have tested the above X11 session scenario (login as "Guest" without the /usr/bin/X11 in the search PATH) we won't get into the "hung" situation. It is true that the screen displays, "Starting session for Guest...", if no one presses the Return key.

At that "hung" point, however, if you only press Return, the default X11 session will come up. The default X11 session includes a "Console" window, two "xterm" windows, and three X client applications (xlogo, xload, and xclock). If you have pressed any printable key then Return, it will bring you back to the Login dialog box.

As we examine the /usr/bin/X11/X11 script, the above behavior becomes clear, because the X11 script does check if /usr/bin/X11 is in your search path, then asks you if it should be appended to your search path. This is why the "Starting session for Guest..." message was waiting for your reply.

Note that the "x11debug.log" file will be created under the user's home directory, if any error is encountered. Check with that file for an explanation.

Published Date: Feb 18, 2012

TA44054_AUX_Supported_Printing_from_UNIX__(TIL05896).pdf

A/UX: Supported Printing from UNIX (12/95)

This article describes printing features available to UNIX users.

This article has been archived and is no longer updated by Apple.
A/UX 3.0 supports both AT&T System V and Berkeley BSD printer spoolers. The default printer spooler now is the Berkeley printer spooler that supports printcap (/etc/printcap) and remote printing capability.

You can configure printcap to print to locally connected devices like a serially connected ImageWriter or LaserWriter, or remote printers like other UNIX systems with lpd or TCP/IP capable Laser printers.

For more detailed information on Berkeley printer spooler system, refer to the printcap(4), lpr(1), lpc(1M), lpd(1M), lpq(1), & lprm(1) manual pages, and the "Setting Up Accounts and Peripherals for A/UX" documentation.

Additionally, printcap can be configured to make connections to AppleTalk printers, by have lpd use the AppleTalk protocol stack that is part of A/UX.

The input/output filters for AppleTalk LaserWriter Printer are provided in the /usr/spool/lpd/AppleTalk directory. For those who need to create multiple AppleTalk LaserWriters access, be sure to follow the instructions included in the input filter file (ifiler).

NOTE: The "pipe" file and filter files under each individual printer directory must be owned by "daemon" and grouped by "daemon".

As an example, to print a file "test", to a LaserWriter named "Metro" on an AppleTalk network (assuming the LaserWriter has a printcap entry "metro|mt") the user may give the command:

lpr -Pmetro test
or lpr -Pmt test

If the "-P" option is omitted, A/UX will print to either the default printer chosen from CHOOSER, from "at_cho_prn", or from the value of environment variable PRINTER.

For information on AppleTalk printing, refer to the atprint(1), atstatus(1), at_cho_prn(1), & atlookup(1) manual pages. Also look at "A/UX Networking Essentials" and "A/UX Local System Administration" manuals.

Article Change History:
14 Dec 1995 - Updated article with new information.
08 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

Applesoft: Syntax error when the program is run

Applesoft requires the first byte in the program storage area be zero.
This article has been archived and is no longer updated by Apple.
Some machine language programs don't leave a zero, causing Applesoft to react strangely.

Initialize that byte, even if the program memory pointer has been changed by:

POKE PEEK (103) + PEEK (104) * 256,0
Published Date: Feb 18, 2012

Business BASIC III: Errata for Reference Manual

This article has been archived and is no longer updated by Apple.
The following are errata for Business BASIC III manual # A3L0002/030-0122-00

Page iv...The correct page number for Chapter 6 is 159.

Page iv...The entries for appendices C and D are reversed. They should read:

C Alphabetic list of reserved word 236
D Variable maps 238

Page 27...The section on CTRL-5, -6, -7, -8, -9 should refer to page 139 of the Standard Device Drivers Manual.

Page 128...The information at the top of the page is missing periods. It should read:

)print using "+###.###"; 3.14159
+ 3.142

This spec, +###.##,

Page 151...The line at the top of the page should read:

DEF FN MODB(A)=int ((A - int (A / B) * B +.5)

Page 240...The information for Long integers is reversed. It should read:

Long integer 0 high byte
7 low byte

Page 329...The example that starts "print1;Apple" should read:

print #1;"Apple"

Prints text characters on the graphics display, starting at the cursor position.

If you used:

open #1,".Graphix"

to open the graphics driver. Cursor marks upper left corner of character's rectangular cell.

To send direct screen-control characters to the .Graphix driver:

print #1; chr$(19);chr$(13)

Page 322...KBD is described on page 121 instead of page 43.
Published Date: Feb 18, 2012

Final Cut Pro 1.0.x: QuickTime 4.x Compatibility

For maximum compatibility and stability, it is important to have the correct version of QuickTime 4 for your version of Final Cut Pro.
This article has been archived and is no longer updated by Apple.
For more information on which version of QuickTime is compatible with your version of Final Cut Pro, please see Tech Info Library article 24991:
Final Cut Pro: Compatibility Matrix

For more information about the latest version of Final Cut Pro, visit:

http://www.apple.com/finalcutpro/

To download the latest version of QuickTime 4, visit:

http://www.apple.com/quicktime/
Published Date: Feb 18, 2012

Mac OS X Server 1.x: Downloading Updates

This article contains general instructions for downloading and installing updates for Mac OS X Server versions 1.x.

Note: This article does not pertain to Mac OS X Server versions 10.x, which were released in or after May 2001.

This article has been archived and is no longer updated by Apple.
If your Mac OS X Server computer does not have a connection to the Internet you must perform the following file transfers on another computer that does have a connection, and then copy them to your server computer.

If your Mac OS X Server computer does have an Internet connection follow these steps:

Using OmniWeb

1. Log in to the server as Administrator (or root).

2. Open the OmniWeb browser (/Local/Applications/Internet/OmniWeb.app).

3. Select the folder from the following directory; it contains the update you need:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/English-North_American/Mac_OS_X_Server/

4. Command-click the appropriate.tar file and click OK in the dialog box that appears. This saves the file into your download directory (~/Library/OmniWeb/Downloads/)

5. In a Viewer Window go to the ~/Library/OmniWeb/Downloads/ directory. The easiest way to navigate to this directory is to type a ~ and press the Return key, then follow the directory structure down.

6. Single click the .tar and press Command+2. This opens the Contents Inspector. Click the Unarchive button and the tar file will be expanded in the current directory.

7. Using the Viewer in WorkSpaceManager, select the .pkg file. Then under the Tools menu choose Inspector/Tools. Make sure that "Installer" is the application selected to open this package.

(**Note**: The file name is the name of the component you have downloaded with the extension.pkg such as MacOSXServer.1.0.2.pkg . For the remainder of this article it will be referred to as .pkg).

8. Close the Inspector and double click the package to start the installer. This opens Installer.app. Click on the "Install" button to perform the installation. You are asked if you want to replace existing files; answer "Continue" to this question.

9. Shut down the computer by choosing Log Out from the File Menu and clicking Shutdown in the dialog box that appears.

10. Start the computer normally and the updated components are ready for use.

Using the command line

1. Log in as Administrator (or root)

2. Open Terminal.app

3. Download the updates for Mac_OS_X_Serer_OS from Apple's ftp server using the following commands:

```
ftp ftp.info.apple.com (Log in as "anonymous" and give your email address as password)
bin
cd Apple_Support_Area/Apple_Software_Updates/English-North_American/Mac_OS_X_Server/Mac_OS_X_Server_OS
get <insert name here>.pkg.tar
quit
```

Replace the string <insert name here> with the actual file name.

Note: To download files for other components of Mac OS X Server change Mac_OS_X_Server_OS to the appropriate folder such as QuickTime_Streaming_Server/ for QTSS

4. At this point the update will be in the home directory of the Administrator user. Keep a copy of this file in case you need it in the future. Type the following command to make a temporary copy of the update to work with: cp <insert name here>.pkg.tar /tmp

5. In the Viewer, go to the /tmp directory and single click the .pkg.tar and press Command+2. This will open the Contents Inspector. Click the Unarchive button and the tar file will be expanded in the current directory.

6. Using the Viewer in WorkSpaceManager, select the .pkg and then under the Tools menu, choose Inspector/Tools. Make certain that "Installer" is the application selected to open this package. Then install the software update by opening the package by double clicking it. This will open Installer.app. Click on the Install button to perform the installation. You will be asked if you want to replace existing files, answer "Continue" to this question.

7. Shutdown the computer by choosing Log Out from the File Menu and clicking the Shutdown button in the dialog box that appears.

8. Start the computer normally and the updated components will be ready for use.
Published Date: Feb 18, 2012

A/UX 2.0: Virus Protection

What do you recommend for virus protection in the mixed A/UX-and-Macintosh OS environment?

This article has been archived and is no longer updated by Apple.

We haven't heard of any virus reports on A/UX machines. Most anti-virus programs like "Disinfectant" or "SAM" should run under A/UX. Just check with the vendor of the product you plan to buy to make sure it works in the A/UX environment.

Published Date: Feb 18, 2012

Power Mac G4: AppleShare IP 6.x Support

Power Macintosh G4 computers require AppleShare IP 6.3 or later.
This article has been archived and is no longer updated by Apple.
For full details on compatible versions, see Tech Info Library article 16145: **AppleShare: Platforms and Mac OS Releases Supported**
Published Date: Feb 18, 2012

QuickTime: Installer Download Requires Cookies

When I try to download either the Web or the stand-alone installer for QuickTme, my browser presents a dialog box asking me for a name and a password. Why can't I download QuickTime?
This article has been archived and is no longer updated by Apple.
In order to download QuickTime (both the Web installer and the stand-alone installer), your browser (and firewall or proxy server) must allow cookies. If you disallow cookies, you will not be able to download the software.

If your browser is configured to allow cookies and you are presented with a dialog box asking for a name and a password, contact your network administrator or service provider.

The cookie that is set in your browser is only in RAM, does not track any personal information, and is purged as soon as you quit your browser.

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TA44063_AUX_Patch_Server__(TIL05902).pdf

A/UX Patch Server (3/94)

Location of updates for A/UX, if available.

This article has been archived and is no longer updated by Apple.
Any updates or patches that are available for A/UX will be found via anonymous ftp on: aux.support.apple.com. Users should ftp to aux.support.apple.com and type in 'anonymous' as their username. The password should be their username.

Article Change History:
11 Mar 1994 - Modified article to indicate location on the internet of Apple's anonymous ftp server.

Support Information Services

Published Date: Feb 18, 2012

LaserWriter: All Printers on Network Need Same Driver

I have Version 6.0.1 of the LaserWriter driver and Laser Prep. After installing it on one of our machines, I get a message that the LaserWriter contains an incompatible version of Laser Prep that cannot be removed and that I should restart the printer.

Restarting the printer doesn't help. The LaserWriter in question is spooled using the AppleShare Print Spooler on an AppleShare server. When the spooler "picks up" the LaserWriter, it must be downloading the Laser Prep to the LaserWriter. The problem is that I am spooling LaserWriters for two departments on this spooler and don't want to update both departments to the new drivers.

Will I have to update everyone to System 6.0.5 and the 6.0.1 LaserWriter driver?

This article has been archived and is no longer updated by Apple.
The LaserWriter driver on the spooler determines the version needed by each workstation. Therefore, all printers captured by the spooler must use the same drivers. However, you need only update the users' drivers, not the system software. The 6.0.1 driver is compatible with Macintosh System Software 6.0.x.

In other words, if there are different versions of the LaserWriter Driver in your network on various Macintoshes, including System 7 versions, the printer will have to go through a lengthy process of reinitializing itself to a new version of the LaserWriter driver every time a different version is used in the printing process. In general, the best and most consistent approach is to update every Macintosh on the network with the highest version of the LaserWriter driver being used on the network.

Published Date: Feb 18, 2012

AppleShare: Folder "View" Is Set by Owner

Is there any way to "set" an AppleShare file server, so that the folders and files are viewed by date instead of by folder as default?

This article has been archived and is no longer updated by Apple.
The "View" choice for a folder is set by the owner of the folder. Once the owner has made the change (view by date, for instance), users of the folder won't see a difference until the folder has been closed by the owner.

Published Date: Feb 18, 2012

Macintosh Portable: Modem Ring Detect Problem and Workaround

I have a Macintosh Portable. I experienced problems using the internal modem when the Portable's Ring Detect feature is on.

This article has been archived and is no longer updated by Apple.
The Ring Detect setting is located in the Portable's Control Panel Device (CDEV) and lets users wake up their Portable when an internal modem detects a phone ring. This setting can be accessed only when an internal modem is installed.

This problem was fixed in System 6.0.7. System 7 also fixes the problem.

Published Date: Feb 18, 2012

IBM 3476, 3477 Terminals: Emulation Alternatives

I have an IBM AS/ENTRY model A20 with 3476 B20 and 3477 D20 terminals. I would like to replace the terminals with Macintoshes.

Do you have technical information on those terminals, and are you aware of any products for the Macintosh to emulate those terminals?

This article has been archived and is no longer updated by Apple.
We are not sure about models B30 and D20. Here is what we got from IBM brochures:

IBM InfoWindow 3476 Monochrome Models EA and EG:

14-inch, low-glare etched flat screen
Choice of amber (EA) or green (EG) characters on a black background
Enhanced ergonomics
Low-cost, entry-level 5250 compatibility
Choice of three low-profile keyboards

IBM InfoWindow 3477 Monochrome Models FA and FG:

14-inch, low-glare etched flat screen
Choice of amber (FA) or green (FG) characters on a black background
Enhanced ergonomics
Full-function 5250 compatibility
Choice of two low-profile keyboards
Printer port for host or screen print

We don't know of any Macintosh programs that emulate the two terminals you mentioned, but because they are 5250-compatible, you can use one of the following alternatives:

Andrew Corp. provides a system of hardware and software for connecting to both the AS/400 and System 3x computers. Their product line includes MacTwin, NetAxcess, TokenAxcess, Boxer (protocol converter), and TCPAxcess.

IDEAssociates has a Macintosh product for connecting to AS/400 computers and to System 3x computers. IDEAcomm Mac version 1.0+ is the product's name.

Wall Data has a Macintosh product line for connecting to an AS/400. Their product line includes SNA*ps 5250 stand alone product, SNA*ps 5250 client, and SNA*ps Gateway.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Note: This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

Published Date: Feb 18, 2012

LaserWriter 2.0 ROM: Performance Enhancements

This article has been archived and is no longer updated by Apple.

The performance of the LaserWriter for many applications has been significantly improved in the new implementation of the LaserWriter software. The main areas of improvement are as follows:

-- PostScript interpreter

The PostScript interpreter is substantially (30 to 40 percent) faster than before. This improvement applies primarily to programs that are being interpreted from procedures already stored in VM; programs being interpreted from a file or string receive little benefit.

-- AppleTalk

Efficiency of AppleTalk communication has been improved by a buffer strategy that permits greater overlap between the work being performed on the LaserWriter and on the host. This is especially noticed when using Apple's Print Manager on the Macintosh, which sends relatively short (512 byte) blocks.

-- Throughput

Page throughput for many applications is significantly increased by a new printing strategy that permits imaging of a page to be overlapped with execution of the PostScript description for the next page. Formerly, page imaging and PostScript execution were performed serially; the imaging time (up to 6 seconds per page) was entirely wasted.

-- Compressed character mechanism

Page descriptions that print large characters may benefit from the compressed character mechanism. Large characters now are often obtained from the font cache, whereas formerly they were always produced by re-executing the character descriptions.

-- Font cashe

Characters may be retained in the font cache even after removal of the font definition from which they were generated. If the same font is later defined again, the cached characters will be found and used if they still exist. This depends on correct use of the UniqueID entry in the font definitions; see the discussion under 'Modifying and creating fonts' in the PostScript Language Tutorial and Cookbook.

-- Virtual memory

The total amount of virtual memory available is not exactly the same as in the original LaserWriter, although it is close to being the same. This may affect the maximum number of down-loaded and user defined fonts that can be present simultaneously. Note that PostScript page descriptions with large preambles can obtain significant VM space savings by making use of the packed array facility.

Published Date: Feb 18, 2012

Macintosh: Support for External Floppy Drives

I want to use two Apple 90 mm (3.5-inch) external floppy drives with my Macintosh. I have tried to chain them together, but the system recognizes only the first drive in the chain. Can I use more than one external floppy drive?

This article has been archived and is no longer updated by Apple.

No Macintosh computer can work with more than one external floppy drive. Only the Macintosh SE and later computers can work with the Apple SuperDrive (Apple FDHD).

Computer	Floppy Disk Drive Configuration
Macintosh Plus	1 Internal (800K) and 1 External (400K or 800K)
Macintosh SE	1 or 2 Internal (800K or SuperDrive if upgraded) and 1 External (400K, 800K, or SuperDrive if upgraded)
Macintosh SE with SuperDrive	1 or 2 Internal (SuperDrive) and 1 External (800K or SuperDrive)
Macintosh SE/30, Classic, Classic II	1 Internal (SuperDrive) and 1 External (800K or SuperDrive)
Macintosh Color Classic	1 Internal (SuperDrive) and no External
Macintosh II, IIx	1 or 2 Internal (800K or SuperDrive) and no External NOTE: The Macintosh II must be upgraded to a IIx, or must use a PMMU, to support a SuperDrive.
Macintosh IIcx, IIci	1 Internal (SuperDrive) and 1 External (800K or SuperDrive)
Macintosh IIfx	1 or 2 Internal (800K or SuperDrive) and no External
Macintosh LC	1 or 2 Internal (SuperDrive) and no External
Macintosh LC II, LC III	1 Internal (SuperDrive) and no External
Macintosh IIsi	1 Internal (SuperDrive) and 1 External (800K or SuperDrive)
Macintosh IIvx	1 Internal and no External
Macintosh Quadra 610, 630, 650, 700, 800, 900, 950, Power Macintosh 4400, 5200, 5300, 5400, 5500, 6100, 6200, 6300, 6400, 6500, 7100, 7200, 7300, 7500, 7600, 8100, 8115, 8200, 8500, 8600, 9500, 9600, G3, G3 All-in-one, Twentieth Anniversary,	1 Internal (SuperDrive) and no External
Macintosh Portable	1 or 2 Internal (SuperDrive) and 1 External (800K or SuperDrive)
Macintosh PowerBook 100	No Internal and 1 External HDI-20 1.4MB floppy drive
Macintosh PowerBook 140, 145, 160, 165c, 170 180, 180c, 190, 190cs	1 Internal (SuperDrive) and no External
PowerBook Duo 210, 230, 250, 270c, 280c, 2300	No Internal and 1 External (with MiniDock)
Macintosh PowerBook 520, 520c, 540, 540c, 550, 1400, 3400, 5300, G3, G3 Series	1 Internal (SuperDrive) and no External
Macintosh PowerBook 2400	No Internal and no External
Macintosh Performa 200	1 Internal (SuperDrive) and 1 External (800K or SuperDrive)
Macintosh Performa 400, 405, 410, 430, 450, 460, 466, 467, 475, 476, 550, 600, 630	1 Internal and no External

Notes:

1. Floppy disk drives on some PowerBook computers are optional.
2. Some Apple computers that do not have a floppy disk drive, like an iMac computer, work with optional external floppy disk drives connected to the Universal Serial Bus (USB) port.

Published Date: Feb 18, 2012

Macintosh: Photo Downloading from Wire Services

Do you know of any product that will permit a newspaper to download photographs from a photo wire service.

This article has been archived and is no longer updated by Apple.
All of the news wire services we checked with feel that though this would be highly desirable (to download pictures directly into a Macintosh), this capability doesn't exist for any PC.

The news wire services presently support "photo" downloading to printers only, a service that can be purchased from Independent Network System (INS).
Published Date: Feb 18, 2012

Metrowerks, Inc.

Metrowerks, Inc.
This article has been archived and is no longer updated by Apple.
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Web site: **http://www.metrowerks.com**

Company Profile:
Software, specializing in Modula-II, Pascal and C++ compiliers, including the Metrowerks CodeWarrior series..
Published Date: Feb 18, 2012

Ethernet: Preventing Macintosh IIci Performance Degradation

Apple engineering has discovered performance degradation under the following configuration:

- EtherTalk NB Revison K card

- EtherTalk 2.0.1 or 2.0.2 software

- Macintosh IIci

- On-board video and four or more colors (In 2-bit or greater mode).

This article has been archived and is no longer updated by Apple.
To avoid Ethernet performance degradation on a Macintosh IIci, choose from among these three options:

- Use an EtherTalk NB Revision L card (shipping since December of 1989).

- Do not use on-board video (i.e. use a video card)

- Use only black and white video (1-bit video)

If you're using EtherTalk software, the Ethernet performance can be improved somewhat by starting the Macintosh IIci in 1-bit video and later switching to 2-bit or more video. This workaround is effective when using EtherTalk software (AppleTalk), but not MacTCP software (like MacX.)

The Ethernet performance can also be improved somewhat if you start the Macintosh IIci in LocalTalk and then switch to EtherTalk. This doesn't help in the MacTCP case, unless you are running MacTCP over EtherTalk, rather than standard Ethernet.

Published Date: Feb 18, 2012

TA44074_Business_Graphics_III_INTERCHANGE_(TIL00592).pdf

Business Graphics III: INTERCHANGE

This article has been archived and is no longer updated by Apple.
The INTERCHANGE command automatically adds a ".text" suffix to your file name unless disabled by adding a period at the end of the file.

Enter What INTERCHANGE tries to find

file file.text
file. file

Published Date: Feb 18, 2012

Macintosh Finder: Print Directory Workaround

I have a problem printing a disk directory from the Finder while in "View by Name" mode (running System Software 6.0.5 with the LaserWriter 6.0.1 and 5.2 drivers).

Black areas are printed on the pages along with the correct information. Sometimes, the areas are narrow, running along the right side of the page. Other times, the areas are broad, running right through the middle of the page. It is NOT a problem with the toner cartridge, as the black areas have a definite pattern like a scaled graphic character.

This article has been archived and is no longer updated by Apple.
When you choose Print Directory for the directory of a folder or disk that has one or more locked files, and with the view set to something other than Icon or Small Icon, the pixels for the padlock are printed like fat bits on top of (or next to) the text. The size of the padlock (usually very distorted) varies.

You can work around the problem under MultiFinder by turning on background printing.

This has been fixed in System 7.

Published Date: Feb 18, 2012

MacX: Key-Mapping Problem When Oracle Changes sysenvir to tty

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

I'm having a problem with the new MacX.

I was using a Macintosh SE with Extended Keyboard on LocalTalk going through a GatorBox Box. The host was a SUN workstation; OS was 4.0

When doing Xterm or accessing an Xwindow based Oracle database, certain keys didn't seem to be mapping -- A, D, M, and N. Also, numbers on the top of the keyboard weren't being mapped, but the numbers on the side key pad worked fine.

What's the scoop?

This article has been archived and is no longer updated by Apple.
If you logged on to the X Window-based Oracle database, it was changing the sysenvir to tty mode. In our own test, we changed the Oracle profile so the userid was TERM=PC. This solved the problem.

Published Date: Feb 18, 2012

AppleShare PC: Switching From PostScript to Epson

Are there any DOS batch files that will switch AppleShare PC print services from PostScript to Epson mode transparently as a pre-defined application is loaded, and then back again when the application is quit?

(The two applications in question are Smartterm and CrossTalk. Both are being used for All-in-1 emulation.)

Barring the batch files, do you have any other suggestions. It's unacceptable to me to have to access the ASPC chooser every time I want to use All-in-1?

This article has been archived and is no longer updated by Apple.
The easiest solution would be to establish two connections to the same LaserWriter. One connection can be set up to use PostScript, and print to LPT2 (or the first available). The second can then be set up to use Epson emulation and print to LPT3 (or the next available). You would then configure one application to print to LPT2 and the other to LPT3. (We have done this with AppleShare PC 2.0 and 2.0.1 and it works fine.)

The connections can be configured from DA to be established automatically on startup, so that you need only remember that printing to LPT2 uses PostScript and printing to LPT3 uses Epson emulation.

Published Date: Feb 18, 2012

Macintosh-to-CA-Datacom/DB Access

I need to access a database on an IBM 3090. It's called DATACOM, by Computer Associates International. Can you help?
This article has been archived and is no longer updated by Apple.
CA-Datacom/DB is a database management system from Applied Data Research (ADR) which was acquired by Computer Associates International in 1988. Since then, CA has tried to merge Datacom/DB with its other DBMS product: CA-Universe. Prior to release 8.0, Datacom/DB did not provide SQL capability.

A terminal emulation program such as MacDFT would allow access to IBM hosts and databases. However, we assume you would like to access the database in the client/server fashion, such as what is offered by Data Access Language (formerly CL/1). We provide DAL servers for both VM/CMS and MVS/TSO. However, on VM/CMS, DAL servers only allow access to IBM's Structured Query Language/Data System (SQL/DS) and on MVS/TSO, only Database 2 (DB2). There is no adapter currently for CA-Datacom/DB.

For more information, search under "Computer Associates".

Published Date: Feb 18, 2012

Macintosh IIfx: CDC Wren Hard Drive Compatibility (11/94)

Is there a way to connect a CDC Wren Series 7 94601 or CDC Wren Series 6 602 to the SCSI port of the Macintosh IIfx? Both hard disks need to be connected synchronously.

This article has been archived and is no longer updated by Apple.
We called Seagate Technical Support and asked them about the two drives mentioned above. They were aware of the CDC Wren 94601 but not the CDC Wren 602. There is a CDC Wren 94602 but it is not compatible with the Macintosh. Note: CDC is a division of Seagate.

There is a specific model of the CDC Wren 94601, the CDC MacWren 94601-1.2GM, that is, according to Seagate, compatible with the Macintosh IIfx; other models of the CDC Wren 94601 are not compatible with the Macintosh IIfx. Driver software and cables are available from a company called Ontrack (Technical Support: 612-937-2121; Sales: 800-752-1333).

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Business Graphics III: HP Plotters

This article has been archived and is no longer updated by Apple.
Business Graphics III includes a set of drivers for different graphic plotters, one of which is the HP 7225A plotter. HP has since changed their product; the 7225A Plotter has been replaced by the HP 7470A plotter. To connect this new plotter to the Business Graphics III:

a. Use the Apple Modem Eliminator Cable (A3M0019) along with the cable supplied with the plotter (AMP 07470-60090).

b. Set the .printer driver to 1200 baud and one (1) stop-bit.

c. Set the plotter's switches as follows:

S2 S1 Y US B4 B3 B2 B1
0 1 0 0 0 1 1 1

d. Enter the command SET DEVICE HP 7225A to initialize the plotter from Business Graphics.
Published Date: Feb 18, 2012

Macintosh IIfx: SCSI Port and Hard Drive Performance

How fast must a hard disk be to take full advantage of the speed (3 megabytes per second) of the Macintosh IIfx SCSI port?

This article has been archived and is no longer updated by Apple.
A hard disk drive with a sustained data transfer rate (not to be confused with "throughput") of 3 megabytes per second or faster will take full advantage of the improved performance of the Macintosh IIfx SCSI port.

This transfer rate is independent of the operating system. For example, there is no difference in the transfer rate when using A/UX.

Published Date: Feb 18, 2012

A/UX 3.0 Workstation Information (9/94)

This article contains a series of questions about using Macintosh IIci systems as A/UX workstations.

1) How many NuBus slots can be connected as 802.3 Ethernet ports?

2) What UNIX is A/UX based on?

3) What about the A/UX C compiler?

4) Does the current version of A/UX support menu-driven System Administration type of function?

5) Are the remote system administration utilities like "rdump" and "rrestore" supported in A/UX?

6) Does A/UX support Xerox's Ethernet (XNS)?

7) Does A/UX support RFC 943?

8) Does A/UX support RFC 951 (Bootstrap Protocol)?

9) How many physical layer supported connections can you have?

10) How many sockets per session can you have?

This article has been archived and is no longer updated by Apple.
Here are the answers:

1) In theory, up to 6 NuBus slots can be connected as 802.3 Ethernet ports.

2) The current version of A/UX 3.0 is based on AT&T System V2.2 UNIX with BSD 4.[23] extensions which include software signals and Internetwork facilities. It conforms to SVID (System V Interface Definition) and SVVS (System V Verification Suite). Also the System V3 Streams is supported in A/UX.

3) The A/UX C compiler is driven from the standard AT&T System V.2 C compiler. However, it is not ANSI C compatible.

4) The current version of A/UX does not support menu driven System Administration type of function.

5) The remote system administration utilities like "rdump" and "rrestore" are supported in A/UX.

6) Currently, A/UX 3.0 does not support Xerox's Ethernet (XNS), but a third-party might have solution on it, for instance the BSD 4.3 UNIX supports XNS protocol. Porting to any UNIX box should be easy.

7) RFC 1117 is pretty standard in Internet. It replaced the obsolete RFC 943. Basically, DDN Network Information Center (NIC) maintains the assigned network number for the Internet community, Class A network is assigned with numbers between 1 and 127, Class B network is assigned with numbers between 128 and 191, and Class C is assigned with numbers between 192 and 255. This is supported by A/UX.

8) RFC 951 (Bootstrap Protocol) describes an IP/UDP bootstrap protocol (BOOTP) that lets a diskless client machine discover its own IP address, the address of a server host, and the name of a file to be loaded into

memory and executed. The current version of A/UX 3.0 does not support bootp.

9) The number of physical layer supported connections can be up to the number of available NuBus slots. (That's 6 in Macintosh IIx.)

10) The number of sockets per session can be configured via "kconfig" to as many as the user wishes. However, for the sake of performance, more physical memory is needed if the number of sessions is increased. The default is 16.

Article Change History:
19 Sep 1994 - Reviewed.

Support Information Services
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Floppy Drive Port: Maximum Power Load (11/94)

I am interested in the Integrated Data Systems IDS-WIP series drive. It is a low-power, compact SCSI drive that gets its power from the external, floppy port.

Are there any possible problems with this drive? Would it invalidate Apple's warranty? They mentioned in its specifications that it uses from .25 to 1.5 watts maximum draw, depending on the size of the hard disk.

This article has been archived and is no longer updated by Apple.
The power budget of this port varies slightly with each of the Macintosh models, but the worst-case scenario follows. The combined load of all devices connected to the floppy drive ports shouldn't exceed the following:

+5 700 milliamps
+12 600 milliamps
-5 10 milliamps

Apple typically discourages using the floppy port in the way you describe. These ports were designed to support the 400K, 800K, and the 1.44MB Apple disk drives. The older Macintosh computers also had ROM support for the Apple HD20-- which provided its own power.

Because the drive you describe requires no physical modification to the Macintosh, powering a SCSI drive in this fashion would not void the warranty--unless the damage caused to the Macintosh is traced back to the drive.

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

A/UX: Quantum Pro-80 Requires Different Formatting (9/94)

I have been unsuccessful in installing A/UX 1.1.1 onto Quantum Pro-80 drives using the Apple HD Setup utility. I heard that there is a ROM difference between the Quantum drives I have and the ones Apple uses. My drives have Quantum ROMs, while Apple's have an Apple ROM. Have you heard of problems with Quantum drives?

This article has been archived and is no longer updated by Apple.
According to Quantum technical support, the Pro-80 drive is not compatible with the Quantum Q280 drive which is used in the Apple HD 80SC. They use their own ROM. The Apple HD Setup software cannot be used to initialize the Quantum Pro-80 drive.

To install A/UX onto a Quantum Pro-80 drive, find a third-party disk formatter to format and partition it for A/UX. A good example is SilverLining from La Cie Ltd.

Support Information Services
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A/UX: Change Process Priority with nice (1) and (2)

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Apple gives a high priority or time slice to the mac32 process. I'm developing a product that needs to throw up a dialog saying that it's going to process data and then take over as much of the CPU's time as possible.

Do you have any tools and/or facilities to give priorities to specific tasks? Ultimately, I would like to shut off tasks like network deamons, cron deamons, and so on.

This article has been archived and is no longer updated by Apple.
A/UX supports both nice (1) and nice (2). These let you run or change the priority of a process.

nice (1), which is available from the command level, executes the specified command with a lower or higher CPU scheduling priority. Note that the nice built-in function in the C shell is different from /bin/nice, so be careful using nice. The superuser may run commands with priority higher than normal by using a negative increment. For example:

/bin/nice --15 wc /usr/dict/words

causes the program "wc" to be run with higher priority than a normal process. See nice (1) manual page for more details.

nice (2) is a system call to change the priority of a process. It adds the increment value (specified in the argument) to the value of the calling process. See nice (2) manual page for more details.

Published Date: Feb 18, 2012

Apple IIGS: High-Speed SCSI Card Memory Requirement (11/94)

How much memory does the Apple II High-Speed SCSI card require? I can't find anything about this in the manual.

This article has been archived and is no longer updated by Apple.
The Apple II High-Speed SCSI card requires a minimum of 768K on the Apple IIGS computer.

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Farallon StarController: IIGS and IIfx Upgrade Information

Is there a known problem using Macintosh IIfx systems with (older) Farallon's StarControllers similar to the problem with Apple IIGS systems on networks with StarControllers?

Do you have the date that StarControllers began shipping with the new PAL, and what is Farallon's policy regarding upgrading old controllers?

This article has been archived and is no longer updated by Apple.
Farallon is aware of a performance loss when using the Macintosh IIfx and the Apple IIGS with the StarController, part number PN207. This occurs only on networks with Apple IIGS systems or Macintosh IIfx systems. Networks without these systems not experience any loss.

According to Farallon, the original StarController has been replaced with the PhoneNET StarController Series 300. The new product began shipping on April 30, 1990. Among other additions, this new version of the StarController contains the fix for the Apple IIGS and Macintosh IIfx.

For owners of the older StarController (PN207), chip upgrades (part number FX207) are available directly from Farallon. For more information, call Farallon customer service.

Published Date: Feb 18, 2012

Business Graphics III: Silentype printer

This article has been archived and is no longer updated by Apple.

Occasionally, Business Graphics III hangs and doesn't recognize the Silentype when trying to use the WRITE SCREEN Silentype command. To avoid this problem, enter "set unit 128" each time you boot the program before using the WRITE SCREEN Silentype command.

Copies of Business Graphics III, beginning with copies which have a 9 NOV 81 date on the PLOT.CODE file, need this procedure.

Published Date: Feb 18, 2012

AppleShare PC 2.0: How to Set Zones

What is the analogous mechanism for PC users to change the zone they reside in? ANET? If so, which command(s)? I've gone over the manual and was unable to find the answer.

This article has been archived and is no longer updated by Apple.
ANET is the correct command to use to set the zone that you wish the PC to reside in. The exact format of the command is:

ANET USE MLIDname Z zonename

where MLIDname is the name of the MLID you are using, and zonename is the zone you wish to reside in. Executing this command also stores these values in the NET.CFG file, keeping them across restarts of the machine. For more information on this command, check page 132 of the "AppleShare PC User's Guide."

Published Date: Feb 18, 2012

MacDFT v1.1: Doesn‘t Support IBM Entry Assist Function

Turning Document mode on enable's IBM's Entry Assist function. This feature works with several IBM host editors to provide limited local-formatting, entry, and edit control.

The key sequence that initiates this on a 3278 Model 2 terminal is "Alt-Blank" (on the MacDFT keyboard layout this is "Alt-CR POS"). Also, I have seen this function implemented on a PS/2 Model 60 using IRMA DFT.

I need to know if I can imitiate this function. However, I cannot get into Document mode, because I am already showing "Alt-CR POS" in the key position that produces this function on a 3278 terminal.

This article has been archived and is no longer updated by Apple.

MacDFT 1.1 does not support IBM's Entry Assist function. If this functionality is needed, we suggest investigating DCA's MacIrma product, because it is likely to provide features similar to those found in their DOS products.

Published Date: Feb 18, 2012

LaserWriter: Direct Printing over Mixed Ethernet

I have a Novell Ethernet network (spread over four floors) with 30 IBM PCs. I want to connect 20 Macintosh IIs. To date, I have tested two Macintosh directly connected to the Ethernet network (version 2.15c, Mac VAP 1.1). Both of the connected Macintoshes have InterLAN NIA310 MacConnect cards running the NIA310 driver, Rev. AA, version 1.0.

I would like to connect my LaserWriters to the Macintoshes and not to the Novell Server, because the Server is on another floor. I need a solution that lets Macintosh users connect directly to Ethernet and print to any LaserWriter linked through any Macintosh II AppleTalk printer port--without requiring the user to disconnect from Ethernet and connect to AppleTalk.

1) Can I use an Apple Internet Router?

2) If yes, can I use the InterLAN card, or do I need the EtherTalk NB Card?

3) Can I use, for example, the GatorBox or FastPath as another solution?

This article has been archived and is no longer updated by Apple.
Netware for Macintosh (which is included with ELS Netware Level II 2.15, Advanced Netware 2.15, and SFT Netware 2.15) lets DOS, OS/2, and Macintosh users share Apple LaserWriters and Apple ImageWriters. Macintosh users have the option of printing directly to the printer or through the Netware print queue.

Because as Apple LaserWriters and Apple ImageWriters can be connected to the network only through their built-in LocalTalk connectors, you must use one of the routers that supports connections between LocalTalk- and EtherTalk-based networks. The Apple Internet Router, the GatorBox, or the FastPath can be used for this purpose.

You should be able to use the same InterLAN cards, if you can successfully connect to the Netware server over EtherTalk with these cards.

Published Date: Feb 18, 2012

TA44092_ImageWriter_IIL_What_Is_It_(TIL05947).pdf

ImageWriter II/L: What Is It?

I've seen references to an "ImageWriter II/L." What is it?

This article has been archived and is no longer updated by Apple.
Apple has rolled out a new ImageWriter II printer without changing the printer's name. The easiest way to identify the new model is by observing where the serial or power connector is located. If the connector is on the leg of the printer, you have an old ImageWriter II. Otherwise, it is the recent model.

Service addressed the identification problem by using the suffix "/L" in all their service documents referring to the new printer. Articles in the Tech Info Library follow this same convention.

Published Date: Feb 18, 2012

Parallel Interface Card: Initializing with POKEs (11/96)

This article explains how to use POKEs to control the Parallel Interface card.

This article has been archived and is no longer updated by Apple.

Neither PR# nor IN# commands in Applesoft and Integer Basic initialize the Parallel Interface. This situation can cause problems if you need to modify the parameters of the interface for your application.

The ROM on the Parallel Interface card, upon receiving the first character, sets all parameters to their default settings. After you POKE the parameter you want, the first character you send causes the ROM to overwrite all the parameter locations you have set up.

To correct this, send a character through the card and then change the parameter locations by means of the following POKEs. (Please refer to the Parallel Interface Card manual for additional information about what each POKE does.)

Replace all occurrences of "s" in the BASIC program below with the number of the slot the Parallel Interface Card is plugged into.

```
10 POKE 1400+s,80 carriage width
20 POKE 1656+s,0 character counter
30 POKE 1784+s,137 set command prefix to CTRL-I
40 POKE 1912+s,0 no video, no linefeed
or ,1 no video, enable linefeed
or ,128 enable video, no linefeed
or ,129 enable video, enable linefeed
```

The next list of POKEs replace the PR# and IN# commands and they must be used to benefit from the previous POKEs. Use "Call 1002" to execute DOS commands while the interface is enabled. However, if speed is of the essence, use the "Call 1002" after the data transfer has been made since DOS slows down I/O. All of these POKEs must be on one command line separated by colons to work in command mode; in a program, they may have separate line numbers.

```
50 POKE 54,2 PR#s
60 POKE 55,192+s
70 Call 1002
```

The normal way to reset the I/O back to the Apple video and keyboard is:

```
900 D$ = CHR$ (4): Rem CTRL-D
910 Print D$;"PR#0"
920 Print D$;"IN#0"
```

This only works after a Print and it is ignored after a Get or Print terminated with a comma or semicolon.

To avoid entering an extra Print statement, you can use the following:

```
900 Call -375 : Rem this is IN#0
910 Call -365 : Rem this is PR#0
920 Call 1002 : Rem this reconnects DOS
```

Tthe Parallel Printer Interface Card can echo characters to the Apple's video output, disable the video out while printing lines more that 40 characters long. Please refer to the Parallal Printer Interface manual for more information on what each POKE does.

Article Change History:
19 Nov 1996 - Reviewed for technical accuracy, revised formatting.
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AppleTalk for VMS 2.1: Running On A VAX Cluster

I want to run AppleTalk for VMS 2.1 on a VAX cluster, which has two VAX systems sharing the same disks. I cannot run AppleTalk for VMS on both VAX systems. A file called PORTDESC.TEXT can have only one AppleTalk network number and can be accessed only from a directory called ATK$ROOT. Therefore, I can run AppleTalk for VMS from only one VAX at the time.

Is this a known issue?
This article has been archived and is no longer updated by Apple.
PORTDESC.TEXT resides in the directory ATK$ROOT:[APPLETALK]. This port descriptor file is a text file that stores port descriptions. When the router process is initialized, it uses the port descriptor file to set up the port handlers. The AppleTalk for VMS installation procedure creates this file for you, using the information you supply during the installation procedure.

ATK$ROOT is a VMS logical name. You can assign it to any rooted directory. The default is SYS$SPECIFIC:.

In a cluster environment, there is a common disk that stores the entire directory structure (the common root plus each node's local root). Each local root contains, in addition to the usual system directories, a [SYSx.SYSCOMMON] directory that is an alias for [VMS$COMMON], the cluster common root directory, in which cluster common files actually reside. The disk Master File Directory (MFD) contains the local roots (SYS0 for NODE1, SYS1 for NODE2, and so on) and the cluster common root directory, [VMS$COMMON].

The VMS Install Utility puts everything in SYS$COMMON unless you specify a directory for the files. In AppleTalk for VMS installation, you have a choice for the directory ATK$ROOT. ATK$ROOT is a system-wide logical name assigned to a rooted directory. The default rooted directory is SYS$SPECIFIC:. If you install AppleTalk for VMS on each node and use the default rooted directory, most AppleTalk for VMS files are placed in ATK$ROOT:[APPLETALK] and its subdirectories. In a cluster, SYS$SPECIFIC for each node is unique. Therefore, the PORTDESC.TEXT and other files are in the unique directories for each node. Keep in mind that you must have a unique network number for each ATKVLAP port on each node, and the ATKAELAP ports on all nodes should have the same network number. That means that the PORTDESC.TEXT files are not the same on every node.

If you use the default SYS$SPECIFIC for the default during the installation and have correct network numbers in the PORTDESC.TEXT file (like above), each VAX should read the correct file when you start AppleTalk for VMS.

The only problem with this, beside the PORTDESC.TEXT file (which you want to keep unique on each VAX), is that copies of all other files are kept on each node. This can be a waste of space, and it is difficult to manage the same copies of files on each node, especially on a cluster with many nodes. If you are concerned about this, install everything in SYS$COMMON. Then, after installation, manually move the PORTDESC.TEXT file to each node SYS$SPECIFIC:. Modify the PORTDESC.TEXT files to have unique VLAP network numbers.

Re-define the ATK$ROOT logical name to search the node SYS$SPECIFIC first, then SYS$COMMON. When you start AppleTalk for VMS on each node, the cluster will search SYS$SPECIFIC and find the PORTDESC.TEXT file for that node, and then it will go to SYS$COMMON for the rest of the file.
Published Date: Feb 18, 2012

Printing to PostScript Printer Using Novell Server (7/93)

I have a Macintosh Plus with system software 6.0.4 and 1MB RAM, connected via thin Ethernet (Nuvotech's SCSI Ethernet Device) to a Novell file server running 2.15c.

This Macintosh can access the file server without problems, but when it tries to print to a PostScript printer connected to the serial port on the file server, a NEC LC890, nothing prints -- the Macintosh can see the print queue, can go ahead and print to it, and the light blinks on the printer...but nothing happens.

Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
We contacted Novell Technical Support and they confirmed that the printer device has to be one of the Apple LaserWriters or Apple ImageWriters supported by Netware for Macintosh, OR a third-party printer which supports LocalTalk and the Apple printer dictionary.

The printers have to be on the LocalTalk network connected to the Novell server via a LocalTalk Adapter such as NL1000, or on any LocalTalk networks connected to an Ethernet network connected to the server via a LocalTalk-Ethernet router.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
27 July 1993 - Company title updated from Focus Enhancement to Focus Enhancements, Inc.
19 June 1992 - Focus Enhancement acquired Nuvotech connectivity products.

Published Date: Feb 18, 2012

AppleTalk Phase 2: Obtaining Node Number on Startup

Under the AppleTalk Phase 2 protocol specification, a node remembers the node number previously assigned to it and that it is stored in the Macintosh. Does the Macintosh also remember the last network number it was associated with, and where is that number stored? If the network number is not stored, does the resolution begin at the base of the network range?

This article has been archived and is no longer updated by Apple.
This information is on page 8 of the "AppleTalk Phase 2 Protocol Specification":

Obtaining a provisional address

Obtaining a provisional address upon startup is accomplished in two different ways depending on whether the node has previously saved an address in parameter RAM. An address saved in PRAM consists of two parts: the 16-bit network number, denoted $nnnn, and the 8-bit node ID, denote $yy. The concatenated 24-bit address value of [network number, node ID] is denoted $nnnnyy.

If no address was previously saved in PRAM:

Upon starting up when no information is saved in parameter RAM, a node will randomly select a provisional network number $FFnn in the startup range. This range is specified to be $FF00 to $FFFE inclusive (most significant byte first). The node then also randomly selects a node ID $yy (yy cannot be $00, $FE, $FF). As in AppleTalk Phase 1, the node must first use AARP to ensure that $FFnnyy is not in use by any other node on the network. If another node is already using this address, the node should try all other possibilities for $FFnnyy until a valid provisional address is obtained.

If an address was saved in PRAM:

If there is a saved 24-bit address of the form $nnnnyy in PRAM, the node can use it as the provisional address. The node must use AARP to ensure that this address is not in use by any other node. If another node is already using this address, the node should try all other possibilities for yy (yy cannot be $00, $FE, $FF) keeping nnnn the same until all possibilities are exhausted (nnnn is probably a valid network number for this network unless the node has been moved from another network).

If all possibilities are exhausted, the node must select a new address as if none was previously saved in PRAM (as described in the previous section).

Published Date: Feb 18, 2012

Macintosh IIfx: Hangs with Macintosh IIci AppleShare Server

I'm having a problem keeping a new Macintosh IIfx logged on to an AppleShare 2.0 File Server running on a Macintosh IIci over LocalTalk.

Apparently, whenever the Macintosh IIfx logs on to the server it freezes and locks up. When it isn't logged on to AppleShare, the Macintosh IIfx is fine. Also, the Macintosh IIfx can log on to other non-Macintosh IIci servers without freezing.

I'm running system software 6.0.5 on the Macintosh IIfx and version 2.0 of AppleShare on the Macintosh IIci. Other Macintosh II and Macintosh SE systems run fine. I haven't tried the Macintosh IIfx serial INIT yet, nor have I tried server connections over EtherTalk or TokenTalk.

Do you have any ideas on what I might do to isolate this problem? All non-Apple INITs have been removed from the Macintosh IIfx, and there are no known viruses.

This article has been archived and is no longer updated by Apple.
We haven't encountered any problems during our testing of a Macintosh IIfx client on a Macintosh IIci AppleShare File Server over LocalTalk.

We tested the Macintosh IIfx both in the "compatibility" and "faster" modes. We wrote a program to run on the client Macintosh IIfx to write 512 bytes at a time to a file until it grew to 3MB, then erase the file and repeat the process. These specific tests ran over 24 hours. We also ran other tests over EtherTalk while investigating another unrelated issue, and the Macintosh IIfx client didn't hang during any of these tests.

Troubleshooting

- Have you tried running the Macintosh IIfx with the IOPs turned off/on?

- Do other Macintosh IIfx systems have the same problem?

- Are you using a clean system? (Did you trash the System Folder and reinstall?)

- Have you tried connecting other Macintoshes to the network connector that the Macintosh IIfx was connected to?

- Does the Macintosh IIfx in question have problems when connected to other physical networks?

- Are the other Macintosh systems used similarly; that is, are they connected to AppleShare for the same length of time, are they running the same software?

Another line of inquiry:

Is your Macintosh IIfx attached to a Farallon "Black Beauty" Star Controller or a Nuvotech TurboStar? Farallon and Nuvotech have acknowledged severe performance problems with the Macintosh IIfx over LocalTalk on their star repeaters.

Both Farallon and Nuvotech are shipping upgrades to fix compatibility problems with the Macintosh IIfx and the Apple IIGS. These systems exhibit extremely slow network response, sometimes to the point that they seem to hang, when using those network products. This may explain your

problem.

Nuvotech's upgrade to their TurboStar involves exchanging the old connector for a new one. Arrange an upgrade by contacting Nuvotech. All new TurboStars shipped since approximately the middle of June 1990 have the upgraded components and can be identified by the rev number ECO #4 on the circuit board. This newer connector also fixes previous compatibility problems with ImageWriters having and using the LocalTalk Expansion Cards and with PCs using LocalTalk PC Cards.

Farallon's upgrade involves installing a new chip in the "Black Beauty" Star Controller (part #207--easily identified since the case is black). The new platinum-colored Star Controller (part number 307) contains the fix.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
27 July 1993 - Company title updated from Focus Enhancements to Focus Enhancements, Inc.
19 June 1992 - Focus Enhancement, Inc. has acquired the Macintosh connectivity product family from Nuvotech.

Published Date: Feb 18, 2012

MPW: Installer Documentation Is On Developer Services BBS

I was told that there would be documentation explaining modification of Installer Scripts for those of us who have MPW. Is this documentation now available (and do I already have it someplace?)
This article has been archived and is no longer updated by Apple.
Installer documentation is on the Developer Services bulletin board. It includes a StuffIt archive containing documentation for Apple's Installer 3.0 and Tech Note #75, which documents Installer 3.0.1 scripting and changes from previous versions of the Installer.

The StuffIt package consists of the following:

- A ScriptWriter's Guide to Installer 3.0 (MacWrite).
- Technical Reference for Writing Installer Scripts (MacWrite).
- An MPW Rez file, InstallerTypes.r.
- An MPW Tool, ScriptCheck, for testing scripts.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

A/UX 2.0: How To Stop "newconfig" From Dumping Modules

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I have a problem with newconfig.

It seems that newconfig does not do an "eupdate" after building a new kernel. Therefore, when the system starts up and finds something strange, it takes the old kernel back from Eschatology. This leads to strange problems, like missing modules in the kernel.

Is it possible to include an eupdate in the script so the Eschatology information is automatically updated after a new kernel build?

This article has been archived and is no longer updated by Apple.

You are correct in stating that newconfig does not do an eupdate. However, we do not think that is the cause of your problem.

When the system is started up, and something "strange" is found (such as a new card installed), newconfig is run to rebuild the kernel. The file, /newunix, is used as the base for the new kernel. Since this is a minimal kernel, modules that you had previously installed will be missing.

It should be possible to write your own script that first called newconfig and then eupdate to save the new kernel in the Eschatology partition. When the system finds an invalid kernel and builds a new one, you could then restore your kernel from Eschatology.

Another method that many people use is to copy /newunix to /newunix.save and install the modules you want in /newunix. Then, anytime your kernel is rebuilt from this /newunix, you will automatically have all of the modules you want.

Published Date: Feb 18, 2012

A/UX: Only AppleTalk Phase 2 Is Supported (9/94)

Using A/UX 2.0 and AppleTalk, it seems that we can run only EtherTalk Phase 2. Is there a way to switch back to EtherTalk Phase 1?

This article has been archived and is no longer updated by Apple.
AppleTalk Phase 2 is the only version of AppleTalk supported under A/UX 2.0 and 3.0. There are no plans to provide Phase 1 support in the future. If AppleTalk Phase 1 is required, you must use LocalTalk or, for EtherTalk, use an AppleTalk Internet Router.

AppleTalk Phase 2 is our networking system, and Apple will not continue to support two different protocol stacks.

This has already been implemented in other products, such as TokenTalk and DEC PATHWORKS (formerly LanWORKS) for Macintosh, which support only AppleTalk Phase 2.

Article Change History:
19 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
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MacX: Rootless Windows vs. Rooted Windows

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

I'm very interested in using MacX to provide nationwide access to a database I'm working on. The software is written for X Window System and (mostly) works using MacX.

I would like to have the Macintosh handle the scrolling of an image that is larger than the window. Ideally, it would be a "rootless" window. If this is possible, I can ship a complete image across the country to a user and still have the user get "excellent" response to scrolling operations. If the program on the "client" side has to do the scrolling, performance will not be acceptable.

Can you help?

This article has been archived and is no longer updated by Apple.
The only way to do what you want is to use a rooted window in MacX. If you use a rootless window, the client application will be completely responsible for all scrolling, updating, and so on. At that point, the X Window System calls are being mapped onto the Macintosh's Window Manager by MacX, and everything is being handled remotely. This includes using the scroll bars, moving the window, sizing the window, and so on.

If you use a rooted window instead, MacX will handle the bitmap, including the updating and scrolling of images that are bigger than the Macintosh window they are being displayed in.

In this case, the Macintosh window has nothing to do with the X Window System Window Manager being used. Therefore, as long as the entire X Window System image has been drawn in the Macintosh window's GrafPort, MacX will handle the scrolling and upating locally.

Published Date: Feb 18, 2012

A/UX 2.0: Supports the AT&T System V Level 2 Specification

I have a question about TCP/IP on A/UX 2.0:

Is there a TLI interface (transport level) and/or a DLPI interface (network level)? (These interfaces are defined by AT&T and are standard in System V 4.0.)

This article has been archived and is no longer updated by Apple.

```
A/UX 2.0 is designed to meet the AT&T System V level 2 specification.  We do
not provide a Transport Level Interface or a Network Level Interface.
```

Published Date: Feb 18, 2012

TA44105_AUX_MacTCP_and_native_TCPIP_(TIL05966).pdf

A/UX 2.0: MacTCP and "native TCP/IP"

Does MacTCP use the A/UX 2.0 "native TCP/IP"?

This article has been archived and is no longer updated by Apple.

Under A/UX 2.0, MacTCP maps its calls to the "native TCP/IP" calls available under A/UX.

MacTCP maintains the same API in both A/UX and the Macintosh OS, but under A/UX, MacTCP is merely a front end to the existing implementation of TCP/IP.

Published Date: Feb 18, 2012

Excel: Leading Space Will Enter Numeric String as Text

When I enter certain text strings into Microsoft Excel, such as 2/5/80, the cell format is automatically changed to a date format. How do I avoid this without encapsulating the text in quotation marks?

In other words, how do I get Excel to treat certain text as text and not numerals?

This article has been archived and is no longer updated by Apple.
To enter a numeric string in Excel as text, type a space before the entry.

Typing " 1/1/90" (without the quotes) into a cell formatted for "d/mmm/yy" displays 1/1/90 instead of 1-Jan-90.

Published Date: Feb 18, 2012

HyperCard: How To Use for Text File Column Alignment

I want to upload a Macintosh spreadsheet to an AS/400 - via a KMW box - as a text file with column alignment intact. Both WingZ and Excel write to text files, but add tabs between columns. I need to have spaces between columns to correctly align the columns using a nonproportional font.

I tried using Vantage/McSink, but it only left-justifies columns; I need right justification on numbers.

My idea was to get a generic TTY print driver to print the spreadsheet, then capture it to a text file for uploading. I received a TTY print driver from GDT Softworks, but can't think of a method/utility to capture printer output to a text file.

This article has been archived and is no longer updated by Apple.
We aren't aware of a commercial solution to your needs, but HyperCard can be used for a custom workaround.

Use Vantage (or Microsoft Word or equivalent) to convert the tab-delimited output from the spreadsheet to comma-delimited text. HyperCard considers each spreadsheet entry in the text file an item in a line. You could even use HyperCard to do the tab-comma conversion, but for simplicity, we'll assume the tabs have been converted.

Read the comma-delimited text into a variable (we used "container1") and call the following code:

```
on mouseUp
repeat with i = 1 to the number of lines in container1
repeat with j = 1 to the number of items in line i of container1
set cursor to busy
put expand (item j of line i of container1) after container2
end repeat
put return after container2
end repeat
open file "your filename here"
write container2 to file "your filename here"
end mouseUp

function expand which
put 25 into fieldLength
if which = empty
-- send a string of spaces fieldLength long
then
repeat with i = 1 to fieldLength
put " " after temp
return temp
end repeat
else
repeat with i = 1 to fieldLength - length (which)
put " " after temp
end repeat
-- pad with spaces
return temp & which
end if
end expand
```

The formatted text is now saved as "your filename here".

(NOTE: The entire process could have been done while reading the text in a line

at a time, rather than moving it into a container before expanding, but it was easier to explain as a multistep process.)

Published Date: Feb 18, 2012

Display Card 8/24: RasterOps 19" 724 Is Not Supported

I need to confirm that the Macintosh Display Card 8/24 does not support the RasterOps 724 19-inch monitor.

I know that the Macintosh Display Card 8/24 GC does not support the RasterOps 19-inch monitors based on its pinouts, but there is no mention of the Macintosh Display Card 8/24.

Are the pinouts for the Macintosh Display Card 8/24 GC the same as for the Macintosh Display Card 8/24?

This article has been archived and is no longer updated by Apple.
The Macintosh Display Card 8/24 and the Macintosh Display Card 8/24 GC have the same connector and pinouts, and produce the same signals.

The RasterOps 724 19-inch monitor is not supported by either.

Published Date: Feb 18, 2012

LaserWriter 2.0 ROM: General description of revisions (9/94)

LaserWriter Revision 2 and LaserWriter Plus are enhanced versions of the original LaserWriter printer. The original LaserWriter is fully described in Appendix D of the PostScript Language Reference Manual (copyright 1985, Adobe Systems, Inc., Addison-Wesley Publishing Co., ISBN 0-201-10179-3) so only the differences between the old and the new software will be described here.

This article has been archived and is no longer updated by Apple.
A LaserWriter containing the new software can be identified in several ways:

The test page printed at power on time includes the LaserWriter revision number in the lower left corner of the line graph illustration; for the new software, this revision number is '2.0'.

A revision entry in statusdict contains the integer '2' identifying the new revision of the LaserWriter software. A PostScript program can read this value.

The version entry in 'systemdict' contains the string '37.0' or '38.0', identifying the PostScript interpreter included in the new software.

The product entry in 'statusdict' contains the string 'LaserWriter' for a LaserWriter with the standard 13 fonts, or 'LaserWriter Plus' for a LaserWriter Plus with its expanded set of 35 fonts. Note that a program is better advised to determine the selection of available fonts by enumerating the FontDictionary dictionary.

The enhancements introduced in the new software fall into three categories, LaserWriter-specific functions, improvements in software implementation, and PostScript language changes.

1. LaserWriter-specific functional changes. There include expanded communications options, additional paper tray selections, new fonts, and various other features present in revision 2 LaserWriter and not necessarily present in other PostScript printers.

2. Improvements in implementation. Nearly all the problems present in the original LaserWriter software have been corrected, and a number of operations have been made significantly faster.

3. PostScript language changes. Several new operations and capabilities have been introduced into the standard PostScript language and are being incorporated into all PostScript printers.

Installation of the new LaserWriter or LaserWriter Plus ROM software in an existing LaserWriter causes the page count to be reset to zero and all system parameters to revert to their default values.

Article Change History:
8 Sep 1994 - Reviewed for accuracy.

Support Information Services
Published Date: Feb 18, 2012

Apple Products: EMI Susceptibility

I am designing office workspaces to house computers and would like specifications for Apple equipment regarding acceptable electro magnetic environmental conditions.

For instance, what's the maximum 60Hz magnetic field Apple monitors can be exposed to before they produce objectionable jitter? Do you have any information about exposing disk drives to Elecro-Magnetic Interference (EMI) fields, and so on?

In addition, I would like similar information on AC power supply specifications.
This article has been archived and is no longer updated by Apple.
Except for disk drives, Apple does not perform EMI susceptibility tests on its products.

We test the disk drives to ensure that they have sufficient shielding to maintain data integrity in a typical home or office environment. As long as the drives remain in their housings, you should have a great deal of latitude when positioning them, even without adding additional shielding. They should certainly be fine in any normal home or work environment.

As a general rule, in the abnormal situation where EMI is present, your monitors will be visibly effected long before there is any affect to data on your disk drives or other hardware.
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Macintosh Portable: VHF Emission Level Information

Do you have any information on the VHF interference that the Macintosh Portable generates?

This article has been archived and is no longer updated by Apple.
Apple doesn't publish the VHF levels of the Macintosh Portable, or of other systems or peripherals, which is probably why you didn't locate that information. Ironically, the Federal Communications Commission results ARE available to the public, and can be obtained from them.

The Macintosh Portable (as well as most other products we sell) is designed to be used in a home or work environment, and has been tested to comply with the limits set for an FCC Class B computing device or equivalent in all countries it is sold in. This means that it is less "noisy" or likely to cause interference than a Class A device, which can legally be used only in a work environment.

Page X of the Macintosh Portable Owner's Guide lists some measures that minimize or eliminate the Macintosh Portable's potential for radio-frequency energy interference with other electronic devices, such as radios and televisions.

Published Date: Feb 18, 2012

WingsZ 1.1a: Upgrade for System Software 6.0.5

I know there are compatibility problems with System Software 6.0.5 and Informix WingZ 1.1. I heard there is a patch for WingZ. Do you have any information?

This article has been archived and is no longer updated by Apple.
Informix (makers of WingZ) recommends that customers call them to obtain version 1.1a of the software, which includes the fixes in the first-generation patch, and more.

Informix will mail the upgraded software to registered users free of charge.

For more information, search under: "Informix"

Published Date: Feb 18, 2012

AppleShare Print Server: Improving Lino L300 Spooling Speed

I ran into a severe slowdown using the AppleShare Print Server and LaserWriter Driver 5.2. on a dedicated Macintosh SE (with 2.5MB of RAM) that was spooling to a Linotronic L300. 700K files took up to 7 minutes to spool.

I then took the two high-end output workstations and linked them to the Rip 4s via Ethernet, using the 5.2 Laser Prep and so on. The same print job now took 1 minute 40 seconds to the Print Server, and 1 minute 30 seconds direct to the Rip.
This article has been archived and is no longer updated by Apple.
The Laser Prep and LaserWriter Driver 6.0 are the only drivers that are able to take advantage of font caching.

We installed LaserWriter Driver 6.0 on an AppleShare Print Server and workstations. The AppleShare Print Server then printed in 40 seconds.
Published Date: Feb 18, 2012

Macintosh II: 1-Bit Video Card Pinouts

What are the pinouts for the Macintosh II 1-Bit Video Card?

This article has been archived and is no longer updated by Apple.

Pin	Signal
1	Signal ground (Red)
2	Analog red video
3	Composite Sync
4	Signal ground (Sync)
5	Analog green video
6	Signal ground (Green)
7	NC
8	NC
9	Analog blue video
10	NC
11	NC
12	NC
13	Signal ground (Blue)
14	GND
15	NC
Shield	Shield ground

Connector Type: DA-15 Male

Published Date: Feb 18, 2012

Pascal: Linking from PILOT

Use the LP (LINK TO PASCAL) command to exit PILOT and enter Pascal. If you are in a PILOT lesson and wish to use a Pascal program, insert the following command into your lesson.
This article has been archived and is no longer updated by Apple.
For this example, the Pascal program is named MyProg.code.

```
LP:MyProg
```

Don't enter the ".code" suffix on the file name, since PILOT automatically adds it.

Use Pascal version 1.0 to compile your Pascal program, but link it to the system.library file provided on the PILOT Lesson1: Student Diskette. The "*$U name *" compiler option allows you to do this.

After executing the LP command, the PILOT interpreter no longer has control. LP closes any open PILOT data files, and errases from memory the status and locations of PILOT variables.

When the Pascal program ends, the system reboots your PILOT "Hello" lesson. To return to a specific spot in your PILOT lesson, have your PILOT program "leave a trail". The following example instructs PILOT to return to the label "bolts" in the lesson "Mechanics":

```
D:N$(50)
T:going off to Pascal...

R:Open file "restart"
C:N$="restart"
FOX:1,N$

R:leave a trail in the form of the
R:appropriate L: command
C:N$="L:Mechnaics,bolts"
FO:1,N$

R go off to Pascal file MyProg.code
LP:MyProg
```

The Hello lesson on the PILOT disk looks for the restart file, as follows:

```
D:N$(50)
C:N$="restart"
FIX:1,N$

R: If error flag is raised, the restart file
R: does not exist, so link to the normal first lesson

LE:firstlesson

R: Otherwise, read in the record containing our
R: restart lesson and label, and link there.

FI:1,N$
XI:N$
```

Published Date: Feb 18, 2012

LaserWriter IINTX: Can‘t Print HPGL Files Without Translation

There are no Macintosh systems involved in this.

HPGL (a Hewlett-Packard protocol), and my LaserWriter IINTX can emulate an HP LaserJet Plus.

Therefore, if you connect our LaserWriter IINTX to a PC through the serial port, can you print HPGL format? (I don't want to convert the file before printing.)

Is it up to the program I'm using to emulate an HP plotter on an Apple LaserWriter?

This article has been archived and is no longer updated by Apple.
Briefly, the LaserWriter IINTX emulates an HP LaserJet Plus. LaserJets use PCL, not HPGL; a PC printing an HPGL print job cannot print to a LaserWriter IINTX.

Hewlett-Packard uses different printer control languages -- including HPGL and PCL -- for their different printers. HPGL is commonly used by CAD/CAM type programs for outputting to plotters; PCL is used by more common, generic programs for outputting to HP LaserJets and similar printers.

Apple's PostScript LaserWriters emulate Diablo 630s. In addition, the LaserWriter IINTX emulates an HP LaserJet Plus; therefore, a program that uses PCL and is LaserJet Plus compatible can print to the LaserWriter IINTX when the LaserWriter IINTX is in its LaserJet Plus emulation mode. Again, you cannot print an HPGL print file directly (without file translation) on the LaserWriter IINTX.

If you want to print to an Apple LaserWriter, you must use a program that supports a Diablo 630, LaserJet Plus, or PostScript-compatible printer. If your program and drivers do not support these types of printers, you need to export and, possibly, translate the data before importing the data to a program that does -- whether that program runs on a PC, Macintosh, or another system.

Published Date: Feb 18, 2012

LaserWriter IINTX: How To Print HPGL Files from a PC

Is it possible to write HPGL files from a PC to a Macintosh LaserWriter IINTX without converting them to PICT or PostScript?

This article has been archived and is no longer updated by Apple.
Two possibilities that might work are:

1) PlotView (formerly called MacHP) from Stevens Creek Software allows you to open and display Macintosh HPGL files on a Macintosh, and copy and paste them into other Macintosh programs for embellishment before printing to a LaserWriter. If you can use Apple File Exchange or a similar program and perform a generic text translation on the PC HPGL file, you can then open it with PlotView. This may work, but may require a little experimentation and manipulation with ResEdit or similar programs. Another option is to write your own AFE translator.

2) Another program that may work is called CADMOVER from Kandu, which is a 2-D/3-D Macintosh-based vector graphics translation utility, with bidirectional IGES, DXF, PICT, MacDraw, Minicad+, MacConcept, HPGL, Minicad+, Dimensions, Hyperspace and Space Edit.

Both products are listed in the Tech Info Library and/or the buyer's guides on AppleLink.

We feel the easiest solution would have been to select a program on the PC that also prints to a PostScript printer or, at least, use a program that can save the file in a format (not just an HPGL print file) that can also be read by other Macintosh or PC programs that can print to a PostScript printer. There may be PC programs that open HPGL files and save in a more commonly used file format, but we aren't familiar with any.

For more information, search under: "Stevens Creek" and "Kandu"

Published Date: Feb 18, 2012

MacTerminal 3.0: Conforms to ISO Latin 8859/1 Standard

When using VT320 emulation with MacTerminal 3.0, there is support for multilingual ISO Latin character sets.

Does it support ISO Latin 8859/1 and/or ISO Latin 8859/7?

This article has been archived and is no longer updated by Apple.
Apple's VT320 Tool conforms to the ISO Latin-1 Supplemental Graphic (ISO Latin 8859/1) standard.

Published Date: Feb 18, 2012

A/UX: Ethernet Input Errors (9/94)

I seem to have a high number of input errors on two Macintosh computers running A/UX on ethernet. This number increases all the time.

For instance, today:

Mac1:

```
Name Mtu Network Address Ipkts Ierrs Opkts Oerrs Coll
---- --- ------- ------- ----- ----- ----- ----- ----
ae0 1500 nta-ring bic 2003687 2398 461618 0 0
lo0 1536 loopback-ne loop 20802 0 20802 0 0
```

Mac2:

```
Name Mtu Network Address Ipkts Ierrs Opkts Oerrs Coll
---- --- ------- ------- ----- ----- ----- ----- ----
ae0 1500 nta-ring cm 2126045 2350 547482 0 0
lo0 1536 loopback-ne loop 18989 0 18989 0 0
```

Is this normal, or do we have a problem?

This article has been archived and is no longer updated by Apple.
The following input errors are reported as "Ierrs" by netstat:

- receive CRC errors

- frame alignment errors

- fifo overflows

- missed packet errors

One or all of these errors could be causing netstat to report the Ierrs. Unfortunately, all of these errors are summed together to create a global input error counter for each interface. This counter is what netstat is reporting to you.

As you probably already guessed, there is no program to separate the error counters for each type of input error. Without such a tool, we have little idea of what is causing the problem.

You are seeing about a 1% hit on inbound traffic. This is fairly high, but not necessarily a cause for alarm. Higher-level protocols usually take care of problems encountered in any lower layers. The problem won't be seen or felt by the user unless it is a serious enough problem to cause degradation or loss of services. You should monitor this situation, but until you can determine exactly what errors are being reported, all we can do is guess at what the problem might be.

If it's only the A/UX systems that are experiencing these errors, you can probably eliminate the physical network as the problem. Since this is a very busy network, you're probably seeing a few missed packets, and there are probably a fair amount of collisions on this Ethernet, which we suspect are frame alignment errors on the receive. All of these, with an occasional CRC error, could cause the number of errors you're seeing. It really depends on the environment and amount of traffic on the Ethernet as to how many errors will be reported as input errors.

Article Change History:
19 Sep 1994 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

A/UX 2.0: Problem Running rez (9/94)

I am having a problem trying to run rez under A/UX 2.0. I am using the same rez line from a makefile that runs perfectly under A/UX 1.1.

The line under A/UX 1.1 is:

/mac/bin/rez -i /cardinal/cape/HEADER/v4r8m0 -o %test test.r cursor.r

Under A/UX 2.0 Golden, I tried the following:

When using launch, I tried the following commands:

==>> ops_test.pechner /cardinal/cape/APPL/v4r8m0> /mac/bin/launch /mac/bin/rez
-i /:cardinal:cape:HEADER:v4r8m0 -s /:cardinal:cape:HEADER:v4r8m0
-o %test test.r cursor.r

==>>ops_test.pechner /cardinal/cape/APPL/v4r8m0> /mac/bin/launch /mac/bin/rez
-i /cardinal/cape/HEADER/v4r8m0 -s /cardinal/cape/HEADER/v4r8m0
-o %test test.r cursor.r

==>>ops_test.pechner /cardinal/cape/APPL/v4r8m0> /mac/bin/launch /mac/bin/rez
-i /cardinal/cape/HEADER/v4r8m0 -s /cardinal/cape/HEADER/v4r8m0
test.r cursor.r -o %test

==>>ops_test.pechner /cardinal/cape/APPL/v4r8m0> /mac/bin/launch /mac/bin/rez
-o %test test.r cursor.r

These give the following results:

/mac/bin/rez - OS error -43 (Error message file not available)
during open of "%test".
/mac/bin/rez - Fatal error trying to open the resource file "%test"
for writing.
/mac/bin/rez - Fatal Error, can't recover.
/mac/bin/rez - Since errors occured, Ttest's resource fork was not
written.

Without using launch:

==> /mac/bin/rez
-i /cardinal/cape/HEADER/v4r8m0 -s /cardinal/cape/HEADER/v4r8m0
-o %test test.r cursor.r

I get the following result:

/cardinal/cape/APPL/v4r8m0: No such file or directory
ops_test.pechner /cardinal/cape/APPL/v4r8m0>

What has worked is when I output to the default rez.out and when I specify the full pathname in test.r "#include".

Therefore, rez is not recognizing the options "-i" and "-o". It also must be "launched" to run.

Can you explain?

This article has been archived and is no longer updated by Apple.

The man page (the manual command) for rez(1) states that you must be in 32-bit mode and run the command from the command line (without using launch). You didn't specify the environment you were in when you were trying to run this.

The -o option to rez seems to work fine as long as you don't specify an output filename with a % appended to it. Rez is supposed to take the name you gave it from the -o option and affixes a % sign to it.

The -s option to rez also seems to be broken, but the -i option (which basically does the same thing) does work correctly.

Otherwise, this problem is currently (as of August, 1990) without a solution.

Published Date: Feb 18, 2012

Apple Software Licensing Group: How to Contact

I understand Apple has a software licensing group. How do I get in contact with them and what is their function?
This article has been archived and is no longer updated by Apple.
Contact Apple's Software Licensing department for a complete list of Apple software available for licensing. This list provides information on the different types of agreements available and the corresponding license fees.

Before producing any written materials that accompany a product being licensed (such as manuals and disk labels), be sure to contact Software Licensing.

All requests to license Apple source code require a written proposal.

You can contact the software licensing group by eMail at SW.LICENSE@apple.com; by telephone at (512) 919-2645; and by fax at (512) 919-2120.
Published Date: Feb 18, 2012

System Software 6.0.5 and System Heap Size Adjustment (11/94)

I have heard that when you upgrade to System Software 6.0.5, you should also increase your system heap size at least 32K via SUM Tools or Heap Fixer. This is supposed to increase compatibility with third-party programs.

Is this correct? If yes, what utility do you suggest?

This article has been archived and is no longer updated by Apple.
In our testing, System Software 6.0.5 does NOT require the system heap size to be adjusted to work properly with Apple or third-party software.

It is possible to run out of system heap space when using a lot of public domain or commercial INITs. This may necessitate adjusting the system heap size. We cannot make a recommendation on what utility to use, but both Heap Fixer from CE Software and SUM Tools from Symantec seem to work fine.

For more information, search under: "CE Software" and "Symantec"

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

PILOT: Controlling Memory Mapped I/O

Many Apple II-compatible I/O devices are memory mapped; therefore, you can control them using Apple PILOT. The PILOT system variable %M is actually a memory map controlled by a subscript. The value of this subscript defines the location in the I/O device control space addressed by %M.

This article has been archived and is no longer updated by Apple.

The I/O locations begin with address C080 (hex). This constant offset is added automatically to all %M locations. Variables %M(16) thru %M(127) address the device control space of slots 1 thru 7; access to slot 0 is not permitted. Variables %M(128) thru %M(1919) refer to the I/O select space of slots 1 thru 7. This space is typically used for ROM memory, but can be used in some cases for auxiliary device control information.

For example, the PILOT command: C: %M(16) = 0

POKEs a zero into I/O location 16, which is the first available byte (relative location zero) in the device select space of slot 1.

Similarly, the command: C: X = %M(20)

PEEKs into location 20 (relative location 4 in slot 1); it returns the result in variable X.

Generally variable %M may be used wherever the system variable %A is legal. It cannot be used to manipulate program memory from within PILOT lessons, but does provide some control of external devices.

The %M variable is a very powerful construct--I/O devices can be damaged by indiscriminate PEEKing and POKEing. Particularly avoid trying to manipulate any of the device controls for slot 6 where the disk controller is typically located. It is entirely possible to erase entire tracks of on your PILOT diskettes.

Published Date: Feb 18, 2012

GS/OS: Setting the Finder as the Startup Application

My school district has an Apple IIGS network.

I want to change the startup application from Aristotle to the GS/OS 5.0.2 Finder. I tried to set "Finder" as the startup and got an error, "Unable to load descriptor $004E".

I set the appropriate permissions for access to the GS/OS operating system folder on the server, but I got the same error.

Can you help?

This article has been archived and is no longer updated by Apple.

The $004E error indicates that GS/OS attempted an invalid access procedure. There was only one way we were able to duplicate this error -- by denying access privileges to the Icons folder on the server. When the access privileges on the Icons folder weren't set to See Folders/See Files for everyone,the "Unable to load descriptors" message appeared. Descriptor refers information stored in files within the Icon folder, which is needed by the Finder. Once we reset the Icon folder privileges so See Folders/See Files were allowed for everyone, startup proceeded normally.

Once access is granted to the Icons folder on the server and Finder is set as the startup application in the server's Admin program, the startup process should continue until you reach the Finder's desktop.

IMPORTANT NOTE: When using the "Icon Info" menu item from the GS/OS "Special" menu, there is one step that is sometimes forgotten. Be sure to press the "Apply" button while on the "Access" card of the "Icon Info" dialog box after making any changes to access privileges. If this button is not pressed, the changes are not recorded and the privileges revert to the previous settings.

Published Date: Feb 18, 2012

AppleShare PC 2.0.1: Use COMPAT.COM for Compatibility

I have a DOS machine with a LocalTalk PC Card running AppleShare PC 2.0.1, and I'm trying to run TCP/Connect through the card.

TCP/Connect was configured to run with AppleTalk; however, when running version 2.0.1 of AppleShare PC, I get an error that "AppleTalk was not initialized with the proper interrupt". TCP/Connect claims that this product worked with AppleShare PC 1.X.X, and that it uses interrupt #60.

Were the interrupts changed from version 1 to 2? If yes, what interrupt range can be used by the software?

This article has been archived and is no longer updated by Apple.
It's not surprising that a product layered on top of the protocol stack in AppleShare PC 1.X wouldn't automatically work with AppleShare PC 2.0.1. Apple totally reworked the interface to make it more accessible to developers, and we changed the way we interfaced with MS-DOS. This includes the interrupts used.

There should be a relatively simple solution to the problem.

There is a program that ships with AppleShare PC 2.0.1 that tries to ensure compatibility with programs that layered on top of older versions of AppleShare PC. This program is called COMPAT.COM. You should run it immediately after you run ATALK.COM (most likely in a batch file). It intercepts the old style calls and reroutes them to the new API.

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MacX: Window Management Q & A (4/93)

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

Here are some questions and answers about MacX and window management.

This article has been archived and is no longer updated by Apple.
Q) Does the host machine send bitmaps or an object / vector description to the network? If bitmaps are a sent, there may be some issues with network performance and cutting and pasting text.

A) Typically, an X client application sends information in the form of an object / vector description. For instance, when drawing a scroll bar, the bit image of the scroll bar is not transmitted, only the commands to generate the bit image are transmitted. However, it is quite possible for the client application to transmit bit images. A perfect example of this is a bit image viewing application.

Q) Does MacX always use the Macintosh Window Manager in rootless and rooted modes? I'm running Open Look under MacX in a rooted window, and I'm concerned about the implications of the Open Look interface being mapped onto Macintosh windows (although I can understand why this may have been done). I'm concerned also with consistency between machines. I have had some interesting problems with windows disappearing, use of menus, and so on (things that may be considered normal with the Macintosh interface). Interestingly, the calculator appears in a normal Open Look window, but everything else is in Macintosh windows. My feeling is that the choice of rooted or rootless should define what happens (that is, whether Macintosh windows or Open Look windows are used).

A good example of the problem is when you iconify the clock. Normally, under Open Look, the time still appears and is updated--in MacX this doesn't happen. Is there a way that this can be configured to use Open Look windows (I am aware of the disadvantages), or will Macintosh windows always be used?

A) When you execute a client application in a rootless window, MacX always maps the client's calls into the Macintosh Window Manager. When you use a rooted window, the Macintosh Window Manager is not used except to contain the entire "screen" or display that is being drawn into. If client applications are being displayed in Macintosh windows, the environment for the remote call is not being properly set. You need to set the display to the rooted window desired for each application you execute.

Published Date: Feb 18, 2012

HyperCard: "closeCard" Error Fixed in 2.0 (11/94)

When you cut or delete a card in HyperCard, an "openCard" message is not sent to the card that is then opened.

This article has been archived and is no longer updated by Apple.
This problem has been fixed in HyperCard v2.0.

Old message order:
deleteCard closeCard

Revised message order (under HyperCard 2.0):
closeCard [closeBackground] deleteCard [deleteBackgroundI IopenBackground]
openCard

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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TA44131_K_Disk_Eject_INIT_Not_Available_for_the_Apple_IIGS__(TIL05995).pdf

800K Disk Eject INIT: Not Available for the Apple IIGS (11/94)

I use the 800K Eject INIT in Macintosh systems. Is there is a similar program for the Apple IIGS?

This article has been archived and is no longer updated by Apple.
There is no program for the Apple IIGS that provides the same function as the 800K Eject INIT. There were no reports of drive failures on the Apple IIGS using 800K disk drives, as there were with some Macintosh systems. Because of this, such a program is not necessary.

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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TA44133_Applesoft_Variable_Conflicts_(TIL00060).pdf

Applesoft: Variable Conflicts

Only the first two characters of an Applesoft variable name are significant.
This article has been archived and is no longer updated by Apple.
The variables BACK and BALL are considered to be the same variable BA. Keep track of your variable names to avoid such conflicts.
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Pascal: How to read Apple PILOT data files

Though it may appear that data files are randomly accessible text files, they are actually block structured files, two strings long, with 255 per block. Records 0 and 1 are contained in relative block zero, 2 and 3 are in block 1, etc. The Pascal construct which defines this file format is:

VAR PILOTFILE: FILE OF STRING [255];

The data record associated with this file has the description PILOTFILE^, with a string of length 255. This file may be sequentially or randomly accessed using the commands Get, Put and Seek. See the Pascal Language Reference manual for details.

This article has been archived and is no longer updated by Apple.
To open an existing file, use the Reset command; a new data file may be created using Rewrite. These commands are the same as the PILOT commands Fix and Fox respectively. Always Close a new file using the Lock option to record the data file in the diskette directory.

PASCALPGM Links to the Pascal program contained in the file PASCALPGM.code. Compile any intrinsic library units this program requires with the libraries found on your Apple PILOT Author Diskette or Lesson Diskette using the Pascal 1.0 compiler. The Apple PILOT system uses a special 48K run-only version of Pascal 1.0, which requires different intrinsics due to its unique storage allocation.

The linkage from PILOT to Pascal is one-way: data cannot be transmitted from PILOT to Pascal, except by data files on diskette. When the Pascal program ends, the PILOT lesson diskette reboots automatically and begins executing the Hello program if any. Programs running in this environment have approximately 10K less user storage space than in the standard Pascal system.

The first compiled procedure in the outer block of any Pascal program running under the PILOT system should be:

```
Procedure Syserror;
Begin
End;
```

System errors automatically divert control to this procedure, with IOResult set to the corresponding error number. The default action is:

A. If the error is non-fatal, execution of the procedure currently executed is aborted. Execution of its calling procedure is resumed.

B. When the error is fatal, the program terminates with an appropriate error message. Any additional error checking or recovery should be done in this procedure.

The following example prints the contents of any Apple PILOT data file:

```
Program Datalist;

Var PILOTFILE: file of string [255];
Filename: string;
RECNO: integer;

Procedure Syserror;
Begin
End;

Procedure Pause;
Begin
Writeln;
Write ('Press RETURN to continue...');
Readln;
Writeln
End;

Begin
Page (output);
Write ('List which data file? ');
Readln (Filename);
Writeln;
Filename := CONCAT (Filename,'.data');
RESET (PILOTFILE, Filename);
RECNO := 0;
```

```
While not EOF (PILOTFILE) Do Begin
Writeln ('Record ',RECNO,': ',PILOTFILE^);
Get (PILOTFILE);
RECNO := RECNO + 1;
If RECNO MOD 20 = 0 Then PAUSE
End;
Writeln;
Writeln ('End of file: ',RECNO,' records listed.');
Pause
End.
```

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TA44135_Wang_LPSLIS_Laser_Printer_Connecting_to_a_Macintosh_(TIL06000).pdf

Wang LPS/LIS-8 Laser Printer: Connecting to a Macintosh

Can I connect my Macintosh systems to a Wang LPS/LIS-8 laser printer? If yes, please explain how to do this.

This article has been archived and is no longer updated by Apple.
The LPS-8 printer technology is many years old and is not likely to be PostScript-compatible. Therefore, to print Macintosh files you would need a specialized driver -- and to our knowledge, none exist. Alternatively, if the printer is similar enough to other printers for which third parties like GDT provide drivers (HPs, daisy-wheel printers, and so on), you might be able to use one of those drivers along with a serial connection.

To initiate a print job when the Macintosh is emulating a Wang terminal is much more likely by using one of the terminal emulation products described in the Tech Info Library or in one of the AppleLink buyer's guides. However, we don't think this is what you are looking for, and you'd definitely lose the neat graphical and WYSISYG capabilities the Macintosh offers.

A third possibility is to translate the Macintosh file to a Wang file format to print on the LPS-8, but again you'd lose many of the advantages of the Macintosh.

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Printers: Paper and Envelope Dimensions

This article lists the dimensions of the most common standard paper and envelope sizes. Consult the materials that came with your printer to determine the paper sizes and weights appropriate for it. For a complete discussion of ISO 216:1975 series paper sizes, please see Tech Info Library article number **19885**.
This article has been archived and is no longer updated by Apple.

ISO 216:1975 Standard Sizes

The following table shows the width and height of ISO A- and B-series paper formats, as well as the ISO C series envelope formats. The dimensions are in millimeters. Sizes supported by Apple LaserWriter printers are in bold text (not all printers support all sizes).

A Series Paper		B Series Paper		C Series Envelopes	
4A0	1682 x 2378	--	--	--	--
2A0	1189 x 1682	--	--	--	--
A0	841 x 1189	B0	1000 x 1414	C0	917 x 1297
A1	594 x 841	B1	707 x 1000	C1	648 x 917
A2	420 x 594	B2	500 x 707	C2	458 x 648
A3	**297 x 420**	B3	353 x 500	C3	324 x 458
A4	**210 x 297**	**B4**	**250 x 353**	C4	229 x 324
A5	**148 x 210**	**B5**	**176 x 250**	**C5**	**162 x 229**
A6	105 x 148	B6	125 x 176	C6	114 x 162
A7	74 x 105	B7	88 x 125	C7	81 x 114
A8	52 x 74	B8	62 x 88	C8	57 x 81
A9	37 x 52	B9	44 x 62	C9	40 x 57
A10	26 x 37	B10	31 x 44	C10	28 x 40

ISO standard paper and envelope sizes are not yet widely used in Canada and the United States. However, many paper manufactures and resellers carry ISO stock sizes.

Customary Sizes

The following table shows the width and height of customary paper sizes used in North America. Many, but not all, Apple LaserWriter printers can print at these sizes.

Paper Size	mm	inches
Tabloid/Ledger	279 x 432	11 x 17
US Legal	216 x 356	8.5 x 14
US Letter	216 x 279	8.5 x 11
Folio	210 x 330	8.25 x 13
Executive	184 x 267	7.25 x 10.5
Statement	140 x 216	5.5 x 8.5
Postcard	100 x 148	3.94 x 8.82

The following table shows the width and height of customary envelope sizes used in North America and Germany. Many, but not all, Apple LaserWriter printers can print at these sizes.

Envelope Size	mm	inches
DL (DIN Long)	110 x 220	4.33 x 8.67
Comm 10	105 x 241	4.13 x 9.5
Monarch	98 x 191	3.88 x 7.5

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AppleShare PC 2.0.1: EtherLink II Problems

I'm using AppleShare PC 2.0.1 and the 3COM EtherLink II card (AT bus card). I'm trying to use a thick Ethernet external transceiver with the card.

Essentially, the card seems to be functioning, but it does not communicate with the network. I've also noticed that the NET.CFG file generates the same code for both thin and thick Ethernet.

Since AppleShare PC is supposed to support this card out of the box, I need some help. Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
There are several potential causes for problems with AppleShare PC and 3COM EtherLink II cards.

The most common is attempting to use Phase 1 services (usually after upgrading from AppleShare PC 1.x to AppleShare PC 2.0.x). Since AppleShare PC 2.0.x is Phase 2 only, you can only use it with Phase 2 services unless a router with both Phase 1 and Phase 2 drivers is present.

The card model is also important. 3COM has produced at least three different PC or AT bus Ethernet cards, all with the name EtherLink II. We are familiar with models 501, 503, and 505. The model 501 is an 8-bit card, quite old, and not supported. The model 503 is the most common, and what we wrote our EtherLink II MLID for. The model 505 arrived later and is a 16-bit card (AT bus only). We do not yet support this card. The 503 driver will not work with it because the model 505 is substantially more complex and full-featured.

Another reason could be that they are trying to load 3COM-supplied drivers before loading AppleShare PC. This does not work. It prevents AppleShare PC from communicating with the network. Installing NetBIOS support will have the same effect.

Finally, the ENET3CII driver has problems when the bus speed of the PC is over 8MHz. The CPU speed can be greater, but the expansion bus speed cannot be above 8MHz. This is rarely a problem, but could be if you shift the PC into its non-turbo mode and things work.

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Microsoft Office 98: Tips and Tricks

Is there a resource for tips and tricks using Microsoft Office 98 application programs?
This article has been archived and is no longer updated by Apple.
Yes. Microsoft has published a series of tips and tricks at the following URL:

http://microsoft.com/macoffice/tips/default.htm.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: Managing Users and Groups With NetworkManager.app

NetworkManager.app is used to configure users, groups, file sharing, computers, and other services. This article explains how to use NetworkManager.app to set up users and groups.
This article has been archived and is no longer updated by Apple.
If you are unfamiliar with NetInfo domains, please see the following article:

Article 30832 "**Mac OS X Server: Basic Introduction To NetInfo Domains**."

The NetworkManager application (/System/Administration/NetworkManager.app) is used to configure computers, users, and groups in a NetInfo environment. It allows the System Administrator (root) to make changes network wide or to a specific domain. This is in contrast to other Unix-based systems where users have to be added to each computer.

Note: Changes made with the NetworkManager application require the System Administrator's (root) password for the domain being configured. This may be for the local domain (an individual computer), or it may be the root domain (the entire network of computers). Do not try to make changes to domains you do not have access to.

Selecting The Correct Domain

Note: If the computer is not part of a NetInfo network, please skip to the next section.

NetworkManager allows you to make modifications network wide, so you must select the domain you want to change. If the computer is not part of a NetInfo network, the local domain is the only one available to edit. If the computer is part of a NetInfo network, any domain you have permission to edit may be selected.

Select a domain to edit by typing its name in the field titled Domain: at the top of the frontmost NetworkManager window. To see a list of the domains available for editing, click the disclosure triangle to the left of the Domain field. Click on a domain name in the list to select it, or type its name in the Domain field.

Once the domain you wish to edit appears in the Domain field, you may add or edit computers, users, and groups of users to NetInfo using the NetworkManager application.

Before we begin, a quick word on button conventions: A button with a star is for a new item; a button with a pencil is for editing an item; buttons with the international symbol for "no" are for deleting an item; and buttons with a pencil and outline are for editing default profiles. Finally, buttons with one face are for users, and buttons with two faces are for groups.

Why Add Users?

Unlike the traditional Mac OS, Mac OS X Server is based on a Unix-compatible operating system. This creates the need for a paradigm shift for those who are familiar only with the Mac OS. Mac OS X Server is a multi-user environment. So, the operating system must have a way to identify users, and what they have access to. Mac OS X Server identifies a user with a login and password. Once identified, the user has access to the appropriate files and directories. A user is added anytime a new person needs access the system.

There are two types of users in Mac OS X Server. The first is more similar to traditional Mac OS users, because they are local. Local users exist only on one computer. They may still have access to network applications, but they do not have stored space on a server.

Network users are much more flexible. In contrast to local users, network users live on a server. Their files and programs are stored there. They generally have limited access to local files and directories. Network users are able to login to any computer that is on the NetInfo network to which they were added.

Managing Users

To add a new user open NetworkManager. Click on the Users and Group button. It is the top button on the left-hand side of the window and has the word "Users" under it.

With the Users button selected, two tabs become visible. The first is Users and the second is Groups of Users. Select the Users tab.

If the system is just being configured, there is only one user, named Nobody. More users can be seen by checking the Show System Users checkbox. **Note**: These users should not be tampered with except by an experienced administrator.

Click the new user button and the newuser window opens. It is important to fill in all of the fields. Do not change the User ID, Login Shell, and Home Directory unless necessary. **Note**: New users are able to change their passwords after their initial login by opening Preferences.app and

selecting the Security option.

At this time it is also possible to add the user to any preexisting groups by clicking the Add... button and selecting the group. The wheel group allows users to become the root user if they have the root password. This privilege should only be given to trusted users! It is also possible to add users to a group by clicking on the new group button.

Managing Groups

You manage groups by clicking on the Groups of Users tab.

Clicking on the new group button brings up the new group window. Type in the name of the new group and use the Add User button to add existing users to the group. Editing and deleting users can be done with the appropriate buttons. **Note**: Do not delete preexisting groups.

Giving Network Users Root Access

In normal network operation, most users login to their computer through their network user login. However, it is sometimes necessary to have System Administrator (root) access to the local computer. This can be accomplished by adding the network user to the local computer's wheel group. The wheel group allows users to substitute user identity--"su"--to root in a terminal window if they have the root password. This privilege should only be giving to trusted users!

The first step is to click the Groups of Users tab in the Users section of the NetworkManager. Then double-click on the group the user is to be added to, in this case wheel. In the window that opens click Add User.

Scroll through the list of users to find the user to be added, and double-click it.

Close the window, save changes and enter the root password for the domain that you are making the change to. The user now has permission to "su" to the root user for that domain. Currently, a user can only "su" to a user by using the terminal window.
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Mac OS X Server 1.x: Using NetworkManager To Manage Computers In NetInfo

This article describes how edit computer entries in NetInfo for using the NetworkManager application.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

If you are unfamiliar with NetInfo domains, please see the following article:

Article 30832 "**Mac OS X Server: Basic Introduction To NetInfo Domains**."

The NetworkManager application (`/System/Administration/NetworkManager.app`) is used to configure computers, users and groups in a NetInfo environment. It allows the System Administrator (root) to make changes network wide, or to a specific domain. This is in contrast to other UNIX-based systems where users have to be added to each computer.

Note: Changes made with the NetworkManager application require the System Administrator's (root) password for the domain being configured. This may be for the local domain (an individual computer), or it may be the root domain (the entire network of computers). Do not try to make changes to domains you do not have access to.

Selecting The Correct Domain

NetworkManager allows you to make modifications network wide, so you must select the domain you want to change. If the computer is not part of a NetInfo network then the local domain is the only one available to edit. If the computer is part of a NetInfo network then any domain you have permission to edit may be selected.

Select a domain to edit by typing its name in the field titled "Domain:" at the top of the frontmost NetworkManager window. To see a list of the domains available for editing, click the disclosure triangle to the left of the Domain field. Click on a domain name in the list to select it, or type its name in the Domain field.

Once the domain you wish to edit appears in the "Domain" field, you may add or edit computers to NetInfo using the NetworkManager application.

Before we begin, a quick word on button conventions: if a button has a star it is for a new item, a button that has a pencil is for editing an item, buttons that have the international symbol for "no" are used to delete an item, and buttons that have a pencil and outline are to edit default profiles. Finally, buttons that have one face are for users, and buttons that have two faces are for groups.

Why Add Computers In NetworkManager?

NetworkManager is one way of adding information to a NetInfo database. Using NetworkManager it is possible to add computers to a network domain or to a local domain. If a computer is added to a network domain, it becomes part of that domain and have access to network resources. If a computer is added to a local domain, it only has access to the resources of the computer running the local domain. Adding computers to a local domain is similar to adding entries to a computer's host file.

Computers are added to a NetInfo database so that the computer can access the shared information stored in the database.

Adding computers in NetworkManager

Adding computers to NetInfo is very easy with NetworkManager. Once you have selected the domain you wish to edit, click the "Computers" button on the left-hand side of the window to begin.

As in the "Users" pane, there are buttons across the bottom of the window that allow you to create, edit, and delete computers from the NetInfo database.

To add a computer, click the button that has a computer and star on it. The first three fields must be completed, and must be unique to the network. **Note**: This article covers filling out the first three fields, but not the other fields available in this window.

The computer name and IP address are ways that the computer will be identified on the network. These are used by a variety of different protocols and applications. The hardware Ethernet address it is built into the computer. You can find out the computer's Ethernet address by opening the Preferences application (System/Applications/Preferences.app) and then opening the Network option. Once the Network option is open, click on the "Connections" tab and choose "Hardware Info" from the pop-up menu. Click on the Ethernet interface you want to use, and its hardware Ethernet address will appear on the right.

Once the Ethernet address is known it can be entered into the correct field in the NetworkManager application. **Important!** The hardware

Ethernet address is displayed with leading zeros in the Preferences application, for example: 00:08:05:bf:05:09. In order for NetInfo to correctly recognize the computer, you must enter the address without leading zeros in the NetworkManager application, for example: 0:8:5:bf:5:9.

The hardware Ethernet address is used by bootp to assign an IP address to the computer at boot, or to allow the computer to network boot from the server.

Removing Computers In NetworkManager

If a computer is no longer on the network it can be removed by selecting its name from the list of computers and clicking the Delete Computer button. You cannot undo the deletion of a computer.

Changing Computers In NetworkManager

Sometimes a user gets a new computer, or gets tired of a host name. The Edit Computer button is a simple and fast way to update computers in NetInfo. If a user has a new computer, but wants to keep the other information the same, the only entry that needs to be updated is the new computer's hardware Ethernet address. The host name can also be changed by simply entering a new one.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: Configuring the Apple Menu

Configuring the Apple menu in Mac OS X Server is similar to Mac OS 8, but it does have some new features and procedures. This article discusses customizing the Apple menu.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Configuring the Apple Menu

The Apple menu appears in the upper left-hand corner of the monitor. Anything can be placed in the Apple menu to make items easier to open. Individual users can configure their own Apple menu.

The AppleMenuOptions application is located in the following path: /System/Applications/AppleMenuOptions.app. This application is used to configure everything about the Apple menu.

When the AppleMenuOptions.app is opened, there are two tabs present at the top of the window, "Organize" and "Recents."

The Organize Tab

The Organize tab is used to configure the overall order of the items in the Apple menu. At the bottom of this panel are several buttons.

The first button is titled "Default." This button restores the Apple menu to its factory configuration.

The "New Submenu" button creates a new submenu in the Apple menu. A submenu has a folder icon with an arrow to the left of its title. When a submenu is highlighted, the items in the submenu appear to the right of the Apple menu. Items are added to a submenu by highlighting the submenu in the "Organize" tab, and then clicking the "Add Item..." button.

The "New Separator" button is used to add a line between two items that appear in the Apple menu. In the default configuration, two separators are used to isolate the Mac OS item in the Apple menu. These are useful for organizing items in the menu.

The "Add Item..." button was briefly discussed above. It can be used to add items to the main Apple menu, or to a submenu. When this button is clicked it brings up a navigation window. You add an item by browsing the filesystem and locating the item to be added to the Apple menu and double clicking on it. You may also type in the full path for the item you wish to add. Clicking "OK" will add the selected item to the Apple menu.

The "Edit Item..." button is used to edit the name, location, or icon of a previously existing item.

Items in the menu can be reordered by simply clicking on them and dragging them to the new location.

To remove a menu item, select it by clicking on it, and then click the "Remove" button.

The Recents Tab

The Recents tab can be configured to keep track of recently used applications and documents.

Under the "Show Last" field you may select how many previously used applications or documents the operating system will keep track of. The maximum number is 99.

Also on this tab is a pop up menu titled "Recent:." By choosing "Applications" or "Documents" you can see, in list view, the previously opened applications or documents. You may delete an item from this list by clicking on it and then clicking the "Remove" button.

Restoring Default Settings

The default settings for the Apple menu can be restored by clicking on the "Default" button found on the Organize tab. If this does not work, it is possible to delete the preferences file manually. To do so, you must be logged in as root. The preferences file is located in a given user's home directory in the following path: `~/.OpenStep/AppleMenu/NSAppleMenu.appleMenuDomain`. **Note**: In Mac OS X Server the ~ symbol refers to the currently logged in user's home directory.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: The Desktop and Viewer

This article describes the Desktop and Viewer as implemented in Mac OS X Server. Its purpose is to differentiate between the traditional Mac OS and Mac OS X Server. It also provides some useful keyboard shortcuts.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The Desktop

In Mac OS 8 the Desktop Folder is an invisible folder on the hard disk. Everything in that folder appears on the desktop. Dragging an item to the desktop moves it into the Desktop Folder.

In Mac OS X Server the desktop is not designed this way. If an item is dragged to the desktop, a symbolic link to the original item is created. A symbolic link is, for the most part, the same as an alias in the traditional Mac OS. Only symbolic links can reside on the desktop.

There are some things to know about symbolic links. If a symbolic link is copied from one viewer window to another, a dialog box appears. It gives you the option to create a new link in the desired location, to skip copying the link, stop copying, or to copy the original item instead of the symbolic link.

If a link is copied from the desktop, this window does not appear. The original item (to which the link is pointing) is automatically copied to the new location. This is because a symbolic link on the desktop is treated differently than symbolic links in other locations.

The Viewer

Viewing Methods

The Workspace Manager's main navigation tool is the Viewer window. There are three ways to navigate the filesystem using the Viewer. The two that are most familiar to Mac OS or Windows users are the icon view and the list view.

The icon view provides the least amount of information about a file and its directory hierarchy. It only shows an item's icon and title. Directories are shown as folders. Double clicking on an item opens it. Double clicking a directory icon opens a new Viewer window.

The list view is more informative. It provides information about the size of the item, its modification date, and the owner and group to which it belongs.

The least familiar, but perhaps best, is the column view. This viewing method can be thought of as a browser because it allows the user the see multiple directories in the same window, thus saving space. The items inside a directory are listed in columns. When you click on a directory, the Viewer is updated to display the contents of that directory. With this viewing method it is possible to see into multiple directories in one window.

Keyboard Shortcuts

Holding down the Command key while dragging an item to another directory moves it to its new location. The arrow pointer changes so that it has a box to its right.

Holding down the Option key while dragging an item to another directory copies it to its new location. The arrow pointer changes so that it has a plus sign to its right.

Holding down the Control key while dragging an item to another directory creates a symbolic link in the new location. The arrow pointer changes so that it has a curved arrow to its right.

The Tool Bar

The Tool Bar is a group of eight buttons that appear at the top of the Viewer window. The Tool Bar is shown or hidden from the View menu in Workspace Manager. For this discussion the first button on the left is numbered 1 and the last button on the right is numbered 8.

Button 1 has a picture of a house on it because it changes the directory being browsed to your home directory. Button 2 has a folder with an up arrow because it changes the directory being browsed to the one above it.

You may not be able to use to buttons 3, 4, and 5 depending on your level of permissions for a file or directory. In Mac OS X Server when a button has a star on it, the button creates a new item. In this case, button 3 (with a star and folder on it) creates a new folder in the current directory. Button 4 duplicates any selected item(s). Button 5 moves the selected item(s) to the Trash.

Button 6 allows you to choose the way a Viewer window is displayed: by icon, by list, or by columns. These view options are described above.

Button 7 allows you to type the path of the directory you want to browse without having to navigate the filesystem.

Button 8 opens up the Inspector. The Inspector is described in its own article.

The Tool Bar can be turned on or off by selecting the appropriate command from the View menu in the Workspace Manager.

Key Differences

Currently, it is not possible to copy, move, or create symbolic links in the same Viewer window. A second Viewer window must be opened, and the item to be copied, moved, or linked must be dragged to the second Viewer window.

Also, a Viewer window is not automatically updated when a change is made to the filesystem. To see any changes to the filesystem, you must select Update Viewers from the View menu or by type Command+U.

When you double click on a directory icon in icon view, a new Viewer window opens. Holding down the Option key while double clicking on a directory icon opens the directory in the same window.

Changing the name of an item is similar to the traditional Mac OS with one key difference. After selecting an item, you must click on its title. The highlight disappears and the pointer changes from an arrow to an I-Beam. After changing the name, you must press the Return key in order for the change to take effect.
Published Date: Feb 18, 2012

A/UX 2.0: panic(vbwrite) Error

I'm having problems with A/UX 2.0 and the Macintosh IIci.

I receive VB Write Error, at which point MultiFinder freezes up. I don't have to be doing anything with my system for this to occur. The systems configuration is as follows:

Hardware

Macintosh IIci with HD80 SC and 8MB RAM
EtherTalk NB Card rev L
Apple external 160SC

Software

A/UX 2.0

This article has been archived and is no longer updated by Apple.

```
The error you're seeing is probably "panic(vbwrite)".

This is a kernel panic error which occurred in the I/O buffer routines.  The
I/O buffer routines take care of reading/writing and freeing buffers within the
UNIX kernel.  In this case the kernel thinks the size of the available buffers
are smaller than the amount of data that needs to be written out.  In other
words, you can't write out what you don't have.  This is a very serious error,
which under normal circumstances should never occur.

The first thing to resolve the problem is to try a "kconfig -v -a /UNIX >
kernel.conf" and have the output checked by an expert.

Let the same person look at a "module_dump /unix".
```

Published Date: Feb 18, 2012

Mac OS X Server 1.x: Importing NFS Directories With NetworkManager

This article discusses NFS and how to import directories with NFS.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

If you do not already have an understanding of NetInfo domains, please read articles:

Article 60038: "**Mac OS X Server: What is NetInfo?**"
Article 30832 "**Mac OS X Server: Basic Introduction To NetInfo Domains**."

What Is NFS?

NFS stands for network filesystem. A filesystem in Mac OS X Server generally means a directory or directory hierarchy. NFS is based on the client/server model. The server exports the filesystems, and the client imports them. With NFS it is possible to seamlessly share filesystems to other computers on a network. When users changes directories, they should not know that they are now looking at a remote filesystem. This is very powerful because it allows common resources to be stored on one computer, and accessed throughout the network. This would be an excellent idea for documentation like man pages, or read me files.

Selecting The Correct Domain

NetworkManager allows you to make modifications network wide, so you must select the domain you wish to change. If the computer is not part of a NetInfo network then the local domain is the only one available. If the computer is on a NetInfo network then the domain that you have access to must be selected.

The domain is selected at the top of the NetworkManager window in the field title "Domain." To reveal the larger domain hierarchy, click the disclosure triangle to the left of "Domain." The correct domain name can be typed or selected.

Once the correct domain appears in the "Domain" field, NetworkManager can be used.

A quick word on button conventions; buttons that have a star are for a new items, buttons that have a pencil is for editing items, buttons that have the international symbol for no are to delete items, and buttons that have a pencil and outline are to edit default profiles. Finally, buttons that have one face are for users, and buttons that have two faces are for groups.

Importing Filesystems

Importing directories from a server is very similar to exporting them. Click the "File Sharing" button along the left-hand side of the window and then click the "Mounted Directories" tab. This is where filesystems are imported from other computers. Once again, it is critical to make sure that the correct domain is chosen at the top of the window.

Clicking the new directory button in this window will open a new window. In this window you specify where and how to import a filesystem.

The first field in this window specifies the server and the directory to import. If the server that is exporting the directories is in NetInfo, you can use the "Select" button to choose the server. If the server is not in NetInfo its information must be typed into the field.

example:[hostname]:/directory	www.foo.com:/web

The next field specifies where the imported directories are to be mounted on the local computer. This can be any existing directory on the local computer. This directory is called a mount point. If files or directories exist inside a mount point, these items are not accessible while a filesystem is mounted there. If the remote filesystem is unmounted then these items can be accessed.

Finally, specify the import options. The table below lists the options and describes them.

Mount this directory as read only	This option will not allow changes to the remote filesystem to be made.
Return an error if the server does not respond	If the server does not respond to the mount request an error message will be generated.
Allow interrupts	Allows a user to terminate the importing if the server is down.
Mount this directory in the background	If the mount fails, the computer will try to mount the directory in the background.

Ignore setuid	Ignore the setuid and setgid bits, which otherwise when set on executable files, will cause the program contents of the file to run as the user (and/or group) which owns the file. This option plugs a potential security hole caused by this behavior.

Once the options are set, close the window and save the changes. Two dialog boxes appear. The first requests that you enter the root password. The second tells you that the changes will not take effect until the computer is restarted.

Note: Changes made with this program require the root password to the domain you are trying to configure. This may be only for the local domain (your computer) or it may be the root domain (the entire network). You should not try to change settings you do not have access to.
Published Date: Feb 18, 2012

Mac OS X Server: Starting Up Mac OS From A Separate Disk

This article tells how to start up a computer from a separate hard disk containing a different version of Mac OS (such as Mac OS 8.5) when the default hard disk has Mac OS X Server installed and is the default startup volume.
This article has been archived and is no longer updated by Apple.
To start up the computer in Mac OS 8.5 instead of Mac OS X Server, hold down the Option key while the computer is starting up. Mac OS 8.5 must be installed on a separate drive or partition, and that drive or partition must be selected in Mac OS 8.5's Startup Disk control panel.

Published Date: Feb 18, 2012

Mac OS X Server: Verifying WebObjects Installation

This article tells how to verify if WebObjects is correctly installed.
This article has been archived and is no longer updated by Apple.
To verify that the WebObjects deployment server is correctly installed simply open the "Monitor" application that is shipped as part of the WebObjects deployment package.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: UFS Partitions Do Not Mount In Mac OS

The Mac OS X Server installer changes the partition type of the partition on which Mac OS X Server is installed. This change results in the partition not mounting in the Mac OS.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

When a user selects the drive or partition to install Mac OS X Server on to, the installer modifies the partition map so that the selected partition is no longer a Mac OS volume. The installer changes the type of partition to Apple_Rhapsody_Inst. This is the type of partition that the installer scripts recognize, thus allowing the files to be installed.

Just before Mac OS X Server is installed, the installer scripts change the partition type again. This is because Mac OS X Server is a Unix-style operating system and must be installed on a UFS drive. This time the type of partition is changed to Apple_Rhapsody_UFS.

After the installation process has successfully finished, or if it failed, the selected partition does not mount in the traditional Mac OS. This is because neither Apple_Rhapsody_Inst, or Apple_Rhapsody_UFS partition types do not mount in the Mac OS. So, these partitions are not accessible while in Mac OS.

A common example of a failed install is if the user did not boot off of the Mac OS X Server CD. The partition types are changed, so the partitions do not mount.

If the install failed, try running the installer again making sure the error is not procedural in nature. The installer can recognize both types of Apple_Rhapsody partitions, so if the partition is recognizable it sees it. The installer now lists the partition as either the "Mac OS X Server Install" partition or the "Mac OS X Server UFS partition." Select this partition and try to install again, following the procedures carefully.

If the partition that had Mac OS X Server installed successfully or unsuccessfully, it must be reformatted with Drive Setup or another formatting utility that supports HFS or HFS+ in order for it to mount in Mac OS again. It may be possible to edit the partition map with pdisk back to a Mac OS volume, but Apple does not provide support for this.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: What Is NetInfo?

This article explains the fundamentals of NetInfo. It also describes how to back the database up, and restore the database to its default state. The final part of the article is a set of links to other articles that aid in understanding how NetInfo operates.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

NetInfo is a hierarchical distributed database that is used to keep track of administrative data in NeXTSTEP, OpenStep for Mach, and Mac OS X Server. It can store information on user and group accounts, e-mail configurations, NFS (network filesystem), printers, computers and other resources. Since this information is stored in NetInfo these resources are easily configurable, and can easily be shared over in a network environment.

A NetInfo Domain is the basic unit of the NetInfo hierarchy. For a discussion of domains please see article:

Article 30832 "**Mac OS X Server: Basic Introduction To NetInfo Domains**."

NetInfo Servers

Every computer that runs NetInfo is also a NetInfo server. This is because every computer has a local domain and information in this domain is accessed via NetInfo. In a NetInfo network, at least one network domain will be present and the computer that serves the network domain will have two NetInfo servers running. One server will be for the network domain and the other for the local domain. Computers that are part of the network domain will have access to the information stored in the network domain and any domains that may be above it.

Reading Information from the NetInfo database

NetInfo is an information storehouse. It is a passive database that stores information on configurations and resources. This means that NetInfo that information stored in the NetInfo database will have to be read out of the database to another application for it to be used.

There are two ways for information to read information from NetInfo. The first is through lookupd. Lookupd is a background process that is used to read information from NetInfo. Lookupd is used by applications that use the standard library (libc) to call lookupd. Applications can also read information directly from NetInfo using the NetInfo APIs (Application Program Interface). The application that controls logins (loginwindow.app) reads information directly from the NetInfo database.

Location of NetInfo

The NetInfo databases are stored in the /etc/netinfo directory. All computers that use NetInfo will have a local.nidb directory inside the netinfo directory. If the computer is a NetInfo server, databases for the domain(s) that the computer is serving will also be here. These databases will have the same name as the domain they server.

Structure of a NetInfo database

A NetInfo database contains directories that are organized hierarchically, similar to the way a file system is organized. Each directory has properties and values. These properties and values are the basic units of the administrative data that NetInfo stores. A property is referenced by its property key. The property key is simply the name of that property. Each property can have any number of values depending on the property.

Figure 1: Directory Browser window.

In Figure 1 the first directory under Directory Browser is the root directory and it is called "/", just like the root directory of the file system. It is lacking the property key "/name" so NetInfo references it by directory ID number, which is 0. Each of the other directories in the picture has the property key "name", and the value of that key is the name of the directory. If a directory does not have the key "name" NetInfo references it by ID number. Other property keys in Figure 1 are gid, realname, shell, passwd, home, shadow passwd, and uid. Each of these keys has a value except for shadow passwd.

The Template NetInfo Database

As part of the installation of Mac OS X Server, template files have been included on the hard drive. The template files are default files, similar to default preferences. The /usr/template/client/etc directory contains a default NetInfo database. This can be used to set a computer back to its shipping NetInfo configuration. Before this is done, the original NetInfo database should be moved to a new location. This is to ensure that any corruption that may exist in the old NetInfo database is not transferred to the new database.

Once the default NetInfo database has been restored the computer must be rebooted for the changes to take effect. After the computer has been

restarted the computer will boot into the Setup Assistant.

Making Backups

The NetInfo database stores some of the most important information on the computer and backups should be made frequently. However, a NetInfo database is in use while the server is booted into multi-user mode. Backing up the server in this mode may result in a database that is in flux (being changed while it is being backed up). If this is the case the backup will not properly load when it is restored.

There are two ways around this problem. The easiest is to boot the computer into single-user mode and manually copy the database at the command line. Example:

```
#cp -R /etc/netinfo/local.nidb /etc/netinfo/local.backup
```

This command will copy the local NetInfo database to a file called local.backup in the same directory as the original database.

The second way to backup the database does not require the server be rebooted, but it is more time consuming. Make a backup of the NetInfo database by selecting Save Backup from the Domain menu of NetInfoManager. Wait 5 minutes, then make another backup (use a different name so the original backup is not overwritten). Use FileMerge.app (available only if the developer packages are installed) or the command line utility "sum", to compare the two backups. If the two backups are identically either one can be used as the backup. If they are different, repeat the process until no differences are found.

To restore a backup, go to the Domain menu and choose Restore From Backup in NetInfoManager. Locate the backup and click the restore button. The computer will need to be restarted for the restored database to be read.

Files Not Used By NetInfo

For users that are not experienced with NetInfo, but are experienced with other Unix-style operating systems here is a list of files in the /etc directory that are not used when NetInfo is running; group, hosts, hosts.eq, passwd, netgroup, networks, printcap, protocols, rpc, and services. These files are still used if the computer is booted into single-user mode, but once NetInfo has started it takes over the functionality of these files.

Related Articles

The articles listed below will aid in understanding NetInfo and its surrounding processes.
Article 30832 "**Mac OS X Server: Basic Introduction To NetInfo Domains**."
Article 30770: "**What is Lookupd?**"
Article 24719: "**Creating a 2 level domain in NetInfo**"

These links are to articles that will aid in the configuration of Netinfo.

Article 60032: "**SMac OS X Server: Importing NFS Directories with NetworkManager**"
Article 60025: "**Managing Users and Groups with NetworkManager**"
Article 60026: "**Managing Computers with NetworkManager**"

Published Date: Feb 18, 2012

A/UX: EtherTalk Support and MacTCP Issues (9/94)

I have heard that A/UX ships with EtherTalk already built into the kernel. Is this true?

If yes, how do I change the driver to run on the Macintosh IIfx and 1.2 to run on a Phase 1 network to update later revs to the driver?

I also noticed that MacTCP is shipped locked, and the MacX folders says not to add MacTCP Admin to A/UX. I did this anyway, so I could unlock MacTCP to change the IP addressing. This resulted in the system hanging.

After restarting, I tried newconfig with commando to turn on NFS and the Berkeley file system and restarted. The EtherTalk NB Card (rev K) did not get configured. I replaced MacTCP with a different, unlocked version, ran newconfig without commando, and the card was configured with no problem. I was using a Macintosh IIfx.

Why is MacTCP shipping locked? How do I make changes to it if I cannot use MacTCP Admin?

This article has been archived and is no longer updated by Apple.
The AppleTalk for A/UX product, which could be ordered as a separate product for A/UX 1.1.1 and was rolled into the A/UX 2.0 and 3.0 release, is based on the new AppleTalk Phase 2 protocol specification but is in no way tied to any version of the Macintosh OS EtherTalk driver.

The Ethernet driver running under A/UX is completely different from the driver written to support the Macintosh OS. The driver for A/UX is called ae6; you add and remove this driver from A/UX via the newconfig(1M) command. This driver does not have the same problems that the Macintosh OS driver has with the Macintosh IIci and Macintosh IIfx and, therefore, does not require the same revisions that the Macintosh OS driver needed.

There is no Ethernet support for the AppleTalk Phase 1 protocol suite. If you're using A/UX on an Ethernet and you want to use AppleTalk services, you must be attached to a Phase 2 network.

MacTCP for A/UX is a completely different version from the one we use under the Macintosh OSs. The version running under A/UX does not, and cannot, use the MacTCP Admin CDEV for configuration purposes. MacTCP running under A/UX gets all its configuration information from the kernel, making the Admin utility unnecessary. Use the ifconfig(1M) command to configure the IP network parameters under A/UX, or edit the /etc/NETADDRS file to change them permanently.

This shouldn't be necessary for a first-time installation since A/UX asks you for all configuration information it needs after you run the newconfig(1M) command to add an IP (ae6/bnet/ae6) network device driver to the kernel.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

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Mac OS X Server 1.x: Verifying Apache Installation

If the Apache web server is not running even though it has been selected to be a web server in the Setup Assistant, there is a way to verify its successful installation.
This article has been archived and is no longer updated by Apple.
Open the network settings from the Apple menu. Under the Services tab, make sure that the server has a name. Make sure the setting to be a web server is checked. If this is the case, the /etc/hostconfig file should include the following line:

```
WEBSERVER=-YES-
```

Check the console for any relevant errors by choosing the Console command from the Tools menu in the Workspace Manager.

Attempt to start the server from the command line by typing the following command at the prompt (open the Terminal application first):

```
apachectl start
```

If there is an error about the server's name, set the server name manually by editing the apache.conf file (/Local/Library/WebServer/Configurations/apache.conf). The setting you will edit is "ServerName". You must replace "localhost" with an explicit hostname (for example, "joesbox.apple.com") Be sure to use the hostname provided by your network administrator or ISP. Also, uncomment the line by removing the pound sign (#) before the "ServerName" on that line.

Please back up the config file before making any change by typing the following command at the prompt:

```
cp apache.conf apache.conf.old
```

After saving the changes to the config file, try restarting the server manually again from the command line.
Published Date: Feb 18, 2012

Mac OS X Server 1.3: Configuring A Hosts File

This article tells how to configure a DNS hosts file for Mac OS X Server.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Hosts are stored in NetInfo. Use the NetworkManager (System/Administration/NetworkManager.app) to add computers.

See the following article for more information on managing computers with NetworkManager:

Article 60026: "**Mac OS X Server: Using NetworkManager To Manage Computers In NetInfo**."
Published Date: Feb 18, 2012

Mac OS X Server: Configuring A Multiport Server With AppleTalk

With a multiport server, the Setup Assistant seems to hang when attempting to configure more than one port for AppleTalk.
This article has been archived and is no longer updated by Apple.
Setup Assistant is looking for a seed router on each port configured for AppleTalk. The server (a single host) cannot be present twice on the same network (configuring multiple ports for AppleTalk on the same network). So, it is polling for a seed router that would confirm that the server is on a routed network. The server can have multiple ports using Appletalk if each is in a different zone.

If the Setup Assistant does not find a seed router, it prompts you to set one up. If you are running the Setup Assistant before connecting your Ethernet cables, you should connect them at this point to get a correct configuration.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: Supported Browsers For Remote Administration Of Apple File Services

This article tells which web browsers can be used to administer Apple File Services remotely in Mac OS X Server versions 1.0 to 1.2.
This article has been archived and is no longer updated by Apple.
The following web browsers are supported:

- Netscape Navigator, version 4.0 or later
- Microsoft Internet Explorer, version 4.0.1 or later

Both require Java to be enabled.

Other browsers or versions may work but are not tested and therefore Apple does not provide support for such configurations.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: Exporting NFS Directories With NetworkManager

This article discusses NFS and how to export directories with NFS.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

If you do not already have an understanding of NetInfo domains, please read the following articles:

Article 60038: "**Mac OS X Server: What is NetInfo?**"
Article 30832 "**Mac OS X Server: Basic Introduction To NetInfo Domains**."

What Is NFS?

NFS stands for network filesystem. A filesystem in a Unix-style operating system generally means a directory or directory hierarchy. NFS is based on the client/server model. The server exports the filesystems, and the client imports them. With NFS it is possible to seamlessly share filesystems to other computers on a network. When users changes directories, they should not know that they are now looking at a remote filesystem. This is very powerful because it allows common resources to be stored on one computer, and accessed throughout the network. This would be an excellent idea for documentation like man pages, or read me files.

Selecting The Correct Domain

NetworkManager allows you to make modifications network wide, so you must select the domain you wish to change. If the computer is not part of a NetInfo network then the local domain is the only one available. If the computer is on a NetInfo network then the domain that you have access to must be selected.

The domain is selected at the top of the NetworkManager window in the field title "Domain." To reveal the larger domain hierarchy, click the disclosure triangle to the left of "Domain." The correct domain name can be typed or selected.

Once the correct domain appears in the "Domain" field, NetworkManager can be used.

A quick word on button conventions; buttons that have a star are for a new items, buttons that have a pencil is for editing items, buttons that have the international symbol for no are to delete items, and buttons that have a pencil and outline are to edit default profiles. Finally, buttons that have one face are for users, and buttons that have two faces are for groups.

Exporting Filesystems

To export a directory, click the "File Sharing" button on the left-hand side of the window. Clicking the "Shared Directories" tab shows the directories that are currently being exported (shared) to the network. This is also where new directories can be exported.

To share a new directory, click the share new directory button (a hard drive with a star). In the window that appears, use the "Select..." button along the right-hand side of the window to select the directory to be exported (shared). It is also possible to type in the path of the directory. All directories contained in the exported directory are visible to any client, but a client can only mount the exported directory, not nested directories.

Choosing a Destination

Next, the destination of the exported directory needs to be chosen. The destination is where the directory is exported to. There are three options, world, subnet, and clients.

Client is the most secure option because only clients with specified host names or that belong to specified netgroups are allowed to mount the directory. If the client option is chosen two buttons appear add and remove. Clicking the add button allows you to type in the name of the client or netgroup that the filesystem should be exported to. The name of the client or netgroup must be in the NetInfo database.

For more informaon on adding computers to NetInfo, please read:

Article 60026: "**Mac OS X Server: Using NetworkManager To Manage Computers In NetInfo.**"

The export to subnet option allows only a specified segment of the network to import these filesystems. For example, if 192.168.42.0 were entered into the subnet field then any computer on the 19.168.42.X subnet would be able to import the filesystem. **Note**: this is only true if the default subnet of 255.255.255.0 is still in place.

The last option is export to world and allows any client to import the directory. This means that if the server is on the internet it is possible for a client that is also on the internet to import the directories. However, this is also the easiest to configure.

The NFS Export Options

The nobody user is a default system user that has limited access privileges. For the highest level of security it is best to select treat all users as nobody. This is to be sure that remote users do not have access to secure information. There are times when other users should be selected, but they are not discussed here.

The other export options are listed in the following table:

Read Only	Does not allow changes to be made to the remote filesystem.
Export Entire Filesystem	Allows any directory below the exported directory to be imported directly.
Require Kerberos Authentication	Use a Kerberos server for authentication (a Kerberos server must be installed).

Note: Changes made with this program require the root password to the domain you are trying to configure. This may be only for the local domain (your computer) or it may be the root domain (the entire network). You should not try to change settings you do not have access to.
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Mac OS X Server: NetInfo Delay During Startup

After installing and configuring Mac OS X Server, the computer may experience a significant delay at the Starting NetInfo section of the boot process.
This article has been archived and is no longer updated by Apple.
If your Mac OS X Server was set up to look for a NetInfo network or NetInfo server on startup, a delay of up to two minutes could occur if no NetInfo resources are available. After a timeout period, you can continue starting up by pressing the c key. For faster startup times you should turn off the option to use a NetInfo network server. You do this by opening the Preferences.app and selecting Network. Once the Network window has opened, click the NetInfo tab. In this pane there is only one checkbox. Uncheck this box, and the computer no longer tries to find a NetInfo network server at startup.

This delay could also be caused be improperly shutting down the computer. When this happens the information in the NetInfo database must be verified during startup. If a large NetInfo database is present the consistency check may take up to 20 minutes. Once the consistancy check is complete, the computer starts up properly.

For more information on NetInfo and what it does please see the following articles:

Article 60038 "**Mac OS X Server: What is NetInfo?**"
Article 30832 "**Mac OS X Server: Basic Introduction To NetInfo Domains**."

For information on creating a NetInfo network see:

Article 24719 "**Mac OS X Server: Creating a NetInfo Network**."
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Mac OS X Server: Processes

A process is a name for any running program that has its own memory space. Processes in Mac OS 8 include system software, application programs and background applications (such as FBC Indexing Scheduler, Control Strip, and Application Switcher). A background server process in Mac OS X Server is called a "daemon."
This article has been archived and is no longer updated by Apple.
In Mac OS X Server, several processes may be required to provide any given service. Starting an application also starts any other processes the application may need. If you know which processes are required for a certain service, you can check to make sure that they are running. A process that starts--or "spawns"--another process is called the parent process. A process that is started by a parent is called a "child" process. When a process is terminated intentionally, that is called "killing" the process. When a process stops working, it has "died." One step in troubleshooting a Mac OS X Server application is to determine if all its required processes are running. If a process is running but not responding, you may need to kill it.

Every process has a process identification number (PID) that is assigned according to order it was run. The first process that runs has a PID of 1. The second has a PID of 2 and so on. If a process dies or is killed, that PID is not reused. If the computer is restarted, the process count begins at 1 again.

You can use the ProcessViewer application to view and kill processes. This is similar to "force-quitting" an application in Mac OS 8. To do this, highlight a process in the process listing and choose "Quit Process" from the Process menu. If clicking the "Quit" button doesn't work, try the "Force Quit" button.

You open the ProcessViewer by choosing "Show All Processes" from the applications menu. It shows you the following information about each process:

- Name - The name of the process (not the full path)
- User - The name of the user that launched the process. System processes may show "root', "daemon", "www" or any user on your system.
- Status - Can be running, stopped, waiting
- % CPU - Shows what share of processor time a process is using. This is useful for performance analysis.
- % Memory - Shows what share of RAM a process is taking. This is useful for monitoring RAM consumption.

More Info

- Process ID- Shows the process ID, parent process ID, process group ID, Saved User ID and which terminal window the process was launched from (if applicable).
- Statistics - Shows total CPU time, virtual memory size and resident memory size.
- Path & Arguments - Shows which copy of a program was launched and the options (arguments) with which it was started.

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Mac OS X Server 1.x: Directory Structure and File Types

This article describes Mac OS X Server's directory structure and file types.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The top (or "root") level of your hard drive is called "/" ("slash" or "root"). The Mac OS equivalent is Macintosh HD. Folders are called "directories." Directories located at the root level are referred to as /<directory name>.

There are three default directories (folders) at the root level of the hard drive. /Local, /System, and /Network.

/Local is for files specific to the computer that you're on.

/Local/Applications/Internet/ - Contains OmniWeb.app, the web browser. Required for reading some help files.
/Local/Library/Receipts - Contains .pkg files - Essentially installer logs for what's installed on your computer.
/Local/Library/WebServer - Default location for your web files. Can be changed in the Setup Assistant.
/Local/Library/MacOS/Users/ - Location for each user's startup disk and PRAM setting.
/Local/Users - Home directories for each user.

/System is for files specific to the operation of the computer

/System/Administration - The applications needed for administering the computer.
/System/Applications - These are programs and utilities that come with the computer.
/System/Documentation - Contains Read Me files, System Help.

/Network is for remote resources (devices, volumes, and users).

In general, applications folders contain applications.

/System/Applications contains applications that come with the computer /Local/Applications is a good place for administrators to install third-party applications that they want to make available to all users.

/Network/Applications is a good place for the Administrator to install applications for other NetInfo users to use on a NetInfo Network. (Used by the system, stored on the local drive or store a server). **Note**: If you move an application from its default directory, it may no longer work correctly.

Documentation folders contain help system files (.help) and other instructional documentation.

Users folders contain the users' "home" folders, where users keep their files.
The "home" folder for a user is also represented as "~username". If a user name is omitted, it is taken to mean the current user.

Filenames

Filenames are case-sensitive. myfile and Myfile, are different files.

The part of a filename after the last period is called the "extension." Extensions can be of any length and usually indicate a file's type. Some common extensions are .app (application), .rtf (rich text format), and .mbox (mailbox). If a file has multiple extensions, separated by periods, the last extension is the one the system uses to determine the file's type. Renaming a file to change its extension does not change its file type.

Also note that XXX.app is really an application wrapper. This is essentially a folder that contains what we think of as resources (other languages, picture and text files). To view its contents, open the Contents inspector and click on the "Open Application Wrapper..." button or use the keyboard shortcut (Command-Shift-O)

Pathnames

If you are typing a file path, you can save time by using some shortcut notation for the relative path.

./ refers to the current directory.

./Stuff/thing.html would be a file called thing.html in a directory called "Stuff", located in the current directory.

../ refers to the parent directory. You can have a ../ for each directory away from the root directory that your current directory is.

This information may come in handy when trying to decipher file locations or when entering commands in Terminal.app or in the Workspace

Manager "Go To" command under the Tools menu.

Expert Mode/Invisible files

Since Mac OS X Server is based on a Mach/BSD core, there are traditional Mach/BSD directories. However, these directories are hidden by default, in every account but the Administrator account. To view these files, you can choose "Expert" from the Preferences.app in /System/Applications (or under User Preferences in the Apple Menu). Expert mode can be triggered by changing to a directory that is only visible in Expert mode. To toggle back, update the viewer (command - U).

Note: Most tasks can be performed without having to use Expert Mode.

These additional items appear in Expert mode:

/bin - binaries, usually user-invoked commands
/cores - (core dump saved here after bad crash)
/dev - device driver interfaces. This is a link to /private/dev
/etc - directory where most configuration info is stored. This is a link to /private/etc
/lib - shared libraries
mach - a link (alias) to mach_kernel
mach_kernel - the kernel, the single most important file. This is the boot file listed in Open Firmware
/Net - a link to /Network/Servers
/private - contains /etc, /dev, /tmp, /var and more
/sbin - system-related binaries
/tmp - erased at restart. This is a link to /private/tmp
/usr - items related to applications and devices
/var - variables, spool and growable files and logs. This is a link to /private/var
.hidden - contains a list of files to be invisible in non-expert mode
.vol -

Files beginning with a dot are invisible.
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Mac OS X Server 1.x: Printing With Print Manager

Before you can print to a printer, you must create a local or network printer resource.
This article has been archived and is no longer updated by Apple.
Before you can print to a printer, you must create a local or network resource. The Administrator password is required to create new printers.

AppleTalk and TCP/IP printing are supported over Ethernet. LocalTalk printing and serial printing to Apple printers is not supported either from Mac OS X Server or from MacOS.app.

Setting up a new printer connection

To set up a printer for use across a network, you create a "local" printer (on your computer) and then "export" it (make it available on the network) using the PrintManager application.

To create a new local printer, do the following:

1. Open the Print Manager application from the Apple menu.
2. Cick the Create... button in the printers window.
3. Make sure the appropriate communications driver is selected (AppleTalk, TCP/IP). Parallel is not supported.
4. Type in information. For AppleTalk printers, you can also click the Set... button and choose the printer and AppleTalk zone. For TCP/IP printing, choose LPR. You'll also need to enter the remote host (the name of the print server the printer is connected to) and the name of the queue. If there is no remote host, enter the printer's remote name.
5. Give the printer a local name.
6. Choose the PostScript printer description (PPD) file for your brand and model of printer.

To export a printer:

1. Open the Apple menu and choose PrintManager.
2. Click the Local tab.
3. Select the name of the printer you want to export and click Edit.
4. Enter the remote name for the printer.
5. Under Export, click Add.
6. Select the domain to export to and click Save.
7. Open the Apple menu, choose Computer Settings, then choose Network.
8. Click the Services tab, then click "Enable remote printing."

Print Services

Can I set up an AppleTalk-type (PAP) print server/spooler?

Apple does not include such a capability in Mac OS X Server 1.x. Third-party applications that provide spooler services are available.

For more help with printing, choose "Help" from the Help menu in the Workspace Manager and click on the "Printing" topic.
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Mac OS X Server 1.x: Restarting/Shutting Down

Mac OS X Server versions 1.0 to 1.2v3 depend more on an orderly shutdown of the operating system than Mac OS 8 does. If the computer is turned off or restarted abruptly, there will probably be damage to the file system. If this happens, it is necessary to run the fsck command to check for and repair any file system damage.

Because Mac OS X Server is a server operating system, it should stay running all of the time.
This article has been archived and is no longer updated by Apple.

1. Normal Shutdown - Choose Quit from the File menu in the Workspace Manager. The following dialog box appears: "Do you really want to log out." You are given a chance to save any changes to unsaved documents.
2. Normal Power off - Press the Power key on the keyboard. The following dialog box appears: "Do you really want to turn off the computer." Clicking the "Turn It Off" button shuts down the computer properly. You should be given a chance to save and changes to unsaved documents.
3. Command Line - If you are logged on as Administrator, or as a user that is a member of group wheel, open Terminal.app from /System/Administration or from the Apple menu. If you are not logged in as the Administrator, type su root. When prompted, type the Administrator password. Type halt or reboot. The computer should shut down or restart properly.
4. Mini Monitor - Type Control-Power. You should get a small dialog box that says "Restart or Shutdown" Type R to restart, or type H to shutdown. Type C to continue. **Warning**. You may lose unsaved data. Nonetheless, Mac OS X Server should still properly shut itself down.
5. Command-Control Power - Likely to cause file system damage. May be the last resort in some circumstances. You **must** start the computer up in single-user mode and run fsck.

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Mac OS X Server 1.x: MacOS.app Disk Access Modes

This article discusses the tradeoffs among the three access modes available to MacOS.app: Shared, Exclusive, and SCSI.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

If you are just running Mac OS productivity applications, you should not need to switch the access mode for any of your disks or partitions. However, in case you need to run disk utilities such as Disk First Aid, Disk Copy, or Drive Setup, you may need to (temporarily) switch the access mode of one or more of your disks or partitions. The "Blue Volume Mount Options" control panel is provided to allow you to set these access modes for individual disks and disk partitions. It is described below, after the explanations of the three access modes.

You can determine in which mode a volume is being accessed by selecting it in the Finder and choosing Get Info from the File menu. The dialog that appears includes a "Where" string that describes the mode in which the underlying disk is currently being accessed, along with an indication of the physical disk to which it corresponds. Disks accessed in Shared mode have "Shared" in this string. Similarly, disks accessed in Exclusive mode have "Exclusive" in this string. Disk image files (which are always accessed in Exclusive mode) list the pathname of the disk image file. Disks accessed in SCSI mode have a string identical to the one they would display if running native Mac OS; typically this string gives the SCSI Bus number and SCSI device ID of the disk.

For disks accessed in Shared or Exclusive mode, the SCSI bus and ID (or ATA/IDE ID) are not given; instead, they are identified in the "Where" string by their Mac OS X Server device name. In order to understand how Mac OS X Server names disk devices, you must consult the documentation for Mac OS X Server. Briefly, SCSI (and ATAPI) disks have names like "sd0", "sd1", etc. ATA/IDE drives have names like "hd0"; and floppy disks have names like "fd0". Disk devices may also have more than one HFS(+) partition; the first HFS(+) partition of "sd0" is "sd0_hfs_a", the second is "sd0_hfs_b", etc. Disks without partition maps (such as floppies and ISO9660 CD-ROMs) are treated as though they consisted of a single HFS(+) partition, comprising the whole disk (e.g., "sd0_hfs_a").

Shared Mode

MacOS.app supports mounting HFS(+) volume(s) which are already mounted by Mac OS X Server. This mode of access is called Shared mode because all the files and folders on Shared volumes are simultaneously accessible from Mac OS applications running inside MacOS.app and Mac OS X Server applications running outside of it. Shared mode was chosen as the default file system access mode because it does not require the user to unmount a volume from one environment before mounting it in the other.

Although Shared mode access provides the highest level of interoperability between Mac OS and Mac OS X Server applications, it is not compatible with Mac OS applications that require low-level disk access. Mac OS productivity applications are not affected by this incompatibility since they access files and folders through the high-level interface provided by the File Manager. On the other hand, disk utility programs typically require low-level disk access. Examples of disk utilities that require Exclusive mode access are Disk First Aid, and Norton Disk Doctor. Examples of disk utilities that require SCSI mode access include Drive Setup, and FWB's Hard Disk Toolkit. None of these utilities function correctly on a volume accessed in Shared mode.

Exclusive Mode

MacOS.app supports mounting HFS(+) disk volumes in a mode that permits block-level access. This mode permits certain disk utilities (such as Disk First Aid and some operations in Disk Copy) to run that would not work with a disk accessed through Shared mode. This is called Exclusive mode because disks accessed by MacOS.app in this mode appear exclusively in MacOS.app and cannot be accessed by Mac OS X Server applications. You can request that a disk or partition be accessed through Exclusive mode by using the "Blue Volume Mount Options" control panel.

When Mac OS X Server first detects an HFS(+) disk partition (either when starting up or when a removable disk is inserted into a drive) it mounts it and notifies MacOS.app. MacOS.app is also notified about disks that are not recognized or mounted by Mac OS X Server. When MacOS.app notices a disk that has been mounted in Mac OS X Server for which the user has selected Exclusive mode, it asks Mac OS X Server to unmount the disk and then mounts it exclusively.

Because it remains under the control of the Mac OS X Server SCSI drivers, a disk accessed through Exclusive mode cannot be accessed through the Mac OS SCSI Manager, even if the underlying disk is a SCSI disk.

Volumes accessed in Exclusive mode can be read from and written to, regardless of the access rights of the user.

Disk image files like the supplied StartupDisk.img are always accessed through Exclusive mode.

The choice between Exclusive and Shared mode access can be made on a per-partition basis for disks with multiple HFS(+) partitions.

Removable disks accessed througgh Exclusive mode are usually ejected upon Shutdown or Restart of MacOS.app. CD-ROMs are an exception and are not ejected upon shutdown, in order to more closely mimic the behavior of Mac OS.

SCSI Mode

MacOS.app supports SCSI disk devices that are recognized by Mac OS X Server. MacOS.app provides a special compatibility mode for accessing these devices through the SCSI Manager, just as they would be accessed under the native Mac OS. This mode provides the highest level of compatibility with Mac OS disk utilities, especially with those that require SCSI access, like Drive Setup.

Like Exclusive mode, SCSI mode must be selected by using the "Blue Volume Mount Options" control panel. When MacOS.app first detects a disk for which SCSI mode has been selected, it attempts to unmount it from Mac OS X Server. If this succeeds, MacOS.app can access it in SCSI mode without fear of interference from Mac OS X Server applications.

Volumes accessed in SCSI mode can be read from and written to, regardless of the access rights of the user.

Unlike the choice between Shared and Exclusive mode access - which can be made on a per-partition basis for disks with multiple HFS(+) partitions - accessing a disk through SCSI mode precludes any other sort of access, either by Mac OS X Server or through Shared or Exclusive mode in MacOS.app. One consequence of this is that a disk containing a UFS file system partition that is mounted by Mac OS X Server cannot be accessed through SCSI mode in MacOS.app. For example, if your system has only one hard disk and has separate partitions for UFS and HFS(+) file systems, you cannot access the disk in SCSI mode.

Removable SCSI drives without media present become reserved for SCSI mode access if probed with a SCSI disk utility like Drive Setup.

SCSI mode access is not available for ATAPI devices (which includes the internal CD-ROM and optional Zip drive on some Power Macintosh G3 models) or IDE/ATA devices (which include the internal disks on most non-Server Power Macintosh G3 models).

Switching Modes: The "Blue Volume Mount Options" Control Panel

In the "Apple Extras" folder of the supplied StartupDisk.img is the control panel to set the desired access mode for disks and disk partitions. Disks can be accessed in one of three modes (Shared, Exclusive, or SCSI), although not all disks permit access in SCSI mode. A disk cannot be accessed in SCSI mode if it is not a SCSI disk (e.g., floppies, ATA/IDE/ATAPI disks). Nor can it be accessed in SCSI mode if there is a UFS file system mount point active on the disk at the time the mode switch is attempted (either when the control panel is launched or when MacOS.app is starting up).

Launching the "Blue Volume Mount Options" control panel displays a single dialog which can be dismissed by quitting the control panel or closing the window. Any changes that are made are stored immediately upon quitting the control panel, although most changes do not take effect until MacOS.app is restarted.

Figure 1, Volume Mount Options control panel

The control panel lists all the disk drives and disk partitions that it finds on the system, together with three columns of radio buttons, named after the three possible modes of operation: SCSI, Exclusive, and Shared. If a radio button does not appear in one of the columns, it means that the corresponding mode is not available for that drive (for example, SCSI mode for an ATAPI CD-ROM drive). If a disk partition is already mounted in Shared or Exclusive mode, it appears in the control panel under that name (for example, "sd0_hfs_a"). If it is a removable drive with no disk present, it appears under the name of the drive (for example, "sd0"). Finally, if it is being accessed through SCSI mode, it appears labeled with its SCSI Bus and device ID (for example, "Bus 0, ID 0"). In each case, these labels should correspond closely to what you find in the "Where" string displayed in the Finder's "Get Info" dialog for that volume.

The same disk may appear under different names at different times in the "Blue Volume Mount Options" control panel depending on whether there is a disk in the drive. For example, the internal ATAPI CD-ROM drive on a Power Macintosh G3 appears as "ATA drive sd0" when there is no CD-ROM in the drive, but as "HFS partition sd0_hfs_a" when a CD-ROM is in the drive.

If a disk has multiple HFS(+) partitions, they can be accessed in Shared or Exclusive mode independently from one another. In other words, the choice between Shared and Exclusive mode can be made on a per-partition basis. Similarly, Mac OS X Server can mount a UFS partition from a disk containing one or more HFS(+) partitions, each of which may be accessed in Shared or Exclusive mode. SCSI mode is different, though, because it requires complete control of all requests going to the disk. Therefore, selecting SCSI mode for one partition on a disk causes all the partitions on the disk to be accessed through SCSI mode. If you try this, the settings of the radio buttons automatically reflect this constraint. Similarly, you cannot select SCSI mode for a disk containing a mounted UFS file system. If you do select SCSI disk mode for a disk that contains an unmounted UFS file system, your selection is honored. You cannot mount that UFS file system in Mac OS X Server while MacOS.app is accessing the disk in SCSI mode.

For fixed, non-removable disks, changes made through the "Blue Volume Mount Options" control panel do not take effect until MacOS.app is restarted. Removable disks can be ejected and reinserted without restarting MacOS.app.

TA44160_Mac_OS_X_Server_x_MacOSapp_Disk_Access_Modes.pdf

The disk mode selections made through the "Blue Volume Mount Options" control panel are only requests. In some cases, it might not be possible to honor them and MacOS.app may mount a disk in a mode other than the one selected in the control panel. To find out what mode a volume is being accessed in, consult the "Where" line in the "Get Info" window of that drive.

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Mac OS X Server 1.x: Apple File Services Features

Apple File Services is an Apple File Protocol 2.2 (AFP)-compliant server. Apple File Services fully supports version 2.2 of the AFP specification (the same as AppleShare IP 5.x and later).
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Apple File Servers has the following features:

- Optimized for use with AppleShare 3.8.2 client.
- Supports AFP over TCP/IP and AppleTalk.
- Provides high performance and scalability.
- Supports Mac OS Extended Format (HFS+) volumes
- Supports volumes sizes up to 2 terabytes
- Enforces AFP access privileges.

The following table shows the maximum allowed values for properties of the server:

Maximum number of...	Specification
Connected users over TCP/IP or AppleTalk	1 100
Unique open files	3 000 to 4 000*
Physical volumes	50
Share points	500
Users and groups	10 000
Group memberships per user	42

* Depends on the number of connected users.

Miscellaneous properties:

- TCP port for Apple Filing Protocol (AFP): 548
- TCP port for Remote Administration: 311

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Serial Cables: Extreme Length Can Generate Noise (11/94)

I've connected a Macintosh SE to my MV15000 (Data General host) through the serial port using a cable wired according to the pinouts documented in the Tech Info Library.

When a terminal line is enabled, the host sends a "welcome" message to the terminal. If the Macintosh is not already in the terminal emulation program, the host receives arbitrary noise back on the line, causing the operating system to disable that port.

Can you shed any light on why this may be occurring, and where I could look for a solution?

This article has been archived and is no longer updated by Apple.
When a Macintosh system is turned on and the System software is loaded, the transmit lines of the serial ports are in a high-impedance mode. This does not change until a terminal program, such as MacTerminal, is run.

Arbitrary noise back on the Macintosh transmit line could result if the cable is too long. The maximum serial cable length that the Macintosh supports is 50 feet. If the cable is longer than this, you may want to use short- haul modems.

You did not provide us with the pinouts that you're using. We are providing the following as a reference:

RS-422 and RS-232 Equivalents

Pin RS-422 name RS-232 equivalent
1 HSKo (handshake out) DTR (data terminal ready)
2 HSKi (handshake in) CTS (clear to send)
3 TXD- (transmit data negative) TXD (transmit data)
4 GND (signal ground) GND (signal ground)
5 RXD- (receive data negative) RXD (receive data)
6 TXD+ (transmit data positive) leave unconnected
7 not connected not connected
8 RXD+ (receive data positive) must be grounded to pin 4 (on Macintosh RS-422 connector)

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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Mac OS X Server 1.x: Apple File Services Installed Files

Apple File Services installer is integrated into the core OS installer and installs the items below into appropriate locations within the local file system hierarchy.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Apple File Services Server
(/usr/sbin/AppleFileServer)
The core AFP server application, which is a daemon process.

Server Control API Framework
(System/Library/PrivateFrameworks/ServerControl)
The Server Control API framework is shared with QuickTime Streaming server

Remote Admin CGI
(/System/Library/RemoteAdminServer/CGI-Executables/)
A lightweight pass-through process that is invoked by the web server and in turn transmits requests to the Web-Based Admin Server. It also receives the reply from the Web-based Admin Server and transmits it back to the web server, which then sends the reply back to the browser.

Remote Admin Server (/System/Library/RemoteAdminServer/FastCGI/RemoteAdminServer)
Handles authentication and majority of admin tasks.

Remote Admin Java and Image Files (/System/Library/RemoteAdminServer//Documents/)
Java classes are used for authentication and password encryption.

Log Files: There are two log files kept by the server:

- The AFP server creates a log file at /Local/Library/AppleFileServices/AppleFileAccess.log and logs key events if the "Enable Log" preference is set in Remote Administration.
- The server error log file is located at /Local/Library/AppleFileServices/AppleFileError.log. This log is always enabled.

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Mac OS X Server 1.x: Apple File Services Configuration and Setup

This article describes the configuration and setup of Apple Files Services under Mac OS X Server.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Apple File Services depends upon the Mac OS X Setup Assistant to configure basic setup information, including:

- AppleTalk Name
- Whether Apple File Services is enabled
- Whether Apache Web server is enabled
- Whether AppleTalk and TCP/IP is enabled

After initial setup, these settings, as well a users, groups, and sharing for Apple File Services, are configured using Remote Administration. For help setting up and using Remote Administration, please see:

Article 60063: "**Mac OS X Server: Using Apple File Services Remote Administration**"

Both Apple File Services and Apache must be enabled.

Even if you only select Apple File Services, the Apache Web server will be launched on startup since it is required for Remote Administration.

If Apple File Services is enabled with the Setup Assistant, an entry is made in the file /private/etc/hostconfig. This causes RemoteAdmin to launch. When Remote Admin launches, it looks for the "autostart" flag in the NetInfo database. If this flag is either missing or set to true, Remote Admin opens AppleFileServer. The only condition that would cause the File Server not to start up is if this flag is set to false. This requires changing the setting in Remote Administration.
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Mac OS X Server 1.x: Apple File Services Required Processes

This article outlines the required processes for operating Apple File Services under Mac OS X Server.

For more information on processes under Mac OS X Server, please see article:

Article 60053: "**Mac OS X Server: Processes**."
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

AppleFileServer runs over either TCP or AppleTalk and requires that TCP and/or AppleTalk be configured on the system.

The processes that show AppleFileServer is active are AppleFileServer and AdminWebServer.

AppleFileServer runs from a PIPE out of the AdminWebServer server (an HTTP server) and once running shows up in a process:

```
ps ax |grep AppleF
 632 ?  I     0:00 AppleFileServer /tmp/afpserver_PIPE
 639 ?  S     0:00 AppleFileServer /tmp/afpserver_PIPE
```

AdminWebServer appears in the process list as well:

```
ps ax |grep Admin
 557 ?  S     0:00 /usr/libexec/AdminWebServer -f
/System/Library/RemoteAdminServer/Configuration/apache.conf
 559 ?  I     0:00 /usr/libexec/AdminWebServer -f
/System/Library/RemoteAdminServer/Configuration/apache.conf
 560 ?  I     0:00 /usr/libexec/AdminWebServer -f
/System/Library/RemoteAdminServer/Configuration/apache.conf
 566 ?  I     0:00 /System/Library/RemoteAdminServer/FastCGI/RemoteAdminServer
```

Notice that the final process listed is the FastCGI which executes the remote administration of the AppleFileServer.

Remember that in the process viewer, the AdminWebServer processes show up as 'apache' EXACTLY like the HTTP server that is serving files on port 80.
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Mac OS X Server 1.x: Using Apple File Services Remote Administration

This article describes how to use Apple File Services Remote Administration.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Using Remote Administration requires the following:

- Set up the following in the Mac OS X Server Setup Assistant:
  - TCP/IP services must be enabled on Mac OS X Server.
  - The Apache Web server must be enabled on Mac OS X Server.
  - Apple File Services must be enabled on Mac OS X Server.
- You must have a client computer with a TCP/IP connection to the server. This connection can be over a LAN, WAN, or a dial-up connection. If you are accessing it through a firewall, make sure that port 311 is not filtered.
- Netscape 4.0 and Internet Explorer 4.0.1 or higher. Note, that the current version of OmniWeb does not work with Remote Administration.

Users of Remote Administration in AppleShare IP 6.1 should be immediately familiar with Apple File Services Remote Administration. To Access the Remote Administration program, enter in the following URL:

```
http://www.yourserver.com:311
```

where "www.yourserver.com" is the hostname of the server,

- or -

```
http://nnn.nnn.nnn.nnn:311
```

where nnn.nnn.nnn.nnn represents the IP address of the server.

You are prompted to enter the Administrator name and password:

Figure 1, Remote Server Administration login

For the initial login, use the root password. The root user may log in with the name "root", "Administrator", or "administrator." Remote Administration uses a Java Applet to encrypt all transactions containing a password, so administrators need not worry about sending the root password over the network. After the initial login, the administrator can create other users who are administrators of Apple File Services, but do not hold any special privilege within Mac OS X Server.

Note: Unlike versions of AppleShare for Mac OS 8, the user name is case sensitive. This applies to both logins in the Remote Administration, and through the Chooser.

Once you have logged on, the status screen appears:

Figure 2, Remote Server Administration status screen

The toolbar at the top of the page appears on every page within Remote Administration. It is in many respects identical to AppleShare IP 6.1 Remote Admin. However, you cannot administer the Web server, mail server, or print server applications in Mac OS X Server, with this version of Remote Administration.

Administering Users & Groups

Adding, editing, and deleting Users and Groups within Remote Admin is mostly self-explanatory. The following options, available in AppleShare 6, are not available for Apple File Services:

- Program Linking
- Disable Log on as of _____
- User may change Password (This is always enabled)
- Require new password on next log on

When you create users within Remote Administration, these users are kept in the NetInfo database. The user's AppleShare name is entered into NetInfo as the "realname." The Internet alias is entered into NetInfo as "name." If you fail to give a user an Internet alias, Remote Admin will give the user a default name of "uXXX", where XXX is the Unix-style User ID. For example, User ID (uid) 810 would have a name of "u810". Following is a user's account from the NetInfo database (as shown in NetInfo Manager). This user has the realname "Teacher", no name, and is an Administrator of Apple File Services. In the Network Manager application (which uses the same database), the NetInfo name property is called "Internet Alias" and the NetInfo realname property is called "Full Name".

Figure 3, NetInfo Manager user's account example

While NetInfo is where all the Unix-style users are kept, users created with Remote Administration do not have access to the Mac OS X Server console; they are only allowed to log on to the Apple File Services server.

Conversely, when you create users within Mac OS X Server using Network Manager, that user has access to AFP services, in addition to other logon privileges the user may have (to the console, FTP, and so forth).

When you create an administrative user from Remote Administration, that user is only an Administrator over Apple File Services. That means that the user can log into Remote Administration, and that when the user logs in througgh the Chooser, she sees mounted HFS and HFS+ volumes, rather than share points. However, this administrative user has no special privileges in Mac OS X Server other Apple File Services.

Setting up Share Points

Apple File Services will allow you to create a share point on any Mac OS Extended format disk. You can make either the entire disk - or specific folders on the disk - share points. You can also make removable disks (such as CD-ROM discs) or folders on removable disks share points. Hard drives formatted as Standard HFS are not supported under Apple File Services.

When you set up share points in AppleShare IP, all of the share points and privileges information is kept in one location: the AppleShare PDS file. With Mac OS X Server, these two preferences are kept in distinct places:

- Sharepoint information is kept in the NetInfo database. This is only the information about which directories are shared.
- Privileges are kept in the filesystem itself.

With HFS+, Apple included the ability to define privileges within the file's header block in the filesystem. There is no separate file to track privileges as there were with Mac OS versions of AppleShare. These privileges are identical to Unix-style permissions and are accessible via command-line utilities such and `chown` and `chmod`.

Another difference from AppleShare IP is the Group field. In previous versions of AppleShare, there were three classes of users: Owner, User/Group, and Everyone. The User/Group could either be an individual user or a group of users. With Apple File Services, this field must be a group.

Because of the difference in the way privileges are stored in AppleShare for the Mac OS and Apple File Services, disks that were previously set up for sharing over AppleShare will not maintain privileges when shared with Apple File Services. Apple File Services will not recognize information located in the AppleShare PDS file, nor is there any way to convert that information into privileges understood by Apple File Services.

Since privilege information is kept in the filesystem itself, Apple File Services does not support privileges on read-only volumes, such as CD-ROMs. However, it is still possible to share this volume. The privileges look like this:

Figure 4, Apple File Services privileges

Privileges for read-only volumes will be read-only for everybody, and there is no way to change them.

Other Server Settings

These are the other server options available under Remote Administration:

Figure 5, Remote Administration Server Settings

These changes require a server restart to take effect. **Note:** Toggling guest access is immediately active over TCP/IP. Guest logon over AppleTalk only changes after a restart. TIP: Since these settings are also entered into NetInfo, NetInfo Manager is a good place to check for correct information, when troubleshooting AFP issues.

Figure 6, Checking information in NetInfo Manager

Backing up and Restoring Users & Group and Privileges.

A backup option includes the command line tools, part of BSD 4.4. The most common is the `tar` command. Tar does not retain user and group privileges like backing up an ASIP server. These only backup UFS volumes. To back up HFS volumes, use a third-party utility.

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Mac OS X Server 1.x: Apple File Services Open File Limitation

This article discusses the maximum number of files that can be opened by Apple File Services.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Apple File Services can handle 3 000 to 4 000 unique files open on client computers. This limit is expressed as a range because of the way Apple File Services keeps track of open files. The server has a total of 4 000 file descriptors with which it can keep track of open files. Each user who is logged in over AFP also takes one of these 4 000 file descriptors. Furthermore, a Mac OS file may have either a data fork and a resource fork. While the user perceives this as one file, the server sees it as two files for the purpose of file descriptors. Therefore, if ten users were logged on through AFP and each user had 10 files open (each file with both a data and a resource fork) this would count as 210 file descriptors against the total limit of 4 000.

Note: The open file limit operates differently than in recent versions of AppleShare IP. Under AppleShare IP the server support 3 000 instances of 346 unique files. Apple File Services makes no such distinctions between unique and duplicated open files.

For more information on other Apple file sharing limitations, please see:

Article 15460: "**AppleShare File Sharing: Chart of All Limitations**."
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Mac OS X Server 1.x: Apple File Services Compared To AppleShare IP

Apple File Services does not have all of the options available under versions of AppleShare IP for Mac OS 8.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Some functions of AppleShare IP that are not part of Apple File Services include:

- Duplicate user, import, export
- Batch-change user options
- Log on greetings
- Multi-homing support
- Dynamic server name change (You must restart Apple File Services to change the server's AppleTalk name)
- Setting access privileges on read-only volumes, such as CD-ROM
- Support for HFS or UFS volumes
- Application launch limit support
- DOS short names support
- ProDOS support
- Cannot enable or disable just AFP/TCP or AFP/AppleTalk
- Idle disconnect
- Automatic reassignment of access privileges after a user is deleted
- Web-based administration from OmniWeb browser on Mac OS X Server platform
- Clear text authentication only; no extensible UAM mechanism
- Ejectable media is not shared automatically. When it or its sub-directory is shared explicitly, the access privileges are set to read-only for everyone
- Password related convenience features:
    - Password expiration
    - Minimum password length
    - Disable account after a specific number of failed attempts
    - Change ability to allow user to save password for automatic log on
- There is no serial number for Apple FIle Services as there was for AppleShare IP

Cache

Previous versions of AppleShare for the Mac OS 8 used a RAM cache to increase performance. As files were copied from the server, AppleShare would store them in RAM so that the next time the files were copied, the server would be faster finding and transferring it from RAM instead of the disk. Apple File Services does not use this mechanism. Instead, it leverages on the speed of the underlying OS to provide fast file transfers. There is no cache setting to adjust, and the Apple File Services process on the server allocates RAM as it needs it.
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Mac OS X Server 1.x: Troubleshooting Apple File Services Remote Administration

This article describes how to troubleshoot Apple File Services Remote Administration under Mac OS X Server.
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If you don't know the host name of the Web server:

On the server computer, open the Apple menu and choose Computer Settings, then choose Network. In the Network settings panel, click the Services tab. The server name should be listed here. You can also log into the server using its numeric IP address.

If Remote Administration does not recognize the user name and password you enter:

Be sure you have entered the user name and password for a user with administrator (root) privileges. If the user name and password continue to fail, you can log in by typing "Administrator" and the password for the Administrator user (root) of the server computer. Passwords are case sensitive.

If you're unable to connect to or log in to Remote Administration:

Make sure your computer is connected to the network properly. Try logging in to Remote Administration using the TCP/IP address for the server.

If you are able to log in using the TCP/IP address, then you may have entered the URL incorrectly. The URL should be similar to this:

http://server.domain.com:311

The "server.domain.com" is the host name of the Web server plus the domain of the organization.

If you are logging in to Remote Administration from the Internet, be sure the name is the Internet DNS name for your Web server and not the local domain name.

If you are logging in to Remote Administration from the Internet, be sure the DNS server is available, or use the IP address.

If you receive a "504" or proxy time-out error message, ask your proxy server administrator to allow write access for the Web server on port 311.

If this is not possible, turn off any proxies set up in your web browser and select the option to connect directly to the Internet. Then, try again.

You can also make sure Apple file services is turned on and connected to the network:

1. Make sure you can reach the other computer over the network (try pinging the other computer)
2. Log in to your server computer as Administrator.
3. Open the Apple menu and choose Server Administration, then choose Assistant.
4. In the panel, select Setup Assistant and follow the onscreen instructions to turn on Apple file services.
5. Restart the server computer.

If you have other network services running on the server computer, you may want to notify users first.

If you're sure Apple file services is turned on but you are unable to log in to Remote Administration:

Two different processes are required for Remote Administration to work: RemoteAdminServer and AdminWebServer. To find RemoteAdminServer, open the ProcessViewer (located in "Server Administration" under the Apple Menu). You should see RemoteAdminServer listed in the Process Listing.

The AdminWebServer shows up as "apache" in the ProcessViewer, but not all processes named "apache" function as the AdminWebServer. To make sure that the correct apache processes are running, follow these steps:

1. Click the triangle at the bottom of the ProcessViewer to view More Info.
2. Click the "Path & Arguments" tab in that section.
3. Type 'apache' (without quotes) in the Find box at the top of the window. This should display only those processes whose name contains "apache".
4. Three of the listed processes should have "/usr/libexec/AdminWebServer" in the "Full Path" section of the "Path and Arguments" tab.

Alternatively, you can type the following into the command line (Terminal.app):

```
ps aux | grep Web
```

This gives you a long display of all the processes running on the server whose name contains "Web". Look for /usr/libexec/AdminWebServer.

There should be three instances (copies) of this.

If you are unable to find either AdminWebServer or RemoteAdminServer, try restarting Apple File Services using the Setup Assistant

If they both appear in the list, you can use ProcessViewer to stop the processes, then restart Apple File Services using the Setup Assistant.

If users say the server is slow:

- Make sure it's not a network-wide issue. Log onto another server to test performance
- Have Admin check histogram in Remote Admin to see what user level is at versus connected user activity for possible culprits.

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Mac OS X Server 1.x: Troubleshooting Apple File Services

This article describes how to troubleshoot Apple File Services under Mac OS X Server.
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If the server doesn't appear in the Chooser:

- Make sure AppleTalk is active on the server computer.
- Make sure AppleTalk is active on the user's computer and that the correct network connection type is selected in the Connect via pop-up menu in the AppleTalk control panel.
- Make sure the user has the correct version of the AppleShare client software installed on their computer.

Log in to the server computer as Administrator (root), open the Apple menu and choose Server Administration, then choose ProcessViewer. Look for AppleFileServer in the Name column.

If AppleFileServer doesn't appear in the ProcessViewer, try restarting the server using the Setup Assistant:

- Make sure users are looking in the correct AppleTalk zone and that they are looking for the correct name.
- Make sure the user's computer and the server computer are connected to the network properly.

If a user is disconnected unexpectedly:

- Make sure another administrator didn't disconnect the user.
- Make sure the volume the user was connected to is mounted.
- Make sure the user's computer and the server computer are connected to the network properly.

If a user can't log in to the server:

- Make sure the user entered the correct name and password.
- Make sure you have created a share point and assigned access privileges for the user or a group to which the user belongs.
- Make sure the maximum number of connections has not been exceeded.
- See if the user can connect to the server via AppleTalk using the Chooser. Then check to see if the user can connect to a Web site througgh TCP/IP using a browser. If the user can connect through one protocol but not the other, there may be a problem with AppleTalk or TCP/IP settings.

If a user's password doesn't work:

- Give the user a new password, then have him or her try to log in again.

If a user forgets his or her password:

- Give the user a new password.

If an administrator forgets his or her password:
Another administrator can give te administrator a new password. If you have not created another administrator user, you can log in to Remote Administration by typing Administrator and entering the password for the Administrator (root) of the server computer.

If a user cannot find a file or folder:

- Be sure the user has Read or Read & Write privileges to the folder. Log in to the server on the user's computer and select the file or folder. Choose Sharing from the File menu to see the folder's access privileges. Change the folder's access privileges, if necessary.

If the access privileges a user sets keep changing:

- The user may be setting an invalid combination of access privileges. You can have the user select valid access privileges or install the AppleShare client software version 3.8.2.

If a user cannot access a CD-ROM disc:

- Make sure you've made the disc a share point.

If some users see a volume size that is different from the volume size displayed on the server:

- Users who have versions of system software earlier than System 7.5 cannot see large volumes. Update the client computers to Mac OS 8.5 and AppleShare 3.8.2.

If users say the server is slow:

- Make sure version 3.8.2 or later of the AppleShare client software is installed on users' computers.
- Make sure users connect to the server computer by using TCP/IP.

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Mac OS X Server 1.x: Starting and Stopping Apple Files Services

This article describes how to start and stop the Apple File Services server.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Starting The Server

To start the server:

- Log into the Remote Administration web page.
- Click Status, then click Start Server.

If the server fails to start up:

- Check the error log on the server computer.
  On your server computer, look for the file named AppleFileError log in this location:
  /Local/Library/AppleFileServices
- Be sure the server has a name and that the name is different from that of other server computers or any Macintosh computers with file sharing turned on.
- Make sure the server has at least one Mac OS Extended format volume available to share.
- Be sure your server computer is connected to the network properly.
- If you have a NetInfo master domain set up on your network, be sure your server computer is configured properly to connect to it. For information about setting up a NetInfo master domain, see Server Administration Help on your server computer.

Stopping The Server

Before you stop the server, you may want to notify users.

To stop the server:

1. Log into the Remote Administration web page.
2. Click Status, then click Stop Server.
3. In the Default Shutdown Message page, type the number of minutes before the server stops and, if you like, a message for users. If you type more than five minutes, users can continue to log in until the final five minutes.
4. Click Shutdown.

Users who are logged in to the server and who can receive messages see a standard warning message, which includes any message you entered.

If the server fails to stop:

On the server computer, open the Apple menu and choose Server Administration, then choose ProcessViewer. Select AppleFileServer in the Name column and click Stop Process.

Cancelling Stopping The Server

To cancel stopping the server:

- Click Cancel Shutdown in the Status page.

The server sends a message notifying users that you have cancelled shutting down the server.
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Macintosh: Third-Party Drivers for High-Speed Printers

I have HP RuggedWriter 480 printers and Printronics P300 High-speed line printers. I want to use the Macintosh with a 4D database to print labels in mass volumes at high speed using the printer-resident font characters.

Currently, I have drivers from GDT (of Canada) that let me print to these printers from the Macintosh, but at very low speed.

1) Do you know of any drivers that work on these high-speed printers using the printer-resident font characters?

2) Do you know of any other printer and drivers that will do the job?

This article has been archived and is no longer updated by Apple.
We know of three possible sources: GDT Softworks, Orange Micro, and Insight. Most support fonts built into printers, but none lists your specific printers in their product literature. Perhaps you should contact the printer manufacturers to discuss their specific requirements.

For more information, search the Tech Info Library under: "GDT Softworks", "Orange Micro", and "Insight".

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Mac OS X Server 1.x: Large File System Option

This article describes the Large File System option in Mac OS X Server.
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With this option enabled, the Workspace manager caches files differently. Consequently, it doesn't take as long to start viewing a folder containing hundreds of files.
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Mac OS X Server 1.x: Maximum Virtual Memory

This article details the maximum Virtual Memory Mac OS X Server uses and whether it can be configured.
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The system is free to try and allocate it's full 4 GB of address space. There is no limit imposed by the system other than running out of space on the file system where the swap file exists.
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Mac OS X Server 1.x: The ".dir5_0.wmd" File Explained

Under Mac OS X Server, you may notice a file named ".dir5_0.wmd". This article tells what the file is and what it does.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

This file is the equivalent of the Desktop Database under Mac OS 8, and stores things like icon placements and sort order. You can delete it without concern. Note that other '.' files, which are invisible unless you are in Expert mode, are often needed by various Unix-compatible programs, and should not be deleted.
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Mac OS X Server 1.x: Support Information For Apache Web Server

This article tells where to get more information about Apache server.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The Apache documentation is preinstalled with Mac OS X Server in the /System/Administration/Services/apache directory. There is a link to this directory in the /Local/Library/WebServer/Documents/ directory.

The latest information on Apache is posted on Apache's Web site at: http://www.apache.org/.

Beyond the support of basic installation, configuration, troubleshooting and recovery offered by Apple, many public information sources provide broad support for Apache. A few popular sites include:
Apache FAQ at http://www.apache.org/docs/misc/FAQ.html
ApacheWeek at http://www.apacheweek.com

Some useful information is also available from the comp.infosystems.www.servers.unix newsgroup.
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Mac OS X Server 1.x: Resetting Apple File Services Administrator Password

This article tells how to reset the System Administrator's (AFP) password.
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You can reset the password at the server by logging in from the Console as Administrator, and selecting Apple Menu -> User Preferences->Password.
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Mac OS X Server 1.x: Peer or Gateway in NetBoot Server

This article describes the difference between Peer or Gateway in NetBoot Setup Assistant.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

This information is covered in the "Setting Up Your NetBoot Server" section of the Mac OS X Server Install Manual. Choosing between Peer or Gateway depends on the configuration of your network. For example, a network administrator might want to connect both the Mac OS X Server and the NetBoot clients directly to a router on a single subnet. In this configuration, the administrator would choose Peer in the NetBoot Server Setup Assistant because the Server is Peer of the NetBoot clients.
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Mac OS X Server 1.x: Using Another BootP Server On NetBoot Network

Since the Mac OS X Server's NetBoot services use vendor specific enhancements to BootP in order to boot Mac OS clients, what happens to the clients if another BootP server is on the same network?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

NetBoot Server dynamically adds NetBoot capable computers to the NetInfo database based upon the vendor specific formatting in their BootP packets. NetBoot clients will take whatever BOOTREPLY it receives first. Therefore, other bootp and DHCP servers must not reply to the NetBoot client, in order for NetBooting to work successfully. If BootP services are desired for non-NetBoot capable machines for purposes other than NetBooting this can be facilitated by adding the client machines hardware Ethernet address to NetInfo via the NetInfoManager on Mac OS X Server.
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Mac OS X Server 1.x: Using As An AppleTalk Seed Router

This article tells why you would want to allow my Mac OS X Server to be an AppleTalk seed router.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

If you use more than one port on your NetBoot server, you need to be sure AppleTalk is in routing mode. There must be a seed router for every port that's connected to a subnet. The seed router can be the NetBoot server or an AppleTalk router.

If the NetBoot server is the seed router for a subnet, you must enter valid AppleTalk network numbers when you use the NetBoot Server Setup Assistant. It is important that you enter the correct numbers because the NetBoot Server Setup Assistant cannot check to see if the numbers are valid. If you enter the wrong values, AppleTalk won't startup.

If AppleTalk doesn't start up (You can check by using the ProcessViewer.), you can set up the NetBoot server so that only one port is used. Once you obtain the correct network numbers, you can set up other ports.
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Mac OS X Server 1.x: Macintosh Manager 1.0 Client Requirements

Will Macintosh Manager1.0 client software be available for pre-iMac computers? If so, what are the requirements for the clients?
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Yes. The administration workstation requirements are as follows:

- Mac OS version 8.5 or later
- AppleShare Client 3.8.2 or later
- 800 x 600 resolution display or better
- 16 MB physical RAM (not virtual memory)
- 2 MB hard disk space (Additional space required on server for databases and preferences possibly up to 4 MB)
- Ethernet network

The client workstation requirements are as follows:

- Mac OS computer 68040 processor or later
- Mac OS version 8.1 or later
- 8 MB RAM (physically installed, not virtual memory)
- 2 MB hard disk space
- Appearance control panel 1.0.1 or later
- Ethernet networking set up

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Mac OS X Server 1.x: NetBoot Product Description

NetBoot Server is a collection of Mac OS X Server processes that allow for computers with ROM in RAM such as the iMac and Power Macintosh G3 Blue & White to boot from a remote volume.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The following are features of NetBoot:

- Single point of administration-You can use NetBoot software to manage all computers connected to the NetBoot server.
- Personal desktop-Users can log in to any computer connected to a NetBoot server and have the same Macintosh user experience.
- User authentication-Authentication provides a way to control who can log in to the computers connected to your server.
- Access control-You can decide which network resources (such as printers and applications) and which features of the Mac OS your users can access. Access control helps you to maintain desktop and network security.

A NetBoot network needs three types of software to make it work properly: administration applications, server programs, and the client operating system. Administration applications are needed to set up and manage your NetBoot server. Some of these administrative applications run on the server, and others are used from a network-connected client. Server programs run on the server under the Mac OS X Server operating system. Some of these programs don't have a user interface. Although server programs are not necessarily visible from a graphical perspective, it is necessary to know what they are and how they work to understand how your NetBoot environment operates. (You can use Process Viewer to check the status of a server program). The Mac OS used by client computers is downloaded from the server when a client computer starts up. The client Mac OS stored as a single image on the server. Every client computer uses the same Mac OS image. Management of this image can be used to administer all NetBoot clients.
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Macintosh IIfx: Xerox 7650 Scanner Termination (11/94)

I have a Macintosh IIfx with HD80 SC and 4MB RAM (Quantum) running System software 6.0.5.

The Macintosh alone is functioning perfectly, but as soon I put on a Rank Xerox scanner 7650 and terminate with the black terminator, I am not able to start my system. The same scanner connected to a Macintosh IIcx, terminated with the old terminator, is functioning perfectly.

Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
From your description, it sounds as if either the SCSI cables and terminators or the SCSI port on that Macintosh IIfx are bad -- or, much more likely, that there is an incompatibility between the Macintosh IIfx and Xerox 7650 scanner.

We contacted Xerox and found that this version of the scanner (having Macintosh and PC support) is distributed only by their VARs, and that Xerox will only support their VARs on this product. Because we were unable to get any assistance for you, we recommend the user contact the company that sold the scanner to see if there are new drivers or workarounds, and if not to escalate the problem through that organization and eventually to Xerox.

You also might try connecting another SCSI device or two on the same chain -- try in the middle or at the end.

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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Mac OS X Server 1.x: NetBoot Theory of Operation

When NetBoot software is installed on a server, images of the Mac OS and the Applications folder are copied onto its hard disk. The Mac OS image contains the Mac OS system software that each of your NetBoot clients needs to start up. The Applications image contains application software for your users. These appear as two separate hard disks on the desktop after the computer has started up.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Establishing a Network Connection

When a user turns on a NetBoot client computer, the computer broadcasts a message to find the startup server program. The startup server program responds by sending information (such as an IP address) the client computer needs to establish a connection to the NetBoot server. This information is entered using the Setup Assistant, which asks for a range of IP addresses that can be used by NetBoot computers. The NetBoot server keeps track of the client's hardware Ethernet address, and associates it with the IP address and other information in a table. Each time the client starts up from a NetBoot server, this table is referenced to ensure the client receives the same IP address and other information at system startup time. Addresses in the NetBoot range are therefore not recycled when a computer shuts down. They are stored in the table for use when the computer starts back up. Be sure to include extra addresses in the range you specify for additional clients on your network, as addresses are reserved for each client by the association between the Ethernet adapter address and the assigned IP address. Once a connection is established between a client computer and the server, portions of the Mac OS ROM image are copied from the server to the client computer's memory. This is done using the Trivial File Transfer Protocol (TFTP).

Note: The Mac OS ROM file must be present for NetBoot clients to start up successfully. When you use the installer, the Mac OS ROM file is installed on your disk. Be sure not to move or delete it. If you should add newer computers to your network over time, this file may need to be updated with a new ROM file to be compatible with your new computers.

Next, the Mac OS ROM image that was copied to the client computer's memory connects to the image of the Mac OS and opens the System file. You see an icon on the screen indicating that the Mac OS is starting up. This is accomplished by a minimal Apple File Protocol (AFP) client (AppleShare-type) contained in the Mac OS ROM and stipulates that there must be an AFP server running on the Mac OS X Server used as the NetBoot server.

NetBoot Process

- NetBoot client is turned on, Open Firmware (OF) net-boot begins transmitting BOOTP requests
- BOOTP server (bootpd on Mac OS X Server) receives request and looks for a host entry with the client's hardware Ethernet address
- If no entry exists, the server creates a new client identity:
    - Finds an available IP address on the client's subnet
    - Assigns the client a unique number i, range 1..n
    - Creates an AFP login account
    - Creates a new host entry
- Once an identity is established, the server: Creates an empty copy-on-write disk image file shadow of the system disk image created the first time and when size of shadowed file changes
- Places startup parameters into a BOOTP reply, sends it to client
- Open Firmware client receives BOOTP reply:
    - Stores the reply in the Open Firmware tree
    - Configures itself using the IP parameters in the reply
    - Downloads the startup file, Mac OS ROM, using TFTP
    - Passes control to Mac OS
- Mac OS retrieves BOOTP reply from Open Firmware tree
- The "network block driver" initializes itself using information in the reply:
    - Configures its IP stack
    - Logs into the AFP server using the AFP login identity
    - Connects to the system disk image copy-on-write and the applications disk image read-only
- The remainder of Mac OS starts up as usual
- Open Transport stack configures itself using BOOTP

NetBoot Disk Image Files

- NetBoot Server provides the client with three disk image files by default:
    - System read-only system disk image
    - Applications read-only applications disk image
    - System_s read/write system disk shadow of System

System and Applications disk images are shared by all NetBoot clients. Each client gets its own shadow system disk image-an empty image file the same size as System-created by the BOOTP server when the client starts up. Files written to the System image are written to the shadow file and are therefore not maintained when a client is restarted.

These images are stored on the Mac OS Extended format (HFS Plus) partition of the NetBoot server. If there is more than one HFS Plus partition on the server, the shadow images created for NetBoot users are automatically distributed between all HFS Plus volumes with available space.

Each NetBoot client's shadow image takes up the full system disk image space for a short time. Prior to starting up the shadow image size decreases in size and increases as needed.

There are two ways to start up a computer from a NetBoot server:

- Open the Startup Disk control panel and click NetBoot HD.
- Press and hold the "N" key as you start up the computer.

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Mac OS X Server 1.x: Macintosh Management Overview

Macintosh Management software provides the means for easy administration of Macintosh computers in a variety of environments, while offering users the privacy of their own personal workspace.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The software provides desktop security by controlling which network and system resources users can access. Administrators can protect the System Folder and Applications folder.

Options can be set to promote password security, startup security, and that prevent users from reconfiguring the system or using unauthorized applications.

User accounts and workgroups can be managed from any computer connected to the server. Once the network is set up, there is very little daily management.

In school environments, teachers can distribute and collect assignments through the network. A teacher can also make available network resources, applications, and CDs that promote teaching objectives for his or her class.

To simplify maintenance, Macintosh Management stores the settings defined by the system administrator in one location accessible by all the computers on the network.

Macintosh Management requires an Apple File Protocol (AFP) server that is also running Macintosh Management server software for the storage of its databases. All the computers using Macintosh Management software must be connected to a network.

The maintenance of the data is handled by an administration application called Macintosh Manager. The application can reside on any Macintosh computer on the network including the NetBoot server. The Macintosh Management software can also control the administration workstation, but this is not a requirement.

The workstations require software that enforces the controls set forth by the administration program. This software is known as the client software.

At a minimum, a working configuration contains one AFP server, one Client/Admin workstation on an Ethernet network.
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Mac OS X Server 1.x: NetBoot System Requirements

This article outlines the system requirements for NetBoot server and client.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Server

- Mac OS X Server
- 100BaseT Ethernet network (requires Category 5 cable)
- 750 MB hard disk (HFS), plus additional disk space per client, depending on usage - additional HFS drive space depending on usage.

Client

- iMac or Power Macintosh G3 Blue & White or later CPU
- 32 MB RAM or more
- Ethernet Network (10BaseT switched, or 100BaseT)

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Mac OS X Server 1.x: Macintosh Manager System Requirements

This article outlines the system requirements for Macintosh Manager's server, administration workstation, and client.
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Server

You can install Macintosh Manager software on a server that has Mac OS X Server installed.

- Mac OS X Server
- 1 MB RAM in addition to Mac OS X Server requirements
- 500 KB disk space (on HFS volume)
- Ethernet network

Administration Workstation

- Mac OS version 8.5 or later
- AppleShare Client 3.8.2 or later
- 800 x 600 resolution display or better
- 16 MB physical RAM (not virtual memory)
- 2 MB hard disk space (Possibly up to 4 MB additional space required on server for databases and preferences)
- Ethernet network

Client Computer

- Mac OS computer with a 68040 processor or better
- Mac OS version 8.1 or later
- 8 MB physical RAM (not virtual memory)
- 2 MB hard disk space
- Appearance extension 1.0.1 or later
- Ethernet network

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Mac OS X Server 1.x: Macintosh Manager Versus At Ease 5.0

In Macintosh Manager for Mac OS X Server, some features of At Ease 5.0 have been removed, while others have changed. This article describes the most relevant of these changes.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Removed

1. Workstation Access List - In At Ease 5.0, each workstation had to be added to an "authorized" workstations list in order to use the server. If the workstation was not in the list, then it would not be able to run. This has been removed to eliminate the need to add workstations.
2. Web Access
3. Guardian Passwords - Guardians have been removed from Macintosh Manager. This was a concept that was mostly useful with the web access feature of At Ease 5.0.
4. Clues - In previous versions of At Ease, the administrator was provided a text string to be used as a clue to their passwords. With security becoming an increasing concern, this has been removed.
5. Attach Sounds - In all prior versions of At Ease, the administrator could attach sounds to the items that appeared on the brown panel in the Panels environment. These sounds would play when the mouse was passed over the button for an item with an attached sound. The new panels environment of Macintosh Manager does not support this feature.
6. Prevent users from accessing the hard drive by booting from a floppy or other removable media.

Changed

1. Finder Environment - The unrestricted Finder environment used to be a way of "turning off" At Ease. Macintosh Manager still supports this environment, but the user is actually logged into At Ease, which means user preferences and limited security will be permitted in this environment. This includes access to the user's documents folder, themes, volumes available at login, desktop printers, and application preferences. The system access environment is similar to the Finder environment in At Ease 5.0.
2. Special Folders - Special folders are a way of customizing certain folders on workstations to have a specific set of privileges. For example, on Machine A, which might be the "teacher station" in normal use, you might want one folder that exists here to contain items that only a certain workgroup could access (like, maybe, the Teacher workgroup). The special folders feature has been pared down to include one folder per workgroup.
3. Panels - The Panels environment has been updated and rewritten primarily to be more consistent with new visual aspects of the Mac OS.

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Mac OS X Server 1.x: NetBoot Installation and Setup

This article provides an overview of the installing and setting up NetBoot Server on Mac OS X Server.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Planning Your Setup

Decide which HFS Plus volumes the NetBoot server should use:

- Determine network port configuration.
- Gather network information.
- Decide how server's Ethernet ports will be used.
- Determine configuration for each port.
- Choose an AppleTalk machine name.

Mac OS Extended (HFS Plus) Volumes Configuration Tips

- You must select at least one HFS Plus volume.
- The NetBoot Server software can load balance hard disk usage across several physical disks. Selecting multiple logical volumes that all reside on the same physical disk does not improve performance. If you have several physical disks, select one volume from each disk to improve performance.

1. Gather Network Information
    - Identify all existing IP routers in your network. For each router you need to collect the following information:
        - IP address
        - Routing table
    - Identify all existing AppleTalk routers in your network. For each AppleTalk router, collect the following information:
        - Network number range(s)
        - AppleTalk zone names
2. Draw a diagram of the network topology.
3. Determine where the NetBoot Server is to be connected to the network.
4. Decide How Server's Ethernet Ports Will Be Used
    - One port is used to connect to the existing network, we'll call it the Internet Port. The Internet Port is optional, but without it, the NetBoot clients will have no conduit to the Internet. Usually Ethernet port 0 (built-in). Usually 10BaseT is sufficient.
    - One or more of the remaining ports are used to connect the NetBoot clients. We'll call these the Client Ports. Usually Ethernet port 1 and up. 100BaseT is required.
5. Determine if server will also function as a Macintosh Manager Server.

Setup Assistant

The following items appear at the root level of the CD-ROM install disc:

Figure 1, Root level of the CD-ROM install CD

The NetBoot Server Setup Assistant prompts the user to gather information needed to complete the setup process:

Figure 2, NetBoot Server Setup Assistant Introduction

The following prompt asks whether or not Macintosh Management features are desired. Running the Setup Assistant also represents the simplest way to remove Macintosh Manager functionality:

Figure 3, Macintosh Management Server prompt

On servers with multiple Ethernet ports (such as our Mac Server G3) more listings will appear. One of them must be selected for use with

NetBoot.

Figure 4, Ethernet Port Planning

The following dialog configures the NetBoot Server device to function as a gateway if necessary:

Figure 5, IP Routing for NetBoot Clients options

The following configures both Bootptab and NetInfo providing the range of IP addresses that from which NetBoot clients can start up:

Figure 6, IP address range configuration

Files Installed

Mac OS Volume (HFS) Pieces

Mac OS ROM - This image is copied to the RAM of the NetBoot client.
NetBoot HD.img - This image is mounted on a NetBoot client computer when it starts up. It contains the system software used by the client.
Application image - This image is mounted when a NetBoot client computer starts up. It contains the applications that came with your NetBoot Server Software for use by your NetBoot clients.
Administration folder - This contains Macintosh Manager software and Macintosh Manager Help. You use these applications from a client computer connected to the server when you need to administer your Macintosh Manager configuration (Macintosh Manager auto connects to the server).

UFS (Mac OS X Server) Volume Pieces

- Admin framework
- Network preference panel with BootP support
- Startup server (BootP)
- AppleFileServices program (this program can only share items on HFS and Mac OS Extended Partitions, and is located in /usr/sbin directory)
- Macintosh Manager Server (located in the /usr/sbin directory)
- NetBoot Server Setup Assistant (located in the /System/Library/Assistants directory)
- HDNamer (Accesible via the Apple Menu)

HDNamer - A Mac OS X Server application that allows you to name your HFS volumes.
DiskFirstAid.app - This is a Mac OS X Server application that repairs your HFS volumes. Equivalent to Disk First Aid version 8.1 (from Mac OS 8.1). For additional repair options, run DFA 8.5 in the Mac OS environment or third-party disk repair utilities.
NetBoot Desktop Admin - The Applications and Macintosh HD volumes that you see when you log in to a NetBoot client computer are read-only volumes. You must use the NetBoot Desktop Admin software to make any changes to these volumes, such as installing applications for your users or changing the system configuration.
NetBoot Drive Unmounter - The "NetBoot Drive Unmounter" extension removes the internal hard disk from the desktop on a Macintosh booted from a NetBoot server during the startup process. This would be useful if the administrator of a Netboot server decided that access to the internal hard drives for a group of Macintosh computers should be prohibited. This may be desired to force users to store all data on the server, or to keep users from copying applications or files onto the internal drives of NetBooted computers. With this extension installed, the internal hard disk does not appear on the desktop, nor is it available in Open/Save dialog boxes.
Apple Secure Compression - Application which compresses and encrypts Mac OS files. Runs under Mac OS.
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Mac OS X Server 1.x: Macintosh Manager Installation and Setup

This article describes the installation and setup of the Macintosh Manager on Mac OS X Server.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Macintosh Management Server

Macintosh Manager software works in conjunction with AppleFileServer (AFP) server software. The AppleFileServer is a server process that Macintosh Manager uses to communicate between the client computer and the Macintosh Manager databases.

Macintosh Management server provides the following services:

- Authenticates the administration user to the administration application.
- Returns login information to the workstation in order to allow the workstation to login to the server.
- Tracks the current login status of each client workstation.
- Provides some maintenance and setup functions of the AFP server.
- Provides AFP status information.
- Mirroring of the Macintosh Management and AFP databases.

Installing the Macintosh Management Server Software

The Macintosh Management server software is preinstalled on the Macintosh Server G3 computers shipping with Mac OS X Server preinstalled.

If you purchased Mac OS X Server software as a standalone package without hardware, you need to install NetBoot server software. NetBoot server software is on a separate CD that comes as part of the software package. You must install NetBoot server software on a computer that already has the Mac OS X Server software installed and set up. The Macintosh Management software is installed as part of the NetBoot server installation.

For complete instructions on installing the NetBoot Server software, see:

60085 "**Mac OS X Server : NetBoot Installation and Setup.**"

The NetBoot Server Setup Assistant guides you through the steps necessary to set up the software. To learn more about each step, click the Tell Me More button in the window. If you need to change any setup information in the future, you can use the NetBoot Server Setup Assistant to make changes. In Setup Assistant, you must select the option...

Figure 1, NetBoot Server Setup Assistant

Server Automatic Setup

All setup and configuration of the Macintosh Management server for clients access is done automatically. A sharepoint on the HFS+ partition is created on the server called "Macintosh Manager". This folder will hold the documents folder and the Macintosh Managers Items folder. An AFP User named "Macintosh Manager User" is created in the NetInfo database and a password generated. The user permissions are set to read and write to the sharepoint.

Figure 2, Macintosh Manager server contents

Tip: If the Macintosh Manager User is mistakenly deleted from the NetInfo database it will be regenerated when the server is restarted.

Tip: The Macintosh Manager User Password is dynamically reset every time the server process is started. Only the Macintosh Manager software knows it.

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Mac OS X Server 1.x: Macintosh Manager Client Installation and Setup

This article provides an overview on the installation and setup of Macintosh Manager client software.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Workstation Setup

The workstation is pretty much self-configuring, since the administration program handles all the settings for the workstations and users. The only thing that you may need to do is to locate the Macintosh Management server.

If you are on an AppleTalk network, the workstation attempts to locate and connect to the first Macintosh Management server it finds in the local AppleTalk zone. If it finds one, the login dialog appears.

If the server it found was correct, you can log in with a user name (and optional) password, assuming that this information was previously specified in the admininstration application.

If the server it found wasn't correct, you can use the Server popup menu to select either another server in the same AppleTalk zone, or use the Other menu to bring up a dialog box that asks you to locate the server, either by AppleTalk or by IP.

Once the server has been located, the login dialog box reflects the new server's information.

The user can change the server location only as long as the computer has never been successfully logged into a Macintosh Management server.

Holding down the Shift key at startup does not bypass Macintosh Management, though you may be able to go to the Finder if no administration passwords are known, or if you enter a global administration password when asked. This is true for NetBoot clients as well.

In all environments, the File menu contains a Quit menu command to allow the user to logout (back to the login dialog).

User Environments

Before users can have access to the computer they must be authenticated by the system. This is done through the Login screen.

Figure 1, Macintosh Manager Login screen

Panels

The Panels environment provides a simple and easy to use interface, with large one-click icons that make it easy for the younger child. Buttons are now icons, similar to what you might find in a browser window (you click them once to "open" them). Because the panels environment does not show (or normally give) access to the client's hard disk, this environment can also be used to limit access by individuals to only those programs and files that they should have access to.

Figure 2, Panels environment

Restricted Finder

The Restricted Finder environment is a secured Finder environment that gives users access to the Finder, but imposes many default restrictions on the user. This environment is used to help protect workstations, while still giving the user access to the standard Macintosh desktop. In general, users are restricted to not being able to write to any location on the local volume except for their own documents folder.

Figure 3, Restricted Finder environment

Finder

The Finder environment imposes little or no restrictions on the users. Its primary purpose is to give users the virtual desktop experience. You can, however, protect the System Folder and Applications folder.

System Access

While not a true environment (that is, it can't be selected as an environment by the administrator but instead is given automatically to every global administrator), logging into this environment is equivalent to "turning off" Macintosh Manager. That is, when a user logs into a System Access environment, it is very similar to starting up the client workstation with Macintosh Manager off, gaining immediate access to the Finder.

The System Access environment is automatically granted to all global administrators, and can be optionally given to any other user as well.

Installing Workstation Software

For a workstation to be controlled by Macintosh Management software, the client software must be installed. The workstation software is preinstalled in the Mac OS image for Mac OS X server NetBoot clients.

To install software on a local-startup computer, follow these steps:

1. Start up the computer you want to install the software on.
2. Use the Chooser to mount the NetBoot server volume. When you log in to the server, use any user name and password that has read access to the NetBoot server volume. For example, you can use the name "Administrator" and the password you set up for the Administrator of the Mac OS X Server.
3. Locate the Macintosh Manager Installer folder and open it.
4. Double-click the Installer icon.
5. Follow the onscreen instructions to install the appropriate software.

Once the software is installed, the computer restarts automatically.

The components of the client software are:

- MM Client Panels
- MM Client Finder Plugin,
- MM Client Login
- MM Client Startup.

Workstation Startup

When a client netboots it immediately looks for a Macintosh Management server in the local AppleTalk zone. If it is successful it brings up a login dialog box.

If you have not configured any users or administrators at this point you can log in as Administrator using the password you set up for the Administrator (root) account on the Mac OS X Server. You can also log in to the Macintosh Management server as any Apple File Services user with the appropriate privileges.

Keeping in mind this is the first time the system has been used, the initial login gives the user full system access.
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Mac OS X Server 1.x: Macintosh Manager Theory Of Operation

The Macintosh Manager is designed to set up and configure the Macintosh Management Server and its databases. The Macintosh Manager is used to create user accounts and workgroups, and to set up global, workstation, and server options. The options you set depend on the purpose of your network, the experience level of your users, and the security needs of your organization.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

How It Operates
When the Macintosh Manager application starts up, it checks to see if it has administered a Macintosh Manager server previously. If it finds that it has, through the Macintosh Manager Prefs, it attempts to automatically connect to that server, either using AppleTalk or IP.

However, if this is the first time (that is, no Macintosh Manager Prefs file was found), it first tries to use AppleTalk to locate any registered Macintosh Management server in the local AppleTalk zone. For a server to be registered, it must be running the Macintosh Management Server software.

If the Macintosh Manager cannot find a Macintosh Management server automatically, a dialog box appears asking the administrator to locate the server. The server can be specified as either an AppleTalk entity, or if you change the Find: popup menu, you can specify an IP setting; either an IP number, or a registered domain name address.

Once the Macintosh Management server has been located, the authentication dialog box is displayed. There are two primary ways of authenticating to the Macintosh Management server:

1. By entering the Macintosh Management server as root or Administrator (an alias of root) and password, or
2. By entering a valid Macintosh Manager global or workgroup administrator name and password.

If this is a first time case, only option (1) works, since there are no Macintosh Manager users assigned.

After proper authentication, the Macintosh Manager checks to see if the AFP server is running. If it isn't, the program goes directly to the Server pane, allowing the user to activate the AFP server, which is a requirement for adding users and workgroups. If the AFP server is already running, the application instead goes directly to the Users main panel.

A properly set up Macintosh Management system contains users, workgroups, and membership assignments (for example, attaching users to one or more workgroups). Various settings determine the privileges that a user gets.

Locating the software
The Macintosh Manager software can be found in one of two places. You can copy it to your administration workstation following the steps below or you can install it from the Macintosh Manger Install disk image. It is not preinstalled on the Mac OS or Application images mounted by NetBooted machines.

Follow these steps to locate the software and copy it to the administration workstation:

1. Connect to the Server as administrator and enter the server's root password.
2. Locate the Admin folder.
3. Copy the folder to your local hard disk or desktop.
4. Unmount the server volume by dragging it to the Trash.
5. Double-click the Macintosh Manager. If there is one Macintosh Management Server in the same zone, the login window opens.

Type the same user name, administrator, and enter the administrator password.

User names are case sensitive, but since "administrator" and "Administrator" are aliases of the user "root" both names work.

If a Macintosh Management server cannot be located, a dialog box appears asking you to find the server. You can find the server through AppleTalk or IP.

Configure User Environment
You need to configure at least one user and workgroup before workstations running the client software can access the Macintosh Management server.

Additional Information Sources

- Apple Discussions for Mac OS X Server and ASIP: **http://www.apple.com/te**
- John DeTroye's Tips and Tricks: **http://homepage.mac.com/johnd/**
- The Macintosh Manager mailing list:**http://lists.apple.com/lists.taf?function=showlistsdetail&Layout_0_uid1=97**

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Macintosh Portable: Details About the Idle and Sleep States 9/95

How much of the Macintosh Portable gets turned off at Shutdown, and how much gets shut down when you sleep? I am particularly interested in RAM disks.

This article has been archived and is no longer updated by Apple.
The Macintosh Portable has two power saving states: Idle (or Rest) and Sleep. Shutdown uses the same amount of energy as Sleep except when going into or coming out of a Shutdown state, when it requires more energy than Sleep for closing and saving files, and for bringing up the system and reloading the operating system when restarting. But while it is IN the Shutdown or Sleep state, the Portable will draw the same amount of electricity.

The Portable is considered idle after 15 seconds without any activity of any kind. The Portable is not considered to be idle if any of the following occurs:

- Any ADB routine other than routine monitoring of the bus
- Any I/O call to firmware (Read, Write, Control, Format, Status)
- Any change in the cursor (for example, the rotation of a hand in the clock icon)
- Any post-event call (for example, a call resulting from insertion of a disk)
- Any communication through the serial port

When the BatteryMonitor routine determines that the Portable is idle, it causes the CPU to insert 64 wait states into RAM and ROM accesses; this lowers the effective clock rate to approximately 1MHz. Interrupts continue to be processed at the full speed of the CPU.

After the Portable has been idle for the amount of time selected by the user, the BatteryMonitor routine puts the machine into the sleep state. When the Macintosh Portable goes into the sleep state, the Portable maintains full power to system RAM, video RAM, and the Power Manager IC.

The Power Manager IC stops the clocks to the SCC, the SWIM, and the ASC. By stopping the clocks to these devices, their power consumption is reduced to almost zero without requiring that they be reset, as would be necessary if all power were switched off. The Power Manager IC switches off power to the serial drivers, ROM, the flat-panel display, the ASC, the Sony sound ICs, the SCSI, and to a variety of pullup resistors and other components. The Power Manager IC sends a signal to the internal modem (if one is installed) that causes the modem to shut itself down.

After putting the rest of the system in the sleep state, the Power Manager IC does no processing except to monitor the 60HZ interrupt signal. Each time the 60HZ interrupt occurs, the Power Manager IC performs the following functions:

- It updates the real-time clock.
- It checks the wake-up timer to see if it matches the real-time clock.
- It checks the events that should return the machine to the operating state, such as a keystroke or a Ring Detect signal from the modem (when the modem feature has been enabled by the user).

The periodic functions take approximately 200 microseconds out of the 16.7 milliseconds between interrupts, so the Power Manager IC is inactive most of the time that the Portable is in the sleep state.

When the Power Manager IC determines that the wake-up timer matches the real-time clock or detects an event, it asserts the /RESET signal to the CPU, restores the clocks and power to other devices in the system, and then raises (deasserts) the /RESET signal.

Article Change History:
08 Sep 1995 - Reviewed for technical accuracy, corrected minor typo.

Support Information Services

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Mac OS X Server 1.x: Setup Assistant Blocks Upper Case Characters In User Names

When trying to enter the name of a user in Mac OS X Server Setup Assistant, some letters may not appear in the dialog box as you type them. This article explains why.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

This is a result of the merging of two different operating environments. Mac OS X Server is based on Mach/BSD whose UFS (Unix filing system) is completely case-sensitive, while case sensitivity in Mach/BSD applications varies. Mac OS 8 file systems, including Macintosh Standard (HFS) and Macintosh Extended (HFS+) formats, are insensitive to case. That is, a UFS file system allows items named "Bob" and "bob" to exist at the same level, and sees them as separate items. Mac OS Standard- and Mac OS Extended-formatted volumes see "Bob" and "bob" as identical names.

In Mac OS X Server, if user "Bob" exists, and an attempt to create user "bob" is made, "bob" will replace "Bob". Because Mac OS X Setup Assistant also creates home directories for users it creates, it was determined that to force user names and home directories to lower case would help avoid interoperability problems with applications such as mail.
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Mac OS X Server 1.x: DHCP Not In Initial Release

Mac OS X Server does not include DHCP in its initial release.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

DHCP has grown in popularity in recent years, and is now used widely.

Mac OS X Server does not implement DHCP in the initial relase of the product, but does fully implement bootp, of which DHCP is a superset. Bootp supports boot-time assignment of TCP/IP address, gateway router, subnet mask, and hostname over ethernet. Nameservers must be provided in /etc/hosts or configured manually. This dynamic assignment can be promiscuous, or restricted to particular MAC addresses ("Media Access Control", Ethernet hardware addresses).

Bootp is typically not routed, so as a rule, clients requiring bootp services must be on the same segment a bootp server.
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Mac OS X Server 1.x: Why and Why Not Allow Remote Login

Mac OS X Setup Assistant network configuration includes a "Remote Login" panel that configures the system to "allow network access", but it has no "Tell Me More" button to explain why you might or might not wish to do this.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Remote Login in the Mach/BSD context means an ability to open a command line session from another computer on the network, using Telnet or other communications software. There are pros and cons to permitting this, or to disallowing it.

Security and administrative capability are the contesting issues here. Security is obviously stronger if the system doesn't even support remote command line connections, even though password access still applies. Environments where it might be considered particularly risky to allow remote logins would include systems connected directly to the Internet without a firewall; systems with critical financial, commercial, military or other confidential data; systems located in university or non-elementary school environments, or even in highly competitive business environments.

An available telnet connection, along with a non-root user account that is a member of group "wheel", enable detailed system administration and monitoring to be done remotely. This can be a huge asset, especially in the relatively rare event that the system's GUI interface ("Workspace Manager") should freeze, or keyboard and mouse become unresponsive. In such situations, the server may well be running and behaving in a normal manner as far as most users would be concerned, but without the remote login and with no console access, it can be pretty awkward shutting down the system or restarting it. Also, a telnet session can eliminate much of the need for console access; this is very handy if the computer is located in a remote or difficult location.

To allow remote logins doesn't inherently invite disaster. There are two layers of protection inherently involved: the normal username-password security, and the fact that on Mac OS X, the root (administrative) account doesn't directly allow remote logins; one must first telnet in with a less-privileged user account, and, if that user account is made a member of group "wheel", that connection will be allowed to "su" to the root account once connected. One must have the root password to do this, of course.

Almost any operation not involving graphics can be performed with a telnet command-line connection; in particular, text-based programs and utilities can be run; data drives can be dismounted and checked; files can be edited, copied, deleted, duplicated, or printed; best of all, though, the system can be shut down or restarted in a proper, orderly manner.

Thus, it is an important decision for the administrator to decide whether to forgo these capabilities in the interests of security, or not.

For further information, read the man pages on su and telnet.
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Mac OS X Server 1.x: Why and When fsck Should Be "Forced" To Run

Occasionally a Unix-style operating system may find itself shut down in such a manner that it is unable to write cached date or directory information back to disk. Under rare circumstances, one or more of the system's volumes may not have been properly flagged as "dirty." Because Unix-style operating systems fail to see that such a file system needs repair, autorecovery fsck fails to run before mounting the drive. Sometimes the damage may be such that the volume fails to mount, which brings the matter to the administrator's attention. However, if the volume mounts successfully and the system is put back in service without precautionary maintenance, continued writing may cause additional damage.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Fortunately, these occurrences are quite rare, but the savvy user is well advised to learn in what circumstances such a situation is prone to occur, and intervene appropriately as a precaution. In the case of servers, it is always best to assume that any disorderly shutdown can lead to such a situation.

Review of a great many support calls reveals that most of these situations stem from storm or other power outages, brown-outs, power supply failures, kicked power cords, shutdowns or restarts forced by an operator from front-panel buttons or keyboard, or unresponsiveness caused by hardware failure. All of these are very sudden events. A brownout or a spike caused by a nearby lightning strike seems often to be the cause of the more severe situations.

If performed promptly, recovery of these unflagged dirty file systems can be routinely successful, but because the dirty flag isn't set, the system itself does not recognize the need for autorecovery. Therefore, the system administrator must know when to do routine manual maintenance for any of the improper shutdown situations described. It is especially important for servers because the data of many users may be at risk.

A typical Unix-style system has one root filesystem that contains the system software, and may have one or more data volumes mounted within this root filesystem.

If a system is believed to have suffered a traumatic shutdown, the first step in recovery is to startup partially to "single-user" mode, which gives a command line shell interface that can perform a file system check "fsck" on the system file system before it is mounted. For more information on this process, see the following article:

Article: 24501 "**Mac OS X Server: Why, When, and How to Run fsck for File System Maintenance.**"

Here are a few **very** important notes about using fsck in these situations:

1) If the default Unix-based partition is completely full, or almost completely full, it may be necessary to delete a few files before there will be enough scratch space on the disk for fsck to write recovered or temporary data.

2) If the filesystem isn't flagged "dirty," the usual fsck command believes the filesystem to be clean, and drops back to the command line without doing maintenance. To circumvent this and force the fsck utility to run, add the "-f" flag to the fsck command:

```
fsck -y -f
```

The root (boot) file system is assumed.

3) Any time that fsck makes any changes whatsoever to the drive, the final line before the prompt returns states: "***** FILE SYSTEM WAS MODIFIED *****." If your file system check ends with such a message, it is important that the check be run again until this message no longer appears. This is because repairs that allow the system access to parts of the file system that were unintelligible before may unearth previously undetected damage.

4) If repairs cannot be made, or if an error is presented regarding difficulties reading the file system's superblocks (the master table of pointers to directory elements which begins at block 8 of the volume), fsck can be directed to use one of the alternate copies of the superblocks. The first of these is block 16, on most Unix-style systems. Thus, to recover using a superblock mirror, the command becomes:

```
fsck -y -f -b16
```

Note that because the original default superblocks at block 8 is re-written from the mirrored data at block 16, the message "***** FILE SYSTEM WAS MODIFIED *****" occurs. Therefore, it is necessary to run fsck again, but without the redirection to a superblock mirror. Only the first pass of fsck should be used with the -b flag, because once this is done, the default location has the same information as the mirror.

5) In the very, very unusual event that the superblocks at location 16 are also illegible, one may suspect that extensive damage has occurred, but the file system may still be salvageable if other superblock mirror locations are readable. To learn where other superblocks are located, use the "disk" command:

```
disk /dev/rhd0a
disk> scan
```

Disk scans the partition for superblock mirror locations, listing each as it is found.

To exit the disk utility, type "q" or "quit." For a summary of disk commands, type "?". For more information about the disk utility, which can initialize, partition, and query a disk in many ways, type the following command at the prompt:

```
man disk
```

6) Whether the -b flag is used or not, if fsck is run three to five times and repairs are still being made, or especially if the same repairs are made over and over, one may conclude that either the data is truly damaged, or that there is a hardware fault. This may include worn media, damaged media, a frayed, cracked, or loose data cable, or a bad controller. If it is severe,

7) Have room on disk (df)

8) lost+found?

9) When fsck runs, it echoes to screen each problem it discovers, asking if you want it fixed, repaired, or salvaged, and automatically answering "y" if you entered the -y flag on the command. Errors such as

```
cannot stat /dev/rhd0a
```

or

```
cannot determine file system type of /dev/rsd0a
```

could mean that you have entered the command incorrectly (targeted a drive that doesn't exist, isn't powered up, or isn't a UFS or Mac OS Extended (HFS+) file system type. These errors may also mean exactly what they say: the disk may be damaged, or for other reasons may not be communicating properly. Cables, connectors, and SCSI termination (if applicable) should be reviewed carefully, especially if recent changes have been made to storage subsystems.

10) It is important to bear in mind that an improperly terminated SCSI system can behave properly for a while, only to become suddenly stubborn. Make no assumptions here unless you enjoy reformatting and reconfiguring systems. With internal SCSI devices, it is especially important to verify that termination jumpers are removed from all but the last device, because raw mechanisms are almost always terminated when received.

11) Once fsck runs without error, you may continue your use of the computer with one of the following commands:

`exit`	(the single-user shell)
`reboot`	(restarts and proceeds through a normal startup)
`shutdown`	(powers the computer off)

For additional details about fsck, enter "man fsck" at the command prompt or see article 24501: "**Mac OS X Server: Why, When, and How to Run fsck for File System Maintenance.**"
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Mac OS X Server 1.x: NetBoot Disk Images Have Extra 4 KB of Data

If you run Disk First Aid on the NetBoot disk images, it reports that files are damaged and can't be repaired.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The NetBoot disk images shipping with the Mac OS X Server have an extra 4 KB of data at the end of their data forks. This makes Disk First Aid complain about them. It does not affect the data in any way. Version 1.1 of NetBoot Desktop Admin automatically repairs the images.
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Mac OS X Server 1.x: How AppleFileServer Starts

This article describes how Apple Files Services starts under Mac OS X Server.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The startup process for the AppleFileServer begins with AdminWebServer. AdminWebServer is started at boot by inetd if the server is configured for AppleFileServer. The configuration is checked and AdminWebServer started with the script '/etc/startup/1600_AppleShare' which checks for the configuration in hostconfig as well as NetInfo.

```
cat /etc/startup/1600_AppleShare
    #!/bin/sh

    . /etc/rc.common

    CheckForNetwork

    if [ "${NETWORKUP}" = "-NO-" ]; then exit; fi

    ##
    # Start the AFP Server
    ##
    if [ "${AFPSERVER:=-NO-}" = "-YES-" ]; then
        ConsoleMessage "Starting AppleShare server"

        echo "Starting the AdminWebServer server"
        /usr/sbin/AdminWebServerctl start
    fi
```

If AppleFileServer's NetInfo property is set to start AppleFileServer at startup, the AdminWebServer server starts a single process of AppleFileServer (the "parent process") which does not serve files. That single parent process generates the second process (the "child process") which actually performs the file serving.

```
ps ax |grep AppleF
 632 ?  I     0:00 AppleFileServer /tmp/afpserver_PIPE
 639 ?  S     0:00 AppleFileServer /tmp/afpserver_PIPE

ps al 632
      F  UID   PID  PPID CP PRI BASE VSIZE RSIZE WCHAN STAT TT  TIME COMMAND
      4    0   632     1  0  10   10 6.19M  368K     0  I   ?   0:00
AppleFileServer /tmp/afpserver_PIPE

ps al 639
      F  UID   PID  PPID CP PRI BASE VSIZE RSIZE WCHAN STAT TT  TIME COMMAND
      4    0   639   632  0  10   10 38.6M 2.05M     0  S   ?   0:00
AppleFileServer /tmp/afpserver_PIPE
```

To administer the AppleFileServer, the AdminWebServer server is used again. Connecting to the server on port 311 (http://servername:311) connects to the AdminWebServer server (using a FastCGI). The settings added by AdminWebServer, along with other configuration settings for the AppleFileServer, are stored in the NetInfo database.
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Mac OS X Server 1.x: What‘s The Group "macos"?

This article tells what the group "macos" in Mac OS X Server is.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Users set up through the AdminWebServer for Apple File Services belong only to the default group: "macos". This group is also the default group for files created by AppleFileServer only users.
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Mac OS X Server 1.x: Using the HFS Plus Volume With Apache

This article tells how a directory in the Mac OS Extended Format (HFS Plus) volume can be used by the HTTP Server.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Some administrators may wish to configure their Mac OS X Server for Web creation by Apple File Services only users. Because Apple File Services serves only from the Mac OS Extended format (HFS Plus) volume, the administrator must make directories on this volume available to the HTTP server in one of two ways:

1. The HTTP server may be moved to the HFS Plus volume (configured in SetupAssistant or changed in the Network Preferences). Because HFS Plus does not have some of the inherent security features of UFS, administrators should take precautions with this configuration.
2. Directories on the HFS Plus volume may have links in the HTTP server's directories. Notice that the setting in the /Local/Library/WebServer/Configurations/apache.conf file that allows the HTTP server to follow these links is in the OPTIONS for the specific directory. Use OPTION followsymlinks to enable the HTTP server to access the HFS Plus directories. **Note:** This is also a type of security risk and careful consideration of access and privileges should be taken. (Remember that the HTTP server settings are only read when that server starts. Any changes to the .conf file requires restarting the Apache server.)

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Mac OS X Server 1.x: NetBooted Clients Unresponsive When NetBoot Server Stopped

NetBooted clients that have started up from a server become unresponsive when AppleFileServer is shut down.
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The clients may appear fine until they attempt to access the system or any items from the mounted volume. Making the server available again does not allow clients to smoothly transition from one session to another. They must be restarted if the AFP server is restarted or brought down at any point.

To avoid client computer unresponsiveness, remember to shut down all NetBooted clients before shutting down or restarting the server, or when quitting the the AppleFileServer through Macintosh Manager or Remote Administration.
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Mac OS X Server 1.x: Preventing a Client From Binding to a NetInfo Server

This article tells how to change a computer's configuration so that it does not attempt to bind to a NetInfo server at system startup time.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

A client configured to bind to a NetInfo parent at system startup times out after a period of minutes if a NetInfo sever is not available. Depending on the number of interfaces, this may be longer on some computers. To prevent the client computer from attempting to bind to NetInfo, you can type this command while the computer is started up in single user mode:

```
liutil -destroyprop /etc/netinfo/local.nidb /machines/broadcasthost serves
```

Warning: the lituil command should only be used in single user mode. Otherwise, a NetInfo database that was open for use under multi-user mode could be rendered unusable.

Mac OS X Server version 1.2 does not include the liutil command. It is only available if the server has an earlier version of Mac OS X Server or if it was upgraded to version 1.2 with the upgrade CD.

Entering the lituil command with no parameters shows the proper syntax and parameters that liutil accepts.
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LaserWriter: How to Change Page Types

This article has been archived and is no longer updated by Apple.

The selection of built-in 'page types' has been enlarged to include two European sizes. The height of the letter and legal page sizes has been slightly decreased because of memory constraints in the new software. Finally, the function of the 'note' page type has been generalized.

The LaserWriter includes buit-in device setup procedures for establishing any of seven standard page types:

1. letter

2. legal

3. A4

4. B5

5. lettersmall

'Lettersmall' is an imageable region 7.68 by 10.16 inches centered on an 85. by 11 inch page.

6. A4small

7. note

'Note' selects one of the above page types according to the paper tray that is installed. If the letter or A4 tray is installed, 'note' selects 'lettersmall' or 'A4small' respectively. If the legal or B5 tray is installed, 'note' selects 'legal' or 'B5'.
For the letter or A4 paper sizes, this has the effect of increasing all four margins to approximately 0.42 inch. The reduction in the imageable area frees up as much as 100,000 bytes of memory, which is added to the VM (Virtual Memory) and made available for PostScript programs.

Page 121 of the LaserWriter and LaserWriter Plus manual (copyright 1986, Apple Computer, Inc., manual number: 030-1296-B) describes the letter, legal, A4 and B5 pages sizes.
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Mac OS X Server 1.x: About Mac OS X Server

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This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Introduction

This document provides information about your Mac OS X Server software that supplements the information in the Mac OS X Server Installation Manual. Read this document for information about known problems with this release and possible solutions. Additional information can be found in the following places:

- Read Me documents available in the System/Documentation/ReadMe/ folder
- Read Me documents in the Admin folder in the NetBoot installation volume
- the Help menu

For up-to-date news and compatibility information, see the Apple Support Web site at http://www.apple.com/support.

Note: If you are familiar with UNIX-based systems, you will find using your Mac OS X Server easier. Information in this document and the other Read Me documents included with your server assume you are familiar with this type of operating system.

Backing Up and Restoring Your Mac OS X Server

Your Mac OS X Server system uses a UFS format volume. You may also have Mac OS (Standard or Extended) format volumes on your Mac OS X Server. At present, to back up and restore volumes, you need to follow different procedures depending on the format of the volume.

Backing Up and Restoring Mac OS Format Volumes

To back up and restore Mac OS format volumes, you can use third-party programs such as Retrospect from Dantz Development Corporation. To use such a program, install the software in the Mac OS environment (open the Apple menu and choose Mac OS), then open the program and follow the instructions provided with the software.

Important: Retrospect does not back up permissions information for files and folders. If you restore a volume using Restrospect, you will need to set permissions again.

Backing Up and Restoring Mac OS X Server Format Volumes

For a sample script that backs up the UFS partition, please see article 60145: "**Mac OS X Server: UFS Backup Script**" The article contains a generic script; you may need to customize it for your specific needs.

AppleShare and Apple File Services Issues

AppleShare password security: When a client user logs in to Apple file services, the user's password is sent over the network in clear text form. Someone monitoring your network traffic could get the Administrator password, thus compromising your network's security. For information about updates to correct this situation, see http://www.apple.com/support.

AppleShare client software: To connect to an Apple file services volume from a client computer, you need to install the AppleShare client software, versions 3.8.2, on the client computer. This version is available in the Utilities folder on your Mac OS X Server installation CD.

Connecting to Apple file services using IP: If you want to connect to Apple file services from a client computer using IP, instead of AppleTalk, you need to enter the server's IP address in the Router box in the TCP/IP control panel on each client computer. To do so, open the TCP/IP control panel on the client computer, choose Ethernet from the "Connect via" popup menu and Manually from the Configure popup menu, then enter the server's IP address in the Router address box, as well as the other information required for the connection.

QuickTime Streaming Server Preview Software

This release of Mac OS X Server includes a preview release of the QuickTime Streaming server, which will let you deliver rich digital media over the Internet or intranets to any QuickTime-capable application. For information about updates for QuickTime Streaming, see the QuickTime Web site at www.apple.com/quicktime/.

Note: Telephone support is not available for preview software, such as QuickTime Streaming server.

Obtaining Database Adapters for WebObjects

Your Mac OS X Server includes WebObjects adaptors that let WebObjects applications connect to and retrieve data from OpenBase and flat-file databases. An adaptor for Oracle will be available soon. For information about availability of other adaptors, see the Apple Developer Web site at http://www.apple.com/developer.

Selecting Ethernet Ports

If you purchased a Mac OS Server G3 With Mac OS X Server, it includes a four-port Ethernet card. An illustration in "Connecting to an Ethernet Network," in Chapter 1 of Setting Up Your Macintosh Server G3, shows the four ports of the Ethernet card numbered 1 to 4 from left to right. However, the ports are numbered from right to left. Therefore, in the Setup Assistant or Network settings panel, Ethernet Card Port 1 corresponds to the port on the right while Ethernet Card Port 4 corresponds to the port on the left.

Creating and Changing Users and Groups

You should name users and groups on a Mac OS X Server using only the lowercase alphabetic characters (a-z), the numeric characters (0-9), and the underscore character. This includes users and groups you create for Apple file services using Remote Server Administration.

If you create a NetInfo user account on your Mac OS X Server, do not use a name that you plan to use for a Macintosh Manager user account. If you do, you will see a warning message when you try to create a user with that name in Macintosh Manager.

Remote Administration shows Administrator (root), Unprivileged user (nobody), and macos group. Do not change the names of these items.

NetworkManager lets you change the names and IDs of all user accounts and groups. Do not change the names or IDs of user accounts and groups with IDs less than 100.

Other Issues

- You cannot start up a Mac OS X Server from an ATA disk configured in Slave mode.
- You should not change the name of a volume used by NetBoot server unless absolutely necessary. If you do change the name of the volume, you will need to install the NetBoot server software again.
- You can customize the contents of your Mac OS X Server Apple menu by choosing Configure Menu from the Apple Menu. If Configure Menu is not available, open the AppleMenuOptions application directly from the Workspace Manager. The application is located in the System/Applications folder.
- The floppy disk driver supports MFM formats such as 1.44 MB and 720 MB floppies. At present, it does not support formatting and writing to GCR formats such as 400K and 800K. Therefore, GCR floppies are marked as Write Protected.

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Mac OS X Server 1.x: About the Apache Web Server

This document describes issues with the Apache Web (HTTP) server provided with Mac OS X Server.

This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Recent changes

This release of Mac OS X Server includes version 1.3 of the Apache Web server. This version offers new features and slightly different usage. For example, Apache now opens properly with the apachectl command, rather than by using the apache command directly.

See the Apache manual (/System/Documentation/Administration/Services/apache/index.html) for Apache version 1.3 release notes and instructions.

Patches have been sent to the Apache Group so that versions of the Apache Web server after version 1.3.4 should build on Mac OS X Server without needing to port the software. For or more information, see http://www.apache.org/.

Apache now includes DSO support. For more information, see the "Dynamic Shared Object (DSO) Support" section later in this document. Apache headers needed for the compilation of loadable modules are now available in the Apache Framework.

Differences between Apache for UNIX systems and for Mac OS X Server

The location of files on Mac OS X Server reflects the structure of the Mac OS X Server directory, which extends the standard BSD filesystem conventions.

- Executables follow BSD conventions. You can find the Apache server executables (eg. apachectl) in /usr/sbin and tools (eg. htpasswd) in /usr/bin.
- The default server root is /Local/Library/WebServer, where you will find configuration files, server executables, logs, and the document root. This directory includes a basic server configuration when the system is installed to provide users with a good starting point.
- Apache's built-in icons and loadable modules included with this distribution are in /System/Library/Apache.

Known issues with restarting Apache on the Mac OS X Server

Due to an unimplemented feature of the dynamic linker, both soft and graceful restarts of Apache cause a significant penalty in memory consumption. See "Dynamic Shared Object (DSO) Support" below.

Graceful restarts are believed to cause Apache to become unstable and may cause the server to exit with an error message in the error log, such as "[warn] long lost child came home!" You should avoid graceful restarts anyway because of the DSO unloading problem. To avoid this problem, use the same workaround described in the "Dynamic Shared Object (DSO) Support" section next.

Dynamic Shared Object (DSO) support

Apache now loads its modules dynamically using dyld. This means that Apache does not need to be recompiled to add additional modules if the modules are compiled as dynamic modules. In addition, you can now disable code that you don't want linked into Apache simply by editing the server configuration.

To provide all the Apache features, all standard Apache modules are compiled into the Apache binary. However; you can selectively add and remove the modules you are interested in using. See the Apache documentation for details on developing, configuring, and using DSO modules.

Known issues with Apache DSO support

The dyld API allows runtime linking of executable files, but unloading these files is not implemented currently. Sending a HUP signal to Apache, which asks Apache to reload its configuration, causes Apache to attempt to unload its modules and then load them. The unload operation fails without notification but the load operation will succeed and will use any new symbols found in the modules, if any have changed. As a result of this, the process size will grow, consuming additional memory each time you soft restart the server in this way.

The commands `apachectl restart` and `apachectl graceful` attempt a soft or graceful restart, so both run into this problem.

The workaround is to always hard restart the server by stopping it, then restarting it using `apachectl stop; apachectl start`.

Tips for improving server performance

Move the document directory

Resolving pathnames can require a significant amount of time. If it's important that your server is able to deliver a large number of documents per second, then the default document root (`/Local/Library/WebServer/DocumentRoot`) may not be appropriate. If this is an issue, you may want to move your document root to the root of the filesystem, for example `/WebDocs`. For best performance, you may choose to mount a fast disk on the document root directory.

Disable any server features that you are not using

Avoid loading any modules that you don't need and disable any features which don't apply to your server usage.

Loaded modules require additional memory. (See "Dynamic Shared Object (DSO) Support" earlier.) and may add additional processing on some or all incoming requests.

If you need to maximize the performance of your Apache Web server, you may want to compile a version which sets compile-time settings to meet your needs. See the Apache documentation for more information on compiling your own server and suggestions on maximizing performace at compile time.

The official Apache distribution is available from The Apache Group, although the port to Mac OS X Server may not yet be integrated into the official distribution. Apache source code which compiles properly on Mac OS X Server may be available on the Developer ToolKit CD or from ftp.apple.com.

Using Mac OS format volumes with Apache

Because of the way in which Mac OS Standard (HFS) and Mac OS Extended (HFS Plus) format volumes handle uppercase and lowercase file names, you should avoid using these volumes to store your Apache document root. Apache may fail to operate as documented on case-insensitive filesystems. For example, access control checks may fail and compromise the security of your server.

You should also avoid locating your documents on NFS volumes. Doing so may significantly reduce the performance and reliability of your server.

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Mac OS X Server 1.x: About Apple File Services

This document contains important information about using Remote Server Administration to administer Apple file services.

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This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Browser compatibility issues

- Before logging in to Remote Server Administration from your browser, open Preferences and set the cache settings to Never (for NetscapeTM Navigator) or Always (for Internet Explorer).
- This version of Remote Server Administration is incompatible with Microsoft's JavaTM Virtual Machine in Microsoft Internet Explore, version 4.0.1 or earlier. Before using one of these versions of Internet Explorer with Remote Administration, open Preferences and set the Java virtual machine option to use Apple MRJ (Mac OS Runtime for Java). Make sure your computer has MRJ version 2.0 or later installed by checking the version of the MRJLib in the MRJ Libraries subfolder in your Extensions folder.
- Before using Remote Server Administration with European keyboards on non-localized Mac OS computers sold in the U.S., you must specify the appropriate font encoding settings in the Web browser preferences. For Internet Explorer, check the Language/Fonts settings in the Preferences. For a Netscape browser, check the Encoding settings.
- If you connect to your server through a proxy using Netscape Communicator, you may experience timeout problems and data may not be updated on the server. If you experience this problem, use a direct connection to the server. If you must use a proxy, talk to your proxy server administrator about enabling HTTP write access to the Mac OS X Server.
- If you are using Microsoft Internet Explorer with Remote Administration, you should set the preferred size of memory to at least 12 MB.

Issues with using Remote Server Administration

- To log in to Remote Server Administration, your user account must exist in the NetInfo database on the same server as the Apple file services. All accounts created using Setup Assistant, NetworkManager, and Remote Server Administration are stored in the local NetInfo database.
- You can only use 7-bit characters for administrator and user passwords. These are the standard ASCII characters which include control characters, alphabetic and numeric characters, and standard keyboard characters.
- Due to a limitation in Netscape Java, the Caps Lock key is not recognized to enter uppercase letters in a password. To use uppercase letters in a password, press the Shift key.
- If you are using Netscape Navigator or Netscape Communicator with Remote Administration, do not click Reload. If you do, you will need to log in to Remote Administration again. You may also need to log in again if you resize the browser's window.
- Do not use the browser's Back button to return to a page in Remote Server Administration. If you do, settings you have made in the page may appear to be different.
- The server access log (AppleFileAccess) is not turned on automatically. To turn on access logging in Remote Administration, click File then click Server Settings, select the Log Server Access checkbox, and click Save.
- For Internet aliases and group names, you can use only lowercase letters, numbers, and the underscore character.

Issues with Apple file services

Do not give your server the same name as any other AppleShare or Apple file services server on the same zone of the network. Remote Administration does not warn you if you do. However, users trying to log in to the servers may be unable to log in to the server they want to use. Check the server error log (AppleFileError) for information about this problem.

You can't change access privileges for removable media. You can share folders on the removable media, but files are read-only for everyone.

If you define more than a few hundred sharepoints on the server, some sharepoint names will not appear in the client's Chooser.

Folders created by guest users are owned by "Unprivileged user" (nobody). To reassign privileges for these folders, log in to the server computer Administrator (root).

Local host information for your server computer may not be saved in the local NetInfo domain if you use Setup Assistant to choose a connection to a NetInfo parent server then turn off the connection, for example by using the Network settings panel, and you have configured DNS manually without any DNS server addresses being specified and TCP/IP to get the host name and default router automatically using Bootp. If NetInfo domain does not contain the local host name, Apple file services will not start and any applications that use the local host name will fail. If this happens, open Setup Assistant and make sure you do not have your network services configured in this way.

If Apple file services does not start when you start up your server computer or when you turn on the service using Remote Administration, check the server error log (AppleFileError) for information about startup errors.

Issue with AppleTalk configuration

If AppleTalk isn't configured correctly, it will fail when you start your Mac OS X Server but you will not receive a message about the problem. If this occurs, AppleShare clients will not be able to locate the server in the Chooser and Macintosh Manager clients will not be able to log in to the server.

Note: Because Apple file services can use TCP, Remote Administration will show that the server is running and NetBoot client computers will be able to start up

If you experience these problems, be sure AppleTalk is configured correctly using the Setup Assistant and Network Settings control panel.

If you configure more than one port on your server computer to use AppleTalk, each port must be connected to a network with an AppleTalk router. If your server computer is acting as the router, make sure it is configured correctly and does not conflict with other AppleTalk routers on the network.

Issue with the AppleShare client software

If AppleShare client computers have Mac OS 8.5 or later and AppleShare client version 3.8.1 installed, files may be corrupted in some cases when users copy files to server volumes. To prevent this, install AppleShare 3.8.2 on all the computers installed with Mac OS 8.5 or later. AppleShare 3.8.2 is provided with the Mac OS X Server software.

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Mac OS X Server 1.x: AppleShare Client 3.8.2 Read Me

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Requirements for using the software
Installing the AppleShare client software
Changes with AppleShare client software version 3.8.2
Using the new features of the AppleShare client software
Known incompatibilities and limitations

This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Introduction

AppleShare 3.8.2 is the latest version of AppleShare client software. This document provides important information about using the AppleShare client software.

Requirements for using the software

- System software version 7.6 or later
- Open Transport version 1.1.2 or later

To use AutoRemounter on a PowerBook with AppleShare client version 3.8.2 on systems earlier than Mac OS 8.5, you should use AutoRemounter version 1.3, which is available in Mac OS 8.1. If you are using Mac OS 8.5, open the Energy Saver control panel and click Advanced Settings, then select the network connections options you want to use.

The version of the AppleShare client software you use depends on the version of the system software you have installed on your computer:

- For Mac OS 7.5.1 or earlier, use AppleShare Workstation version 3.5.
- For Mac OS 7.5.1 up to (but not including) version 7.5.3, use AppleShare Workstation version 3.6.5.
- For Mac OS 7.5.3 up to (but not including) version 7.6, use AppleShare client version 3.7.4.
- For Mac OS 7.6 and later, use AppleShare client version 3.8.2.

Installing the AppleShare client software

To install the AppleShare client software, double-click the Installer and follow the onscreen instructions.

The AppleShare Client Installer places the AppleShare Chooser extension in the Extensions folder (in the System Folder) appropriate for the localized version of the Mac OS installed on your computer.

If you want to connect to AppleShare servers using TCP/IP, make sure that the TCP/IP control panel is set up correctly.

Changes with AppleShare client software version 3.8.2

- Improves performance when connecting to a Mac OS X Server computer.
- AutoRemounter now recognizes the most recent PowerBooks.
- The client software works correctly with AutoRemounter version 1.3.
- Dialog boxes are centered correctly if you have more than one monitor.
- Aliases to servers mounted using an AppleTalk connection will not switch to a TCP/IP connection. If you want a server alias to open a TCP/IP connection, you must mount the server using TCP/IP then create an alias.
- You can now cancel when you attempt to log in to a server.
- The client software now provides a transport independent UAM (User Authentication Module) interface. This allows UAM plug-in modules to connect to servers using AFP over TCP/IP. Contact your UAM vendor for a new version of your UAM that works with this interface. Existing UAMs will still work.

Using the new features of the AppleShare client software

The AppleShare client software now automatically connects to a server using TCP if a user chooses an AppleShare IP file server that is set up for TCP connections. If you want to use AppleTalk to make the connection, press the Option key and double-click the name of an AppleShare IP file

server in the Chooser.

When you want to use TCP to connect to an AppleShare IP file server that does not appear in the "Select a file server" list in the Chooser, click the Server IP Address button. When you click the Server IP Address button, a dialog box appears in which you can type the DNS name (such as shasta.acme.com) or the IP address (such as 172.16.156.52) of the AppleShare IP file server .

If the AppleShare IP file server is on a computer behind a firewall, you can connect to it by adding a colon (:) and the TCP port number (the default is 548) to the IP address or DNS name.

Known incompatibilities and limitations

- If you have problems using AppleShare client software version 3.8 to connect to an AppleShare IP file server, use MacTCP Ping (available from Apple Computer) to make sure that you can ping the server computer. If you can't ping the server computer, there is a connectivity problem. Check the network cables and the configuration of the TCP/IP control panel.
- If a computer has Mac OS version 8.1 or earlier installed and a user connects to a volume on an AppleShare IP server using TCP/IP, AppleTalk must be active on the user's computer to make an alias to that volume.
- In AppleShare IP version 5.0, the Web & File Server uses a set of access privileges based on combinations of the original access privileges (See Files, See Folders, and Make Changes). The new privileges are Read Only, Read & Write, Write Only, and None. When you connect to an AppleShare IP file server volume and choose Sharing from the Finder's File menu, the dialog box that appears displays the original AppleShare access privileges. If you use the dialog box to change a folder's privileges to a combination of privileges that is invalid for the AppleShare IP file server, the file server automatically applies the most secure access privileges that approximate the privileges you selected. If you close the dialog box and choose Sharing again, the selected privileges may be different than those you selected. In Mac OS 8.0, the Sharing dialog box uses the AppleShare IP access privileges.
- Some older versions of HyperCard XCMDs that mount AppleShare volumes are incompatible with this version of the AppleShare client software.
- Microsoft Office Manager causes the AppleShare client version 3.7 to crash when you try to connect to an AppleShare file server. To correct this problem, install Office Manager Updater, available from Microsoft.
- Versions of the Novell NetWare User Authentication Modules prior to version 5.11 are incompatible with AppleShare client version 3.7 and later. Contact Novell for an update of the modules.
- Utilities that mount disk images from AppleShare file servers may have problems with the AppleShare client version 3.8.2. If you have problems, contact the developer for a new version of the utility. Apple Disk Copy version 6.3.1 or later is compatible with the new version of the AppleShare client software and is the only application for mounting disk images that Apple supports.
- Server management applications that mount AppleShare volumes may have problems with the AppleShare client version 3.8.2. Contact the developer for an update of the application.
- If there are volumes set to mount at startup and the server administrator disables the "Enable users to save password for automatic log on" checkbox in Web & File Admin, you will be unable to change the startup mounting settings for those volumes. If this happens, throw away the AppleShare Prep file in the Preferences folder (in the System Folder) and use the Chooser to reselect the server volumes you wish to mount at startup.
- To allow mounting volumes when you start up your computer using a TCP/IP connection, be sure to delete the AppleShare Prep file in the Preferences folder, and use the Chooser to reselect the volumes you wish to mount at startup. Doing this saves the TCP address of the server in the AppleShare Prep file.
- If you are having problems mounting volumes when you start up your computer using a TCP/IP connection, try setting TCP/IP to always load. If that doesn't work, try turning on virtual memory using the Memory control panel.
- If you mount a volume automatically at startup and the server software is a version prior to version 5.0, on upgrading the server to version 5.0 or later you should throw away the AppleShare Prep file and use the Chooser to reselect the server volumes you wish to mount at startup. This will prevent problems with server volumes mounting twice.
- If you are receiving "Server not responding" errors when connecting to the server using TCP over PPP, use the AppleShare Client Setup utility (available on the Apple Support Web site at www.apple.com/support) to increase the TCP Lookup timeout from 20 seconds to the time it takes the PPP link to connect plus 20 seconds.
- If the Chooser waits 2 minutes when you connect to a server using TCP, use the AppleShare Client Setup utility (available on the Apple Support Web site at www.apple.com/support/) to reduce the TCP Connect Timeout from 120 seconds to 20 seconds. Reducing the TCP Connect Timeout may make connecting to AppleShare servers over the Internet impossible.
- If you have TCP/IP set to use PPP to connect to a server and you open an alias to an AppleShare IP server (or any other server that supports AFP over TCP/IP), the AppleShare client software will try to connect using TCP/IP first before using AppleTalk. If you do not want this to happen, you can use the the AppleShare Client Setup utility (available on the Apple Support Web site at www.apple.com/support/) to disable TCP/IP support in the AppleShare client.
- If you have an alias to a server that supports AFP over TCP/IP, and the server is behind a firewall that doesn't allow pings to go through, you will not be able to connect via the alias unless you use the AppleShare Client Setup utility (available on the Apple Support Web site at www.apple.com/support/) to disable address verification via pings.
- If you have a Global Village 56k Flex Modem card and you are using PPP version 1.0.1 to connect to your Internet service provider (ISP) using TCP/IP, you need to disable the modem software's menu bar status indicators or open PPP to connect to your ISP yourself, before using the Chooser to connect to an AppleShare file server over TCP/IP.
- If the Chooser hangs after you click the OK button in the volume dialog box, try disabling the Apple Menu Options control panel.
- If you open a TCP/IP connection to a server that is behind a firewall or other device that performs network address translation, aliases to volumes on that server may not work because the IP address that the server sends to the client software may not be an address the client

can use to connect to the server.

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Mac OS X Server 1.x: About the Dec21x4Ethernet Driver

This Mac OS X Server release note describes the Dec21x4Ethernet driver.

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This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Introduction:
This driver replaces the old driver named "SwitchEthernet". The old driver SwitchEthernet works only with DEC21140 based cards. Some of the adavtages of this new driver are:

1. It supports a wide variety of DEC2114x cards, like DEC21140, DEC21143.
2. It parses the SROM information and eliminates the need to manually supply some of the information like CSR12 values in Default.table.
3. Supports the features like Auto-detection and auto-negotiation.

Cards supported:
Znyx DEC21140 based 1port, 2port, 4 port cards and D-Link DEC21143 based 1port and 4port cards.

Cards not supported:
The Adaptec's multi-port cards, which have only one SROM, donot work with this driver. We give an error message.

Known Problem:
The auto-detection doesnot work reliably for 4 port cards. It works well with single port cards. It is recommended to plug-in the wires before starting the machine.

How to use the Driver:
In order to make the driver recognize the card, make sure the Card Matching name is listed in Default.table. We currently have the strings: "Matching" = "pci1011,9 pci1186,1101 pci1186,1110"; in the Default.table to take care of Znyx DEC21140 cards and D-Link DEC21143 based cards. if you want to try any other card, you can add the appropriate name to the above list.

The driver is loaded automatically, as it is listed in /etc/startup/0500_Devices file. The old driver "SwitchEthernet" is also provided in `/private/Devices/SwitchEthernet.config`.
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Mac OS X Server 1.x: About Kerberos on Mac OS X Server

This release note describes Mac OS X Server specific issues surrounding the Kerberos version 5.

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Support for Kerberos v5 in Mac OS X Server

There is limited support for Kerberos version 5 in Mac OS X Server. Due to U.S. export restrictions, the Kerberos libraries are not available in the developer tookit, and Kerberos is not yet fully integrated into the system. The authentication and administration clients, however, are available: kinit, kadmin, and other utilities are built into the system. It is therefore possible to make use of kerberos-enabled software that you add into the system.

Login support using kerberos is available in the distribution. /usr/bin/login may be replaced with /usr/libexec/login.krb5, which will use kerberos to authenticate the login session and obtain the appropriate credentials for logged in users. Similar support is available for loginwindow from /System/Library/Authenticators/Kerberos.loginauthenticator. You may choose to enable its use via the "Custom Login Authenticator" option in the "Login Window" panel in Preferences.app while logged in as Administrator.

Kerberos-enabled versions of telnet and other network clients may be available to take advantage of kerberos authentication in a future release. Domestic users may get the full Kerberos distribution from M.I.T. via FTP at ftp://athena-dist.mit.edu/pub/kerberos/

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Mac OS X Server 1.x: About Linux NFS Volumes

Mounting Linux NFS Volumes Issues:

If you are using Mac OS X Server as an NFS client and you mount a Linux volume as the NFS server, you may see the message "Permission denied."

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To solve this issue:

- Log in to the Linux server and edit /etc/exports to add the "insecure" option to the filesystem you want to mount on your Mac OS X Server.

While this solution causes a small reduction in security, you don't need to repeat this step every time you add or reinstall a Mac OS X Server client.

Note: If you cannot change the Linux server, you can work around the issue by opening Terminal on your Mac OS X Server computer and using a mount command with a "-P" options flag (for example, mount -o"-P") to mount the Linux volume. However, you must do this each time you add or reinstall a Mac OS X Server as a client to the server. Because NetworkManager doesn't support the "-P" option flag, you must add the option to the NetInfo /mounts entry if you want to use NetworkManager to mount the volume.

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Mac OS X Server 1.x: About NetInfoManager

This file contains release notes for the Mac OS X Server Release of the NetInfoManager application.

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New Features

The following new features have been added to the NetInfoManager application since Developer Releases:

- A new look has been provided for the properties and values editor. Multi-valued properties are now displayed as a list of values, and must be opened (with the triangle next to the property name) in order to be edited.
- There are now cut, copy, and paste menu items (and command-key equivalents) which can be used on properties and values.
- Many inconsistencies in the user interface have been cleared up.
- NetInfoManager now has a Help menu, which provides access to the network administration online help.

Known Issues

- No support for setting up a mail server. The panel presented when creating a new master netinfo server has a checkbox labeled "Maintain the network's e-mail server." This checkbox has no effect, and should be ignored. Instructions for setting up a mail server on Mac OS X Server will be available on the Apple web site sometime after the release of Mac OS X Server.

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Mac OS X Server 1.x: About Networking

This article the release note regarding networking in Mac OS X Server.

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Known Issues

Enabling NetInfo Access by Clients

When a Mac OS X Server computer is configured as a NetInfo server, clients cannot automatically get their network configuration information from the Mac OS X Server server. Once you have created a NetInfo server using the NetInfoManager application, there are a couple steps that you must take before client computers can access information on the server.

Note: When you configue the NetInfo server, make sure that you have the correct settings for the Hostname, Internet Address, Netmask and Router fields as appropriate for your network. After you have made all these configurations, restart the computer.

In order for a client to be part of a NetInfo network, you must do the following:

1. **Create an entry on the NetInfo server for the client machine.**
On the server, launch **/System/Administration/NetworkManager.app**. Click the "Computers" button. For each client machine you want to be part of the NetInfo network, do the following:

a. Select the appropriate parent domain in the upper portion of the NetworkManager window.
b. Click the Create Computer button located on the Computers tab.
c. Fill in the Hostname, Internet Address, and Ethernet Address fields. The format of the Ethernet Address field is six colon-separated lowercase hexadecimal values with no leading zeroes. For example, "0:5:2:ef:be:ce:" is a valid entry whereas "00:05:02:ef:be:ce" and "00:05:02:EF:BE:CE" are not. Both the Internet Address and Ethernet Address fields must not have any extra spaces anywhere.
d. Save the entry by choosing Save from the File menu.
e. When the application asks if the selected domain is the parent domain for this host, click the Yes button

2. **Statically configure the client machine's networking information.**
In order for a client to boot properly on the network, you must statically enter its network configuration. To do this, launch **/System/Library/Preferences/Network.preference** on the client machine. Set the **Connect via** pop-up menu to **Ethernet**, and TCP/IP **Configure** pop-up menu to **Manually**. Enter values for the IP address, Hostname, Subnet mask, and Router address fields (this information should be available from your System Administrator or Internet Service Provider). Once you've entered this information, click Apply. If you are not logged in as root, you will be prompted for the root password. Enter the root password and click the Authenticate button. You must now restart the client computer for the new networking settings to take effect.

AppleTalk

The Mac OS X Server AppleTalk API is expected to change in the near future. For this reason, the header files for that API have not been included in this release. Developers who are working with a preliminary version of this API should contact ADR for support until an official API is released. In addition, developers should be aware of a potentially serious problem that is still being investigated at Apple.

The problem is that use of the `SPWrite` and `SPWrtContinue` functions can result in a system hang. When this happens, you must restart the system. Although these functions are not normally used, they are typically employed in an Apple File Protocol (AFP) server using AFP on top of ASP/ATP.

We currently have no workaround for this situation. An alternative is to use AFP over TCP/IP, which is not affected by this bug. When a solution has been found, we will notify developers through the usual channels, and will post a new version of the Mac OS X Server kernel.

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Mac OS X Server 1.x: About NetworkManager

This file contains release notes for the NetworkManager application. NetworkManager lets you edit information in NetInfo domains at a higher level than NetInfoManager allows. Instead of operating on the raw data in NetInfo, as NetInfoManager does, NetworkManager represents this data as hosts, users, groups, and so on.

This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Undocumented Features
The following features have been added to NetworkManager but are not currently documented:

Domain Browser Default Settings
When NetworkManager is opened, a user default sets the initial selection of the domain browser. This default, DefaultStartupDomain, can have the following values:

> **RootDomain**
> Causes the domain browser to display the root ("/") domain.
>
> **LocalDomain**
> Causes the domain browser to display the local (".") domain of the machine that is running NetworkManager.

You can set this default in a Terminal shell by entering the following at the command line:

```
defaults write NetworkManager DefaultStartupDomain RootDomain
```

NetworkManager remembers the last selected domain and uses that as the selection for new windows. In the future these defaults will be selectable in a preferences panel.

Known Issues

These new issues have been identified in the Mac OS X Server Release.

Issue	Nothing is ever written to /var/log/nu.log
Description	In the User and Group template panels it is possible to specify a log file. However this file is never created and no output is ever written to it.
Workaround	There is no workaround for this problem.
Issue	Difficulties exporting mutiple directories on same filesystem to same clients.
Description	Each export specifies the mount point and export flags within one local server filesystem for one or more hosts. A host may be specified only once for each local filesystem on the server and there may be only one default entry for each server filesystem that applies to all other hosts. This default entry exports the filesystem to the ``world'' and should be used only when the filesystem contains public information. Since /Local/Public and /Local/Users are both part of one filesystem they may not be separately exported to the same host(s).
Workaround	Export the entire filesystem on which the directories which one wishes to export reside, using the "Export Entire Filesystem" option.
Issue	Prompt to re-enter password on save to domain of an unmodified user.
Description	When attemting to save an unmodified user to a domain using the "File:Save To Domain..." menu item. A prompt appears asking to re-enter the users password. Entering the correct password still fails the operation.
Workaround	Enter a new password for the user in the "Password:" field. Then select "File:Save To Domain...", finally when prompted enter the new password again.
Issue	Some options are currently not supported in Mac OS X Server.
Description	Kerberos authentication does not work in the File Sharing controls. TCP Transport (In the Advanced Import Options.) does not work..
Workaround	Never select these options in the file sharing panels since they do not work.
Issue	NetworkManager cannot administer exports and imports of OpenStep networks.

Description	Due to incompatibilities in the schema for exports and imports creating or modifing exports or imports on netinfo databases with OpenStep clients attached to them with NetworkManager may cause unexpected behaviour of the OpenStep clients.
Workaround	Use the tools that came with OpenStep to administer domains with OpenStep clients. Mac OS X Server does understand the old schema. However, it does not allow for as much control as NetworkManager currently does.

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Mac OS X Server 1.x: About QuickTime Streaming Server (Preview Release)

This article is the release note for the Preview Release of QuickTime Streaming included with Mac OS X Server.

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QuickTime Streaming Server 1.0.2 Update is available for downloading. For more information go to:
Article 60462: "**QuickTime Streaming Server 1.0.2 Update: Read Me**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

This version of Mac OS X Server includes a special preview release of the QuickTime Streaming server. This preview allows you to explore the delivery of rich digital media over the Internet or intranets to any QuickTime-capable application.

Important: The QuickTime Streaming server preview release expires on January 31, 2000. Telephone support is not available for preview products, such as QuickTime Streaming server.

Note:

To view QuickTime streaming media, you need the latest version of the QuickTime client software. See the QuickTime Web site at **http://www.apple.com/quicktime/**.

To receive information about QuickTime Streaming server updates, join the QuickTime Streaming server public mailing list. By joining the list, you can share experiences, questions, and comments with others using the software. Apple employees may monitor these lists, but Apple does not guarantee that questions sent to this list will be answered. For more information about joining the mailing list, see the Apple mailing lists Web site at http://www.lists.apple.com/.

Known issues and solutions

- If users receive a 415 error when they attempt to view a streamed movie, be sure you save the movie you want to stream as a self-contained movie using your authoring software (for example, QuickTime MoviePlayer).
- If you have difficulties reflecting several movies to multiple clients at the same time, be sure that you set up the QuickTime application that transmits the live multicast so that each multicast source and each broadcast source has a unique port number.
- Do not use MacIP as the TCP connection method for client computers that are playing QuickTime Streaming media. To change the connection method, open the TCP control panel and choose the method you want to use from the "Connect via" pop-up menu.
- QuickTime Streaming server accepts connections on ports 554 and 7070. If your client computers are behind firewalls, users may find it easier to connect to the server by including 7070 as an explicit port number in the URL (for example, rtsp://myserver.my.com:7070/mymovie).
- QuickTime Streaming server can use only the built-in Ethernet port of your server computer. It cannot use the 4-port Ethernet card. Be sure to provide the IP address or domain name of your built-in Ethernet port for streaming.
- The version of QuickTime MoviePlayer provided on your Mac OS X Server computer does not support some new formats, so you may be unable to view some QuickTime Streaming media using this version of MoviePlayer.

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Mac OS X Server 1.x: About Security With Mac OS X Server

This document describes some actions that you can taken to adjust the security of a Mac OS X Server configuration.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Network services

The Network settings panel lets you turn on these services:

- Web server
- Remote shell
- Remote login
- Remote printing
- Remote Mach IPC
- FTP server
- Telnet server
- Finger
- Mail server

Turning on any of these services may reduce the security of your system. Turn on only those service that are necessary for your particular installation.

Denying access to FTP services

If you turn on the FTP server, then you can deny access to specific users by listing their user names in /etc/ftpusers.

Denying access to LPD services

If your server computer acts as a print server, then you can restrict print services to specific client computers. To do so, edit /etc/hosts.lpd so that it lists the host names of the clients.

If /etc/hosts.lpd contains a line consisting of a single plus sign, then print services will be available to any client. If you want to restrict access to specific clients, make sure that /etc/hosts.lpd does not contain a line consisting of a single plus sign.

If print service is turned off in the Network settings panel, then /etc/hosts.lpd will be renamed as /etc/hosts.lpd.disabled.

Password shadowing

Passwords in Mac OS X Server are stored in a protected form so that the original password cannot be recovered directly. However, there remains the possibility that someone might guess a password. For this reason, even the protected passwords are hidden (or "shadowed") from unprivileged users.

When an executable without special privileges uses BSD-level APIs such as getpwent, getpwnam, and getpwuid, an asterisk ("*") is returned for the passwd field rather than the actual protected password.

In addition, user records in NetInfo are created by default with a _shadow_passwd property. If this property exists, then unprivileged executables retrieving those records from NetInfo will receive an asterisk rather than the actual protected password.

Note: This feature is actually more general. Any property in a directory that contains _shadow_propertyname will be so shadowed. The _shadow_propertyname doesn't need a value. If it has values, they are ignored.

For this protection to be effective, it is still necessary that you restrict access to your NetInfo domains to trusted hosts as described later in this section. Because even protected passwords for network accounts may still be vulnerable to sniffing as they pass across the network, it's important to control all access to your local network.

If it is necessary for an unprivileged executable to perform password-based authentication, then it's possible to do so by invoking the setuid-root executable /usr/libexec/chkpasswd, passing it the user name as an argument and the password via a pipe. A non-zero exit code indicates that the password is incorrect.

Note: Chkpasswd accepts the same options as passwd and uses getpass() for its input. It may be necessary to call setsid() in the child before executing it. This will be done automatically if it is invoked from the Yellow Box using NSTask.

Versions of NetInfo prior to that shipped with Mac OS X Server will not shadow passwords and will ignore the _shadow_passwd tag. For the most part, old and new versions of NetInfo can work together and serve both old and new clients. The one exception occurs if you perform from an older client computer an administrative operation, such as changing the password, on a user record stored on a new Mac OS X Server NetInfo server and the record contains the _shadow_passwd tag,. In this case, you may need to open the administrative application as root to perform the operation. Alternatively, you can remove the _shadow_passwd tag from the account.

NetInfo

You can limit access to a NetInfo domain by creating a top-level property listing the Internet addresses of those networks that are allowed access to the NetInfo domain. In most cases, this property is created by default when you create a domain.

You may want to change this property later. The values of this property should be the IP network addresses of networks to which you want to grant access. These addresses must have one of these forms:

```
17

17.202

17.202.15
```

Alternatively, it is possible to refer to a network by name, if that name is listed under /networks within the same domain.

If the trusted_networks property does not exist, access will be granted to anyone. Access will always be granted to the local computer on which the domain is being served.

If the property exists but has no values or no valid values, then access will be denied to all but the local computer. This should be the default for the local NetInfo domain, but this will prevent remote administration of the local domain. See the NetInfo man pages and documentation for more information.

Note: Because IP is not a secure protocol, filtering based on IP addresses may not be effective, depending on your network configuration.

Mach IPC and distributed objects

A number of facilities in Mac OS X Server use Mach IPC for communication. This includes those that make use of distributed objects, whose default transport mechanism uses Mach IPC, as well as others, such as the window server.

The nmserver has the capability to allow Mach IPC to be communicated transparently across the network. This allows for such features as the NSHost remote window serving. NSHost in particular can be turned off for security purposes using the 'Private Window Server' setting in the Expert Preferences module. However, the private window server setting does not protect the other facilities that make use of Mach IPC, which need to be protected for the same reasons and under the same circumstances as the window server.

To protect all of these facilities, nmserver has several new options.

First, you can use the Network settings panel to turn on or off the capability to act as a server for remote Mach IPC. This controls the MACHIPC setting in /etc/hostconfig, setting it to either -LOCAL- or -SECURE-. With the -SECURE- setting, the nmserver will refuse all remote lookup requests. With the -LOCAL- setting, responses to remote requests will be controlled by the file /etc/nmserver.access.

The default /etc/nmserver.access file contains entries allowing access to all of the standard Apple-supplied services for which remote access is likely to be useful, including NSHost, Yellow Apple Events, Terminal services, remote build services, WebObjects monitoring, etc. If you have an additional DO-based or Mach IPC-based service to which you want to grant remote access, add an additional line to this file consisting of the name under which the service is registered, followed by a colon, then by a comma-separated list of the IP network or host addresses to be granted access, or a plus sign to grant access to anyone. A question mark used in the service name acts as a wild card for any single character, an asterisk for any number of characters. If you want to restrict access to some of the Apple-supplied services, then edit the corresponding lines in the file. To disable a particular line, you may turn it into a comment by preceding it with a pound sign.

Alternatively, the MACHIPC setting in /etc/hostconfig may be changed to -UNRESTRICTED-. This will grant access to any service to any host. This should be done only in well-controlled network environments. Another alternative for particularly hostile network environments, is to add a flag -nevernet after the -nonet flag in the invocation of the nmserver in /etc/startup/0500_MachMessaging. This will prevent the nmserver from ever connecting to the network and any use of remote Mach IPC. However, this will interfere with some applications (including the Blue Box) and is not intended for normal use.

The IP network or host addresses used in /etc/nmserver.access may use any one of the formats given above for trusted_hosts, or a variety of other formats, including the ability to specify ranges of addresses or subnet masks. For example:

```
17.202.12.0 / 255.255.252.0

17.202.15.177 - 17.202.15.181

17.202.4 - 17.202.12 / 255.255.252.0
```

Note: Because IP is not a secure protocol, filtering based on IP addresses may not be effective, depending on your network configuration.
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Mac OS X Server 1.x: About The Group Wheel

These release notes cover the use of the group "wheel", particularly with respect to the su command, and how it difference slightly on Mac OS X Server from other 4BSD systems.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Notes on group wheel and special administrative access for non-root users

The program that gives you command-line access to a root shell while you are logged in as a regular user (/usr/bin/su) behaves slightly differently on Mac OS X Server than on other 4BSD systems. The usual BSD behavior is that only users in the group wheel may use su to gain access to a super-user (root) prompt, unless the group wheel does not exist or has no users in it. On Mac OS X Server, the behavior is the same, except that when the wheel group is empty or nonexistent, nobody can su. This was done due to a difference in how we look up a list of users in a group on Mac OS X Server (which is hierarchical, not the usual flat as in /etc/master.passwd).

Users who would need to have special administrator access should be explicitly added to group wheel via Network Manager. Note that adding a user to the wheel group on your parent NetInfo server (if applicable) grants that user such access on all machines inheriting configuration from that server, while adding a user to a local wheel group grants special access only on the local machine.

The local user account that is optionally created with Setup Assistant is automatically added to the wheel group under the assumption that this user is the primary user of the machine and therefore should have such privileges. Note that the user is added to the local wheel group, not a network wheel group, and therefore only has such privileges on the local host.

The special privileges granted to users in group wheel include the ability to use the su program to gain a root prompt and the ability to edit files which are otherwise restricted, such as the web server documents and configuration in /Local/Library/WebServer. There may also be other privileges granted depending on the configuration of the machine. Beware that users with such privileges may be able to compromise a system and obtain root-level access even without the administrator (root) password. One should therefore limit such privileges to trusted users and only on appropriate hosts. The ability to log in as root via loginwindow (if one knows the password) is not affected by which users are in group wheel, nor is the ability of users with the root password to use system management tools such as NetworkManager to gain certain privileges which are only otherwise available to the root user. Restricting wheel users does not prevent this form of obtaining root privileges.

One cannot log into a machine remotely via telnet as root (unless root has no password), and therefore users who wish to obtain root access remotely must first log in as a normal user and then use su to gain root access. By restricting wheel access you can therefore reduce the probability that a compromised account will result in an intruder obtaining privileged access via the network.

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Mac OS X Server 1.x: Apple Menu Release Notes

These notes are for the Mac OS X Server Apple Menu.

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Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

You can customize the contents of your Apple Menu by selecting the Configure Menu item from the Apple Menu. If, for some reason, the Configure Menu item is not available, you can launch the AppleMenuOptions application directly from the Workspace Manager. The application is named AppleMenuOptions.app and is located in the /System/Applications folder.

Each user can configure the Apple Menu as he or she desires without affecting the Apple Menu configuration of the other users of the system.
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Mac OS X Server 1.x: About Exception Handling on Mac OS X Server

This release note describes a new user default for controlling the behavior of applications in response to certain types of errors.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Application Errors

Certain types of application errors typically cause Yellow Box applications to exit abruptly. A new user default, NSExceptionHandlingMask, has been provided to control this behavior (for AppKit-based applications only) for three of the most common classes of such errors:

- uncaught NSExceptions;
- system-level exceptions (such as invalid memory accesses); and
- Objective C runtime errors (such as messages sent to freed objects).

Setting NSExceptionHandlingMask causes the application to optionally (a) print a descriptive log and a stack trace to the console when such an error occurs, or (b) handle the error in such a way as to prevent the resulting abrupt termination, or both. The mask is constructed by summing values corresponding to the types of errors to be logged or handled: 1 for logging uncaught NSExceptions, 2 for handling them; 4 for logging system-level exceptions, 8 for handling them; 16 for logging runtime errors, 32 for handling them. Thus

```
defaults write NSGlobalDomain NSExceptionHandlingMask 63
```

will cause all of these types of errors to be both logged and handled for all applications.

System-level exceptions and runtime errors are handled by converting them into NSExceptions. NSExceptions generated in this manner will contain a stack trace in their userInfo under the key "NSStackTraceKey". Uncaught NSExceptions are handled by terminating the thread in which they occur (NSExceptions in an application's main thread are caught by NSApplication's top-level handlers).

In addition to the use of the NSExceptionHandlingMask user default to control this behavior for AppKit-based applications, the same functionality can also be accessed programmatically from both application and non-application Yellow Box executables by linking against the ExceptionHandling framework and calling

```
[[NSExceptionHandler defaultExceptionHandler] setExceptionHandlingMask:aMask]
```

See the ExceptionHandling.framework header files for more details on the NSExceptionHandler API.

Debugging Aids

For debugging purposes, it is also possible to use the same mechanism to report on NSExceptions that would otherwise be caught. The additional values that may be added to NSExceptionHandlingMask for this purpose are 64 for logging exceptions that would be caught by the top-level exception handlers in NSApplication, 128 for handling them, 256 for logging exceptions that would be caught at lower levels, and 512 for handling them. In these cases, handling an exception means nothing more than adding a stack trace to its userInfo under the key "NSStackTraceKey". Note that caught exceptions should be logged or handled only for debugging, not under normal circumstances, because doing so may generate large amounts of output, or alter the normal behavior of applications.

For further debugging purposes, it is possible to change the handling behavior for any condition handled by NSExceptionHandler so that the application will instead be halted to wait for a debugger to be attached. This is controlled by the NSExceptionHangingMask user default, constructed by summing values corresponding to the conditions under which the application should hang: 1 for uncaught NSExceptions, 2 for system-level exceptions, 4 for runtime errors, 8 for top-level caught NSExceptions, and 16 for other caught NSExceptions.

In addition, a tool called atos has been provided to convert numeric stack traces into symbolic form. See the atos(1) man page for details.

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Mac OS X Server 1.x: Floppy Disk Driver Release Notes

Release notes for the floppy disk driver in Mac OS X Server.

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Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Known Issues

The Floppy Driver supports MFM formats like 1.44MB, 720 MB floppies. At present we do not support Formatting and writing of GCR Formats like 400K and 800K. So we mark GCR floppies as Write Protected.
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Mac OS X Server 1.x: About Mac OS Format Volumes

Release notes about Mac OS Format volumes for Mac OS X Server.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Filesystem performance

Filesystem performance on any Mac OS format disks (Standard or Extended) using Mac OS X Server will be dramatically affected by the allocation block size on a given disk or partition. The system is designed to accelerate input and output (I/O) only to files on volumes whose allocation block sizes are an even multiple of 4K; I/O to files on volumes with smaller or larger allocation blocks will be slower.

Optimal Mac OS Standard format volume size ranges are 32 MB in size ending at multiples of 256 MB:

- 224 - 256 MB
- 480 - 512 MB
- 736 - 768 MB
- 992 - 1,024 MB
- 1,248 - 1,280 MB
- 1,504 - 1,536 MB
- 1,760 - 1,792 MB
- 2,016 - 2,048 MB

For the best performance on a Mac OS Standard format disk, you should partition the disk using these size ranges.

Allocation block sizes on Mac OS Extended format volumes are determined using a different algorithm and the allocation block size on these volumes will never be larger than 4 KB. Volumes under 2 GB will be created with increasingly larger allocation block sizes up to 4 KB and any volume or partition 2 GB or larger in size will be created with an allocation block size of 4 KB. Mac OS Extended disks or partitions should therefore be at least 2 GB in size for optimal performance.

An easy way to verify the allocation block size on any disk is to use Get Info in the Finder to check the size of a small file. Alias files should take exactly one allocation block on disk. The size on disk should be 4 KB, 8 KB, 12 KB, 16 KB, or some other even multiple of 4 KB.

Using Yellow Box or BSD applications

Yellow Box and BSD applications, such as TextEdit, Emacs, and vi, were not written to make use of resource forks or certain other information associated with files on a Mac OS Standard or Mac OS Extended format disk. As a result, using these applications to open and save files created on Mac OS, Mac OS Compatibility on the Mac OS X Server, or AppleShare can lead to lossing the resource fork or other information, such as the Finder information which contains the type and creator of the file.

Differences between Mac OS Standard and Mac OS Extended formats affecting MacOS X Server

In addition to the usual advantages of the Mac OS Extended format, there are several features in the Mac OS X Extended format that are specific to Mac OS X Server operation. Because of these feature differences, you should always format Mac OS disks for Mac OS X Server using the Mac OS Extended format rather than Mac OS Standard format.

The main differences follow:

- Support for file and directory based permissions. Mac OS X server supports file and directory permissions the same way that BSD systems do. The Mac OS Standard format cannot store this information. All files and directories on Mac OS Standard format volumes have a universal permission set to allow read access to all users and both read and write access to root users and the Blue Box and cannot be changed. Attempting to change the owner, group, or permissions of a file on a Mac OS Standard format volume will not change any values, although no error message reports the failure. Mac OS Extended format volumes can store permission and other security information about files. If permissions have never been set for a file or directory on a Mac OS Extended format volume, the universal permission set is used. Users may, however, change the permissions on a file or directory on a Mac OS Extended format volume and those user set values will be stored and used.
- Support for BSD file types. The Mac OS Standard format cannot store BSD file type information. This is especially noticeable with symbolic link files which are not supported on Mac OS Standard format volumes. The Mac OS Extended format can store this information, so link files are supported.
- Support for AppleShare. You cannot share Mac OS Standard format volumes using Apple file services on Mac OS X Server, unless those volumes are on CD-ROM media.

TA44221_Mac_OS_X_Server_x_About_Mac_OS_Format_Volumes.pdf

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Mac OS X Server 1.x: About Installation Applications

These notes are for the Mac OS X Server installation process, including the installation tools used to boot the system from a CD, install a base system, and install packages and updates to the system.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
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Mac OS Tools

The Mac OS X Server CD includes an installer application, as well as System Disk Control Panel and Extension. System Disk, which allows you to switch between booting into Mac OS and Mac OS X Server, replaces Multibooter of previous releases. For information on these tools, consult the Read Me files on the CD.

Installing Multiple Languages

The Mac OS X Server includes French, German, and Japanese localization packages. These add localized resources to certain core applications, such as the Workspace Manager, Installer, NetworkManager, and TextEdit. More complete localizations will be part of Japanese, French, and German versions of Mac OS X Server, which will be released this Spring. Note that the localization these application display depends on the order of languages the user has chosen in the Localization User Preference.

These packages can be selected as optional languages at installation time, and are available on the Mac OS X Server CD in System/Installation/Packages/*language*Essentials.pkg if you want to install them at a later time. Their contents can also be removed, like other packages, by opening the receipt in /Local/Library/Receipts.

Choosing optional languages at install time also determines which localized MacOS.app startup disk images are installed. This is not the case if you install a language after the OS installation process. If you want to install a new localized disk image, reinstall the package System/Installation/Packages/BlueBox.pkg on the Mac OS X Server CD, and select that language.

If you've installed the Mac OS X Server SDK, and are interested in developing localized applications, consult the Localization Read Me for more information.

Mac OS X Server Installer application

The Installer application (located in /System/Administration/Installer.app) is the tool used by administrators to install and remove software in Mac OS X Server.For information on how to create packages, see the Read Me Creating and Installing Packages.

Known Issues

* During installation of multi-package bundles, such as the Mac OS X Server SDK, the Installer may show alert panels referring to an unnamed log file. This file is located in:

/tmp/*filename***.installerLog**

where *filename* is the name of the multi-package bundle being installed (without the **.mpkg** extension).

* Version information for multiple package bundles isn't displayed anywhere in the Installer UI.

* The Installer fails to indicate when individual packages in a multiple package bundle have already been installed. Also, there is no facility for deleting installed multiple package bundles: you have to delete the individual installed packages.

* Installer now uses the pax tool to create and read packages. OpenStep packages created with tools that predate the Rhapsody Developer Release do not work with the Installer application included with Mac OS X Server. Packages created in Developer Release 2, which used the gnutar tool, can be installed by Installer, although the application fails to give feedback on each individual file as it is installed.
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Mac OS X Server 1.x: About Japanese on Mac OS X Server

Mac OS X Server lets you edit, display, and print Japanese text. Most of the applications included with this release are capable of handling the complex language using the internationalization feature of Mac OS X Server. In addition, applications developed for Mac OS X Server are automatically Japanese-ready, unless they have language dependent needs or features.

This document describes features and issues specific to Japanese.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
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Contents

- Configuring the system default character encoding
- New features
- Known issues

Configuring the system default character encoding

Mac OS X Server uses the Unicode character set. Unicode lets applications handle thousands of characters from multiple languages, including Japanese, simultanously.

Note: Mac OS X Server provides the transmission-friendly format of Unicode (UTF8) as the default system encoding.

To provide backward compatibility and inter-operability on other platforms, Mac OS X Server allows users to configure the system's default character encoding. The system character encoding setting governs how Mac OS X Server treats "plain text" files, filename character encoding, and application-specific default character encoding configurations such as MailViewer's default character encoding for plain text messages.

Because the default setting is Mac OS Roman, US and Western European users typically do not neeed to change the encoding setting. On the other hand, Japanese users should set their system default encoding to Japanese EUC. Setup Assistant automatically sets the configuration to Japanese EUC if the user select Japanese as the system language.

When you switch to a Japanese setting, the following components change their default character encoding handling:

- Mac OS X Server reads and writes plain text files in Japanese EUC character encoding if they are not already in Unicode.
- The default value for the Java "file.encodng" property is set to EUCJIS.
- The default character encoding for plain text messages sent or received by MailViewer is set to ISO 2022 JP.

You can change the default character encoding configuration by editing the text file at /System/Library/Frameworks/Foundation.framework/Resources/CStringEncoding. The default character encoding is Japanese EUC if the file contains the character "3" at the beginning, and Mac OS Roman if the file contains "30" or the file does not exist.

New features

The following new features have been added for Japanese text handling.

Automatic default input server launch at login

Workspace Manager now opens and initializes the user's default input server when the user logs in to the server. This reduces the delay before opening the input server the first time. The Canna Japanese Input Method is initialized if the system language is set to Japanese.

Default system character encoding configuration at installation

Setup Assistant now configures the default system character encoding to Japanese EUC if the system language is set to Japanese.

Known issues

Apple JIS keyboard support

On Apple JIS keyboards, typing the Yen (¥) key generates a backslash (\\) character. To enter the Yen symbol, type Option+Y.

Font settings in Japanese environment

For the best look and performance, you should change the font settings to use Japanese fonts using the Appearance control panel.

You cannot select fixed variants of the Heisei fonts for the Fixed Pitch Font setting.

Mac OS compatibility

For the Japanese Mac OS, the startup disk image requires at least 150 MB of disk space, not 100 MB as mentioned in About Mac OS Compatibility.

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Mac OS X Server 1.x: About Apple Multiscan 720 Display

Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

This article contains the Mac OS X Server release notes for the Apple Multiscan 720 Display.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.

Known Issues

Issue	The Apple Multiscan 720 Display may seem to only support 640 x 480 on some graphics cards, usually older cards.
Description	The Multiscan 720 defaults to require a DDC-capable graphics card to recognize the display and determine its capabilities. Some third party graphics cards and older Apple machines (pre-G3 series) may not support DDC and will allow only 640 x 480, unless the workaround below is used.
Workaround	The display can be configured with its front panel and onscreen display to disable DDC. When this is done, additional modes should be available on all supported graphics cards. A reboot is required after changing the monitors configuration.

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Mac OS X Server 1.x: About Printing

This article contains the Mac OS X Server release notes about printing.

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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Security Issues

All Mac OS X Server machines are set up to disallow computers on the network to print to printers configured for that machine. If you wish to share a printer you will have to edit (as root) the file /etc/hosts.lpd to select which computers you wish to permit printing privileges - you must then reboot the machine to make the changes take effect. Please see the man page for hosts.equiv for information on the format of this file.

PrintManager

This application allows NetInfo printer entries to be created and exported to other domains. You may view, delete or get information about jobs in a printer queue.

Known problems and workarounds:

1. Viewing Print Queue only works 1 time.
   - Workaround: Quit and re-launch PrintManager.
2. Cannot create/export remote printer entry if the domain need authentication.
   - Workaround: Use NetInfo.app to create the printer entry.
3. Cannot select any printer specific options from a PPD file.
   - Workaround: Remove the execute bit from the PPD file located in /System/Library/Printers/PPDs/Apple/Resources/
4. First local printer entry created does not update the Tabs correctly.
   - Workaround: Click on the tabs again.

Backward Compatibility

Because of the directory restructuring, printing to a Rhapsody Developer Release 1, NextStep, or OPENSTEP network printer from a Mac OS X Server computer does not work. This is because the Spooling Directory specified in the NetInfo entry for the printer does not exist on the Mac OS X Server system. There are two workarounds:

1. Rename all the **/printers/**[*PrinterName*] "sd" property keys to be "_sd". We have experienced no problems with legacy systems being able to print (if no spooling directory is specified, a default one is used).
2. Create the spooling directory on the Mac OS X Server system. This workaround is less desirable as it will have to be repeated for all new systems.

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Mac OS X Server 1.x: About Disk First Aid

This article contains the Mac OS X Server release notes on Disk First Aid.

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Differences in Disk First Aid versions

The version of Disk First Aid provided with Mac OS X Server works the same as version of Disk First Aid provided with Mac OS 8.1. The version of Disk First Aid provided with Mac OS 8.5 can detect and repair some disk problems that the version of Disk First Aid with Mac OS X Server cannot detect or repair.

If Disk First Aid on a Mac OS X Server computer reports a problem but says it cannot fix the problem or if you experience disk problems after Disk First Aid reports repairing your volume, you can try using the version of Disk First Aid with Mac OS 8.5. To do this, start up the computer wiht Mac OS 8.5 then open Disk First Aid. Alternatively, you can mount the volume in the Blue Box using exclusive mode, then open Disk First Aid on that volume in the Blue Box.

Using Disk First Aid on mounted volumes

If you use Disk First Aid to verify or repair a Mac OS Standard or Mac OS Extended volume with an open file or application on it, you will see a message that Disk First Aid is unable to unmount the volume.

- You may see this message in these cases:
- You have shared the volume as an Apple file services volume.
- You are using the volume with NetBoot services.
- You chose Mac OS from the Apple menu.
- In Terminal, you changed the directory to a folder on the volume.

To use Disk First Aid to verify or repair the volume, close any open files and quit any open applications. If you are using Terminal, quit Terminal.

If you have turned on Apple file services or NetBoot services, you may need to stop the AppleFileServer processes. To do this:

1. Open the Apple menu and choose Server Administration, then choose ProcessViewer. If necessary, choose All Processes from the Show pop-up menu.
2. Find the two AppleFileServer processes and select both.
3. Open the File menu and choose Quit Process, then click the Quit button to stop each process.

Note: The server may create a new AppleFileServer process after you complete these steps. Before continuing you should check if there is a new process and, if so, stop the process.

You should also make sure any NetBoot clients are shutdown before stopping the Apple File Server process. If this is not done, the workstations will freeze and any work users have not saved will be lost.

You should now be able to use Disk First Aid to verify or repair the volume.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: About the Find Application

This file contains release notes for the Mac OS X Server Release of the Find application. Items specific to the current (Mac OS X Server) release are included.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Find

Find for Mac OS X Server integrates the functionality of Find By Content and Find File within a single tabbed window. Find can be accessed from the Apple menu. Find opens with the Find File tab frontmost by default.

Find File

The File File tab allows an non-indexed search of files on the System. Clicking the More Choices button at the bottom left of the tab can refine the search. This increases the size of the window and adds new search criteria. Clicking on the Fewer Choices button removes a field and reduces the window size to fit. The Fewer Choices button is disabled when only one option is available. The More Choices button is dimmed when eight options (the maximum) are visible.

The volume popup lists a number of useful directory paths such as Home, Root and a series of paths that are chosen from a submenu.Note that choosing the menu item (i.e. applications) will not work. The user must choose the specific submenu item.

The Browse... button brings up the open dialog and allows the user to add favored directories to the volume popup menu. Added directories are appended to the volume popup menu and last a session only.

A maximum of eight search criteria are possible. Each one has one or more modifiers, accessed in the middle popup. The default modifier is <is>.

Drag and Drop to Search Fields

Dragging a file to the Find File dialog will update all the visible fields for that file, including the permission fields and the date modified field.

Searching

When the user presses the Find Button, the search commences and the Find button changes to a Stop button. All items in the window are disabled (except for the feedback field and Stop button). A spinning arrow in the top right of the window indicates activity. The items found field in the bottom center of the window lists the number of items found.

Pressing the stop button will abort the search and display the results collated up to the abort.

If no items are found an alert is shown.

Threading Finds

More than one find can be run simultaneously. By choosing Reset Find from the file menu or Cmd-R the user can enable all fields while a search is still running. He can then modify his search criteria and launch a simultaneous find by pressing the Find button. This again will disable all fields. By again choosing Reset Find the user can continue to modify and launch new finds. Ten finds can be threaded.

Note that the item found field will display results from all finds and appear non-sequential.

Choosing the Stop button in this case will bring up the Process Dialog.

Process Dialog

The Process dialog can be launched from the Recent Processes menu item in the Window menu. Or more likely it is shown if a user tries to stop a multi threaded find.

The Processes dialog lists all threads running at that time in a table. The user can abort any search by clicking on it in the table. This enables the Stop button and displays more information for that find in the status fields. Pressing the Stop button aborts the search for the listed find and displays the result window.

Results Window

The result window is the window where the results of the search are displayed to the user. The window is divided in two distinct parts separated by a resizable splitview. The top of the window contains a table that lists the results in columns. The columns order the results by Document, Size, Last Modified, Type, and Owner. The results are originally shown sorted by name. Clicking on the column will sort by that column. Columns can be reordered and resized.

Clicking on a row of this column will display the icon path of the file in the bottom view. Files can be dragged from the Icon path view to the desktop or to another volume or folder. Files can also be dragged from the workspace to the icon path view or from different result windows. The modifier keys determine the type of drag, as in the workspace. The items found field in the bottom left hand side displays the number of items found for this search.

Find allows multiple Results windows to be open at one time. The Results window is resizable.

Saving Search criteria

A search is saved from the Favorites menu. The Save As Favorite menu item presents a dialog allowing the user to name the saved criteria. It is saved to ~user/Library/FindPreferences. The favorites menu only saves search criteria and NOT results. Each favorite is appended to the menu. Choosing a favorite menu item will reinstate the search fields (enlarging or reducing the window as necessary). The user can launch the find as usual by pressing the Find button.

Editing Favorites

Choosing Edit Favorites from the Favorites menu will launch the Edit Favorites dialog. The user can rename or remove a find from the menu. (He cannot in this release change the internal find predicates i.e. the rightmost column of the table). Choosing a favorite and pressing remove removes it from the table , menu and disk.

Find by Content

The Find by Content uses Apple Information Access Toolkit (AIAT) to create indexes of the contents of folders, which you can then search for specific contents. Only folders which have been indexed can be searched in this way.

- If you have only installed User CD, you will have an empty "Search on" popup menu. You need to click the "Indexing" button to index the folder that you want to search on. After the folder is indexed, the folder will be automatically added to the "Search on" popup menu. Then, you can enter the search words, and click the "Find" button to start the searching.
- If you have installed Developer CD, you will have the Sytem Documentation pre-indexed for you. The "Search on" popup menu has "System Documentation" pre-selected. You can enter the search words, and click the "Find" button to start the searching. If you want to search on other folders, please indexing them first, then you can search for specific contents on those folders.
- The Find by content doesn't index the files with following extensions: index, idx, o, a, gif, pdf, eps, tiff, app, fbc, x, gz, gzip, zip, tar, dylib, nib, plist, accessor, ps, afm, snd, bom, or img. And, it doesn't index the folders with app, framework, font, bundle, or palette extensions.
- There are three files in the English resources of the Find application which are used by the Find by Content to do the indexing and searching. They are abbreviations.fbc, Stopwords.fbc, and Substitutions.fbc. You can use a text editor to modify them for other languages.
- There are some menu or menu items don't apply to the Find by Content : Reset Find, Recent Processes, and Favorites.

Indexing Dialog

If you want to create the index for a folder, you can click "Choose A Folder To Index" button to select the folder . Then, you can click the "Begin Indexing" to start the indexing. If the folder has a lot of text files, it will take a while to index the folder. During the indexing, you still can search on other folders.

After the indexing is completed, the folder name is added to the "Folders which have been indexed" table, and the folder name is automatically added to the "Seach on" popup menu of the main window. Then , you can switch back to the main window, enter the search terms, and click the "Find" button to start the searching.

If you want to update the index or delete the index, you can click the entry on the "Folders which have been indexed" table to select the folder. Then, you can click the "Begin Indexing" to start the indexing. Or, you can click the "Delete Index" to delete the index.

Results Window

The result window is the window where the results of the search are displayed to the user.

The window is divided in two distinct parts separated by a resizable splitview.

If no items are found an empty result window is shown.

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The top of the window contains a table that lists the results in columns. The columns order the results by Score, Document, Size, Last Modified, Type, Owner, hit tersms, and Path.The results are shown sorted by score always. Clicking on the column will not sort by that column. Columns can be reordered and resized.

Clicking on a row of this column will display the summary of the file in the bottom view.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: Mac OS Compatibility (MacOS.app) v2.2 Release Notes

This document describes the Mac OS Compatibility environment shipped with Mac OS X Server 1.1. This environment is implemented by the MacOS.app application, sometimes referred to as the "Blue Box".

Note: This document was installed by Mac OS X Server in /System/Documentation/Read Me For a list of other release notes see article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

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- Quick Start
- System Requirements
- Installation
- Features
- Disk Access Modes
- Disk Drive Support
- Working with Disk Image Files
- Startup Options
- Bugs and Compatibility Issues

Overview

MacOS.app, sometimes referred to as the "Blue Box", is a high-performance, high compatibility environment for running Mac OS software within the Mac OS X Server operating system.

High compatibility is achieved by running Mac OS essentially unchanged in a virtual environment, which appears to be a new Macintosh hardware model. Because of this, the vast majority of Mac OS applications, utilities, extensions and software drivers just work. Software that directly accesses hardware, uses undocumented internal APIs of the Mac OS, or relies on Mac OS managers not yet supported by this release of MacOS.app is not expected to work.

The Mac OS managers not currently supported by this release are those generally associated with hardware not yet fully supported by Mac OS X Server. Such missing functionality is explicitly listed in this document and will likely be provided in subsequent releases of MacOS.app.

This release of MacOS.app comes with Mac OS 8.5.1 and will support future versions of Mac OS that have not shipped as of this writing. Previous versions of Mac OS are not supported, and MacOS.app will not allow them to run.

MacOS.app allows you to use your current Mac OS applications to "live" on Mac OS X Server, to explore its new capabilities while preserving your current Mac OS environment.

You are encouraged to read these release notes before running MacOS.app. If you just can't resist, at least read the following "Quick Start" section.

Quick Start

To start MacOS.app, choose Mac OS in the Mac OS X Server Apple menu or double-click on "/System/Applications/MacOS.app" in the Workspace File Manager. You may also want to drag an alias onto the Workspace for quicker access to MacOS.app. It is best not to launch MacOS.app from a Terminal window, since it will not result in a clean MacOS.app shutdown when logging out from the Mac OS X Server's Workspace.

The first time you launch MacOS.app, a private Mac OS 8.5.1 startup disk image (called StartupDisk.img) will be created. The language of the image will be selected based on the Localization settings from the Preferences application and the MacOS.app languages that have been installed. The selected image will be copied and uncompressed into /Local/Library/MacOS/Users/. This process will take a little time and is accompanied by a dialog box with a progress bar. At the end of creating the startup disk image, a virtual PRAM file called "PRAM" will also be created in the same directory.

Choosing Shut Down from the Mac OS Finder's Special menu will quit MacOS.app. Similarly, choosing Restart will quit and re-launch MacOS.app. You may also use the Power key, which will bring up the standard Mac OS "Shut Down / Restart" dialog box.

To switch between the Mac OS and Mac OS X Server environments, use the Application menu at the far right of the menu bar. In both MacOS.app and Mac OS X Server, this menu has been extended to list all applications running in both environments, grouped by environment. If you choose an application that is running in the other environment, you will be switched to that environment and the selected application will be

activated.

There is a special item in the application menu of each environment that will switch you to the other environment and bring you back to the last application you were using in that environment. That item is called "Mac OS X Server" in the Mac OS environment and "MacOS" in the Mac OS X Server environment.

The following special keys combinations are available when you are in the Mac OS environment, and supersede any Mac OS use of these key combinations:

Command-Return is a shortcut for choosing "Mac OS X Server" from the application menu. Since this may interfere with some applications that use this combination of keys, you may disable it, as discussed under "User Input" in the "Bugs and Compatibility Issues" section.

Command-Shift-Q will force-quit MacOS.app. This would be equivalent to pulling the power plug out of the wall on native Mac OS and should only be used when Mac OS is hung.

All other Mac OS special keys (e.g., Command-Power for NMI - to enter MacsBug) function as expected.

Before installing software, read the section "Use of Disk Image Files", under "Working with Disk Image Files".

System Requirements

The minimum recommended RAM for running Mac OS X Server with MacOS.app is 64 MB.

Each user running MacOS.app on this machine will require a minimum of 175 MB of disk space for the Mac OS 8.5.1 startup disk image. The Japanese localized startup disk image requires approximately 200 MB of disk space.

Installation

MacOS.app is installed as part of the standard Mac OS X Server installation. Earlier versions of MacOS.app are not compatible with Mac OS X Server.

The installation consists of the following installed items:

```
/System/Documentation/ReadMe/MacOS.html
```

This release note document.

```
/System/Applications/MacOS.app
```

The application directory contains the executable file (MacOS), supporting resources and compressed localized Mac OS disk images. The particular localized disk images installed (of English, French, German and Japanese) will depend on your language selection(s) when you install Mac OS X.

```
/usr/bin/createimage
```

A command-line utility to create new disk image files (discussed under "Working with Disk Image Files").

Features

System Software

MacOS.app currently supports Mac OS 8.5.1. The supplied StartupDisk.img files contain complete default installations of Mac OS 8.5.1 except for Apple Remote Access and Text-to-Speech. These were omitted to save space and because they rely on features not yet supported by MacOS.app.

Do not attempt to install previous versions of Mac OS. Future versions of Mac OS are likely to be directly installable by running their installer in MacOS.app.

Virtual Memory

MacOS.app uses a new method for virtual memory, taking advantage of Mac OS X Server's VM system. This method, called "Sparse Virtual Memory", allows application heaps to be protected from each other with "guard" pages of unmapped memory. In addition, it allows a large number of applications to be launched, using disk space for memory as it is needed. The total virtual application memory available is 1024 MB.

MacOS.app always runs on top of Mac OS X Server's Virtual Memory, but Mac OS VM will appear to be off to applications.

Temporary Memory

In native Mac OS, an application's memory heap comes out of the same memory area as temporary memory. Since some applications allocate large fractions of available temporary memory, MacOS.app does not offer the entire unused portion of its 1024 MB sparse virtual address space as temporary memory. Instead, the temporary memory heap is created at startup time, with the size determined by the machine's available physical memory, with a minimum size of about 16 MB. Some applications may require a larger amount of temporary memory in order to run properly, and you can allocate additional temporary memory by setting SysZoneMemorySize to the desired size. For example "defaults write MacOS SysZoneMemorySize 0x10000000" will set the temporary memory size to approximately 256 MB. You may notice this difference in the Finder's "About This Computer" dialog box. In native Mac OS, the first bar (labeled "Mac OS") shows the amount of memory allocated to Mac OS and is usually almost fully in use. In MacOS.app, this bar includes the memory allocated to Mac OS plus the temporary memory allocation. On machines with a large amount of physical memory, this bar will be significantly larger.

File Systems

Throughout this document, "HFS(+)" is used as an abbreviation for "HFS or HFS+". HFS is also known as "Mac OS Standard Format" and HFS+ as "Mac OS Extended Format".

MacOS.app supports file systems on nearly all kinds of disk devices that are supported under the native Mac OS. These include, but are not limited to floppies, CD-ROMs, hard drives, and disk image files stored in the Mac OS X Server file system (UFS). Both SCSI and ATA/IDE (including ATAPI) drives are supported.

Disks can be accessed in one of three modes: Shared, Exclusive, or SCSI. Not all disk modes are available for all disks. The default access mode is Shared mode, except for disk images (which are always accessed in Exclusive mode). In order of highest-to-lowest interoperability with Mac OS X Server applications, the modes are Shared, Exclusive, and SCSI. Conversely, the modes in order of highest-to-lowest compatibility with Mac OS applications are: SCSI, Exclusive, and Shared.

Thus, there is a fundamental tradeoff involved with choosing which mode to use to access a disk. Shared mode was chosen as the default access mode because it provides a high enough level of compatibility to support typical productivity applications, while at the same time permitting access to the same disk via Mac OS X Server applications.

For more information, see the sections entitled "Disk Access Modes" and "Disk Drive Support".

Copy and Paste Between Mac OS and Mac OS X Server

MacOS.app currently supports basic Copy and Paste between Mac OS and Mac OS X Server applications.

Text can be copied (without style information) back and forth between the two kinds of applications. This includes some support for two-byte characters. See the "Bugs and Compatibility Issues" section for more details.

Pictures ('PICT') can be copied from Mac OS to Mac OS X Server applications, but are converted to RTF, which cannot be copied back to Mac OS. Many more data types are expected to be supported in future releases of MacOS.app.

Networking

MacOS.app supports Open Transport AppleTalk and TCP/IP networking using built-in Ethernet and any PCI Ethernet devices supported by Mac OS X Server. LocalTalk (AppleTalk over serial ports) is not supported. As with native Mac OS, AppleTalk networking is active by default if connected to a network.

AppleShare Client as well as Personal File Sharing, AppleShare Server and AppleShare IP Server are fully supported by MacOS.app. Personal Web Sharing is also supported.

Since Mac OS uses a different networking model than Mac OS X Server (Open Transport vs. Sockets), you must use a separate IP address for MacOS.app TCP/IP from that used by Mac OS X Server. This is best accomplished by using a static IP address in the TCP/IP control panel (or

by using MacIP - IP over AppleTalk). In previous versions of MacOS.app, when the same IP address was used for Mac OS X Server and MacOS.app, Open Transport reported an error message indicating the reason TCP/IP networking is not available. If the same IP address is used in the present versions of Mac OS X Server and MacOS.app, Open Transport TCP/IP will silently be disabled.

PCI Native Driver Model

MacOS.app partially supports the PCI native driver model. This means that the name registry, DriverServicesLib, and associated libraries are present. However, the Mac OS device tree is currently empty, so no 'ndrv' drivers are loaded.

Video

Unlike Mac OS X Server, MacOS.app can change color depth on the fly and supports multiple monitors in color depths of 8, 16, and 24-bit (256, "thousands" or "millions" of Colors or Grays). However, if Mac OS X Server is in grayscale mode, then MacOS.app will not allow depth changes.

Because of limitations in Mac OS X Server, MacOS.app cannot change resolution (size and scan rate). The resolution must be changed in Mac OS X Server's Preferences application and the changes take effect after logging out of Mac OS X Server.

MacOS.app supports multiple monitors. However, you may set it up to use only one monitor on a multiple-monitor system. MacOS.app assigns the number 0 to the main monitor (the one with the menu bar). Additional monitors are assigned the numbers 1, 2, etc. Setting the Mac OS X Server user preference "MonitorSelect" for MacOS.app to a value that indicates that monitor's assigned number will cause MacOS.app to only use that monitor for displaying video.

For example, from a Mac OS X Server Terminal window:

```
"defaults write MacOS MonitorSelect 0"
```

means only use the main monitor and

```
"defaults write MacOS MonitorSelect 1"
```

means only use the second monitor.

AppleEvents and AppleScript

AppleEvents and AppleScript are supported as usual within MacOS.app and from MacOS.app to scriptable Mac OS X Server applications.

For Mac OS X Server applications to be scriptable, they must use the Scripting Framework. Developer documentation on the use of this framework can be found in /System/Documentation/Developer/YellowBox/ReleaseNotes/

The Script Editor in MacOS.app can target applications that are running in the Mac OS X Server environment. On the local machine, targeting these applications is done the same way that targeting Mac OS applications is done.

For example, if you have a Mac OS X Server application named Sketch, you would target the application with standard AppleScript syntax:

```
tell application "Sketch"
...
end tell
```

If you are targeting Mac OS X Server applications on other machines, the syntax is slightly different and uses a semicolon between the application name and the host name:

```
tell application "Sketch;hostname"
...
end tell
```

The normal Mac OS syntax to target remote Mac OS X Server applications:

```
tell application "Finder" of machine "machine name" of zone "zone name"

...

end tell
```

is not supported in this release.

The MacOS.app Script Editor cannot get the dictionary information for a Mac OS X Server application in Mac OS X Server 1.1. This functionality will be added in a later release.

By default, Scripting between two machines is turned off for security purposes (similar to Mac OS Program Linking which is turned off as the default). The following information will help you turn on remote AppleEvents and remote AppleScripting.

The remote scripting default is called NSAllowRemoteAppleEvents.

It can be set from a Terminal window like this:

```
defaults write NSGlobalDomain NSAllowRemoteAppleEvents YES
```

It could also be turned on only for certain applications as follows:

```
defaults write Sketch NSAllowRemoteAppleEvents YES

defaults write TextEdit NSAllowRemoteAppleEvents YES
```

An API for using AppleEvents outside of AppleScript in Mac OS X Server applications has not been provided in this release.

Sound Output

Sound output is fully supported by MacOS.app, although breakup may occur during times of heavy CPU usage or memory paging. Occasionally, this may result in sound going silent altogether until the application using sound quits or MacOS.app is restarted. Playing sound in Mac OS X Server and MacOS.app simultaneously will have unpredictable results.

SCSI Manager

The Mac OS SCSI manager is partially supported in this release. It can be used via SCSI Mode for disks, as discussed in the section "Disk Access Modes", and to access non-disk devices (such as scanners and tape drives) which are not in use by Mac OS X Server.

Both the original SCSI Manager and SCSI Manager 4.3 are supported with the following limitations:

Original SCSI Manager:

- SCSIReset will not reset the SCSI bus.
- The values returned from SCSIStat provide only an approximate indication of what is going on during a transaction. Code that relies on SCSIStat to control an operation may fail.

SCSI Manager 4.3:

- MacOS.app does not support Mac OS drivers for third-party SCSI cards. Mac OS X Server DriverKit drivers are required to use these cards.
- The SCSIBusInquiry function does not return complete information about each SCSI bus.
- The SCSIResetBus function will not reset the SCSI bus.
- Command queuing functions, such as scsiQEnable, scsiSIMQHead, scsiSIMQFreeze, scsiSIMQNoFreeze, scsiSIMQFrozen and SCSIReleaseQ are not implemented.
- All SCSI transfers use DMA. Handshaking information is ignored. The scsiSelectTimeout parameter is ignored.
- SCSIAbortCommand and SCSITerminateIO are not implemented.
- The SCSI implementation will attempt to negotiate synchronous data transfer and device disconnect by default.
- scsiNoParityCheck, scsiDisableSelectWAtn, scsiSavePtrOnDisconnect, scsiDisableWide, scsiInitiateWide, and scsiRenegotiateSense, scsiNoBucketIn, and scsiNoBucketOut are not supported.
- If an application traverses the SCSI chain, devices that are already reserved or in use (e.g., by Mac OS X Server) will not be found. In order to have an application recognize a device via the SCSI manager, you must explicitly set that device to SCSI mode as described below.

Disk Access Modes

The sections below describe the tradeoffs among the three access modes: Shared, Exclusive, and SCSI. If you are just running Mac OS productivity applications, you should not need to switch the access mode for any of your disks or partitions. However, in case you need to run disk utilities - such as Disk First Aid, Disk Copy, or Drive Setup - you may need to (temporarily) switch the access mode of one or more of your disks or partitions. The "Blue Volume Mount Options" control panel is provided to allow you to set these access modes for individual disks and disk partitions. It is described below, after the explanations of the three access modes.

You can determine in which mode a volume is being accessed by selecting it in the Finder and invoking the "Get Info" command from the "File" menu. The dialog that appears includes a "Where" string that describes the mode in which the underlying disk is currently being accessed, along with an indication of the physical disk to which it corresponds. Disks accessed in Shared mode will have "Shared" in this string. Similarly, disks accessed in Exclusive mode will have "Exclusive" in this string. Disk image files (which are always accessed in Exclusive mode) will list the pathname of the disk image file. Disks accessed in SCSI mode will have a string identical to the one they would display if running native Mac OS; typically this string gives the SCSI Bus number and SCSI device ID of the drive.

For disks accessed in Shared or Exclusive mode, the SCSI bus and ID (or ATA/IDE ID) are not given; instead, they are identified in the "Where" string by their Mac OS X Server device name. In order to understand how Mac OS X Server names disk devices, you will need to consult the documentation for Mac OS X Server. Briefly, SCSI (and ATAPI) disks have names like "sd0", "sd1", etc. ATA/IDE drives have names like "hd0"; and floppy disks have names like "fd0". Disk devices may also have more than one HFS(+) partition; the first HFS(+) partition of "sd0" is "sd0_hfs_a", the second is "sd0_hfs_b", etc. Disks without partition maps (such as floppies and ISO9660 CD-ROMs) are treated as though they consisted of a single HFS(+) partition, comprising the whole disk (e.g., "sd0_hfs_a").

Shared Mode

MacOS.app supports mounting HFS(+) volume(s) which are already mounted by Mac OS X Server. This mode of access is called Shared mode because all the files and folders on Shared volumes are simultaneously accessible from Mac OS applications running inside MacOS.app and Mac OS X Server applications running outside of it. Shared mode was chosen as the default file system access mode because it does not require the user to unmount a volume from one environment before mounting it in the other.

Although Shared mode access provides the highest level of interoperability between Mac OS and Mac OS X Server applications, it is not compatible with Mac OS applications that require low-level disk access. Mac OS productivity applications are not affected by this incompatibility since they access files and folders via the high-level interface provided by the File Manager. On the other hand, disk utility programs typically require low-level disk access. Examples of disk utilities that require Exclusive mode access are Disk First Aid, and Norton Disk Doctor. Examples of disk utilities that require SCSI mode access are Drive Setup, and FWB's Hard Disk Toolkit. None of these utilities will function correctly on a volume accessed in Shared mode.

Volumes accessed via Shared mode are slightly less compatible with Mac OS applications than if they were mounted in Exclusive or SCSI mode. But they are far more flexible because they allow you to concurrently share data between Mac OS applications running inside MacOS.app and Mac OS X Server applications running in the Mac OS X Server environment. This means that the files and folders you see in MacOS.app can also be seen from Mac OS X Server.

In Shared mode you should be able to run nearly all of the applications you run on a native Mac OS system. One small difference between volumes accessed via Shared mode is that the size of the underlying "disk" may not be reported accurately. For small HFS disks (like floppies), it might be overestimated by a few kilobytes and for large HFS+ disks (like multi-gigabyte hard drives) it might be underestimated by a few megabytes. This cosmetic difference should not have any adverse affect, since block-level access is not permitted on disks accessed via Shared mode.

In general, other incompatibilities and inconsistencies result from conflicts over shared resources. For example, if a Mac OS application running inside MacOS.app is accessing a file (or group of files) at the same time that a Mac OS X Server application is accessing them, there is a risk that they might make conflicting changes.

One place where this arises is in the process by which the Mac OS Finder rebuilds the Desktop Database. In Mac OS X Server, the Desktop Database is a shared resource that is managed by an independent server task (the "DesktopDB" server) and which fields requests from various clients, including MacOS.app. This works well and provides a centralized place for serializing access to the shared Desktop Database files. However the mechanism used by the Mac OS Finder for rebuilding the Desktop Database conflicts with the Desktop Database server. Consequently, rebuilding the Desktop Database on a Shared volume will not always have the desired effect. This issue will be addressed in a future Finder and MacOS.app. As a workaround you can switch the disk to Exclusive mode, rebuild the Desktop Database, and then switch the disk back to Shared mode. See the section on the "Blue Volume Mount Options" control panel for information on switching modes.

Another example of a shared resource conflict can be seen when attempting to eject a disk from one environment (the Workspace or the Finder) while it is in use by an application in the other environment. In this case, the ejection attempt may appear to succeed (i.e., the volume's icon may disappear from the desktop) but the disk might not be physically ejected from the disk drive. If this happens, the solution is to switch to the other environment and eject the disk from that environment as well (after closing any files that may be in use first, of course). Since Mac OS X Server cannot tell if individual files are open by Mac OS applications running inside MacOS.app, the Workspace will refuse to eject a disk that is mounted in MacOS.app, even if there are no individual files opened from that volume by Mac OS applications. Going in the other direction is a

little better; when you attempt to eject a removable disk from MacOS.app it will ask the Workspace to unmount any volumes mounted from that disk and to eject the disk. If there are no files open from that volume and no processes whose current working directory is set to a directory on that volume, then the disk will be automatically unmounted from Workspace and ejected - there will be no need to switch to the Workspace and eject the disk again.

Remember, having a Mac OS X Server application with its "current working directory" set to a folder on a disk marks that disk as "in use" the same way that having an open file does. For example, if you insert a floppy in the Workspace then in a Terminal window "cd" to some directory within the floppy, you will not be able to eject that floppy via MacOS.app.

Removable disks accessed via Shared mode are not ejected upon shutdown of MacOS.app (floppies are an exception).

How does Shared volume support work? MacOS.app contains the same File Manager code used by the native Mac OS with the addition of some logic that determines when a file system request is targeting an object on a Shared volume. These requests are passed over to the HFS(+) implementation in Mac OS X Server. The important thing to note is that this processing happens at the level of Mac OS File Manager requests, as opposed to disk driver requests or SCSI Manager requests. Thus, when you ask to "open" a file on a Shared volume, that request is sent to Mac OS X Server and is processed there. The results of the "open" in Mac OS X Server are passed back to MacOS.app and mapped into Mac OS "open" results. Then, a "read" from the newly opened file would be mapped into a Mac OS X Server "read" request and the results mapped in a Mac OS "read" result. The MacOS.app implementation of the Shared file system tries to map the file system requests and their results as closely as possible to native Mac OS. Applications should never know (or care) that they are running in the MacOS.app on a Shared volume, as long as they limit themselves to making File Manager requests and do not attempt to make disk driver or SCSI Manager requests.

The choice between Shared and Exclusive mode access can be made on a per-partition basis for disks with multiple HFS(+) partitions.

Exclusive Mode

MacOS.app supports mounting HFS(+) disk volumes in a mode that permits block-level access. This mode permits certain disk utilities (such as Disk First Aid and some operations in Disk Copy) to run that would not work with a disk accessed via Shared mode. This is called Exclusive mode because disks accessed by MacOS.app in this mode appear exclusively in MacOS.app and cannot be accessed by Mac OS X Server applications. You can request that a disk or partition be accessed via Exclusive mode by using the "Blue Volume Mount Options" control panel.

When Mac OS X Server first detects an HFS(+) disk partition (either when starting up or when a removable disk is inserted into a drive) it mounts it and notifies MacOS.app. MacOS.app is also notified about disks that are not recognized or mounted by Mac OS X Server. When MacOS.app notices a disk that has been mounted in Mac OS X Server for which the user has selected Exclusive mode, it asks Mac OS X Server to unmount the disk and then mounts it exclusively.

Because it remains under the control of the Mac OS X Server SCSI drivers, a disk accessed via Exclusive mode cannot be accessed via the Mac OS SCSI Manager, even if the underlying disk is a SCSI disk.

Volumes accessed in Exclusive mode can be read from and written to, regardless of the access rights of the user.

Disk image files like the supplied StartupDisk.img are always accessed via Exclusive mode.

The choice between Exclusive and Shared mode access can be made on a per-partition basis for disks with multiple HFS(+) partitions.

Removable disks accessed via Exclusive mode are usually ejected upon Shutdown or Restart of MacOS.app. CD-ROMs are an exception and are not ejected upon shutdown, in order to more closely mimic the behavior of Mac OS.

SCSI Mode

MacOS.app supports SCSI disk devices that are recognized by Mac OS X Server. MacOS.app provides a special compatibility mode for accessing these devices via the SCSI Manager, just as they would be accessed under the native Mac OS. This mode provides the highest level of compatibility with Mac OS disk utilities, especially with those that require SCSI access, like Drive Setup.

Like Exclusive mode, SCSI mode must be selected by using the "Blue Volume Mount Options" control panel. When MacOS.app first detects a disk for which SCSI mode has been selected, it attempts to unmount it from Mac OS X Server. If this succeeds, MacOS.app can access it in SCSI mode without fear of interference from Mac OS X Server applications.

Volumes accessed in SCSI mode can be read from and written to, regardless of the access rights of the user.

Unlike the choice between Shared and Exclusive mode access - which can be made on a per-partition basis for disks with multiple HFS(+) partitions - accessing a disk via SCSI mode precludes any other sort of access, either by Mac OS X Server or via Shared or Exclusive mode in MacOS.app. One consequence of this is that a disk containing a UFS file system partition that is mounted by Mac OS X Server cannot be accessed via SCSI mode in MacOS.app. For example, if your system has only one hard drive and has separate partitions for UFS and HFS(+) file systems, you will not be able to access the disk in SCSI mode.

Removable SCSI drives without media present will become reserved for SCSI mode access if probed via a SCSI disk utility like Drive Setup.

SCSI mode access is not available for ATAPI devices (which includes the internal CD-ROM and optional Zip drive on some Power Macintosh G3 models) or IDE/ATA devices (which include the internal disks on most non-Server Power Macintosh G3 models).

Switching Modes: The "Blue Volume Mount Options" Control Panel

In the "Apple Extras" folder of the supplied StartupDisk.img is the control panel to set the desired access mode for disks and disk partitions. Disks can be accessed in one of three modes (Shared, Exclusive, or SCSI), although not all disks will permit access in SCSI mode. A disk cannot be accessed in SCSI mode if it is not a SCSI disk (e.g., floppies, ATA/IDE/ATAPI disks). Nor can it be accessed in SCSI mode if there is a UFS file system mount point active on the disk at the time the mode switch is attempted (either when the control panel is launched or when MacOS.app is starting up).

Launching the "Blue Volume Mount Options" control panel displays a single dialog which can be dismissed by quitting the control panel or closing the window. Any changes that are made are stored immediately upon quitting the control panel, although most changes do not take effect until MacOS.app is restarted.

The control panel lists all the disk drives and disk partitions that it finds on the system, together with three columns of radio buttons, named after the three possible modes of operation: SCSI, Exclusive, and Shared. If a radio button does not appear in one of the columns, it means that the corresponding mode is not available for that drive (e.g., SCSI mode for an ATAPI CD-ROM drive). Radio buttons are used to convey the fact that each drive or partition can only be accessed in one mode at a time. For a brief explanation of how Mac OS X Server names disk devices, see the beginning of the "Disk Access Modes" section. If a disk partition is already mounted in Shared or Exclusive mode, it will appear in the control panel under that name (e.g., "sd0_hfs_a"). If it is a removable drive with no disk present, it will appear under the name of the drive (e.g., "sd0"). Finally, if it is being accessed via SCSI mode, it will appear labeled with its SCSI Bus and device ID (e.g., "Bus 0, ID 0"). In each case, these labels should correspond closely to what you will find in the "Where" string displayed in the Finder's "Get Info" dialog for that volume.

The same disk may appear under different names at different times in the "Blue Volume Mount Options" control panel depending on whether there is a disk in the drive. For example, the internal ATAPI CD-ROM drive on a Power Macintosh G3 will appear as "ATA drive sd0" when there is no CD-ROM in the drive, but as "HFS partition sd0_hfs_a" when a CD-ROM is in the drive.

If a disk has multiple HFS(+) partitions, they can be accessed in Shared or Exclusive mode independently from one another. In other words, the choice between Shared and Exclusive mode can be made on a per-partition basis. Similarly, Mac OS X Server can mount a UFS partition from a disk containing one or more HFS(+) partitions, each of which may be accessed in Shared or Exclusive mode. SCSI mode is different, though, because it requires complete control of all requests going to the disk. Therefore, selecting SCSI mode for one partition on a disk causes all the partitions on the disk to be accessed via SCSI mode. If you try this, you will see that the settings of the radio buttons automatically reflect this constraint. Similarly, you cannot select SCSI mode for a disk containing a mounted UFS file system. If you do select SCSI disk mode for a disk that contains an unmounted UFS file system, your selection will be honored. You will not be able to mount that UFS file system in Mac OS X Server while MacOS.app is accessing the disk in SCSI mode.

For fixed, non-removable disks, changes made via the "Blue Volume Mount Options" control panel will not take effect until MacOS.app is restarted. Removable disks are an exception to this rule: if you change the access mode for a removable disk then it will be accessed in that mode the next time you insert a disk in the drive. Consequently, you can quickly change the access mode for a removable disk by changing the setting in the control panel (and quitting it), ejecting the disk, and reinserting it - all without needing to restart MacOS.app.

There is one situation in which switching modes requires special care. When switching a non-removable disk to Shared mode from some other mode, you must shut down MacOS.app and wait for the Workspace to remount the disk on its desktop before re-launching MacOS.app. Otherwise, if you were to switch a disk to Shared mode and restart MacOS.app (e.g., from the Finder) then the Workspace might not have enough time to remount the disk before MacOS.app claimed it in Exclusive mode again. In this situation, the disk would not appear on the desktop of the Workspace and the "Where" string in the Finder's "Get Info" dialog for the disk would indicate "Exclusive". If this happens, the only way to get the Workspace to remount the disk for Shared access is to log out of the Workspace (after shutting down MacOS.app) and log back in again.

Currently, settings made via the "Blue Volume Mount Options" control panel are stored in the user's defaults database, although this might change in the future. Consequently, in a NetInfo environment, the same settings will be used for a user regardless of the machine they login to - beware. To see which disks have been set up in Exclusive mode, execute this command from the command line (i.e., in a Terminal window): "defaults read MacOS ExclusiveDisks". This "defaults" setting is a list consisting of device and/or individual partition names, separated by spaces. To see which disks have been set up in SCSI mode, execute this command at the command line: "defaults read MacOS SCSIDiskLoans". This list consists of ":" pairs, separated by spaces. If a disk or partition is not mentioned on either of these lists then MacOS.app will attempt to access it via Shared mode. In general, there should be no need to view these settings from the Mac OS X Server command line rather than with the "Blue Volume Mount Options" control panel. However, this information is provided because it might be useful for remote diagnosis and trouble-shooting.

The disk mode selections made via the "Blue Volume Mount Options" control panel are only requests. In some cases, it might not be possible to honor them and MacOS.app may mount a disk in a mode other than the one selected in the control panel. To find out what mode a volume is being accessed in, you can interpret the "Where" string displayed in the Finder's "Get Info" dialog for that volume, as described at the beginning of the "Disk Access Modes" section. For example, if Exclusive mode is selected for a disk partition but a Mac OS X Server application has a file from that partition open, then MacOS.app will not be able to get Exclusive access when it starts up. Rather than having the disk not appear in

MacOS.app in this situation, MacOS.app will fall back to mounting the disk in Shared mode.

Mac OS X "Disk Mounting" Preferences

There is a preference setting, "Disk Mounting", which can restrict MacOS.app's ability to unmount volumes from Mac OS X Server. In turn, this can prevent MacOS.app from ejecting removable disks and from accessing disks via Exclusive or SCSI mode.

To invoke the "Disk Mounting" preference panel, select it in the "Computer Settings" submenu of the Mac OS X Server Apple Menu. The panel includes some explanatory text. To change the panel's setting, you must be logged-in as root. Changes will not take effect until Mac OS X Server is restarted.

The default setting for a Server configuration is either "Fixed & removable disks" or "Only fixed disks". In a non-Server configuration where MacOS.app is going to be used extensively, it may be more convenient to select the "Only the startup disk" setting, for reasons that will be explained. However, this setting is not appropriate for a Server, because it means that files cannot be served from disks other than the startup disk unless someone is logged into the server. The other two settings are more appropriate for a Server because they permit files to be served from all disks attached at startup time, regardless of whether anyone is logged into the server.

In either of the Server modes you must be logged-in as root if you wish to use MacOS.app to eject removable disks or access disks via Exclusive or SCSI mode. This is a security precaution that is appropriate for a Server configuration, but might be overly restrictive for a Macintosh that is being used as a personal workstation, especially if it is shared between non-root users. If you select the "Only the startup disk" setting in the "Disk Mounting" preference panel (and restart Mac OS X Server), then disks other than the startup disk will be mounted upon login and unmount upon logout. As a result, the user that logs in will be able to use MacOS.app to unmount these disks, e.g. in order to eject a removable disk or to access a disk via Exclusive or SCSI mode.

Disk Drive Support

The following sections discuss the level of support provided for various kinds of disk media. Since some things apply to whole families of drives (e.g., SCSI drives) and some things apply to specific kinds of drives (e.g., CD-ROM drives), there is some overlap between the categories and you may need to read them all in order to find what you are looking for.

SCSI Disk Drives

SCSI disk drives can be accessed in Shared, Exclusive, or SCSI mode.

For more information on SCSI mode file system access, see the section on "SCSI Mode File System Access". For more information on switching the access mode, see the section on the "Blue Volume Mount Options" control panel.

SCSI disk devices (e.g., hard drives, CD-ROM drives, Zip drives, and Jaz drives) are supported, including those with multiple partitions. In Shared and Exclusive mode they behave like generic SCSI hard drives with the addition that disk-insertion detection and auto-ejection are supported. In Shared and Exclusive mode, special vendor-specific drivers (e.g., the Iomega Driver) are not loaded or used. If the drive has a manual-ejection button then it will be disabled while the disk is being accessed.

In SCSI mode, most third-party SCSI drivers are supported, including those that make possible special device-specific features (e.g., hardware write-protection or password protection). In this mode, MacOS.app supports the original SCSI Manager and SCSI Manager 4.3 with limitations. See the section on "Bugs and Compatibility Issues" for more details.

Mac OS X Server implements SCSI device arbitration. This means that only one client can send SCSI commands to a SCSI device at a time. Often, in the case of SCSI disks, this client is the Mac OS X Server file system. When MacOS.app is accessing a disk partition in Exclusive mode, then it is the client. For the purpose of SCSI mode access, MacOS.app can "see" any SCSI device not in use by Mac OS X Server (or any other client). In particular, removable disk drives with no media in place are always visible to MacOS.app and if probed will be accessed in SCSI mode until MacOS.app is shut down.

ATA/IDE/ATAPI Disk Drives

ATA/IDE/ATAPI drives can be accessed via Shared or Exclusive mode. They cannot be accessed via SCSI mode.

"ATA" and "IDE" are used interchangeably. The internal hard drives on most non-Server Power Macintosh G3 models are ATA/IDE drives. MacOS.app does not currently support the Mac OS ATA Manager. A future release may include an "ATA mode" similar to the existing "SCSI mode". "ATAPI" drives are special ATA/IDE drives with additional features. The internal CD-ROM and optional Zip drives on Power Macintosh G3 models are ATAPI drives.

Floppy Drives

Floppy drives can be accessed in Shared or Exclusive mode. They cannot be accessed in SCSI mode.

High Density (1.44 MB) floppies are fully supported. 800 KB floppies are supported read-only.

MacOS.app supports auto-detection and auto-ejection of floppies. Low-level initialization is only supported in Exclusive mode. If you insert a floppy that lacks a low-level format, it will be automatically accessed in Exclusive mode in order to permit you to initialize it. If, after initializing such a floppy, you wish to access it in Shared mode, you will need to eject it and reinsert it. See the section on the "Blue Volume Mount Options" control panel for instructions on how to change the mode. See the "Bugs and Compatibility Issues" section for other floppy issues.

Disk Image Files

Disk image files are volume images in Mac OS Disk Copy uncompressed format, stored in Mac OS X Server's UFS file system. They are always accessed in Exclusive mode. From the Mac OS X Server environment, they appear as large binary files whose name end in ".img". In the Mac OS environment, however, they appear as regular Mac OS volumes (with a special icon). By default, MacOS.app will startup from the disk image file in /Local/Library/MacOS/Users//StartupDisk.img. See the section "Working With Disk Image Files", below, for details.

CD-ROMs

CD-ROMs are supported in MacOS.app. They behave like locked SCSI hard drives when accessed via Shared or Exclusive mode. MacOS.app supports auto-detection and auto-ejection of CD-ROMs.

HFS(+) CDs can be accessed in Shared, Exclusive, or SCSI mode. DOS, ProDOS, PhotoCD, ISO 9660, and High Sierra CDs are automatically mounted in Exclusive mode, even if Shared mode is selected. They are also accessible in SCSI mode.

ISO9660 CDs are treated specially: they are mounted simultaneously in Mac OS X Server and in MacOS.app, but they are mounted in Exclusive mode in both environments. This may sound like a contradiction, but is possible because CD-ROMs are read-only media and there is no risk of writing inconsistent data or causing disk corruption. ISO9660 CD-ROMs are the only exception to the rule that disks appearing in MacOS.app in Exclusive mode do not appear in Mac OS X Server.

Only the first session of a multisession CD-ROM will be accessible in Shared or Exclusive mode. To access additional sessions the CD-ROM drive must be accessed in SCSI mode. See the section on the "Blue Volume Mount Options" control panel for instructions on how to change the mode.

Audio CDs are only accessible in SCSI mode. Audio playthrough is not supported, however.

If an Audio CD or any other CD in an unsupported format is inserted in Shared or Exclusive mode then the CD will automatically be ejected from the drive.

CD-ROMs are not ejected upon Shutdown or Restart of MacOS.app, even if accessed via Exclusive mode. This mimics the behavior of the native Mac OS.

DVD ROMs

DVD ROM disks are supported in Exclusive and SCSI modes. MacOS.app supports the UDF file system format that is used on these disks. DVD ROM movie playback is not supported in Mac OS X Server.

Working with Disk Image Files

Use of Disk Image Files

Although disk image files are used as default startup volumes in this release, they may not be the best choice for long-term use. More convenient startup volume options are available in this release which supports HFS(+) volumes that can be shared between Mac OS X Server and Mac OS.

You can use the Mac OS Startup Disk control panel to select a different startup volume. This can be very useful, but a few important steps are needed to properly setup a startup volume. If you plan to use this feature, be sure to read the "Startup Options" section below.

The StartupDisk.img created when you first launch MacOS.app is a relatively small startup volume (175 MB), which will not allow installing much software. It is suggested that you use available Mac OS partitions or create additional disk images to hold Mac OS applications and documents.

Even if you install applications elsewhere, as suggested, many applications also take up space in the System Folder on the startup disk. Enough

free space (about 40 MB) has been left for the System Folder additions of a few applications. However, you may eventually run out and be forced to enlarge your StartupDisk.img, as described below, or switch to startup from an HFS(+) partition.

Creating New Disk Image Files

At startup time, after finding the startup volume (StartupDisk.img by default), MacOS.app will search for and attempt to mount image files (files ending in ".img", but excluding StartupDisk.img) in the following Mac OS X Server directories:

```
/Local/Library/MacOS/Users/<user name>

~/Library/MacOS

/Local/Library/MacOS

/System/Library/MacOS
```

Note that the first two directories are private to a particular user ("~" means the current user's home directory), whereas the last two are global to all users of the machine.

MacOS.app respects the file permissions for disk images. If the user has only read permissions for the disk image file in the Mac OS X Server file system, then the image will appear locked in MacOS.app.

You can create new disk image files in Mac OS X Server by using Disk Copy in MacOS.app and creating the disk image on a shared volume, which can then be moved to one of the above directories. You can also create a disk image on a native Mac OS system and transfer the file to Mac OS X Server with "ftp" (or other utility).

Alternatively, you can use the provided "createimage" tool in the /usr/bin/ directory. It creates an empty image file that can be made available within MacOS.app. To use this tool, from a Terminal window (when logged in as the user who intends to use the image), execute:

```
createimage -mb num -o name
```

where "num" is the desired disk image size in MB and "name" is the pathname of the image file to be created, usually of the form:

```
"/Local/Library/MacOS/Users/<user name>/<name>.img".
```

For example:

```
createimage -mb 100 -o /Local/Library/MacOS/Users/me/mydata.img
```

The next time MacOS.app is started, Mac OS will present a dialog offering to initialize this new volume; you should allow the initialization to proceed.

Note: Issue Initializing Disk Image File

At the present time there is an issue that prevents MacOS.app from initializing the disk image file created by the createimage tool. A future release of MacOS.app or the createimage tool will correct this issue, but until they become available you should not use createimage to create new disk image files for use with MacOS.app, and should instead use one of the other methods for creating new disk image files described earlier.

Enlarging Your Startup Disk Image File

You can enlarge your StartupDisk.img by creating a new disk image with "createimage," and copying the contents of the startup disk to that new image. Perform the following steps to create a larger startup disk.

1. Make sure that MacOS.app is not running.

2. Create a new, larger, disk image using "createimage".

```
cd /Local/Library/MacOS/Users/<user name>

createimage -mb <size in MB> -o NewStartupDisk.img
```

3. Start MacOS.app.

4. Initialize the new volume when asked.

5. Copy the contents of the startup disk to the new volume.

6. Shut down MacOS.app.

7. Rename the original StartupDisk.img and rename your new disk image.

```
cd /Local/Library/MacOS/Users/<user name>

mv StartupDisk.img StartupDisk.img.old

mv NewStartupDisk.img StartupDisk.img
```

MacOS.app will now startup from your newly created startup disk.

When you are satisfied that the new startup disk image is OK, the old image may be removed to conserve disk space.

It is also possible to transfer image files to native Mac OS and modify their contents using Apple's Disk Copy utility. The correct file type and creator for image files are 'hdrv' and 'ddsk', respectively. These can be set when transferring if using Fetch, or afterwards via ResEdit or other utilities. The version of Disk Copy included with this release of MacOS.app supports opening disk image files with incorrect file types via drag and drop. Disk Copy will treat the data fork as a valid image only if the resource fork does not have any of the NDIF specific resources in it (or if there is no resource fork at all). So, if ftp is used to download just the data fork of a Disk Copy image file, Disk Copy should be able to mount it.

Startup Options

Startup

By default, MacOS.app starts up from your StartupDisk.img. If you have issues with your StartupDisk.img, see the section "Startup Disk Issues", below. If the currently selected Startup volume for MacOS.app does not support MacOS.app, a new StartupDisk.img will be created to allow proper startup.

If you wish, you may select an HFS(+) partition as your startup disk, using the Startup Disk control panel. You can even dual boot native Mac OS and MacOS.app from the same startup disk.

As with native Mac OS systems, you can hold the "C" key down to start up from the CD-ROM drive. This is done just after starting up MacOS.app, but before the gray screen appears.

Configuring a Startup Disk's System Folder

Beginning with Mac OS 8.5 no special setup is required; you just run the installer. For Mac OS 8.5, installation will require that the target disk is in Exclusive (or SCSI) mode during installation. In future versions of Mac OS it will be possible to perform an installation to a target disk in Shared mode as well.

Once your new startup disk is set up, select it using the Startup Disk control panel and then restart MacOS.app.

After setting your system to start up from a Mac OS partition, you may remove the StartupDisk.img file from the /Local/Library/MacOS/Users/ directory.

Startup Issues

If MacOS.app immediately quits on a user's first attempt to start up, check the ownership of the /Local/Library/MacOS/Users/ directory. If it is owned by root, change the ownership to using the chown command, then restart MacOS.app.

Startup Disk Issues

If you have an issue with your StartupDisk.img, MacOS.app can be forced to install a new StartupDisk.img. When starting MacOS.app, hold down the Command-Option-Shift keys. You will be given the option to modify your PRAM file. You must modify your PRAM file to proceed with fixing your startup disk issues. If you accidentally pressed the Command-Option-Shift keys, you should choose the Quit option.

After modifying your PRAM file, you will be given the option of deleting, using or renaming your current StartupDisk.img. If the disk image is corrupted and you don't want to mount it, but you don't want to delete it, be sure to remove the ".img" extension when renaming. Renaming a disk image across Mac OS X Server file system volumes (mount points) will result in a copy (rather than a rename). This will take a while.

If the "Copying StartupDisk.img" dialog is cancelled when MacOS.app is not in the foreground (i.e., the dialog is frontmost, but is not active), the "Cancel" button may appear pressed, but then doesn't release. Click anywhere in the dialog to complete the cancel operation.

Renaming a startup disk image across file system volumes when there is insufficient disk space available may cause Mac OS X Server to fail. Due to the large size of the disk images, caution should be used when maintaining several on your disks.

Copying StartupDisk.img Issues

If you receive the "Helper Copy Prolem. Exception raised during the write." alert while copying the StartupDisk.img, verify that there is sufficient disk space available for the copy (~ 175 M). This alert can be received if there is negative space available as reported by "df". As a non-root user, type "df -kl" in a Terminal window to get this information.

Bugs and Compatibility Issues

Killing MacOS.app from Mac OS X Server Workspace Process Menu

If you use the Mac OS X Server Workspace process menu to force-kill MacOS.app, an issue occurs if MacOS.app has gone through a restart since being launched by the Workspace. The issue occurs because whenever MacOS.app goes through a restart it gets different process IDs for all of the processes associated with MacOS.app. The force-kill option will shut down all of the MacOS.app windows, but the MacOS.app processes will not be killed because the kill signal will be sent to the original process IDs which no longer correspond to the running MacOS.app processes. Therefore, it will appear that MacOS.app has been killed, but you will not be able to launch a new MacOS.app. To work around this issue, you must manually kill the old MacOS.app processes from the command line using the kill command. You must first find the process ID of MacOS.app. You can do this by typing the following command from the command line:

```
ps -aux | grep MacOS
```

This will produce output that looks something like this:

```
machine ps -aux | grep MacOS

user 721 96.5 26.1 1.03G 33.4M ? R N 2:21 MacOS.app

user 752 0.2 0.1 924K 88K p1 U 0:00 grep MacOS
```

This output shows that the process ID for MacOS.app is 721 and the process ID for the grep command you just ran is 752. You must now kill the MacOS.app process by entering the following command (substitute the process ID of the MacOS.app process you are trying to kill for the process ID 721 as shown below):

```
kill -9 721
```

After killing the MacOS.app process in this way, you should be able to launch a new MacOS.app from the Workspace.

Tear Off Application Menu

The Mac OS Applications window that appears when the Applications menu is "torn off" does not list any Mac OS X Server applications that

normally appear in the MacOS.app Applications menu. To switch from MacOS.app to another Mac OS X Server application, you must use the Applications menu and not the tear-off window.

AppleShare File Server connection lost using TCP/IP

When running MacOS.app using the presently shipping version of Mac OS (System 8.5.1), there is an issue that may cause loss of connection to AppleShare File Servers that are connected via TCP/IP. The workaround for this issue is to connect to the server using the AppleTalk protocol instead. To do this, when selecting the File Server using the Chooser, hold down the Option key when you click on the OK button. This forces the system to connect via AppleTalk and not TCP/IP. This issue will be corrected in a future version of Mac OS.

Unable to read PC Zip disks

The present version of Mac OS X Server is unable to read PC Zip disks that have been formatted using the Iomega Tools. The issue does not occur if you initialize the Zip disk using MacOS.app by accessing the Zip drive using Exclusive mode and then initializing it by selecting the Finder's "Erase Disk" menu item.

Norton's CrashGuard

When running MacOS.app using the presently shipping version of Mac OS (System 8.5.1), Norton's CrashGuard INIT will not work in MacOS.app. A future version of Mac OS is expected to correct this issue.

Launching PowerPC Applications from Disks in Direct SCSI Mode

There is an issue that occasionally occurs when launching PowerPC Macintosh applications from disks accessed via direct SCSI mode. The issue causes MacOS.app to hang because of repeated timeouts attempting to access the disk. If you encounter this issue try changing the disk access to Exclusive mode. See the "Disk Access Modes" section for more details.

Symantec's ACT!

When running MacOS.app using the presently shipping version of Mac OS (System 8.5.1), Symantec's ACT! will not run properly in MacOS.app. The issue is due to a known incompatibility between MacOS.app and Mac OS 8.5.1 or earlier with regard to the GetSpecificHighLevelEvent() Toolbox call. An application that calls GetSpecificHighLevelEvent() directly will crash and possibly crash MacOS.app as well. A future version of Mac OS is expected to correct this issue.

Eudora Pro 4.1

When running this version of Eudora Pro on MacOS.app, the application crashes because it is making a power manager call which is not implemented in MacOS.app. A future version of Eudora Pro will correct this issue.

MacBench 5.0

When running the MacBench 5.0 "all" test (with CD in), MacOS.app will crash when it arrives at the Microsoft Word formatting stage. This issue is currently under investigation and should be corrected in a future version of MacOS.app.

Myth II

When launching Myth II under MacOS.app you may receive an error dialog saying "Myth does not have enough free memory to launch. Try closing open applications or turning on VM". This message is incorrect; the actual issue is due to the Myth application attempting to perform a dynamic screen resolution change that is not supported in MacOS.app. In order to run Myth II under MacOS.app you must first change the screen resolution in Mac OS X Server to 640x480 using the Preferences.app application, then launch MacOS.app with the new screen resolution and Myth II will run correctly.

Switching from MacOS.app to Mac OS X Server

Switching from MacOS.app to Mac OS X Server using command-return is not allowed during startup of MacOS.app. Attempts to do so prior to the Finder starting up will be ignored.

Locked files not owned by current user

MacOS.app runs the MacOS in a multiuser environment. Native MacOS runs in a single user environment. In the Mac OS X Server environment a user must be the owner of a file in order to unlock it. If you try to move a locked file or delete a locked file, owned by someone else in the underlying file system, you will get an "access privileges" error. You can workaround this limitation in several ways. 1) use the chown command to change the owner of the file 2) shutdown MacOS.app and login to the system as the owner of the file, then start up MacOS.app again 3) do the move/rename in a terminal window as root or after doing a su to the owner of the file.

Disk Icons

Disks formatted with 3rd party utilities and utilizing 3rd party drivers may appear on the desktop with a different icon than they would under the native Mac OS. For example, a removable Zip or Jaz disk may appear on the desktop as a generic hard drive icon.

Disk First Aid, Drive Setup, and the Mac OS installer

The Mac OS 8.5 installer will not function correctly when attempting to install Mac OS 8.5 onto a disk volume that is being accessed via Shared mode. This issue will be resolved in a future Mac OS release. If you need to install Mac OS 8.5 from within MacOS.app, switch the access mode of the target disk volume to Exclusive mode. See the "Disk Access Modes" section for more information.

Versions of Disk First Aid and the Mac OS installer currently shipping will not function correctly when their target is a disk accessed via Shared mode. Starting in a future version of Mac OS, Disk First Aid will simply report "no errors" for disks accessed via Shared mode without actually examining the disk. You can run the Mac OS X Server version of Disk First Aid (DiskFirstAid.app) or you can set the access mode of the target disk to Exclusive mode. See the "Disk Access Modes" section for more information.

In general, the Drive Setup application cannot be used on disk volumes that are accessed via Shared or Exclusive mode. It can only be used on SCSI disks (not ATA/IDE/ATAPI disks) that are accessed via SCSI mode. One of the things that the Mac OS installer does is ask Drive Setup to update the disk drivers of all the disks connected to your Macintosh. Disks that are being accessed via Shared or Exclusive mode will not be detected by Drive Setup and so will not have their drivers updated. Therefore, if you ever intend to boot your Macintosh into the native Mac OS, you should run Drive Setup manually from within the native Mac OS and select the "Update Drivers" menu option. Setting your disks to be accessed via SCSI mode from within MacOS.app might also work, but there are a few things that might prevent this from working as well as it would if you did it from within the native Mac OS: you might have non-SCSI disks on your system, or you might not be able to get SCSI mode access to all of your disks since at least one of them is used as the Mac OS X Server boot disk and therefore cannot be unmounted. See the "Disk Access Modes" section for more details.

If you have a 36 GB disk, do not format it with the version of Drive Setup that is located on your MacOS.app Startup disk. This could result in an improper format of the disk. Drive Setup 1.7.1, which can be found on the Mac OS X Server installation CD, should be used to format 36 GB disks.

Desktop Rebuild For Shared Mode Volumes

Desktop rebuilds on some volumes mounted in shared mode may take longer than the same rebuilds in native MacOS. It is recommended that if you must rebuild your DesktopDB, you do it in native MacOS or in MacOS.app using Exclusive mode. In fact, a rebuild of the DesktopDB in shared mode does not actually delete the old DesktopDB files (although it appears from the progress dialog that it does), so repair of any damaged entries may not be as complete as would be the case in Exclusive mode or in Native Mac OS.

MacOS Crashes After Improper Shutdown

There is an issue that only happens when running with Mac OS System 8.5 or 8.5.1, in which MacOS.app crashes on startup after being improperly shut down. This is a side effect of putting up the "Your Macintosh was improperly shut down" dialog and will be fixed in a future release of Mac OS. The workaround to this issue is to uncheck the "Shut Down Warning" checkbox in the General Controls control panel. Note that if you do this, not only will there no longer be a warning dialog after crashes, but Disk First Aid will not be automatically run in such cases. You

should run Disk First Aid to check the integrity of your file system after all improper shutdowns. There is a Mac OS X Server version of Disk First Aid (DiskFirstAid.app) that can be run on volumes shared with Mac OS X Server. In order for Disk First Aid in MacOS.app to run on a volume, it must be mounted in "Exclusive" mode (see the Disk Access Modes section). Or you can boot into native Mac OS and run Disk First Aid on the volume in question.

Runtime Performance

The runtime performance of MacOS.app is sensitive to other processes running on the Mac OS X Server, especially if these other processes consume the majority of "CPU" time. These types of processes are known as "CPU-bound" or "CPU-intensive" processes. The runtime performance of MacOS.app is highest when these types of processes are not running in Mac OS X Server.

File System Performance

In this release, Shared disk mode may be slower than other modes for some operations. If this is a concern, consider switching disk access modes or using disk images (which are always accessed in Exclusive mode). Disk access modes are discussed in detail in the "Disk Access Modes" section. Shared mode performance is expected to improve significantly in future releases.

NMI (Non-Maskable Interrupt)

On native Mac OS, using Command-Power to generate a NMI invokes the installed debugger (MacsBug) or invokes MicroBug if no debugger is installed. MicroBug is not currently supported in MacOS.app, so Command-Power with no debugger installed is ignored. When a debugger is installed, you may occasionally have to use Command-Power more than once to invoke the debugger. A current version of MacsBug is provided in the Apple Extras folder. Older versions are not compatible.

Mac OS X Server Workspace Logout

When logging out of Mac OS X Server with MacOS.app running, MacOS.app will come to the foreground with a dialog informing the user of the steps to safely shut down MacOS.app. The Workspace logout will be stopped. Upon shut down of MacOS.app, the user will again have to select Logout from the Workspace File menu. If MacOS.app was started from a shell window, it is not registered with the Mac OS X Server, so it will simply be killed during the logout process. This is why we don't recommend starting MacOS.app this way. Also note that if MacOS.app has gone through a restart since being launched by the Workspace, the process IDs for MacOS.app will have changed and the Workspace will not be able to contact it to initiate the safe shutdown dialog. This will also result in MacOS.app being killed during the logout process.

Sparse Virtual Memory

If Mac OS X Server runs out of disk space for virtual memory when MacOS.app is trying to allocate sparse virtual memory for an application, Mac OS will likely crash. This issue will be addressed in a future version of Mac OS X Server.

Aliases on Removable Disks

Mac OS has a limitation that sometimes causes aliases created on removable disks to fail when they are taken to a machine other than the one on which they were created. Because running MacOS.app is much like taking your disks created under native Mac OS and moving them to a different machine, this bug may manifest itself even though you did not physically move your disks to a different machine. This issue will be addressed in a future version of Mac OS.

Disk Copy Disk Images

Starting with Disk Copy version 6.3.3, it is possible to mount Disk Copy disk images from a Shared volume. However, it is not possible to create a disk image from an existing disk which is being accessed via Shared mode (i.e., using either of the "Create Image from Folder..." or "Create Image from Disk..." items in the "Image" menu of Disk Copy). If you are using an older version of Disk Copy to mount a disk image, or you are trying to create a disk image file from an existing disk, you will need to set that disk volume to be accessed via Exclusive mode. See the "Disk Access Modes" section for more information.

Disk images will only mount from shared volumes when the new Disk Copy driver (6.3.3) is loaded. This will happen if you run Disk Copy 6.3.3.

The newer driver will override older drivers and "stick" until Shutdown once loaded. This does mean that if you mount an SMI (Self Mounting Archive) created with an earlier version of Disk Copy before the new Driver has loaded, it will not work. The workaround is to run Disk Copy 6.3.3 once.

Disk Initialization

There are two kinds of "Disk Initialization": low-level formatting is device-specific and only need to be performed once for the life of the device, whereas high-level formatting simply writes an empty filesystem onto a device that already has a low-level format. The Finder's "Erase disk..." menu option usually only performs a high-level format, except for floppies, where it also causes a low-level format to be performed. The low-level formatting and partitioning of SCSI and ATA/IDE drives is performed by the Drive Setup application.

SCSI mode: The low-level formatting and partitioning of SCSI disks can only be achieved via Drive Setup for disks that are accessed via SCSI mode. Currently, this is not supported for ATA/IDE drives.

Exclusive mode: The Finder's "Erase disk..." menu option should function as expected for all volumes accessed via Exclusive mode. It will even perform a low-level format for floppies, as long as they are accessed via Exclusive mode.

Shared mode: Neither Drive Setup nor the Finder's "Erase disk..." menu option will function for disks accessed via Shared mode. You should not attempt to reformat or erase a volume that is being accessed via Shared mode. If you select a Shared disk and invoke the "Erase disk..." menu option and then select either the "Mac OS Standard" or "Mac OS Extended" format, then the operation will be aborted and you will get an error alert stating that the "Erasing the disk failed!", and the volume will be unmounted causing it to disappear from the desktop. If this happens, you can remount the volume via the Disk First Aid application - no data will be lost or altered.

The mouse cursor may freeze while performing the low-level format portion of the initialization process on a floppy. Switching to Mac OS X Server will be disabled until the formatting has completed, which may take several minutes.

MacOS.app ignores UFS disks by design, so you cannot reinitialize a UFS disk as HFS(+) with MacOS.app. However, you can do this via the native Mac OS.

NFS Sharing of Disk Images

Read-only disk images can be shared via NFS by instances of MacOS.app running on different machines, but read/write images must not be shared or image corruption will result. Note that startup disk images (StartupDisk.img) are always read/write. In the future these rules will be enforced by MacOS.app when NFS advisory locking (rpc.lockd) is available in Mac OS X Server; but for now don't try it. The sharing of all volume types works fine via Personal File Sharing and AppleShare.

Floppy Disk Can Prevent Startup

Floppy drives have traditionally been treated specially in the Mac OS startup process; the Mac OS always looks for a bootable floppy before attempting to start up from the disk chosen via the Startup Disk control panel. Originally, this was done in order to make it possible to start up a Macintosh with a floppy in case of hard disk corruption. Consequently, the Mac OS attempts to eject any non-bootable floppy that it finds in the drive during startup. MacOS.app inherits this behavior, but, unlike the native Mac OS, can be prevented from doing so by Mac OS X Server applications that may have files open on the floppy, not allowing it to be ejected from the drive. If this happens, MacOS.app will be unable to start up. If you would like to share files from a floppy between Mac OS X Server applications and MacOS.app applications, you should insert the floppy after starting up MacOS.app. Alternatively, you could eject it before launching MacOS.app and reinsert it after MacOS.app has started up.

Removable Media - Insertion and Ejection

When inserted, HFS(+) disks may take longer to mount in the Finder if accessed in Exclusive mode rather than in Shared mode. The extra delay results from the fact that HFS(+) disks are automatically mounted by Mac OS X Server and then need to be unmounted on behalf of MacOS.app in preparation for being mounted in Exclusive mode. This extra step essentially doubles the time required to mount a disk and may be noticeable - especially with slow media like floppy disks.

A request to eject a removable disk within MacOS.app may fail silently if the disk is shared with Mac OS X Server and files are open on the Mac OS X Server side (or a process has its current working directory set to a directory on the disk). In this situation, MacOS.app will behave as though the disk had been ejected (e.g., the disk's icon will disappear from the Finder's desktop), but the disk will not have been physically ejected from the drive. In this situation, you will have to switch to Mac OS X Server and eject the disk via the Workspace (after closing any open files, of course).

MacOS.app ejects all removable media upon shutdown if they are accessed via Exclusive mode, with the exception of the CD-ROM drive. If you

select a removable disk as the startup disk using the Startup Disk control panel and that disk is accessed via Exclusive mode, then you will have to quickly reinsert the disk into the drive during the restart.

File System Permissions on HFS(+) Volumes

The Mac OS X Server permissions model is enforced on volumes accessed in shared mode. The way permissions are enforced differs for HFS and HFS+ volumes, due to differences in their ability to store permission information. HFS volumes are unable to store permission information and therefore permissions have to be synthesized whenever they are needed. The permissions for the volume's mount point are used as the starting point for this synthesis (with appropriate differences for files versus folders). Moreover, when Mac OS X Server starts up, it mounts local volumes, setting the owner of these volumes to be root and the group to "macos". MacOS.app runs with an effective group id of "macos". By default, the macos group is set up to allow read/write access. Thus any user running MacOS.app will have access to all files and folders on HFS volumes mounted in shared mode.

HFS+ volumes mounted in shared mode behave similarly to HFS volumes with the exception of permissions that are explicitly set. Permissions are saved to disk on HFS+ volumes and are persistent on Mac OS X Server. However, native Mac OS completely ignores the permission information: it is neither enforced nor maintained. The HFS+ volume mount point will be owned by root and the group will be set to "macos", just as with HFS volumes. When a file is created the current user will be owner of the file and the group will be "macos". This will enable users in MacOS.app to access files as if they were running native MacOS. Please note that once permissions are set on HFS+ volumes they are honored when MacOS.app runs. So if you, or someone else, sets permissions in a terminal window, the above mechanism to allow MacOS.app access (via group macos) to files and folders will not allow access for someone without appropriate permissions to a file or folder. Unfortunately, MacOS was not designed to run in an environment where file access permissions might deny access. In most cases volumes mounted in shared mode will return "access denied" error codes that the Finder will pass along to the user when a permissions failure is noticed in the underlying file system. But there may be some cases where a confusing error may occur - so if you see strange error messages or odd behavior from an application on an HFS+ volume mounted in shared mode, keep permissions in mind.

As noted above, the group "macos" is a special group used to allow users of MacOS.app to access HFS and HFS+ file systems. If this group is removed or renamed, MacOS.app will not be able to access some local filesystems, and will refuse to run unless you are logged in as root.

Apple file services uses group permissions to control remote access to exported filesystems. If you set the group of an exported filesystem to anything other than "macos", then non-root users will not be able to access these filesystems in MacOS.app. To set the group for exported file systems using Remote Administration, click Disk & Share Points and click the disk or folder you want to share, then click Set Privileges.

Symbolic Links in Shared Mode

The R1.1 version of Mac OS X Server supports UNIX symbolic links in the Workspace. However, MacOS.app does not understand symbolic links on volumes mounted in shared mode. When a symbolic link is seen by the Finder or any other application in MacOS.app, the underlying file system always resolves the link. This would be like always resolving a MacOS alias. This behavior is not normal in a MacOS environment, so you may run into unpredictable results if you try to use symbolic links on volumes that are accessed in shared mode. One symptom you may see is a folder that does not contain any items or fewer items than there should be. If you must use symbolic links on volumes accessed by MacOS.app in shared mode, you may want to place the links in a well known directory (a folder called "symlinks", for example). Alternatively, name the symbolic link so it appears at the end of directory when sorted by name (zMyLink, for example). This issue will be fixed in a future version of Mac OS X Server.

Sound Input /Output

When MacOS.app starts up, it uses Mac OS X Server's sound preferences to initially set volume, balance, and mute levels. Changes to these preferences in MacOS.app will also change Mac OS X Server's preferences. While MacOS.app is running, changes to Mac OS X Server sound preferences will not change MacOS.app sound preferences.

Playing sound from an application running in Mac OS X Server at the same time an application is playing sound in MacOS.app may result in unpredictable results.

Sound input is not currently supported. This will affect speech recognition software.

Video Capture

Video capture is not currently supported.

Special Hardware Support

Some applications that require special hardware support, such as the Apple Video Player, will not work correctly under the BlueBox. These applications fail during startup and incorrectly post dialogs suggesting they could work if extensions are added to the System Folder.

Using Localized Disk Images

When starting up on the localized disk images available with MacOS.app, the default keyboard setting while running in Mac OS may differ from the keyboard setting in the Workspace. In Mac OS, this can be changed using the Keyboard control panel. Refer to the "Using different languages" section of Mac OS Help - available from the Help menu in the Finder.

Copy and Paste Between Mac OS and Mac OS X Server

Applications are advised to always use the Scrap Manager to access the Scrap. Direct scrap access may not behave correctly.

When copying data from MacOS.app to a Mac OS X Server application, it may take a noticeable period (up to several seconds) before the pasteboard is synchronized with data from the MacOS.app clipboard. If a paste is performed before this time (e.g., immediately after switching out of MacOS.app), the data may be incorrect, and the paste should be performed again.

MacOS.app supports the pasting of Japanese text between the Mac OS and Mac OS X Server environments. Starting with System 8.5.1, Japanese text can be copied to or from a Japanese localized Mac OS if MacOS.app was started with the Mac OS X Server Localization Preference set to Japanese.

System Folder Pieces

Just as with any Mac OS system, when applications are installed, they sometimes install resources into the System Folder on the startup volume. If you later change the startup volume or System Folders, those applications which require resources located in the System Folder, may not work as desired. In order for these applications to run correctly, you must either run the installer or manually move the appropriate pieces to the startup volume System Folder.

Serial

Serial is not supported in this release of MacOS.app; applications attempting to open either port will receive a notInitErr (-900). A future release of MacOS.app will have serial support.

Printing

Because serial is not yet supported, attempting to print to a serial-attached printer will hang MacOS.app.

Mouse Acceleration

MacOS.app uses Mac OS X Server's cursor acceleration for its own, so use Mac OS X Server's mouse preferences to configure cursor acceleration for MacOS.app. The Mac OS Mouse control panel will have no affect on cursor acceleration.

Video

Switching between Mac OS X Server and Mac OS can only happen at SystemTask() time. If Mac OS is hung, running a game which doesn't call SystemTask() or WaitNextEvent(), or sitting in MacsBug, you can't switch. You can still use Command-Shift-Q to force MacOS.app to quit. If this does not work, then the Mac OS X Server part of MacOS.app is hung and you will have to either telnet in from another machine and kill the MacOS.app process, or do a hard reboot of Mac OS X Server.

Similarly, if you switch to Mac OS X Server and then Mac OS hangs, you can't switch back. In that case, you must kill the MacOS.app process from Mac OS X Server. If MacOS.app drops into MacsBug while hidden, you may be able to unhide MacOS.app, but user input will not work. Command-Shift-Q should work.

The Video vertical retrace queue is hung off the System vertical retrace queue, and is therefore not synchronized with the actual monitor refresh

interval.

If for any reason MacOS.app causes the Mac OS X Server cursor to go away, you can restore it with the following command from a Terminal window:

```
/System/Applications/MacOS.app/MacOS -showcursor 50
```

Multiple monitors are now supported. MacOS.app does not support display repositioning (via the Monitors control panel). If you try it anyway, you will have issues. To undo your changes, remove the "Display Preferences" file from the Preferences folder in the System Folder, and restart MacOS.app.

Some Mac OS applications that draw directly to the screen may continue to do so even after switching from Mac OS to Mac OS X Server. The occurrence of this behavior may be limited by switching to the Finder before switching to Mac OS X Server.

Video mirroring in Mac OS is the feature where both monitors of a dual-monitor system display the same exact picture. Use of this feature is not fully supported in MacOS.app. If you use video mirroring, make sure to turn it off before switching to Mac OS X Server from the application menu.

Hardware video acceleration is not yet supported.

User Input

Direct ADB access is not supported. Applications that read directly from ADB devices and expect mouse ADB events will not work.

Command-Shift-Q will force MacOS.app to quit. This only works if Mac OS is hung, not if the Mac OS X Server part of MacOS.app is hung. See more details under "Video", above.

MacOS.app will intercept the Command-Return key sequence and use it to jump to Mac OS X Server. This is the same key combination that PC compatibility cards use. However, some Mac OS applications (like MPW) need this key combination for full functionality. To disable special handling of this key combination, type "defaults write MacOS ScreenToggleKey 0" on the command line of a Terminal window.

Date & Time

To change the date, time, or time zone, use Mac OS X Server's Preferences.app, rather than the Mac OS Date & Time control panel. Changes to the date, time, or time zone using the Mac OS control panel will be ignored. Other features of this control panel, such as date and time formats and the menu bar clock, are fully supported.

Canceling the "Copying StartupDisk.img" Dialog

If the "Copying StartupDisk.img" dialog is cancelled when MacOS.app is not in the foreground (i.e., the dialog is front most, but is not active), the "Cancel" button may appear pressed, but then doesn't release. Click anywhere in the dialog to complete the cancel operation.

SCSI Based Printers

MacOS.app does not support printing to the LaserWriter SC, or any other SCSI-based printer that requires the LaserWriter SC 7.0.1 driver.

Apple Software

The Mac OS Setup Assistant will allow the user to configure a local (serial) printer. If you do this and attempt to print to this printer, Mac OS will hang (see "Printing", above).

The Mac OS Setup Assistant on MacOS.app takes a little longer to configure printers than it does on native Mac OS. During this time do not select any menu or you will hang MacOS.app.

The Graphing Calculator has a bug which can cause a crash when running its "Mouse Control" demo and the application is located high in memory. This also happens on native Mac OS, but is much more common in MacOS.app.

The AppleCD Audio Player does not work in MacOS.app without additional configuration. Since the AppleCD Audio Player uses the SCSI Manager to find CD-ROM drives, this causes the application not to work in MacOS.app because CD-ROM drives are not mounted in SCSI mode by default in MacOS.app.

If the AppleCD Audio Player does not find at least one CD-ROM drive, it will return an error indicating that the CD-ROM drive is not responding. Some CD-ROM drives can be enabled to use direct SCSI access; see the section on the "Blue Volume Mount Options" control panel for instructions on how to switch the mode. If direct SCSI access is enabled on at least one CD-ROM drive, the AppleCD Audio Player will launch with no error and audio CDs can be played from MacOS.app, although audio playthrough is not supported.

Apple Video Player refuses to launch because MacOS.app does not currently support video capture.

When using the Extensions Manager, some of the installed Apple software is not a part of the "Mac OS 8.5 all" set (for example, "AppleScript" and "QuickTime"). This is normal when newer releases are installed.

Disk Copy prior to version 6.3.3 cannot mount images on a Mac OS volume that is in the Shared Access mode.

MacOS.app does not contain all the necessary Unicode converters to handle file and folder names on HFS+ volumes that were created on a native Mac OS machine using a system script other than Mac OS Roman. For example, if you take an HFS+ volume that was used on native Mac OS with the Japanese language kit installed, and you access it on Mac OS X Server, the file and folder names will appear garbled.

Third-Party Software

MacBench 4.0 crashes since it attempts to access hardware that is not supported by MacOS.app. MacBench 3.0 works correctly and MacBench 5.0 works with the exception of the issue noted previously in the paragraph entitled MacBench 5.0.

Networking modes promiscuous/raw are not supported in MacOS.app; therefore, applications such as Etherpeek are not supported.

Versions of CodeWarrior prior to the Pro 4 release do not support debugging; everything else seems to work. CodeWarrior Pro 4 (IDE 3.1) with version 1.3.6 of the MetroNub supports debugging and break/watch points.

RAM Doubler attempts to access the internals of Mac OS Virtual Memory and is therefore not compatible with MacOS.app.

Virtual PC attempts to access the internals of Mac OS Virtual Memory and is therefore not compatible with MacOS.app.

Disk Doubler Pro (and especially its Finder Menu feature) is not compatible with Mac OS 8.5 and therefore not with MacOS.app.

Speed Doubler causes MacOS.app to hang at startup, presumably because it attempts to modify undocumented Mac OS internals, and is therefore not compatible with MacOS.app.

The Disinfectant system extension (installed via the Protection menu of the Disinfectant application) should not be installed because it can cause some applications to quit with errors (such as Type 1 error). Conflict Catcher and Note Pad are particularly likely to crash when Disinfectant is present. Such errors are more likely to occur on MacOS.app than on native Mac OS because of the memory allocation scheme used in MacOS.app. Disinfectant is no longer supported by its developer, who recommends a full-featured virus protection program.

Adobe Persuasion 4.0's installer frequently fails with a bus error because of a bad memory access. Due to memory layout, this rarely occurs on native Mac OS, so a workaround is to run the installer there. Adobe has discontinued this product.

If drives formatted with FWB's Hard Disk Toolkit are mounted in "Shared" or "Exclusive" mode, any driver-level password protection will be ignored. Data that is encrypted will be inaccessible. Mounting these drives in "Direct SCSI" mode will re-enable password protection and access to encrypted data.

Descent II, like many other video games, uses SCSI Manager calls as part of its copy protection. By default, MacOS.app accesses SCSI disks via Shared mode. In both Shared and Exclusive mode, SCSI-level access is disallowed. The CD-ROM drive needs to be manually configured for direct access via SCSI mode. This can be done with the "Blue Volume Mount Options" application. However, the "Blue Volume Mount Options" application cannot set an ATA/IDE/ATAPI CD-ROM drive to direct SCSI mode. See the section on the "Blue Volume Mount Options" control panel for more information.

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Mac OS X Server 1.x: About MailViewer

This article contains the Mac OS X Server release notes for the MailViewer application.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

New Features

The following new features are available in MailViewer but were not available in previous releases.

Multiple Account Support

You can now have multiple accounts configured in MailViewer. Using the Accounts preferences panel you can configure any number of POP or IMAP accounts. Each account needs a hostname, username and, optionally, a password set. If no password is given, MailViewer will prompt you when it is needed.

Each account must also have an "Account Directory" specified which is the directory that will be used to store local copies of mailboxes or where incoming POP messages are temporarily stored while fetching. For best performance, this directory should be on a local filesystem. If you are running MailViewer on multiple computers, they should not use the same directory for accounts.

In addition to any POP or IMAP accounts that you set up, there is a special account called "Local Mailboxes" which is always available to you. This account contains mailboxes that are located in the filesystem. The default location for these is ~/Mailboxes, although this can be changed. In this account there are 2 special mailboxes:

Active	This mailbox receives all incoming POP messages
Drafts	This mailbox is where messages get saved when you choose Mailbox->Drafts->Save in drafts

The first account listed in the Accounts list is the "primary" account. When MailViewer launches, it will try to open the "primary mailbox" of the primary account. If the first account listed is Local Mailboxes then the Active mailbox will be opened. If the first account listed is IMAP then the INBOX will be opened.

IMAP Accounts

MailViewer now supports IMAP accounts. By default, MailViewer will automatically cache the contents of IMAP mailboxes locally. You can change the caching behavior on the Accounts preferences panel. The other choices are to not cache any messages locally or to cache messages as they are read. Note, that if you have indexing turned on, the entire contents of the message will be read from the server (in order to index it) so you probably want to leave caching turned on.

Indexed Mailbox Searching

MailViewer now incorporates the Apple Information Access Toolkit (AIAT, also known as VTwin) to provide fully indexed mailbox support. There is a new Search Index panel which allows you to perform simple or complex (boolean) searches and display the relevance ranked results in a table. To create an index for a mailbox use the Mailbox->Indexing->Create Index menu item. Once an index has been created, this menu item will change to Remove Index which can be used to remove the index file for the current mailbox. To bring up the search panel, choose Mailbox->Indexing->Search Index.

To do a simple search, simply type one or more words in the text field on the search panel. The search will find any messages with one or more of the words in it. The results are shown in relevance ranked order which means that messages with the most and the closest matches are displayed first. The blue bar in the Rank column gives a percentage rank from 0% (no bar) to 100% (full bar). Also, AIAT matches "stems" of words, not exact words. Therefore, searching for "sleep" will find matches for "sleep", "sleepy", "sleepless", "sleeping", etc. Exact matches of "sleep" will be ranked higher but the other matches will still appear in the results. The search results will display the messages (up to 100) which match the search phrase. Double clicking on one of the resulting rows will display the message in the message viewer window. You can use the regular find panel to find the exact location in the message where the phrase(s) was found.

Boolean searches can be done using the modifiers "and", "or" and "not". Furthermore, logical groupings can be made by putting parentheses around terms. The following table shows some examples with a verbose description of the phrase:

Search Phrase	Meaning
Bill and Hillary	Find messages containing both of the words Bill and Hillary.

Bill or Hillary	Find messages containing either of the words Bill or Hillary.
Hillary not Bill	Find messages that contain the word Hillary but NOT the word Bill.
Bill and (Chelsea or Hillary)	Find messages that contain the word Bill and either (or both) Chelsea or Hillary
Bill and Hillary not (Monica or Paula)	Find messages that contain the words Bill and Hillary but do not contain either Monica or Paula.

Another thing to be aware of is that the AIAT engine uses a list of "stopwords" which are words which are not indexed. These are generally words which are commonly found in day to day language which are or little use when indexing. For example, "the", "also", "can" are all stopwords and will not be found if entered in the Search Phrase field. For the inclusive list of stopwords you can view the EnglishStopwords file which is located in /System/Library/Frameworks/Message.framework/Resources/EnglishStopwords.

When searching mailboxes, keep in mind that VTwin does not fully support non-ASCII characters so things like Japanese text will not be properly indexed. Most accented characters will be indexed properly although searching for these characters may return additional non-related messages. The messages containing the accented characters will typically be ranked much higher than the "false positives" and as a result will appear at the top of the results list.

There are a few preferences which control the indexing behavior. These can all be found on the Indexing Preferences Panel. The preferences are as follows:

Prompt about creating indexes	If this option is checked, MailViewer will ask you if you want to create an index whenever you create a new mailbox in the Mailboxes Panel or when you open a mailbox which is not currently indexed. The choices that you have are to click "Yes" meaning that you want to create an index of the contents immediately, click "No" meaning that you don't want to create an index at this time or click "No Forever" meaning that you never want to be asked again for this mailbox. If you click "No", MailViewer will ask you again the next time you open the mailbox. If you click "No Forever", you always have the option of manually indexing the mailbox at any time using the Create Index menu item. The default value is ON.
Maximum number of search results	This value controls the maximum number of rows the search panel will show. Increasing this number will increase the amount of time it takes to perform searches. The default value is 100.

Color Quotes:

MailViewer will now display text which is quoted in messages from other people in color. By default, the quote prefix is ">". Multiple levels of quotes (e.g. ">>", ">>>", ">>>>" and so on) get colored with different colors. This makes it easier to distinguish quoted text from the text from the person who sent the mail. There is a new Colors preference panel where you can turn this on and off, change the quote prefix and set the colors.

Remembering Open Mailboxes

In the Viewing preferences panel there is a new option called "Reopen previously open mailboxes". If this option is checked then any open mailbox windows at the time MailViewer quits will be automatically reopened when MailViewer is launched again.

Improved Unicode Support

Various improvements have been made to Unicode support in MailViewer. Among them are:

- Recognizing and generating the Windows-1250 and Windows-1252 character sets
- Properly decoding header values that have been encoded with specific character sets
- Improved ISO-2022-JP handling

Support for displaying MIME alternatives

If you have selected a message which contains MIME "alternatives" (different versions of the message, for example, plain text, rich text, HTML, etc), the MIME menu in the Message menu will become enabled. This menu lets you select between the "first alternative" (which is typically a plain text representation) and the "best alternative" (which is the richest representation that the sender was capable of creating). Showing of all

alternatives simultaneously or selecting intermediate alternatives is not currently implemented.

Paste As Quotation and Automatic Quoting

Under the Edit menu is a new menu item which will allow you to paste the contents of the pasteboard into a compose window as a quotation. The format of the quoted text can be changed using the Quoting preference panel. Also, if you have enabled the automatic quoting preference, messages will be quoted if you choose Reply or Reply All from the main window. If there is a selection in a message when you choose Reply or Reply All, only that portion of the message will be quoted.

MIME

MailViewer has advanced MIME capabilities such as inline images and attachments, multiple font styles and colors, and support for rulers.

MIME supports multiple alternative representations of a sent message and lets the receiver pick the most appropriate one. MailViewer generate two alternatives, one plain text and the other an "enriched" format that contains things such as font attributes, inline attachments, and text colors. If you deselect the "Send MIME alternatives" option, MailViewer sends only one representation (either plain text or enriched text) depending on the selection made in the format pop-up list in the Compose window.

When MailViewer receives messages with RTF text attachments it tries to display the contents of the messages inline in the body of the message (unless this feature is disabled).

MailViewer also supports a custom extension to MIME that allows the application to embed information about the ruler in the body of a message. Currently the only information embedded are the tabstop positions. This information is embedded in such a way that that clients that don't support the extension simply ignore it and display text indented by fixed-space tabs.

New Preferences Panel

Several preference options that weren't in the Mail application have been added to MailViewer. You should review each of the displays to verify your settings and set any new options to suit your needs. The new options are the following:

- User Information
  This display allows you to set your name and user name as it will appear in messages that you send. The default is to use the user name of the account you log in as, but you can change this to something else. The sample is only an approximation of how it will look to recipients of your mail because the receiving mail program controls the format. You can also specify a "reply-to" address that can be different than the account you are sending the mail from. This address is the one that most mail programs use when a user replies to messages; however, this behavior varies among clients.

- Viewing
  You use this display to customize various aspect of the mail viewer (the main window for each open mailbox). Here you can also set how often MailViewer should check for mail.

- Sending
  This display allows you to specify options used when you send mail. The most commonly supported delivery method is SMTP; your ISP or system administrator should provide the address of the SMTP host to use. You can disable warnings of messages over a certain size by either leaving the appropriate field blank or entering zero in it; even if you disable warnings, however, not all networks can deliver messages of any size. You should contact your ISP or system administrator if you experience problems with mail delivery that are due to the size of messages.

- Accounts
  This is where you can create your accounts and set options for each account type.

- Compose
  With this display you can specify the default format that MailViewer should use when you compose new messages. The display also allows you to control how you reply to messages. If you want to archive all outgoing messages automatically to a mailbox, you can enter the mailbox name in the appropriate field; if the mailbox doesn't exist, MailViewer creates it when you send the next message. To disable archiving for individual messages, hold down the Alternate key when you click the Deliver button.

- Quoting

If you want to quote the original text of messages automatically when you reply to or forward a message, you should check the appropriate checkbox in this display. You can also specify characteristics of the text included in the body of replied-to or forwarded messages for both plain text and rich text (MIME) messages. The format used is determined by the Format pop-up list in the Compose window when you click the Reply, Reply All, or Forward toolbar buttons or menu items.

- MIME
  In this display you can enable the option that allows you to receive messages with inline text attachments. You can also select the "Send MIME alternatives" option to have both plain text and enriched (MIME) text sent to recipients as alternative representations of your messages. If the ruler option is causing undesirable text in the body of messages sent by MailViewer, you can disable the option.

New Mailboxes Panel

The Mailboxes panel uses an outline view to display the contents of your accounts in a hierarchical manner. At the top level are all your accounts. You can create nested mailbox directories by typing a path in the New Mailbox panel. For example, entering "Meetings/Notes" in the New Mailbox panel would create a directory called Meetings in ~/Mailboxes with a Notes.mbox inside of it. You can create a new mailbox in an existing ~/Mailboxes subdirectory by selecting that directory in the mailboxes panel, typing a name, and clicking the New button.

If a mailbox has unread messages, the Mailboxes panel displays the mailbox name in bold face and shows the number of unread messages in parentheses after the mailbox name.

Display of Senders Image

When MailViewer displays an message it tries to find a TIFF file corresponding to the sender's e-mail address. The directories that MailViewer looks in are, in order:

1. Local/Library/Images/People
2. /System/Library/Images/People
3. ~/Library/Images/People

When it searches for a user's image, MailViewer use the From header's value and appends ".tiff" to the string. If it finds a match in any of the above directories, it displays that image in the upper right corner of the message viewer. For example, if MailViewer is displaying a message with a From address of "steve@apple.com", it looks for a file called "steve@apple.com.tiff" in one of the directories listed above.

It is common to populate a central directory on an NFS server with the images of a site's users and then mount that directory as /Local/Library/Images/People.

Known Issues

These issues are known to exist in the MailViewer application:

Issue	Garbled messages displayed
Description	Occasionally MailViewer displays messages incorrectly; it displays random characters or sometimes part of one message and part of another. This happens when the mailbox file and the table of contents file (**table_of_contents**) become out of sync.
Workaround	To fix the issue, open the affected mailbox and choose the Mailbox->Rebuild Mailbox menu item. Rebuilding the table of contents may change the appearance of your mailbox in two ways. The first is that messages previously marked as being deleted may appear as undeleted. The second is that messages which were previously unread may appear as having been read.

Issue	Messages accidentally left on POP server.

Description	If you fetch mail via a POP server and have the "Only fetch unseen messages" checked, some messages might be left on the server even though they are unseen. MailViewer determines if it has seen messages by keeping track of the Message-ID header of messages. Message-ID headers are supposed to be unique, but sometimes (typically as a result of mailing lists), some messages can have the same Message-ID. When MailViewer fetches mail from a POP server, it scans backwards (from newest to oldest) looking for a Message-ID that it's already seen. As soon as it finds one it stops looking and starts fetching from that message forward. Thus, if two messages on the POP server have the same Message-ID, the message behind the fetched one is not fetched.
Workaround	Periodically uncheck the "Only fetch unseen messages" option and have MailViewer fetch all messages on the server. If you don't have the "Delete messages on server" checked, a large number of new messages might be fetched. The suggested configuration is to have "Delete messages on server" checked and "Only fetch unseen messages" unchecked. This configuration avoids the issue altogether.

Issue	Can't change filtered headers.
Description	The original Mail application had a preference for indicating which headers to filter when reading messages. This preference has not yet been added to MailViewer's Preferences displays.
Workaround	Although the filtered-headers preference is not settable in a Preferences display, you can set it as a user default from the command line (using the Terminal application). The default name is "MailFilter" and the value is a string containing colon separated header names. For example, `defaults write MailViewer MailFilter "CC:Date"` causes the the suppression of the CC and Date headers when a message is displayed. Setting a default such as this overrides the default filtered headers, which is: "Content-Length:Content-Transfer-Encoding:Content-Type:Errors-To:Mime-Version:Received:References". Therefore, you might want to include these values in your custom setting.

Issue	Transferring messages using IMAP sometimes fails
Description	Sometimes when trying to transfer messages between two IMAP mailboxes, the transfer button stays in for a few seconds then pops back out. Unfortunately the mail does not get transferred and there is no error reported.
Workaround	Clicking the transfer button a second time will transfer the message.

Issue	MailViewer is showing a different IMAP message than the one I have selected
Description	If an IMAP mailbox is compacted (sometimes also called "expunged" or "compressed") by another mail client, the locally cached messages can get out of sequence. Because of this, MailViewer may show the body of one (cached) message with the header of the selected header.
Workaround	Removing the cache will clear this issue up. The cache of messages is kept in a directory called CachedMessages for each mailbox in an account. For example, if you have an account setup with an account directory of ~/MailAccounts/IMAPAccount and you are seeing this issue in the INBOX mailbox, you can remove the directory ~/MailAccounts/IMAPAccount/INBOX/CachedMessages. The next time the mailbox is opened, the cache will be checked for the message and since it no longer exists, MailViewer will retrieve it from the server.

Issue	List of message may get out of sync with IMAP server if multiple clients accessing the same mailbox
Description	When multiple clients access IMAP mailboxes simultaneously, the IMAP server generally notifies all clients about the changes. Unfortunately not all servers do this. As a result, the message attributes such as whether a message is read or deleted may not properly get updated when changes are made from a different IMAP client.
Workaround	Either closing and reopening the mailbox or choosing the Mailbox->Rebuild Mailbox menu item should resynchronize the message list.

Published Date: Feb 18, 2012

Mac OS X Server 1.x: About Setting Preferences

These notes are for the Mac OS X Server Release of the User Preferences & Computer Settings panels.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

In this release, you can access commonly used preferences and settings panels via the Apple Menu. The User Preferences submenu contains preference panels that only affect the current user. The Computer Settings submenu contains settings that apply to all users of the machine. Not all available preferences and settings may appear in the submenus. To see a complete list of user preference panels, select More Preferences from the User Preferences submenu. Similarly, to see a complete list of computer settings panels, select More Settings from the Computer Settings submenu.

Appearance

The Desktop pattern selection user interface is greatly improved over the DR2 release. To quickly browse through all of the patterns using the keyboard, press Tab until the keyboard focus is on the pattern list. Press the up and down arrows to browse through the patterns.

To add your own personal patterns to the pattern list, create a DesktopPatterns folder in your home Library folder (~/Library). Any TIFF images that you place in the DesktopPatterns folder will appear in the pattern list.

Date & Time

The Network Time tab pane is not completely functional. If Network Time Synchronization is off, clicking the Start button will not turn it on, although the user interface will indicate otherwise. Network Time Synchronization will be activated the next time you restart, however.

Login Items

To remove an item from the Login Items window, you need only drag it out of the white area. You need not drag it all the way to the trash. In fact, dragging to the trash is not recommended as this action will cause the system to move the actual item to the trash.

Monitor

Changes to the color depth and resolution of your monitor will not take effect until you log out. By default, only the recommended resolutions are shown in the resolution list. Recommended resolutions are those resolutions that the system has determined are supported by your monitor. The system is not aware of all types of monitors, however, and may sometimes only show a severely limited subset of resolutions as recommended.

To enable the Show All resolutions feature, you can issue the following command in Terminal.

```
defaults write Preferences NSEnableShowAllDisplayModes YES
```

Be careful! If you attempt to use a resolution that is not supported by your monitor, your display may become unusable when you log out.

Multiple Monitors

The Multiple Monitors panel appears in the Computer Settings list of the Preferences & Settings window only when you have multiple monitors attached to your system. With the Multiple Monitors panel, you can arrange how the monitors are positioned relative to each other, and you can specify a main monitor. The main monitor is the monitor on which the login window and menu bar appear.

The Multiple Monitors panel is disabled by default on Power Macintosh computers because of a potential conflict with the Monitors & Sound control panel in the Mac OS environment.

Adventurous users can enable the Multiple Monitors panel by issuing the following command in Terminal:

```
defaults write NSGlobalDomain NSEnableMultipleMonitors YES
```

If you adjust the position of the monitors using the Multiple Monitors panel, you must not adjust the position of the monitors with the Monitors & Sound control panel in the Mac OS environment. Doing so will limit your mouse position to a single screen in the Mac OS environment.

Network

The Network panel now supports configuration of multiple network ports. Changes to the DNS search domains, name server addresses, FTP Server, Telnet Server, and IP Forwarding take effect immediately. All other changes require a restart to take effect.

Known Issues

The following issueshave been identified. When reporting bugs against the Preferences application, please identify the affected control panel and explicitly associate the bug with the installed release.

Keyboard Preferences

Issue	The Keyboard Panel does not type the correct extended characters in the text edit field. This also occurs in the Keyboard Panel invoked from the Localization Preference.
Problem	In the Keyboard Panel, some key caps are left highlighted when you type quickly in mixed case. This also occurs in the Keyboard Panel invoked from the Localization Preference.

Date and Time

These known issues with the Date and Time Preferences option also apply to the System Date & Time Settings panel in the Clock application.

Issue	Not all time zones in **/usr/share/zoneinfo** are shown in the pop-up menu.
Description	Do not attempt to manually set the **/etc/localtime** symbolic link to a time zone not shown in the pop-up menu.
Issue	The time field stops ticking when the system time is set to an earlier time using the BSD **date** command.
Workaround	Click on any day in the calendar. This causes the Revert and Set buttons to become enabled. Click the Revert button.

Monitor

Issue	If you use the keyboard navigation keys (tab, backtab and the arrow keys) to change the slider values, Preferences does not save the settings to the persistent user-defaults database. Thus, when you log out and log back in again, the values you had set in the previous session are not saved.
Workaround	Use the mouse to change the slider values.

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Mac OS X Server 1.x: About QuickTime on Mac OS X Server

This file contains release notes for a Demonstration Release of QuickTime for Mac OS X Server.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

QuickTime enables editing and playback of multimedia content in a variety of video, sound, and graphic formats.

Notes Specific to this Release

The QuickTimePlayer application is a demonstration of QuickTime technology on MacOS X Server. It offers the following features:

- It is based on QuickTime 3.0.
- Media files can be opened and played.
- The player enables simple editing features.

Known Issues

- The version of QuickTime client included with Mac OS X Server does not currently support the Streaming features provided in QuickTime Streaming Server.
- QuickTime 3.0 third-party codecs are not supported in this release. This includes Sorensen Video, Indeo, QualComm PureVoice, and QDesign Music codec.
- Audio and video capture are not currently supported.
- There is no developer access to the QTML framework yet. This will be rectified in the Carbon release.
- Movies playing offscreen may display incorrectly when brought back onscreen. Use the Window Shade button to hide and show the window to redraw its contents.
- Files need to be world-readable to be viewed.
- Files at root (/) cannot be read. Try moving them into a directory.
- The movie thumb controller sometimes leaves portions of itself behind.
- If the QuickTimePlayer application crashes, sometimes the cursor is left hidden.
- Shift-click and drag in the movie controller doesn't work (use shift-click instead).
- QTVR, QD3D, and MPEG are not currently supported.
- Playing movies backwards may sometimes fail.
- PC graphics cards set to 4444 16-bit pixel format will not get correct visual results.
- Dual monitor setups are not supported.

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Mac OS X Server 1.x: About Terminal

This article contains release notes for the the Mac OS X Server release of the Terminal application.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

For those familiar with Terminal in OpenStep for Mach, notes specific to this release are included. Also, a section is devoted to some of Terminal's less obvious features. Finally, this document includes information about Terminal's execution service, which is of interest mainly to developers.

New Features

The following new features have been added to the Terminal application in this release.

- Terminal has been moved to the directory /System/Administration (it used to live in /NextApps).
- Yellow Box Conversion and Macintosh User Interface: Terminal has been ported to use the Yellow Box APIs and to support the Macintosh menu layout and user interface. In addition, Terminal's execution service uses NSConnection-based ("new") Distributed Objects.
- Library Menu: You can configure Terminal to create a menu containing shortcuts for the terminal settings files in your ~/Library/Terminal directory. Enable this feature by executing the following command:

```
/usr/bin/defaults write Terminal LibraryMenu YES
```

  After restarting Terminal, the Shell>Library menu contains an item for each of the abovementioned files.

Known Issues

These new bugs have appeared since OpenStep for Mach 4.2.

Issue	The Page Up and Page Down keys don't work.
Issue	Characters lost when pasting text.
Description	Pasting a large body of text into a Terminal window will sometimes result in many of the characters being lost.

Terminal Features

- Saved Windows: You can save a window or set of windows to a file, thereby saving your preferred configurations. Everything about the windows is saved except the contents of the scrollback buffer; this includes the shell, the location of the window, and whether the window is miniaturized. When you choose the Save As command, you can decide whether all windows or just the main window is saved.
  Once a window is associated with a file, Save can be used to flush the settings out without seeing a Save Panel, just as with more conventional documents. However, if more than one window belongs with that file, all the relevant windows will be re-saved (the Save menu item indicates this by changing its label to Save Set). This convention allows you to open a set of windows, rearrange them, and type Command-s to save them back to the file.
  To have a file opened for you automatically each time you start up Terminal, you can either check a box in the Save As panel, or you can specify the filename in the Preferences panel under Startup options.
- Drag and Drop Support: Terminal can accept files dragged into a window: The appropriate filenames will be pasted, plus a space. Dragging an executable file onto Terminal's application icon results in that file being executed in a new Terminal window. If a directory is dragged, a new shell window is started with that directory as the working directory.
- Color Setting: You can drag and drop colors into Terminal windows to allow reverse video and other interesting settings. The color of the selection is settable, as are the color and size of the cursor.
- Activity Monitoring: Terminal tries to determine whether your shell windows are in active use by monitoring the processes inside them. If Terminal thinks something interesting is going on inside a window, it will mark the window with a broken X. You are prompted for confirmation before if you try to close a "busy" window or quit Terminal when there are busy windows.
  To make this evaluation, Terminal collects ps-type information about processes it considers relevant and applies a number of heuristics. Usually, Terminal considers shells and a few other garden-variety processes such as su to be innocuous and will not mark windows busy on their account. But there are exceptions; for example, if the distinguished process on the tty is a shell but it is actively running, the window will be dirty. You may designate additional "clean" command names (rlogin and telnet are common) in the preferences panel. If there are running processes on the terminal, the terminal might still be clean if the processes seem to be running in the background. But an interesting process that's the current process or that you've explicitly suspended with Control-z will always make the window dirty.
  The status of windows is checked only when it is likely to have changed. A back-off strategy prevents the probes from happening too often if the window seems constantly busy.
- Output Indication: When Terminal is hidden and one or more Terminal windows have received unviewed output, Terminal puts a blinking

icon in the menu bar. Also, Terminal window shades are marked as `dirty' when there is unviewed output.

- Accelerators: Two panels, Quick Title and New Command, provide an easy way to set the title on a window and to start up a new window running a designated command. Both of these panels would otherwise require use of the Preferences panel.
  Quick Title provides the current title of the window for you to edit; however, when you set the title this way Terminal won't update any of the information in the future. For example, if your window is titled "/bin/csh 80x24 ~/Term.term" and you edit that to include some text of your own choosing, the new title is treated as a string and won't reflect (for example) the size of the window should you change it. The preferences panel allows better control over this; you can mix your own material with Terminal's automatically updated information.
  New Command does use path searching when it execs your command, but since the path is just the default inherited from Workspace, it's utility is limited. You can add arguments, but shell metacharacters won't be handled correctly.
- A Tool for Creating New Terminal Windows: The program /usr/bin/terminal may be useful for opening new shell windows in the current (or another) directory. Without any arguments, it will open a new shell window in the current directory. (However, you may have a .login or .cshrc file which defeats this by changing to the user's home directory; you may wish to change this.) If a command is specified, terminal will, by default, run the command without a shell for fastest startup. If a shell is desired, it can be guaranteed by running the command with the -shell option. For usage information, type `/usr/bin/terminal -help'. For information on how this utility works, see the section Terminal's Execution Service below.
- Execution Service: Terminal publishes a Distributed Objects interface to allow it to execute commands on the behalf of other applications. See the section Terminal's Execution Service below.
- Settable Title Bar Text: A process can set the title bar of its terminal window by emitting the following string, without spaces or quotes:

```
ESC ] 0 ; "Title String" BEL
```

  where ESC is '!', and BEL is ''. The initial 0 may alternatively be a 2. The following csh script code (which can be added to a .cshrc file) shows one example of how you can set the title bar to a "clipped" version of the current directory. It also puts the hostname in the prompt in inverse video:

```
# begin csh script to set the title bar to the current working directory
set homedirectory = ~${user}
alias shortpwd 'pwd|sed -e "s|^/private||" -e "s|${homedirectory}|~${user}|"'
alias getTitle 'set titleString="`shortpwd|sed -e '\\''s|.*[^/]\\
(/[^/]*/[^/]*/[^/]*/[^/]*\\)|...\\1|'\\'' `"'
getTitle

if( ${?prompt} ) then
set hostNm=`hostname`
alias cd 'cd \\!*; getTitle ; echo -n "*]0;${titleString}*" ; set prompt = "*[7m${hostNm} >*[m "'
endif
cd .
#end csh script
```

- Terminal Services: You can configure Rhapsody Services to allow you to specify Unix commands to operate on text. (Like other OpenStep Services, these will be available when you're editing text in any application). Terminal services are dynamic and appear in other application's Services menu as soon as you define them. They can be edited by choosing 'Terminal Services...' under Terminal's Apple menu.
  When you specify the command associated with a service, you can use the tokens "%s" and "%p" to refer to the location where the selection and prompted input are inserted, respectively (prompted input is not requested unless this string appears in the command).

- Environment Variables: It is sometimes useful to know the tool that is providing the terminal emulation without changing the TERM environment variable. Terminal now sets 2 environment variables to provide this information to subprocesses:

```
TERM_PROGRAM=Apple_Terminal
TERM_PROGRAM_VERSION=99.99  (or something else...)
```

Terminal's Execution Service

Overview

The TSTerminalDOServices protocol, declared in the header **/System/Developer/Headers/Apps/TerminalDOProtocol.h**, allows applications to request that the Terminal application perform commands on their behalf. This is useful if a program wants to open up a shell window for the user to interact with, and it may be easier than setting up pipes and doing a fork/exec of a program yourself.

Terminal cannot provide services if it is not running. It may be necessary to use the Application Kit's NSWorkspace API to launch Terminal if the connection to Terminal fails.

You may run the commands in a window, in which case an integer window handle is returned to allow a window to be reused for subsequent commands, or the commands can performed in the background. In addition, you can specify the window's title, as well as the working directory and environment to be used when executing the command.

In the case of commands performed in the background only, you can pass in an NSData object whose data will be fed to the command's standard input, and if you pass in a pointer to an NSData, Terminal can hand you back the output of the command's standard output and standard error. If you pass a pointer to get these back, the data at the pointer should be nil before you invoke the command. Upon completion, the pointer points to an newly created NSData containing the output.

For details on the specific methods in the protocol, see the header file referenced above.

Security Considerations

By default, Terminal registers a port for the execution service with the Mach bootstrap server. This means that only processes descended from the Workspace application have access to this service. You can also have Terminal register this port with the Mach netname server, which allows access from other machines on the network. This is enabled by setting the default

```
/usr/bin/defaults write Terminal PublicDOServices YES
```

Important Note

Running with this default is a security hazard, as Terminal has no way of verifying who is making the remote connection.

Disabling the Service

Any user may disable this service by executing the following command:

```
/usr/bin/defaults write Terminal DisableDOServices YES
```

The superuser can disable it for all users on a given machine by giving this command:

```
touch /System/Administration/Terminal.app/.DisableDOServices
```

Sample Code and Client

The program **/usr/bin/terminal**, mentioned above in "A Tool for Creating New Terminal Windows," is a simple client which utilizes this protocol. The following is the source code for this program:

```
//
//  terminal.m
//
//        Sample client for Terminal.app's Distributed Objects services.
//        Copyright 1994-1997, Apple Computer, Inc. All rights reserved.
//
//
//    This program opens a terminal window in the current directory. It's installed
//    in /usr/bin/terminal.
//
//    Author: sam streeper
//    Updated by: Barry Locklear, Grant Baillie
//
//    To compile:
//
//      cc terminal.m -I/System/Developer/Headers -framework Foundation -o terminal
//
//    Usage:
// terminal [-shell] [-dir <dir>] [-noclose] [-env] [command]
//

#import <AppKit/AppKit.h>
#import <Foundation/Foundation.h>
#import <stdio.h>
#import <mach/mach.h>
#import <servers/bootstrap.h>
#import <Apps/TerminalDOProtocol.h>

static void usage(void) {
```

```
    fprintf(stderr,"terminal: open a new Terminal.app window\\n\\n");
    fprintf(stderr,"Usage: terminal [-shell] [-dir <dir>] [-noclose] [-env] [command]\\n");
    fprintf(stderr," -shell   - Run command from default shell\\n");
    fprintf(stderr," -dir     - Specify working directory (default is current)\\n");
    fprintf(stderr," -noclose - Retain window upon exit\\n");
    fprintf(stderr," -env     - Export current environment\\n");
    exit(-1);
}

static id<TSTerminalDOServices> lookupTerminalDOServer(void) {
    port_t sendMachPort;
    NSDistantObject *rootProxy = nil;
    id<TSTerminalDOServices> result;

    // First, try look up Terminal's DO object in the bootstrap server.
    // This is where the app registers it by default.
    if ((BOOTSTRAP_SUCCESS == bootstrap_look_up(bootstrap_port, "TerminalDO", &sendMachPort)) && (PORT_NULL !=
sendMachPort)) {
        NSConnection *conn = [NSConnection connectionWithReceivePort:[NSPort port] sendPort:[NSPort
portWithMachPort:sendMachPort]];
        rootProxy = [conn rootProxy];
    }

    // If the previous call failed, the following might succeed if the user
    // logged in is running Terminal with the PublicDOServices user default
    // set.
    if (!rootProxy) {
        rootProxy = [NSConnection rootProxyForConnectionWithRegisteredName:@"TerminalDO" host:@""];
    }

    // We could also try to launch Terminal at this point, using
    // the NSWorkspace protocol.
    if (!rootProxy) {
        fprintf(stderr,"Can't connect to Terminal\\n");
        exit(-1);
    }

    [rootProxy setProtocolForProxy:@protocol(TSTerminalDOServices)];
    result = (id<TSTerminalDOServices>)rootProxy;

    if ([result protocolVersion] < 0x10002) {
        fprintf(stderr,"Incompatible terminal protocol version\\n");
        exit(-4);
    }

    return result;
}

int main(void) {
    NSAutoreleasePool *pool = [[NSAutoreleasePool alloc] init];
    id <TSTerminalDOServices> terminal = lookupTerminalDOServer();

    NSEnumerator *argsEnum = [[[NSProcessInfo processInfo] arguments] objectEnumerator];
    NSString *thisArg;

    int returnCode;
    NSMutableString *command = nil;
    NSDictionary *environment = nil;
    NSString *directory = nil;
    TSShellType shellType = TSShellNone;
    TSExitAction exitAction = TSCloseUnlessError;

    int winHandle;

    NSData *inputData = nil;
```

```
    NSData *outputData = nil;
    NSData *errorData = nil;


    thisArg = [argsEnum nextObject]; /* Skip the program name */

    if (nil == thisArg) {
        shellType = TSShellDefault;
    }

    // Run through the command-line arguments. We only set command to
    // something non-nil once we encounter an argument that isn't an
    // option. Once we've done this, though, we treat the rest of
    // the arguments as part of the command.
    //
    while(thisArg = [argsEnum nextObject]) {
        if (command) {
            [command appendFormat:@" %@", thisArg];
        }
        else if (![thisArg hasPrefix:@"-"]) {
            command = [[thisArg mutableCopy] autorelease];
        }
        else  if ([@"-shell" isEqualToString:thisArg]) {
            shellType = TSShellDefault;
        }
        else if ([@"-dir" isEqualToString:thisArg]) {
            if (!(thisArg = [argsEnum nextObject])) usage();
            directory = thisArg;
        }
        else if ([@"-noclose" isEqualToString:thisArg]) {
            exitAction = TSDontCloseOnExit;
        }
        else if ([@"-env" isEqualToString:thisArg]) {
            environment = [[NSProcessInfo processInfo] environment];
        }
        else {
            usage();
        }
    }

    if (!directory) directory = [[NSFileManager defaultManager] currentDirectoryPath];
    if (!command) command = [NSMutableString stringWithCString:""];

    [terminal runCommand:command
        inputData:inputData
        outputData:&outputData
        errorData:&errorData
        waitForReturn:NO
        windowType:TSWindowNew
        windowHandle:&winHandle
        exitAction:exitAction
        shellType:shellType
        windowTitle:command
        directory:directory
        environment:environment
        returnCode:&returnCode];

    [pool release];

    exit(returnCode);
}
```

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Mac OS X Server 1.x: About TextEdit

This article contains the Mac OS X Server release notes for the TextEdit application.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

- TextEdit is a small but powerful word-processing application based on the Yellow Box. It is written in Java, using the Java Yellow Box APIs. (The TextEdit application in Developer Release 1 was written in Objective-C using the Objective-C version of the same APIs.

Features

Most of TextEdit's word-processing capabilities come from the Yellow Box text system. These capabilities include:

- Editing rich text with graphics
- Support for Unicode and other encodings (if you have installed the Japanese package, you can read, write, and edit Japanese files on any Rhapsody system)
- Reading and writing RTF and reading HTML
- Ruler for setting paragraph properties
- Advanced typographical features such as hyphenation, kerning, ligatures, and baseline offsets
- Spell checking and correction
- Ability to access text services provided by other Yellow Box applications (such MailViewer's "Mail Text")

Additional features of TextEdit include:

- Ability to specify explicitly the character encoding to be used for each opened or saved file.
  Plain text files from different operating systems often use different encodings for international and special characters; if the default encoding choice that TextEdit uses when it opens a file turns out to be wrong, the user can specify the encoding through the pop-up menu in the Open panel. The default choice, "Automatic," tells TextEdit to use either the default eight-bit encoding of the system or Unicode.TextEdit can usually differentiate an eight-bit plain text file from a Unicode file, so it will choose the appropriate one.
  Similarly, the user can use the encoding pop-up menu in the Save panel to specify explicitly the encoding for a saved file. By default TextEdit uses the encoding used when the file was opened.
  You can set the default settings of these pop-ups items through the Preferences panel.

- Loading rich text files without interpreting the rich text; this allows the user to see and edit HTML tags (for instance) directly.
- A "Wrap to Page" mode, which presents the document wrapped to the current page size (as opposed to the window size), thus giving the user a simple WYSIWYG representation of the pages. This mode also allows zooming.
- A simple non-modal find panel with replace capability.
- Services ("Open File" and "Open Selection") to allow other applications to open files and text in TextEdit.
  TextEdit source files are installed with the development environment in the examples directory (on Rhapsody /System/Developer/Examples/Java/AppKit/TextEdit; on Windows in Developer/Examples/Java/AppKit/TextEdit under the directory where you installed the Yellow Box).

Known Issues

- If TextEdit or other Yellow Box Java applications fail to launch, the most likely cause is that your CLASSPATH environment variable is not correctly set. (This variable contains the path to the resources for the Java environment.) If this is the case, the application actually launches, but since it can't find its resources, it continues running without any graphical user interface. (You must kill the process with the Task Manager.)
  The workaround is to either remove this existing CLASSPATH (if you don't need it anymore), or to add the default class path for Yellow Box Java to the existing CLASSPATH. On Rhapsody, use the javaconfig command with the "DefaultClasspath" argument, for example:

  ```
  setenv CLASSPATH .:'javaconfig DefaultClasspath'
  ```

  On Windows NT, you can do this via the System control panel; on Windows 95 or 98, you need to edit your **autoexec.bat** file. The string to add (assuming you installed the Yellow Box in C:\\Apple) is:

  ```
  C:/Apple/Library/Java;C:/Apple/Library/JDK/lib/classes.zip
  ```

  Add this after the existing value, separated by a colon. Replace the two occurences of "C:/Apple" with the location you installed the Yellow Box in.

- If you wish to customize the list of encodings TextEdit shows in the Open panel popup, please copy the file DefaultEncodings.txt in TextEdit.app/Resources to Encodings.txt and add or delete the encodings you want. For a complete list of appropriate string encodings, see the header file NSString.h in the Foundation framework. For instance, WinLatin2 nor CP1251 encodings are "11" and "15".
- The complete list of encodings that are actually useful for TextEdit is: 2,3,4,5,8,9,10,11,12,13,14,15,30
- TextEdit can open HTML files, but doesn't save them. If you open an HTML file, edit, and then save, the file will be saved as an RTF or RTFD file. TextEdit will present you with a Save panel allowing you to specify a new name. Do not try to overwrite your HTML file, as TextEdit will simply end up appending "rtf"or "rtfd" to the name.

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Mac OS X Server 1.x: About the Workspace Manager

This article contains the Mac OS X Server release notes for the Workspace Manager application.

Note: This document was installed by Mac OS X Server in /System/Documentation/ReadMe. For a list of other release notes see:
Article 30925: "**Mac OS X Server: Release Notes**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Key Differences from the Mac OS Finder

- You can move icons to the desktop from FileViewer windows. However, all icons placed on the desktop act like aliases instead of the original items. If an icon on the desktop represents an application, you can drop a document on it to launch (or activate) the application and have it open the document. You can remove items from the desktop by dragging them to the trash. This will remove the alias, not the original item that it pointed to.
- When you drag items between locations, you can force the creation of an alias rather than a copy by pressing the Control key while dragging. The Command key will force a move to be done, and the Option key will force a copy to be made. As on Mac OS, by default an item is copied if it crosses volumes or mount points and is otherwise moved.
- When renaming a file, you must press return after typing the new name or the change may not take effect. Also, you might see some display glitches in the filename if you delete characters while editing it.
- In this version of Mac OS X Server, a file's type is determined by the suffix in its name, instead of the type being invisibly stored by the filesystem as on Mac OS. If you rename a file and change its suffix, you might change which application will open it.
- You can use the option modifier key when double clicking a folder, or when using the tool bar, to reuse the same window instead of opening a new window.
- If you use the Goto panel (Command-g) to jump to a hidden directory (such as **.OpenStep**, or **/usr**), the File Manager shows all hidden files and directories whether you have selected the expert mode or not. To hide these files and directories again), then select the Update Viewers command in the Views menu (Command-u).

HFS Support

A significant addition since Developer Release 2 is support for HFS and HFS+ volumes. Because of the inherent differences in the capabilities of HFS and the Mac OS X Server filesystem (referred to as UFS below), there are issues that rise to the user level:

- When files are copied from HFS to UFS, any resource forks the files have will not be copied. In addition, their FinderInfo, including type and creator attributes, are lost as well. Workspace Manager will warn the user whenever they are moving files from HFS to UFS. It provides a "convert" option, which will try to add a suffix to the filename to match the type that it has under Mac OS.
- When files are copied from UFS to HFS, they will not have any type or creator when viewed by Mac OS.
- Files copied within HFS, or from one HFS volume to another, are handled correctly.
- When Workspace performs file manipulations on an HFS disk it does not consult or update the Desktop Database. This means that if you add, remove or move applications using Workspace and then use that disk under Mac OS, the Finder may report that it cannot find an application or not know about an application that you added. We recommend you do these operations under Mac OS (including MacOS.app, a.k.a. the "Blue Box").
- Although Workspace Manager hides hidden files on HFS volumes for non-expert users, this is not the case for hidden folders.

Known Issues

- Japanese users should consult the **Japanese-specific release notes**, especially regarding string encodings and HFS filesystems.
- Workspace Manager will not prevent the user from starting simultaneous file operations that may interfere with each other (e.g., copying a directory tree that is also being removed). Avoid initiating multiple operations that apply to the same set of files.
- Workspace is only able to initialize an entire disk, not an individual partition. Whenever Workspace initializes a disk, all data in all partitions of that disk is lost. To initialize a multi-partition disk, you will need to invoke the eject command on all but one partition, which unmounts them from the desktop. You may than select the last available partition, and choose the Initialize command.
- If an application fails to launch or crashes, there is no error message given by Workspace, other than an entry in the console window.
- It isn't possible to distinguish between HFS (Mac OS Standard) and HFS Plus (Mac OS Extended) disks in the Workspace.
- When presenting a message about an IDE hard disk, Workspace may refer to it as a SCSI disk. An example of this is seen on G3 systems with IDE/ATA disks.
- If you insert a removable disk that is locked and is either uninitialized or in a format Mac OS X Server does not recognize, it will be ejected without any error message. If you unlock the disk, you will be able to initialize it.
- Icons on the desktop (which are aliases) cannot be renamed. Furthermore, renaming the original of an alias on the desktop causes the desktop icon to disappear when the alias is next clicked because the original is not available.
- Filenames can contain spaces, but inserting spaces in filenames will probably produce issues within Project Builder projects.
- Sometimes creating a new folder can put you in "Expert mode", where files that are normally hidden become visible, such as Unix directories or files beginning with a period. If this happens, you can use the Update Viewers command to restore correct behavior (command-u).

- The Goto panel only works if you have a browser window open.

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Mac OS X Server 1.x: Adding NetBoot Images To NetInfo

How do I add the NetBoot images to NetInfo?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The following script can be used to add the private_image_volume and shared_image_volume to NetInfo. This is useful if the NetInfo database (/etc/netinfo/local.db) is replaced with the template.

```
#!/bin/sh
# This script looks for Netboot HD.img and Applications HD.img in
# the following paths /<HFS+ Volume>/<HFS+ Volume>_NBS/SharedImages/
# If it finds them it adds the shared_image_volume and
# private_image_volume properties to netinfo
#
# Written by Scott George with help from Dieter Siegmund

##
# Constants
##
PrivateImage="NetBoot HD.img"
SharedImage="Applications HD.img"
PartialPath="_NBS/SharedImages/"

##
# get the list of mounted HFS volumes
##
mount -t hfs | while read line
do
   RealDrive=`echo $line | sed 's/.*on \\/\\(.*\\) (local)/\\1/'`
   ImagePath="/${RealDrive}/${RealDrive}${PartialPath}"
   if [ -e "${ImagePath}${PrivateImage}" ] && \\
      [ -e "${ImagePath}${SharedImage}" ]; then
niutil -createprop . /config/NetBootServer \\
          private_image_volume "${RealDrive}"
niutil -createprop . /config/NetBootServer \\
          shared_image_volume "${RealDrive}"
exit 0
   fi
done

echo "No images found"
exit 1
```

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Mac OS X Server 1.x: How To Move A NetBoot Server

I need to move a NetBoot server to a new location that has a different network. How do I do that?
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Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

To move a NetBoot server to a new location with a different network:

1. Delete all computers with name "macnc***" in Network Manager.
2. Delete all users "macnc***" from group g105 in Network Manager. You could also delete all the shadow images but this is not needed.
3. Open Network preferences and change TCP/IP settings for all cards as needed, and global settings.
4. Select BOOTP from the popup menu and change settings for all cards as needed.
5. Select AppleTalk from the popup menu and make changes as needed.
6. Restart the server computer.
7. If using Macintosh Manager, the netboot image must be updated to select the new server. Use NetBoot Desktop Admin to boot a client in private (persistent) mode, select the new server and save the images.

Use Macintosh Manager to edit Macintosh Management Server data.
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Mac OS X Server 1.x: Server Begins To Start Up Then Won‘t Respond

The computer begins to start up, then won't respond.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Mac OS X Server may be looking for a NetInfo server.

1. Disconnect the computer's Ethernet connection.
2. When asked if you want to continue in non-network mode, enter Y.
3. Log in as Administrator.
4. Open the Apple menu and choose Computer Settings, then choose Network.
5. In the NetInfo panel, make sure "Connect to parent NetInfo server at startup" is not selected.

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Mac OS X Server 1.x: Monitor Screen Is Black

This article explains why the monitor on a computer with Mac OS X Server could be black.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Symptom
The monitor on a computer with Mac OS X Server is black.

Solutions

- Press any key. (The computer automatically dims the display when left idle; press a key to reset the display. You can set the dimming interval in Monitor Preferences.)
- Make sure the monitor is properly connected and adjusted. See the manual that came with your monitor for more information.
- Make sure the computer has a compatible video card. Shut down your computer by halting Mac OS X Server, then remove the video card. See article 60135 "**Mac OS X Server: Halting the Server and Restarting From the CD**." See article 30604 "**Mac OS X Server: System Requirements**" for information about compatible video cards.
- Make sure the resolution in Monitor Preferences is set to a resolution that works with the monitor.
    1. Shut down your computer by halting Mac OS X Server
    2. Restart the computer using the Mac OS X Server CD. This resets your monitor
    3. Use the System Disk application to select your Mac OS X Server hard disk as the startup disk
    4. Restart your computer

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Mac OS X Server 1.x: Halting The Server and Restarting From The CD

This article describes how to halt Mac OS X Server and restart from the CD-ROM disc.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Warning! This method of stopping Mac OS X Server may result in data loss or disk corruption. If possible, quit all applications and processes before following these instructions.

1. Put the Mac OS X Server CD in the CD-ROM drive's tray, but do not close the tray.
2. Press Control-Power, then press the H key. After a moment, your computer turns off.
3. Gently close the CD-ROM drive.
4. Turn on the computer, then hold down the C key. Continue holding the C key until you see the Welcome to Mac OS message.
5. Use the fsck command to check the root file system disk.

For more information on the fsck command, see :

Article 24501 "**Mac OS X Server: Why, When, and How to Run fsck for File System Maintenance.**"
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Mac OS X Server 1.x: Can‘t Log In To Server

I can't log in to Mac OS X Server. What could cause that?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Try these solutions:

- Make sure you are entering your password correctly, using the same capitalization and punctuation that you originally used. If you still can't log in, log in as administrator and reset the password for your user account using Network Manager (open the Apple menu and choose Server Administration, then choose Network Manager).
- If you are using automatic login, temporarily bypass it by holding down the mouse button when you start up your computer. If you want to turn off automatic login, log in as the administrator, then open the Setup Assistant (open the Apple menu and choose Server Administration, then choose Assistant) and turn off the Automatic Login option.

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Mac OS X Server 1.x and 10.x: Services Aren‘t Working

Mac OS X Services services don't seem to be working. What can I do?
This article has been archived and is no longer updated by Apple.
Try these solutions:

- Make sure the server is turned on.
- Check that one end of the Ethernet cable is plugged into the Ethernet port on the computer and the other end is plugged into a working Ethernet connector.
- Make sure the hard disk is working properly.
- Check Network configurations. See if the system can access devices or services on the network.
- Make sure the appropriate server processes are running.
- Restart the server.
- Use ProcessViewer to see what's working.
- If you've exhausted all solutions, you may need to reinstall Mac OS X Server or NetBoot server software. With Mac OS X Server 1.2 v3 or earlier, if you reinstall server software you will lose documents and data. If you have backed up your server, you can restore the data you backed up.
- For Mac OS X Server 10.0.3 check the logs via the log viewer or the in the Console.

The following articles may be helpful:

Article 60053 "**Mac OS X Server: Processes.**"
Article 60056 "**Mac OS X Server: Restarting/Shutting Down**"
Published Date: Feb 18, 2012

Mac OS X Server: NetBoot Client Computer Won‘t Start Up

A NetBoot client computer won't start up. How can I fix that?
This article has been archived and is no longer updated by Apple.
Try these solutions:

- Sometimes a computer may not start up immediately because other computers are putting a heavy demand on the network. Wait a few minutes and try starting up again.
- Make sure that all the cables are properly connected, and that the computer and server are getting power. See the troubleshooting information that came with the client computer for more information.
- Check that one end of the Ethernet cable is plugged into the Ethernet port on the computer and the other end is plugged into a working Ethernet connector.
- Make sure the startup server program is running. If other computers can start up from the server, the server program is running. If other computers cannot start up, check the server's processes.
- Make sure you haven't exceeded the number of IP addresses assigned to your network. You check the IP address by logging in to the server and opening the Network Preferences panel.
- If you installed memory or an expansion card in the client computer, make sure it is installed properly.
- If you are using more than one Ethernet card, or you are using more than one port on a multiport Ethernet card, check to see if other computers using the same card or port can start up. If they can't, check to be sure the Ethernet port you set up on the server is the same port the client computer is connected to. It's easy to mistake Ethernet port 1 for Ethernet port 4 on a multiport card.
- If the computer has a local hard disk with a System Folder on it, disconnect the Ethernet cable and try to start up the computer from the local hard disk. Then reconnect the Ethernet cable and try to start up the computer from the network.

The following article may be helpful:

Article 60053 "**Mac OS X Server: Processes.**"
Article 107386 "**Mac OS X Server: NetBoot Clients Cannot Start Up From Server (NetBoot Troubleshooting)**"
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Mac OS X Server: NetBoot Log-in Screen Doesn‘t Appear

On a NetBoot client, you see the Mac OS desktop but the log-in screen doesn't appear.
This article has been archived and is no longer updated by Apple.
Make sure Network is selected as the startup disk in the Startup Disk control panel (for network-startup computers).
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Mac OS X Server: User Can‘t Log In To NetBoot Client

A user can't log in to a NetBoot client. What can I do to fix that?
This article has been archived and is no longer updated by Apple.
Try these solutions:

- Check to see if the user can log in to other computers. If the user can log in to other computers, then the computer the user can't log in to may be connected to a Macintosh Management server the user does not have an account on. If there is more than one Macintosh Management server, make sure the user has selected a server on which he or she has an account.
- Open Macintosh Manager and make sure the user is a member of at least one workgroup.
- Open Macintosh Manager and reset the user's password.

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Mac OS X Server 1.x: How Many NetBoot Clients Can Connect to a Server

This article explains how many clients you can connect to a NetBoot server using Mac OS X Server versions 1.0 to 1.2.

Note: For server versions 10.0 and later, see technical document **107665**.
This article has been archived and is no longer updated by Apple.
The number of NetBoot client computers you can connect to your server depends on how your server is set up, as well as a number of other factors.

A NetBoot server that has this configuration can easily support 25 NetBoot client computers:

- Macintosh G3 computer with a 400 MHz processor
- 256 MB of RAM
- Two 9 GB hard disks
- Four-port, 100Base-T Ethernet card

If you want to use a server that has a different configurationor if you want to have more than 25 client computers, consider these factors:

- **Ethernet speed** - For optimum performance, use 100Base-T connections for both clients and server.
- **Hard disk capacity and number of NetBoot client computers** - The NetBoot server requires a minimum amount of hard disk space for each client connected to it. The amount of space depends on the size and configuration of the system image.
- **Hard disk capacity and number of users** - Each user needs storage space on a server for documents and preferences. If you have a large number of users, consider adding a separate file server to your network to store user documents. By default, users' documents and preferences are stored on the NetBoot server, but any AppleShare server can store this information. (You can set up where documents and preferences are stored using Macintosh Manager.)
- **Location of server and client** -- The startup server program only works with NetBoot client computers on the same subnet, and only one NetBoot server can run on a subnet. A NetBoot client computer can't start up using a server on a different subnet.
- **Number of Ethernet ports on the server** -- Distributing NetBoot clients over multiple Ethernet ports on your server offers a performance advantage. You can add ports by adding Ethernet cards, or by using several ports on a multiport Ethernet card. Each port must serve a distinct segment.

Note: As a client starts up from a NetBoot server, it creates a shadow image on the server's hard disk. Each NetBoot client's shadow image takes up the full space of a system disk image for a short time. The size of the server's shadow disk image increases and decreases as needed.

For more information on the NetBoot client's shadow image, please see article 60080: "**Mac OS X Server: NetBoot Theory of Operation.**"

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Mac OS X Server 1.x: UFS Backup Script

The provided script allows you to backup your UFS file systems on a Mac OS X Server computer. It attempts to filter out any file that is unmodified from your system installation. It does this by comparing the system's disk contents with the package receipts left by the Installer.app.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

This process takes a fair amount of time to examine the hard disk to determine what to write on the tape.

Limitations

- You must be logged in as the System Administrator to use the script.
- This script does not have any incremental backup functionality.
- Backups spanning multiple tapes has not been tested.

Steps to Create a backup

To create a backup archive do the following:

1. Make sure you are logged in as the System Administrator (root).
2. Start Terminal.app to get a BSD command shell window.
3. Use a text editor to create the backup script below. You only need to do this step the first time you wish to make a backup (or when a new backup script is released). Save the script as `/usr/local/bin/makebackup` and then make it executable (`chmod 754 /usr/local/bin/makebackup`).

```
#! /bin/sh
# simple backup script to copy all files listed in the system package receipts
# and added files to the specified destination
#
# usage: makebackup <destination>
#    where destination is typacally a tape backup device
#    e.g. makebackup /dev/rst0
#
# This is intended to be run only by the super-user
#
if [ `whoami` != root ]
then
echo "$0 is intended to be run by the System Administrator"
exit 1
fi

if [ "x$1" = "x" ]
then
echo usage: "$0 <destination>"
exit 1
fi

#
# remove modified files that are unnecessary to backup
# The list is:
#    /Network - network data residing on another machine
#    /private/Network - network data residing on another machine
#    /private/dev - special device files created at boot time
#    /private/var/run - runtime data create at boot time
#    /private/tmp - temporary directory cleaned up at boot time
#    AppKit and Foundation documentation is tweaked during post_install
#    /System/Library/Java diretiry is tweaked during post_install
#    /private/Devices - directory is mode changed during post_install
#    /Local/Library/Receipts - these are the package recepits and shouldn't be restored
#    precomp header files (*.p)
#    other misc. things
showmods -t --find-added | awk '{print $1}' | \\
sed -e '/^\\/Network\\//d' -e '/^\\/private\\/dev\\//d' \\
-e '/\\/private\\/dev$/d' \\
-e '/^\\/private\\/var\\/run\\//d' -e '/^\\/private\\/tmp\\//d' \\
-e '/^\\/private\\/var\\/run$/d' -e '/^\\/private\\/tmp$/d' \\
-e '/^\\/private\\/Network\\//d' \\
-e '/^\\/private\\/Network$/d' \\
-e '/^\\/System\\/Library\\/Frameworks\\/AppKit.framework\\/Versions\\/C\\/Resources\\/English.lproj\\/Documentation\\/Reference\\//d'
\\
-e
'/^\\/System\\/Library\\/Frameworks\\/Foundation.framework\\/Versions\\/C\\/Resources\\/English.lproj\\/Documentation\\/Reference\\//d'
\\
-e '/^\\/System\\/Library\\/Java$/d' \\
-e '/^\\/private\\/Devices$/d' \\
-e '/^\\/Local\\/Library\\/Receipts\\//d' \\
-e '/^\\/System\\/Library\\/Frameworks\\/.*\\.p$/d' \\
-e '/^\\/System\\/Library\\/CoreServices\\//d' \\
```

```
-e '/^\\/System\\/Library\\/Fonts\\/.default.fcache$/d' \\
-e '/^\\/System\\/Library\\/Frameworks\\/System.framework\\/Resources$/d' \\
-e '/^\\/System\\/Library\\/Frameworks\\/System.framework\\/Versions\\/Current$/d' \\
-e '/^\\/System\\/Library\\/PrivateFrameworks\\/Keyboard.framework\\/Resources$/d' \\
-e '/^\\/System\\/Library\\/PrivateFrameworks\\/Keyboard.framework\\/Versions\\/Current$/d' \\
-e '/^\\/private\\/var\\/vm\\//d' \\
-e '/^\\/Local\\/Applications\\/Internet\\/OmniWeb.app/d' \\
| pax -w -v -x cpio -f $1
```

4. Determine the BSD device name for your tape drive (generally /dev/rst0).
5. Run the backup script using the following command:

```
/usr/local/bin/makebackup tapeDevice
```

Where tapeDevice is the device name of your tape drive.

The makebackup script creates a cpio format archive. For more information on the cpio tape format please refer to the BSD manual pages for cpio(1) or pax(1). You can view these manual pages by using the following commands from a command line shell:

```
man cpio
man pax
```

Steps to Restore a Backup

To examine the list of files on the tape archive use the command:

```
pax -v -f tapeDevice
```

To restore files use the command:

```
pax -r -v -f tapeDevice <list of files to restore>
```

Where <list of files to restore> is a space separated list of file paths to extract from the tape archive. You must specify full file paths to restore and if the file paths contain spaces or other non-alphanumeric characters such as "*", you must enclose the file paths with single quotes (').

If you wish to restore all files from the backup, do not specify a list of files to restore.
Published Date: Feb 18, 2012

Mac OS X Server: Macintosh Manager Cannot Add Preference Files

This article discusses adding a preference file in Macintosh Manager.
This article has been archived and is no longer updated by Apple.

Symptom

When running Macintosh Manager users unable to add a preference file from the Add File button in the Preferences tab under the Global tab.

Solution

Version 1.1 and later of the Macintosh Manager application no longer use the Add File button to add preference files.

The Macintosh Manager application works with drag and drop. You can drag any preference file from the System folder of the "NetBoot HD" volume (if you have started up the computer from a NetBoot server) or from the local hard disk to the Preferences window in Macintosh Manager.

You have to use drag and drop with Macintosh Manager to add a specific item to a workgroup if you use the Find button under the Items tab for a workgroup.

This occurs only if the Macintosh Manager Client has been installed. If you run the Macintosh Manager on a Macintosh without the Macintosh Manager Client installed, it does not occur.

Published Date: Feb 18, 2012

Mac OS X Server: Macintosh Manager - What Is System Access?

What does giving System Access to a user mean?
This article has been archived and is no longer updated by Apple.
System Access allows a user access to all items on the client computer, including the Finder and the System Folder. When a user with System Access logs in to a client computer, System Access appears as a choice in the workgroups log-in window.

Global Administrators always have System Access. Other users only have System Access if a Global Administrator sets this option for them.

Having System Access is equivalent to pressing command-shift-escape from the At Ease/Macintosh Manager login window. You will be required to enter an administrator's password if there is one.
Published Date: Feb 18, 2012

Mac OS X Server: About Apache 1.3.4

This article describes Apache 1.3.4.
This article has been archived and is no longer updated by Apple.
Apache 1.3.4 is incorporated into Mac OS X Server. Apache is a GNU licensed implementation of an HTTP 1.1 server. It can take advantage of many new features of Mac OS X Server including multilink multihoming, file level permissions, and scripting languages available at install (perl, TCL, sh, etc).

Apache makes use of CGI (common gateway interface) scripts to perform automated tasks on the server side. These scripts can be written in any of the supported scripting languages, and can utilize any system services, such as sendmail and ftp, that are accessible to the administrator. More information and add-ons to Apache are available from the ApacheGroup site at http://www.apache.org. Bug lists and reporting are also available through this site.
Published Date: Feb 18, 2012

A/UX 2.0: "Disk Space" Value Depends on Login (6/93)

We set up a 160MB disk with a 57MB Root&Usr and a 70MB Usr partition. The 70MB partition is automatically mounted by an entry in fstab. Everything works, except there seems to be a major discrepancy in available space reported by the Finder.

When logging in as root, the Finder reports 3MB free on the Root&Usr and 16MB on the Usr partition (after double clicking the directory specified as the mount point in fstab). When logging in as any other user, the Finder reports less than 1MB on the Root&Usr partition and 7MB on the Usr partition. Why the discrepancy?

This article has been archived and is no longer updated by Apple.

The values you see for available free disk space (from either Finder or the "df" command), depend on whether you login as "root" or with a normal user (non-root) accounts. This is because A/UX 2.0 adopts UFS (Berkeley Fast File System) as the default root file system with minimum free-space threshold. UFS provides a mechanism that lets you specify the percentage of disk space RESERVED FROM USE by normal (non-root) users to reduce disk overhead and increase disk performance.

The percentage of space reserved for the Root file system shipped with A/UX 2.0 is about 5 percent, and the default percentage of space reserved for the non-root file system is 10 percent on the UFS file system. This is done via the -m option of the "newfs" command.

The point is that the root superuser has the privilege to see and use all free disk space, including the reserved space, but other users see only the AVAILABLE disk space.

If you really need some or all of the reserved disk space for normal use and don't care about disk performance, use the tunefs(1M) command with the -m minfree option to change the percentage of the reserved space on an unmounted UFS file system. For example, the command,

```
tunefs -m 0
```

sets a UFS file system without free-space threshold. However, the disk performance (throughput) is significantly lower than performance at the default 10 percent threshold.

For more information on Berkeley UFS, refer to newfs(1M) and tunefs(1M) manual pages.

Published Date: Feb 18, 2012

Mac OS X Server: HTTP Server Does Not Start From the "On" Button

Turning the Network Settings Preferences 'on' in the control panel will not start the Apache web server. The 'off' button in the control panel turns the Apache HTTP service off, but the 'on' button does not start the server.
This article has been archived and is no longer updated by Apple.
You have to restart the server computer in order to start the web server from the control panel. The Apache server can also be started from the command line. This does not require restarting the server computer. To turn the HTTP server on without restarting, type this command in a Terminal window:

```
/usr/sbin/apachectl start
```

Published Date: Feb 18, 2012

Mac OS X Server: Blue Volume Mount Options and SCSI Access

Blue Volume Mount Options do not always give exclusive or SCSI access to volumes in MacOS.app.
This article has been archived and is no longer updated by Apple.
In order to get exclusive or SCSI access for volumes in MacOS.app, the Workspace Manager must be able to unmount them in Mac OS X Server. This is not possible if there are files open on them in Mac OS X Server or if someone is logged into Apple File Services (AFP server).

There is one potential issue with the AFP server. If no one is logged into the server and MacOS.app is launched with volumes set for exclusive access, those volumes will be unmounted from MacOS.app. The result is that AFP users cannot mount these volumes until MacOS.app is shutdown. Again, if someone is already logged in, this will not happen.
Published Date: Feb 18, 2012

Mac OS X Server: Disk Copy Reports Error -8812

When trying to mount a disk image in MacOS.app, Disk Copy reports an error -8812.

This article has been archived and is no longer updated by Apple.

Disk Copy needs special access to a volume to mount a disk image file. This can only be done on volumes that have either exclusive or SCSI access, not on volumes that are shared. Use the Blue Volume Mount Options application to change the access mode. Blue Volume Mount Options is located in the Apple Extras folder of the startup image that is created when MacOS.app is run the first time.

Published Date: Feb 18, 2012

Mac OS X Server: Installers Look Like They Are Not Responding

During the installation of Mac OS X Server, there are several times where some software installers look like they are not responding (frozen). This is particularly visible during the installation of Web Objects and the NetBoot Server.
This article has been archived and is no longer updated by Apple.
The installer progress bar moves based on the number of files copied and not the number of bytes or running of post-install scripts. Therefore, when installing the NetBoot Server, the installer looks as though it has stopped when copying large Disk Copy image files.

The same is true when the Web Objects installer starts to run its post-installation scripts.

Let an installer run for 10 to 15 minutes before you restart the server computer or try to stop the installer.
Published Date: Feb 18, 2012

Mac OS X Server: Delays in Starting up With 4-Port Ethernet Card

With a 4-port Ethernet card installed, the first few times Mac OS X Server starts up seem to take a long time.
This article has been archived and is no longer updated by Apple.
The default setting for the Ethernet ports is to use BootP. The computer will wait two minutes for a response from a BootP server. On a computer with a 4-port Ethernet card, this can result in a total of 10 minutes (two minutes for each port) of waiting. Once all the ports are configured properly or disabled if not in use, this will no longer occur.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: Tips for Importing Users With NetworkManager

This article gives tips on bulk importing users in Network Manager.
This article has been archived and is no longer updated by Apple.
NetworkManager has the ability to bulk import users from AppleShare IP but there are several issues to be aware of.

1. There is an option to fill in gaps in user numbers. Doing so results in all imported users having the same user number. To recover from this, uncheck this option and import again.
2. User numbers can be constrained. By default, Mac OS X Server uses numbers from 100 to 32767 but this range can be changed when importing users. The problem occurs when the range is smaller than the number of users being imported. In this case, when the maximum number is reached, the numbers will wrap and users will be imported with duplicate user numbers. To recover, adjust the range to the correct size and import again.
3. All imported users have login disabled. To correct this, select all the users and click the Uncheck the Login Disabled button.

Published Date: Feb 18, 2012

Mac OS X Server: QuickTimePlayer.app Will Not Play All Movies

Some QuickTime movies will not play in QuickTimePlayer.app.
This article has been archived and is no longer updated by Apple.
QuickTimePlayer.app is based on Movie Player 2.5 so it will not play any movies that require Movie Player 3.0 or later. It is only a demonstration application.
Published Date: Feb 18, 2012

Mac OS X Server: SetupAssistant Can‘t Edit Existing Users

SetupAssistant does not allow editing of user information for users that already exist.
This article has been archived and is no longer updated by Apple.
SetupAssistant has the ability to create and edit users. However, it can only edit those users it is going to create. Once all the changes are made in SetupAssistant and saved, it will no longer be able to modify the user information on subsequent runs.

To edit user information for users that are already created, use the NetworkManager application.
Published Date: Feb 18, 2012

Mac OS X Server: SVGA Monitor Listed as VGA

When using an SVGA monitor, the Power Macintosh G3 (Blue and White) only lists 640 x 480 as a recommended resolution.
This article has been archived and is no longer updated by Apple.
This is normal behavior since an SVGA monitor does not have any sense pins like an Apple monitor does. To workaround this, select All in the Colors and Resolutions panel. Select a resolution that works with the SVGA monitor. Be sure to check the documentation for the SVGA monitor for compatible resolutions and scan rates as there is no easy way to recover from selecting one that is not compatible.

Changes to the color depth and resolution of your monitor will not take effect until you log out. By default, only the recommended resolutions are shown in the resolution list. Recommended resolutions are those resolutions that the system has determined are compatible with your monitor. The system is not aware of all types of monitors, however, and may sometimes only show a severely limited subset of resolutions as recommended.

To enable the Show All resolutions feature, you can type the following command in a Terminal window:

```
defaults write Preferences NSEnableShowAllDisplayModes YES
```

Warning: If you attempt to use a resolution that does not work with your monitor, your display may become unusable when you log out.
Published Date: Feb 18, 2012

Mac OS X Server: Macintosh Manager - Access To Control Panels

I created a Panels and restricted Finder workgroup in Macintosh Manager with privileges to only see the Chooser. When I log in to the Panels or restricted Finder workgroup, I still have access to the Control Panels, Favorites, and Automated Tasks. They show up as generic icons.

In the Panels workgroup, selecting most of the items in the Control Panels, I get a warning message that I "do not have enough privileges." However, selecting Startup Disk allows me to change the current startup disk. Selecting TCP/IP gives me an error that there is "not enough memory..." Selecting QuickTime settings will freeze the client computer.

How can I fix this problem?
This article has been archived and is no longer updated by Apple.
Use the NetBoot Desktop Admin to make a private copy of the NetBoot HD and Applications HD volumes. Refer to the NetBoot Desktop Admin Read Me for instructions on how to do this.

Once you have write access to the NetBoot HD, navigate to the Apple Menu Items folder in the System folder. To fix the generic icons for the Control Panels, Favorites, and Automated Tasks, choose Get Info from the File menu (command+I) on each icon. Closing the Get Info window will restore the correct icon.

Follow the instructions for the NetBoot Desktop Admin to make the NetBoot HD and Applications HD read-only.

Now, when you login to the Panels workgroup, only the Chooser should be available.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: Description

This article contains the text of the Mac OS X Server1.x datasheet. Product specifications are subject to change without notice.

See also these articles:

Article 60162: "**Mac OS X Server 1.x: Features and Benefits**"
Article 60163: "**Mac OS X Server 1.x: Specifications**"
This article has been archived and is no longer updated by Apple.

Mac OS X Server 1.x

The powerful Internet and workgroup server.

Mac OS X Server 1.x software combines outstanding performance and robustness, the renowned Macintosh ease of use, and innovative services for the Internet and workgroups--all for one great price.

Mac OS X Server 1.x uses the same modern foundation that will power Mac OS X. Based on Mach 2.5 and BSD 4.4, this operating system is incredibly stable and scalable. It includes systemwide protected memory for crash-resistant computing, and full preemptive multitasking so that a single service can't monopolize the processor.

Two industry-leading Internet services--Apache and WebObjects developer tools--are included with Mac OS X Server 1.x. Apache is the world's most popular server for reliably delivering both static and dynamically generated HTML pages. Apache can be scaled from a workgroup Web server to a complex Internet site hosting multiple domains. Apple's standard implementation of Apache is fully integrated with Mac OS X Server 1.x, and the server software itself has been optimized to work with Apache.

WebObjects software is the most flexible and scalable way to develop and deploy network applications for viewing from any Web browser. It's a proven, industry-leading technology that currently runs thousands of mission-critical applications around the world. Included with Mac OS X Server 1.x are the WebObjects developer tools, which let you create your own WebObjects applications.

In addition to providing powerful Internet services, Mac OS X Server 1.x introduces a whole new way to manage your Macintosh workgroups. Apple's exciting NetBoot software enables a network of Macintosh computers to run from the same shared System Folder and applications volume stored on the NetBoot server. Just update the NetBoot server, and all the other computers have instant access to the new configuration.

Mac OS X Server 1.x also includes highly scalable file services capable of supporting thousands of open files, connecting to more than a thousand concurrent users, and pushing hundreds of megabits per second across the network.

Mac OS X Server 1.x: Powerful software for Internet services and Macintosh workgroups.

Key Features

Robust core operating system

- Kernel based on Mach 2.5 and BSD 4.4
- Protected memory
- Preemptive multitasking
- Native support for 100% Pure Java (JDK 1.1.6)

Industry-leading web server

- Standard implementation of Apache 1.3.4
- Optimized for fastest Apache performance
- Fully integrated single-button setup

Powerful application server

- WebObjects 4.0.1, the industry leader for developing and deploying flexible, scalable network applications
- 50-transaction-per-minute license
- Full suite of WebObjects development tools

Simple Macintosh workgroup management

- Apple's new NetBoot technology for managing Macintosh systems on a network
- Macintosh Management server software gives users secure access to their personal desktops, files, and applications from any Macintosh on the network
- NetBoot Desktop Admin software makes managing a network of Macintosh computers as easy as managing a single Macintosh

Scalable file services

- File services comparable to those in AppleShare IP
- Support for more than 4,000 open files per process and more than 1,000 simultaneous connections
- User and group information stored in NetInfo, a distributed network database
- Support for importing user information from AppleShare IP servers
- Ability to export the Apache documents directory to AppleShare clients
- Web-based Remote Administration tool for monitoring and changing server status, user and group lists, and mountable volumes

Published Date: Feb 18, 2012

Mac OS X Server 1.x: Features and Benefits

This article contains the text of the Mac OS X Server 1.x datasheet. Product specifications are subject to change without notice.

See also the following articles:

Article 60161: "**Mac OS X Server 1.x: Description**"
Article 60163: "**Mac OS X Server 1.x: Specifications**"
This article has been archived and is no longer updated by Apple.

Features	Benefits
Robust core operating system	
Kernel based on Mach 2.5 and BSD 4.4	Provides an incredibly stable and scalable operating system based on open standards. Makes it easy to port applications from UNIX operating systems.
Protected memory	Helps prevent system crashes.
Preemptive multitasking	Prevents a single service from monopolizing the computer.
Native support for 100% Pure Java (JDK 1.1.6)	Runs any of the multitude of conformant Pure Java applications and applets. Integrates the Java runtime code with the native object model and threads for impressive performance and stability.
Industry-leading Web server	
Certified implementation of Apache 1.3.4	Brings the world's most popular web server to the Macintosh platform. Allows you to easily share Apache configuration files with or migrate them from other platforms. Supports easy updating to future releases from the Apache Group.
Optimized for Apache performance	Delivers performance outstripping any other Web server in its class.
Single-button setup	Gets your Web server up and running in minutes.
Powerful application server	
WebObjects 4.0.1 software	Provides the most flexible and scalable server for deploying network applications that can connect to multiple databases and generate HTML and Java user interfaces for a standard Web browser. Provides proven technology that has made WebObjects the most popular application server for the Internet and intranets, running some of the Web's most popular sites Lets you leverage hundreds of existing third-party WebObjects solutions previously developed for use on UNIX or Windows NT systems.
50-transaction-per-minute license	Allows you to evaluate WebObjects applications or deploy them in medium-size workgroups.
Full suite of WebObjects development tools	Enables you to create your own WebObjects applications. Enables you to assemble prebuilt components to create powerful reporting and electronic-commerce solutions. Includes the WebObjects Direct-to-Web feature to quickly enable access to SQL databases in a Web page
Simple Macintosh workgroup management	
Apple's new NetBoot technology	Enables you to configure and update systems on all your NetBoot-capable Macintosh computers by simply updating the NetBoot server once. Stores a single, consistent System Folder and application folders for all clients on a NetBoot server.

Macintosh Management server software	Enables individual users to securely access their system and applications, documents, and personal desktops from any NetBoot or non-NetBoot client. Lets you control access to your network by providing authentication services and system policy control.
NetBoot Desktop Admin software	Lets you administer the system and application resources used by NetBoot client computers from any NetBoot client. Allows you to manage all the Macintosh systems on your network as though they were a single computer.
Scalable file services	
File services comparable to those in AppleShare IP	Lets any AppleShare client access files over either TCP/IP or AppleTalk.
Support for more than 4,000 open files per process and 1,000 simultaneous connections	Enables you to provide file services to a large workgroup from a single Macintosh server.
Ability to share user and group information among different Mac OS X Server systems	Streamlines the updating of multiple servers.
Support for adding multiple users at one time from AppleShare IP servers	Speeds server configuration. Makes it easy to add a Mac OS X Server-based system to an existing AppleShare network.
Ability to export the Apache documents directory to AppleShare clients	Allows you to drag and drop files onto the Apache server from any Macintosh client.
Web-based Remote Administration tool	Provides easy-to-use file server management that you can access from any Java-capable Web browser.

Published Date: Feb 18, 2012

Mac OS X Server 1.x: Specifications

This article contains the text of the Mac OS X Server 1.x datasheet. Product specifications are subject to change without notice.

See also the following articles:

Article 60161: "**Mac OS X Server 1.x: Description**"
Article 60162: "**Mac OS X Server 1.x: Features and Benefits**"
This article has been archived and is no longer updated by Apple.

Top Five Reasons to Get Mac OS X Server 1.x

1. Provide native Apache Web services on the Macintosh platform.
2. Develop and deploy cutting-edge network applications with WebObjects.
3. Control your network with NetBoot and Macintosh Management server software.
4. Scale your Apple file services to more than 1,000 users.
5. Support powerful third-party solutions for digital and print publishing.

Choosing between AppleShare IP and Mac OS X Server 1.x

AppleShare IP software provides file, print, Web, and mail services for Macintosh and Windows clients. Setup and management are done through an integrated and secure interface that makes AppleShare servers extremely easy to use.

Mac OS X Server 1.x does not provide all the same services as AppleShare IP, but does offer high scalability for Web serving and file sharing. It does not directly support Windows clients for file sharing, although any Web client can access its Web services.

If you need any of the following capabilities, you should choose Mac OS X Server 1.x:

- Configure and update multiple Macintosh systems from a single server
- Support more than 1,000 simultaneous Macintosh clients for file sharing
- Have a high-speed Apache Web server
- Implement a WebObjects application server

If, however, you need a general-purpose server that can support a mixed environment of Macintosh and Windows clients, you should choose AppleShare IP.

Ordering Information

Mac OS X Server 1.x
Order No. M7348Z/A (North American English)

Includes four CDs containing the following software:

- Base Mac OS X Server 1.x system
  - Mac OS X core operating system
  - Apache 1.3.4 web server
  - QuickTime Streaming Server (preview release)
  - Apple file services
  - Java 1.1.6
  - Perl 5.0
  - Sendmail 8.9
  - FTP
  - Telnet
  - NFS
  - Mac OS 8.5 compatibility environment
- WebObjects 4.0.1 development and deployment software*
- NetBoot server software*
  - Mac OS 8.5.1 client images for NetBoot client computers
  - NetBoot Desktop Admin
  - Macintosh Management client for non-NetBoot client computers
- Demo versions of third-party server solutions*
  - Avatar team collaboration and groupware from Avatar Works Limited
  - Cumulus media management system from Canto
  - Helios EtherShare, EtherShare OPI, PDF Handshake, and Print Preview file and print management software from HELIOS

Software GmbH
- Web Crossing and Web Crossing/Chat collaboration software from Lundeen & Associates
- RSCommerce electronic commerce suite from Running Start
- KeyServer client license management software from Sassafras Software
- CommuniGate Pro Internet messaging server from Stalker Software, Inc.
- FullPress file-sharing, WebNative, and OPI software from Xinet

*Includes electronic documentation for preinstalled software.

System Requirements

Mac OS X Server 1.x

- Power Macintosh G3 computer or Macintosh Server G3
- 64MB of RAM
- 1GB hard disk

Note: Mac OS X Server 1.x is not supported on iMac or PowerBook products.

NetBoot client computers

- Apple iMac or Power Macintosh G3 (Blue and White) computer
- 32MB of RAM

Macintosh Manager client computers

- A 68040 or PowerPC-based Macintosh computer
- Mac OS 8.1 or later
- 32MB of RAM

Important: Mac OS X Server 1.x uses a different file system, called Mac OS X Server Format, which supports POSIX file system semantics. This requires you to partition or reinitialize your existing Macintosh hard disk drives. Files that are shared with AppleShare or NetBoot clients must be stored on Mac OS Extended Format (HFS Plus) volumes.

Support Options

Apple is dedicated to providing support that meets the needs of our customers. Fee-based support for Mac OS X Server 1.x is offered on a per-incident basis or through an annual agreement. To purchase one of Apple's support products in the United States or Canada, please call 1 (888) 275-8258. In the United States and Canada, technical and administrative support is provided in English. For more information, visit http://www.apple.com/support.

For support information in other regions of the world, please see :

Article 60164: "**Mac OS X Server: Worldwide Support Contacts**."

Published Date: Feb 18, 2012

Mac OS X Server: Worldwide Support Contacts

This article provides contact information for Mac OS X Server support from Apple for the various regions and countries of the world. Apple is dedicated to providing support that meets the needs of our customers. Fee-based support for Mac OS X Server is offered on a per-incident basis or through an annual agreement.
This article has been archived and is no longer updated by Apple.
For information related to service and support options for Mac OS X Server, refer to the following Web site and choose your country/language from the pop-up list: http://www.apple.com/support/

To purchase one of Apple's support products in the United States or Canada, please call 1 (888) 275-8258. Technical and administrative support in North America is only available in English.
Published Date: Feb 18, 2012

Mac OS X Server 1.x: General FAQ

This article contains frequently asked questions (FAQ) regarding Mac OS X Server, with answers to those questions.

Also see the following articles:

Article 60166: "**Mac OS X Server: Operating System FAQ**"
Article 60167: "**Mac OS X Server: Services FAQ**"
Article 60168: "**Mac OS X Server: NetBoot/Macintosh Manager FAQ**"
Article 60169: "**Mac OS X Server: Hardware and Compatibility FAQ**"
Article 60170: "**Mac OS X Server: Pricing and Availability FAQ**"

This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Questions answered in this article:

1. What is Mac OS X Server?
2. When will Mac OS X Server be available?
3. Who is the target customer for Mac OS X Server?
4. Is Mac OS X Server the same as Mac OS X?
5. How does Mac OS X Server differ from AppleShare IP?
6. How does Mac OS X Server provide greater scalability than AppleShare IP?
7. Will there be future releases of Mac OS X Server?
8. Will there be future releases of AppleShare IP?
9. Is Mac OS X Server the same as Rhapsody?

Question 1: What is Mac OS X Server?

Answer: Mac OS X Server is the first in a line of new server software products that demonstrate Apple's commitment to providing servers that meet the needs of its customers. The first release of Mac OS X Server will be available in both software and hardware configurations. It is the first product built on the core technology of Mac OS X, the desktop operating system scheduled for later in 1999. It includes innovative services such as the Apache Web server, WebObjects application server, NetBoot workgroup management technology, and Apple file services.

Question 2: When will Mac OS X Server be available?

Answer: Mac OS X Server is now available in English in the U.S. and Canada. It is scheduled to be available worldwide in April in English, Japanese, French, and German.

Question 3: Who is the target customer for Mac OS X Server?

Answer: Mac OS X Server is designed for use by experienced system and network administrators, who typically have had previous experience with configuring and managing at least two of the following:

- AppleShare IP and At Ease for Workgroups
- complicated networks, including routing between subnets
- other UNIX servers, such as Solaris and Linux

Question 4: Is Mac OS X Server the same as Mac OS X?

Answer: No. The client (end-user) version of the Mac OS X operating system is scheduled to be available at the end of the year. While Mac OS X will include an upgraded version of the Mac OS X Server foundation, the user experience will be optimized for a desktop operating system and will be more familiar to today's Mac OS users. Unlike Mac OS X, Mac OS X Server does not include Carbon, the technology for porting today's Macintosh applications to the new foundation.

Question 5: How does Mac OS X Server differ from AppleShare IP?

Answer: The two servers offer different types of services. AppleShare IP is a general-purpose server that includes a fully integrated set of services based on the familiar Mac OS 8.5 operating system, delivering high performance and exceptional ease of use. Some key services are unique to AppleShare IP, such as mail servers, SMB support, and firewalls.

Mac OS X Server provides innovative services such as an Apache Web server, WebObjects network application services, and the revolutionary new NetBoot server software for easily managing numerous Mac systems. Mac OS X Server provides these services through a powerful core

operating system, which features advanced capabilities such as preemptive multitasking and protected memory for incredible stability and scalability.

Question 6: How does Mac OS X Server provide greater scalability than AppleShare IP?

Answer: Mac OS X Server is scalable in three key ways:

- The core system supports over 1,000 simultaneous user connections.
- The multithreaded file system can handle over 4,000 open files per process.
- Advanced networking provides support for multiple 100-megabit-per-second network interface cards, allowing simultaneous full-bandwidth file transfers across multiple subnets.

Question 7: Will there be future releases of Mac OS X Server?

Answer: Yes. Mac OS X Server lays the foundation for Apple's future server software. Over time, it will incorporate features currently available only in AppleShare IP. Mac OS X Server will evolve into a bundle of services built on top of Mac OS X, similar to the way AppleShare IP currently builds services on top of Mac OS 8.

Question 8: Will there be future releases of AppleShare IP?

Answer: Yes, but Apple is not announcing specific plans at this time. Over time, Mac OS X Server will incorporate identical or equivalent functionality to AppleShare IP, and will become Apple's sole server operating system product.

Question 9: Is Mac OS X Server the same as Rhapsody?

Answer: No. Mac OS X Server leverages a number of the technologies formerly called Rhapsody. In addition, it includes some innovative services that were not part of the original Rhapsody project.

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Mac OS X Server 1.x: Operating System FAQ

This article contains frequently asked questions (FAQ) regarding Mac OS X Server, with answers to those questions.

Please see the following article for further information:

Article 60165: "**Mac OS X Server: General FAQ**"
Article 60167: "**Mac OS X Server: Services FAQ**"
Article 60168: "**Mac OS X Server: NetBoot/Macintosh Manager FAQ**"
Article 60169: "**Mac OS X Server: Hardware and Compatibility FAQ**"
Article 60170: "**Mac OS X Server: Pricing and Availability FAQ**"

This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Questions answered in this article:

1. What is the foundation for Mac OS X Server?
2. Is Mac OS X Server based on UNIX?
3. Does Mac OS X Server use a command line interface?
4. Does configuring Mac OS X Server require editing configuration files?
5. Does Mac OS X Server support remote administration?

Question 1: What is the foundation for Mac OS X Server?

Answer: Mac OS X Server is based on a Mach microkernel that roughly corresponds to Mach 2.5. This microkernel is integrated with an implementation of BSD 4.4 to provide a full UNIX-style operating environment.

Question 2: Is Mac OS X Server based on UNIX?

Answer: Mac OS X Server is built on UNIX technologies, implementing most of the POSIX APIs, which makes it easy to port UNIX applications, particularly those from a BSD heritage. The main exception is applications with a graphical user interface, because Mac OS X Server doesn't include the X Window System UI toolkits. Mac OS X Server is built around a graphical interface, unlike traditional UNIX systems that rely on the command line. However, Mac OS X Server cannot be called a UNIX operating system, as it does not fully comply with the POSIX and X/OPEN specifications required for use of the UNIX trademark.

Question 3: Does Mac OS X Server use a command line interface?

Answer: The primary interface is a Mac-like user interface, allowing administration with graphical tools. For administrators who prefer the command line interface or make use of Telnet/rlogin for remote administration, a Terminal application and several UNIX shells are included, as well as standard tools such as NFS, FTP, Perl, Tcl, and Emacs.

Question 4: Does configuring Mac OS X Server require editing configuration files?

Answer: No. Mac OS X Server provides a friendly Setup Assistant and a rich set of graphical administration tools. Editing configuration files is not required for basic use of any of the core ser vices. However, certain UNIX-derived services such as Apache use their existing configuration files for advanced administration.

Question 5: Does Mac OS X Server support remote administration?

Answer: Yes. There are currently several options, each suited to different purposes. Users, groups, and mountable volumes can be managed via a web-based remote-administration tool, similar to the one in AppleShare IP Configuration information can also be managed from another Mac OS X Server system via NetInfo, the built-in Network Directory Service. In addition, UNIX-savvy system administrators can enable Telnet for command line-based remote administration.

Published Date: Feb 18, 2012

Mac OS X Server 1.x: Services FAQ, Part I

This article contains frequently asked questions about Mac OS X Server, with answers to those questions.

For Part II of this article, please see article 88108: "**Mac OS X Server: Services FAQ, Part II**"

See also the following articles:

Article 60165: "**Mac OS X Server: General FAQ**"
Article 60166: "**Mac OS X Server: Operating System FAQ**"
Article 60168: "**Mac OS X Server: NetBoot/Macintosh Manager FAQ**"
Article 60169: "**Mac OS X Server: Hardware and Compatibility FAQ**"
Article 60170: "**Mac OS X Server: Pricing and Availability FAQ**"

This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Questions answered in this article:

1. What are the key services provided with Mac OS X Server?
2. What is Apache?
3. What version of Apache is included in Mac OS X Server?
4. How is Apache administered?
5. What is WebObjects?
6. Which version of WebObjects is included with Mac OS X Server?
7. What is NetBoot?
8. Which Apple file services are included?
9. Can I transfer my AppleShare IP user and group information to Mac OS X Server?
10. Does Mac OS X Server support Windows clients via SMB file sharing?

Question 1: What are the key services provided with Mac OS X Server?

Answer: There are four primary services in this release of Mac OS X Server:

- Apache Web server
- WebObjects network application services
- NetBoot and Macintosh Management server software for workgroup administration
- Apple file services

Question 2: What is Apache?

Answer: Apache is today's most popular Web server, serving over half of the public Web sites on the Internet. Apache is an open-source HTTP server developed by the Apache Group (www.apache.org). The Apache source code is freely available, making it easy for a large community to assist in fixing bugs, porting to new platforms, and customizing for special purposes.

Question 3: What version of Apache is included in Mac OS X Server?

Answer: Mac OS X Server includes Apache 1.3.4, the latest version available at the time of release. We are working with the Apache Group to ensure that future versions of Apache will compile directly on Mac OS X Server.

Question 4: How is Apache administered?

Answer: Basic administration of Apache is very simple. The Setup Assistant and control panels allow for easy on/off configuration, as well as selection of the hostname and documents director y. For advanced configuration, you can edit the same configuration files used by Apache on other platforms.

Question 5: What is WebObjects?

Answer: WebObjects is the industry's leading application server, with a flexible, scalable architecture for creating and deploying network applications. WebObjects provides a dynamic object-oriented environment for creating applications that can draw their data from a database server and run their user interface on any standard Web browser. WebObjects makes it easy to develop personalized content, e-commerce solutions, and MIS applications. For more information, see http://www.apple.com/webobjects.

Question 6: Which version of WebObjects is included with Mac OS X Server?

Answer: Mac OS X Server includes WebObjects 4.0.1, along with a 50-transaction-per-minute deployment license. The deployment license can be used for testing or for low-volume usage, or it can be upgraded for full-scale Internet deployment. For the first release of Mac OS X Server, Apple is including all of the WebObjects developer tools. These tools can be used for compiling WebObjects network applications, database client/server applications, or UNIX server applications. The included license covers only the tools and runtimes for Mac OS X Server. WebObjects 4.0.1 for Windows NT and UNIX platforms will continue to be available as a separate product.

Question 7: What is NetBoot?

Answer: NetBoot is a revolutionary Apple technology for managing Macintosh networks. System and user files are stored on the server, bypassing the local hard disk drive, thus making it easy to centrally administer large networks of Macintosh clients. Mac OS X Server also includes Macin-tosh Manager, a tool for allowing users of both NetBoot and non-NetBoot client computers to access their personal files and desktop environment from anywhere on the network.

Question 8: Which Apple file services are included?

Answer: Mac OS X Server includes a high-performance native implementation of AFP, the Apple File Protocol, allowing it to share HFS Plus volumes with any AppleShare client over TCP/IP or AppleTalk. You need to update client systems to the latest AppleShare client (version 3.8.2 or later) to ensure reliability, performance, and security. User, group, and mountable volume information can be managed remotely using a Web-based remote-administration tool, similar to the one in AppleShare IP.

Question 9: Can I transfer my AppleShare IP user and group information to Mac OS X Server?

Answer: Yes. AppleShare IP includes the ability to export its user information, which can then be imported into Mac OS X Server. It does not export passwords and group information, however, so that information will need to be recreated.

Question 10: Does Mac OS X Server support Windows clients via SMB file sharing?

Answer: This version does not provide integrated support for native Windows (SMB) file sharing. However, Mac OS X Server can support Windows clients that function as AppleShare clients. Several third-party solutions should be available, including the free SAMBA server.

Published Date: Feb 18, 2012

Mac OS X Server 1.x: NetBoot/Macintosh Manager FAQ, Part I

This article contains frequently asked questions about Mac OS X Server, with answers to those questions.

For Part II of this article, please see article 88109: "**Mac OS X Server: NetBoot/Macintosh Manager FAQ, Part II**"

See also:

Article 60165: "**Mac OS X Server: General FAQ**"
Article 60166: "**Mac OS X Server: Operating System FAQ**"
Article 60167: "**Mac OS X Server: Services FAQ**"
Article 60169: "**Mac OS X Server: Hardware and Compatibility FAQ**"
Article 60170: "**Mac OS X Server: Pricing and Availability FAQ**"

This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Questions answered in this article:

1. What are the advantages of the NetBoot server?
2. Who should use the NetBoot server?
3. What components are included with the NetBoot server?
4. What types of Macintosh computers can I use with the NetBoot server?
5. What is Macintosh Manager, and how does it interact with At Ease for Workgroups?
6. Can I manage non-NetBoot clients with Macintosh Manager?
7. Can other Mac systems be upgraded to support NetBoot?
8. How does a Macintosh start up from the network?
9. How do I set up a Macintosh to start up from the server?
10. What version of the Mac OS runs on a NetBoot client?

Question 1: What are the advantages of the NetBoot server?

Answer: The NetBoot server makes it easy to manage a network of Macintosh computers. With a traditional network, adding an application or changing a system component requires administrators to physically update every computer on the network. NetBoot-capable Macintosh computers--called NetBoot clients--share the same System Folder and applications stored on the NetBoot server. Updating the shared System Folder or adding an application to the server immediately updates every NetBoot client on the network. The shared system components are protected to prevent users from corrupting the system. Since new NetBoot client computers on the network don't require any configuration, adding one system or creating a new lab of computers is fast and simple. Users also have access to their applications, documents, and personal desktop environment at any Macintosh on the network.

Question 2: Who should use the NetBoot server?

Answer: The NetBoot server is designed for any organization using Macintosh computers on a network. It helps educators bring technology to the classroom with low-cost, easy-to-manage computers like the iMac. NetBoot helps educators who want to:

- Improve the student to computer ratio.
- Achieve technology goals under tight fiscal constraints.
- Reduce the cost of managing their computing infrastructure.
- Use existing technology resources.

The NetBoot server is also ideal for business customers with Macintosh networks, particularly those who want to replace data entry or editorial terminals. It allows them to reduce their computer costs through low-cost Macintosh hardware and reduced administration requirements.

Question 3: What components are included with the NetBoot server?

Answer: The NetBoot server runs on Macintosh G3 computers with the Mac OS X Server operating system. NetBoot includes:

- Three server applications: a BootP server, an AFP server, and a Macintosh Management server.
- Mac OS 8.5.1 system software and accompanying applications used by the NetBoot client computers.
- Two administration applications: NetBoot Desktop Admin for installing applications for use by NetBoot clients, and Macintosh Manager for administering users and groups on the network.

Question 4: What types of Macintosh computers can I use with the NetBoot server?

Answer: All iMac computers and the new Power Macintosh G3 (Blue and White) computers introduced at Macworld 1999 have the necessary hardware and firmware needed to support NetBoot. Future Macintosh computers may also be NetBoot-capable.

Question 5: What is Macintosh Manager, and how does it interact with At Ease for Workgroups?

Answer: Macintosh Manager is a technology for storing the user's computing environment on the server, so that the user can obtain his or her environment from any Macintosh on the network. This can include application preferences, desktop patterns, and fonts, depending on the level of customization allowed by the administrator. Macintosh Manager is based on, and can be considered a replacement for, At Ease for Workgroups, an earlier Apple product available only to education customers. Macintosh Manager on Mac OS X Server systems can serve both NetBoot and non-NetBoot clients.

Question 6: Can I manage non-NetBoot clients with Macintosh Manager?

Answer: Yes. An installer is provided that adds the necessary components to non-NetBoot Macintosh computers.

Question 7: Can other Mac systems be upgraded to support NetBoot?

Answer: No. Systems that are not NetBoot-capable can only take advantage of the file, Web, and Macintosh Management services of Mac OS X Server.

Question 8: How does a Macintosh start up from the network?

Answer: At startup, the NetBoot client computer broadcasts a BootP request on the network. BootP is a standard industry protocol for allowing computers to discover information about their network settings and the location of files to execute from a network server. The NetBoot server receives the BootP request and replies to the client's request with the information needed to start up. The client uses the information to configure its network settings and begins a TFTP download of the Mac OS into RAM. The client uses this file to finish booting.

Question 9: How do I set up a Macintosh to start up from the server?

Answer: A NetBoot-capable Macintosh requires no software setup to start up from the NetBoot server. To make a Macintosh boot the first time, hold down the N key until the Mac OS logo appears. After the computer is booted, simply set the Startup Disk Control Panel to start up from the network drive. From then on, the Macintosh will boot from the network without the aid of the N key.

Question 10: What version of the Mac OS runs on a NetBoot client?

Answer: NetBoot clients run Mac OS 8.5.1 with some minor modifications. These modifications allow the Macintosh to operate over the network and do not affect the user experience.

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Mac OS X Server 1.x: Hardware and Compatibility FAQ

This article contains frequently asked questions about Mac OS X Server, with answers to those questions.

For more information on Mac OS X Server, please see articles:

Article 30604: "**Mac OS X Server: System Requirements**"
Article 60165: "**Mac OS X Server: General FAQ**"
Article 60166: "**Mac OS X Server: Operating System FAQ**"
Article 60167: "**Mac OS X Server: Services FAQ**"
Article 60168: "**Mac OS X Server: NetBoot/Macintosh Manager FAQ**"
Article 60170: "**Mac OS X Server: Pricing and Availability FAQ**"
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Questions answered in this article:

1. What are the hardware requirements for Mac OS X Server?
2. To what extent does Mac OS X Server work with added third-party hardware?
3. Will Mac OS X Server be available for Intel-based computers?
4. Does Mac OS X Server 1.2 work with all the Power Macintosh G3 build-to-order options?
5. Does Mac OS X Server include RAID?

Question 1: What are the hardware requirements for Mac OS X Server?

Answer: The following computers work with Mac OS X Server 1.2.

- Power Mac G4 (AGP Graphics)
- Power Mac G4 (PCI Graphics)
- Macintosh G4 Server (except Gigabit Ethernet models)
- Power Macintosh G3
- Macintosh G3 Server
- Power Macintosh G3 All-In-One

Note: Mac OS X Server 1.2v3 supports the same computers as Mac OS X Server and adds support for the Power Mac G4 (Gigabit Ethernet).

For more information on Mac OS X Server hardware requirements, please see article 30604:
"**Mac OS X Server: System Requirements**"

Question 2: To what extent does Mac OS X Server work with added third-party hardware?

Answer: The extent to which Mac OS X Server will interoperate with third party hardware and software varies from one product to another. Consult with the developer of the hardware or software in question to determine its compatibility with Mac OS X Server. The Macintosh Products guide at: http://guide.apple.com/ provides a forum for developers to showcase their products. It is an excellent starting point for those searching for specific hardware or software solutions.

Question 3: Will Mac OS X Server be available for Intel-based computers?

Answer: Apple has no plans to provide Mac OS X Server for any architecture other than PowerPC.

Question 4: Does Mac OS X Server 1.2 work with all the Power Macintosh G3 build-to-order options?

Answer: No. It works with ATA and SCSI drives, Ethernet, and limited USB (for keyboard and mouse). It does not work with serial ports, FireWire, or LocalTalk.

Question 5: Does Mac OS X Server include RAID?

Answer: Mac OS X Server does not include RAID software. However, it is compatible with a number of Ultra2 SCSI-based RAID devices, including those from MicroNet.

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Mac OS X Server 1.x: Pricing and Availability FAQ

This article contains frequently asked questions about Mac OS X Server versions 1.0 to1.2v3 only, with answers to those questions. Additional Mac OS X Server FAQs are listed at the bottom of this article.

Note: This software is no longer available as a retail shrinkwrap package. However, the hardware bundle is available in limited quantities through the Apple Store.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Questions answered in this article:

1. What is the price of Mac OS X Server?
2. What licensing do I get for that price?
3. What is included in the Macintosh Server G3 with Mac OS X Server configuration?
4. What build-to-order (BTO) options are available for the Macintosh Server G3 with Mac OS X Server?
5. Where will the software and hardware be available?
6. Will the products be available from Apple Enterprise Sales?
7. Are there any upgrade or volume discounts?

Question 1: What is the price of Mac OS X Server?

Answer: In the United States Mac OS X Server software is USD499 and is available to education customers for USD249. The hardware configuration, Macintosh Server G3 with Mac OS X Server, is USD4,999.

Question 2: What licensing do I get for that price?

Answer: Just about everything. You get unlimited client access (as much as your hardware can handle) for:

- Apache Web server
- Apple file services
- NetBoot network startup
- Macintosh Manager (both NetBoot and non-NetBoot systems)

For WebObjects, you get a basic 50-transaction-per-minute deployment license. You can purchase WebObjects upgrade licenses through the normal Apple Enterprise Software channels. For more information, see www.apple.com/webobjects.

Question 3: What is included in the Macintosh Server G3 with Mac OS X Server configuration?

Answer: The Macintosh Server G3 with Mac OS X Server includes a 400-MHz PowerPC G3 processor with 1MB of backside cache, 256MB of high-performance PC100 SDRAM, two 9GB 10,000-rpm Ultra2 LVD SCSI hard disk drives, built-in 10/100BASE-T Ethernet connector and four-port 10/100BASE-T Ethernet PCI card, CD-ROM drive, and Mac OS X Server software (preinstalled). This hardware configuration includes an unlimited-client license for Apple file services, NetBoot clients, and Macintosh Manager clients, and a 50-transaction-per-minute deployment license for WebObjects.

Question 4: What build-to-order (BTO) options are available for the Macintosh Server G3 with Mac OS X Server?

Answer: The Macintosh Server G3 with Mac OS X Server will offer the following BTO options:

- 256MB, 384MB, 512MB, 768MB, or 1GB of PC100 SDRAM
- Two or three 9GB 10,000-rpm Ultra2 LVD SCSI hard disk drives
- One, two, or three 36GB 7,200-rpm Ultra2 LVD SCSI hard disk drives
- Dual-channel Ultra2 LVD SCSI PCI card with any hard disk drive configuration
- Ultra SCSI PCI card
- Gigabit Ethernet PCI card
- LaCie external DDS-3 tape drive

For up-to-date information about options and availability, visit http://www.apple.com/store.

Question 5: Where will the software and hardware be available?

Answer: They will be available through most traditional Apple channels, including the online Apple Store, Apple sales agents, and most Apple resellers.

Question 6: Will the products be available from Apple Enterprise Sales?

Answer: Yes. For this release, Mac OS X Server will be the only vehicle for purchasing WebObjects 4 for Power Macintosh systems. WebObjects deployment licenses and consulting services will continue to be available solely through Apple Enterprise Sales.

Question 7: Are there any upgrade or volume discounts?

Answer: No. This is the first in a new line of server products.

See also the following articles:

- Article 60165: "**Mac OS X Server: General FAQ**"
- Article 60166: "**Mac OS X Server: Operating System FAQ**"
- Article 60167: "**Mac OS X Server: Services FAQ**"
- Article 60168: "**Mac OS X Server: NetBoot/Macintosh Manager FAQ**"
- Article 60169: "**Mac OS X Server: Hardware and Compatibility FAQ**"

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Mac OS X Server 1.x: Setting up Anonymous FTP

I understand that I can configure my computer to allow guest (anonymous) access to my files using the File Transfer Protocol (FTP). How do I do this in Mac OS X Server?
This article has been archived and is no longer updated by Apple.
In order to set up anonymous FTP, first create a user named ftp in Network Manager. In the home directory, create the following directories:

```
bin
usr/lib
System/Library/Frameworks/System.framework/Versions/B
```

Copy the following files to their respective corresponding directories in the ftp directory:

```
/bin/ls
/usr/lib/dyld
/System/Library/Frameworks/System.framework/Versions/B/System
```

A complete directory listing is below. If dyld and the System framework are not copied, `ls` will not list any files.

```
dr-xr-xr-x  3 ftp  ftp  1024 Mar 18 04:36 System
dr-xr-xr-x  2 ftp  ftp  1024 Mar 18 04:22 bin
drwxr-xr-x  2 ftp  ftp  1024 Mar 18 04:42 pub
dr-xr-xr-x  3 ftp  ftp  1024 Mar 18 04:36 usr

./System:
total 2
dr-xr-xr-x  3 ftp  ftp  1024 Mar 18 04:36 Library

./System/Library:
total 2
dr-xr-xr-x  3 ftp  ftp  1024 Mar 18 04:36 Frameworks

./System/Library/Frameworks:
total 2
dr-xr-xr-x  3 ftp  ftp  1024 Mar 18 04:36 System.framework

./System/Library/Frameworks/System.framework:
total 2
dr-xr-xr-x  3 ftp  ftp  1024 Mar 18 04:36 Versions

./System/Library/Frameworks/System.framework/Versions:
total 2
dr-xr-xr-x  2 ftp  ftp  1024 Mar 18 04:40 B

./System/Library/Frameworks/System.framework/Versions/B:
total 2760
-r-xr-xr-x  1 root  ftp  1405672 Mar 18 04:40 System

./bin:
total 68
-r-xr-xr-x  1 ftp  ftp  34548 Mar 18 04:22 ls

./pub:
total 2808
-rw-r--r--  1 ftp  ftp  1433600 Mar 18 04:41 Archive.tar

./usr:
total 2
dr-xr-xr-x  2 ftp  ftp  1024 Mar 18 04:33 lib

./usr/lib:
total 440
-r-xr-xr-x  1 ftp  ftp  220972 Mar 18 04:33 dyld
```

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Mac OS X Server 1.x: SMB and CIFS Support

Mac OS X Server does not come with support for SMB or CIFS.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001. Later versions of Mac OS X Server include SMB support.

Samba, which is freely available under the GNU public license, provides functionality with these protocols. For general information about Samba go to http://www.samba.org.

Samba for Mac OS X Server is availabe from:

http://www.peak.org/apple/macosx/server/Applications/Network/CLI/Samba/

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

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Mac OS X Server 1.x: Sometimes The Computer Restarts Itself During System Startup

Under certain circumstances a server computer running Mac OS X Server will automatically restart during system startup.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

After starting up into Mac OS 8 it is necessary to use the System Disk control panel to set Open Firmware to start up into Mac OS X Server. However, if the QuickTime Streaming Server, or if the AFP Server is enabled, the command that the System Disk control panel tells Open Firmware to use is not appropriate.

During system startup the operating system reads the `/etc/hostconfig` file and determines if either of these servers is on. If either server is set to "`YES`", "`srv = 1`" will be appended to the command in Open Firmware and the computer will restart. The computer must restart in order for the new command to take effect. This new command configures the kernel so that it will work properly with these servers.
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Mac OS X Server: What is nifind?

The nifind command is a utility for reading information from the NetInfo database to command line output.
This article has been archived and is no longer updated by Apple.
Using the NetInfo command line utilities requires knowledge of NetInfo and domains. Please see the following articles for more information

Article 60038: "**What is NetInfo?**"
Article 30832: "**A Basic Introduction to NetInfo Domains.**"

Nifind is a simple but powerful utility for finding and displaying information in NetInfo databases. It is useful for verifying in the existence of directories and for displaying their properties and values at the command line.

There are several options for using nifind

-a searches for the directory in the entire NetInfo hierarchy
-n causes the local domain not to be searched, useful if the local domain is not in question
-p prints the properties and values for a subdirectory
-t specify a timeout value in seconds. This may be needed in large NetInfo networks
-v verbose output mode, causes more information to be displayed

Examples

In these examples the network is a three level hierarchy. The top level is "/" the midlevel is "/scotland" and the local level is "/scotland/skye".

```
#nifind /machines
```

/machines found in /scotland/skye, id =1
/machines found in /scotland, id = 49
/machines found in /, id =190

This tells you that a `/machines` directory was found in all three domains, the local (skye), the mid-level (/scotland) and the root. It also displays the directory id number for each of these directories.

An example using the -p flag:

```
#nifind -p /machines/skye
```

/machines/skye found in /scotland, id = 321
name: skye
servers: skye/local
bootparams: root=aberdeen:/enterprise/release/private
bootfile: mach.rhap
ip_address: 192.168.156.1
en_address: 0:b:0:54:3b:5
owner: MacLeod

By specifying a subdirectory, you can display information on the properties in that directory and their values. This can be done for any of the directories in NetInfo. By default these are: aliases, fax_modems, groups, locations, machines, mounts, old_mounts, printers, services, and users. The subdirectories inside these default directories will vary with your setup.
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Mac OS X Server: Where Should The Mac OS 8/9 Partition Be?

Where should the Mac OS 8/9 startup partition be?

This article has been archived and is no longer updated by Apple.

The Macintosh Extended Format (HFS+) partition that is used to start up Mac OS 8/9 should be first partition on the drive. The computer's ROM may have trouble finding this partition if it is not in this location and this may cause difficulty starting up into Mac OS 8 after Mac OS X Server is installed.

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Mac OS X Server: Close View and NetBoot Clients Using the Panels Environment

When I use the CloseView control panel on a NetBoot client, the computer stops responding. What could be causing this?

This article has been archived and is no longer updated by Apple.

Close View control panel included with Mac OS 8.5.1 is not compatible with NetBoot clients in the Panels environment. Attempting to use this feature with panels will cause the NetBoot client to stop responding.

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Mac OS X Server: Keyboard Navigation Using Setup Assistant

When I use the keyboard to navigate the Setup Assistant, it doesn't always work. What's wrong?

This article has been archived and is no longer updated by Apple.

Using the keyboard (enter or tab keys) to advance or reverse panels in the Mac OS X Server Setup Assistant does not work on all screens. To ensure proper navigational behavior, always use the mouse to click the navigation buttons in the panels.

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Mac OS X Server: Support for 100 Percent Pure Java

Apple documentation says that Mac OS X Server is built on core technologies like "100 percent Pure Java" and includes "native support for 100 percent Pure Java (JDK 1.1.6)." However, Apple is not listed on the Sun Java compatibility list. Is Mac OS X Server "100 percent Pure Java" or not?

This article has been archived and is no longer updated by Apple.

Mac OS X Server includes a fully compatible Java VM (virtual machine) based on (JDK) Java Development Kit version 1.1.6. The Mac OS X Server Java VM supports applets that are "100 percent Pure Java." Applets (not VM's) must be tested to documented specifications to become certified as "100 percent Pure Java" compliant.

By supporting applets that are "100 percent Pure Java," Mac OS X Server is considered to be "100 percent Pure Java" compatible and compliant.

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StuffIt Deluxe: Use Commercial Version for Important Work

I use StuffIt 1.5.1 to archive large amounts of data. I made one large StuffIt archive (about 20MB). Later, I extracted and deleted some of the files in the archive, making the size about 8MB. Then, I tried to extract more files, but got the following message: U-uh! The CRC-check for the resource fork has failed. Chances are that the file is trashed. Please use this file with caution. This happens when StuffIt has almost finished extracting the resource fork. That seems reasonable, because that is the time for calculating the CRC. Sometimes, I'll get the error messag above. Other times the machine bombs or just hangs. The message says that one should use the file with caution, but that is impossible, because StuffIt is unable to finish extracting the file. This happens with all the remaining files in the archive. I have tried to delete all files in the archive except one, but that does not help either. I suspect that the error is caused by a media fault. The drive in question is a Bernoulli Box from IOMega, and the error has occurred only on the two cartridges that came with the drive. Later, I ordered at least 30 cartridges from the USA without any problems.
This article has been archived and is no longer updated by Apple.
Sorry but we aren't familiar with StuffIt's error handling or bugs, nor are we familiar with this specific problem. The user might check with the programmer (name located on program's splash-screen) or the new distributor for any recovery routines they may have.

We generally caution users against using shareware software for critical work; you may wish to get the enhanced commercial StuffIt Deluxe. StuffIt Deluxe, a file compression, encryption, and file-archiving software. It is designed to compress files (or folders) of all types into compact spaces, potentially saving 50 to 75 percent of hard disk space. You can also password protection (DES algorithms) any archive. StuffIt Deluxe works on 512KE or larger Macintosh running System 5.0 or later.

For more details, search the Technical Info library under "Aladdin Systems" or "StuffIt Deluxe."

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Mac OS Runtime for Java 2.1: Applet Security

Changing Java applet security settings in Microsoft Internet Explorer has no effect when using Mac OS Runtime for Java (MRJ).
This article has been archived and is no longer updated by Apple.
Microsoft Internet Explorer's applet security settings are intended for the Microsoft Java virtual machine, not Mac OS Runtime for Java (MRJ).

To change the settings for MRJ, use Apple Applet Runner, which is part of the MRJ 2.1 SDK. Apple Applet Runner has a user interface to change the properties file which controls the global security restrictions used in MRJ. To get to the properties dialog, select "Properties" from the "File" menu in Apple Applet Runner.

Apple Applet Runner is installed as part of MRJ 2.0 in the Apple Applet Folder in the Mac OS Runtime for Java folder in the Apple Extras folder. MRJ 2.1 does not install Apple Applet Runner. If Apple Applet Runner is missing, download the SDK from:

ftp://ftp.apple.com/developer/Development_Kits/MRJ_SDK_2.1.sit.hqx
Published Date: Feb 18, 2012

Mac OS X Server: WebObjects Developer Disc Says "For Windows NT"

I have Mac OS X Server and the WebObjects Developer CD included in the package is labeled "For Windows NT." What version of WebObjects is on the disc?

This article has been archived and is no longer updated by Apple.

The WebObjects Developer CD included in the Mac OS X Server bundle is incorrectly labeled. The disc reads "For Windows NT," but the software on the disc is actually for the Mac OS X Server platform. There is a label on the disc's sleeve that points out this inaccuracy, but if the disc becomes separated from the sleeve there are two other ways to distinguish the Mac OS X Server CD from the Windows NT CD. Both discs include a version number and part number just below the words "For Windows NT" but the version and part numbers differ:

Version	Part Number
Mac OS X Server 4.0.1	Z691-2252-A
Windows NT 4.0	691-2093-A

Although the Mac OS X Server version of the software will install on Windows NT, entering the Mac OS X Server key results in a error message: "Invalid serial number for this platform."

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Mac OS 8: ObjectSupportLib Part of System File

What is ObjectSupportLib and when do I need it?
This article has been archived and is no longer updated by Apple.
ObjectSupportLib is a library developers use to implement the Open Scripting Architecture (OSA) object model. For example, how to refer to a word of a paragraph of a document.

As of Mac OS 8.0, the ObjectSupportLib extension is part of the System file. Although some applications may install it as a separate extension, it is not needed and can be safely removed without a loss of functionality.
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Mac OS X Server 1.x: How to Remove the Software

I purchased Mac OS X Server and installed it on my computer. How can I remove it and reinstall Mac OS 8 that came with my computer?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

The Mac OS X Server installation guide recommended you partition your hard disk prior to installing Mac OS X Server. When Mac OS X Server was installed, the hard disk partition format was changed from Mac OS Standard format (also known as HFS) or Mac OS Extended format (also known as HFS Plus) to Mac OS X Server filesystem (also known as UFS). Mac OS 8 does not recognize UFS volumes. To fully ues the disk with the Mac OS that came with your computer, the hard disk will need to be reformatted.

Warning: Reformatting the hard disk will cause all data to be erased. Make sure any files you want to keep are backed up.

To reinstall the Mac OS that came with your computer do the following:

1. Backup any data files on the hard disk you wish to save.
2. Start up the computer with the Mac OS CD-ROM disc that came with your computer. (Insert the disc and press the C key on restart).
3. Run the Drive Setup utility (located on the CD) and reformat the drive Mac OS X Server is installed on. If the disk was partitioned all partitions will be reformatted.
4. Quit Drive Setup.
5. Run the Mac OS software installer on the CD-ROM disc.
6. Restart the computer.

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Mac OS X Server 1.2: Print Manager and LPD

Mac OS X Server 1.2 cannot be used as a print spooler.
This article has been archived and is no longer updated by Apple.
LPD in Print Manager is not functional in Mac OS Server 1.2. However, AppleTalk based printers do work in the Print Manager environment for printing from the server.
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Mac OS X Server: Apple File Services Guest Accounts for AppleTalk Only Clients

Guest Access for AppleTalk only clients using Apple File Services does not work with this version of Mac OS X Server.
This article has been archived and is no longer updated by Apple.
If clients are capable of using an AppleShare client that work with TCP/IP, Guest Access operates correctly. All clients of the Apple File Service should use the AppleShare 3.8.2 client, which can drag installed from the CD-ROM disc. The client is found in the Utilities folder of the Mac OS X Server CD. The AppleShare 3.8.2 client is also installed on the Mac OS Extended format volume by the NetBoot Server installer.
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Mac OS X Server 1.x: Sherlock "Find by Content" and Apple File Services

Sherlock's "Find by Content" feature does not work with the Apple File Services component of Mac OS X Server
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Sherlock's "Find by Content" feature does not work with the Apple File Services component of Mac OS X Server. If attempted, the search will fail with an Error -30523.
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Mac OS X Server: Navigating Fields In Mac OS X Server

Mac OS X Server has a number of anomalies relating to navigating fields in the interface.
This article has been archived and is no longer updated by Apple.
These anomalies are due to legacy code inherited from the various sources used to create Mac OS X Server. Some fields require the use of the enter, return, or tab keys after a value is entered to ensure that the value "sticks."

If you are having difficulty in this regard, try the combinations above after entering a value in a field.

See also:

Article 60177 "**Mac OS X Server: Keyboard Navigation Using Setup Assistant**."
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Mac OS X Server: NetBooting, Apple File Services, and Mac OS Format Volumes

I've installed NetBoot on the Mac OS format volume, but it's not working. What could be wrong?

This article has been archived and is no longer updated by Apple.

Although the NetBoot Setup Assistant will allow installation of the software on Mac OS Standard format (HFS) volumes, NetBooting will not operate after the install is complete. NetBoot software must be installed on a Mac OS Extended format (HFS Plus) volume to operate properly. This is because Apple File Services will only share Mac OS Extended format volumes.

Published Date: Feb 18, 2012

Mac OS X Server: Using RemoteAdmin With the Multiport Ethernet Card

Do I need to enable IP forwarding to use RemoteAdmin?
This article has been archived and is no longer updated by Apple.
To use RemoteAdmin on any segment of the network connected to a multiport Ethernet card, IP forwarding must be enabled on the server (available in the Control Panels' Network selection, Connections panel). If IP forwarding is not enabled, RemoteAdmin can be used by directing the browser to the IP address of the server port on the same segment as RemoteAdmin (no router or gateway is needed this way).
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Mac OS X Server 1.x: Using WebAdmin with Internet Explorer

Internet Explorer keeps telling me that it's running out of memory when I run WebAdmin. How can I fix that?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

If you encounter a "running out of memory" condition using Internet Explorer to run WebAdmin, increase Internet Explorer's application memory size. To do this, locate and select the application's icon by clicking on it once. Choose Get Info from the File menu. Then select Memory from the Show popup menu. Increase the preferred size to at least 12000 K, then close the Get Info dialog box.
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Mac OS X Server 1.x: Compatible USB Devices

Not all Universal Serial Bus (USB) devices are compatible with Mac OS X Server.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Mac OS X Server comes with USB drivers for Apple USB keyboards and mouse devices only. Using multiple or third-party keyboards and mouse devices will not work with this version of Mac OS X Server.
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Programmer‘s Aid #1: Memory Test Issue

The memory test in the Programmer's Aid #1 diskette has a problem.
This article has been archived and is no longer updated by Apple.
According to the listing on page 86 of the manual, $D670 contains 20 8A D6 when the ROM contains 4C CB 02. This causes the program to jump to $02CB where there normally isn't any program. To patch around this problem, enter these instructions in the monitor before testing any memory:

02CB:20 8A D6 4C 73 D6
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Mac OS 8.6: System Requirements

What are the system requirements for Mac OS 8.6?
This article has been archived and is no longer updated by Apple.
To install Mac OS 8.6, your computer must have:

- One of the following Mac OS-based Apple computers with a PowerPC processor:
- iMac
- Power Macintosh G3
- Power Macintosh G3 (Blue and White)
- Any Power Macintosh, PowerBook, or Workgroup Server computer with a 4-digit model number.
    - Mac OS 8.6 may not function with a Mac OS 8.6 compatible Apple Power Macintosh computer that has been upgraded with a non-Apple processor upgrade card. Please check with the card's manufacturer for compatibility information.
    - Computers upgraded with Apple's Power Macintosh 233-MHz Processor Upgrade Kit are supported.
    - The Power Macintosh Upgrade Card (supported in the Quadra 700), the Macintosh Processor Upgrade (supported in the 575), and all 680X0 processors are NOT supported with Mac OS 8.6.
- 190 MB to 250 MB free disk space (full install of Mac OS 8.5 and Mac OS 8.6 Update), or 50 MB free disk space when only updating with Mac OS 8.6 Update.
- at least 24 megabytes (MB) of random-access memory (RAM) installed; 32 MB is recommended

Note: You cannot use Mac OS 8.6 if your computer has been upgraded with a PowerPC processor card but still has a 68040 (or earlier) processor that is accessed during startup.

If your computer has less than 32 MB of built-in RAM, you must use virtual memory. (Virtual memory is turned on automatically after installation).

If you don't know how much RAM your computer has, open the Apple menu and choose About This Computer (or About This Macintosh). Look at the number next to Built-in Memory.

To install the recommended software, you need at least 190 MB of free space on your hard disk. To install the optional components, you need sufficient storage space on your hard disk. The exact amount of space needed varies for different computer models, hard disk sizes, and the optional software you choose to install. The Installer will display a message if you do not have enough free space to install the software you select.

Many application programs use your hard disk to temporarily store information. For best performance, keep at least 10 percent of your disk space free. To determine the amount of free space on your hard disk after you've installed the Mac OS, select the hard disk icon on your desktop, then open the File menu and choose Get Info. Look at the number next to the word "Available."
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Mac OS 8.6: Updating A NetBoot OS Image

I want to update the System software image on my Mac OS X Server NetBoot server. Which installer should I use?

This article has been archived and is no longer updated by Apple.

If you are the administrator for a NetBoot-capable server, do not use the Install Mac OS 8.6 Installer. Instead, use the "Update to Mac OS 8.6" Installer.

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Mac OS: "An Item Cannot Be Replaced" Message

When I try to install Mac OS, I get a message that says an item cannot be replaced. What should I do?
This article has been archived and is no longer updated by Apple.
Cause: The Installer is attempting to replace a file, but there is a folder on the disk that has the same name as the file being replaced. (Files cannot replace folders).

Solution: Find the folder on your disk and rename it, then try the installation again.
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Mac OS X Server: Third-Party PCI Cards Require Drivers

Can I use a third-party PCI card with Mac OS X Server?

This article has been archived and is no longer updated by Apple.

Mac OS X Server uses a different driver model than Mac OS 8/9. Third party PCI card vendors must write drivers specifically to support Mac OS X Server. Mac OS X Server only includes drivers to support Apple's specific SCSI and Ethernet cards for the Power Macintosh G3 or Power Mac G4 lines. Due to variations between Apple and third party cards, even third-party cards that are very similar to the Apple-supplied cards may not function properly, if at all. Contact your card's vendor to determine if they sell a version of their product that they believe will work with Mac OS X Server.

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Mac OS X Server: MacOS.app Fails to Initialize Image Files Created With creatimage

MacOS.app fails to initialize an image file created with createimage in Mac OS X Server 1.0 versions prior to 1.0-2.
This article has been archived and is no longer updated by Apple.
Prior to the release of Mac OS X Server 1.0- 2, there was a issue that prevented MacOS.app from initializing a disk image file created by the createimage tool. A new release of MacOS.app, which corrects this issue, is included with Mac OS X Server 1.0- 2.

All Mac OS X Server customers should update to Mac OS X Server 1.0-2. The software can be found on Apple's Software Updates Web site at: http://www.apple.com/swupdates/ .

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Mac OS X Server 1.x: Mac OS Extended Format Volumes Do Not Work With NFS Export

Should I export Mac OS Extended format volumes as NFS mount points?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Under Mac OS X Server it is possible to export any Mac OS Extended format (HFS Plus) volume as an NFS mount point. However, please be aware that the NFS is based on the Unix-style UFS file system which is case-sensitive and no resource fork information is available under an HFS Plus volume mounted through NFS. This is to the filesystem data structure difference between NFS and HFS Plus.

Because of this, Apple does not recommend or support exporting Mac OS Extended volume as an NFS mount point in the current version of Mac OS X Server. (This is not an issue in Mac OS X Server 10.0.3 and later).
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Power Macintosh G3 (Blue and White): Rage 128 Video Memory Usage

This article describes how the video memory on the Rage 128 video card that ships with some Power Macintosh G3 (Blue and White) computers is allocated for2D and 3D operations.
This article has been archived and is no longer updated by Apple.
The Rage 128 card doesn't have a fixed amount of memory assigned to either 2D or 3D operations. The 16 MB of memory is assigned dynamically, as needed for either operation, meaning that any memory not used for your 2D operations will be made available for 3D operations.

Note: This information doesn't apply to other ATI-based chipsets, such as the Rage II, Rage IIc, or Rage Pro used in some other Apple products.

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Mac OS X Server 1.x: Choosing the Startup OS Using System Disk Application

I have Mac OS X Server and Mac OS 8.x or Mac OS 9 installed on my Power Macintosh G3 or Power Mac G4. I want to be able to start up from either operating system (OS). Is this possible?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Mac OS X Server and Mac OS 8.x or Mac OS 9 can be installed on the same computer, and you can choose the OS you want to use to start the computer.

Most Power Macintosh computers (and iMacs) load a small program called Open Firmware when they are first turned on. Open Firmware determines where the computer's startup device is (such as a disk) and which file on that device is used to start up the computer (such as Mac OS 8).

Some of the settings used by Open Firmware can be changed using a utility program that runs in OS 8.x and OS 9 called System Disk. It is located on the Mac OS Extended format (HFS Plus) partition of the Mac OS X Server CD-ROM disc in the Utilities folder.
Note: You cannot select a Mac OS X Server disk as your startup disk in the Startup Disk Control Panels in Mac OS 8.x or OS 9.

The System Disk application contains an icon list of disk partitions available to the computer labeled with the kinds of operating systems installed on each partition. At a minimum, the System Disk application will contain options for "Open Firmware" and "Mac OS" on the computer's hard disk. If the Mac OS X Server CD-ROM disc in the drive, you'll also see the partitions and versions of system software available on the disc. Additional partitions may also be listed if you have attached additional storage devices to the computer.

In the System Disk window, Mac OS and Mac OS Extended format partitions appear with a Mac OS badge on their icons, and Mac OS X Server partitions appear with an "X" badge on their icons.

To select the startup OS and disk, follow these steps:

1. Open the System Disk application. This program is provided on the Mac OS X Server disc within the Utilities folder.
2. In the list of devices, select the volume that will start up the computer.
3. Click Save and quit the application.
4. Restart the computer.

The computer will now start up from the volume that you selected.

Using the System Disk utility program in this way, you can easily switch between the two operating systems.

If you expect to frequently switch between systems, you may want to install the Mac OS 8 System Disk extension (located in the same folder as the System Disk utility program on the Mac OS X Server disc). When this extension is installed, holding down the Option key during startup opens the System Disk utility program and allows you to choose the partition and OS you want to use.

If Mac OS X Server is set as the computer's default OS in Open Firmware, holding down the Option key until the Happy Mac icon appears stops the computer from starting up with Mac OS X Server, and makes the computer start up with Mac OS 8 by default (if Mac OS 8.x or Mac OS 9 is installed on an available partition). Holding down the Option key longer than this during startup will open the System Disk utility as described above.

Resetting the Parameter RAM (PRAM) (Option-Command-P-R) at startup is another way to reset Open Firmware's settings to start up with Mac OS 8 or Mac OS 9.

For instructions on formatting a hard disk for use with both operating systems, see article 60175: "**Where Should the Mac OS 8 Partition Be Located?**"

If you have OS X Server and Mac OS 8.6 or Mac OS 9 installed on a Power Mac G4 or a Macintosh Server G4, you can also select the OS and disk from which the computer will start up using the Startup Manager. For instructions on how to use the Startup Manager, see article 106178: "**Startup Manager: How to Select a Startup Volume**"
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Mac OS 8.6: Error Installing With Norton Crashguard Enabled

When I am installing Mac OS 8.6 Norton Crashguard says the Mac OS installer caused the computer to crash then attempts to save it from doing so. The computer then becomes unresponsive and I can't force quit, I can only restart. How can I fix this?
This article has been archived and is no longer updated by Apple.
Simply turning Norton Crashguard off will prevent this error from happening. The Mac OS Installer quits all running applications as a normal part of the installation process. Norton Crashguard incorrectly interprets this action as a crash.

You should install Mac OS 8.6 by starting up with extensions off. You do this by holding down the Shift key when you turn the Macintosh on. You could also disable non-Apple extensions using the Extensions Manager (in the Control Panels folder). If you have a Mac OS 8.6 CD-ROM disc, you should start up your Macintosh from the disc to install the OS.
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Mac OS X Server: Video Acceleration Supported for ATI Cards

Does Mac OS X Server use video acceleration?
This article has been archived and is no longer updated by Apple.
Mac OS X Server does use video acceleration for the Built-In ATI video as well an any ATI Build To Order video cards.

MacOS.app does not use hardware video acceleration.
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Final Cut Pro 1.0: System Requirements

This article outlines the system requirements for Final Cut Pro 1.0
This article has been archived and is no longer updated by Apple.

- A Power Macintosh G3/266 computer (G3/300 or faster required for DV)
- Mac OS 8.5 or later
- 128 MB of RAM
- A CD-ROM drive
- A 6 GB, A/V (Audio/Video rated) drive (16 GB recommended)
- A true-color display
- ATI built-in video support on G3 models (required for DV)
- An Apple FireWire or other QuickTime-compatible digital video card for capturing videofrom an external source or exporting video to tape
- The correct FireWire or device control cable and any additional cables you may need for connecting your deck or camcorder to your computer

Note: Final Cut Pro 1.0 is not supported on iMac, Power Mac G4 or PowerBook products.
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Mac OS 8.6: What‘s New - Expanded Sherlock Capabilities

This article describes the new features of Mac OS 8.6.
This article has been archived and is no longer updated by Apple.

Searching the Internet

Sherlock has improved the ability to search behind firewalls, including SOCKS and authenticated proxy servers. You can also set the number of Internet connections that you can make simultaneously in Sherlock's Preferences window.

The Search Internet panel is now resizeable so you can easily see all available search sites. Click the new Uncheck All button to quickly deselect the selected search sites.

Find by Content

The "Find by Content" section of Sherlock now allows you to index and search PDF and HTML files. You can also index or search items with a particular label, or index an individual folder.

You index a folder using the Contextual menu (press the Control key and click a folder). This is particularly useful when you perform frequent indexes of volumes where few folders change. If the contents of an individual folder have changed, you can update the index for just the changed folder.

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Mac OS 8.6: What‘s New - Improved Media Integration

This article discusses the new features of Mac OS 8.6.
This article has been archived and is no longer updated by Apple.

ColorSync 2.6

The ColorSync control panel is newly designed and provides additional file format support for JPEG and GIF. The file format plug-in framework performs critical color operations, such as simulation and proofing of common formats used for the Internet and publishing.

ColorSync 2.6 also affords flexible workflow combinations. The 18 new AppleScript commands that come with ColorSync provide a complete automated solution for publishing. Additional software includes more profiles and CMMs for expanded color publishing workflow.

Monitors & Sound

Use Apple's monitor calibrator in Color section of the Monitors & Sound control panel to make it easier to view and customize color settings.

Surfing the Web is better than ever

Mac OS Runtime for Java (MRJ) 2.1.1 offers performance improvements in both speed and stability. MRJ now supports a wider selection of Java applets and applications. MRJ is based upon Java Development Kit (JDK) 1.1.7, from Sun Microsystems.

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Mac OS 8.6: What‘s New - Greater Device Access and Capabilities

This article describes new features in Mac OS 8.6.
This article has been archived and is no longer updated by Apple.

Games support

Playing your favorite games is easier than ever. Game Sprockets are now integrated into the Mac OS.

Support for USB and FireWire devices

Now you can connect USB keyboards, mice, or other pointing devices to USB-capable computers. You can also connect USB printers and mass storage devices.

Connect any FireWire device to a FireWire-capable computer to enjoy a super high-speed transfer rate. FireWire makes it easy to download large files, such as digital video, from any FireWire-capable device.

Published Date: Feb 18, 2012

Mac OS 8.6: What's New - Improved Printing and Font Management

This article describes new features of Mac OS 8.6.
This article has been archived and is no longer updated by Apple.
Mac OS 8.6 includes LaserWriter 8 version 8.6.5 which adds support for printing to USB-compatible PostScript printers. LaserWriter 8.6.5 provides support for PostScript printers that have USB ports built-in, and those that have IEEE 1284 parallel compatible ports. IEEE 1284 compliant printers may be connected to your Macintosh via a USB-to-Parallel adapter cable.

Secure printing and font management
Enjoy secure printing using AppleShare IP 6.1 or later and the new LaserWriter 8.6.5 driver. LaserWriter 8.6.5 also allows you to connect USB PostScript printers to your computer.

In the new LaserWriter 8.6.5 print dialog box, you can create a Job/Font log to view a history of your printing jobs and fonts used. You can also choose TrueType over Type 1 fonts, and force all fonts to be downloaded to the printer.

PostScript printer support
The new Desktop Printer Utility 1.2 allows you to create desktop printers for PostScript printers that are connected to your computer using USB or LPR (TCP/IP).

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Using DVD-RAM discs

Learn how to use and initialize DVD-RAM discs.
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Using DVD-RAM Discs

DVD-RAM discs can be used with Macintosh computers that have a DVD-RAM drive, or with certain Generation 3 DVD-ROM drives. These computers should also have this software installed:

- Mac OS 8.6 or later
- Apple CD/DVD Driver system extension
- Foreign File Access system extension
- UDF Volume Access system extension

DVD-RAM disks can be used to store information, as with any hard disk, floppy disk, or other removable, recordable media.

Apple DVD-RAM drives work with Mac OS X. You can use and burn DVD-RAM discs. However, you can't burn CD-RW or DVD-R discs with an Apple DVD-RAM drive in Mac OS X.

Formatting

DVD-RAM discs can be initialized using the Universal Disk Format (UDF), Mac OS Standard, Mac OS Extended, or DOS formats. The UDF format allows you to share information with any computer platform that works with UDF 1.5.

Choosing Erase Disk from the Mac OS 9 or earlier Special menu in the Finder also initializes a DVD-RAM disc. For Mac OS X, use Disk Utility.

Starting Up From DVD-RAM Media

Beginning with Mac OS 9.0.4, Power Mac G4 (AGP Graphics and Gigabit Ethernet) computers can use DVD-RAM media as a startup disk. Other computers, which may have a DVD-RAM drive, including the Power Macintosh G3 (Blue and White) and the Power Mac G4 (PCI Graphics) cannot use DVD-RAM discs as a startup disk.

Follow these instructions to start up from a DVD-RAM disc:

Power Mac G4 (AGP Graphics)

1. Use Drive Setup 1.9.2 or later to format the DVD-RAM media.

2. Install Mac OS 9 and the Mac OS 9.0.4 Update on the DVD-RAM disc. If your computer is running Mac OS 9.0.4 or later, you may drag copy that System Folder to the DVD-RAM media.

Power Mac G4 (Gigabit Ethernet)

1. Use Drive Setup 2.0.1 or later to format the DVD-RAM media.

2. Install Mac OS from the Restore or Install CD that came with your computer onto the DVD-RAM disc, or drag copy the active System Folder from your hard disk.

The DVD-RAM disc can now be used to start up a Power Mac G4 (AGP Graphics) computer after either:

- using the Startup Disk control panel to select the DVD-RAM disc as the startup disk.

- using the Startup Manager by holding down the Option key at system startup time

- pressing and holding down the C key at system startup time

DVD-ROM Drives

Most Generation 3 (or higher) DVD-ROM drives can read Type 2 DVD-RAM discs if they are removed from their cartridge. (See the DVD-RAM disc's packaging for instructions on how to remove the disc from its cartridge.)

DVD-ROM drives use only one side of a DVD-RAM disc. If you are using a double-sided DVD-RAM disc, you must eject the disc and flip it over to use the other side.

CD-R discs

DVD-RAM drives can read CD-R and CD-RW discs, but cannot record them.

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Mac OS X Server: MacOS.app and Mac OS X Server Performance

MacOS.app is a high-performance virtual Mac OS within a Mac OS X Server application, but isn't intended to be used while the server is online.
This article has been archived and is no longer updated by Apple.
MacOS.app, the Macintosh-compatibility application provided with Mac OS X Server, is a complete and robust implementation of a virtual machine within a BSD application program. It uses a real Macintosh ROM image, loads and executes full, genuine Mac OS code (and can even start its virtual self from an unaltered, attached Mac OS 8.5 startup disk). It runs virtually any properly written Mac OS application within its own environment. (See also article 30607, "**Mac OS X Server: What Is MacOS.app?**").

To accomplish all this, MacOS.app uses many system resources. Running MacOS.app while Mac OS X Server is offering services from the underlying BSD/Mach operating system will have a negative effect on the smoothness and performance levels of those services. Actually running application programs within the MacOS.app will have a greater negative effect.

MacOS.app is provided with Mac OS X Server as an administrative convenience, and as a demonstration of the ongoing evolution of Mac OS X and Mac OS. At times when the server is not online, it is a very functional Mac OS workstation. It should not, however, be used to implement additional services. Specifically, Mac OS-based server services should not be run on a Mac OS X Server system that is online with connected clients. This includes database services, mail or group calendaring services, and Mac OS-based backup or archiving systems. When native Cocoa- or Carbon-based API versions of these packages are released by their respective developers, they can run on the Mach/BSD Mac OS X Server side and offer the performance and reliability benefits for which this operating system was developed.

Mac OS X Server's Mach kernel/BSD OS offers the server benefits of Unix-derived operating systems such as fine-grained preemptive multitasking, high-performance virtual memory, smoothly asynchronous I/O for a large number of connected users, robust security, and high reliability.
Published Date: Feb 18, 2012

Mac OS X Server: Only OS Installer Disc Appears On Desktop of Mac OS 8

My Mac OS X Server disc appears on the desktop in Mac OS 8, but whenever I insert any of the three other discs that came with Mac OS X Server while in Mac OS 8, the computer reports that the disk is unreadable.

This article has been archived and is no longer updated by Apple.

Of the four discs that come in the Mac OS X Server package, only one will appear on the desktop in Mac OS 8. This is the main install disc. It appears because it has both a Mac OS Extended format (HFS Plus) partition and a UFS format partition on it. The other three discs contain only UFS partitions and will only be available while in Mac OS X Server.

```
Mac OS X Server disc  (contains both UFS and HFS Plus partition)
NetBoot disc          (contains only UFS partition)
WebObjects disc       (contains only UFS partition)
Solutions disc        (contains only UFS partition)
```

Published Date: Feb 18, 2012

Mac OS X Server 1.x: Using Macintosh Management Server Without NetBoot

Can I create a Macintosh Management Server with out the NetBoot process? I want to control access to non-NetBoot Macs without having any NetBoot clients on the network.

This article has been archived and is no longer updated by Apple.

You can control access to non-NetBoot computers without having NetBoot clients by following these steps:

1. Install the NetBoot software and open the NetBoot Setup Assistant.
   - Reply Yes to configuring the server as a Macintosh Management Server.
   - Provide valid IP numbers for NetBoot clients. It can be a range or one IP number.
   - On the last screen of the Setup Assistant, click the Quit button (not the Restart button).
2. Select Computer Settings, Network from the Apple Menu.
   - Click the Connections tab.
   - Select BootP from the Show pop-up menu.
   - Click Global BootP to select it.
   - Select Off in the Global Bootp Settings panel.
   - Quit the Network applcation.
3. Restart your server for all changes to take effect.

If you decide later to add some NetBoot clients you can run the NetBoot Setup Assistant to configure it as a NetBoot server.

Published Date: Feb 18, 2012

AppleShare IP 6.1: Incorrect Time Stamps for Windows Clients in Some Time Zones

In time zones ahead of Greenwich Mean Time (GMT), AppleShare IP (ASIP) 6.1.x may report incorrect date/time stamps for files when viewed with Windows File Sharing clients.

This article has been archived and is no longer updated by Apple.

Apple has identified an issue with AppleShare IP 6.1 where the date and time may be incorrectly reported in time zones ahead of GMT. This issue only occurs over Windows File Sharing (SMB) connections.

This issue is resolved in AppleShare IP 6.2.

Published Date: Feb 18, 2012

Mac OS: Inserting Jaz Cartridge Causes OS to Ask For Reinsert

Inserting a Jaz cartridge may cause a dialog to appear asking to "insert <Jaz cartridge>" again.
This article has been archived and is no longer updated by Apple.
This appears to be an issue with earlier versions of the Iomega driver. Mac OS 8.5 and later install a newer version that should prevent this dialog. Iomega Tools has an option to update any older driver on a cartridge with the current one when inserted. Therefore, you may experience the dialog the first time you insert a cartridge under Mac OS 8.5 before the driver is updated. Subsequent uses of the cartridge should not cause the dialog to appear.

To bypass the dialog, type command-period.
Published Date: Feb 18, 2012

Apple Video Player: No Video At Certain Bit Depths

On my 6500, when I launch Apple Video Player I notice that I don't get any video unless I switch to 256 colors (as opposed to Thousands or Millions of colors). What's wrong?

This article has been archived and is no longer updated by Apple.

There is an issue with the video digitizer of the 6500, 5500, and Twentieth Anniversary Macintosh which can cause this to happen. The issue is fixed in Apple Video Player 1.7.3 that Apple plans to include with the next system update. Until then, continue to switch to 256 colors if necessary.

Published Date: Feb 18, 2012

Apple Network Server 500,700: Open Firmware Read Me

This article contains a comprehensive overview of Apple's implementation of PCI Open Firmware on the Apple Network Servers 500 and 700. While it is a reference specific to that particular product line, Open Firmware is an industry cross-platform standard, and most of the information included applies broadly to all PCI Macintosh systems.
This article has been archived and is no longer updated by Apple.
About Open Firmware for the Network Server

Contents

* Introduction
* Starting Up Open Firmware
* Using Open Firmware
* Open Firmware Command Summary

Introduction

Open Firmware provides features that enable you to access low-level information about your Network Server. Using Open Firmware, for example, you may examine settings stored in the server's non volatile memory (NVRAM).

Open Firmware is a standard software architecture for controlling a computer before the operating system begins execution. The complete specification for the Open Firmware standard is defined in the IEEE standard document IEEE P1275-1994 Standard for Boot Firmware. The Open Firmware software orchestrates how the hardware loads the operating system and defines which properties (or features) of the hardware are available for use by the operating system. The Open Firmware command language is based on Forth.

For the latest version of Open Firmware software and documentation, click the Network Server button at the World Wide Web site http:/www.solutions.apple.com. [**Note**: this service and web site are no longer available].

Starting Up Open Firmware

To start up Open Firmware, hold down these keys while the server is restarting:

Command-Option-O-F

Enter Open Firmware commands at the `>ok` prompt. Separate each command by one or more spaces. A summary of general commands available in this implementation of the IEEE standard is provided at the end of this section.

Using Open Firmware

These commands provide low-level information about your Network Server:

`printenv`
Displays configuration settings stored in NVRAM. For example, one configuration setting specifies the boot path for the operating system. This setting is named boot-device. There is also a setting named diag-device which identifies the boot path for loading diagnostics when the server key switch is in the left (service) position.

The configuration setting name appears in the left column, the current setting appears in the middle column, and the default setting is in the right column. Use the set-default command to restore default settings when appropriate. If you encounter difficulties starting up the Network Server operating system, try setting defaults. Also, you should copy down the current settings after you install the operating system. If you later experience problems starting up the operating system, you can use printenv to check the settings using this command to determine verify the configuration settings.

`devalias`
Displays name aliases to devices stored as properties in the device tree. A name alias is an abbreviated way of referring to a device path name. For example, to boot the Network Server Diagnostic Utility, you specify the name alias for the floppy drive, `fd:`

```
boot fd:diags
```

`probe-scsi1`
Searches the Fast and Wide SCSI bus 0 and for each device attached displays the SCSI ID, the type of device, and other pertinent information such as the device's firmware version number. Use this command to verify that the devices in the top four drive trays are correctly recognized by the Network Server.

`probe-scsi2`

Searches the Fast and Wide SCSI bus 1 and for each device attached displays the SCSI ID, the type of device, and other pertinent information such as the device's firmware version number. Use this command to verify that the devices in the bottom four drive trays and the two rear bracket-mounted internal drives (Network Server 700 only) are correctly recognized by the Network Server.

`dump-device-tree`
Displays the device tree, which lists all features and devices in the Network Server encoded into a specific data format. Use the spacebar to control scrolling of the list.

The following command are used to change configuration settings stored in NVRAM. The *name-alias* variable is the setting name. The *value* variable can be a number, logical name (true, false), or a sequence of text.

`setenv` *name-alias value*
Use this command to change the specified configuration setting to the indicated value. For example, to change the OS boot device:

```
setenv boot-device disk3:aix
```

This adds disk 6 to the boot search path:

```
setenv diag-device cd disk6 fd:diags
```

`set-default` *name-alias*
This command restores the default of the named configuration setting. This example restores the boot device setting to `disk2:aix:`

```
set-default boot-device
```

This command restores the default diagnostic device to `disk2:aix:`

```
set-default diag-device
```

`set-defaults`
Restores the factory defaults for all the configuration settings.

Configuration Settings to Check in Case of Problems

If you encounter problems when the operating system starts up, check these configuration settings:

`auto-boot?`
Must be true in order to enable automatic booting of the operating system or the diagnostics when the key switch is the in the service position.

`load-base`
The Network Server Diagnostic Utility expects this number to be 4000 or greater.

`diag-device`
In order to be able to boot the Network Server Diagnostic Utility from the floppy drive, the value of `diag-device` must include `fd:diags`. Any device preceding `fd:diags` must be unmounted or removed. For example, the default setting for `diag-device` is `cd fd:diags`. This means that the search order for a bootable device begins with the CD-ROM drive and proceeds to the floppy drive only if the CD-ROM drive does not contain a bootable CD. You must remove the CD-ROM disk in this case in order to boot the floppy drive.

`boot-device`
The factory default for booting the operating system is disk2 or the hard drive contained in drive tray three (Fast and Wide bus 0 SCSI ID 2). If this value becomes corrupt or changes, the AIX operating system won't boot. If you are unable to restore this setting to the default or you cannot change the setting with the `setenv boot-device` command, then you may still be able to boot AIX by manually entering the boot command:
`boot disk2:aix`

Open Firmware Command Summary

Changing the Number Base & Number Input/Output Commands

Command	Stack	Comment
decimal	(--)	Set the number base to 10.
d# number	(-- n)	Interpret the next number in decimal.
hex	(--)	Set the number base to 16.
h# number	(-- n)	Interpret the next number in hex.
u.	(n --)	Display the unsigned number.

.d	(n --)	Display n in decimal without changing number base system.
.h	(n --)	Display n in hex without changing base.
.	(n --)	Display a number in the Current base.
.s	(--)	Display contents of data stack.

Memory Access Commands

Command	Stack	Comment
!	(n adr16 --)	Store a 32-bit Number at adr16, 16-bit aligned.
@	(adr16 -- n)	Fetch a 32-bit Number from adr16.
c!	(n adr --)	Store low byte of n at adr.
c@	(adr -- n)	Fetch a byte from adr.
cpeek	(adr -- [byte] ok?)	Fetch the byte at adr. Return the data and true if the read access was successful. Return false if an error occurred.
cpoke	(byte adr -- ok?)	Store the byte to adr. Return true if the write access was successful. Return false if an error occurred.
comp	(adr1 adr2 len -- n)	Compare two byte arrays, n=0 if arrays are identical, n=1 if first byte that is different is greater in array#1, n= -1 otherwise.
dump	(adr len --)	Display len bytes of memory from adr.
fill	(adr size byte --)	set size bytes of memory to byte.
l!	(n adr32 --)	Store a 32-bit number at adr32, 32-bit aligned.
l@	(adr32 -- n)	Fetch a 32-bit number from adr32.
lpeek	(adr -- [long] ok?)	Like cpeek, but 32-bit access.
lpoke	(long adr -- ok?)	Like cpoke, but 32-bit access.
move	(adr1 adr2 n --)	Copy n bytes from adr1 to adr2.
w!	(n adr16 --)	Store a 16-bit number at adr16.
w@	(adr16 -- n)	Fetch a 16-bit number from adr16.
wpeek	(adr -- [word] ok?)	Like cpeek, but 16-bit access.
wpoke	(word adr -- ok?)	Like cpoke, but 16-bit access.

Memory Mapping Commands

Command	Stack	Comment
do-map	(phys virt size mode --)	Map a region of 32-bit physical address at phys to a region of 32-bit virtual address at virt, the mode is 0 for Memory and 0x28 for input/output normally. Open Firmware turns on MMU translation and uses virtual address for Memory
do-unmap	(virt size --)	Unmap the previous mapped region.

PCI Registers Access Commands

Command	Stack	Comment
rb!	(n adr --)	Store low byte of n at adr.
rb@	(adr -- n)	Fetch a byte from adr.
rl!	(n adr32 --)	Store a 32-bit number at adr32, 32-bit aligned.

rl@	(adr32 -- n)	Fetch a 32-bit number from adr32.
rw!	(n adr16 --)	Store a 16-bit number at adr16.
rw@	(adr16 -- n)	Fetch a 16-bit number from adr16.
Note: For big endian registers use xb!, xb@, xl!, xl@, rw!, rw@ instead. If the (big endian) register access doesn't require special instruction such as eieio, it may use c!, c@, l!, l!, w!, w@.		

Stack Manipulation Commands

Command	Stack	Comment
bounds	(start-adr size -- end-adr start-adr)	This is equal to:over + swap
2drop	(n1 n2 --)	Remove two items from the stack.
2dup	(n1 n2 -- n1 n2 n1 n2)	Duplicate two items.
clear	(??? --)	Empty the stack.
drop	(n --)	Remove one item from the stack.
dup	(n -- n n)	Duplicate the top stack item.
over	(n1 n2 -- n1 n2 n1)	Copy the second item to the top.
rot	(n1 n2 n3 -- n2 n3 n1)	Rotate three stack items.
swap	(n1 n2 -- n2 n1)	Exchange the top two items.

Arithmetic Commands

Command	Stack	Comment
*	(n1 n2 -- n3)	Multiply n1 * n2
+	(n1 n2 -- n3)	Add n1 + n2
-	(n1 n2 -- n3)	Subtract n1 - n2
/	(n1 n2 -- n3)	Divide n1 / n2 (truncated)
<<	(n1 n2 -- n3)	Left shift n1 by n2 bits
>>	(n1 n2 -- n3)	Right shift n1 by n2 bits
and	(n1 n2 -- n3)	Bitwise logical and
mod	(n1 n2 -- n3)	Remainder of n1 / n2
not	(n1 -- n2)	Bitwise logical inversion
or	(n1 n2 -- n3)	Bitwise logical or
xor	(n1 n2 -- n3)	Bitwise logical exclusive or.

Examining and Creating Device Aliases

devalias	Display all current device aliases.
devalias <alias>	Display the device path name corresponding to <alias>.
devalias <alias> <device-pathname>	Define an <alias> representing the <device-pathname>.

Device Tree Browsing Commands

dump-device-tree	Dump the whole system device tree.
.properties	Display the names and values of the current device node's properties.
dev <device-pathname>	Select the indicated device node, making it the current node.
dev <node-name>	Search for a node with given name in the subtree below the current node, and choose the first such node found.
dev ..	Choose the device node that is the parent of the current node.
dev /	Choose the root machine node.
show-devs <device-pathname>	Display all the devices directly beneath the given device. For example, show-devs /bandit

device-end	Leave no node selected.
ls	Display children of the current node.
pwd	Display the current device path name.
words	Display the names of the current node's methods.
select-dev (str,len --)	Select the desired device node in order to execute the device methods under it. This requires all nodes of the desired device path have open method.
unselect-dev	Unselect the previous selected device node.

If-then-else Commands

else (--)	Execute the following code if 'if' failed.
if (flag --)	Execute the following code if flag is true.
then (--)	Terminate if ... then ... else.

Begin (conditional) Loop Commands

again (--)	End a begin ... again infinite loop.
begin (--)	Begin a begin ... while ... repeat, begin ... until, or begin ... again loop.
repeat (--)	End a begin ... while ... repeat loop.
until (flag --)	Continue executing a begin ... until loop until flag is true.
while (flag --)	Executing a begin ... while ... repeat loop while flag is true.

Do (Counted) Loop Commands

+loop (n --)	End a do ... +loop construct; add n to loop index and return to do (if n < 0, index goes from start to end inclusive).
do (end start --)	Begin a do ... loop. Index goes from start to end-1 inclusive. Example: 10 0 do i . loop
i (-- n)	Loop index.
j (-- n)	Loop index for next enclosing loop.
leave (--)	Exit from do ... loop.
loop (--)	End of do ... loop.

Comparison Commands

<	(n1 n2 -- flag)	True if n1 < n2.
<=	(n1 n2 -- flag)	True if n1 <= n2.
<>	(n1 n2 -- flag)	True if n1 <> n2.
=	(n1 n2 -- flag)	True if n1 = n2.
>	(n1 n2 -- flag)	True if n1 > n2.

Controlling Text Input Commands & Display Text Output Commands

ascii <c>(-- n)
Get numerical value of first ASCIIcharacter of next word.

key (-- char)
Read a character from the assigned input device's keyboard.

key? (-- flag)
True if a key has been typed on the input device's keyboard.

cr (--)
Go to the next line on the display.

File Loading Commands

boot [specifiers]

```
Boot file from specified source.

dl
Load a Forth file over a serial line.

init-program
Initialize to execute a binary file.

load [specifiers]
Load data from specified device.

NOTE: Use boot (or load) one of these four ways:

(1) boot
(2) boot <device-specifier>
(3) boot <arguments>
(4) boot <device-specifier> <arguments>

NOTE: When using the floppy drive (name-alias is fd), the disk must be high density 1.4 MB formatted for the
MacOS or DOS environments.

(1) For a MacOS floppy, <device-specifier> is fd:<filename>
(2) For a DOS floppy, <device-specifier> is  fd:,<filename>
```

Defining Words

```
: <name>( -- )      Start creating a new command word.
;   ( -- )          Finish creating the new word.
```

Manipulating Text Strings

```
" <string>"( -- adr len )   Collect an input string.
```

Redirecting I/O

```
input   (device-str -- )
Select the indicated device for console input, device may be a device name-alias.

io  (device-str -- )
Select device for subsequent input and output. Eg.  ttyb:9600

output  (device-str -- )
Select the indicated device for console output. Eg.  screen output
```

Emergency Keyboard Commands

```
NOTE: Hold down keys during Open Firmware power on sequence.

Command-Option-O-F  Abort auto booting if auto-boot? is true.
Command-Option-P-R  Reset NVRAM contents to default values.
```

Miscellaneous Operation Commands

```
eject [fd]
Eject the floppy disk from the drive.

get-msecs ( -- ms )
Return the approximate current time in milliseconds.

ms ( n -- )
Delay for n milliseconds. Resolution is 1 millisecond.

reset-all
Reset the entire system (similar to a power cycle).
```

PowerPC Register Commands

%r0 through %r31	(-- value)	Return saved copy of the given register.
%srr0 & %srr	(-- value)	Return saved copy of Save/Restore reg.
%sprg0 through %sprg3	(-- value)	Access saved copies of SPRG registers.
%cr	(-- value)	Return saved copy of Condition Register.
%ctr	(-- value)	Return saved copy of Counter Register.
%lr	(-- value)	Return saved copy of Link Register.
%xer	(-- value)	Return saved copy of XER register.
msr@	(-- value)	Return current value of Machine State Register.
msr!	(value --)	Set new value of Machine State Register.
sprg3@	(-- value)	Get current interrupt vector pointer.
sprg3!	(value --)	Set our interrupt vector pointer.
.registers		Display the PowerPC CPU's saved program state.

NVRAMRC Editor Commands

nvalias <alias> <Device-pathname>
Store the command "devalias <alias> <Device-pathname>" in NVRAMRC. (The alias persists until the nvunalias or set-defaults commands are executed or NVRAM is reset.)

nvedit
Enter the NVRAMRC editor. If data remains in the temporary buffer from a previous nvedit session, resume editing the previous contents. If not, read the contents of NVRAMRC into the temporary buffer and begin editing it.

nvquit
Discard the contents of the temporary buffer without writing it to NVRAMRC.

nvrecover
Recover the contents of NVRAMRC if they have been lost

nvrun
Evaluate the temporary buffer.

nvstore
Copy the contents of the temporary buffer to NVRAMRC; discard the contents of the temporary buffer.

nvunalias <alias>
Delete the corresponding alias from NVRAMRC.

^c (Control-C) Quit nvedit and get back to the ok prompt.

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Mac OS X Server: Workspace View Settings Not Remembered

Workspace windows always open in browser mode after setting them to either list or icon view.
This article has been archived and is no longer updated by Apple.
This is a known issue and is being investigated. Global settings in Workspaces preferences for views also do not work correctly

The only workaround is to set the view every time a window is opened.
Published Date: Feb 18, 2012

AppleShare IP: International English Mac OS Included

I purchased the North American English version of AppleShare IP, but when I try to install the system software from the included disc, it asks me whether I want the British, Australian, or International English version installed.

This article has been archived and is no longer updated by Apple.

The International English version of the Mac OS ships with AppleShare IP. Simply install the International English (Z) version. Any of the three will work with AppleShare IP. If one of the other two versions is installed already, there is no functional need to go back and reinstall.

Published Date: Feb 18, 2012

A/UX: TCP/IP Problem Configuration Solved

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

We have had a problem with A/UX and TCP/IP lines dropping. The problem configuration was:

IP: 192.31.38.69
Broadcast : 255.255.255.0
Netmask : 0

This article has been archived and is no longer updated by Apple.
The resolution to the problem is with the configuration of the /etc/NETADDRS file and the setting for the Broadcast address. The corrected configuration is:

IP: 192.31.38.69
Broadcast : 192.31.38.255
Netmask : 255.255.255.0

With this modification all line drops will be eliminated.

Published Date: Feb 18, 2012

QuickTime 4: Description

This article describes the features of QuickTime 4.
This article has been archived and is no longer updated by Apple.
QuickTime 4: The easy way to play, create, and edit streaming movies, sound, pictures, and other media on Windows- and Mac OS-based computers.

Key Features

Versatile support for web-based media

- Access live and stored streaming media content with QuickTime Player
- View QuickTime movies more easily than ever with new enhanced controls
- View the most popular Internet media formats, including Macromedia's Flash format
- Save your favorite movies in the QuickTime Player for one-click access

Sophisticated playback capabilities

- Play back full-screen video
- Play slide shows and movies continuously
- Work with video, still-image, and sound files in all leading formats

Easy content authoring and editing

- Create new QuickTime streaming movies by copying and pasting content from any supported format
- Enhance movies and still pictures with filters for sharpening, color tinting, embossing, and more
- Save files in multiple formats, including the new DV format for high-quality video
- Create slide shows from pictures
- Add sound to a slide show

QuickTime is the most widely used cross-platform multimedia technology available today. QuickTime now has powerful streaming capabilities, so you can enjoy watching live events as they happen. The QuickTime 4 Pro version includes streaming capabilities as well as the tools you need to create, edit, and save QuickTime movies. These tools include QuickTime Player Pro, PictureViewer, and the QuickTime Plug-in.

QuickTime Player Pro has an exciting new look, easy-to-use controls, and the ability to save and bookmark your favorite movies, regardless of where they are stored. QuickTime Player Pro is ideal for viewing video and audio streams, animation, virtual reality scenes, and 3D models. It contains a convenient Favorites Drawer for one-click access to content, and it has sound-adjustment controls for balance, treble, and bass. You can also correct color, adjust contrast and brightness, and apply special effects such as film noise and lens flare to enhance your movies.

In addition to playing movies, QuickTime Player Pro can also open, edit, and save movies in dozens of different formats, including Macromedia Flash files. Flash is the Internet standard for interactive vector graphics and animation. With QuickTime 4 Pro, you can copy and paste Flash tracks from one movie to another; combine Flash tracks with video to create an interactive, user-controllable interface; and combine Flash tracks with other types of media. QuickTime Player Pro also has a new "LCD" panel that provides an easily accessible Timecode mode selector and a time slider for quick editing and saving.

Once you've finished editing, QuickTime Player Pro compresses your files using Sorenson Video 2, QDesign Audio 2, or Qualcomm PureVoice compressors for streaming from any Internet-ready web server. You can also choose one of the many standards-based compressors, such as H.263, to provide the ultimate in streaming media interoperability.

PictureViewer is an essential tool for viewing and converting images between standard publish-ing formats. It has enhanced support for still images, allowing you to rotate and resize more than a dozen of the most popular image file formats. Images can be saved in Photoshop or TIFF format for use by graphic artists, BMP or PICT format for use on Windows- or Mac OS-based computers, and PNG or JPEG for posting to your web site.

PictureViewer now supports the FlashPix multi-resolution standard created by Kodak, Hewlett-Packard, and Live Picture. With PictureViewer, you can open FlashPix files easily from a digital camera. You can also export to an image sequence to create your very own slide shows, or use PictureViewer to view 16-bit-channel images.

QuickTime 4 Pro includes the QuickTime Plug-in, which works with the leading web browsers to open any media type supported by QuickTime. The QuickTime Plug-in replaces numerous applications and plug-ins, allowing you to save movies and QuickTime movie favorites to media servers around the world by simply using the convenient plug-in "Save" control.

The QuickTime files you create can be viewed by anyone using a Windows- or Mac OS-based computer with QuickTime 4 installed. The files

will be displayed in exactly the same for mat as they were created. The QuickTime Player is included in QuickTime 4, but is not required to view QuickTime movies--many applications, such as word processors, web browsers, and presentation programs, can display QuickTime movies.

QuickTime 4 Pro offers a low-cost, simple, and powerful way to create, edit, and play media files on a computer. QuickTime 4 Pro applications work with all supported QuickTime media formats, making it easy to enjoy streaming media clips, movies, pictures, and sound files (including MP3 files) from the World Wide Web, DVD-ROM, CD-ROM, and other sources. No other product offers such a high degree of media integration.
Published Date: Feb 18, 2012

Programmer‘s Aid #1: Memory test and DOS

Disable DOS before atempting to test the memory locations used by DOS.
This article has been archived and is no longer updated by Apple.
All input from the keyboard displayed on your screen goes through DOS; therefore, DOS is erased during the memory test, which causes your system to hang. To disable DOS, type from the monitor:

FE89G
FE93G
Published Date: Feb 18, 2012

Final Cut Pro 1.0: Specifications

This article outlines the specifications for Final Cut Pro 1.0.
This article has been archived and is no longer updated by Apple.
For system requirements, please see:

Article 60225 "**Final Cut Pro 1.0: System Requirements**."

Input and output formats

- DV video using FireWire
- Composite analog (NTSC) and component analog (NTSC) using Pinnacle Systems TARGA products or other certified QuickTime-compatible cards. (Final Cut Pro works with the Pinnacle Systems TARGA series of video capture cards. See www.apple.com/finalcutpro for information on other certified cards).
- All QuickTime video and file formats, including Motion and Photo JPEG, Sorenson, Cinepak, and more
- Standard image formats (BMP, JPEG, MacPaint, Photoshop, PICT, PNG, QuickTime Image, SGI, TARGA, TIFF) with alpha channels maintained (import only)
- Standard sound formats, including AIFF, WAV, and various compressions
- Export in QuickTime web-streaming format
- Import and export of common EDLs with preread options

Video capture

- Multiple resolutions and re-digitizing options
- Batch digitizing into bins
- Support for marking subclips during digitizing
- Ability to add scene, shot, take, and comment notations to footage as it is being digitized
- Waveform monitor

Printing to tape and exporting

- Instant playback of cuts
- Insert and assemble to tape using device control
- Up to 4,000x4,000-pixel resolution in any combination, including ITU-R 601 720x486-pixel and 720x576-nonsquare pixel options
- Compressed or uncompressed output
- 60-field processing
- Certified performance on Pinnacle Systems TARGA cards and other cards that have qualified QuickTime drivers. (Final Cut Pro works with the Pinnacle Systems TARGA series of video capture cards. See www.apple.com/finalcutpro for information on other certified cards).

Editing

- Three-point editing
- Match frame for replacing edits
- L cuts
- Multitrack trimming
- Multiple actions, including insert, overlay, and replace
- Ability to back-time edits in a single step
- Active track targeting
- Numerical trimming from timeline
- Slip trimming and slide trimming
- Support for editing and trimming using black (null) space, and for replacing black
- Sync multiple video edits to a single audio track
- Sync detection and automatic correction
- Markers with or without comments and durations
- Choice of editing with offline or online files
- One-step transition and superimpose edit mode
- Inline transitions instead of A/B model

Compositing and effects

- Direct manipulation of video and images
- Graphical and numeric control of acceleration and velocity

- Unlimited compositing layers
- Import of Adobe Photoshop files with layers maintained
- Subpixel motion accuracy
- Insertion of fully editable submasters
- Text generator
- Keyframe-based filters
- Real-time wire frame views
- Bezier motion path controls with acceleration control
- More than 75 built-in filters and keying effects
- Support for third-party Adobe After Effects plug-ins, including Ultimatte
- FXBuilder scripting language for creating custom filters and compositing effects
- Ability to apply effects to time ranges, not just clips
- Photoshop-like transfer modes, such as multiply and lighten
- Multiple compositing methods, including alpha, blue and green screen, luminance, and more
- Automatic alpha compositing
- Time effects such as slow motion with frame blending
- Motion blur and sophisticated image deinterlacing
- Multiprocessor rendering
- Four user-defined rendering qualities for fast previews
- Separate render cache for each quality setting
- More than 60 predefined transitions

Audio capabilities

- Sampling at 8 to 48 kHz and 8 to 16 bits
- Mixing of audio during video playback
- Audio pan controls
- Logarithmic audio fades
- Scrubbing with or without pitch shifting
- Automatic, single-step audio transitions
- More than 12 audio filters, including three-band and parametric equalizer, compressor/limiter, 60/120-Hz hum remover, and noise gate

Media management

- Multiple bins and folders for clip and effects storage
- Icon and detail list views by name and other parameters
- Ability to open multiple projects and programs
- Support for multi-item sorts, sifts, and searches
- Storage of clip information in 34 bin categories such as file size, frame rate, and comments
- Optional subclips

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QuickTime 4: Where Do I Find Open Transport 1.2

The System Requirements section of the QuickTime 4 Read Me file, that I need "Mac OS version 7.1.1 or higher, with Open Transport 1.2 or higher." I have looked all around for Open Transport 1.2 and can't find it. Where can I get Open Transport 1.2?
This article has been archived and is no longer updated by Apple.
This section of the System Requirements needs a little clarification. Open Transport 1.2 is only required for QuickTime Streaming and is not required for normal playback of local movie files. However, the only way to install Open Transport 1.2 (or higher) is to install Mac OS 8 (or higher). Open Transport 1.2 is not supported on any version of the Mac OS prior to Mac OS 8 (the latest version of Open Transport that you can download for systems prior to Mac OS 8 is version 1.1.2).

So, just to clarify, here are the system requirements for QuickTime 4 slightly restated:

- Any Macintosh based on the 68020 processor (or higher)
- System 7.1.1 or higher
- 8MB RAM for 680x0 computer or 16MB RAM for PowerPC-based computers
- Streaming requires a PowerPC running Mac OS 8 (or higher) and a static IP address or a DHCP server

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QuickTime 4: FAQ

This article contains the following frequently asked questions (FAQ) regarding QuickTime 4, with answers to those questions.
This article has been archived and is no longer updated by Apple.
Questions answered in this article:

1. What's new in QuickTime 4?
2. How do I view streaming content?
3. How can I check if streaming is working?
4. What are the advantages of using QuickTime Streaming?
5. What is the difference between live and stored streaming?
6. What is the difference between QuickTime HTTP streaming and live streaming?
7. What is the difference between Apple's QuickTime streaming and existing streaming products such as RealPlayer from RealNetworks?
8. How can I create my own streaming multimedia?

Question 1: What's new in QuickTime 4?

Answer:

- New Enhanced Interface - View QuickTime movies more easily than ever with new enhanced controls. Save your favorite movies in the QuickTime Player for one-click access.
- QuickTime Streaming - QuickTime 4 supports live and stored video and audio streaming.
- QuickTime Web Installer - This release of QuickTime includes a totally new installer that improves the speed and flexibility of your installation process.

Question 2: How do I view streaming content?

Answer: Viewing QuickTime Streaming is as easy to view as QuickTime has always been. You have the ability of viewing a streaming movie in a web browser or QuickTime Player. In fact, any application that currently supports QuickTime 4 is capable of viewing QuickTime Streaming content.

Question 3: How can I check if streaming is working?

Answer: See the QuickTime Troubleshooting page: **http://www.apple.com/quicktime/troubleshooting/**

Question 4: What are the advantages of using QuickTime Streaming?

Answer: Using QuickTime Streaming as a solution allows you to utilize the QuickTime 4 features such as effects, chapter tracks, MIDI, alternate language tracks, poster effects, overlays, client-side transforms, and alternate data rate selections.

Question 5: What is the difference between live and stored streaming?

Answer: Live Streaming allows users to join a session in which real time media is being sent over a network. Because these streams are live, users are not allowed to jump around to any point in time. Unlike live streaming, video-on-demand, or stored streaming, allows users to jump to any point in time in the media.

Question 6: What is the difference between QuickTime HTTP streaming and live streaming?

Answer: The new live streaming capabilities of QuickTime 4 are complimentary to the QuickTime HTTP streaming that is currently built into QuickTime. QuickTime HTTP, otherwise known as Fast Start, downloads the entire QuickTime file to your computer. As soon as enough of the content has been downloaded, it will begin to playback the movie while downloading the rest of the file. QuickTime Streaming does not download the movie to the computer, but loads and plays the movie in real time as the data is received.

Question 7: What is the difference between Apple's QuickTime streaming and existing streaming products such as RealPlayer from RealNetworks?

Answer: Whereas RealNetworks uses proprietary streaming protocols, Apple has opted to use industry-standard streaming protocols such as RTP and RTSP. The use of industry standards encourages competition and advancement of the technology by multiple parties. QuickTime streaming also allows for effects, chapter tracks, MIDI, alternate language tracks, poster effects, overlays, client-side transforms, and alternate data rate selections.

Question 8: How can I create my own streaming multimedia?

Answer: If you have a Power Macintosh G3 or later, you can use Apple's QuickTime Streaming Server with Mac OS X. For more information, visit **http://www.apple.com/quicktime/streamingserver/**

More Questions?

Visit Apple's QuickTime Web Site at **http://www.apple.com/quicktime/**.

Or Apple's QuickTime Support Page at **http://www.apple.com/support/quicktime/**.

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QuickTime 4: Read Me

This is the Read Me included with QuickTime 4.

For clarification on system requirements, please see Knowledge Base article:

Article 60308: "**QuickTime 4: Where Do I Find Open Transport 1.2?**"

This article has been archived and is no longer updated by Apple.

QuickTime 4: The Standard in Streaming Digital Video

QuickTime is Apple's award-winning, industry-standard, software architecture for creating and playing digital media for Mac OS and Windows. With QuickTime 4, it is easier than ever to work with video, animation, sound, music, text, pictures, interactive images, and 3D graphics.

Macintosh System Requirements

QuickTime 4 requires a 68020 CPU or later running Mac OS version 7.1.1 or higher, with Open Transport version 1.2 or higher. Streaming functionality requires a PowerPC-based Macintosh. In addition, the computer must have at least 8 MB of RAM for 68K machines, and 16 MB of RAM for PowerPC systems, and either a static IP address or a DHCP server.

Windows System Requirements

QuickTime 4 runs on Windows 95, Windows 98 & Windows NT. Requires an Intel or compatible processor or any MPC2-compliant PC (minimum 66-MHz 486 or later processor). A Pentium processor is recommended when using effects, 3D, Sorenson Video, DV, Streaming, or Music. Requirements also include 16 MB of RAM, a Sound Blaster or compatible sound card, and speakers. DirectX version 3.0 or later is recommended.

What's New in QuickTime 4

QuickTime 4 provides dozens of new features and enhancements to existing features. For complete information about these new capabilities, including live video and audio streaming, support for Macromedia's Flash file format, and support for MP3 audio files, visit the QuickTime 4 web site at <**www.apple.com/quicktime**>. The QuickTime web site also provides many links to demonstration content and to other Internet sites that are using QuickTime.

One of the most innovative features of QuickTime 4 is its smart installation technology. With QuickTime 4, you will automatically be notified whenever updates to your QuickTime software are available. With a few simple clicks, you can quickly update your QuickTime software to the latest available version. You can also check for the availability of updated software manually. To perform this simple check, open the QuickTime Player application and select the menu item "Check for QuickTime Updates" found in the Help menu. Alternatively, you can open the QuickTime Updater application found in the QuickTime Folder and follow the instructions to install additional QuickTime pieces or to manually check for updates to your currently installed software.

About Roland's Sound Set for General MIDI and GS Format

This release of QuickTime includes an instrument sound set licensed from Roland Corporation that makes a complete General MIDI compatible sound set. It also includes additional sounds necessary to make a complete GS Format compatible sound set.

What is the GS Format?

The GS Format is a standardized set of specifications for sound sources that defines the manner in which multitimbral sound generating devices will respond to the MIDI messages. The GS Format complies with the General MIDI System Level - 1. The GS Format also defines a number of other details over and above the features of General MIDI. These include unique specifications for sound and functions available for tone editing, effects, and other specifications concerning the manner in which sound sources will respond to MIDI messages. Any device that is equipped with GS Format sound sources can faithfully reproduce both General MIDI sound recordings and GS Format MIDI sound recordings.

How to contact Roland:

Roland Corporation U.S.
5100 S. Eastern Ave.,
Los Angeles, CA 90040-2938

For more information about Roland and its line of products, visit the website at http://www.rolandus.com/.

Limitations

TA44327_QuickTime_Read_Me.pdf

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QuickTime 4: Troubleshooting Installation

You may use the following web page to troubleshoot your installation of QuickTime 4:

http://www.apple.com/quicktime/troubleshooting/.

This article has been archived and is no longer updated by Apple.
You may also wish to read the following Knowledge Base article:

Article 60310 "**QuickTime 4: Known Issues**."

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Mac OS X Server 1.x: G3 Firmware Update Installation

This article describes the G3 Firmware Update and the impact on Mac OS X Server users.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

There are minimal minimal performance enhancements, so it is not necessary to install this update when running Mac OS X Server.

The G3 Firmware Updater requires Mac OS 8.5.x or later installed on a read/write Mac OS Extended format volume. If Mac OS 8.5.x or later is installed on a Mac OS Extended format (HFS Plus) partition of your Power Macintosh G3 or Macintosh Server G3, it will be necessary to start up into it to install the firmware update.

Note: Macintosh Server G3 computers shipping from the factory with Mac OS X Server, do not include a Mac OS 8.5.x or Mac OS 8.6 System Sofware installer. A System Folder capable of starting up your computer may be found on your Mac OS format volume after installing Mac OS X Server.

Starting up into Mac OS 8.5.x can be performed by holding down the Option key at startup. Having started up into the Mac OS it will be necessary to decompress the downloaded updater file with Stuffit Expander or a similar MacBinary decompression tool. Once the file has been decompressed, proceed through the following instructions:

1. Double-click the Power Macintosh G3 Firmware Updater icon and follow the on-screen instructions.

2. Click the Shut Down button when a message appears telling you to shut down your computer.

Perform these steps after the computer has been shut down.

3. Hold down the Programmer's button on the front of the computer. (For more information, see the manual "Setting Up Your Power Macintosh G3" that came with your computer.)

Figure 1 Location of Programmer's button

4. Press the Power button on your computer or on the Apple USB keyboard while continuing to hold down the Programmer's button.

The computer starts up.

5. Release the Programmer's button when you no longer hear the tone.

A progress bar appears at the bottom of the screen.

6. After your computer starts up, if the update process was successful, a message appears saying the firmware is up-to-date. Click OK.

If a message appears saying the update was not completed successfully, go back to step 1 and begin the update process again.

If the Macintosh Server G3 or Power Macintosh G3 does not have an existing Mac OS 8 installation on a Mac OS Extended format partition, download the firmware update to a Mac OS Extended format partition. The following steps may be used to start up into Mac OS 8.5.x or later to apply the Firmware Update:

1. Start up from either the System Restore or Mac OS X Server Install discs that came with your Power Macintosh G3 or Macintosh Server G3 (Blue and White) computer.

2. Open your Mac OS format volume and locate the directory named *_NBS, where * is your Mac OS volume name.

3. Open the SharedImages folder and double-click on NetBoot HD.img.

4. After the NetBoot HD.img has appered on the desktop, copy the System Folder to the root level of your Mac OS Extended partition.

5. Remove the MM Client Startup Extension from the newly copied System Folder and set the volume as the startup disk in the Startup Disk control panel.

6. Decompress the downloaded updater file with Stuffit Expander or another suitable decompression utility, and proceed through the process described above for running the G3 Firmware Updater.

TA44329_Mac_OS_X_Server_x_G_Firmware_Update_Installation.pdf

Notes:

Because the firmware update requires booting into the Mac OS, refer to article 60217: "**Mac OS X Server: Choosing the Startup OS**"

If you are having difficulty starting up into Mac OS 8.5.x refer to article 60153: "**Mac OS X Server: Power Macintosh G3 (Blue and White) Won't Start Up With Mac OS 8.x**"

You should move the Mac OS System Folder on the Mac OS Extended format partition after completing the firmware update process.

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G3 Firmware Updater 1.0.1: Crash After Installing Unformatted ATA Hard Drive

This article describes an issue with the G3 Firmware Updater that is included with Final Cut Pro 1.0.
This article has been archived and is no longer updated by Apple.
Final Cut Pro 1.0 includes G3 Firmware Updater 1.0.1 for the Power Macintosh G3 (Blue and White). It installs version 1.1f1 of Open Firmware. Apple has identified an issue with this version of Open Firmware that can cause the computer to crash at system startup time after an unformatted UltraDMA (ATA) hard drive is installed in the computer. (Crash does not imply that the hardware was harmed.)

This issue does not occur with the original version of Open Firmware that shipped with the Power Macintosh G3 (Blue and White). G3 Firmware Updater 1.0.1 is only available to users who purchase Final Cut Pro 1.0. The issue is resolved in G3 Firmware Updater1.0.2 or later, available from Apple Software Updates.

All Power Macintosh G3 (Blue and White) customers should download and install the latest firmware updater for their computer from the Apple Software Updates Web site at http://www.apple.com/swupdates/ even if they do not use Final Cut Pro.

For more information, see article 60314: "**Final Cut Pro 1.0: Download Newer G3 Firmware Updater**."
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Final Cut Pro: EDL Access For RT-11 Formatted Disks

Does Final Cut Pro support copying of Edit Decision List (EDL) files between the Macintosh file system and disks formatted with the RT-11 file system?

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Editing Systems manufactured by CMX and GVG (Grass Valley Group) use 90mm floppy disks that are formatted with a file system from Digital Equipment Corporation known as RT-11. These are 720K double-density disks.

Editing Systems manufactured by Sony Corporation use the DOS file format for their disks.

EDL Access(TM) from FocalPoint Systems, Inc. is a Macintosh application that can be used to format, read, and write to RT-11 formatted disks. EDL Access(TM) is included on the Final Cut Pro CD-ROM disc. Use EDL Access to copy an EDL file to or from a RT-11 formatted disk using a third party USB floppy disk drive. For Sony editing systems, you may copy the EDL file directly to a DOS formatted disk.

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Definition: Beta Software, Beta Test

What is "beta" software, or a "beta test?"
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Beta is a term used to describe software that is in the last stage of testing. Software publishers frequently make beta software availabile to a limited audience so that it can be tested in real-world environments. This is called a beta test.

Because beta software may be incomplete, it may not function correctly all of the time. You should only install beta software if you know how to remove it, or how to troubleshoot errors it may cause. Before installing any beta software, be sure you have a backup of important files you want to keep.
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iMac: Update Firmware Before Installing Mac OS 8.6

When I try to install Mac OS, the Installer gives me the following error:

"Your Mac's firmware is out of date, please update it before continuing."

What is firmware and how do I update mine?
This article has been archived and is no longer updated by Apple.
Firmware is the software that controls the basic functions of the iMac's hardware. Firmware is typically stored on a ROM chip or other controller chip on the logic board or other device within the computer.

Make certain that you have properly installed the iMac Firmware update prior to installing Mac OS 8.6 update. You will receive an alert message and the installation will be halted if you try to install on an iMac that has not been updated.

You can find the update in the CD Extras folder of the Mac OS 8.6 disc or you can download it from the Apple Software Updates Web site at http://www.apple.com/swupdates.

A list of all updates for each model of the iMac is available in document 58174 titled "**iMac: When to Install Available Updaters**"
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Mac OS 8.6: What‘s New - Sherlock 2.1

This article outlines the new features of Sherlock 2.1.
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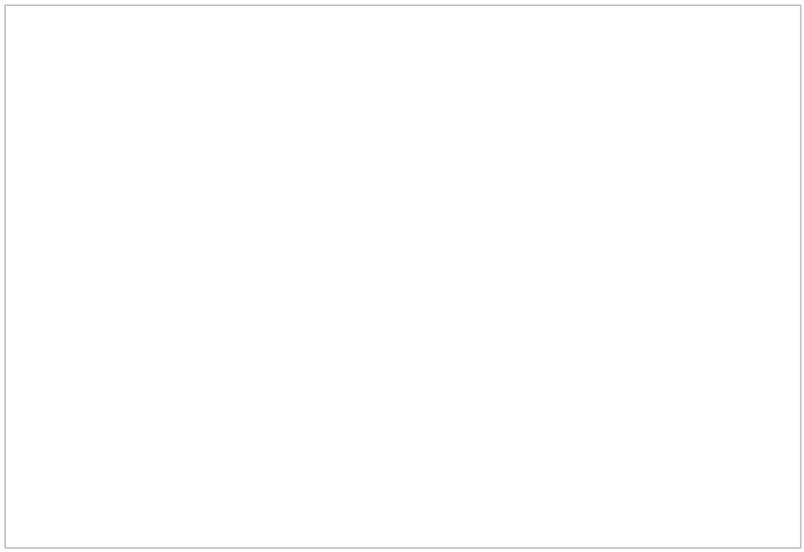
Sherlock in Mac OS 8.6 has a number of enhancements:

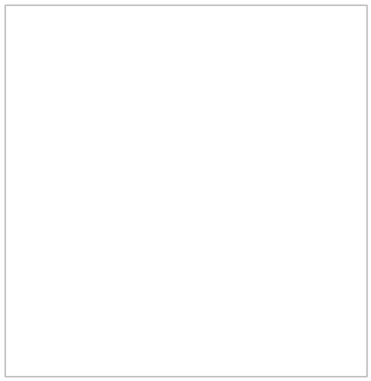
Search Internet

- Panel is now resizeable so you can easily see all available search sites
- The new Uncheck All button allows you to quickly deselect search sites.
- Improved ability to search behind firewalls, including SOCKS and authenticated proxy servers.



Find by Content

- Allows indexing and searching of PDF and HTML files.
- Can index or search items with a specific label
- Can index the contents of a specific folder (instead of the whole disk) using the contextual menu:



Preferences

- Preferences allow setting the number of Internet connections that you can make simultaneously:

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Mac OS 8.6: What‘s New - LaserWriter 8.6.5

This article outlines the features of LaserWriter 8.6.5.
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LaserWriter 8.6.5 provides support for secure printing using AppleShare IP 6.1 and works with USB-connected PostScript printers. The LaserWriter 8.6.5 print dialog box allows you to create a Job/Font log to view a history of your printing jobs and fonts used. You can also choose TrueType over Type 1 fonts and force all fonts to be downloaded to the printer.

When you select Print from the File menu of any application, you get the print dialog box shown here. The different menu options appear in the Print Options pop-up menu. The Print Options pop-up menu is under the word "Printer." Selecting Font Settings from the print options menu provides the window shown here:

Font Settings options

- Select the Annotate Font Keys checkbox to annotate font keys in the PostScript output. This will include information regarding the QuickDraw font (which the driver has translated into a font for the printer, either a PostScript Type 1 or TrueType font). The information may be used by a very sophisticated user (such as a prepress user) to debug a troublesome print job.
- Select either Type 1 or TrueType radio buttons in order to select which font type is preferred.
- Select the Always download needed fonts option to ignore fonts in the printer's ROM or memory.
- Select Never generate Type 42 format to prevent Type 42 fonts. A type 42 font is a TrueType font. Some high end printers do not work with TrueType fonts. This option provides a way to force the driver not to generate TrueType fonts at all. If one is needed, the TrueType font is converted into an unhinted Type 1 font. (This is not the best font, but it will print.)

Note: The vast majority of users and print jobs do not need to change (or benefit from changing) the Font Downloading options. If you have changed these options from their defaults and you are experiencing printing difficulties, try restoring the options to their defaults by clicking the Use Defaults button (see above).

Selecting Job Logging from the print options menu provides the window shown in here:

Job Logging options

PostScript error reporting is sometimes useful in determining why a print job has failed when the printer fails to print.

- Select No special reporting to prevent reporting of any PostScript errors during printing.
- Select Summarize on screen to receive a summary of any PostScript errors encountered during printing.
- Select Print detailed report to print a detailed description of any PostScript errors encountered during printing.
- Select the Generate Job Copy and/or Generate Job Log options to see PostScript error reporting information in the job log.
- Click the Change button to select a destination folder for font logs and job copies.

To receive explanations of each of the settings in the LaserWriter 8.6.5 print dialog, select "Show Balloons" from the Help menu before selecting the Print command. Help balloons appear as you move the pointer over each setting.

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Mac OS 8.6: What's New - Dvorak Keyboard Layout

This article describes the new features of the Keyboard control panel 8.2, including the Dvorak keyboard layout.
This article has been archived and is no longer updated by Apple.
Additional keyboard layouts have been added to Mac OS 8.6 to support Dvorak keyboards. A Dvorak keyboard is a keyboard whose keys are in different order than standard keyboards. For example, standard American keyboards start with the letters QWERTY. A Dvorak keyboard starts with the characters ',.pyf.

Dvorak keyboards are designed to be easier and quicker to use and with fewer mistakes. Using a Dvorak keyboard involves having to relearn how to type. The keyboard layout is a way that to get the functionality of a Dvorak keyboard without having to buy a Dvorak keyboard.

To select the Dvorak keyboard layout:

1. Open the Keyboard control panel.
2. Click the checkbox for Dvorak or Dvorak - Qwerty to select the keyboard layout.
3. Clicking the Options... button will allow you to specify Keyboard Menu Shortcuts used to toggle between selected keyboard layouts.

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Mac OS 8.6: What‘s New - English Speech Recognition 1.5.4

This article outlines the new features of English Speech Recongnition 1.5.4.
This article has been archived and is no longer updated by Apple.
English Speech Recognition 1.5.4 is software that allows the computer to interpret your speech and run Speakable Items scripts. New features in version 1.5.4 include:

- Support for 44.1 kHz sound input used on iMac and G3 series computers has been added.
- The Speakable item script "Find by content" that references "Find" rather than "Sherlock" has been corrected to reference "Sherlock".
- The Speech Recognition extension now correctly restores the sound input source to it's original state when exiting. In previous versions of Speech Recognition, users may have noticed some feedback being generated during shutdown.

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QuickTime 4: Rescanning MIME Types

This article describes how to rescan the MIME settings used by the QuickTime Plug-in.
This article has been archived and is no longer updated by Apple.
You can rescan QuickTime Plug-in MIME settings from within your browser by doing the following:

1. Drag and drop the file Sample.mov installed by the QuickTime installer into your browser window.
2. Click and hold down the mouse button on the movie. A pop-up menu appears.
3. Select Plug-In Settings. The following screen appears:

4. To reset the MIME types the plug-in uses click on MIME Settings... The following screen appears:

5. Click the checkbox for the MIME type you want the QuickTime Plug-in to handle, then click the OK button. The following message appears:

6. Click the OK button twice to reach the Plug-In settings window.
7. Click Save to keep the changes you have made.

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QuickTime 4: Using QuickTime Player

This article describes the QuickTime Player application program and how to use it.
This article has been archived and is no longer updated by Apple.
The MoviePlayer application previously included with earlier versions of QuickTime has been updated and renamed QuickTime Player. QuickTime Player provides a dramatically new user interface and features, as well as support for viewing QuickTime Streaming files.

To open QuickTime Player, double-click its icon in the QuickTime folder.

Player Window

When opening the QuickTime Player, a new Player Window appears:

The controls and features of the Player Window are:

A - Close box - closes the Player window
B - TimeCode Display - this shows the current time in hours, minutes, and seconds from the beginning of the movie
C - Volume control - can be rotated to control the volume level.
D - Volume level indicator - displays a graphical representation of the current volume level.
E - Name of the QuickTime file
F - Time bar - represents the duration of the movie, can be dragged to change the current time.
G - Information button - clicking this button displays the Info Panel. The Info Panel displays copyright and author information of the QuickTime file being viewed. **Note**: Not all QuickTime files will contain copyright or author information.
H - Controls button - clicking this button displays Playback Controls for adjusting the sound and navigating the movie.
I - Window size - Click and drag the corner of the Player Window to adjust the size of the window. **Note**: the window size is always a minimum of 320 x 240 pixels. If the movie size is smaller than this, it will be centered in the Player Window.
J - Play button - Click this button to begin playing a movie from its current time. Click again to stop playing.
K - Favorites Drawer - Click and drag this control to open the Favorites Drawer. Double-click the control to quickly open and close the drawer.
L - Pause button - Click once to pause the movie playback. Click the Play button (J) to resume playback.

Playing a QuickTime Streaming Movie

In addition to QuickTime files on your computer, QuickTime Player can also open and display QuickTime Streaming movies. These movies can be either fast-start (HTTP) or streaming (RTSP) movies.

Note: You must have an active connection to the Internet in order to view QuickTime Streaming files.

From the File menu, select Open URL... and type the full URL address of the QuickTime streaming file:

Click the Ok button. QuickTime Player makes a connection to the Internet server URL address you have typed and opens a new window.

Status messages are displayed in the window to the right of the timecode display. After successful connection to the server, the movie will begin playback.

You must type the full Internet service type designation of rtsp: in the URL address to access files on a QuickTime Streaming web server. Other service types supported are http: and ftp.

If you receive the message "Can't find movie on server," check that you have entered the full path to the movie including upper and lowercase characters.

Favorites Drawer

The Favorites Drawer allows you save bookmarks to QuickTime files on your local hard disk or on QuickTime Streaming Servers. The favorites bookmarks can be used to quickly open the QuickTime file. To access the Favorites Drawer, double-click its handle at the bottom of the Player window:

To create a bookmark of a movie that you have opened, select Add Favorite from the Favorites menu. An icon representing the QuickTime movie favorite appears in the Favorites drawer.

You can add bookmarks to the Favorites drawer by dragging the QuickTime file's icon from the Finder to the Favorites Drawer.

- To access a movie from the Favorites drawer, just click on its icon.
- To arrange bookmarks, click and drag its icon to a new location within the Favorites drawer.

To close the Favorites Drawer, double-click its handle at the bottom of the Player window.
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Mac OS 8.6: Installing Mac OS 8.6

This document provides compatibility information and basic troubleshooting for installing Mac OS 8.6.
This article has been archived and is no longer updated by Apple.

Before you install

1. Make sure you have at least 24 megabytes (MB) of RAM installed in your computer.
2. Turn off any security software that you may have installed on your computer.
3. If you have a PowerBook, make sure that it is plugged into an AC power outlet and set not to go to sleep.
4. Start up your computer using the Mac OS CD. (Hold down the "C" key while you restart). If you're installing from a network or your computer does not have a CD-ROM drive, you should turn off any virus-protection software and non-Apple extensions and control panels that you may have installed, then restart your computer. See the installation manual for details.
5. It's recommended that you do an easy installation to update your system software. If you plan to do a clean installation instead, write down your current Internet settings, such as the IP address, subnet mask, name server, and so on from the TCP/IP, PPP or Remote Access, and Modem control panels. After installation, the Internet Setup Assistant will ask you to enter this information. (If you do an easy installation, you do not need to write down this information.)
6. If you are the administrator for a NetBoot-capable server, before you install Mac OS 8.6, please go to the Apple support Web site in the Mac OS X server section at: http://www.apple.com/support/ for the latest version of the NetBoot Desktop Admin and follow the instructions in the related Read Me.
7. Although compatibility issues are not expected, check with the manufacturers of any non-Apple software you use to make sure it is compatible with Mac OS 8.6. For information on isolating compatibility issues, see the troubleshooting section in this document or the troubleshooting chapter in your installation manual.
8. Review the compatibility information in this document.

Compatibility information

- Installing Mac OS 8.6 on computers with Ultra Wide SCSI cards
  Some older Ultra Wide SCSI cards require a firmware update before they will work with Mac OS 8.6. If the card's firmware is not compatible, your computer will crash during installation or when you start up from the CD. Before installing Mac OS 8.6, contact the manufacturer of your SCSI card to determine if a firmware update is necessary.

- Internet Setup Assistant and LAN connections
  If you connect to the Internet over a local area network, select the "add a new Internet configuration" option when you use the Internet Setup Assistant. (Selecting the option to modify the default configuration will not configure your TCP/IP settings correctly.)

- Third-party Finder and utility software
  Some third-party programs that extend or add features to the Mac OS may not be compatible with Mac OS 8.6. Examples include programs that change the way menus work, change how files are stored, or alter the way you work with files in the Finder. You may need to upgrade these applications before you can access the files they affect. For more information, contact the third-party software manufacturer.

- Computers with DOS compatibility cards
  Apple DOS Compatibility cards do not work with Mac OS 8.6.

- Computers with PowerPC processor upgrade cards
  Computers with 680x0 processors that have been upgraded with a PowerPC processor upgrade card do not work with Mac OS 8.6.

- 400K floppy disks and Mac OS 8.6
  The 400K MFS disk format is not supported by Mac OS 8.6. If you have information or programs on 400K disks that you want to access, copy the files to your hard disk or another storage device before installing Mac OS 8.6.

- QuickDraw GX and Mac OS 8.6
  After installing Mac OS 8.6, you may not be able to print from application programs that use QuickDraw GX. For more information, see About QuickDraw GX on the Mac OS 8.6 CD.

- MacODBC and Mac OS 8.6
  If you use MacODBC, you should either install it before installing Mac OS 8.6, or perform a custom install of MacODBC and make sure the ASLM extensions are not selected. The MacODBC installer installs older versions of ASLM extensions that are incompatible with Mac OS 8.6.

- Installing Mac OS 8.6 on accelerated NuBus PowerPC computers
  If you have a Power Macintosh 6100, 7100, 8100, or 9150 with a third-party accelerator card installed, the Installer might not install Mac OS 8.6. For more information, contact the accelerator card's manufacturer.

- Performa or Power Macintosh 5000 and 6000 series computers
  Some Performa or Power Macintosh 5200, 5300, 6200, and 6300 series models cannot use Mac OS 8.6 until a hardware issue is fixed. The repairs are covered under the Apple repair extension program. To see if your computer has this hardware issue, use the 5xxx/6xxx Tester utility in the Utilities folder on the CD before installing Mac OS 8.6.

  IMPORTANT The Power Macintosh or Performa 5260, 6320, and 6360 do not have this hardware issue. You do not need to use the tester program if you have one of these computers.

Troubleshooting suggestions

If you experience issues during installation, be sure you have started up with the Mac OS CD. See your installation manual for further instructions. You can also check the following:

Updating your disk drivers
Some Apple-brand disks manufactured by third parties, including the Apple 365 MB external hard disk, are not supported by the Apple disk utilities. If your disk cannot be updated with the Apple utilities, you will need to use a third-party disk utility to update the driver.

Repairing disks
If you see a message that your disk has issues and cannot be repaired, make sure file sharing is off, then try installing again. If that does not work, try using another disk-repair utility. If that utility also does not work, you may need to reinitialize the disk. Before doing so, copy all your files to another disk as reinitializing erases the disk. For more information, see Mac OS Help in the Finder's Help menu.

Updating your firmware
If you receive a message during installation that your firmware is out of date, follow the instructions for updating your firmware in the CD Extras folder on your Mac OS CD, or at the Apple support Web site: http://www.apple.com/support/imac/.

Installing over a network
If you are installing over a network, or if you have a non-Apple CD-ROM drive and cannot start up with the CD, turn off all extensions that were not provided with your system software. Then restart the computer. For instructions, see your installation manual.

Additional troubleshooting information is available in the Mac OS installation manual. For up-to-date news and compatibility information, go to the Mac OS Late-Breaking News Web site at http://www.info.apple.com/latebreakingtips/.
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Apple IIGS System 5.0: Setting Up an AppleShare Network

I have been having problems adding Apple IIGS systems to an AppleShare network under Apple IIGS System Software Update Version 5.0. Can you give me some help?
This article has been archived and is no longer updated by Apple.
The following information applies to Apple IIGS System Software Version 5.0 and later.

Because of recent rapid development of the Apple IIGS operating system, setting up an AppleShare network with IIGS systems can be confusing. For example, the Apple II Setup disk included with AppleShare Version 2.0.1, a Macintosh disk designed to install Apple II features onto the Macintosh file server, is now obsolete. You should use the Apple II Setup disk that comes with the Apple IIGS System Software Update Version 5.0 and later. If you do the AppleShare installation with the obsolete Apple II Setup disk from AppleShare Version 2.0.1, you get the following error message when you try to start an Apple IIGS over the network:

Cannot load (servername) /SYSTEM/SYSTEM.SETUP/CDev.Init.

To add IIGS systems to an AppleShare network properly under Version 5.0, you must buy the Apple IIGS System Software Update Version 5.0 or later. The update package includes the Apple II Setup disk and the manual "AppleTalk Network User's Guide for the Apple IIGS."

Setting up AppleShare on the Macintosh Server

Follow the steps below to set up AppleShare, so that IIGS systems start over the network.

1) Start up with the System Tools disk and run Apple HD SC Setup.

2) Initialize the server hard disk.

3) Name the hard disk using an Apple II convention; for example, "A2." (The shorter the name, the better.)

4) Install the Macintosh System Software on the server, making sure to use the latest version possible for your Macintosh computer.

5) Restart with the AppleShare Version 2.0.1 Server Installer disk. Install "AppleShare 2.0.1 Server" onto the server volume. Be sure you don't click any of the Macintosh-family installation scripts, because they will install old system software, overwriting the system software you just installed.

6) Restart from the AppleShare Server Admin disk and launch the Server Admin application.

7) Enter the administrator's key and password, name your server, and create the users and groups you need.

8) Choose Volume List from the Volumes menu and double-click the server volume. A dialog box allows you to set access privileges. Click all boxes and save enclosed folders.

9) Quit the Server Admin application and restart the Macintosh server from the Apple II Admin disk that came with the Apple IIGS System Software Update Version 5.0.

10) Launch the Installer program on the Apple II Admin disk, and install "Apple II Info" on the server volume; then quit.

11) Restart from the Server Admin disk and launch the Server Admin application.

12) From the Server menu, choose Server Info and click the Apple II feature. Then, click Save.

13) Choose Volume List from the Volumes menu and double-click the server volume. A dialog box allows you to set access privileges. Click all boxes and save enclosed folders.

14) Quit the Server Admin application and restart the server. Keep the server on-line while you perform the steps for the Apple IIGS.

Setting up AppleShare on the Apple IIGS

Follow the steps below to set up AppleShare on the IIGS systems:

1) Start up with the System.Disk that came with the Apple IIGS System Software Update Version 5.0, and format a blank 3.5-inch disk.

2) Launch the System 5.0 Installer on the System.Tools disk.

3) In the Installer, select "AppleShare on 3.5 Disk" and install it on the formatted disk. (You'll have to do some disk swapping.)

4) Shut down the IIGS and restart from the AppleShare 3.5 disk you just created.

5) Enter the administrator's name (usually "Administrator") and password. On the Graphic Control Panel under the Apple menu, click the AppleShare icon and mount the server volume.

6) Launch the Installer program on the IIGS System.Tools disk.

7) Using the Command key (Open Apple), select the following scripts:

* Latest Sys. Files (No Finder)
* Server Network Startup
* Server Quick Logoff
* Optional scripts (Install the scripts that the IIGS systems starting up over the network will require; for example, the SCSI driver, 5.25 driver, LaserWriter printer, or AppleTalk printer.)

8) Install the selected scripts on the server volume. The system installs over the network, and the double-arrow icon at the top left of your screen flashes. You may have to do some disk swapping, and the installation may take a fair amount of time.

9) Once the installation is complete, quit and shut off the IIGS.

10) Shut down the file server and restart it from the Server Admin disk.

11) Launch the Server Admin application.

12) Select all users, or all Apple IIGS users who you want to be able to start up over the network.

13) Under the Apple II menu, choose Set Startup, and designate "Finder" as the startup application. (It will be located at /servername/System/Finder.)

14) When you're prompted for a response, allow the system to set the prefix automatically.

15) If the users you selected will be using a network printer, select Set Printer.

16) Choose Volume List from the Volumes menu and double-click the server volume. A dialog box allows you to set access privileges. Click all boxes and save enclosed folders.

17) Quit the Server Admin program and restart the file server.

18) On the IIGS units that you want to start up over the network, reset the startup slot from the Control Panel. Systems with ROM 01 should have the printer port set to "Your Card," Slot 7 set to "Built-in AppleTalk," and the startup slot set to "7." Systems with ROM 03 should have the printer port set to "Built-in AppleTalk," Slot 7 set to "Built-in AppleTalk," and the startup slot set to "AppleTalk."

Note: If you have the newer model Apple IIGS with 1MB of RAM on the logic board, set Slot 7 to AppleTalk and EITHER slot 1 or slot 2 to AppleTalk.

19) Restart the Apple IIGS. It now boots over the network and prompts you to enter a user name and password. Once you enter the name and password, the "progress thermometer" appears, and then you see the Apple IIGS System 5.0 desktop with the server volume icon at the top right.
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Mac OS 8.6: What‘s New - AppleShare Server Messages

After upgraded to Mac OS 8.6, you may see files on the desktop named "AppleShare Server Messages."

This article has been archived and is no longer updated by Apple.
This is a new feature in Mac OS 8.6. AppleShare servers alert connected clients whenever there is a change in network status (if a server shuts down, for example). These alerts now time out. After a two-minute delay, the alert is dismissed and the message text from the alert is appended to the end of the "AppleShare Server Messages" file located on the desktop. If the AppleShare Server Messages file is not on the desktop, a new file is created.
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Mac OS X Server: Updating the NetBoot Mac OS ROM File

When updating the NetBoot HD.img file with the NetBoot Desktop Admin for the purposes or installing a newer version of the Mac OS you do not have to separately update the Mac OS ROM file in the Shared Images folder.

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The NetBoot Desktop Admin application will check to see if the Mac OS ROM file was modified when changes to the NetBoot images are saved. If it was modified as is the case with the Mac OS 8.6 update, it copies the new Mac OS ROM file to the shared images directory automatically.

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Open Transport 2.0 Technical Information - Part 2

This document contains technical information about Open Transport that may be useful to network managers and administrators. You do not need to read this document in order to use Open Transport.

Refer to article 58138: "**Open Transport 2.0 Technical Information - Part 1.**" for the first part of this article.
This article has been archived and is no longer updated by Apple.

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- Dialup network connectivity - AppleTalk
- Dialup network connectivity - TCP/IP
- Native dialup network connectivity - AppleTalk
- Native dialup network connectivity - TCP/IP
- MDEVs
- Tips for SLIP and PPP configurations

Dialup network connectivity - AppleTalk

For dialup connectivity to AppleTalk networks, Open Transport supports Apple Remote Access version 2.0.1 or later.

Dialup network connectivity - TCP/IP

For dialup connectivity to TCP/IP networks (including the Internet) Open Transport supports third-party extensions known as "MDEVs." Serial Line Interface Protocol (SLIP) and Point to Point Protocol (PPP) connectivity are provided in this manner. Not all versions of all MDEVs are compatible with Open Transport 1.1 and later.

Native dialup network connectivity - AppleTalk

Apple Remote Access - version 3.0 or greater
ARA 3.0 supports AppleTalk and TCP/IP protocols concurrently over a PPP connection and is also compatible with ARA 2.x family clients and servers.

Native dialup network connectivity - TCP/IP

Apple Remote Access - version 3.1
ARA 3.1 offers the same features as OT/PPP for dialup access to a TCP/IP network.

OT/PPP - version 1.0 or later
OT/PPP is available on the Apple Software Update sites on the Internet and requires Open Transport 1.1.1 or later.

MDEVs

Open Transport 1.1 and later recognizes and is compatible with the following MDEVs. When properly installed they appear in the "Connect via" pop-up menu in the TCP/IP control panel.

FreePPP - version 1.0.5 or later
FreePPP is shareware and can be found on the Internet at the following sites: ftp://mirrors.aol.com/pub/info-mac/comm/tcp/conn/, and ftp://mirror.apple.com/mirrors/Info-Mac.Archive/comm/tcp/conn/.

FreePPP versions prior to 2.5 may experience problems when running with virtual memory turned on (including RAM Doubler). If you have problems using FreePPP with VM, either update to FreePPP 2.5, or temporarily turn VM off. The current version of FreePPP is 2.6. The FreePPP home page provides the latest information about FreePPP at http://www.rockstar.com/ppp.shtml.

MacPPP - version 2.1.4 or later (MacPPP 2.5 or later is recommended)
MacPPP versions prior to 2.5 may experience difficulties when running with virtual memory turned on (including RAM Doubler). If you have problems using MacPPP with VM, either update to MacPPP 2.5, or temporarily turn VM off. An Open Transport-compatible version of MacPPP (MacPPP 2.5) is included in the Open Transport Extras folder. For more information, please refer to the MacPPP Read Me document.

InterPPP II - version 1.1 or later
InterPPP II is a commercial software product. It has been replaced by CONNECT4ppp which is part of tcpCONNECT4. tcpCONNECT4 can be purchased from VisionSource at 800.326.7427. Additional information is posted on the InterCon web page at http://www.intercon.com.

MacSLIP - version 3.0.4 or later
MacSLIP is commercial software developed by Hyde Park Software. For availability and ordering information in the U.S., contact TriSoft at 800-531-5170 or 512-472-0744. For more details see the MacSLIP Web page at http//www.zilker.net/~hydepark/.

Sonic PPP - version 1.0.2 or later
SonicPPP is commercial software developed by Sonic Systems, Inc. For availability and ordering information in the U.S., contact Sonic Systems at 408-736-1900 (voice) 408-736-7228 (fax). For more details see the Sonic Systems Web page at http//www.sonicsys.com/.

NTS PPP - 2.0 or later
NTS PPP is commercial software developed by Network Telesystems, Inc. For availability and ordering information in the U.S., contact Network Telesystems at 408-523-8100 (voice) 408-523-8818 (fax). For more details see the Network Telesystems Web page at http//www.nts.com/.

LAN TunnelBuilder is a Virtual Private Network technology from NetworkTelesystems, Inc. For more details see the Network Telesystems web page at http://www.nts.com/.

SAT/SAGEM PPP - 1.02b1 or later
SAT/SAGEM PPP is commercial software developed by SAT/SAGEM. For availability and ordering information in the US, contact SAT/SAGEM at 408-446-8690 (voice) 408-446-9766 (fax). For more details see the SAGEM Web page at http//www.satusa.com/.

LeoTCP - 2.0.1 or later
LeoTCP is commercial software developed by Hermstedt GmbH. For availability and ordering information in the U.S., contact Hermstedt USA at 1-800-828-5522 (voice). In Europe contact Hermstedt GmbH at +49 621-76500 (voice) +49 621-7650100 (fax).

T-Online CSLIP - version 1.0.3 or later
T-Online CSLIP is commercial software developed by Computer Consulting GbR. For availability and ordering information in Europe, contact format network & communication at 49 2206 95840. For more details, contact format network & communication at info@format.de.

University of Michigan ISDN - 2.0.6 or later
In addition to these, there are a number of other MDEVs (examples include those from Pacer, FCR, and Tribe) which are indistinguishable from one another to Open Transport. When installed, these appear in the "Connect via" pop-up menu as "TCP/IP PPP."

AOL Link
AOL Link is commercial software developed by America OnLine. It is part of the America OnLine client software that is available from AOL's ftp site and allows use of MacTCP or Open Transport compatible TCP/IP applications while connected to AOL. The latest version of the AOL client is on the AOL ftp site at ftp://ftp.aol.com/.

CompuServe PPP is a commercial PPP implementation specifically designed for connecting to CompuServe. You can obtain it from the CompuServe web site at http://www.compuserve.com/.

Tips for SLIP and PPP configurations

Some MDEVs are known to be incompatible with other MDEVs. If you experience problems, remove unused MDEVs so that only the MDEVs you need are installed on your computer at a given time. If you still encounter problems, you may have to reduce the number of MDEVs installed to one to prevent conflicts.

Users who dial into a TCP/IP network or Internet Service Provider (ISP) may have been assigned a router (gateway) address that is not a part of their local subnet. This was an accepted but technically invalid configuration for MacTCP. Open Transport users should not enter a value for the router address or subnet mask; Open Transport/TCP generates correct values for these fields automatically. In unusual circumstances, these supplied values can be overridden using the Administration mode of the TCP/IP control panel.

If BootP is used over SLIP or PPP for interface configuration, and if BootP returns additional default router addresses, Open Transport will automatically add those addresses to the list of default routers.

When Open Transport is installed on a computer that previously had MacTCP configured for a server configuration, the initial configuration method--the selection in the "Configure" pop-up menu in the TCP/IP control panel--is set for the use of a BootP server. This default may not be the appropriate choice for you; please verify.

If your computer was previously configured for MacTCP "server" addressing and you experience connection difficulties using PPP or SLIP after installing Open Transport, follow these steps:

1. Open the TCP/IP control panel.
2. Choose Using PPP Server or Using SLIP from the Configure pop-up menu.
3. Close the TCP/IP control panel, and save changes when prompted.
4. Try connecting again.

If your computer was previously configured for MacTCP "manual" addressing and you experience connection difficulties using PPP or SLIP after installing Open Transport, follow these steps:

1. Open the TCP/IP control panel.
2. Choose Manual from the Configure pop-up menu.
3. Verify that the correct IP address is entered in the Address field.
4. Close the TCP/IP control panel, and save changes when prompted.
5. Open the configuration utility supplied with your SLIP or PPP software, and verify that it also reflects the correct IP address in the appropriate location. Refer to the documentation supplied with your SLIP or PPP software for further information on how to enter an IP address, and how to save an updated configuration.
6. Try connecting again.

Note: In MacPPP's ConfigPPP control panel, this setting is entered in the IPCP dialog box. Refer to the documentation that came with MacPPP or FreePPP for additional information.
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A/UX: The Event Manager and Mouse Events

Article Change History

08/31/92 - REVIEWED
*For technical accuracy

I'd like to share a general observation, concerning A/UX and multitasking support while running the Finder.

While it is true that A/UX provides true pre-emptive multi-tasking for processes on the machine, it is also true that when the mouse button is held down, all activity appears to cease. The customer observation here is that the computer halts everything to deal with the mouse being down, and nothing seems to happen during this time.

What little I know about Macintosh development and priority queues tells me that StillDown events are taking precedence over screen update events. Therefore, the machine seems to stop. Although, in reality, it continues to process other tasks. Typical workstations have different priorities for user events, and, therefore, tasks continue to run and change their displays despite the actions of the user. Potentially, this could affect the responsiveness of the machine to the user, because user actions are not assigned any special priorities.

Is this is correct?

This article has been archived and is no longer updated by Apple.
Your observations are correct. The Event Manager always returns the highest priority event waiting in the queue. When using A/UX, even though it looks like processing has stopped when you hold down the mouse button, it still is continuing to give processor time to other processes. This is handled by the A/UX scheduler process and falls outside the realm of the Finder shell.

The Event Manager priorities are defined as follows:

1) Activate (window becoming inactive is higher than window becoming active).

2) Mouse down, mouse up, key down, key up, disk inserted, network, device driver, application defined (in that order).

3) Auto key.

4) Update (in front-to-back order of the windows).

5) Null.

To demonstrate this, you could use the small shell script that follows:

1) Start up this process.

2) Let it count up to 10.

3) Press and hold the mouse button. The screen stops updating. The log file will continue to be updated (you will continue to hear the drive).

4) While still holding the mouse button down, press Control-C. Screen output from the program should be halted from the time you first pressed the mouse button down, somewhere around 10.

5) Open the log file (/tmp/junk.log). It shows that the file was being updated even though the screen was not.

C Shell Script

```
#! /bin/csh

set counter = 1

while (1)

echo "The counter value is " $counter | tee -a /tmp/junk.log

@ counter++

end

exit 0
```

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QuickTime 4: Does Not Work With Avid Cinema 1.2.2b

Avid Cinema version 1.2.2b does not work with QuickTime 4.
This article has been archived and is no longer updated by Apple.
Included with Apple's Teacher's Workstation bundle is Avid Cinema 1.2.2b which can be used to record video in conjunction with the ATI Xclaim VR video card. This configuration comes with QuickTime 3 installed. Until a newer version of Avid Cinema is released to work in this configuration, do not install QuickTime 4. Avid Cinema 1.2.2b will not record video if QuickTime 4 is installed and may cause the computer to stop responding.

Other versions of Avid Cinema (including 1.2.2 and 1.3)continue to work with QuickTime 4.
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Mac OS X Server 1.x: Wrappers

When using the Terminal application MacOS.app is actually a directory with a MacOS executable inside it. This article explains the difference between the MacOS.app directory and the MacOS executable.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

In this case, MacOS.app is a wrapper. A wrapper is a directory that contains an executable and any resources the executable may need to operate. Wrappers contain the kind information that would be stored in the resource fork of a Mac OS 8 application, such as icons. Resource forks can not be used with Mac OS X Server because the UFS directory structure does not support forked files.

The Workspace Manager makes directories ending in .app, .pkg, or .mpkg wrappers and thus double clickable. The command line does not have this functionality which is why this difference is noticeable.

Wrappers can be opened by holding down the Command+Shift+O keys, or by holding down Command+2 and pressing the Open Application Wrapper button.

Older command line utilities like the ones in /bin and /sbin do not have a wrapper because they do not have a graphical interface, and therefore must be executed at the command line.
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AppleShare IP 6.x: MacDNS Tutorial on Disc Has Broken Images

The MacDNS tutorials on the AppleShare IP 6.0, 6.1, and 6.2 discs have two pages that contain HTML errors.

This article has been archived and is no longer updated by Apple.
The following pages are affected:

- index.html - this page is missing the background image.
- overview.html - this page is missing the background image and all other images.

Although these pages have HTML code errors, their content intact and they contain correct information. This cosmetic issue should not limit the effectivness of the tutorials.
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AppleShare IP 6.2 Help Files On Disc Don‘t List Table of Contents

The left half of the page of the AppleShare IP Help file from the 6.2 disc is blank.
This article has been archived and is no longer updated by Apple.
The AppleShare IP Help Files are designed to be run from the System Folder of your AppleShare server. They are installed there when you install AppleShare IP, and they are also present on the disc in the form of a disk image. If you attempt to access the files on this image, the Table of Contents frame is missing.

To see the full content of the files, access the copies that are installed in the Help folder of your System Folder. They can be easily accessed throuh an alias in the AppleShare IP 6.2 folder, or from the Help menu within AppleShare Web and File Admin.
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Mac OS X Server 1.x: Dual Startup Loses Monitor Preferences

When starting up your computer running Mac OS 8.6, and then restart using Mac OS X Server 1.x, the monitor comes up in 640 x 480 resolution.

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When the computer is started up using Mac OS 8.6 and then restarted using Mac OS X Server 1.x, the monitor preferences are lost. The administrator (root) must log in and reset the preferences using the Monitor preferences from the Apple Menu, or the Preferences application. The only workaround for this issue is to use the MacOS.app instead of dual startup.

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Differences Between Rage Pro and Rage Pro Turbo Chipset

This article describes the differences between the ATI Rage Pro graphics chipset and the ATI Rage Pro Turbo graphics chipset used in Macintosh computers.

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Both are equal in functionality and performance. There are a few very minor differences between the two chips but they affect only those computers that include support for the AGP (Accelerated Graphics Port) architecture. Since the Macintosh computers in which these chips were included do not support the AGP architecture, they are not affected by these minor changes.

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Programmer‘s Aid #1: Applesoft and the Programmer‘s Aid

The Programmer's Aid #1 diskette uses some of the same addresses as the Applesoft ROMS, making it impossible to use the diskette from Applesoft.
This article has been archived and is no longer updated by Apple.
The only way to have access to the memory test is to enter Integer BASIC before going into the monitor.

The sequence of commands is:

Int
Call -155
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Mac OS X Server: Macintosh Manager Table of Limitations

This article provides an overview of the limits of Macintosh Manager. The information summarized here, can also be found in the Macinstosh Manager Help files.

This article has been archived and is no longer updated by Apple.

Item	Limit
User name	31 characters
User password	31 characters
User comment	63 characters
Maximum number of users	8000
Maximum number of group	400
Maximum Users per group	1000
Maximum groups per user	42
Maximum report log entries	999 999
Maximum auto mount server volumes	10
Maximum approved desktop printers	10
Number of special folders per workgroup	1

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Mac OS X Server 1.x: Installation on ATA/IDE Slave Drives

Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Mac OS X Server cannot be run from, nor installed upon, any ATA/IDE Slave device. Attempts to install Mac OS X Server on, or run it from, a slave ATA/IDE device will fail, or return error messages.

1. When I open the Mac OS X Server installer and select my hard disk target partition for installation, it looks like everything works, but when it finishes, I get an error message that reads something like:

> Mac OS X Server Installer had problems setting startup to the Mac OS X Server CD
>
> [Sorry] button (no cancel or OK)

If I click Sorry, I get a new dialog with a restart button, but the computer starts up back to Mac OS. What could be wrong?

2. After running the Mac OS X Server installer, the system failed to restart from the Mac OS X Server UFS partition of the installation disc. It came up in Mac OS instead. When I open the System Disk control panel (an application provided on the Mac OS X Server installation disc), I don't see the disc among the choices of partitions. I see only "Power User - NVRAM" and the other Mac OS and Mac OS Extended format partitions on my hard drive(s). The disc is available, and the Mac OS partition on it shows up on the desktop. What could be wrong?
This article has been archived and is no longer updated by Apple.
ATA/IDE drives must be configured (usually with a jumper) as IDE Master devices to start up with Mac OS X Server. Thus, the target partition for an installation must be on an IDE Master device, and so must the Mac OS X Server partition of the Installer disc, so that the installer can properly configure Open Firmware to recognize that partition as the startup partition.

The System Disk control panel prevents installation on slave devices by displaying only partitions that reside on ATA/IDE Master drives (or any SCSI volume).

The error message about being unable to configure the Mac OS X Server partition of your disc as the startup device that you received is one of the few hints as to the nature of the difficulty. Because Mac OS X Server cannot start up from an ATA/IDE Slave device, the error is encountered as the installer attempts to save an incompatible configuration.

Typically, only users who have added slave devices, or otherwise altered their IDE configuration will encounter this sort of difficulty.

Standard factory and almost all build-to-order configurations of Power Macintosh G3 (both Blue and White and Platinum) computers will accept installation without complaint. Platinum Power Macintosh G3 computers came in several configurations: all SCSI, SCSI drive and IDE CD, and both IDE. The Blue and White G3 computers have IDE CD and hard disk drives, both masters, but on separate IDE channels, server configurations and some BTO workstation systems may have factory-equipped SCSI cards and SCSI hard disks.

Notes:

1. Only Apple factory-shipped SCSI cards are compatible with Mac OS X Server at this time. Additional SCSI support for versions of SCSI cards other than those shipped in preconfigured systems by Apple will not accept installation of Mac OS X Server, and will not be available from within the Mac OS X Server environment, until the manufacturers of those cards release Mac OS X Server-compatible drivers. The Apple OEM versions of these SCSI cards are NOT identical to those offered by the original manufacturers, and Apple's drivers are not interoperable with non-Apple versions of these cards.
2. Once the Installer has been run on the target partition, the target partition will no longer appear in the System Disk control panel application window, as it has been made an intermediate volume type. Completing the installation successfully will change it to a UFS partition, at which point it again becomes available from within the System Disk control panel application.

Published Date: Feb 18, 2012

Mac OS X Server 1.x: Can‘t Change File Name Case on Mac OS Extendend Format Volume

I am trying to change the name of a file so that the capitalization is different. However, when I try to change "document" to "Document", the Workspace Manager gives me the error "Name already in use: document."
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001. This is not an issue in Mac OS X Server 10.0.3 and later.

This issue affects files and folders on Mac OS Extended format volumes (HFS Plus). It does not affect UFS format volumes.

To work around this issue, give the file an intermediate name.

For example, to change a filename 'foo' to 'Foo' do the following:

foo -> bar -> Foo
Published Date: Feb 18, 2012

MacX 2.0: Extensions Required by MacX 2.0.4 X11 Display Server

MacX 2.0 requires several extensions, included with the software disc. These are:

- XIE.shl: provides support for certain X11 graphics standards (XIE)
- NetManage Winsock Lib: provides mapping to Mac OS TCP/IP APIs
- PacerFTP: provides support for FTP file transfers from within MacX

This article has been archived and is no longer updated by Apple.
The most common issues arise when MacX is drag-copied, and one or all of these extensions is overlooked. MacX should be installed from the original media, or care should be taken otherwise to ensure that all three of these extensions are installed in the active System Folder before MacX is used.
Published Date: Feb 18, 2012

Macintosh Portable Data Modem 2400: Dialing Without Dial Tone

We have had reports that the Macintosh Portable Data Modem 2400 cannot find a dial tone when plugged into an internal switchboard. The Hayes commands to do this, although accepted by the modem, seem to have no effect.

This article has been archived and is no longer updated by Apple.
Setting the active result codes with the X command tells the modem to:
- dial after a delay set by modem register S6, and
- not wait for a dial tone.

Use the following commands. You may or may not need to set register S6, depending on the phone system in use. The text in parentheses is comment only, and not part of the commands.

ATX3 (OK, CONNECT, RING, NO CARRIER, ERROR, CONNECT 1200 & 2400, BUSY)
ATS6=3 (Wait 3 seconds. Default is 2, so this probably isn't necessary.)

Published Date: Feb 18, 2012

Mac OS: Limit of 16 Locations In Location Manager

How many locations can I create with the Mac OS Location Manager?
This article has been archived and is no longer updated by Apple.
Currently Location Manager allows a maximum of 16 locations.
Published Date: Feb 18, 2012

QuickTime 4: Where is QuickTime TV?

I'm looking for some of the channels of QuickTime TV. Where can I find them?
This article has been archived and is no longer updated by Apple.
You can find live streaming channels at the QuickTime web site at: http://www.apple.com/quicktime/showcase/live/.

At this web site, you can play the channels that are available, and add channels to the QuickTime Player favorites drawer.
Published Date: Feb 18, 2012

iBook: Video Memory Not Upgradeable

How much VRAM is in iBook and is it expandable?

This article has been archived and is no longer updated by Apple.

iBook uses the ATI RAGE Mobility video controller for 2D and 3D graphics acceleration. The chip comes standard with 4 megabytes of video memory. Because the video memory is embedded in the ATI RAGE Mobility chip, it cannot be upgraded. However, 4 megabytes of SDRAM is sufficient for supporting millions of colors on the internal iBook display.

Published Date: Feb 18, 2012

Apple IIGS: Disabling the Control Panel

How can I disable the Control Panel on the Apple IIGS?

This article has been archived and is no longer updated by Apple.
The following is Electronic Learning Systems' description of Menu Master, a product that provides a way to disable the Apple IIGS Control Panel. For further information on ELS, search the Technical Information Library on "ELS".

"Menu Master is a simple menu system for the Apple II. It allows creation of customized menus and sub-menus to launch all ProDOS, GS/OS, and DOS 3.3 applications. Menu Master provides automatic pathfinding, simplifying the need to understand or manually set ProDOS paths. Menu Master has password protection, is mouse-compatible, and displays the time and date from any ProDOS clock. A utility feature enables or disables the Apple IIGS Control Panel.

"DOS 3.3 programs can now be launched and returned from, within the ProDOS operating system. DOS 3.3 software developers now have the ability to run DOS 3.3 programs on AppleShare or any ProDOS-specific environment.

"Any Apple II with 128K of memory and an 80-column display can now organize, launch and return from ProDOS, GS/OS, and DOS 3.3 applications with Menu Master. Apple IIc Plus systems can have 3.5-inch diskettes created with DOS 3.3 programs that will run on their computers.

"The network version of Menu Master is compatible with all Apple II networks including AppleShare, Corvus, ELAN, VELAN, and DIGICARD. Menu Master provides all the features of Apple's Aristotle program when used on AppleShare, but requires no memory expansion and can launch DOS 3.3 applications."

Published Date: Feb 18, 2012

iBook: Bundled Software Description

This document links to a list of applications and games bundled with the iBook computer.
This article has been archived and is no longer updated by Apple.
The iBook computer comes with bundled software. Most applications are preinstalled. Some applications require the use of an included disc. iBook also includes electronic documentation for the software. Backup software is provided on CD-ROM.

The current iBook software bundle is available from the iBook Web site.

North America

- http://www.apple.com/ibook/software.html

United Kingdom

- http://www.apple.com/uk/ibook/software.html

Published Date: Feb 18, 2012

Mac OS 8.5: Installing on a Disk Larger Than 21 Gigabytes

I've noticed that I cannot install Mac OS 8.5 and other software using an Apple Installer (such as AppleShare IP 6.1) on a volume larger than 21 Gigabytes.

This article has been archived and is no longer updated by Apple.

The installer version accompanying Mac OS 8.5 and AppleShare IP 6.1 does not properly deal with volumes larger than 21 Gigabytes. The version of the installer application that accompanies Mac OS 8.6 corrects this limitation. If the newer version of the installer is not available, partitioning the drive so that a smaller than 21 Gigabyte segment is available will allow the older installer to function.

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TA44368_Personal_LaserWriter_Multiple_Port_Switching__(TIL06045).pdf

Personal LaserWriter: Multiple Port Switching (11/94)

Is it possible for a Personal LaserWriter to switch printing sessions between the serial port and the LocalTalk connection without the user having to use the hard switch? The customer wants one printer that will work in both environments and is "smart" enough to spool documents from one side while printing on the other.

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter NT was not designed with the necessary intelligence to handle print jobs from both ports simultaneously. This would require an internal spooler that could queue print jobs from either port. It would probably also need to handle switching between PostScript and different emulations on the fly for this to be useful. You have two possible solutions: an external switching device or a different printer.

One such external device is a third-party product called BridgePort, by Extended Systems Inc. BridgePort lets any PostScript printer (including all of Apple's) accept jobs from a serial, parallel, or LocalTalk port. This external device automatically switches input to either a serial or parallel output to the PostScript printer. It is limited to accepting PostScript jobs only; it can't switch between HP and PostScript.

The LaserWriter Pro printers from Apple are capable of accepting print jobs from different ports without any additional hardware or software switching.

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Mac OS X Server: Why Some Groups Don‘t Appear in the Attributes Inspector

The Attributes Inspector (opened by selecting a file or folder and pressing Command 1) only list a small subset of groups in the Groups pop-up menu.

This article has been archived and is no longer updated by Apple.

The groups displayed in the Groups pop-up menu of the Attributes Inspector are determined by the group membership of the current user. This is also true for root. In order to change the group of a file or directory that does not appear in the pop-up menu, type the chgrp command in a Terminal window.

Published Date: Feb 18, 2012

iBook: Secure By Running Cable Through Handle

This article explains how to secure an iBook computer by running a security cable through its handle.
This article has been archived and is no longer updated by Apple.
iBook and iBook (FireWire) computers do not have a security slot.

To secure an iBook computer, in a classroom, for example:

1. Run a security cable through the iBook computer's handle. Almost any security cable system that works with an iMac computer will work with an iBook computer.
2. Secure the security cable to a fixed object or surface.

Note: The iBook (Dual USB), iBook (Late 2001), and iBook (14.1 LCD) computers all have a security slot.

Published Date: Feb 18, 2012

Mac OS X Server: What is System Disk 2.3.1 For?

System Disk 2.3.1 was posted to ftp://ftp.apple.com/developer/macosxserver/utilities/SystemDisk2.3.1.smi.bin.

What is new in System Disk 2.3.1, and what can it be used for?
This article has been archived and is no longer updated by Apple.
System Disk 2.3.1 supports device 1 (slave) IDE/ATA devices. However, since the installer for Mac OS X Server will use the System Disk application on the installation disc, there is no way to install Mac OS X Server directly onto a slave IDE/ATA device. This version of System Disk is not needed for Mac OS X Server1.0-2 or earlier.
Published Date: Feb 18, 2012

Mac OS 9: Multiple Users - Repeated Save/Cancel Dialogs During Logout

I have unsaved changes to a document when an idle logout is activated. A dialog appears asking me if I wish to save changes before closing. When I click Cancel in this dialog, the same dialog reappears. Clicking Cancel will not cancel out of the logout.
This article has been archived and is no longer updated by Apple.
This same sequence can also happen when a user logs out normally with unsaved changes. Once a logout is initiated, canceling from a save request cannot stop it.

You are given an opportunity to save changes. If you hit Cancel, the Multiple Users environment will continue to keep quitting the application. In effect, a Cancel operation is meaningless. The only options that are meaningful are either Save or Don't Save.
Published Date: Feb 18, 2012

Mac OS 9: Multiple Users - Panels Users Cannot Create Desktop Printers

When I try to create a Desktop Printer from the Chooser, everything appears to work as expected, but the new printer is never available. How do I get this to work in Mac OS multiple users panels environment?
This article has been archived and is no longer updated by Apple.
Panels users can't create Desktop Printers because they can only be created using the Finder. Using the computer owner account, you can make printers available to all users.

Printers that are created under a limited Finder user account are available only to that user.
Published Date: Feb 18, 2012

Mac OS 9: Multiple Users - Non-Admin Users Can Create Alert Sounds In System File

New alert sounds are being added to the System, even though I only have panels and limited users defined. Is this a security hole in Multiple Users?

This article has been archived and is no longer updated by Apple.

Even though Limited and Panels user accounts are prevented from modifying the System file directly, those users can use SimpleSound to add alert sounds to the System file of System Folder. This is the nature of the way SimpleSound works. If you wish to limit Non-Admin users from adding alert sounds, then you should deny users access to SimpleSound.

Sounds recorded with the SimpleSound application will not be accessible to users in the Limited and Panels environments. These sounds are stored in the System file, which Limited and Panels users are not allowed to open.

These new alert sounds will appear in the Sound Control Panel and may be selected as alert sounds by Limited and Panels users.

Published Date: Feb 18, 2012

Apple System Profiler: Reports ‘M4848‘ Device Connected

When Apple System Profiler scans my computer's Universal Serial Bus, it reports that a "M4848" device is connected. I don't have a device named "M4848" connected.

This article has been archived and is no longer updated by Apple.

The M4848 device is an Apple USB Mouse. Apple System Profiler sometimes identifies a mouse by its Apple part number instead of its name. Not all Apple mouse devices are identified this way. Some are reported as "Apple USB Mouse." This is nothing to worry about.

Published Date: Feb 18, 2012

AppleShare File Server: How To Set Unattended Restart

A customer needs to perform daily unattended restart of several Macintosh systems that are used customer as communications servers.

This article has been archived and is no longer updated by Apple.
CE Software's QuicKeys and QuickTimer CDEVs should provide the solution.

QuickTimer can run a QuicKeys sequence called "Daily" at a specified time every day, or run a sequence called "Periodic" at regular intervals. From Finder or MultiFinder, define a QuicKeys sequence that does a Restart, and name it "Daily". The sequence needs a keyboard equivalent to be called by QuickTimer. Set the time you want the "Daily" sequence to be run, and restart the computer. The system should restart every day at the time specified in QuickTimer.

If the Macintosh Systems are AppleShare File Servers

In this case, the setup is a little more complicated. There are six steps: patch the AppleShare file server software (please note that this patch is an unsupported solution), define four QuicKeys sequences, and use the Control Panel to choose a time.

Note: It's not necessary to patch AppleShare if the file server is a Macintosh IIcx or Macintosh IIci, because you can lock the power switch in the ON position on these systems. With the power switch locked in the ON position, the Macintosh IIcx and Macintosh IIci automatically restart after the Shut Down command is issued. This is not possible with Macintosh II and Macintosh IIx, because their power switches don't lock in the ON position.

Step A

When Shut Down... is selected from the Server menu, the AppleShare file server closes all open files, writes information in the disk cache to disk, and shuts down the system. You need to patch the AppleShare file server software to just Restart instead of Shut Down.

The Shutdown Manager procedure is called ShutDwnPower, and it turns the computer off. If the Macintosh must be turned off manually (for example, a Macintosh SE), the Shutdown alert is presented to the user.

Disassembled, ShutDwnPower looks like this:

MOVE.W #1,-(SP) ;1 is the selector for the "ShutDwnPower" proc
_Shutdown

and in hexadecimal:

3F3C 0001 A895.

You need to have AppleShare call ShutDwnStart (the Shutdown Manager) instead of ShutDwnPower. ShutDwnStart restarts the system instead of turning it off.

Disassembled, ShutDwnStart looks like this:

MOVE.W #2,-(SP) ;2 is the selector for the "ShutDwnStart" proc
_Shutdown

and in hexadecimal:

3F3C 0002 A895.

Here's how to use ResEdit to make this change:
1) In ResEdit, open the application AppleShare File Srv (in the "Server Folder").
2) Open the CODE resources, find the 2 "Main" ID = 1 resource, and open it.
3) Select Find Offset... from ResEdit's Find menu.
4) Enter an offset of "512D" (a hexadecimal number).
5) "01" is highlighted in the CODE "Main" ID = 1 window. Type "02".
6) Select Save from ResEdit's File menu, and quit.

Here's how to apply the same patch using a file editor such as FEdit:
1) Use the file editor to open the application named AppleShare File Srv.
2) Search for the hexadecimal string "3F3C 0001 A895" (this occurs only once).
3) Replace the string with "3F3C 0002 A895".
4) Save the changes.

Now, the AppleShare file server will restart instead of shutting down when Shut Down... is selected from the Server menu.

(For more information on the Shutdown Manager, see pages 585 to 590 of Inside Macintosh Volume V.)

Step B

Define a QuicKeys sequence that issues a Shut Down command:
1) With the AppleShare file server running, select QuicKeys from the Control Panel.
2) From the QuicKeys CDEV's Define menu, select Menu/DA....
3) From AppleShare's Server menu, select Shut Down.
4) Give this QuicKeys sequence a unique keyboard equivalent, perhaps Shift-Control-A.

Step C

Define a QuicKeys sequence that enters the "Number of minutes until shutdown" into the time delay dialog:
1) From the QuicKeys CDEV's Define menu, select Text....
2) Type the number of minutes you want the AppleShare file server to delay before shutting down.
3) Give this QuicKeys sequence a unique keyboard equivalent, such as Shift-Control-B.

Step D

Define a QuicKeys sequence that selects the OK button in the dialog:
1) From the QuicKeys CDEV's Define menu, select Buttons...
2) When a dialog asks you to "Enter button to look for", type "OK" and click on the OK button.
3) Give this QuicKeys sequence a unique keyboard equivalent, such as Shift-Control-C.

Step E

Define a QuicKeys sequence that links all the above sequences:
1) From the QuicKeys CDEV's Define menu, select Sequences...
2) A dialog appears; on its right side are the three QuicKeys you already defined. On the left side is the default name "List". Change that name to "Daily".
3) Double-click the QuicKeys on the right side of the dialog in this order:
- Shift-Control-A Shut Down...
- Shift-Control-B '5'
- Shift-Control-C OK
4) Click the "OK" button.
5) Give the "Daily" sequence a keyboard equivalent.

6) In the Control Panel, select the QuickTimer CDEV.
7) Click the word "Daily" so that the check box is selected, and set the time.

Step F
---
1) From the Control Panel, Select the QuickTimer CDEV.
2) Click on the word "Daily", so that the check box is selected.
3) Set the time to, say, 4:30 am.

The AppleShare file server will now shut down and restart every day at the defined time.

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TA44378_QuickFile_III_Problem_in_dealing_with_long_lists_of_numbers_(TIL00605).pdf

QuickFile III: Problem in dealing with long lists of numbers

This article has been archived and is no longer updated by Apple.

When a QuickFile file contains only one field, the Arrange command may stop and display a Pascal run-time error, or just not sort the data.

Published Date: Feb 18, 2012

Videodisc Control Stacks for CLV and CAV Formats

Does the APDA Videodisc Toolkit, which allows you to control a videodisc player from HyperCard, work with both CAV and CLV discs?

This article has been archived and is no longer updated by Apple.

The command set of the videodisc player is the same for both CAV and CLV discs. This means that the Videodisc Toolkit will work with both type of discs.

However, there are differences in the discs that will not allow certain commands to provide useful results. Because the Videodisc Toolkit documentation states that the Toolkit does not specifically address CLV control, determining the controls that actually work with CLV discs is a matter of exploring. (Often, the videodisc player determines the available functions when using CLV discs. The player knows whether a CLV or CAV disc is loaded. Some functions are disabled by the player when CLV discs are in the tray.

Commands related to "frameMode" -- that is, "videoFrame()" -- do not work. Using "chapterMode" instead allows access to longer sections of video. The "playVideo" and "searchVideo" commands use chapter numbers rather than frame numbers when in "chapterMode".

Still-frame with CAV discs provides a crisp and clear still image. Attempting to freeze a frame from a CLV disc will not produce a stable image. This is a limitation inherent in the design and layout of CLV discs, not a limitation of the Videodisc Toolkit. CAV discs place one video frame per revolution of the disc; CLV discs place any number of frames within one revolution. One frame per revolution allows the disc to continue to spin with the laser reading head stationary, thus providing the same frame once per revolution. CAV discs have differing numbers of frames from the outside edge of the disc to the inside of the disc. Holding the

laser reading head stationary will not provide a stable image, because there is a variable number of frames/fields passing under the head in one revolution.

The Voyager Company markets "The Voyager VideoStack", which supports time mode with the CLV discs. This allows a stack to tell the player to go, for example, to "19 minutes 12 seconds" and begin playing until it reaches "21 minutes 32 seconds." This is not frame accurate, but in many situations provides sufficiently accurate control.

Voyager also provides "VideoStack 8000 Extension", which is for the Pioneer 8000 player. These extensions support special 8000 model features, such as true CLV still-frame and CLV frame search, digital sound control, and still-frame with audio. CLV still-frame is achieved through the use of the Pioneer 8000 digital frame buffer. The Pioneer 8000 can search to a particular frame and grab a frame of video into its digital buffer. This is different from the CAV method of still-frame.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:

22 Dec 1995 - Reviewed for technical accuracy, updated format.

Support Information Services

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Mac OS 9: What‘s New - Navigation Services

Navigation Services dialog boxes are used to open, save and choose files in the Mac OS and programs. These were introduced with Mac OS 8.5 and replaced the older-style "Standard File" dialog boxes.
This article has been archived and is no longer updated by Apple.
The new features of Navigation Services dialog boxes in Mac OS 9 are:

- FTP Open and Save - You can now open files from and Save files to servers that use the File Transfer protocol (FTP). FTP servers communicate using the TCP/IP protocol. Unless the FTP server uses anonymous (guest) logons, you will need a valid name and password.
- Network Services Location (NSL) Browsing - You can browse the network services that are offered by NSL.

Published Date: Feb 18, 2012

Mac OS 9: File Security - Items That Cannot Be Encrypted

What kinds of things can you not encrypt using Apple File Security?
This article has been archived and is no longer updated by Apple.
You cannot encrypt the following items:

- Open files - Open files cannot be encrypted. Quit the application that has opened the file.
- Folders - Only files can be encrypted, not folders.
- Disks or Discs - Only files can be encrypted, not disks or discs.
- The Trash Can
- Files that have already been encrypted

Published Date: Feb 18, 2012

Mac OS 9: FontSync Seems To Take Too Long

FontSync seems to take too long when I use it. Is that how it's supposed to work?

This article has been archived and is no longer updated by Apple.

FontSync doesn't have a visible user interface to tell you where it's at in its progress. Although you can't tell how long it may take to check fonts, it is working.

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Mac OS X Server 1.x: Managing NFS Exports

The icon for adding an NFS export directory is dimmed in the NetworkManager's File Sharing application. How can I manage NFS exports?
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Here are two ways to manually manage NFS exports without running NetworkManager. Both involve directly storing values into the /exports directory of your local NetInfo database.

Managing NFS Exports With NetInfoManager.app

1. Start the NetInfoManager.app application. It will open up the local NetInfo database; you can verify this by looking at the title of the window--it should start with "local@ yourhostname..."
2. In the directory browser area, click on the exports directory. This should display the current exports, if any, in the rightmost column.
3. To add a new export, select the "New Subdirectory" command under the Directory menu. It will create a directory named "`new_directory`". You may be prompted for root password here.
4. Rename the "`new_directory`" to the path of the UFS directory you want to export. To do this, double-click on the "Value(s)" field corresponding to the "name" property, and type in the new path.
5. Add a "clients" property. To do this, select an existing property and select the "New Property" command under the Directory menu. Give it a name of "clients", and give it a name of "clients", and give it a list of values of client machine you want to export the directory to by selecting the "New value" from the Directory menu.
6. Add an "opts" property. For details on the values, see the man page for exports(5).
7. Do a save from NetinfoManager.app.
8. Restart the server. (Alternatively, if you feel lucky, use Terminal.app to start 'mountd' if it's not running, or send it a SIGHUP if it is by typing the following command: `kill -HUP `cat /var/run/mountd.pid`

Managing NFS Exports using nidump/niload

To manually add a new exported directory, you can use the 'nidump' and 'niload' command line utilities as follows:

1. Start the Terminal application; all this will be done as root.

2. Dump the existing exports, if any, to a file. Start the Terminal application. Type the following commands at the prompt:

```
su root
nidump -r /exports . > ~/exportfile
```

Note that the '.' indicates the current domain.

This places a list of all the existing exports in a file, using a property-list notation.

3. Edit the file to add new exports or modify existing exports.

```
cp ~/exportfile ~/exportfile.bkup
open ~/exportfile
```

At this point, TextEdit should launch, and you can add or modify exports, and save. A typical file with two exports might look like this:

```
{
 "name" = ( "exports" );
 CHILDREN = (
   {
     "clients" = ( "17.221.1.2", "hosta", "hostb" );
     "name" = ( "/exportdir1" );
     "opts" = ( "maproot=root" );
   },
   {
     "clients" = ( "17.221.1.2", "hosta", "hostb" );
     "name" = ( "/exportdir2" );
     "opts" = ( "ro", "maproot=root" );
   }
 )
}
```

4. Load the modified exports back into Netinfo.

```
niload -r /exports . < ~/exportfile
```

5. If something goes drastically wrong, restore the original exports:

```
niload -r /exports . < ~/exportfile.bkup
```

6. Restart the server. (Alternatively, if you feel lucky, use Terminal.app to start 'mountd' if it's not running, or send it a SIGHUP if it is by typing the following command:

```
kill -HUP `cat /var/run/mountd.pid
```

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ALAC (Any Language, Any Computer) Product Information

Is there a programming environment that allows programmers to use one language to write a host application that controls systems as diverse as Macintosh, IBM mainframes, DEC VAX, Cray, and IBM PCs?

This article has been archived and is no longer updated by Apple.
United Data Corporation has announced a product that facilitates this process: ALAC (Any Language, Any Computer).

ALAC is a MacWorkStation-compliant MS-DOS application server that runs under MS Windows. A PC running ALAC responds to the same protocol messages as a Macintosh running MacWorkStation. This lets you build applications while your users remain on familiar hardware. You can use COBOL, Fortran, C, BASIC, or APL. Any computer that can run Windows can also run ALAC.

ALAC provides access to a graphical user interface. Programmers not familiar with Windows and the Macintosh can build applications for these environments, with full access to and control of dialog boxes, menus, and windows.

Single-user versions of ALAC are available through United Data or through APDA. Site licenses are available through United Data. For further information on United Data Corporation or APDA, search the Tech Info Library for the name.

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iMovie: About Shelf Spaces Available With Different Resolutions

This document describes the shelf spaces available at different monitor resolutions.
This article has been archived and is no longer updated by Apple.
iMovie 1 and 2 were designed to work best in 1024- by 768-pixel resolution, in thousands or millions of colors.

iMovie 3 requires a 1024- by 768-pixel resolution, or higher, to open.

Most consumer Macintosh computers offer four monitor resolutions: 640 by 480, 800 by 600, 832 by 624 and 1024 by 768. iMovie will not open with the resolution set to 640 by 480 pixels.

When using iMovie 1 or 2 in 800 by 600 and 832 by 624 resolutions, the Shelf has nine Shelf Spaces. In 1024 by 768 resolution there are 12 Shelf Spaces.

When capturing clips from your camera onto the Shelf, iMovie will automatically create a separate clip and put it into a new Shelf Space every time a scene break is detected. In earlier versions of iMovie, these Shelf Spaces may fill up quickly depending on the number of times you stopped and started recording when you initially shot your source footage. In iMovie 2 and later, Shelf space will expand dynamically, allowing you to scroll through the shelf space as it fills. To avoid filling up all Shelf Space in iMovie 1, which disables further capturing until space is cleared, there are a few options:

- Open the application Preferences and click the Import Tab. Here you can select the destination of the imported clips. By selecting to import clips directly to the timeline, you can avoid filling the Shelf with newly captured clips.
- Deselect the checkbox "Automatically start new clip at scene break."

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iMovie 1.0: Speed of Movie Seems to Slow Down During Cross Dissolves

If you use a cross dissolve in iMovie 1.0, you may notice that the motion seems to slow down during the dissolve, then return to normal speed when the dissolve is complete.
This article has been archived and is no longer updated by Apple.

Symptom

When you playback a movie with cross dissolves, the motion seems to slow down during the dissolve, then returns to normal speed when the dissolve is complete.

Solution

Download and install iMovie 1.0.2 update, which is available from http://download.info.apple.com/ .

In iMovie 1.0, when you select Cross Dissolve from the Transition Palette, there will be a slight decrease in speed for the footage to which the cross-dissolve is applied. With the time slider in the Transition Palette, you can determine how long the dissolve will be.

The Cross Dissolve transition in iMovie 1.0 was designed to maintain the overall length of the sequence, so that transitions applied at the beginning of a movie don't affect any synchronization of audio and video you may have done at other points in the timeline after the transition.

Users have requested the ability to have the option of using both slow- and normal-speed Cross Dissolves. This feature is incorporated into iMovie 1.0.1 and later.
Published Date: Feb 18, 2012

Mac OS 9: International Internet Access

This article provides information about finding an Internet Service Provider using Mac OS 9.

This article has been archived and is no longer updated by Apple.
If you don't already have an account with an Internet service provider, you can obtain one using the Internet Setup Assistant, or you can choose one from the list in the International Internet Access document in the Internet Extras folder on the Mac OS 9 CD.

Published Date: Feb 18, 2012

TA44389_LaserWriter_II_Envelope_Tray_Dimensions_(TIL06057).pdf

LaserWriter II: Envelope Tray Dimensions

What are the smallest and largest envelope sizes that the LaserWriter II's envelope tray can handle?

This article has been archived and is no longer updated by Apple.

The LaserWriter II's U.S. envelope tray handles envelopes measuring:
- as small as 87mm x 177mm, and
- as large as 189mm x 268mm.

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HyperCard and Multi-User Applications on Servers

Some customers have reported problems using HyperCard to open multi-user applications that are on a server. If they launch the application from a HyperCard script, they don't have multi-user access.

If they launch the application from the Finder, then use the HyperCard script to open a session with the application, they do have multi-user access. And if they launch the application entirely without HyperCard, they have multi-user access.

This article has been archived and is no longer updated by Apple.
When you launch an application using HyperCard's Open command, it opens the application with privileges that lock the file. This prevents any other application, including the Finder, from launching the same application. HyperCard's Open command, therefore, can not multi-launch a single application.

There are ways to work around this. As mentioned, if you initially launch the application from the Finder, additional launches of the application from HyperCard do work, because it's the first application (in this case, the Finder) rather than HyperCard that sets the privileges of the open file.

You can also write an XCMD that does what the Open command does, except that you set the privileges for multilaunch in the XCMD.

Another option is to launch multi-user applications locally, rather than from the server. We've found that multi-user applications work faster when each Macintosh has a local copy of the application and accesses only the data file on the server. If the application is kept at the root level of each Macintosh, a HyperCard stack could launch the application locally, and the application could get the data from the server.

If you don't want to have the application at the root level, you can:
- program each HyperCard stack with the access path to the application; or
- have the user tell HyperCard where the application is on the local disk (via the dialog that HyperCard shows if it doesn't know where an application is).

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Mac OS 9: AppleShare 4.0.2 Drop Boxes

This article provides important information about Mac OS 9 and AppleShare 4.0.2 drop box.
This article has been archived and is no longer updated by Apple.
With Mac OS 9, you cannot copy files to drop boxes located on AppleShare 4.0.2 servers. This issue does not occur with newer versions of AppleShare.
Published Date: Feb 18, 2012

Mac OS 9: Apple LaserWriter 8f Printer Driver Not Compatible

As reported in Mac OS 9 Late Breaking News, the Apple LaserWriter 8f printer driver is not compatible with Mac OS 9. If you have this driver installed, remove it and use the LaserWriter 8 driver instead.
This article has been archived and is no longer updated by Apple.
PostScript Fax is an option for the LaserWriter Select 360, the LaserWriter 16/600 PS, and the LaserWriter Pro 810. Apple discontinued PostScript Fax printer driver development many years ago and the last PostScript Fax driver created was LaserWriter 8f (v8.2.3). Though these printers can continue to receive faxes and you can print to these printers, sending faxes with old drivers is not supported with Mac OS 9.

LaserWriter 8, version 8.7 supports PostScript output filters, which are code fragments that live in the data fork of files that reside within the "Printing Plug-ins" folder contained in the Extensions folder. These code fragments can intercept the PostScript output data stream generated by LaserWriter 8 and add, remove, or modify the data before it is transmitted to the output device. Such a filter could add PostScript fax instructions to a "print job," and should such a third party PostScript fax output filter become known to Apple, the information will be posted here.

LaserWriter 8.3.4 has limited PostScript fax capabilities, and though no compatibility testing was performed with it and Mac OS 9, Apple was able to send faxes successfully with this driver. Again this was not tested, nor is this solution supported. Should you wish to experiment with this potential solution, the driver may be downloaded from Apple Software Updates. Place the driver in the Extensions folder or drag it onto your System Folder, then select your printer using this driver via Chooser. Mac OS 9's printer PPD files may be used with this old driver. LaserWriter 8.3.4 requires you to enter your fax destination; LW 8.3.4 will remember the last phone number you faxed to, so if you wish to fax to a different destination you'll need to enter the new number. It has no support for the Fax Phone Book, LaserWriter Fax Log, or the Fax Printer Utility.

Important: After sending a 'fax' using the LW 8.3.4 driver, Apple strongly recommends you reselect and use the LaserWriter 8, version 8.7 to 'print' to these printers.
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Data Access Language: Problem Opening Rdb Databases

A customer had a problem with DAL that prevents Rdb/VMS databases from being opened in certain cases. When they issue the OPEN DATABASE command

OPEN RDB DATABASE 'mydisk:[mydir.mysubdir]my_database'

the database can't be opened.

This article has been archived and is no longer updated by Apple.
You always need to use the IN LOCATION or USE LOCATION statement to open databases that are not in the default directory. Although you might have been able to open databases by specifying the full path name with the database name in version 1.0, later versions (which support opening multiple databases simultaneously in Rdb) do not accept a full path name here.

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Mac OS 9: Requires AppleShare Client 3.8.5 Or Later

Mac OS 9.0 includes AppleShare Client 3.6.5 in the Utilities folder on the Mac OS 9.0 Install disc. I copied this version into my System Folder and now I have problems connecting to AppleShare servers.
This article has been archived and is no longer updated by Apple.
Mac OS 9 requires AppleShare Client 3.8.5 or later. This is the version of the AppleShare Client that is installed with Mac OS 9.0. Do not use earlier versions of the AppleShare Client with Mac OS 9.

AppleShare Client 3.6.5 is only provided on the Mac OS 9.0 Install disc for customers with an AppleShare Client version earlier than verson 3.6.5 who wish to perform a network install of Mac OS 9.0. Customers with a newer version of AppleShare Client should not replace it with AppleShare Client 3.6.5.
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QuickFile III: String overflow error

This article has been archived and is no longer updated by Apple.
When you try to save your file, QuickFile III prompts you for the date for the catalog. If you type in eight or more characters, which is more than QuickFile can convert to a valid date, the program stops with a String Overflow error and loses all the data you just typed in.

To avoid this error, verify that the date you typed in is correct before pressing RETURN. Examples of what QuickFile considers to be valid dates are listed on page 41 of the QuickFile Manual.
Published Date: Feb 18, 2012

AppleShare IP 6.3: Using AppleShare IP First Aid

This article provides troubleshooting information for AppleShare IP 6.3.
This article has been archived and is no longer updated by Apple.

Opening AppleShare IP First Aid

Before you can open AppleShare IP First Aid, you must restart the server computer with extensions turned off. Be sure that no one is connected to the server, or notify any connected users that they will be disconnected.

To open AppleShare IP First Aid:

1. Press the Shift key and choose Restart from the Special menu. The computer starts up with extensions turned off.
2. Open the AppleShare IP 6.3 folder on your server's hard disk.
3. Open the AppleShare IP First Aid folder.
4. Double-click the AppleShare IP First Aid icon.

Backing up AppleShare IP PDS and data files

PDS files are invisible files that store information about privileges, shared items, and other AppleShare IP information.

To back up AppleShare IP PDS and data files:

1. With AppleShare IP First Aid open, click Backup.
2. Choose the volume you want to back up.
3. Type a name for the backup file and click the Backup button.

The backup file is saved in the AppleShare IP 6.3 folder.

Verifying or reconstructing PDS files

To verify or reconstruct AppleShare IP PDS and data files:

1. With AppleShare IP First Aid open, click Verify PDS or Reconstruct PDS.
2. Select the volume that contains your AppleShare IP server software.
3. Click Choose.

The results appear in the AppleShare IP First Aid window.

Verifying or reconstructing Users & Groups data

To verify or reconstruct Users & Groups data:

1. With AppleShare IP First Aid open, click Verify UG or Reconstruct UG.
2. Select the Users & Groups Data File you want to verify or reconstruct.
3. Click Verify or Reconstruct.

The results appear in the AppleShare IP First Aid window.

For more information see the following article:

Article 30635: "**AppleShare: How Privileges are Stored.**"
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AppleShare IP 6.3: Setting Up The Filter List

This article explains how to set up a TCP filtering list for AppleShare IP 6.3.
This article has been archived and is no longer updated by Apple.
The default filter list blocks all access to your server. You can change the filter list by adding, changing, duplicating, or deleting filters.

Note: If you add or change a filter after turning on TCP filtering, it does not affect connections already established with the server. For example, if you deny all access to your Web site, computers already connected to your Web site are not disconnected.

To edit the filter list:

1. Open the Apple menu and choose AppleShare IP Admin, then choose TCP Filter Admin from the submenu.
2. Click the Add button, or select a filter and click the Edit, Duplicate, or Delete button. If you are deleting a filter, you're finished. Otherwise continue with step 3.
3. Select the type of access (Allow or Deny).
4. Select a port by typing the number in the Ports box or choosing it from the pop-up menu.
5. Type an IP address or range in the box, or click Find and enter a domain name.

If you click Find, the search returns one IP address in that domain. You can then use asterisks to define a range of addresses based on the sample address.

If an IP address search is taking a long time:
You may have entered an invalid domain name, or the network may be busy. Check the name and try again.
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AppleShare IP 6.3: Users Can‘t Search the Web Site With Sherlock

This article provides troubleshooting information for AppleShare IP 6.3.
This article has been archived and is no longer updated by Apple.

- Make sure you've created an index for the volume on which the Web folder is located.
- Check to be sure the Sherlock plug-in is in the Plug-Ins folder in your server's Web folder.
- Try fixing volume creation dates.
    1. Open AppleShare IP Advanced Setup (located in the Web & File Server folder in the AppleShare IP folder on your server.
    2. In the Server menu, choose Fix Volume Creation Dates.

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iMovie: Setting Resolution to 640 by 480 Forces Application to Quit

When you change the display resolution to 640 by 480, iMovie quits.
This article has been archived and is no longer updated by Apple.

Symptom

When you change the display resolution to 640 by 480, iMovie quits.

Figure 1 iMovie alert

Solution

To get back to your project:

1. Change the resolution back to 800 by 600 or higher.
2. Open iMovie again.

iMovie is designed to work at 800- by 600-pixel resolutions, or higher. It will not work at 640 by 480. While a movie is being edited iMovie will warn you not to select the 640 by 480 resolution. Changing the resolution to 640 by 480 automatically forces the application to quit. If any edits have not been saved, you will be offered the opportunity to save any changes.

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Mac OS 9: Installation Space Calculated For Standard Format Is Too Low

I could not install Mac OS 9 due to lack of disk space even though the Installer claimed there was more space available than it would need before it started.
This article has been archived and is no longer updated by Apple.
The space required for Mac OS 9 may be higher than the Installer indicates if the disk you're installing on is formatted as a Mac OS Standard format (HFS) volume. To reduce the chance of the installation not completing, you should free up an additional 25 megabytes of disk space.

If your disk or volume is larger than 1 gigabyte, you should consider backing up the files and programs stored on it, and reformatting it as a Mac OS Extended format disk or volume using the Drive Setup utility. After reformatting you can restore your files and programs from you back up. This will provide considerable additional free space for future use.
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AppleWorks 5: Palettes Are Gray in Mac OS 9

What does the AppleWorks 5.0 4 updater fix?
This article has been archived and is no longer updated by Apple.
In Mac OS 9, tear off palette windows, such as those you find in the paint and draw environments, had gray title bars--as if they were in the background--and no close box. See Figure 1. These windows could only be closed when associated documents were closed. The updater fixes this issue. See Figure 2.

Figure 1. A Fill Color palette window from AppleWorks 5.0.3 in Mac OS 9.

Figure 2. A Fill Color palette window from AppleWorks 5.0.4 in Mac OS 9.

For information on AppleWorks 5.0.4 Updater see article 60620: **AppleWorks 5.0.4 Document and Software**

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LaserWriter: Using Refilled Toner Cartridges

This article has been archived and is no longer updated by Apple.
Apple does not recommend the use of refilled toner cartridges because print quality may suffer as parts inside the toner cartridge wear out. Using refilled toner cartridges in your LaserWriter, LaserWriter Plus, LaserWriter II, or Personal LaserWriter printers may or may not cause damage. The impact on Apple printers is difficult to assess because it is impossible to predict the quality of refurbished cartridges.

The use of a refilled toner cartridge in your printer will not void a LaserWriter printer's limited warranty or an AppleCare contract. However, if printer failure is attributable to the use of a refilled toner cartridge, the damage resulting from this failure will not be covered under Apple's limited warranty or AppleCare contract.

The following is a reminder of which cartridges to use with your printer:
- The LaserWriter and LaserWriter Plus both use EP cartridges.
- The LaserWriter II uses EPS cartridges.
- The Personal LaserWriter uses EP-L cartridges.

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Mac OS 9: What‘s New - Notification Manager Alerts

The Notification Manager is a part of the system software that Apple and non-Apple programs use to notify users of some kinds of events. One way to notify users is by using an alert box. Mac OS 9 uses different alert boxes than previous versions of the Mac OS.
This article has been archived and is no longer updated by Apple.
Starting with Mac OS 9, Notification Manager alerts look and act a little differently than under previous versions of the Mac OS. The new alerts are modeless, so the computer keeps working whether or not you dismiss the dialog. Also, the alerts are smaller, rectangular and have a yellow background. The window has a close box and collapse bar instead of an OK button.

Figure 1, Mac OS 9 Notification Manager alert

Wherever you reposition the alert window, that's where it will show up again the next time you get an alert.

Multiple notification windows will not show up at the same time. You have to dismiss the first notification to get the next notification in line. For example, if you disconnect and then reconnect your AppleTalk connection, you will first get an alert that your connection was disconnected, then once you close that window, you'll get the subsequent notification that it is now available.

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iMovie: About Saving DV Video to European Cameras

Digital video (DV) cameras sold in the European Union may not allow you to save movies from your Mac to your camera.
This article has been archived and is no longer updated by Apple.
Due to European Union import restrictions the DV-in feature, or ability to save DV movies to a camera, is disabled on most consumer-level digital video cameras sold in Europe. This feature is only enabled on certain high-level consumer and professional camera models. When this feature is enabled on a camera, it will work fine with iMovie.

While iMovie does have the ability to save out to a digital video camera, it can only do so on camera models that allow this feature to work. It's important to remember that if you are not able to save DV videos to your camera it is a limitation of the camera and not the iMovie application.

You may want to contact the store where you bought your camera, or the camera's manufacturer to determine what steps you can take to record movies from iMovie to your camera.
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iMovie: SECAM DV Not Available

iMovie does not use the SECAM broadcasting standard.

This article has been archived and is no longer updated by Apple.

iMovie does not use the SECAM broadcasting standard. However, you may be able use the PAL standard, which should work with most modern video equipment that works with SECAM.

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Network Assistant 4.0: File Sharing Name Autopopulated by Network Assistant

When I opened my File Sharing control panel, I noticed that the computer already had an assigned name of 'PowerPC 750 128.0MB'. Other computers running Mac OS 9 on the network didn't do this.

This article has been archived and is no longer updated by Apple.
You have most likely installed the Network Assistant component as part of your Mac OS 9 installation on this particular computer. Naming the computer is a feature of the Network Assistant software.

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Mac OS 9: Audio CDs Always Play Through On Some Computers

I have two computers with Mac OS 9 installed. When playing Audio CDs on them, one plays through regardless of the setting in the Sound control panel. The other only plays through when "Internal CD" is selected as the input source in the Sound control panel. How do you fix this for them?
This article has been archived and is no longer updated by Apple.
This is expected behavior under Mac OS 9. Computers with SCSI CD-ROM drives and ATAPI drives (except ROM-in-RAM computers) play through only when "Internal CD" is selected as the sound input source. Computers with ROM-in-RAM and ATAPI CD ROM drives play through regardless of the sound input source selected in the Sound control panel.

ROM-in-RAM computers are iMac, iBook, PowerBook (Bronze Keyboard and later PowerBook models), Power Macintosh G3 (Blue & White model only), All Power Mac G4 computer models. These are also the computers that happen to have USB built-in.
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LaserWriter IINTX: How To Network a PS/2 and Macintosh Computers

You can connect multiple IBM PS/2 computers, Macintosh computers, and one Apple LaserWriter IINTX, so that all the computers are connected to the LaserWriter and using it simultaneously.

This article has been archived and is no longer updated by Apple.

DayStar Digital Solution

The best solution is to use a LocalTalk MicroChannel card. The MicroChannel systems can be networked together using a AppleTalk card for the MicroChannel bus PS/2s by DayStar Digital (the LT200MC MicroChannel LocalTalk card). The card lets MicroChannel PS/2s communicate with other AppleTalk system components, like the LaserWriter IINT/NTX. The card comes with software for PS/2s to connect to AppleTalk printers, like LaserWriters. TOPS is reported to work with the card, too. AppleShare PC is reported to be incompatible with the DayStar card. For more details, search the Tech Info Library under "Day Star".

3COM Solution

Another solution is to use the EtherLink MC PS/2 card from 3COM. This is a more complex solution, because it involves several components. This connects MicroChannel PS/2s to Ethernet. The PS/2s can print to a 3S200 server from 3COM and connect to a serially-connected LaserWriter II. The Macintoshes require an Ethernet interface card or Ethernet router to connect to the 3S200. 3COM servers do not support AppleTalk connections to LaserWriters and can only connect serially.

Kinetics Solution

If you can use a Kinetics FastPath with the EtherLink MC PS/2 product from 3COM (this depends on whether 3COM supports AFP), then the Macintoshes and the LaserWriter can be placed on LocalTalk cabling and be connected to the Ethernet PCs with the FastPath. This configuration does not need the Asynchronous LaserWriter driver for the Macintoshes.

PS/2 Notes

There are six PS/2 models 25, 30, 50, 60, 70, and 80. Each model can also be bought in a different configuration. The low-end models 25 and 30 retain a PC and/or AT bus architecture that works with the Apple LocalTalk PC card.

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Mac OS 9: Opening Additional Desktop Patterns In CD Extras Gives An Error Message

When I double click on the scrapbook file Additional Desktop Patterns in the CD Extras folder, I get a error message saying, "Sorry, there was a problem opening the Scrapbook file." How can I open this file?

This article has been archived and is no longer updated by Apple.

This issue occurs when Personal File Sharing is turned on. Either turn off File sharing, or drag the file from the disc to the hard disk and then it can be opened.

Published Date: Feb 18, 2012

Setup Assistant: European Settings Must Be Made Manually

I just bought an iMac DV and after the Setup Assistant finished registering me with Apple, my keyboard, and date and time settings are all set for the United States. Do I have to manually configure these settings?

This article has been archived and is no longer updated by Apple.

Yes. While the operating system on your computer may be in your language, some of the computers settings may need to be made manually. To set the proper keyboard, open the Keyboard control panel. To set the date and time to your preference, open the Date & Time control panel.

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Mac OS 9: Do Older Plug-ins Work With Sherlock 2?

I have some Sherlock plug-ins I've downloaded from the Internet. Will they work with Sherlock 2?

This article has been archived and is no longer updated by Apple.

Sherlock plug-ins will continue to work with Sherlock 2 in any "Searching" channel and will display the page name and server on which the page resides. However, since the "People", "News" and "Shopping" types of channels are new to Sherlock 2, new plug-ins will have to be written that correspond to the new column headings for these channel types.

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HyperCard: General Problems with XCMDs

Some XCMDs may cause system crashes or unusual problems to appear. These problems are usually results of poor programming.

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When running a new XCMD, check the result of the command. Try placing this statement into the script after executing the command:

"Put the result into the message"

Here are some possible problems and their solutions when the system locks up:

1) The memory management system is purging needed data, because the XCMD has not taken precautions to protect it.

2) The XCMD has broken the master pointer block, and the problem is not uncovered until some random, future action.

3) The application stack has become fragmented causing an out-of-memory error, because the XCMD has allocated memory, locked it down, and has not removed the data after it was finished.

4) There just is not enough memory available.

There are several ways for XCMDs to crash. Almost all are due to bad programming and trying to use HyperCard in ways for which it was not designed. Anyone using an XCMD needs to test the XCMD in a stack by itself and slowly add and execute other XCMDs. Any one of them may be fragmenting the stack, corrupting the master pointer block, or using up memory by leaving data floating around.

Apple does not support extensions that are not part of the HyperTalk language. The ability to add extensions has been created so that programmers can enhance their stacks. However, each programmer must take the responsibility to check for errors and report any problems to the user when writing the XCMD or XFCN. Programmers who are using extensions from unknown sources must take on the consequences.

Finally, a user's needs may not be appropriate for the capabilities of HyperCard. There are some supported XCMDs, like those available within legitimate HyperCard software products. We suggest HyperTalk programmers use only those XCMDs that they are confident with or that are supported if any future problems develop.

There are many other programming environments that support and handle advanced programming requirements. HyperTalk is not meant to be a replacement for programming languages like Pascal or C.

Published Date: Feb 18, 2012

Mac OS 9: Voice Password Can‘t Find a Microphone

I am trying to use the Voice Verification feature of Multiple Users under OS 9. I was able to successfully set up a voice password, but when I try to use it when logging in, the computer tells me it can't find a microphone.
This article has been archived and is no longer updated by Apple.
Possible Solution:

Try installing Speech Recognition from the OS 9 installer. It is likely that you are inadvertently using an older version of Speech Recognition than the one that comes with OS 9.

Possible solution:

The external mic you used to create the password has been unplugged, and the voice print doesn't match using the computer's built-in mic. Plug the external microphone back in, or change the voice print password using the built-in mic instead.

This error is misleading in this case, since you must authenticate using the same microphone that you used to create your voiceprint. The voice authentication technology takes into account the inherent properties of the microphone while saving the voice print. If you will not normally have the external microphone available at login time, you should create a new voice print using the built-in microphone.
Published Date: Feb 18, 2012

AppleShare IP 6.3: Restart Server to Enable/Disable Plug-ins

Whenever I disable/enable plug-ins for the Web and file server, I receive a 404 error when connecting to the server via a browser.
This article has been archived and is no longer updated by Apple.
Possible solution:

You need to restart the Web and file server each time after enabling or disabling plug-ins. AppleShare doesn't tell you that you need to do this. Any changes you make to the plug-in settings will not take effect until the Web and file server is restarted.
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AppleShare IP 6.3: Server Freezes After Increasing Plug-in Memory

The Web and file server freezes after I increase the amount of memory allocated to a plug-in.
This article has been archived and is no longer updated by Apple.
Possible solution:

Reduce the amount of memory allocated to the plug-in to less than two-thirds of the largest unused block (as listed in the About This Computer command from the Apple menu).
Published Date: Feb 18, 2012

AppleShare IP 6.3: Cannot Connect to Admin Agent After 5 Connections

Attempting to connect to the Mac OS Server Admin Agent and then canceling without entering a user name and password from Mac OS Server Admin leaves the Agent's window showing the connection as a current user. If I connect and cancel a few more times, I can reach the maximum number of five and the subsequent connections are rejected. At this point, I can quit out of Mac OS Server Admin, but not quit out of Mac OS Server Admin Agent.

This article has been archived and is no longer updated by Apple.

Possible Solution:

Wait 60 seconds before trying to connect again.

The software is behaving correctly. The server sees no name and and no password as a bad connection and waits for a timeout. The server waits 1 second, 2 seconds, 4 seconds, and so forth, to 60 seconds before rejecting a connection. It is during this time that the number of connected users can build up to the maximum. The number will drop back down after no more than 60 seconds from the time of the first connection. You will not be allowed to quit the Mac OS Server Admin Agent until the last connection times out.

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At Ease 5.0.x: Is Not Qualified With iMac, iBook, Power Mac G4 Models

This article discusses questions regarding using At Ease 5.0.x on the following products:

- iMac (Slot Loading)
- iMac DV (Slot Loading)
- iMac DV Special Edition (Slot Loading)
- iBook
- Power Mac G4 (AGP)
- Macintosh Server G4

This article has been archived and is no longer updated by Apple.

Question:
Can I use At Ease 5.0.x on any of the products listed above?

Answer:
At Ease 5.0.x does not function on these products.

Question:
Since At Ease will not work on these new products, what technology can I use instead of At Ease?

Answer:
In March of 1999, Apple introduced a powerful new product called Macintosh Manager in conjunction with Mac OS X Server, Apple's new server operating system. Macintosh Manager provides a significant increase in functionality over At Ease for Workgroups, and together with Mac OS X Server represents the future of Apple's network management technology. To ease the transition to Macintosh Manager networks, Macintosh Management Server version 1.2 will supports AppleShare IP 6.3. The latest version offers the same functionality and compatibility on both platforms.

Question:
What are some of the advantages of Macintosh Manager?

Answer:
In addition to support for new hardware and operating systems, Macintosh Manager supports a larger number of users and better control over Preferences, Printers, and other resources.

Question:
With what clients can Macintosh Manager be used?

Answer:
Macintosh Manager has been optimized to work with the multi-user environment introduced in Mac OS 9. However, it also includes a client installer that can be freely used with any client running Mac OS 8.1 or later.

Question:
With what server software can Macintosh Manager be used?

Answer:
Macintosh Manager can be used with Mac OS X Server and Macintosh Management Server. Macintosh Management Server 1.2 supports AppleShare IP 6.3 and offers the same functionality and compatibility on both platforms, as well as unlimited client access.

Question:
How can I get the Macintosh Manager server?

Answer:
The original version of the Macintosh Manager server is already available as part of the initial release of Mac OS X Server. The new version is available as part of the Mac OS X Server 1.2 upgrade, and as a free web update to AppleShare IP 6.3.

Question:
Will Apple provide any information on how to migrate from At Ease to Macintosh Manager?

Answer:
To further assist customers with existing At Ease for Workgroup networks, Apple will provide a detailed transition guide that describes the benefits of Macintosh Manager and the steps necessary for a smooth, orderly transition to either an AppleShare IP-based network or a Mac OS X Server-based network.

TA44417_At_Ease_x_Is_Not_Qualified_With_iMac_iBook_Power_Mac_G_Models.pdf

Published Date: Feb 18, 2012

AppleShare IP 6.3: Not Tested With At Ease Server

I have a server running AppleShare IP 6.2 and At Ease Server 5.0.2. Can I upgrade my server to AppleShare IP 6.3?
This article has been archived and is no longer updated by Apple.
At Ease for Workgroups has not been qualified for use with AppleShare IP 6.3 servers. Customers currently using At Ease are encouraged to migrate to Macintosh Manager in order to provide workstation security and management of user preferences.

Macintosh Manager is supported for servers running AppleShare IP 6.1, 6.2 and 6.3 as well as being included with Mac OS X Server.

The Macintosh Manager client software supports workstations running Mac OS 7.6.1, Mac OS 8.0-8.6 and Mac OS 9.

The following software can be downloaded from the Apple Software Updates Web site at http://www.apple.com/swupdates.

- Macintosh Manager Server 1.2.2 for AppleShare.
- Macintosh Manager Server 1.2 for Mac OS X Server.
- Macintosh Manager 1.3 client software.

Published Date: Feb 18, 2012

AppleShare IP 6.2: File Modification Dates Changed

I have an AppleShare IP 6.2 server. I notice that sometimes when my users copy files to the server that the modification date of the files is changed to the time at which they were copied to the server. How can I resolve this?
This article has been archived and is no longer updated by Apple.
This was an issue in AppleShare IP 6.2 when copying files to the server via AppleShare (AFP). Files copied via FTP and SMB were not affected.

This issue is addressed in AppleShare IP 6.3. The update to AppleShare IP 6.3 is available from the Apple Software Updates Web site at http://www.apple.com/swupdates.
Published Date: Feb 18, 2012

Mac OS 9: Location Manager and Multiple Users

I've set up a number of users using the Multiple Users control panel in Mac OS 9. However, I've noticed that when I try to switch network settings as a user other than the Owner using the Location Manager control strip, not all of the settings change the way I would expect.
This article has been archived and is no longer updated by Apple.
Normal, Limited, and Panels users do not have access privileges to change network or File Sharing settings. So, Location scripts that attempt to change these settings will fail if launched in these environments. In turn, Location Manager may stop functioning properly if this is attempted. Location Manager also gives the user access to other settings that the Owner/Administrator may not want changed.

If you need to allow users other than the Owner to change network settings, consider setting Location Manager to ask the user for a location during the startup process. You can find this setting in the Location Manager control panel by choosing Preferences (see figure 1 below) from the Edit menu. Using this method will allow users to change their location _before_ logging in as a specific user, but each user will need to restart the machine to change locations.

In order to prevent users other than the owner from experiencing difficulties when using Location Manager in the Finder or Panels environment, consider one or more of the following:

- Relocate or duplicate the Location Manager control panel to a folder on the hard drive that is only accessible by the users you intend to give access to these controls.
- Disable the Location Manager control strip module by removing it from the Control Strip Modules folder located at the root level of the System Folder.
- And/or, Disable individual Location Manager modules located in the Location Manager Modules folder in the Extensions folder to completely prevent attempts to change specific settings using Location Manager.

Published Date: Feb 18, 2012

AppleShare IP 6.3: Installing Mac OS Server Admin From the Server

On page 13 of "Getting Started with ASIP 6.3" I read:

> **Installing Mac OS Server Admin on an Administration Workstation**
>
> To install Mac OS Server Admin on a workstation, follow these steps:
> 1. Insert the AppleShare IP 6.3 CD into the CD-ROM drive of the workstation.

I downloaded the AppleShare IP 6.3 update from the web, and I don't have an installation CD. How can I install Mac OS Server Admin on a remote computer?

This article has been archived and is no longer updated by Apple.

The Mac OS Server Admin Installer is installed on your server when you update to AppleShare IP 6.3. To install it on a remote client, simply connect to the server hard disk as the Administrator and locate the folder "Mac OS Server Admin Install." Copy this folder to the client's hard drive and follow the installation instructions.

Published Date: Feb 18, 2012

AppleShare IP 6.3 Does Not Require OpenDoc

The AppleShare IP Manager, part of AppleShare IP from version 5 through version 6.2, required that OpenDoc be installed. AppleShare IP 6.3 and the new Mac OS Server Admin no longer require OpenDoc. How do I remove OpenDoc?
This article has been archived and is no longer updated by Apple.
To remove OpenDoc drag the following items on your computer to the Trash then restart the computer.

Figure 1, OpenDoc system software (in the Extensions folder)

Figure 2, The Editors folder (in the System Folder)

Figure 3, The Stationery folder (at the root level of your hard disk)

Published Date: Feb 18, 2012

Mac OS 9: Remote Access Dials Automatically When Opening Network Browser

After installing Mac OS 9, whenever I open the Network Browser my computer dials out to my ISP. Under previous versions of the Mac OS this did not occur. Why does this occur, and how can I stop it?
This article has been archived and is no longer updated by Apple.
Mac OS 9's Network Browser allows for browsing of certain TCP/IP based services (Web, File, FTP). If the TCP/IP Control Panel is configured to connect via "PPP" and the Remote Access Control Panel is configured to "Connect automatically when starting TCP/IP applications" then a connection attempt will be initiated when opening the Network Browser.

Should you not desire this behavior, use the Chooser to browse for AppleTalk services then Network Browser will not initiate any dial-up connections. Alternatively, deselecting the "Connect Automatically when starting TCP/IP applications" option within the Remote Access Control Panel will allow you to browse AppleTalk services within the Network Browser, but will require that you manually initiate a connection to your ISP to browse TCP/IP-based services.

Under previous versions of the Mac OS the Network Browser's functionality was limited to browsing of AppleTalk services only and thus did not produce this behavior.
Published Date: Feb 18, 2012

Mac OS 9: Using Sherlock 2 to Search a Folder‘s Contents

This article discusses how to use Sherlock 2 to search the contents of a particular folder instead of the whole hard disk.
This article has been archived and is no longer updated by Apple.
To limit your search to a particular folder, drag it from the Finder to the Sherlock 2 volume and folder list.

1. Click the Files button in Sherlock 2 (the one with the picture of the hard disk).
2. Click the appropriate search type button (File Names, Contents, Custom...).
3. Drag the folder(s) you want to search from the Finder into the volumes and folder list in the Sherlock 2 window. You should already see your computer's hard disk volumes in this list. The folder's icon will now appear there.
4. Click the On checkbox next to the the folder(s) you want to search.
5. Enter the text or search criteria in the search field.
6. Click the Magnifying Glass button.

To remove a folder from Sherlock 2's volume and folder list, drag the its icon from the list to the Trash.
Published Date: Feb 18, 2012

Mac OS X Server: refcard.pdf Won‘t Open

In Mac OS X Server 1.0, there's demonstration program call gdb. I'd like to view the documentation, but I can't. Whenever I open refcard.pdf, I get an error.

This article has been archived and is no longer updated by Apple.

This file is not currently viewable, but there is a PostScript version in the same directory.

Published Date: Feb 18, 2012

Mac OS X Server: Configure AppleTalk Via the Assistant

I want to turn on AppleTalk on my Mac OS X Server, so I added AppleTalk as a node via the "Computer Settings"->"Network" menu, and I restarted the Mac OS X Server, but I don't see the server in the Chooser.
This article has been archived and is no longer updated by Apple.
If Mac OS X was not configured to use AppleTalk via the Assistant, then turning on AppleTalk via the "Computer Settings"->"Network" menu won't work.

To make your Mac OS X Server an AppleShare file server via AppleTalk, use the Setup Assistant. In the Setup Assistant, select Apple File Services, then click on the right arrow to go to the "Review Settings" panel and click on the "Go Ahead" button to apply the change.
Published Date: Feb 18, 2012

Mac OS 9: Installing on NuBus-based Power Macintosh Computers

I'm trying to upgrade my system software to Mac OS 9. When the computer is started up from the hard disk I get the following message:

"This Computer requires that you boot from the Mac OS 9 CD to perform the installation."
This article has been archived and is no longer updated by Apple.
Installing Mac OS 9 on all Power Macintosh 6100, 7100, 8100 family computers requires that the computer be started up under Mac OS 9--usually from the CD. The Mac OS 9 installer makes sure that NuBus-based computers such as these are running Mac OS 9 before it will continue with an installation.

You can install Mac OS 9 on these computers by either:

- Starting up from the Mac OS 9 installation disc and then running the installer
- Starting up from an external hard drive that already has Mac OS 9 installed

Installing to an internal drive in one of these computers can be completed by:

- inserting the Mac OS 9 install disc on a locally attached CD-ROM drive
- sharing the Mac OS 9 disc from another computer, then connecting to that volume over a network
- copying the installation files to the same external hard drive the computer used to start up

Published Date: Feb 18, 2012

Mac OS 9: Creating Voice Prints on iMac (Slot Loading) Computers

I'm using Mac OS 9 on iMac (Slot Loading). While trying to record a voice print, I frequently get the error message: "You may have clicked the stop button too soon. Try recording the phrase again."

Sometimes when I finally make it through the four recordings, an error appears saying: "The variations between your recordings may make your voice print less secure."

What is wrong?
This article has been archived and is no longer updated by Apple.
Noise from the iMac's internal disk drive is being heard by the microphone and triggering the "clicked too soon" message.

As much tuning as possible of voice verification has been done. You should just patiently keep trying, and possibly close the door of the room where the iMac is located to decrease other background noise.
Published Date: Feb 18, 2012

Mac OS 9: Multiple Users Does Not Accept Double-Byte Passwords

Using Japanese Mac OS 9, I filled in owner name, owner password, and computer name with Japanese characters using Kotoeri. After enabling Multiple Users, I cannot login.
This article has been archived and is no longer updated by Apple.
Although the File Sharing control panel supports double-byte character input, the Multiple Users Login panel in Mac OS 9 is not double-byte aware. Multiple Users will not recognize passwords created with double-byte input methods.

File Sharing in Japanese Mac OS 9 defaults the owner password to US (Roman characters) but allows the use other input methods (Japanese characters). If you plan on using Multiple Users on a double-byte-aware Mac OS, you should use the default Roman input method for passwords.

If you have created a double-byte password and enabled Multiple Users, to get logged in as the owner, you must start up with Extensions off, by holding the Shift key while restarting, and then throw away the Multi-User Prefs file from the Preferences folder. Enter new data in the File Sharing control panel using a Roman input method, before enabling Multiple Users again.
Published Date: Feb 18, 2012

Mac OS 8, 9: About Finder Preferences

This document lists the settings that are stored in the Finder Preferences file.
This article has been archived and is no longer updated by Apple.
The following are stored in the Finder Preferences file (Mac OS 8 and 9):

- Finder version
- All settings from the Finder Preferences window except Label colors and names (which are kept in the System suitcase file)
- Location of the Trash
- Trash warning flag
- Last window size and position for Clipboard, Copy windows, and the About this Computer window
- Location where Sherlock was last located so Command-F always uses the same application (Mac OS 8.5 and 9 only)

Published Date: Feb 18, 2012

PowerBook G3 Series (Bronze keyboard): Printer Error After Waking From Sleep

My PowerBook G3 Series (Bronze keyboard) has difficulty printing to a USB printer after it wakes from sleep. It may display a message that it cannot find the printer; it may crash or hang; or it may report that an application unexpectedly quit because of a Type 1, 3, or 11 error. After it wakes from sleep two printers appear in the Chooser at USB Ports 1 and USB Port 2, even though only one USB printer is physically connected to the PowerBook.

This article has been archived and is no longer updated by Apple.

This is a potential issue with the PowerBook G3 Series (Bronze keyboard) running Mac OS 8.6 or 9.0 when a printer is connected using an USB to Parallel adapter cable, sometimes referred to as a dongle. While this issue is being investigated, if you encounter these errors consider:

- - If the printer has true USB support, use a native USB A-to-B cable instead of an adapter cable.
- - Connect the printer cable to the PowerBook only when you intend to print.
- - If the printer cable remains connected during a sleep/wake cycle, restart the computer after it wakes from sleep prior to printing.

Published Date: Feb 18, 2012

HyperCard 2.0: New Product Features (1 of 2)

This article has been archived and is no longer updated by Apple.

OVERVIEW
========

HyperCard 2.0 is the most-significant, major enhancement to HyperCard since the first version, which was introduced to the public in 1987. There are more than 40 new features in HyperCard 2.0. It runs on all Macintosh computers with the 128K or later ROM and 1MB of memory. Displaying multiple stacks and large cards in their entirety, and using the paint tools will require more memory. Here are a few of the main changes:

- Variable card sizes
- Multiple stacks open at same time
- Styled text in fields
- Runs existing HyperCard stacks with one-way conversion to 2.0 format
- Printing improvements
- Extended XCMD interface
- Enhancements to HyperTalk
- Modal script editor
- Debugging
- User-definable menus

PRODUCT FEATURES
================

Variable Card Size

Previously, HyperCard supported only one card size (512 x 342). HyperCard 2.0 allows card windows from 64 x 64 to 1280 x 1280 pixels.

On the right side of the dialog, you can select one of seven possible standard window sizes from the Card size pop-up menu. You can change the card size any time, but all cards in a given stack are one size. If you reduce the size of a card, none of the fields or buttons that fall outside the new boundaries are lost, just hidden from view. The graphics will stay until they are edited by the paint tools or the stack is compacted, then they are clipped to the new size. You can select a number of default settings for the screen size. These include:

- Small: 416 x 240
- Standard 9" 512 x 342
- Mac II 12" 640 x 480
- MacPaint 575 x 719
- Window 512 x 342
- Screen depends on monitor
- Custom 64x64 to 1024x1024

Multiple Stacks Open Simultaneously

Multiple Windows allow a user to have several stacks open at one time. There will be one window for each stack that is open. Users can have as many stacks open as available RAM space will allow. Only one window is allowed per stack and only one card from a given stack may be displays at the same time.

Text Enhancements

- Styled Text in Fields: HyperCard 2.0 lets a text field contain multiple fonts, styles, and sizes. The text can be changed by selecting the text and then choosing "Text Style..." from the Edit menu or selecting an item from the Font or Style menu. You can also find or set the attributes of any range

of characters using HyperTalk.

- Word Wrap: Word wrap has been changed so only a space character will break up a word at the end of a line. In past versions, HyperCard would break any string with punctuation at the end of a line.

- HotText means that any text within a locked text field can be accessed by a number of new HyperTalk commands. This lets a HyperCard developer create stacks that respond to user mouse clicks in a text field. The commands are:

ClickText
ClickChunk
ClickLine

ClickText returns the text characters that were clicked. ClickChunk returns the range of characters. ClickLine returns the line that was clicked (e.g., Line 5 of card field 2).

You can use a "Group" style to override the standard grouping of text. This lets the stack creator join two or more words together and have them act as one word. When text is joined using Group style, the ClickText and ClickChunk change to return the combined words.

Not Grouped Grouped
---------- -------
ClickText FINDER FINDER 5.3
ClickChunk char 1 to 6 of cd field 3 char 1 to 10 of cd field 3

- Shared Background Text: lets designers enter text in a background field and have the text appear on every card of that background. In the past, text had to be "painted" on or entered in every card that used that background.

Printing Enhancements

HyperCard 2.0 has improved printing abilities:

- Design custom reports for a single stack
- Create and save multiple reports for a stack (up to 7)
- Print fields
- Print the entire contents of a scrolling text field
- Print portions of a card
- Print the value of any HyperTalk expression using HyperTalk
- Print text field in same font as they appear on the screen
- Prints to non LaserWriter devices (fax modem)

When you print a report, you must specify the items to print in by using the menu items that come up when you select Print Report. These items are no longer in the Print Reports dialog box.

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Mac OS 8.1: Computer Stops Responding When Calculating Folder Size on Server

This article explains why a Macintosh computer may appear to stop responding when the Calculate Folder Sizes option is selected.
This article has been archived and is no longer updated by Apple.

Symptom

On a Macintosh computer running Mac OS 8.1 and AppleShare 6, the computer appears to stop responding when you open a folder on a server volume. This occurs if the window is set to View as List and the option to Calculate Folder Sizes is selected.

Solution

This will happen if you do not have read access to all of the folders in this window. Your computer will appear to stop responding with the network arrows visible in the upper left corner of the screen while the Finder attempts to calculate the size of the folder to which you do not have access.

You will be able to continue working on your computer, but performance will be slow until you deselect the option to Calculate Folder Sizes. Your computer will also stop responding if you attempt to Get Info on a folder to which you do not have read access.

This issue is has been resolved in Mac OS 8.5 and later.

Published Date: Feb 18, 2012

QuickTime 4.1: About AppleScript and QuickTime Player

This article describes the AppleScript support in QuickTime Player 4.1.
This article has been archived and is no longer updated by Apple.

About AppleScript and QuickTime Player

With QuickTime 4.1, you can use AppleScript to automate QuickTime Player.

For example, you can:

- open a movie and tell it to play for a specific duration
- automate the conversion of movies from one format to another using export
- automate hinting of movies for streaming
- play a movie from a URL
- script playback of movies with control over size, rate, volume, balance, and looping
- automate annotation of movies
- inventory movie contents (number of tracks, files used, annotations)
- adjust track playback properties such as start time, volume, and layer

QuickTime Player 4.1 is not a recordable application.
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QuickTime 4.1: Access to Controlled Sites

This article describes QuickTime 4.1's access control feature.

This article has been archived and is no longer updated by Apple.

You can tune in to more sites now that QuickTime supports logging on to sites with controlled access, such as pay-per-view sites. All you need to do is set up an account with the content provider, then enter your user name and password when you want to access that site.

Published Date: Feb 18, 2012

Hayes V 9600: Macintosh Pinouts

Can you give me the pinouts for connecting the Hayes V series 9600 baud modems to the Macintosh with a DIN 8 serial port.

This article has been archived and is no longer updated by Apple.
Here are the pinouts for connecting the Hayes V series 9600 baud modems to the Macintosh with a DIN 8 serial port. They are direct from Hayes so they should be correct.

Hayes 9600 V Macintosh
1-7 4-8
2 3
3 5
5 2
4 1

Published Date: Feb 18, 2012

QuickTime: How to Upgrade to QuickTime 4.1

How can I upgrade to QuickTime 4.1?
This article has been archived and is no longer updated by Apple.
If you have QuickTime 3 or earlier, go to http://www.apple.com/quicktime/ and download the QuickTime 4.1 installer.

If you already have QuickTime 4 installed:

- Find and open the QuickTime folder on your computer.
- Open the application program called QuickTime Updater.

Published Date: Feb 18, 2012

Final Cut Pro 1.2.5: Does Not Include FireWire Cable

Final Cut Pro 1.2.5 does not include a FireWire cable.
This article has been archived and is no longer updated by Apple.
Although Final Cut Pro 1.0 included a FireWire cable, Final Cut Pro 1.2.5 does not include a cable because some Power Macintosh G4 and iMac DV computers already ship with a FireWire cable.

The side of the Final Cut Pro 1.2 box specifically lists what the package includes and the FireWire cable is not listed. Unfortunately, the Final Cut Pro User's Guide mentions an included FireWire cable. This will be fixed in future versions of the documentation.

You may have bought a Macintosh model that does not include a FireWire cable and don't know where to get one. FireWire cables can be purchased at computer resellers, video equipment stores, and electronics stores. The cable can also be purchased through the Apple Store.
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QuickTime 4.1: Issue With QTVR Hotspots

There is a potential issue with QuickTime 4.1 where URL hotspots embedded in QuickTime VR movies no longer work.
This article has been archived and is no longer updated by Apple.
Note: This issue is addressed with QuickTime 4.1.1. Find more information on QuickTime 4.1.1 at **http://www.apple.com/quicktime/.**

URL links that rely on the "Hotspot" parameter of an embed tag do not work with QuickTime 4.1. URL links originally authored as URL hotspots work correctly.

Here are some workarounds that may be helpful to developers

1. If your movie does not include hotspots with neighboring ids (which is the case with most movies made with QTVRAS) you can double-up your hotspot parameters in the embed tag:

    Hotspot10="http://www.apple.com"

would become:

    Hotspot10="http://www.apple.com"
    Hotspot11="http://www.apple.com"

This will work with QuickTime 4.1.1, 4.1, and older versions.

2. If this does not work for your content, you may need to modify or re-author your movies. If you have the source files in the authoring tool's format you can modify and re-make the files.

Also, VRTools' application "ConVRter" allows you to change a hotspot's type to "URL" and/or edit its URL string. ConVRter is available from http://www.vrtools.com.
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QuickTime 4.1: Not Compatible With Final Cut Pro 1.0

This article notes an incompatibility between QuickTime 4.1 and Final Cut Pro 1.0/1.0.1.
This article has been archived and is no longer updated by Apple.
QuickTime 4.1 introduces newer DV device control software that may not work with Final Cut Pro 1.0 or 1.0.1. You must upgrade to Final Cut Pro 1.2 in order to use QuickTime 4.1. This is a free upgrade. Please visit http://www.apple.com/finalcutpro/ for the latest version.
Published Date: Feb 18, 2012

Final Cut Pro 1.2: Using With Mac OS 9 Multiple Users Feature

This article discusses some potential issues with Final Cut Pro 1.2.1 when using the Multiple Users feature of Mac OS 9.
This article has been archived and is no longer updated by Apple.
When the Multiple Users feature of Mac OS 9 is turned on, limited users are unable to change Final Cut Pro preferences. In addition, Final Cut Pro will quit with a Type 2 error when a limited user chooses the Preferences command from the Edit menu.

As a workaround, you can copy the entire Final Cut Pro folder to the limited user's Documents folder (an alias to this folder is on the desktop). Also, make sure the limited user only has access to the Final Cut Pro application in this folder.
Published Date: Feb 18, 2012

AppleWorks 6: QuickTime 4 Must Be Installed

To use AppleWorks 6, QuickTime 4 must be installed in the active System Folder.
This article has been archived and is no longer updated by Apple.
AppleWorks 6 requires that QuickTime 4 be installed. If the AppleWorks 6 Installer detects that QuickTime isn't installed in the active System folder, it will install QuickTime 4 for you.

If after installing the AppleWorks software, you disable the QuickTime software via the Extensions Manager and launch AppleWorks at a later date, AppleWorks will warn you that QuickTime needs to be enabled.

If you remove QuickTime from the active System Folder, the AppleWorks First Run installer will reinstall it for you.
Published Date: Feb 18, 2012

Silentype: Spacing errors

This article has been archived and is no longer updated by Apple.

If your Silentype's right margin is set at less than 40 and the screen is OFF, extra spaces may be introduced into the printout. To correct this, turn your screen to ON by sending a control "T" to the printer.

Reset these Silentype margins after every PR#1. Other options, such as print intensity, don't need to be set every time.

Published Date: Feb 18, 2012

Macintosh SCSI Termination: A Brief Explanation

Is the Macintosh SCSI connector terminated on the logic board? In other words, are both ends of the chain terminated or only the last peripheral?

This article has been archived and is no longer updated by Apple.

The Macintosh systems that have SCSI ports are not terminated on the logic board. One system, the Macintosh IIfx, when shipped without an internal hard drive, comes with a terminator plugged into the internal SCSI connector. If an internal hard drive is installed in a Macintosh system, it should be terminated. The internal hard drive is the first device in a SCSI chain. The last device in the SCSI chain should also be terminated.

Typically, a Macintosh system with only one SCSI device needs only one terminator. The exception to this is the Macintosh IIfx when it has a single SCSI device attached on the external SCSI connector. In this case, there should be the internal terminator that came with Macintosh IIfx and a terminator on the external SCSI device.

Published Date: Feb 18, 2012

Macintosh Pascal Discontinued but Supported: Update

Is there a product called MacPascal? If yes, what is the latest version, and is it an Apple's product?

This article has been archived and is no longer updated by Apple.
Macintosh Pascal was discontinued many years ago. The latest version shipped by Apple was version 2.1. Although we no longer ship it, we continue to support the product (though we rarely get any questions on it since most people have migrated to newer products).

There are many substitutes, including Think Pascal from Symantec, which could be used in conjunction with an interactive tutorial called Just Enough Pascal, also from Symantec (these, as well as others, are described in the buyer's guides on AppleLink).

We'll update the article "Macintosh Pascal Is Discontinued But Supported" in the Tech Info Library with this information.

Published Date: Feb 18, 2012

iMovie 1.0 and 1.0.1: Importing Video Clips Filmed Later Than 1999

Update your copy of iMovie 1.0 if you work with video clips that were filmed in later than 1999
This article has been archived and is no longer updated by Apple.

Symptom

When you import a video clip that was filmed as the clock rolled over from 1999 to 2000:

- The clip is split into two clips
- The second clip's date is listed in the Timeline as "not recognized".

Solution

Download and install the iMovie 1.0.2 updater. It is available from http://download.info.apple.com/ .

Published Date: Feb 18, 2012

AppleWorks 5: Picture Elements Disappear When Importing PICT Files

I've exported a PICT file from AppleWorks 5, which has a number of grouped objects. When I import it back into AppleWorks, or if I import the PICT into another application, some of the objects disappear when I ungroup the objects. Why is this happening?

This article has been archived and is no longer updated by Apple.

Apple is aware of this issue and is investigating possible solutions.

Published Date: Feb 18, 2012

Mac OS X Server 1.x: About NetBoot Server Software

About NetBoot Server Software

This document contains late-breaking information that supplements the information in your installation manual.
This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Updating the firmware on NetBoot client computers

Before using an iMac as a NetBoot client computer, you should update its firmware to the latest version of the software using the iMac Firmware Updater included on the NetBoot installation CD. Updating the firmware is especially important if you use the NetBoot server for virtual memory storage. The iMac Firmware Updater fixes a known problem with using virtual memory over the network to the NetBoot server.

You can use the Power Macintosh G3 model released in 1999 (Blue and White) as a NetBoot client, but it also requires updating the firmware if the NetBoot server is used for virtual memory storage. A firmware updater will be available soon on the Apple Support Web site at http://www.apple.com/support. Until the firmware updater is available, you can use a Power Macintosh G3 1999 model as a NetBoot client if you set it to use its internal hard disk for virtual memory.

NetBoot server information

AppleTalk seed routers are required on all NetBoot server ports

If you use more than one port on your NetBoot server, you need to be sure AppleTalk is in routing mode. There must be a seed router for every port that's connected to a subnet. The seed router can be the NetBoot server or an AppleTalk router.

If the NetBoot server is the seed router for a subnet, you need to enter valid AppleTalk network numbers when you use the NetBoot Server Setup Assistant. It's important that you enter the correct numbers, as the NetBoot Server Setup Assistant can not check to see if the numbers are valid. If you enter the wrong values, AppleTalk won't start up.

If AppleTalk doesn't start up, which you can check by using the ProcessViewer, you can set up the NetBoot server so that only one port is used. Once you obtain the correct network numbers, you can set up other ports.

Turning off the Macintosh Manager client software

If you don't want to use Macintosh Manager client software, open the Extensions Manager control panel and turn off the Macintosh Manager extensions. You must do this at the same time you are making your changes to NetBoot HD image, otherwise the extension won't be disabled. If you disable Macintosh Manager client software, computers start up from the NetBoot server, but a login window doesn't appear and none of the Macintosh Manager options you set take effect.

Resetting PRAM disables starting up from a NetBoot server

Your computer stores information in an area of memory called parameter RAM (PRAM). Resetting the PRAM replaces the information stored there with the default (original) settings. If you reset PRAM, the computer will not start up from the NetBoot server. If PRAM is reset and your computer was previously a NetBoot client, hold down the N key while pressing the Power key to restart your computer from the NetBoot server.

Changing volume names

You can change the name of NetBoot server volumes by using HDNamer. However, if you do you must reinstall the NetBoot server software.

Moving the Macintosh Manager folder

The first time you use Macintosh Manager, it sets up a folder on the Apple file services volume of your Mac OS X Server. This folder, called Macintosh Manager, is set up as a share point and is used to store information about users, preferences, and options.

If the Apple file services volume on which the Macintosh Manager folder is located becomes full, you can move the folder to another volume on your Mac OS X Server computer.

To move the Macintosh Manager folder:

1. Make sure no client computers are logged in to Macintosh Manager.
2. Log in to Mac OS X Server and use the ProcessViewer to turn off Macintosh Manager.
3. On a local-startup computer, use the Chooser to mount the Apple file services volume that currently contains the Macintosh Manager

folder and the volume where you want to move the folder. You must log in to each volume as administrator (or root).
4. Copy the Macintosh Manager folder from the root level of the current volume to the root level of the new volume.
5. Use a Web browser to log in to Remote Administration for Apple file services. Be sure to log in as an administrator.
6. In Disks & Share Points, locate the new Macintosh Manager folder and make it a share point. For more information about setting up a share point, see the onscreen help.
7. Change the owner of the new Macintosh Manager folder to Macintosh Manager User.
8. Select "Make all enclosed folders like this one," then click Save.
9. In Disks & Share Points, locate the folder that used to be the Macintosh Manager folder and remove the share point.
10. Delete the old Macintosh Manager folder.
11. Restart the server.

Quitting applications before using NetBoot Desktop Admin

Before you use NetBoot Desktop Admin, quit any applications you have open. If you have other applications open when you open NetBoot Desktop Admin, a message tells you to quit the other applications. If you click Continue, NetBoot Desktop Admin attempts to close all the applications. However, some applications may not close, so NetBoot Desktop Admin will wait indefinitely.

NetBoot client computer Iinformation

Changing the default home page in your Netscape browser

The default home page in the Internet control panel is http://livepage.apple.com. If you change the default home page in your Netscape browser, the setting is not saved when you log out of the computer. The next time you log in and open the browser, you'll see http://livepage.apple.com. To reset the default home page for all users, change the default in the application in the NetBoot HD image.

Applications you install on the Applications HD image may not work properly

The Applications HD image is mounted by a NetBoot client computer as a read-only volume. The NetBoot HD, which contains the Mac OS system the NetBoot client computers use, is a read-write volume. Applications that store information in files kept in the Preferences folder should work correctly because changes can be saved. Those that save information in files in their own application folder may not work properly. As an alternative, you can install the application on the NetBoot HD image. This will work only if the information the application saves in a file does not need to be preserved when the client computer is restarted.

Memory control panel

The information in the Memory control panel for a NetBoot client computer may be incorrect. To view the actual memory settings, choose About This Computer from the Apple menu.
Published Date: Feb 18, 2012

Mac OS X Server: About Release 1.2

About Mac OS X Server Release 1.2
This document contains important information about Mac OS X Server, Release 1.2, including Apple file services, NetBoot, Macintosh Manager 1.1, and WebObjects.
This article has been archived and is no longer updated by Apple.
Information about Mac OS X Server

Late-breaking news about Mac OS X Server

- This release of Mac OS X Server includes the Apache version 1.3.9 software, a later version than stated in the About Mac OS X Server Release 1.2 printed booklet.
- The Mac OS application (MacOS.app), which provides the Mac OS Compatibility Environment, now has Mac OS 8.6 installed. Do not upgrade to a later version of the Mac OS.
- This release includes the NetProbe.app application. It's located in the Demos folder in the System folder on your computer.
- The installer.sh command line utility program has been removed from this release.

Information about hardware supported by Mac OS X Server

- This release of Mac OS X Server includes support for Power Mac G4 and Macintosh Server G4 computers. Keep these points in mind about new features provided by these computers:
- Some Power Mac G4 and Macintosh Server G4 computers have a redundant power supply. Mac OS X Server can detect if the redundant power supply unit has degraded and sends a message to the Console if it does.
- The Power Mac G4 and Macintosh Server G4 has two USB ports. Mac OS X Server can detect devices on only one USB port at a time. Therefore, you must connect your mouse to your keyboard.

Information about expansion cards supported by Mac OS X Server
This release of Mac OS X Server supports the following expansion cards.

For the original (platinum) Macintosh Server G3:

- Single-port 10/100 Ethernet card: Zynx
- Single-channel U1 SCSI card: ATTO PSC

Note: If you install Mac OS X Server on an original (platinum) Power Macintosh G3 computer with an ATTO single-channel Express PCI-PCS card for the first time, you need to use the Mac OS SCSI Card Updater 1.1 program to update the ATTO firmware before you install the server software. The Updater program is located in the Utilities folder on the Mac OS X Server CD.

For the Macintosh Server G3 (blue and white):

- Single-channel U2 SCSI card: Adaptec 2940
- Dual-channel U2 SCSI card: Adaptec 3950
- Ultra SCSI card (Legacy): Adaptec 2930
- Gigabit card: Sun
- 4-Port 10/100 Ethernet card: D-Link

For the Macintosh Server G4:

- Dual-channel U2 SCSI card: ATTO UL2D
- Ultra SCSI card (Legacy): Adaptec 2930
- 4-Port 10/100 Ethernet card: D-Link

Information about installing WebObjects software
The WebObjects disc installs earlier versions of the WebObjects adaptors than the adaptors available on the Mac OS X Server CD. If you install the WebObjects software, you will need to install the newer WebObjects adaptors using the Installer on the Mac OS X Server CD. To do so, follow these steps:

1. After you install the WebObjects software, restart your computer and log in as Administrator.
2. Insert the Mac OS X Server CD.
3. Open the Packages folder (in the `/System/Installation` folder) and double-click the WOAdaptor.pkg file.
4. Follow the onscreen instructions to install the software.

5. Install the WebObjects adaptors in the default location shown in the Installer.

Problems resolved and other improvements

- This release fixes a number of problems that improve the stability and reliability of Mac OS X Server. The Setup Assistant, kernel, NetInfo, networking, and the core foundation have also been improved.
- This release fixes a number of reliability problems with the Mac OS Standard and Mac OS Extended format file system that could result in your server crashing.
- A problem in the TCP/IP software that resulted in the computer hanging or crashing when the network was very busy has been fixed.
- A problem that prevented using volumes larger than 200 gigabytes (GB) has been fixed.
- After you print to an LPD printer, you need to restart the LPD printer daemon by logging in as Administrator and typing the following:

```
/user/libexec/lpd&
```

Known issue with OmniBackup Personal Edition

If the resolution of your monitor is set to 640 x 480, you will not be able to see parts of some windows and dialog boxes in OmniBackup Personal Edition. To solve this problem, set the resolution of your monitor to at least 800 x 600.

About Apple file services

This section contains important information about Apple file services and Remote Server Administration.

Remote Server Administration browser compatibility issues

- Before logging in to Remote Server Administration from your browser, open Preferences and set the Advanced cache settings to Every time (for Netscape Navigator) or Always (for Internet Explorer).

- To use Microsoft Internet Explorer to access Remote Server Administration from a Macintosh computer, you need to select Mac OS Runtime for Java as the Java virtual machine. To do so, open the Edit menu in Internet Explorer and choose Preferences, then open the Web Browser category and select Java. Open the "Java virtual machine" pop-up menu and choose Apple MRJ.

  You should also make sure your computer has Mac OS Runtime for Java version 2.0 or later installed. To do so, check the version of the MRJLib file, which is in the MRJ Libraries folder (in the Extensions folder in the System Folder).

  To log in to Remote Server Administration using an administrator user name that contains two-byte characters, such as Japanese, you must have Mac OS Runtime for Java version 2.1.1 or later installed.
- To access Remote Server Administration from a Web browser on a computer with a European or Japanese system installed, make sure you have selected the correct language and default character set encoding in the Web browser. On Mac OS computers, you must also have Mac OS Runtime for Java version 2.1.1 or later installed to log in with an administrator user name that contains special characters.

  If you are using Netscape Navigator or Communicator, open the Edit menu and choose Preferences, then open the Navigator category and select Languages. If necessary, click Add to add French, German, or Japanese to the list. Remove other languages from the list. Finally, open the View menu, choose Character Set, then choose Western (ISO-8559-1) as the character set for European languages or Japanese (Shift_JIS) for Japanese.

  If you are using Microsoft Internet Explorer, open the Edit menu and choose Preferences, then open the Web Browser category and select Language/Fonts. Open the Language pop-up menu and choose French, German, or Japanese. Then open the "Character set" pop-up menu and choose Western (Latin1) for European languages or Japanese (Shift-JIS) for Japanese.
- If you connect to your server through a proxy using Netscape Communicator, you may experience timeout problems and data may not be updated on the server. If you experience this problem, use a direct connection to the server. If you must use a proxy, talk to your proxy server administrator about enabling HTTP write access to the Mac OS X Server.

- If you are using Microsoft Internet Explorer with Remote Administration, you should set the preferred memory size to at least 12 MB.

Issues with using Remote Server Administration

- To log in to Remote Server Administration, your user account must exist in the NetInfo database on the same server as the Apple file services. All accounts created using Setup Assistant, NetworkManager, and Remote Server Administration are stored in the local NetInfo database.
- You can only use 7-bit characters for administrator and user passwords. These are the standard ASCII characters which include control characters, alphabetic and numeric characters, and standard keyboard characters.
- Due to a limitation in Netscape Java, the Caps Lock key is not recognized to enter uppercase letters in a password. To use uppercase letters in a password, press the Shift key.

- If you are using Netscape Navigator or Netscape Communicator with Remote Administration, do not click Reload. If you do, you will need to log in to Remote Administration again. You may also need to log in again if you resize the browser's window.
- Do not use the browser's Back button to return to a page in Remote Server Administration. If you do, settings you have made in the page may appear to be different.
- The server access log (AppleFileAccess) is not turned on automatically. To turn on access logging in Remote Administration, click File, then click Server Settings, select the Log Server Access checkbox, and click Save.
- For Internet aliases and group names, you can use only lowercase letters, numbers, and the underscore character.
- The Server Administration Help on your Mac OS X Server states that to troubleshoot problems logging into Remote Administration you should open the Process Viewer to confirm that the AdminWebServer and RemoteAdminServer processes are running. Instead of "AdminWebServer," you should see "apache."
- When you create or edit a user account, the user name and Internet alias can be the same.
- The Remote Admin documentation states that the maximum number of groups you can assign to a user account is 42. There is no longer a limit on the number of groups you can assign to a user account.
- In the Users section, you will see the Administrator (root), Unprivileged user (nobody), and macos group. Do not change the names of these items.

Issues with Apple file services

- Do not give your server the same name as any other AppleShare File Sharing or Apple file services server on the same zone of the network. Remote Administration does not warn you if you do. However, users trying to log in to the servers may be unable to log in to the server they want to use. Check the server error log (AppleFileError) for information about this problem.
- You cannot change access privileges for read-only volumes, such as CD-ROM discs. You can share folders on these volumes, but files are read-only for everyone.
- If you define more than a few hundred sharepoints on the server, some sharepoint names will not appear in the client's Chooser.
- Folders created by guest users are owned by "Unprivileged user" (nobody). To reassign privileges for these folders, log in to the server computer Administrator (root).
- If you use Setup Assistant to choose a connection to a NetInfo parent server and then turn off the connection using the Network settings panel, for example, and you have configured DNS manually without specifying any DNS server addresses and TCP/IP to get the host name and default router automatically using Bootp, local host information for your server computer may not be saved in the local NetInfo domain. If NetInfo domain does not contain the local host name, Apple file services will not start and any applications that use the local host name will fail. If this happens, open Setup Assistant and make sure you do not have your network services configured this way.
- If Apple file services does not start when you start up your server computer or when you turn on the service using Remote Administration, check the server error log (AppleFileError) for information about startup errors.
- If your network does not have a router, you need to enter the server's IP address in the Router Address field in the TCP/IP control panel on each AppleShare client computer.

Issues with AppleTalk configuration
If AppleTalk isn't configured correctly, it will fail when you start your Mac OS X Server but you will not receive a message about the problem. If this occurs, AppleShare clients will not be able to locate the server in the Chooser and Macintosh Manager clients will not be able to log in to the server.

Note: Because Apple file services can use TCP, Remote Administration will show that the server is running and NetBoot client computers will be able to start up.

If you experience these problems, be sure AppleTalk is configured correctly using the Setup Assistant and Network Settings control panel.
If you configure more than one port on your server computer to use AppleTalk, each port must be connected to a network with an AppleTalk router. If your server computer is acting as the router, make sure it is configured correctly and does not conflict with other AppleTalk routers on the network.

Issues with the AppleShare Client software

- You should always install the latest version of the AppleShare Client software on the computers in your network. The latest version of the AppleShare Client software is version 3.8.6. To get the latest version of the AppleShare Client software, see www.apple.com/support.

  There are two problems you should be aware of if your client computers have earlier versions of AppleShare Client software installed: If your client computers have Mac OS 8.5 or later installed and AppleShare Client version 3.8.1 installed, files that users copy to server volumes may be corrupted in some cases.

  When a user logs in to Apple file services from a computer with AppleShare Client version 3.8.2 installed, the user's password is sent over the network in clear text form. Someone monitoring your network traffic could get a password, such as the Administrator password, thus compromising your network's security.

  To prevent both of these problems, install the latest version of the AppleShare Client on all client computers.
- If you want to change the access privileges of an Apple file services volume from a client computer, only enter a user name in the Owner

box and a group name in the User/Group box in the Sharing window.

About NetBoot server

The NetBoot server now needs only one disk image. The earlier version of NetBoot server included a System disk image and an Application disk image. NetBoot server now only requires the System disk image. You can install applications in the System disk image or you can continue to use the Application disk image. You can also continue to use NetBoot Desktop Admin to change the size and add items to the Application disk image. The NetBoot disk image has Mac OS 9 installed. Mac OS 9 supports netbooting these computers: Power Macintosh G3 (with Open Firmware update), Power Mac G4, iMac, iMac DV, iBook, and PowerBook G3.

IMPORTANT You may operate any NetBoot-compatible version of the Mac OS software on a NetBoot-capable computer, as long as that computer is licensed to operate that particular version of the Mac OS. This means the version of the Mac OS that was included with your Macintosh or any other version for which you've purchased a license. Mac OS X Server and the NetBoot Server license agreement DO NOT include any Mac OS licenses.

A NetBoot client computer using Mac OS 9 requires 64MB of memory. If a NetBoot client computer does not have this much memory, increase Virtual Memory to equal or exceed this amount. (To increase Virtual Memory, use the Memory control panel.)

With this release, you can netboot client computers over Ethernet switches. Users may notice a slight decrease in speed when they start up the netboot clients.

For more information about the NetBoot server, see the About NetBoot Server Read Me. The Read Me is located on the Mac OS partition of your Mac OS X Server.

About Macintosh Manager 1.2

This release of Mac OS X Server includes Macintosh Manager version 1.2. This version of Macintosh Manager lets you manage client computers installed with Mac OS 8.1 through Mac OS 9, including NetBoot client computers using this release of the software. You must use this version of Macintosh Manager to manage client computers with Mac OS 9 installed. The Macintosh Manager 1.2 client software only works with this version of the server.

WARNING If you upgrade the Macintosh Manager server to the new version, you will not be able to revert the server to an older version.

For more information about this version, see the Macintosh Manager Read Me included with this release.
Published Date: Feb 18, 2012

Mac OS X Server 1.2: About Mac OS Compatibility (MacOS.app) v2.2

Mac OS X Server Customer Release Notes: Mac OS Compatibility (MacOS.app) v2.2

Release Notes as of 9 November 1999.

This document describes the Mac OS Compatibility environment shipped with Mac OS X Server 1.2. This environment is implemented by the MacOS.app application, sometimes referred to as the "Blue Box".

This article has been archived and is no longer updated by Apple.

Note: This article pertains to Mac OS X Server version 1.2, which was released prior to May 2001.

Contents

- Overview
- Quick Start
- System Requirements
- Installation
- Features
- Disk Access Modes
- Disk Drive Support
- Working with Disk Image Files
- Startup Options
- Bugs and Compatibility Issues

Overview

MacOS.app, sometimes referred to as the "Blue Box", is a high-performance, high compatibility environment for running Mac OS software within the Mac OS X Server operating system.

High compatibility is achieved by running Mac OS essentially unchanged in a virtual environment, which appears to be a new Macintosh hardware model. Because of this, the vast majority of Mac OS applications, utilities, extensions and software drivers just work. Software that directly accesses hardware, uses undocumented internal APIs of the Mac OS, or relies on Mac OS managers not yet supported by this release of MacOS.app is not expected to work.

The Mac OS managers not currently supported by this release are those generally associated with hardware not yet fully supported by Mac OS X Server. Such missing functionality is explicitly listed in this document and will likely be provided in subsequent releases of MacOS.app.

This release of MacOS.app comes with Mac OS 8.6 and will only support that version and versions beginning with Mac OS 8.5. Versions of Mac OS prior to Mac OS 8.5 and later than Mac OS 8.6 are not supported and MacOS.app will not allow them to run.

MacOS.app allows you to use your current Mac OS applications to "live" on Mac OS X Server, to explore its new capabilities while preserving your current Mac OS environment.

You are encouraged to read these release notes before running MacOS.app. If you just can't resist, at least read the following "Quick Start" section.

Quick Start

To start MacOS.app, choose MacOS in the Mac OS X Server Apple menu or double-click on "/System/Applications/MacOS.app" in the Workspace File Manager. You may also want to drag an alias onto the Workspace for quicker access to MacOS.app. It is best not to launch MacOS.app from a Terminal window, since it will not result in a clean MacOS.app shutdown when logging out from the Mac OS X Server's Workspace.

The first time you launch MacOS.app, a private Mac OS 8.6 startup disk image (called StartupDisk.img) will be created. The image will be copied and uncompressed into /Local/Library/MacOS/Users/<user name>. This process will take a little time and is accompanied by a dialog box with a progress bar. At the end of creating the startup disk

image, a virtual PRAM file called "PRAM" will also be created in the same directory.

Choosing Shut Down from the Mac OS Finder's Special menu will quit MacOS.app. Similarly, choosing Restart will quit and re-launch MacOS.app. You may also use the Power key, which will bring up the standard Mac OS "Shut Down / Restart" dialog box.

To switch between the Mac OS and Mac OS X Server environments, use the Application menu at the far right of the menu bar. In both MacOS.app and Mac OS X Server, this menu has been extended to list all applications running in both environments, grouped by environment. If you choose an application that is running in the other environment, you will be switched to that environment and the selected application will be activated.

There is a special item in the application menu of each environment that will switch you to the other environment and bring you back to the last application you were using in that environment. That item is called "Mac OS X Server" in the Mac OS environment and "MacOS" in the Mac OS X Server environment.

The following special keys combinations are available when you are in the Mac OS environment, and supersede any Mac OS use of these key combinations:

Command-Return is a shortcut for choosing "Mac OS X Server" from the application menu. Since this may interfere with some applications that use this combination of keys, you may disable it, as discussed under "User Input" in the "Bugs and Compatibility Issues" section.

Command-Shift-Q will force-quit MacOS.app. This would be equivalent to pulling the power plug out of the wall on native Mac OS and should only be used when Mac OS is hung.

All other Mac OS special keys (e.g., Command-Power for NMI - to enter MacsBug) function as expected.

Before installing software, read the section "Use of Disk Image Files", under "Working with Disk Image Files".

System Requirements

The minimum recommended RAM for running Mac OS X Server with MacOS.app is 64 MB.

Each user running MacOS.app on this machine will require a minimum of 225 MB of disk space for the Mac OS 8.6 startup disk image.

Installation

MacOS.app is installed as part of the standard Mac OS X Server installation. Earlier versions of MacOS.app are not compatible with Mac OS X Server.

The installation consists of the following installed items:

`/System/Documentation/ReadMe/MacOS.html`

This release note document.

`/System/Applications/MacOS.app`

The application directory contains the executable file (MacOS), supporting resources and compressed localized Mac OS disk images. The particular localized disk images installed (of English, French, German and Japanese) will depend on your language selection(s) when you install Mac OS X.

`/usr/bin/createimage`

A command-line utility to create new disk image files (discussed under "Working with Disk Image Files").

Features

System Software

MacOS.app currently supports Mac OS 8.6. The supplied StartupDisk.img files contain complete default installations of English language Mac OS 8.6 except for Apple Remote Access and Text-to-Speech. These were omitted to save space and because they rely on features not yet supported by MacOS.app.

Do not attempt to boot MacOS.app from System Folders with versions of Mac OS prior to Mac OS 8.5. You may install Mac OS 8.5 or 8.5.1 using the normal Mac OS installation techniques in MacOS.app.

Virtual Memory

MacOS.app uses a new method for virtual memory, taking advantage of Mac OS X Server's VM system. This method, called "Sparse Virtual Memory", allows application heaps to be protected from each other with "guard" pages of unmapped memory. In addition, it allows a large number of applications to be launched, using disk space for memory as it is needed. The total virtual application memory available is 1024 MB.

MacOS.app always runs on top of Mac OS X Server's Virtual Memory, but Mac OS VM will appear to be off to applications.

Temporary Memory

In native Mac OS, an application's memory heap comes out of the same memory area as temporary memory. Since some applications allocate large fractions of available temporary memory, MacOS.app does not offer the entire unused portion of its 1024 MB sparse virtual address space as temporary memory. Instead, the temporary memory heap is created at startup time, with the size determined by the machine's available physical memory, with a minimum size of about 16 MB. Some applications may require a larger amount of temporary memory in order to run properly, and you can allocate additional temporary memory by setting SysZoneMemorySize to the desired size. For example "defaults write MacOS SysZoneMemorySize 0x10000000" will set the temporary memory size to approximately 256 MB. You may notice this difference in the Finder's "About This Computer" dialog box. In native Mac OS, the first bar (labeled "Mac OS") shows the amount of memory allocated to Mac OS and is usually almost fully in use. In MacOS.app, this bar includes the memory allocated to Mac OS plus the temporary memory allocation. On machines with a large amount of physical memory, this bar will be significantly larger.

File Systems

Throughout this document, "HFS(+)" is used as an abbreviation for "HFS or HFS+". HFS is also known as "Mac OS Standard Format" and HFS+ as "Mac OS Extended Format".

MacOS.app supports file systems on nearly all kinds of disk devices that are supported under the native Mac OS. These include, but are not limited to floppies, CD-ROMs, hard drives, and disk image files stored in the Mac OS X Server file system (UFS). Both SCSI and ATA/IDE (including ATAPI) drives are supported.

Disks can be accessed in one of three modes: Shared, Exclusive, or SCSI. Not all disk modes are available for all disks. The default access mode is Shared mode, except for disk images (which are always accessed in Exclusive mode). In order of highest-to-lowest interoperability with Mac OS X Server applications, the modes are Shared, Exclusive, and SCSI. Conversely, the modes in order of highest-to-lowest compatibility with Mac OS applications are: SCSI, Exclusive, and Shared.

Thus, there is a fundamental tradeoff involved with choosing which mode to use to access a disk. Shared mode was chosen as the default access mode because it provides a high enough level of compatibility to support typical productivity applications, while at the same time permitting access to the same disk via Mac OS X Server applications.

For more information, see the sections entitled "Disk Access Modes" and "Disk Drive Support".

Copy and Paste Between Mac OS and Mac OS X Server

MacOS.app currently supports basic Copy and Paste between Mac OS and Mac OS X Server applications.

Text can be copied (without style information) back and forth between the two kinds of applications. This includes some support for two-byte characters. See the "Bugs and Compatibility Issues" section for more details.

Pictures ('PICT') can be copied from Mac OS to Mac OS X Server applications, but are converted to RTF, which cannot be copied back to Mac OS. Many more data types are expected to be supported in future releases of MacOS.app.

Networking

MacOS.app supports Open Transport AppleTalk and TCP/IP networking using built-in Ethernet and any PCI Ethernet devices supported by Mac OS X Server. LocalTalk (AppleTalk over serial ports) is not supported. As with native Mac OS, AppleTalk networking is active by default if connected to a network.

AppleShare Client as well as Personal File Sharing, AppleShare Server and AppleShare IP Server are fully supported by MacOS.app. Personal Web Sharing is also supported.

Since Mac OS uses a different networking model than Mac OS X Server (Open Transport vs. Sockets), you must use a separate IP address for MacOS.app TCP/IP from that used by Mac OS X Server. This is best accomplished by using a static IP address in the TCP/IP control panel (or by using MacIP - IP over AppleTalk). In previous versions of MacOS.app, when the same IP address was used for Mac OS X Server and MacOS.app, Open Transport reported an error message indicating the reason TCP/IP networking is not available. If the same IP address is used in the present versions of Mac OS X Server and MacOS.app, Open Transport TCP/IP will silently be disabled.

PCI Native Driver Model

MacOS.app partially supports the PCI native driver model. This means that the name registry, DriverServicesLib, and associated libraries are present. However, the Mac OS device tree is currently empty, so no 'ndrv' drivers are loaded.

Video

Unlike Mac OS X Server, MacOS.app can change color depth on the fly and supports multiple monitors in color depths of 8, 16, and 24-bit (256, "thousands" or "millions" of Colors or Grays). However, if Mac OS X Server is in grayscale mode, then MacOS.app will not allow depth changes.

Because of limitations in Mac OS X Server, MacOS.app cannot change resolution (size and scan rate). The resolution must be changed in Mac OS X Server's Preferences application and the changes take effect after logging out of Mac OS X Server.

MacOS.app supports multiple monitors. However, you may set it up to use only one monitor on a multiple-monitor system. MacOS.app assigns the number 0 to the main monitor (the one with the menu bar). Additional monitors are assigned the numbers 1, 2, etc. Setting the Mac OS X Server user preference "MonitorSelect" for MacOS.app to a value that indicates that monitor's assigned number will cause MacOS.app to only use that monitor for displaying video.

For example, from a Mac OS X Server Terminal window:

```
"defaults write MacOS MonitorSelect 0"
```

means only use the main monitor and

```
"defaults write MacOS MonitorSelect 1"
```

means only use the second monitor.

AppleEvents and AppleScript

AppleEvents and AppleScript are supported as usual within MacOS.app and from MacOS.app to scriptable Mac OS X Server applications.

For Mac OS X Server applications to be scriptable, they must use the Scripting Framework. Developer documentation on the use of this framework can be found in /System/Documentation/Developer/YellowBox/ReleaseNotes/

The Script Editor in MacOS.app can target applications that are running in the Mac OS X Server environment. On the local machine, targeting these applications is done the same way that targeting Mac OS applications is done.

For example, if you have a Mac OS X Server application named Sketch, you would target the application with standard AppleScript syntax:

```
tell application "Sketch"
```

```
...
end tell
```

If you are targeting Mac OS X Server applications on other machines, the syntax is slightly different and uses a semicolon between the application name and the host name:

```
tell application "Sketch;hostname"
...
end tell
```

The normal Mac OS syntax to target remote Mac OS X Server applications:

```
tell application "Finder" of machine "machine name" of zone "zone name"
...
end tell
```

is not supported in this release.

The MacOS.app Script Editor cannot get the dictionary information for a Mac OS X Server application in Mac OS X Server 2.0. This functionality will be added in a later release.

By default, Scripting between two machines is turned off for security purposes (similar to Mac OS Program Linking which is turned off as the default). The following information will help you turn on remote AppleEvents and remote AppleScripting.

The remote scripting default is called NSAllowRemoteAppleEvents.

It can be set from a Terminal window like this:

```
defaults write NSGlobalDomain NSAllowRemoteAppleEvents YES
```

It could also be turned on only for certain applications as follows:

```
defaults write Sketch NSAllowRemoteAppleEvents YES
defaults write TextEdit NSAllowRemoteAppleEvents YES
```

An API for using AppleEvents outside of AppleScript in Mac OS X Server applications has not been provided in this release.

Sound Output

Sound output is fully supported by MacOS.app, although breakup may occur during times of heavy CPU usage or memory paging. Occasionally, this may result in sound going silent altogether until the application using sound quits or MacOS.app is restarted. Playing sound in Mac OS X Server and MacOS.app simultaneously will have unpredictable results.

SCSI Manager

The Mac OS SCSI manager is partially supported in this release. It can be used via SCSI Mode for disks, as discussed in the section "Disk Access Modes", and to access non-disk devices (such as scanners and tape drives) which are not in use by Mac OS X Server.

Both the original SCSI Manager and SCSI Manager 4.3 are supported with the following limitations:

Original SCSI Manager:

SCSIReset will not reset the SCSI bus.

The values returned from SCSIStat provide only an approximate indication of what is going on during a transaction. Code that relies on SCSIStat to control an operation may fail.

SCSI Manager 4.3:

MacOS.app does not support Mac OS drivers for third-party SCSI cards. Mac OS X Server DriverKit drivers are required to use these cards.

The SCSIBusInquiry function does not return complete information about each SCSI bus.

The SCSIResetBus function will not reset the SCSI bus.

Command queuing functions, such as scsiQEnable, scsiSIMQHead, scsiSIMQFreeze, scsiSIMQNoFreeze, scsiSIMQFrozen and SCSIReleaseQ are not implemented.

All SCSI transfers use DMA. Handshaking information is ignored. The scsiSelectTimeout parameter is ignored.

SCSIAbortCommand and SCSITerminateIO are not implemented.

The SCSI implementation will attempt to negotiate synchronous data transfer and device disconnect by default.

scsiNoParityCheck, scsiDisableSelectWAtn, scsiSavePtrOnDisconnect, scsiDisableWide, scsiInitiateWide, and scsiRenegotiateSense, scsiNoBucketIn, and scsiNoBucketOut are not supported.

If an application traverses the SCSI chain, devices that are already reserved or in use (e.g., by Mac OS X Server) will not be found. In order to have an application recognize a device via the SCSI manager, you must explicitly set that device to SCSI mode as described below.

Disk Access Modes

The sections below describe the tradeoffs among the three access modes: Shared, Exclusive, and SCSI. If you are just running Mac OS productivity applications, you should not need to switch the access mode for any of your disks or partitions. However, in case you need to run disk utilities - such as Disk First Aid, Disk Copy, or Drive Setup - you may need to (temporarily) switch the access mode of one or more of your disks or partitions. The "Blue Volume Mount Options" control panel is provided to allow you to set these access modes for individual disks and disk partitions. It is described below, after the explanations of the three access modes.

You can determine in which mode a volume is being accessed by selecting it in the Finder and invoking the "Get Info" command from the "File" menu. The dialog that appears includes a "Where" string that describes the mode in which the underlying disk is currently being accessed, along with an indication of the physical disk to which it corresponds. Disks accessed in Shared mode will have "Shared" in this string. Similarly, disks accessed in Exclusive mode will have "Exclusive" in this string. Disk image files (which are always accessed in Exclusive mode) will list the pathname of the disk image file. Disks accessed in SCSI mode will have a string identical to the one they would display if running native Mac OS; typically this string gives the SCSI Bus number and SCSI device ID of the drive.

For disks accessed in Shared or Exclusive mode, the SCSI bus and ID (or ATA/IDE ID) are not given; instead, they are identified in the "Where" string by their Mac OS X Server device name. In order to understand how Mac OS X Server names disk devices, you will need to consult the documentation for Mac OS X Server. Briefly, SCSI (and ATAPI) disks have names like "sd0", "sd1", etc. ATA/IDE drives have names like "hd0"; and floppy disks have names like "fd0". Disk devices may also have more than one HFS(+) partition; the first HFS(+) partition of "sd0" is "sd0_hfs_a", the second is "sd0_hfs_b", etc. Disks without partition maps (such as floppies and ISO9660 CD-ROMs) are treated as though they consisted of a single HFS(+) partition, comprising the whole disk (e.g., "sd0_hfs_a").

Shared Mode

MacOS.app supports mounting HFS(+) volume(s) which are already mounted by Mac OS X Server. This mode of access is called Shared mode because all the files and folders on Shared volumes are simultaneously accessible from Mac OS applications running inside MacOS.app and Mac OS X Server applications running outside of it. Shared mode was chosen as the default file system access mode because it does not require the user to unmount a volume from one environment before mounting it in the other.

Although Shared mode access provides the highest level of interoperability between Mac OS and Mac OS X Server applications, it is not compatible with Mac OS applications that require low-level disk access. Mac OS productivity applications are not affected by this incompatibility since they access files and folders via the high-level interface provided by the File Manager. On the other hand, disk utility programs typically require low-level disk access. Examples of disk utilities that require Exclusive mode access are Disk First Aid, and Norton Disk Doctor. Examples of disk utilities that require SCSI mode access are Drive Setup, and FWB's Hard Disk Toolkit. None of these utilities will function correctly on a volume accessed in Shared mode.

Volumes accessed via Shared mode are slightly less compatible with Mac OS applications than if they were mounted in Exclusive or SCSI mode. But they are far more flexible because they allow you to concurrently share data between Mac OS applications running inside MacOS.app and Mac OS X Server applications running in the Mac OS X Server environment. This means that the files and folders you see in MacOS.app can also be seen from Mac OS X Server.

In Shared mode you should be able to run nearly all of the applications you run on a native Mac OS system. One small difference between volumes accessed via Shared mode is that the size of the underlying "disk" may not be reported accurately. For small HFS disks (like floppies), it might be overestimated by a few kilobytes and for large HFS+ disks (like multi-gigabyte hard drives) it might be underestimated by a few megabytes. This cosmetic difference should not have any adverse affect, since block-level access is not permitted on disks accessed via Shared mode.

In general, other incompatibilities and inconsistencies result from conflicts over shared resources. For example, if a Mac OS application running inside MacOS.app is accessing a file (or group of files) at the same time that a Mac OS X Server application is accessing them, there is a risk that they might make conflicting changes.

One place where this arises is in the process by which the Mac OS Finder rebuilds the Desktop Database. In Mac OS X Server, the Desktop Database is a shared resource that is managed by an independent server task (the "DesktopDB" server) and which fields requests from various clients, including MacOS.app. This works well and provides a centralized place for serializing access to the shared Desktop Database files. However the mechanism used by the Mac OS Finder for rebuilding the Desktop Database conflicts with the Desktop Database server. Consequently, rebuilding the Desktop Database on a Shared volume will not always have the desired effect. This problem will be addressed in a future Finder and MacOS.app. As a workaround you can switch the disk to Exclusive mode, rebuild the Desktop Database, and then switch the disk back to Shared mode. See the section on the "Blue Volume Mount Options" control panel for information on switching modes.

Another example of a shared resource conflict can be seen when attempting to eject a disk from one environment (the Workspace or the Finder) while it is in use by an application in the other environment. In this case, the ejection attempt may appear to succeed (i.e., the volume's icon may disappear from the desktop) but the disk might not be physically ejected from the disk drive. If this happens, the solution is to switch to the other environment and eject the disk from that environment as well (after closing any files that may be in use first, of course). Since Mac OS X Server cannot tell if individual files are open by Mac OS applications running inside MacOS.app, the Workspace will refuse to eject a disk that is mounted in MacOS.app, even if there are no individual files opened from that volume by Mac OS applications. Going in the other direction is a little better; when you attempt to eject a removable disk from MacOS.app it will ask the Workspace to unmount any volumes mounted from that disk and to eject the disk. If there are no files open from that volume and no processes whose current working directory is set to a directory on that volume, then the disk will be automatically unmounted from Workspace and ejected - there will be no need to switch to the Workspace and eject the disk again.

Remember, having a Mac OS X Server application with its "current working directory" set to a folder on a disk marks that disk as "in use" the same way that having an open file does. For example, if you insert a floppy in the Workspace then in a Terminal window "cd" to some directory within the floppy, you will not be able to eject that floppy via MacOS.app.

Removable disks accessed via Shared mode are not ejected upon shutdown of MacOS.app (floppies are an exception).

How does Shared volume support work? MacOS.app contains the same File Manager code used by the native Mac OS with the addition of some logic that determines when a file system request is targeting an object on a Shared volume. These requests are passed over to the HFS(+) implementation in Mac OS X Server. The important thing to note is that this processing happens at the level of Mac OS File Manager requests, as opposed to disk driver requests or SCSI Manager requests. Thus, when you ask to "open" a file on a Shared volume, that request is sent to Mac OS X Server and is processed there. The results of the "open" in Mac OS X Server are passed back to MacOS.app and mapped into Mac OS "open" results. Then, a "read" from the newly opened file would be mapped into a Mac OS X Server "read" request and the results mapped in a Mac OS "read" result. The MacOS.app implementation of the

Shared file system tries to map the file system requests and their results as closely as possible to native Mac OS. Applications should never know (or care) that they are running in the MacOS.app on a Shared volume, as long as they limit themselves to making File Manager requests and do not attempt to make disk driver or SCSI Manager requests.

The choice between Shared and Exclusive mode access can be made on a per-partition basis for disks with multiple HFS(+) partitions.

Exclusive Mode

MacOS.app supports mounting HFS(+) disk volumes in a mode that permits block-level access. This mode permits certain disk utilities (such as Disk First Aid and some operations in Disk Copy) to run that would not work with a disk accessed via Shared mode. This is called Exclusive mode because disks accessed by MacOS.app in this mode appear exclusively in MacOS.app and cannot be accessed by Mac OS X Server applications. You can request that a disk or partition be accessed via Exclusive mode by using the "Blue Volume Mount Options" control panel.

When Mac OS X Server first detects an HFS(+) disk partition (either when starting up or when a removable disk is inserted into a drive) it mounts it and notifies MacOS.app. MacOS.app is also notified about disks that are not recognized or mounted by Mac OS X Server. When MacOS.app notices a disk that has been mounted in Mac OS X Server for which the user has selected Exclusive mode, it asks Mac OS X Server to unmount the disk and then mounts it exclusively.

Because it remains under the control of the Mac OS X Server SCSI drivers, a disk accessed via Exclusive mode cannot be accessed via the Mac OS SCSI Manager, even if the underlying disk is a SCSI disk.

Volumes accessed in Exclusive mode can be read from and written to, regardless of the access rights of the user.

Disk image files like the supplied StartupDisk.img are always accessed via Exclusive mode.

The choice between Exclusive and Shared mode access can be made on a per-partition basis for disks with multiple HFS(+) partitions.

Removable disks accessed via Exclusive mode are usually ejected upon Shutdown or Restart of MacOS.app. CD-ROMs are an exception and are not ejected upon shutdown, in order to more closely mimic the behavior of Mac OS.

SCSI Mode

MacOS.app supports SCSI disk devices that are recognized by Mac OS X Server. MacOS.app provides a special compatibility mode for accessing these devices via the SCSI Manager, just as they would be accessed under the native Mac OS. This mode provides the highest level of compatibility with Mac OS disk utilities, especially with those that require SCSI access, like Drive Setup.

Like Exclusive mode, SCSI mode must be selected by using the "Blue Volume Mount Options" control panel. When MacOS.app first detects a disk for which SCSI mode has been selected, it attempts to unmount it from Mac OS X Server. If this succeeds, MacOS.app can access it in SCSI mode without fear of interference from Mac OS X Server applications.

Volumes accessed in SCSI mode can be read from and written to, regardless of the access rights of the user.

Unlike the choice between Shared and Exclusive mode access - which can be made on a per-partition basis for disks with multiple HFS(+) partitions - accessing a disk via SCSI mode precludes any other sort of access, either by Mac OS X Server or via Shared or Exclusive mode in MacOS.app. One consequence of this is that a disk containing a UFS file system partition that is mounted by Mac OS X Server cannot be accessed via SCSI mode in MacOS.app. For example, if your system has only one hard drive and has separate partitions for UFS and HFS(+) file systems, you will not be able to access the disk in SCSI mode.

Removable SCSI drives without media present will become reserved for SCSI mode access if probed via a SCSI disk utility like Drive Setup.

SCSI mode access is not available for ATAPI devices (which includes the internal CD-ROM and optional Zip drive on some Power Macintosh G3 models) or IDE/ATA devices (which include the internal disks on most non-Server Power Macintosh G3 models).

Switching Modes: The "Blue Volume Mount Options" Control Panel

In the "Apple Extras" folder of the supplied StartupDisk.img is the control panel to set the desired access mode for disks and disk partitions. Disks can be accessed in one of three modes (Shared, Exclusive, or SCSI), although not all disks will permit access in SCSI mode. A disk cannot be accessed in SCSI mode if it is not a SCSI disk (e.g., floppies, ATA/IDE/ATAPI disks). Nor can it be accessed in SCSI mode if there is a UFS file system mount point active on the disk at the time the mode switch is attempted (either when the control panel is launched or when MacOS.app is starting up).

Launching the "Blue Volume Mount Options" control panel displays a single dialog which can be dismissed by quitting the control panel or closing the window. Any changes that are made are stored immediately upon quitting the control panel, although most changes do not take effect until MacOS.app is restarted.

The control panel lists all the disk drives and disk partitions that it finds on the system, together with three columns of radio buttons, named after the three possible modes of operation: SCSI, Exclusive, and Shared. If a radio button does not appear in one of the columns, it means that the corresponding mode is not available for that drive (e.g., SCSI mode for an ATAPI CD-ROM drive). Radio buttons are used to convey the fact that each drive or partition can only be accessed in one mode at a time. For a brief explanation of how Mac OS X Server names disk devices, see the beginning of the "Disk Access Modes" section. If a disk partition is already mounted in Shared or Exclusive mode, it will appear in the control panel under that name (e.g., "sd0_hfs_a"). If it is a removable drive with no disk present, it will appear under the name of the drive (e.g., "sd0"). Finally, if it is being accessed via SCSI mode, it will appear labeled with its SCSI Bus and device ID (e.g., "Bus 0, ID 0"). In each case, these labels should correspond closely to what you will find in the "Where" string displayed in the Finder's "Get Info" dialog for that volume.

The same disk may appear under different names at different times in the "Blue Volume Mount Options" control panel depending on whether there is a disk in the drive. For example, the internal ATAPI CD-ROM drive on a Power Macintosh G3 will appear as "ATA drive sd0" when there is no CD-ROM in the drive, but as "HFS partition sd0_hfs_a" when a CD-ROM is in the drive.

If a disk has multiple HFS(+) partitions, they can be accessed in Shared or Exclusive mode independently from one another. In other words, the choice between Shared and Exclusive mode can be made on a per-partition basis. Similarly, Mac OS X Server can mount a UFS partition from a disk containing one or more HFS(+) partitions, each of which may be accessed in Shared or Exclusive mode. SCSI mode is different, though, because it requires complete control of all requests going to the disk. Therefore, selecting SCSI mode for one partition on a disk causes all the partitions on the disk to be accessed via SCSI mode. If you try this, you will see that the settings of the radio buttons automatically reflect this constraint. Similarly, you cannot select SCSI mode for a disk containing a mounted UFS file system. If you do select SCSI disk mode for a disk that contains an unmounted UFS file system, your selection will be honored. You will not be able to mount that UFS file system in Mac OS X Server while MacOS.app is accessing the disk in SCSI mode.

For fixed, non-removable disks, changes made via the "Blue Volume Mount Options" control panel will not take effect until MacOS.app is restarted. Removable disks are an exception to this rule: if you change the access mode for a removable disk then it will be accessed in that mode the next time you insert a disk in the drive. Consequently, you can quickly change the access mode for a removable disk by changing the setting in the control panel (and quitting it), ejecting the disk, and reinserting it - all without needing to restart MacOS.app.

There is one situation in which switching modes requires special care. When switching a non-removable disk to Shared mode from some other mode, you must shut down MacOS.app and wait for the Workspace to remount the disk on its desktop before re-launching MacOS.app. Otherwise, if you were to switch a disk to Shared mode and restart MacOS.app (e.g., from the Finder) then the Workspace might not have enough time to remount the disk before MacOS.app claimed it in Exclusive mode again. In this situation, the disk would not appear on the desktop of the Workspace and the "Where" string in the Finder's "Get Info" dialog for the disk would indicate "Exclusive". If this happens, the only way to get the Workspace to remount the disk for Shared access is to log out of the Workspace (after shutting down MacOS.app) and log back in again.

Currently, settings made via the "Blue Volume Mount Options" control panel are stored in the user's defaults database, although this might change in the future. Consequently, in a NetInfo environment, the same settings will be used for a user regardless of the machine they login to - beware. To see which disks have been set up in Exclusive mode, execute this command from the command line (i.e., in a Terminal window): "defaults read MacOS ExclusiveDisks". This "defaults" setting is a list consisting of device and/or individual partition names, separated by spaces. To see which disks have been set up in SCSI mode, execute this command at the command line: "defaults read MacOS SCSIDiskLoans". This list consists of ":" pairs, separated by spaces. If a disk or partition is not mentioned on either of these lists then MacOS.app will attempt to access it via Shared mode. In general, there should be no need to view these settings from the Mac OS X Server command line rather than with the "Blue Volume Mount Options" control panel. However, this information is provided because it might be useful for remote diagnosis and trouble-shooting.

The disk mode selections made via the "Blue Volume Mount Options" control panel are only requests. In some cases, it might not be possible to honor them and MacOS.app may mount a disk in a mode other than the one selected in the control panel. To find out what mode a volume is being accessed in, you can interpret the "Where" string displayed in the Finder's "Get Info" dialog for that volume, as described at the beginning of the "Disk Access Modes" section. For example, if Exclusive mode is selected for a disk partition but a Mac OS X Server application has a file from that partition open, then MacOS.app will not be able to get Exclusive access when it starts up. Rather than having the disk not appear in MacOS.app in this situation, MacOS.app will fall back to mounting the disk in Shared mode.

Mac OS X "Disk Mounting" Preferences

There is a preference setting, "Disk Mounting", which can restrict MacOS.app's ability to unmount volumes from Mac OS X Server. In turn, this can prevent MacOS.app from ejecting removable disks and from accessing disks via Exclusive or SCSI mode.

To invoke the "Disk Mounting" preference panel, select it in the "Computer Settings" submenu of the Mac OS X Server Apple Menu. The panel includes some explanatory text. To change the panel's setting, you must be logged-in as root. Changes will not take effect until Mac OS X Server is restarted.

The default setting for a Server configuration is either "Fixed & removable disks" or "Only fixed disks". In a non-Server configuration where MacOS.app is going to be used extensively, it may be more convenient to select the "Only the startup disk" setting, for reasons that will be explained. However, this setting is not appropriate for a Server, because it means that files cannot be served from disks other than the startup disk unless someone is logged into the server. The other two settings are more appropriate for a Server because they permit files to be served from all disks attached at startup time, regardless of whether anyone is logged into the server.

In either of the Server modes you must be logged-in as root if you wish to use MacOS.app to eject removable disks or access disks via Exclusive or SCSI mode. This is a security precaution that is appropriate for a Server configuration, but might be overly restrictive for a Macintosh that is being used as a personal workstation, especially if it is shared between non-root users. If you select the "Only the startup disk" setting in the "Disk Mounting" preference panel (and restart Mac OS X Server), then disks other than the startup disk will be mounted upon login and unmount upon logout. As a result, the user that logs in will be able to use MacOS.app to unmount these disks, e.g. in order to eject a removable disk or to access a disk via Exclusive or SCSI mode.

Disk Drive Support

The following sections discuss the level of support provided for various kinds of disk media. Since some things apply to whole families of drives (e.g., SCSI drives) and some things apply to specific kinds of drives (e.g., CD-ROM drives), there is some overlap between the categories and you may need to read them all in order to find what you are looking for.

SCSI Disk Drives

SCSI disk drives can be accessed in Shared, Exclusive, or SCSI mode.

For more information on SCSI mode file system access, see the section on "SCSI Mode File System Access". For more information on switching the access mode, see the section on the "Blue Volume Mount Options" control panel.

SCSI disk devices (e.g., hard drives, CD-ROM drives, Zip drives, and Jaz drives) are supported, including those with multiple partitions. In Shared and Exclusive mode they behave like generic SCSI hard drives with the addition that disk-insertion detection and auto-ejection are supported. In Shared and Exclusive mode, special vendor-specific drivers (e.g., the Iomega Driver) are not loaded or used. If the drive has a manual-ejection button then it will be disabled while the disk is being accessed.

In SCSI mode, most third-party SCSI drivers are supported, including those that make possible special device-specific features (e.g., hardware write-protection or password protection). In this mode, MacOS.app supports the original SCSI Manager and SCSI Manager 4.3 with limitations. See the section on "Bugs and Compatibility Issues" for more details.

Mac OS X Server implements SCSI device arbitration. This means that only one client can send SCSI commands to a SCSI device at a time. Often, in the case of SCSI disks, this client is the Mac OS X Server file system. When

MacOS.app is accessing a disk partition in Exclusive mode, then it is the client. For the purpose of SCSI mode access, MacOS.app can "see" any SCSI device not in use by Mac OS X Server (or any other client). In particular, removable disk drives with no media in place are always visible to MacOS.app and if probed will be accessed in SCSI mode until MacOS.app is shut down.

ATA/IDE/ATAPI Disk Drives

ATA/IDE/ATAPI drives can be accessed via Shared or Exclusive mode. They cannot be accessed via SCSI mode.

"ATA" and "IDE" are used interchangeably. The internal hard drives on most non-Server Power Macintosh G3 models are ATA/IDE drives. MacOS.app does not currently support the Mac OS ATA Manager. A future release may include an "ATA mode" similar to the existing "SCSI mode". "ATAPI" drives are special ATA/IDE drives with additional features. The internal CD-ROM and optional Zip drives on Power Macintosh G3 models are ATAPI drives.

Floppy Drives

Floppy drives can be accessed in Shared or Exclusive mode. They cannot be accessed in SCSI mode.

High Density (1.44 MB) floppies are fully supported. 800 KB floppies are supported read-only.

MacOS.app supports auto-detection and auto-ejection of floppies. Low-level initialization is only supported in Exclusive mode. If you insert a floppy that lacks a low-level format, it will be automatically accessed in Exclusive mode in order to permit you to initialize it. If, after initializing such a floppy, you wish to access it in Shared mode, you will need to eject it and reinsert it. See the section on the "Blue Volume Mount Options" control panel for instructions on how to change the mode. See the "Bugs and Compatibility Issues" section for other floppy issues.

Disk Image Files

Disk image files are volume images in Mac OS Disk Copy uncompressed format, stored in Mac OS X Server's UFS file system. They are always accessed in Exclusive mode. From the Mac OS X Server environment, they appear as large binary files whose name end in ".img". In the Mac OS environment, however, they appear as regular Mac OS volumes (with a special icon). By default, MacOS.app will startup from the disk image file in /Local/Library/MacOS/Users//StartupDisk.img. See the section "Working With Disk Image Files", below, for details.

CD-ROMs

CD-ROMs are supported in MacOS.app. They behave like locked SCSI hard drives when accessed via Shared or Exclusive mode. MacOS.app supports auto-detection and auto-ejection of CD-ROMs.

HFS(+) CDs can be accessed in Shared, Exclusive, or SCSI mode. DOS, ProDOS, PhotoCD, ISO 9660, and High Sierra CDs are automatically mounted in Exclusive mode, even if Shared mode is selected. They are also accessible in SCSI mode.

ISO9660 CDs are treated specially: they are mounted simultaneously in Mac OS X Server and in MacOS.app, but they are mounted in Exclusive mode in both environments. This may sound like a contradiction, but is possible because CD-ROMs are read-only media and there is no risk of writing inconsistent data or causing disk corruption. ISO9660 CD-ROMs are the only exception to the rule that disks appearing in MacOS.app in Exclusive mode do not appear in Mac OS X Server.

Only the first session of a multisession CD-ROM will be accessible in Shared or Exclusive mode. To access additional sessions the CD-ROM drive must be accessed in SCSI mode. See the section on the "Blue Volume Mount Options" control panel for instructions on how to change the mode.

Audio CDs are only accessible in SCSI mode. Audio playthrough is not supported, however.

If an Audio CD or any other CD in an unsupported format is inserted in Shared or Exclusive mode then the CD will automatically be ejected from the drive.

CD-ROMs are not ejected upon Shutdown or Restart of MacOS.app, even if accessed via Exclusive mode. This mimics the behavior of the native Mac OS.

DVD ROMs

DVD ROM disks are supported in Exclusive and SCSI modes. MacOS.app supports the UDF file system format that is used on these disks. DVD ROM movie playback is not supported in Mac OS X Server.

Working with Disk Image Files

Use of Disk Image Files

Although disk image files are used as default startup volumes in this release, they may not be the best choice for long-term use. More convenient startup volume options are available in this release which supports HFS(+) volumes that can be shared between Mac OS X Server and Mac OS.

You can use the Mac OS Startup Disk control panel to select a different startup volume. This can be very useful, but a few important steps are needed to properly setup a startup volume. If you plan to use this feature, be sure to read the "Startup Options" section below.

The StartupDisk.img created when you first launch MacOS.app is a relatively small startup volume (215 MB), which will not allow installing much software. It is suggested that you use available Mac OS partitions or create additional disk images to hold Mac OS applications and documents.

Even if you install applications elsewhere, as suggested, many applications also take up space in the System Folder on the startup disk. Enough free space (about 40 MB) has been left for the System Folder additions of a few applications. However, you may eventually run out and be forced to enlarge your StartupDisk.img, as described below, or switch to startup from an HFS(+) partition.

Creating New Disk Image Files

At startup time, after finding the startup volume (StartupDisk.img by default), MacOS.app will search for and attempt to mount image files (files ending in ".img", but excluding StartupDisk.img) in the following Mac OS X Server directories:

```
/Local/Library/MacOS/Users/<user name>

~/Library/MacOS

/Local/Library/MacOS

/System/Library/MacOS
```

Note that the first two directories are private to a particular user ("~" means the current user's home directory), whereas the last two are global to all users of the machine.

MacOS.app respects the file permissions for disk images. If the user has only read permissions for the disk image file in the Mac OS X Server file system, then the image will appear locked in MacOS.app.

You can create new disk image files in Mac OS X Server by using Disk Copy in MacOS.app and creating the disk image on a shared volume, which can then be moved to one of the above directories. You can also create a disk image on a native Mac OS system and transfer the file to Mac OS X Server with "ftp" (or other utility).

Alternatively, you can use the provided "createimage" tool in the /usr/bin/ directory. It creates an empty image file that can be made available within MacOS.app. To use this tool, from a Terminal window (when logged in as the user who intends to use the image), execute:

```
createimage -mb num -o name
```

where "num" is the desired disk image size in MB and "name" is the pathname of the image file to be created, usually of the form:

```
"/Local/Library/MacOS/Users/<user name>/<name>.img".
```

For example:

```
createimage -mb 100 -o /Local/Library/MacOS/Users/me/mydata.img
```

The next time MacOS.app is started, Mac OS will present a dialog offering to initialize this new volume; you should allow the initialization to proceed.

Enlarging Your Startup Disk Image File

You can enlarge your StartupDisk.img by creating a new disk image with "createimage," and copying the contents of the startup disk to that new image. Perform the following steps to create a larger startup disk.

1. Make sure that MacOS.app is not running.
2. Create a new, larger, disk image using "createimage".

```
cd /Local/Library/MacOS/Users/<user name>

createimage -mb <size in MB> -o NewStartupDisk.img
```

3. Start MacOS.app.
4. Initialize the new volume when asked.
5. Copy the contents of the startup disk to the new volume.
6. Shut down MacOS.app.
7. Rename the original StartupDisk.img and rename your new disk image.

```
cd /Local/Library/MacOS/Users/<user name>

mv StartupDisk.img StartupDisk.img.old

mv NewStartupDisk.img StartupDisk.img
```

MacOS.app will now startup from your newly created startup disk.

When you are satisfied that the new startup disk image is OK, the old image may be removed to conserve disk space.

It is also possible to transfer image files to native Mac OS and modify their contents using Apple's Disk Copy utility. The correct file type and creator for image files are 'hdrv' and 'ddsk', respectively. These can be set when transferring if using Fetch, or afterwards via ResEdit or other utilities. The version of Disk Copy included with this release of MacOS.app supports opening disk image files with incorrect file types via drag and drop. Disk Copy will treat the data fork as a valid image only if the resource fork does not have any of the NDIF specific resources in it (or if there is no resource fork at all). So, if ftp is used to download just the data fork of a Disk Copy image file, Disk Copy should be able to mount it.

Startup Options

Startup

By default, MacOS.app starts up from your StartupDisk.img. If you have problems with your StartupDisk.img, see the section "Startup Disk Problems", below. If the currently selected Startup volume for MacOS.app does not support MacOS.app, a new StartupDisk.img will be created to allow proper startup.

If you wish, you may select an HFS(+) partition as your startup disk, using the Startup Disk control panel. You can even dual boot native Mac OS and MacOS.app from the same startup disk.

As with native Mac OS systems, you can hold the "C" key down to start up from the CD-ROM drive. This is done just after starting up MacOS.app, but before the gray screen appears.

Configuring a Startup Disk's System Folder

For versions of Mac OS prior to Mac OS 8.6 installation requires that the target disk be in Exclusive mode during installation. Beginning with Mac OS 8.6 it is possible to perform an installation to a target disk in Shared mode as well.

Once your new startup disk is set up, select it using the Startup Disk control panel and then restart MacOS.app.

After setting your system to start up from a Mac OS partition, you may remove the StartupDisk.img file from the /Local/Library/MacOS/Users/ directory.

Startup Problems

If MacOS.app immediately quits on a user's first attempt to start up, check the ownership of the /Local/Library/MacOS/Users/ directory. If it is owned by root, change the ownership to using the chown command, then restart MacOS.app.

Startup Disk Problems

If you have a problem with your StartupDisk.img, MacOS.app can be forced to install a new StartupDisk.img. When starting MacOS.app, hold down the Command-Option-Shift keys. You will be given the option to modify your PRAM file. You must modify your PRAM file to proceed with fixing your startup disk problems. If you accidentally pressed the Command-Option-Shift keys, you should choose the Quit option.

After modifying your PRAM file, you will be given the option of deleting, using or renaming your current StartupDisk.img. If the disk image is corrupted and you don't want to mount it, but you don't want to delete it, be sure to remove the ".img" extension when renaming. Renaming a disk image across Mac OS X Server file system volumes (mount points) will result in a copy (rather than a rename). This will take a while.

If the "Copying StartupDisk.img" dialog is cancelled when MacOS.app is not in the foreground (i.e., the dialog is frontmost, but is not active), the "Cancel" button may appear pressed, but then doesn't release. Click anywhere in the dialog to complete the cancel operation.

Renaming a startup disk image across file system volumes when there is insufficient disk space available may cause Mac OS X Server to fail. Due to the large size of the disk images, caution should be used when maintaining several on your disks.

Copying StartupDisk.img Problems

If you receive the "Helper Copy Problem. Exception raised during the write." alert while copying the StartupDisk.img, verify that there is sufficient disk space available for the copy (~ 225 M). This alert can be received if there is negative space available as reported by "df". As a non-root user, type "df -kl" in a Terminal window to get this information.

Bugs and Compatibility Issues

Killing MacOS.app from Mac OS X Server Workspace Process Menu

If you use the Mac OS X Server Workspace process menu to force-kill MacOS.app, a problem occurs if MacOS.app has gone through a restart since being launched by the Workspace. The problem occurs because whenever MacOS.app goes through a restart it gets different process IDs for all of the processes associated with MacOS.app. The force-kill option will shut down all of the MacOS.app windows, but the MacOS.app processes will not be killed because the kill signal will be sent to the original process IDs which no longer correspond to the running MacOS.app processes. Therefore, it will appear that MacOS.app has been killed, but you will not be able to launch a new MacOS.app. To work around this problem, you must manually kill the old MacOS.app processes from the command line using the kill command. You must first find the process ID of MacOS.app. You can do this by typing the following command from the command line:

```
ps -aux | grep MacOS
```

This will produce output that looks something like this:

```
machine ps -aux | grep MacOS

user 721 96.5 26.1 1.03G 33.4M ? R N 2:21 MacOS.app

user 752 0.2 0.1 924K 88K p1 U 0:00 grep MacOS
```

This output shows that the process ID for MacOS.app is 721 and the process ID for the grep command you just ran is 752. You must now kill the MacOS.app process by entering the following command (substitute the process ID of the MacOS.app process you are trying to kill for the process ID 721 as shown below):

```
kill -9 721
```

After killing the MacOS.app process in this way, you should be able to launch a new MacOS.app from the Workspace.

Tear Off Application Menu

The Mac OS Applications window that appears when the Applications menu is "torn off" does not list any Mac OS X Server applications that normally appear in the MacOS.app Applications menu. To switch from MacOS.app to another Mac OS X Server application, you must use the Applications menu and not the tear-off window.

AppleShare File Server connection lost using TCP/IP

When running MacOS.app using Mac OS System 8.5, there is a problem that may cause loss of connection to AppleShare File Servers that are connected via TCP/IP. The workaround for this problem is to connect to the server using the AppleTalk protocol instead. To do this, when selecting the File Server using the Chooser, hold down the Option key when you click on the OK button. This forces the system to connect via AppleTalk and not TCP/IP. This problem has been corrected in Mac OS System 8.6 which is the version that ships with MacOS.app.

Unable to read PC Zip disks

The present version of Mac OS X Server is unable to read PC Zip disks that have been formatted using the Iomega Tools. The problem does not occur if you initialize the Zip disk using MacOS.app by accessing the Zip drive using Exclusive mode and then initializing it by selecting the Finder's "Erase Disk" menu item.

Launching PowerPC Applications from Disks in Direct SCSI Mode

There is a problem that occasionally occurs when launching PowerPC Macintosh applications from disks accessed via direct SCSI mode. The problem causes MacOS.app to hang because of repeated timeouts attempting to access the disk. If you encounter this problem try changing the disk access to Exclusive mode. See the "Disk Access Modes" section for more details.

Symantec's ACT!

When running MacOS.app using Mac OS System 8.5, Symantec_s ACT! will not run properly in MacOS.app. This problem has been fixed in Mac OS System 8.6 which is the version that ships with this release of MacOS.app.

Eudora Pro 4.1

When running this version of Eudora Pro on MacOS.app, the application crashes because it is making a power manager call which is not implemented in MacOS.app. A future version of Eudora Pro will correct this problem.

MacBench 5.0

When running the MacBench 5.0 "all" test (with CD in), MacOS.app will crash when it arrives at the Microsoft Word formatting stage. This problem is currently under investigation and should be corrected in a future version of MacOS.app.

Myth II

When launching Myth II under MacOS.app you may receive an error dialog saying "Myth does not have enough free memory to launch. Try closing open applications or turning on VM". This message is incorrect; the actual problem is due to the Myth application attempting to perform a dynamic screen resolution change that is not supported in MacOS.app. In order to run Myth II under MacOS.app you must first change the screen resolution in Mac OS X Server to 640x480 using the Preferences.app application, then launch MacOS.app with the new screen resolution and Myth II will run correctly.

Switching from MacOS.app to Mac OS X Server

Switching from MacOS.app to Mac OS X Server using command-return is not allowed during startup of MacOS.app. Attempts to do so prior to the Finder starting up will be ignored.

Locked files not owned by current user

MacOS.app runs the MacOS in a multiuser environment. Native MacOS runs in a single user environment. In the Mac OS X Server environment a user must be the owner of a file in order to unlock it. If you try to move a locked file or delete a locked file, owned by someone else in the underlying file system, you will get an "access privileges" error. You can workaround this limitation in several ways. 1) use the chown command to change the owner of the file 2) shutdown MacOS.app and login to the system as the owner of the file, then start up MacOS.app again 3) do the move/rename in a terminal window as root or after doing a su to the owner of the file.

Disk Icons

Disks formatted with 3rd party utilities and utilizing 3rd party drivers may appear on the desktop with a different icon than they would under the native Mac OS. For example, a removable Zip or Jaz disk may appear on the desktop as a generic hard drive icon.

Disk First Aid

The version of Disk First Aid currently shipping will not function correctly when its target is a disk accessed via Shared mode. You can run the Mac OS X version of Disk First Aid (DiskFirstAid.app) or you can set the access mode of the target disk to Exclusive mode. See the "Disk Access Modes" section for more information.

Desktop Rebuild For Shared Mode Volumes

Desktop rebuilds on some volumes mounted in shared mode may take longer than the same rebuilds in native MacOS. It is recommended that if you must rebuild your DesktopDB, you do it in native MacOS or in MacOS.app using Exclusive mode. In fact, a rebuild of the DesktopDB in shared mode does not actually delete the old DesktopDB files (although it appears from the progress dialog that it does), so repair of any damaged entries may not be as complete as would be the case in Exclusive mode or in Native Mac OS.

MacOS Crashes After Improper Shutdown

There is a problem that only happens when running with Mac OS System 8.5 or 8.5.1, in which MacOS.app crashes on startup after being improperly shut down. This is a side effect of putting up the "Your Macintosh was improperly shut down" dialog and will be fixed in a future release of Mac OS. The workaround to this problem is to uncheck the "Shut Down Warning" checkbox in the General Controls control panel. Note that if you do this, not only will there no longer be a warning dialog after crashes, but Disk First Aid will not be automatically run in such cases. You should run Disk First Aid to check the integrity of your file system after all improper shutdowns. There is a Mac OS X Server version of Disk First Aid (DiskFirstAid.app) that can be run on volumes shared with Mac OS X Server. In order for Disk First Aid in MacOS.app to run on a volume, it must be mounted in "Exclusive" mode (see the Disk Access Modes section). Or you can boot into native Mac OS and run Disk First Aid on the volume in question.

Runtime Performance

The runtime performance of MacOS.app is sensitive to other processes running on the Mac OS X Server, especially if these other processes consume the majority of "CPU" time. These types of processes are known as "CPU-bound" or "CPU-intensive" processes. The runtime performance of MacOS.app is highest when these types of processes are not running in Mac OS X Server.

File System Performance

In this release, Shared disk mode may be slower than other modes for some operations. If this is a concern, consider switching disk access modes or using disk images (which are always accessed in Exclusive mode). Disk access modes are discussed in detail in the "Disk Access Modes" section. Shared mode performance is expected to improve significantly in future releases.

NMI (Non-Maskable Interrupt)

On native Mac OS, using Command-Power to generate a NMI invokes the installed debugger (MacsBug) or invokes MicroBug if no debugger is installed. MicroBug is not currently supported in MacOS.app, so Command-Power with no debugger installed is ignored. When a debugger is installed, you may occasionally have to use Command-Power more than once to invoke the debugger. A current version of MacsBug is provided in the Apple Extras folder. Older versions are not compatible.

Mac OS X Server Workspace Logout

When logging out of Mac OS X Server with MacOS.app running, MacOS.app will come to the foreground with a dialog informing the user of the steps to safely shut down MacOS.app. The Workspace logout will be stopped. Upon shut down of MacOS.app, the user will again have to select Logout from the Workspace File menu. If MacOS.app was started from a shell window, it is not registered with the Mac OS X Server, so it will simply be killed during the logout process. This is why we don't recommend starting MacOS.app this way. Also note that if MacOS.app has gone through a restart since being launched by the Workspace, the process IDs for MacOS.app will have changed and the Workspace will not be able to contact it to initiate the safe shutdown dialog. This will also result in MacOS.app being killed during the logout process.

Sparse Virtual Memory

If Mac OS X Server runs out of disk space for virtual memory when MacOS.app is trying to allocate sparse virtual memory for an application, Mac OS will likely crash. This problem will be addressed in a future version of Mac OS X Server.

Aliases on Removable Disks

Mac OS has a limitation that sometimes causes aliases created on removable disks to fail when they are taken to a machine other than the one on which they were created. Because running MacOS.app is much like taking your disks created under native Mac OS and moving them to a different machine, this bug may manifest itself even though you did not physically move your disks to a different machine. This problem will be addressed in a future version of Mac OS.

Disk Copy Disk Images

Starting with Disk Copy version 6.3.3, it is possible to mount Disk Copy disk images from a Shared volume. However, it is not possible to create a disk image from an existing disk which is being accessed via Shared mode (i.e., using either of the "Create Image from Folder..." or "Create Image from Disk..." items in the "Image" menu of Disk Copy). If you are using an older version of Disk Copy to mount a disk image, or you are trying to create a disk image file from an existing disk, you will need to set that disk volume to be accessed via Exclusive mode. See the "Disk Access Modes" section for more information.

Disk images will only mount from shared volumes when the new Disk Copy driver (6.3.3) is loaded. This will happen if you run Disk Copy 6.3.3. The newer driver will override older drivers and "stick" until Shutdown once loaded. This does mean that if you mount an SMI (Self Mounting Archive) created with an earlier version of Disk Copy before the new Driver has loaded, it will not work. The workaround is to run Disk Copy 6.3.3 once.

Disk Initialization

There are two kinds of "Disk Initialization": low-level formatting is device-specific and only need to be performed once for the life of the device, whereas high-level formatting simply writes an empty filesystem onto a device that already has a low-level format. The Finder's "Erase disk..." menu option usually only performs a high-level format, except for floppies, where it also causes a low-level format to be performed. The low-level formatting and partitioning of SCSI and ATA/IDE drives is performed by the Drive Setup application.

SCSI mode: The low-level formatting and partitioning of SCSI disks can only be achieved via Drive Setup for disks that are accessed via SCSI mode. Currently, this is not supported for ATA/IDE drives.

Exclusive mode: The Finder's "Erase disk..." menu option should function as expected for all volumes accessed via Exclusive mode. It will even perform a low-level format for floppies, as long as they are accessed via Exclusive mode.

Shared mode: Neither Drive Setup nor the Finder's "Erase disk..." menu option will function for disks accessed via Shared mode. You should not attempt to reformat or erase a volume that is being accessed via Shared mode. If you select a Shared disk and invoke the "Erase disk..." menu option and then select either the "Mac OS Standard" or "Mac OS Extended" format, then the operation will be aborted and you will get an error alert stating that the "Erasing the disk failed!", and the volume will be unmounted causing it to disappear from the desktop. If this happens, you can remount the volume via the Disk First Aid application - no data will be lost or altered.

The mouse cursor may freeze while performing the low-level format portion of the initialization process on a floppy. Switching to Mac OS X Server will be disabled until the formatting has completed, which may take several minutes.

MacOS.app ignores UFS disks by design, so you cannot reinitialize a UFS disk as HFS(+) with MacOS.app. However, you can do this via the native Mac OS.

NFS Sharing of Disk Images

Read-only disk images can be shared via NFS by instances of MacOS.app running on different machines, but read/write images must not be shared or image corruption will result. Note that startup disk images (StartupDisk.img) are always read/write. In the future these rules will be enforced by MacOS.app when NFS advisory locking (rpc.lockd) is available in Mac OS X Server; but for now don't try it. The sharing of all volume types works fine via Personal File Sharing and AppleShare.

Floppy Disk Can Prevent Startup

Floppy drives have traditionally been treated specially in the Mac OS startup process; the Mac OS always looks for a bootable floppy before attempting to start up from the disk chosen via the Startup Disk control panel. Originally, this was done in order to make it possible to start up a Macintosh with a floppy in case of hard disk corruption. Consequently, the Mac OS attempts to eject any non-bootable floppy that it finds in the drive during startup. MacOS.app inherits this behavior, but, unlike the native Mac OS, can be prevented from doing so by Mac OS X Server applications that may have files open on the floppy, not allowing it to be ejected from the drive. If this happens, MacOS.app will be unable to start up. If you would like to share files from a floppy between Mac OS X Server applications and MacOS.app applications, you should insert the floppy after starting up MacOS.app. Alternatively, you could eject it before launching MacOS.app and reinsert it after MacOS.app has started up.

Removable Media - Insertion and Ejection

When inserted, HFS(+) disks may take longer to mount in the Finder if accessed in Exclusive mode rather than in Shared mode. The extra delay results from the fact that HFS(+) disks are automatically mounted by Mac OS X Server and then need to be unmounted on behalf of MacOS.app in preparation for being mounted in Exclusive mode. This extra step essentially doubles the time required to mount a disk and may be noticeable - especially with slow media like floppy disks.

A request to eject a removable disk within MacOS.app may fail silently if the disk is shared with Mac OS X Server and files are open on the Mac OS X Server side (or a process has its current working directory set to a directory on the disk). In this situation, MacOS.app will behave as though the disk had been ejected (e.g., the disk's icon will disappear from the Finder's desktop), but the disk will not have been physically ejected from the drive. In this situation, you will have to switch to Mac OS X Server and eject the disk via the Workspace (after closing any open files, of course).

MacOS.app ejects all removable media upon shutdown if they are accessed via Exclusive mode, with the exception of the CD-ROM drive. If you select a removable disk as the startup disk using the Startup Disk control panel and that disk is accessed via Exclusive mode, then you will have to quickly reinsert the disk into the drive during the restart.

File System Permissions on HFS(+) Volumes

The Mac OS X Server permissions model is enforced on volumes accessed in shared mode. The way permissions are enforced differs for HFS and HFS+ volumes, due to differences in their ability to store permission information. HFS volumes are unable to store permission information and therefore permissions have to be synthesized whenever they are needed. The permissions for the volume's mount point are used as the starting point for this synthesis (with appropriate differences for files versus folders). Moreover, when Mac OS X Server starts up, it mounts local volumes, setting the owner of these volumes to be root and the group to "macos". MacOS.app runs with an effective group id of "macos". By default, the macos group is set up to allow read/write access. Thus any user running MacOS.app will have access to all files and folders on HFS volumes mounted in shared mode.

HFS+ volumes mounted in shared mode behave similarly to HFS volumes with the exception of permissions that are explicitly set. Permissions are saved to disk on HFS+ volumes and are persistent on Mac OS X Server. However, native Mac OS completely ignores the permission information: it is neither enforced nor maintained. The HFS+ volume mount point will be owned by root and the group will be set to "macos", just as with HFS volumes. When a file is created the current user will be owner of the file and the group will be "macos". This will enable users in MacOS.app to access files as if they were running native MacOS. Please note that once permissions are set on HFS+ volumes they are honored when MacOS.app runs. So if you, or someone else, sets permissions in a terminal window, the above mechanism to allow MacOS.app access (via group macos) to files and folders will not allow access for someone without appropriate permissions to a file or folder. Unfortunately, MacOS was not designed to run in an environment where file access permissions might deny access. In most cases volumes mounted in shared mode will return "access denied" error codes that the Finder will pass along to the user when a permissions failure is noticed in the underlying file system. But there may be some cases where a confusing error may occur - so if you see strange error messages or odd behavior from an application on an HFS+ volume mounted in shared mode, keep permissions in mind.

As noted above, the group "macos" is a special group used to allow users of MacOS.app to access HFS and HFS+ file systems. If this group is removed or renamed, MacOS.app will not be able to access some local filesystems, and will refuse to run unless you are logged in as root.

Apple file services uses group permissions to control remote access to exported filesystems. If you set the group of an exported filesystem to anything other than "macos", then non-root users will not be able to access these filesystems in MacOS.app. To set the group for exported file systems using Remote Administration, click Disk & Share Points and click the disk or folder you want to share, then click Set Privileges.

Symbolic Links in Shared Mode

The R1.1 version of Mac OS X Server supports UNIX symbolic links in the Workspace. However, MacOS.app does not understand symbolic links on volumes mounted in shared mode. When a symbolic link is seen by the Finder or any other application in MacOS.app, the underlying file system always resolves the link. This would be like always resolving a MacOS alias. This behavior is not normal in a MacOS environment, so you may run into unpredictable results if you try to use symbolic links on volumes that are accessed in shared mode. One symptom you may see is a folder that does not contain any items or fewer items than there should be. If you must use symbolic links on volumes accessed by MacOS.app in shared mode, you may want to place the links in a well known directory (a folder called "symlinks", for example). Alternatively, name the symbolic link so it appears at the end of directory when sorted by name (zMyLink, for example). This problem will be fixed in a future version of Mac OS X Server.

Sound Input /Output

When MacOS.app starts up, it uses Mac OS X Server's sound preferences to initially set volume, balance, and mute levels. Changes to these preferences in MacOS.app will also change Mac OS X Server's preferences. While MacOS.app is running, changes to Mac OS X Server sound preferences will not change MacOS.app sound preferences.

Playing sound from an application running in Mac OS X Server at the same time an application is playing sound in MacOS.app may result in unpredictable results.

Sound input is not currently supported. This will affect speech recognition software.

Video Capture

Video capture is not currently supported.

Special Hardware Support

Some applications that require special hardware support, such as the Apple Video Player, will not work correctly under the BlueBox. These applications fail during startup and incorrectly post dialogs suggesting they could work if extensions are added to the System Folder.

Using Localized Disk Images

When starting up on the localized disk images available with MacOS.app, the default keyboard setting while running in Mac OS may differ from the keyboard setting in the Workspace. In Mac OS, this can be changed using the Keyboard control panel. Refer to the "Using different languages" section of Mac OS Help - available from the Help menu in the Finder.

Copy and Paste Between Mac OS and Mac OS X Server

Applications are advised to always use the Scrap Manager to access the Scrap. Direct scrap access may not behave correctly.

When copying data from MacOS.app to a Mac OS X Server application, it may take a noticeable period (up to several seconds) before the pasteboard is synchronized with data from the MacOS.app clipboard. If a paste is performed before this time (e.g., immediately after switching out of MacOS.app), the data may be incorrect, and the paste should be performed again.

System Folder Pieces

Just as with any Mac OS system, when applications are installed, they sometimes install resources into the System Folder on the startup volume. If you later change the startup volume or System Folders, those applications which require resources located in the System Folder, may not work as desired. In order for these applications to run correctly, you must either run the installer or manually move the appropriate pieces to the startup volume System Folder.

Serial

Serial is not supported in this release of MacOS.app; applications attempting to open either port will receive a notInitErr (-900). A future release of MacOS.app will have serial support.

Printing

Because serial is not yet supported, attempting to print to a serial-attached printer will hang MacOS.app.

Mouse Acceleration

MacOS.app uses Mac OS X Server's cursor acceleration for its own, so use Mac OS X Server's mouse preferences to configure cursor acceleration for MacOS.app. The Mac OS Mouse control panel will have no affect on cursor acceleration.

Video

Switching between Mac OS X Server and Mac OS can only happen at SystemTask() time. If Mac OS is hung, running a game which doesn't call SystemTask() or WaitNextEvent(), or sitting in MacsBug, you can't switch. You can still use Command-Shift-Q to force MacOS.app to quit. If this does not work, then the Mac OS X Server part of MacOS.app is hung and you will have to either telnet in from another machine and kill the MacOS.app process, or do a hard reboot of Mac OS X Server.

Similarly, if you switch to Mac OS X Server and then Mac OS hangs, you can't switch back. In that case, you must kill the MacOS.app process from Mac OS X Server. If MacOS.app drops into MacsBug while hidden, you may be able to unhide MacOS.app, but user input will not work. Command-Shift-Q should work.

The Video vertical retrace queue is hung off the System vertical retrace queue, and is therefore not synchronized with the actual monitor refresh interval.

If for any reason MacOS.app causes the Mac OS X Server cursor to go away, you can restore it with the following command from a Terminal window:

```
/System/Applications/MacOS.app/MacOS -showcursor 50
```

Multiple monitors are now supported. MacOS.app does not support display repositioning (via the Monitors control panel). If you try it anyway, you will have problems. To undo your changes, remove the "Display Preferences" file from the Preferences folder in the System Folder, and restart MacOS.app.

Some Mac OS applications that draw directly to the screen may continue to do so even after switching from Mac OS to Mac OS X Server. The occurrence of this behavior may be limited by switching to the Finder before switching to Mac OS X Server.

Video mirroring in Mac OS is the feature where both monitors of a dual-monitor system display the same exact picture. Use of this feature is not fully supported in MacOS.app. If you use video mirroring, make sure to turn it off before switching to Mac OS X Server from the application menu.

Hardware video acceleration is not yet supported.

User Input

Direct ADB access is not supported. Applications that read directly from ADB devices and expect mouse ADB events will not work.

Command-Shift-Q will force MacOS.app to quit. This only works if Mac OS is hung, not if the Mac OS X Server part of MacOS.app is hung. See more details under "Video", above.

MacOS.app will intercept the Command-Return key sequence and use it to jump to Mac OS X Server. This is the same key combination that PC compatibility cards use. However, some Mac OS applications (like MPW) need this key combination for full functionality. To disable special handling of this key combination, type "defaults write MacOS ScreenToggleKey 0" on the command line of a Terminal window.

Date & Time

To change the date, time, or time zone, use Mac OS X Server's Preferences.app, rather than the Mac OS Date & Time control panel. Changes to the date, time, or time zone using the Mac OS control panel will be ignored. Other features of this control panel, such as date and time formats and the menu bar clock, are fully supported.

Canceling the "Copying StartupDisk.img" Dialog

If the "Copying StartupDisk.img" dialog is cancelled when MacOS.app is not in the foreground (i.e., the dialog is front most, but is not active), the "Cancel" button may appear pressed, but then doesn't release. Click anywhere in the dialog to complete the cancel operation.

SCSI Based Printers

MacOS.app does not support printing to the LaserWriter SC, or any other SCSI-based printer that requires the LaserWriter SC 7.0.1 driver.

Apple Software

The Mac OS Setup Assistant will allow the user to configure a local (serial) printer. If you do this and attempt to print to this printer, Mac OS will hang (see "Printing", above).

The Mac OS Setup Assistant on MacOS.app takes a little longer to configure printers than it does on native Mac OS. During this time do not select any menu or you will hang MacOS.app.

The Graphing Calculator has a bug which can cause a crash when running its "Mouse Control" demo and the application is located high in memory. This also happens on native Mac OS, but is much more common in MacOS.app.

The AppleCD Audio Player does not work in MacOS.app without additional configuration. Since the AppleCD Audio Player uses the SCSI Manager to find CD-ROM drives, this causes the application not to work in MacOS.app because CD-ROM drives are not mounted in SCSI mode by default in MacOS.app.

If the AppleCD Audio Player does not find at least one CD-ROM drive, it will return an error indicating that the CD-ROM drive is not responding. Some CD-ROM drives can be enabled to use direct SCSI access; see the section on the "Blue Volume Mount Options" control panel for instructions on how to switch the mode. If direct SCSI access is enabled on at least one CD-ROM drive, the AppleCD Audio Player will launch with no error and audio CDs can be played from MacOS.app, although audio playthrough is not supported.

Apple Video Player refuses to launch because MacOS.app does not currently support video capture.

When using the Extensions Manager, some of the installed Apple software is not a part of the "Mac OS 8.6 all" set (for example, "AppleScript" and "QuickTime"). This is normal when newer releases are installed.

Disk Copy prior to version 6.3.3 cannot mount images on a Mac OS volume that is in the Shared Access mode.

MacOS.app does not contain all the necessary Unicode converters to handle file and folder names on HFS+ volumes that were created on a native Mac OS machine using a system script other than Mac OS Roman. For example, if you take an HFS+ volume that was used on native Mac OS with the Japanese language kit installed, and you access it on Mac OS X Server, the file and folder names will appear garbled.

Third-Party Software

MacBench 4.0 crashes since it attempts to access hardware that is not supported by MacOS.app. MacBench 3.0 works correctly and MacBench 5.0 works with the exception of the problem noted previously in the paragraph entitled MacBench 5.0.

Networking modes promiscuous/raw are not supported in MacOS.app; therefore, applications such as Etherpeek are not supported.

Versions of CodeWarrior prior to the Pro 4 release do not support debugging; everything else seems to work. CodeWarrior Pro 4 (IDE 3.1) with version 1.3.6 of the MetroNub supports debugging and break/watch points.

RAM Doubler attempts to access the internals of Mac OS Virtual Memory and is therefore not compatible with MacOS.app.

Virtual PC attempts to access the internals of Mac OS Virtual Memory and is therefore not compatible with MacOS.app.

Disk Doubler Pro (and especially its Finder Menu feature) is not compatible with Mac OS 8.5 or later, and therefore not with MacOS.app.

Speed Doubler causes MacOS.app to hang at startup, presumably because it attempts to modify undocumented Mac OS internals, and is therefore not compatible with MacOS.app.

The Disinfectant system extension (installed via the Protection menu of the Disinfectant application) should not be installed because it can cause some applications to quit with errors (such as Type 1 error). Conflict Catcher and Note Pad are particularly likely to crash when Disinfectant is present. Such errors are more likely to occur on

MacOS.app than on native Mac OS because of the memory allocation scheme used in MacOS.app. Disinfectant is no longer supported by its developer, who recommends a full-featured virus protection program.

Adobe Persuasion 4.0's installer frequently fails with a bus error because of a bad memory access. Due to memory layout, this rarely occurs on native Mac OS, so a workaround is to run the installer there. Adobe has discontinued this product.

If drives formatted with FWB's Hard Disk Toolkit are mounted in "Shared" or "Exclusive" mode, any driver-level password protection will be ignored. Data that is encrypted will be inaccessible. Mounting these drives in "Direct SCSI" mode will re-enable password protection and access to encrypted data.

Descent II, like many other video games, uses SCSI Manager calls as part of its copy protection. By default, MacOS.app accesses SCSI disks via Shared mode. In both Shared and Exclusive mode, SCSI-level access is disallowed. The CD-ROM drive needs to be manually configured for direct access via SCSI mode. This can be done with the "Blue Volume Mount Options" application. However, the "Blue Volume Mount Options" application cannot set an ATA/IDE/ATAPI CD-ROM drive to direct SCSI mode. See the section on the "Blue Volume Mount Options" control panel for more information.

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Mac OS 9: "Add to Keychain" Checkbox Is Dimmed (Gray)

This article explains why you may not be able to add an AppleShare server password to your Keychain.
This article has been archived and is no longer updated by Apple.
In some instances, when connecting to an AppleShare server you may not able to add it to you keychain because the 'Add to Keychain' checkbox is dimmed (gray).

Figure 1, "Add to Keychain" checkbox is dimmed

Server administrators can configure AppleShare IP 6 not to allow a computer to automatically log on. Having your password in a keychain can be unsecure if your keychain is unlocked. Not allowing a computer to automatically log on can improve security.

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System 7.5.5: Clean Installation Procedure

This article contains the procedure for performing a clean installation of System 7.5.5.
This article has been archived and is no longer updated by Apple.

Step 1: Find out which version of system software you should install.

The earliest version of system software you should install on your Macintosh computer is System 7.5.5. Apple has tested this version for Year 2000 compliance on Macintosh computers back to and including the Macintosh Plus. It is available for free download from Apple's Web site. See step two for more information on how to get it.

System 7.5.5 requires at least 4 MB of memory and up to 21 MB of hard disk space. Make sure your computer meets these minimum requirements before proceeding.

Your Macintosh computer may be able to use a later version of system software if it came with a later version, or if you purchased an upgrade. For more information on performing a clean installation of versions later than 7.5.5, please see the links at the end of this article.

Step 2: Get the system software you need.

Find the system software CD or floppy disk set that came with your computer. If it includes System 7.5.3, you only need to get System 7.5.5 Update.

Download

System 7.5.5 can be downloaded from the Apple Software Downloads Web site (http://www.apple.com/swupdates/) in a two-step process. First, you must download System 7.5.3, then System 7.5.5 Update.

Step 3: Start up the computer from the Disk Tools disk, or system software CD.

If your computer only has a floppy drive, start up the computer using a Disk Tools disk. If your computer has a CD-ROM drive, start up the computer using your system software CD.

Step 4: Run the Disk First Aid program to repair any errors.

After you have started up the computer from the Disk Tools disk or the system software CD, open the Disk First Aid program. Select the hard disk you want to check by clicking on its icon in the Disk First Aid window. Click the Verify button. Disk First Aid checks your disk for any errors. If Disk First Aid reports any errors, click the Repair button to repair them. Quit the Disk First Aid application.

Step 5: Update the hard drive driver software.

Find the appropriate hard drive utility for your computer on the Disk Tools disk or system software disc. Use Apple HD SC Setup with Macintosh computers that have a Motorola 680x0 family microprocessor and a SCSI hard drive. The following Macintosh computers have IDE hard drives and require that you use the Drive Setup application:

- Macintosh LC 580
- Macintosh LC 630
- Macintosh LC 630 DOS
- Macintosh Quadra 630 series
- Macintosh Performa 580 series
- Macintosh Performa 630 and 640 series
- PowerBook 190 series

Apple HD SC Setup

Open the Apple HD SC Setup application. Click the Drive button until the name of your hard disk you want to update appears. Click the Update button, then the Quit button.

Drive Setup

Open the Drive Setup application. Click the name of the hard disk you want to update. Choose Update Driver from the Functions menu. Quit the

application.

Step 6: Open the System 7.5.3 Installer application.

If you downloaded System 7.5.3 to your computer's hard disk, find and open the file called System 7.5.3 01of19.smi, then open the Installer application.

Step 7: Choose the Clean Installation option.

When the Installer application has opened, click Continue. Make sure Easy Install is selected from the pop-up menu. Press the Command, Shift and K keys on the keyboard. Select Install New System Folder and click OK.

Step 8: Click Clean Install to begin installation.

Click Clean Install to being the installation. When it has finished, restart the computer. Find and open the Installer application for System 7.5.5 Update. Click Install.

You have now finished installing a clean version of System 7.5.5 on your computer. The contents of your old System Folder are in a new folder named Previous System Folder.

You may need to install additional software such as fonts, printer or other device drivers, and application support files. You should reinstall these items from their original disks.

Related documents

8970: "**System 7.1 through Mac OS 7.6: Compatibility With Macintosh Computers.**"
25114: "**Mac OS 8, 9: Compatibility With Macintosh Computers.**"
30034: "**Mac OS 7.6: Clean Installation**"
26055: "**Mac OS 8.0 and 8.1: Clean Installation Instructions**"
58176: "**Mac OS 8.5, Mac OS 9: Performing a Clean Installation** "

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Macintosh Portable: RAM Consumes Insignificant Power

Is there a significant decrease in battery life for a Macintosh Portable with 2MB of Apple Portable RAM as compared to one with 1MB? Also, does the extra 1MB of Apple Portable RAM drain the battery during "Shut Down?"

This article has been archived and is no longer updated by Apple.
When the Macintosh Portable is in a "Sleep" or "Shut Down" state, having 1MB of RAM draws 4.5mA, and adding another 1MB in the RAM expansion-card slot raises the total draw to 6mA. Though we haven't tested the longevity of the battery with the additional 1MB of RAM, it should have a very minimal effect.

When the Macintosh Portable is active, the RAM power requirements are approximately 20 to 35mA with 1MB or 2MB of RAM installed, respectively. This power draw is relatively insignificant, a mere increase of 15mA, as compared to the 200mA the logic board draws, 50 to 70mA for the display, and 700mA for the hard drive.

Of course, this applies to Apple's Portable RAM expansion, because third-party RAM boards may use different kinds of RAM with different power consumption characteristics.

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QuickTime 4.1.2: What‘s New

This article describes the new features in QuickTime 4.1.2.
This article has been archived and is no longer updated by Apple.

Streaming Works Better Through More Firewalls and Proxies
QuickTime streaming works better through more firewalls and proxies.

Improved MP3 Features in QuickTime Plug-in
Added MIME types to work with MP3 playlists (.m3u files).

Works With Windows 2000
QuickTime works with Windows 2000.

Improved QDesign Streaming
QuickTime includes significant improvements in the transmission of live and stored streams when using the QDesign codec. These improvements are compatible with earlier versions of QuickTime.

Improved Compatibility With Kodak Picture CDs
You can open picture files on a Kodak Picture CD using the QuickTime Plug-in.

New SMIL File Extension
Replaced .smi extension with .sml for SMIL support.

Broadband Network Improvements
Fixed situations that caused high packet loss on some networks (including @Home).
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Mac OS 9: About Adobe Software Read Me

The contents of this article are from a Read Me file included with Mac OS 9.
This article has been archived and is no longer updated by Apple.

About Adobe Software

This document describes the Adobe software included in this folder.

Acrobat Reader
Adobe Acrobat Reader allows viewing and printing of any Portable Document Format (PDF) file. There may be several PDF files on the computer's hard disk and on the system software CD that came with the computer. Use Adobe Acrobat Reader to view or print these files.

Adobe Type Manager
Adobe Type Manager (ATM) installs a control panel which allows you to use PostScript fonts. Adobe Type Manager installs into the active (boot) System Folder, even if another hard drive was selected.

Important: To use the "Acrobat Reader" or "Adobe Type Manager" installers from Adobe, do not use the Mac OS CD as the startup disk. If the Mac OS CD is the startup disk, an error will occur when the Adobe installer attempts to write files to the CD. The Mac OS CD should be used as the startup disk only for installation of System Software.

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Mac OS 9: About the 5XXX/6XXX Tester Read Me

The contents of this article are from a Read Me file included with Mac OS 9.
This article has been archived and is no longer updated by Apple.

About the 5XXX/6XXX Tester

This document describes the 5XXX/6XXX Tester application. This application checks Power Macintosh and Performa 5200, 5300, 6200, and 6300 series computers for hardware problems that may cause the computer to freeze. The tester only works on Power Macintosh and Performa 5200, 5300, 6200, and 6300 series computers.

Important: The Power Macintosh or Performa 6360 does not have this hardware problem. If you have a Power Macintosh or Performa 6360, you do not need to use the tester program.

If you are experiencing problems with your computer other than system freezing, you should contact an Apple-authorized service provider to obtain a full diagnostic test.

How to use the tester application

To use the tester application, double-click its icon.

After the tester has checked your computer, you'll see a message. If the message indicates that a problem has been found, contact an Apple-authorized service provider or Apple customer support to have your computer repaired. The necessary repairs are covered under a repair extension program.

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Macintosh Portable: SCSI Termination Problems (1/95)

I have a Macintosh Portable to which I have connected separately either an Apple Tape Backup or external hard drive. In either case, the presence of the SCSI device crashes the SCSI system even though it is terminated correctly.

Could it be that the Macintosh Portable and other new Apple systems do not generate the initial termination due to a change in the CMOS chip?

This article has been archived and is no longer updated by Apple.
There are no known problems using Apple's external SCSI hard drives or the Apple Tape Backup on the Macintosh Portable. However, because the Macintosh Portable doesn't provide termination power (to limit demands on the battery), external SCSI devices connected to the Macintosh Portable must provide that power. That is, they must be powered on and left on while using the Macintosh Portable. Also, the Macintosh Portable should be shut down when connecting or disconnecting peripherals.

We don't know your Macintosh Portable configuration, the software used, the software versions, the events leading up to the error, or what the error was, but what is described above about termination power is common enough that it bears repeating.

If by "initial" termination you mean that the Macintosh Portable does not have "built-in" termination, it is just like all other Macintosh systems except for the Macintosh IIfx. They are internally terminated.

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21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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Final Cut Pro 1.2.1: Incorrect Recapture of PAL Clips

There is an issue with the way that Final Cut Pro 1.2.1 recaptures clips that are in PAL format. This article describes the incorrect behavior, as well as a workaround to avoid it.

Note: This issue has been resolved in Final Cut Pro 1.2.5. The Final Cut Pro 1.2.5 Update can be downloaded from the following Web site: http://www.apple.com/finalcutpro/ .

This article has been archived and is no longer updated by Apple.

Symptom

Users of Final Cut Pro and PAL devices may see an incorrect behavior when performing the following steps:

- Capturing PAL video clips
- Editing the clips into a sequence
- Discarding the original material and recapturing it

During recapture, Final Cut Pro attempts to capture all the clips that are used in sequences with more media than was originally captured, resulting in unexpected differences in the sequences in which they are used.

Solution

When capturing in PAL, always keep a separate log of clips in the browser. When you need to recapture the clips, follow these steps:

1. Keeping your current project open, create a new project.
2. Copy all the clips from the original project browser to the new project browser.
3. Close the original project so that your new project has no sequences inside of it.
4. If the copied clips have user defined In and Out points, clear them now. The In and Out columns in the browser can be cleared in their entirety by using the Clear contextual menu command in the desired column. (Press the Control key and click to see the menu.) See Figure 1.

Note: If you leave these columns set with user in and out points, the batch capture tool will not recapture the entire original clip.

Figure 1: The Clear Contextual Menu Command in the Browser

5. Recapture the clips in your new project.
6. When this is done, relink the files in your original project to the files you just captured. (For instructions on how to relink files, see page 269 of the Final Cut Pro manual.)

Note: This issue has been resolved in Final Cut Pro 1.2.5. The Final Cup Pro 1.2.5 Update can be downloaded from the following Web site: http://www.apple.com/finalcutpro/ .

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iMovie: Unable to Export Movies Using Sony DVMC-DA2

Make sure the LANC cable is connected to your video camera when you export a movie using a Sony DVMC-DA2.
This article has been archived and is no longer updated by Apple.

Symptom

When you try to export a movie, an alert box appears with this message:

> "There is not a tape in the camera, please make sure that you have a tape inserted and that it is not write protected."

Solution

If you are using a LANC/Control-L device:

- Make sure the LANC cable is connected to your video camera or VCR. (See your user's manual for more information.)

If you are not using a LANC/Control-L device::

1. Set iMovie preferences to "play through to camera."
2. Set the Sony converter to DV in.
3. Click the play button in the iMovie window.

These settings will output video through the Sony DVMC-DA2 for recording to a VCR or other analog devices.

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Final Cut Pro: Stops Responding When Certain Effects Are Used

Final Cut Pro stops responding, or "freezes," when the Dither Dissolve transition or the Noise generator are used.
This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro stops responding, or "freezes," when the Dither Dissolve transition or the Noise generator are used.

Solution

- Do not use the Dither Dissolve transition or the Noise generator effects.
- Use a different model Macintosh computer to apply these effects in your project.

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iMovie 2: System Requirements

This article outlines the system requirements for iMovie 2.
This article has been archived and is no longer updated by Apple.
iMovie 2 requires the following:

- A Macintosh computer with a 300 MHz or faster PowerPC G3 or G4 processor and built-in FireWire port
- At least 64 MB of RAM (128 MB recommended)
- A CD-ROM or DVD-ROM drive
- 200 MB of available (unused) hard disk space (4 GB recommended; 5 minutes of imported digital video requires about 1 GB of disk space)
- A monitor that works with 800 x 600 pixel resolution and thousands of colors (1024 x 768 pixel resolution and millions of colors recommended)
- Mac OS 9.0.4 or later
- QuickTime 4.1.2 or later
- FireWire 2.4 or later (FireWire Support and Enabler extensions)
- A digital video (DV) device, such as a camcorder or deck, with a FireWire, IEEE 1394, or i.LINK port
- A 4-pin-to-6-pin FireWire cable (for use with DV camcorders)
- Viewing Desktop Movies on a TV or VCR from your DV device requires appropriate connection cables

A list of compatible cameras and DV devices is available in document number 113546 "**iMovie 2: Compatibility**."

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Macintosh: System Error Codes Explained

This article explains what some Macintosh system errors actually mean. You can use them to interpret what is happening when your Macintosh gives these errors.

This article has been archived and is no longer updated by Apple.
Because Mac OS is a sophisticated, complex operating system, the difficulties you encounter can be equally complex.

These are examples of some difficulties that may occur:

- A handle can be de-referenced.
- A routine can get a NIL pointer.
- The stack can dip into the heap for just a few cycles and not be caught by the stack sniffer.
- An application can forget to check an error code.

A Macintosh usually stops responding ("crashes") with a system error code while running under System 6.0.x. Starting with System 7, errors are displayed in a different fashion. Instead of displaying an error code, the system translates the code to the appropriate words, like "Address Error".

Finding out what's wrong involves use of debugging tools, intricate knowledge of Macintosh memory structures, and familiarity with the application itself. Fixing it usually involves recompiling the source code. The table below explains some of the codes.

ID=01 Bus Error
This means the computer tried to access memory that doesn't exist. You can get this error on almost any Macintosh. If one of these computers tried to access one or more bytes beyond the total number of bytes in RAM, you see a bus error. You should never see this error on a Macintosh Plus or SE, because address references that are out of bounds "roll over". This means if one of these computers tries to access one byte beyond the total bytes in RAM, it actually accesses the first byte in memory. If you see this error on a Macintosh Plus or SE, it's reporting the wrong error or experiencing hardware failure.

ID=02 Address Error
The Motorola 68000 microprocessor can access memory in increments of one byte (8 bits), one word (16 bits), or one long word (32 bits). The microprocessor can access a byte of information at an odd or even memory address. But it must access a word or long word at an even memory address. So, when the microprocessor attempts to read or write a word or long word at an odd address, you see this error. Since that's a 50/50 proposition when running random code, this one shows up quite often.

ID=03 Illegal Instruction
The computer has a specific vocabulary of machine language instructions it can understand. If a computer tries to execute an instruction that isn't in its vocabulary, you see this error code. It's less likely than error 02, but still very common.

ID=04 Zero Divide Error
This error results if the microprocessor divides two numbers, and the divisor is zero. Sometimes a programmer puts these in as debugging aids, and then forgets to take them out.

ID=05 Range Check Error
Programmers can use an instruction in the Motorola 68000 to check if a number is within a certain range. This error indicates that the number tested isn't in the specified range.

ID=06 Overflow Error
Each number stored in a computer is given a certain amount of space. The larger the number, the more space is needed to represent the number. An overflow condition results if a generated number is too big for its allotted space. A Motorola 68000 instruction tests for an overflow condition, and displays this error if it detects an overflow.

ID=07 Privilege Violation
The Motorola 68000 runs in Supervisor or User mode. The Macintosh should always be in Supervisor mode, but sometimes is placed in User mode. Some of the instructions can only be executed in Supervisor mode. If the computer attempts one of these instructions while in User mode, a Privilege Violation error results.

ID=08 Trace Mode Error
A programmer can use a runtime debugger while in Trace mode. This allows tracing through a program one instruction at a time. You see this error if a debugger isn't installed and the 68000 is accidentally placed in Trace mode.

ID=09 and ID=10 Line 1010 & 1111 Trap
There are many routines in the Macintosh ROM that can be called by placing instructions in a program that aren't in the 68000's vocabulary. When the 68000 encounters such an instruction, it looks it up in the instruction table. This table gives the location of routines paired with each instruction. If it finds an entry in the table for the instruction, it branches to the routine. If there's no entry for the instruction, you see one of these errors.

ID=12 Unimplemented Core Routine
A programmer might set breakpoints in parts of a program to inspect for errors. This requires using a debugger. If a debugger isn't installed when a breakpoint occurs, you see this error code.

ID=13 Uninstalled Interrupt
The Macintosh uses an interrupt to identify when devices like keyboards and disk drives need service. Routines must be available in memory to tell the computer how to service the device. If those routines aren't available, you see this error.

ID=15 Segment Loader Error
Macintosh programs are broken up into segments, and each program always has at least one segment. Multiple segments allow loading parts of the program into memory to provide more room for data in internal RAM. The segment loader is responsible for loading a needed segment into RAM. If the segment loader can't do this, this error appears.

ID=17 through ID=24 Missing Packages 0-7
The Macintosh uses packages to do specific tasks. Some of the packages are International Utilities, Binary-Decimal Conversion, Standard File Utilities, and Disk Initialization. These packages are located in the System file. If you get these errors, you probably have a damaged System file. Error codes 15, 16, 26, 27, 30, and 31 also come up when the System file is damaged. Try replacing the System file.

ID=25 Memory Full Error
You've probably run out of RAM. But you can get this error when an earlier error causes the Macintosh to falsely detect an out-of-memory condition.

ID=26 Bad Program Launch
The Macintosh couldn't execute the application opened.

ID=28 Stack Ran into Heap
This is similar to the Memory Full error. It's a good idea to save your work frequently, and keep current backups of your hard disk data. When a system crash does occur, you'll lose less data if you've taken these precautions.

Other error codes can be found in the following Tech Info Library articles:

Article 9804: "**Mac OS System Error Codes: -299 to -5553**"
Article 9805: "**Mac OS System Error Codes: 0 to -261**"
Article 9806: "**Mac OS System Error Codes: 1 to 32767**"
Article 9808: "**Mac OS System Error Codes: Uncommon Codes**"
Article 16456: "**Apple Remote Access: Error Codes**"
Article 18173: "**MacTCP: Error Codes Defined**"
Article 18566: "**PowerTalk and PowerShare: Error Code Listing**"
Article 19791: "**Open Transport: Error Codes**"

Troubleshooting System Errors

It's a good idea to save your work frequently, and keep current backup copies of your hard disk data. When a system crash occurs, you'll lose less data if you've taken these precautions.

If you're getting system errors frequently, investigate these possibilities:

- Try to open the document with a current version copy of the application.
- Try opening other documents with the same copy of the application.
- Check to see if the document size exceeds the application size limits.
- Start up your system with extensions off (restart while holding the Shift key down).
- Any changes (new Control Panels, extensions, etc.) you've made to the system might give you a clue to the cause of the errors.
- Make a note of the desk accessories you had open at the time of the error and exactly what you did before the error.
- Make a note of the error ID or text, and the version numbers of the application and system software you were using.
- Try to recreate the behavior on another Macintosh.
- Perform a clean installation of your system software and try the application again.

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Macintosh Manager: "No Printer Has Been Selected" Alert Message

This article discusses an issue where Macintosh Manager client computers display an alert box with the alert message: "No printer has been selected in the Chooser."
This article has been archived and is no longer updated by Apple.

Symptom

Client computers display an alert box with the following alert message when users try to print:

> "No printer has been selected in the Chooser."

You may also see Desktop Printer icons that are crossed out when opening System Access.

Solution

These symptoms likely indicate that the Printing Preferences file is unusable. Follow these steps to rebuild it:

1. Log into System Access.
2. Drag the Printing Preferences folder to the Trash.
3. Drag all Desktop Printers to the Trash.
   Note: Desktop Printers may also be in the Users folder (on the root of the startup volume) or the Secured Items folder (in the System Folder).
4. Disable the Multi-User Startup extension.
5. Restart the client computer.
6. Open the Chooser.
7. Select a printer.
8. Enable the Multi-User Startup extension.
9. Restart the client computer.

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Final Cut Pro 1.2.5: Captured Video Files Limited to 2 TB

Final Cut Pro 1.2.5 can capture digital video files up to 2 terrabytes (TB) in size.
This article has been archived and is no longer updated by Apple.
Using Mac OS 9, QuickTime 4.1.2 or later, and Final Cut Pro 1.2.5, you can capture DV clips up to 2 TB in size. The disk you capture to must be a Mac OS Extended format disk.

If necessary, you can limit the size of captured DV files to 2 GB in Final Cut Pro's Scratch Disk preferences tab.

Note: File sizes may be limited to 2 GB if you capture clips using a video capture card. Check with the card's manufacturer for more information.

Related articles

Article 24991: "**Final Cut Pro: Compatible Configurations**"
Article 24601 "**Mac OS Extended Format: Volume and File Limits**"
Article 8647 "**Macintosh: File System Specifications and Terms**"
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QuickTime 5 Public Preview: Final Cut Pro Compatibility Information

This article provides information on the compatibility of Final Cut Pro and QuickTime 5 Public Preview.
This article has been archived and is no longer updated by Apple.
On 2000-10-10 Apple released the public preview of QuickTime 5. The purpose of this preview release is to allow developers and users to test and provide feedback on the next generation of digital media technology.

While every effort has been taken to assure the reliability of the QuickTime 5 Preview, it is important to understand that it is trial, prerelease, time-limited software meant for evaluation and development purposes only. The Preview release should not be used in a commercial operating environment or with important data. Before installing QuickTime 5 Preview, you should back up all of your data and regularly make backups while using the software.

Of the many enhancements in QuickTime 5, one of the best for Final Cut Pro users is a new DV CODEC. This new CODEC provides enhanced render performance and a number of quality improvements. However, there are several known issues that affect Final Cut Pro when working with the new DV CODEC included with the QuickTime 5 Public Preview.

- Playing back long DV clips on computers with dual microprocessors and Mac OS ROM version 5.5.1 causes the computer to stop responding, or "freeze." This issue does not occur on computers with a single microprocessor, or dual-processor computers with ROM versions prior to 5.5.1.
- Video playback in the Log & Capture window on computers with dual microprocessors and Mac OS ROM version 5.5.1 causes the computer to stop responding, or "freeze."
- The FireWire output of certain types of images, for example a composite of a 2-color gradient, displays and records incorrectly (it will have jaggies) on Panasonic, Canon, and possibly other DV camcorders.

Note: You may use one of these methods to identify your computer's Mac OS ROM version:

Option 1 (preferred)
Use Apple System Profiler. The ROM file version is listed under "Production Information".

Option 2
From the Finder, Choose About This Computer from the Apple menu. If the computer has ROM version 5.5.1 it will be displayed. Not all ROM versions prior to 5.5.1 are displayed in this dialog.
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iMovie: Text Looks Strange or Is Cut Off

The iMovie interface text looks strange or is cut off.
This article has been archived and is no longer updated by Apple.

Symptom

The iMovie interface text, such as menu items and clip names, looks strange or is cut off.

Solution

This is a font conflict issue. Download and install the iMovie 2.0.3 Updater, available from the Apple Software Updates Web site at http://www.apple.com/swupdates.

Published Date: Feb 18, 2012

QuickTime: Windows troubleshooting tips

Learn troubleshooting tips for QuickTime software on Windows-based computers.
This article has been archived and is no longer updated by Apple.
Although the following tips are related to Microsoft Windows and PC hardware/software configuration, these steps may help to resolve issues.

Troubleshooting Tips

- Make sure your computer meets the system requirements.
- Try running ScanDisk to verify that the directory is OK. This is an important step to take before installing any software.
- Try running the stand-alone version of the QuickTime installer in "Safe Mode." It is available here. This can help to isolate issues with background applications, and some driver conflicts.
- Make certain you have installed the most recent drivers for your sound and video cards. Even if you have a "brand new" computer, it is not guaranteed to have the most recent software installed. Contact the manufacturer of your sound and video cards for additional information.
- Make certain you have installed a recent version of DirectX.

Errors are usually related to software conflicts, unusable files, or incompatibilities. They can also be related to specific hardware combinations, and sometimes the way in which the hardware is configured. Keep in mind that an error message does not necessarily point to a particular cause or solution. Since there can be many different causes for a particular symptom, some suggestions may not work, and you may need to discover a solution on your own.

Note: Please contact Microsoft Corporation or your computer vendor for help configuring Microsoft Windows.

Related documents

30400: "White or gray video when you play a movie with QuickTime or missing software message"
93976: "Trouble installing iPod, iTunes, or QuickTime software in Windows"
93610: "iTunes and QuickTime for Windows: Songs and other audio don't play correctly"
302856: "Troubleshooting an unexpected quit or restart of Windows, iTunes, or QuickTime"

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iMovie: Export Option Defaults

This article has been archived and is no longer updated by Apple.

This chart shows the audio and video settings of each of the default export options in different versions of iMovie.

iMovie 6.01 and later

Email Movie
Video: H.264, size: 160x120, 9.99 frames per second
Audio: AAC, Mono, 32.000 kHz

Web Movie Video: H.264, size: 320x240, 11.99 frames per second
Audio: AAC, Stereo, 32.000 kHz

Web Streaming Movie
Video: H.264, size: 320x240, 11.99 frames per second
Audio: AAC, Stereo, 32.000 kHz

CD-ROM Movie
Video: H.264, size: 320 by 240, 14.98 frames per second
Audio: AAC, Stereo, 32.000 kHz

Full Quality
See "iMovie: Exporting to "Full Quality" may not include URLs, Chapter Markers".

iMovie 5.x

Email Movie
Video: H.263, size: 160x110, 9.99 frames per second
Audio: QDesign Music 2, Mono, 22.05 kHz

Web Movie
Video: H263, size: 240x170, 11.99 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz
Web Streaming Movie
Video: H.263, size: 240 by 170, 11.99 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

CD-ROM Movie
Video: H.263, size: 320 by 230, 14.98 frames per second
Audio: IMA 4:1, Stereo, 44.10 kHz

Full Quality
See "iMovie: Exporting to "Full Quality" may not include URLs, Chapter Markers".

iMovie 4.x

Email Movie
Video: H.263, size: 160x120, 9.99 frames per second
Audio: QDesign Music 2, Mono, 22.05 kHz

Web Movie
Video: H263, size: 240x180, 11.99 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

Web Streaming Movie
Video: H.263, size: 240 by 180, 11.99 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

CD-ROM Movie
Video: H.263, size: 320 by 240, 14.99 frames per second

Audio: IMA 4:1, Stereo, 44.10 kHz

Full Quality DV Movie
Video: DV/DVCPRO - NTSC, size: 720 by 480, 29.97 frames per second
Audio: DV, Stereo, 48 kHz

If the source was PAL
Video: DVCPRO, size: 720 by 576, 25 frames per second
Audio: DV, Stereo, 48 kHz

iMovie 3.x

Email Movie
Video: H.263, size: 160x120, 9.99 frames per second
Audio: QDesign Music 2, Mono, 22.05 kHz

Web Movie
Video: H263, size: 240x180, 11.99 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

Web Streaming Movie
Video: H.263, size: 240 by 180, 11.99 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

CD-ROM Movie
Video: H.263, size: 320 by 240, 14.99 frames per second
Audio: IMA 4:1, Stereo, 44.10 kHz

Full Quality DV Movie
Video: DV - NTSC, size: 720 by 480, 29.97 frames per second
Audio: No compression, Stereo, 32 kHz

If the source was PAL:
Video: DV - PAL, size: 720 by 576, 25 frames per second
Audio: No compression, Stereo, 32 kHz

iMovie 2.x

Email Movie, Small
Video: Sorenson Video, size: 160 by 120, 10.00 frames per second
Audio: QDesign Music 2, Mono, 22.05 kHz

Web Movie, Small
Video: H.263, size: 240 by 180, 12.00 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

Streaming Web Movie, Small
Video: H.263, size: 240 by 180, 12.00 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

CD-ROM Movie, Medium
Video: H.263, size: 320 by 240, 15.00 frames per second
Audio: IMA 4:1, Stereo, 44.10 kHz

CD-ROM Movie, Large
Video: DV - NTSC, size: 720 by 480, 29.97 frames per second
Audio: No compression, Stereo, 48.00 kHz

iMovie 1.x

Email Movie, Small

Video: Sorenson Video, size: 160 by 120, 10.00 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

Web Movie, Small
Video: Sorenson Video, size: 240 by 180, 12.00 frames per second
Audio: QDesign Music 2, Stereo, 22.05 kHz

Web Movie, Small (QT3.0)
Video: Sorenson Video, size: 240 by 180, 12.00 frames per second
Audio: IMA 4:1, Stereo, 22.05 kHz

CD-ROM Movie, Medium
Video: Sorenson Video, size: 320 by 240, 15.00 frames per second
Audio: IMA 4:1, Stereo, 44.10 kHz

CD-ROM Movie, Large
Video: Sorenson Video, size: 640 by 480, 29.97 frames per second
Audio: No compression, Stereo, 44.10 kHz
Published Date: Feb 18, 2012

iPod (with Dock Connector): iPod 2.0 CD Contents

Find out what is included on the iPod CD that comes with the iPod (with Dock Connector) model.
This article has been archived and is no longer updated by Apple.
The iPod (with Dock Connector) comes with a CD that is named "iPod 2.0 CD".

When you insert the iPod CD into a Mac OS computer, only the Macintosh software appears.

Macintosh software

When you insert the iPod CD into a Windows-compatible computer, only the Windows software appears.

Windows software
Published Date: Feb 18, 2012

Macintosh: How to View GDDM Files on Host

I want to view GDDM files using a terminal application (with board or preferrably Ethernet-supported) for 3192G or 3279G terminal types. Can you help?

This article has been archived and is no longer updated by Apple.
The latest release of DCA's (formerly Avatar) MacMainFrame product supports both features you want. It provides APA (All Points Addressable) graphics, and it distributes sessions across AppleTalk to other Macintosh systems on the network. Because the product emulates a 3279 terminal with APA graphics, you can use GDDM on the host to display graphics on the Macintosh.

Because you mentioned Ethernet as a preferred connection, we assume you're looking for a TN3270 solution. We haven't used it personally, but we understand that the latest TN3270 product from Brown University Computing and Information Services supports several IBM graphic terminals (3179G, with GDDM support).

Also, you might want to contact Wollongong with regard to their MacPathway TN3270 product. To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
26 July 1993 - Company title changed from Avatar to DCA (Digital Communication Associates)
Published Date: Feb 18, 2012

iTunes 1.0: System Requirements

This article outlines the system requirements for iTunes 1.0
This article has been archived and is no longer updated by Apple.
To use iTunes 1.0 music software, your computer must meet the following system requirements:

Listen to music

- iMac or later computer
- Mac OS 9.0.4, Mac OS 9.1 recommended
- Internet connection for CD database

Make an audio CD

- Power Mac G4 computer with internal Apple CD recording drive
- Use CD-R media with a 74-minute capacity for music.
  CDR media is available directly from the online **Apple Store**.

Notes

1. All of iTunes features may not work if you install the North American English version on a computer that has a different language version of the Mac OS.
2. Versions of iTunes for International English, Japanese, French, German, Italian, Spanish and Dutch are available. Brazilian Portuguese, French Canadian, Norwegian, Danish, Finnish, Chinese, Swedish and Korean versions are expected to be made available soon.

Published Date: Feb 18, 2012

iTunes: Only One Application Can Use Disc Drive at a Time

Only one application can use a computer's disc (CD or DVD) drive at a time.
This article has been archived and is no longer updated by Apple.

Symptom

You can play an audio CD with the iTunes application, but when you open the AppleCD Audio Player application, iTunes stops playing the CD.

Solution

Quit the AppleCD Audio Player application. Only one program can control the disc drive at a time. iTunes and AppleCD Audio Player cannot both be used to play an audio CD at the same time.

Published Date: Feb 18, 2012

iTunes: Compatible Audio File Types

iTunes can import and play many different kinds of audio files.
This article has been archived and is no longer updated by Apple.
iTunes 1.0 and later can import and play the following audio file types:

- AIFF
- AIFC
- audio CD
- MP3
- System 7 Sound (SND)
- uLaw (AU)
- WAV
- QDesign
- QuickTime audio (audio only movies)

iTunes 3 and later can also play these additional file types:

- Audible.com (format 2, 3, and 4)

iTunes 4 and later can also play these additional file types:

- AAC (Advanced Audio Coding)
- MP4

To add these kinds of files to your iTunes library or playlists:

1. Click the Library icon in the iTunes window.
2. Drag the file's icon into the iTunes window.

You can also add these sounds to your library by choosing Add To Library from the File menu. If you choose a folder or disk, all the audio files it contains will be converted using your current import preference settings. To change the settings:

1. Choose Edit > Preferences (choose iTunes > Preferences in Mac OS X)
2. Click the Advanced tab (click the Importing tab in Mac OS X).
3. Choose a default encoder from the Import Using pop-up menu.

Published Date: Feb 18, 2012

iTunes 1.0: Rio 600, 800, and Nike PSA[play Appear in Source List When Turned Off

Certain hardware MP3 players appear in iTunes' Source list even when they're turned off.
This article has been archived and is no longer updated by Apple.

Symptom

You drag a song from a playlist or the library to the icon of an MP3 player in the Source list, and an alert box with the following error message appears:

> "Attempting to write to media module 'internal Flash memory' failed with error 9001. The media may be defective."

Solution

The hardware MP3 player is probably turned off, but still appears in the Source list.

1. Disconnect the hardware MP3 player from the computer.
2. Turn the player on.
3. Reconnect it to your Macintosh computer.
4. Copy the song(s) to your player.

Published Date: Feb 18, 2012

iTunes 1.0: Turn on Nomad II Docking Station Before Opening iTunes archive

Your computer appears to stop responding or "freeze" after you put your Nomad II MP3 player in its docking station.
This article has been archived and is no longer updated by Apple.

Symptom

Your computer appears to stop responding or "freeze" after you put your Nomad II MP3 player in its docking station. An alert box appears with an error message that says the device is not turned on, and the display on the Nomad II player says, "Please power the docking station."

Solution

Make sure the Nomad II docking station is plugged in and turned on. Your computer should start working when you turn on the docking station.
Published Date: Feb 18, 2012

iTunes: Full Screen Visuals Don‘t Display on a TV

If you connect your PowerBook computer to a television, iTunes' Full Screen visuals may not work. Follow the steps in this article to watch iTunes' Full Screen visuals on your TV.
This article has been archived and is no longer updated by Apple.

Symptom

You connect your PowerBook computer to a television to watch iTunes' Full Screen visuals, but the screen remains in Small, Medium, or Large. It won't switch to Full Screen. You may also see a blank, black screen on the TV and the PowerBook display.

Solution

1. If video mirroring is on, turn it off in the Control Strip. iTunes' Full Screen Visuals do not work with TV mirroring.
2. Put the PowerBook in sleep mode by closing the display.
3. Disconnect the TV from the PowerBook.
4. Wake the PowerBook by opening the display.
5. In the Control Strip or Monitors control panel, set the PowerBook screen resolution to 640- by 480-pixels.
6. Put the PowerBook in sleep mode by closing the display.
7. Connect the TV.
8. Wake the PowerBook by opening the display.
9. Play a song in iTunes with Full Screen Visuals.

Notes

1. You can display Full Screen Visuals on a PowerBook computer's display without following these steps.
2. If you disconnect your computer from the television, change resolutions, or restart the computer, you will need to follow these steps again to watch iTunes' Full Screen Visuals on your television.

Published Date: Feb 18, 2012

Macintosh SE: Products for NTSC Output

Can a Macintosh SE or Macintosh SE/30 use a TV as a display device? If yes, what components are needed?

This article has been archived and is no longer updated by Apple.
We searched the Redgate Buyer's Guide Library using "Macintosh and NTSC" as a search string and found a number of articles on this subject. Read the following articles in the Redgate library to find the product(s) that best suits your needs.

- VideoShow

- DisplayServer SE-TV

- MegaScreen SE Dual-Page Rival Monochrome Display System

- D5-SCX Video Scan Converter

Published Date: Feb 18, 2012

Apple DVD Player: Black Bars at Top and Bottom of Screen

When watching a movie from a DVD-Video disc there are black bars at the top and bottom of the screen even though Fill Screen or Present Video on Screen is selected in the Video menu.
This article has been archived and is no longer updated by Apple.

Symptom

When watching a movie from a DVD-Video disc there are black bars at the top and bottom of the screen even though Fill Screen or Present Video on Screen is selected in the Video menu.

Solution

This is normal due to differences in the monitor's aspect ratio, and the movie's aspect ratio. You do not need to change or correct anything.

For more information on why DVD-Video discs behave this way, see article 60795 "**Apple DVD Player: Why Black Bars Surround the Picture**."
Published Date: Feb 18, 2012

iTunes: Long Gaps Between Songs

You may need to reduce the amount of time iTunes inserts between songs if you make a custom audio CD from your audio CD collection.
This article has been archived and is no longer updated by Apple.

Symptom

There are long gaps between songs on custom audio CDs that you burn with iTunes.

Solution

Some or all of the songs you used to burn the audio CD already have gaps, and iTunes is inserting additional time between songs. You should reduce the amount of time iTunes inserts between songs.

1. Choose Preferences from the Edit menu.
2. Click the Advanced tab.
3. Choose a shorter length of time, perhaps None, from the Gap Between Tracks pop-up menu.
4. Insert a blank CD-R disc.
5. Click Burn CD.

Published Date: Feb 18, 2012

Silentype and the TAB command

This article has been archived and is no longer updated by Apple.
TABs do not work properly with the Silentype. From Integer BASIC, the tab is limited to the first 40 columns, while an Applesoft TAB(20) occassionally outputs 20 spaces instead of going to column 20. Use POKE 36,T instead of TAB(T) (where T is the tab value) with either BASIC.

Print "first item";: POKE 36,45: Print "second item"

Output:

first item second item

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QuickTime 5 Public Preview: Sound Manager or QuickTime Alerts at System Startup Time

You should install a later version of QuickTime 5 if the Public Preview version installed on your computer expires.
This article has been archived and is no longer updated by Apple.

Symptom

When you start up your computer an alert box with one of these error messages appears:

> "The Sound Manager extension has expired."
>
> "QuickTime MPEG Extension has expired. See 'http://www.apple.com/quicktime' for a newer version.'
>
> "QuickTime installation failed because this beta version has expired. See 'http://www.apple.com/quicktime' for a newer version."

Solution

The version of QuickTime 5 Public Preview installed on your computer has expired. Download and install the latest version of QuickTime 5 from http://www.apple.com/quicktime/ .

If you continue to see these alert boxes after installing the latest version of QuickTime 5, follow the instructions in article 31309: "**QuickTime: How to Remove QuickTime 5 Public Preview**" and then reinstall the latest version of QuickTime 5.

Published Date: Feb 18, 2012

iTunes: Cannot Install From Software Install Disc

You cannot install iTunes from the Software Install disc if it is also the startup disk.
This article has been archived and is no longer updated by Apple.

Symptom

When you try to install iTunes from the Software Install disc, an alert box appears with a message that says the disk is locked and the installation cannot take place.

Solution

The iTunes installer cannot install software on your computer's hard disk if the Software Install disc was used to start up the computer. Restart the computer using the hard disk as the startup disk, or follow these steps:

1. Copy the iTunes installer folder from the Software Install disc to the computer's hard disk.
2. Open the iTunes installer.
3. Install iTunes onto the hard disk.
4. After the computer has restarted, drag the iTunes installer to the Trash.

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iTunes 1.1/Disc Burner 1.0.1: Third-Party Disc Burning Software Stops Working

Third-party disc burning software may stop working after you install iTunes 1.1, or Disc Burner 1.0.1.
This article has been archived and is no longer updated by Apple.

Symptom

Third-party disc burning software stops working after you install iTunes 1.1 or Disc Burner 1.0.1

Solution

1. Use the Extensions manager control panel to create an extensions set for your third-party disc burning software.
2. Turn off these system extensions:
   - USB Authoring Support
   - FireWire Authoring Support
3. Turn on the system extensions used by your third-party disc burning software.
4. Restart the computer.

When you want to use iTunes or Disc Burner to burn a disc, open the Extensions Manager control panel and switch back to original extensions set. You may also consider turning off the third-party disc burning software system extensions in this set. Although Authoring Support and iTunes Extension override most third-party system extensions, it may be helpful to turn off the third-party extensions regardless.

For information on creating an extensions set with the Extensions Manager control panel, read article 30929: "**Mac OS: Extension Conflict Troubleshooting/Extensions Manager Features**."
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iTunes 1.1: Compatible Third-Party CD-RW Drive Mechanisms

This article explains how to find out if your third-party CD-RW drive is compatible with iTunes 1.1.
This article has been archived and is no longer updated by Apple.
This following list of compatible drives is included with the iTunes 1.1 Read Me file.

These CD drive mechanisms are supported:

- LG (CD-RW CED-8042B)
- Matshita (CD-RW CW-7121, CD-RW CW-7586, UJDA310)
- Mitsumi (CR-4802TE, CR-4804TE)
- Philips Iomega (CDD4801 CD-R/RW, ZIPCD 650)
- Pioneer (DVD-RW DVR-103)
- Plextor (CD-R PXW1210A, CD-R PX-W8432T, CD-R PX-W8220T, CD-R PX-W124TS)
- Ricoh (CD-R/RW RW8040A)
- Samsung QPS (CD-R/RW SW-208B)
- Sanyo LaCie (CDBP-121032, CDBP-161040, CRD-BP1300P)
- Sony (CD-RW CRX140E, CD-RW CRX700E, CD-RW CRX140, CD-RW CRX145, CD-RW CRX160, CD-RW CRX700, CD-RW CRX10U)
- Teac (CD-W24E)
- Yamaha (CRW4416, CRW6416, CRW8424, CRW8824, CRW2100)

If your drive is not recognized, you may not have a compatible drive or some other CD driver software is preventing its use. If you have installed other software that burns CDs, use Extensions Manager to turn off its extensions. See article 60805: "**iTunes 1.1: Third-Party Disc Burning Software Stops Working**" for more information about using third-party disc burning software.

Published Date: Feb 18, 2012

iTunes: Compatible Personal MP3 Player Isn‘t Recognized

Your personal MP3 Player may not be recognized by iTunes if you install an earlier driver than the one that comes with iTunes.
This article has been archived and is no longer updated by Apple.

Symptom

iTunes does not recognize a compatible MP3 player device, even though you've installed the USB drivers that came with the player.

Solution

Reinstall iTunes. The USB drivers that came with your player are too old. The iTunes installer will install later USB drivers that are compatible.

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iTunes 1.1: Remove CD Master Files

iTunes 1.1 cannot write to a compatible third-party CD-RW drive if you have installed other incompatible disc burning software.
This article has been archived and is no longer updated by Apple.

Symptom

You are unable to burn an audio CD even though the drive mechanism is compatible with iTunes.

Solution

Remove the CD Master plugins from the Authoring Support Files folder in the Extensions folder.

Note: CD Master authoring files were not part of iTunes 1.0.x and are not compatible with iTunes 1.1.

For a list of compatible CD-RW drive mechanisms, see article 60806: "**iTunes 1.1: Compatible Third-Party CD-RW Drive Mechanisms**."
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Fiber Optic Network Developers

Do you happen to know of sites in the U.S. or Europe where fiber optics are being tested or used as the transport media in a LAN of Macintoshes and possibly PCs?

This article has been archived and is no longer updated by Apple.

Although we don't know of any devices that bring fiber optics into the Macintosh (for example, a fiber optics NuBus card), there are numerous companies that offer Ethernet-, Token Ring-, and LocalTalk-to-Fiber Optics transceivers. So a network could look like:

```
Macintosh<-->LocalTalk<-->transceiver<-->fiber<-->transceiver<-->
EtherTalk<-->Macintosh
```

Just a few of the companies offering such products are Berg Electronics (formerly DuPont Electronics), Network Resources Corporation, and SynOptics. Other similar devices are readily available from network-product suppliers like Black Box Corp. Routing AppleTalk over that medium is not a problem. Additional information on these companies can be found in the Technical Info Library.

A significant number of corporations, universities, and government agencies are using (or experimenting with and preparing to use) fiber to some degree. For information on established networks with particular characteristics, contact the vendors of the products you are considering.

Article Change History:
27 July 1993 - Company title changed from DuPont Electronics to Berg Electronics.

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iTunes 1.1: Custom Installation Does Not Install Extensions for Third-Party Drives

Installing the custom installation of iTunes 1.1 does not install system extensions for third-party drives.
This article has been archived and is no longer updated by Apple.

Symptom

The About iTunes 1.1 document says:

> **"Important:** With FireWire and USB CD-RW drives, you may not be able to use third-party CD burning software after you install iTunes. Contact the manufacturer of the CD burning software for updates that resolve this issue. To avoid this issue, when you install iTunes choose the option that does not install the CD authoring support."

However, the first custom installation option says: "iTunes Application with CD Authoring Support". See Figure 1.

Figure 1 iTunes custom installation option

Solution

You can use the first custom installation option. It installs the software necessary to burn a disc using an Apple CD-RW drive, but it does not install software for third-party USB and FireWire drives. Use the Easy installation or the second custom installation option to install software for third-party drives.

Published Date: Feb 18, 2012

Final Cut Pro: May Stop Responding When Connecting Offline Media Clip

If you open a media clip that is already in use in Final Cut Pro with another application, either application may stop responding or "freeze" when you reconnect the clip in Final Cut Pro.

This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro stops responding or "freezes" when you reconnect a media clip that was opened with another program.

Solution

Close the media clip in the other program before reconnecting it in Final Cut Pro.

Published Date: Feb 18, 2012

Final Cut Pro: Lengthy Delay in Writing 20-bit Audio with Targa Ciné System

If you use 20-bit audio in a sequence, you can experience a lengthy delay when editing to tape.
This article has been archived and is no longer updated by Apple.

Symptom

If you have 20-bit audio in your sequence and you edit to tape, Final Cut Pro displays a dialog that says "Writing audio...". It can take 30 minutes or more to finish writing the audio depending on how much 20-bit material is in the sequence.

Solution

Only use 8- or 16-bit audio in your sequence. The delay happens because QuickTime is converting the audio in 16-bit space.
Published Date: Feb 18, 2012

Final Cut Pro 2: Rerenders High Definition 23.976 Files Exported From After Effects

Final Cut Pro 2 may appear to needlessly rerender High Definition 23.976 frame rate files exported from Adobe After Effects when you import them into a 23.98 time base sequence

This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro 2 rerenders High Definition 23.976 frame rate files exported from Adobe After Effects when you import them into a 23.98 time base sequence.

Solution

Final Cut Pro 2 does not work with frame rates of 23.976/23.98.

Published Date: Feb 18, 2012

Final Cut Pro 2.0: Cleaner 5 System Extensions Conflict

System extensions installed with Terran's Cleaner 5 application may interfere with video capture, playback, and YUV processing in Final Cut Pro. This article has been archived and is no longer updated by Apple.

Symptom

These symptoms may occur in Final Cut Pro 2.0 after you install Cleaner 5:

- Slow, choppy capture
- Fields seem to be reversed in capture and playback
- Unexpected frame dropping
- Unwanted brightness shifting

Solution

Use the Extensions Manager control panel to turn off these extensions when you use Final Cut Pro:

- RadDVCodec
- RadDVDecoder

You can turn them back on when you use Cleaner 5.

Published Date: Feb 18, 2012

Final Cut Pro 2: "Error Importing EDL" Message With Sony 9100 Format EDLs

You should use Sony 3600 Format EDLs when you export from AVID Media Composer to Final Cut Pro 2.
This article has been archived and is no longer updated by Apple.

Symptom

When you import Sony 9100 Format EDLs that were exported from AVID Media Composer, an alert box with this message may appear:

"Error importing EDL."

Solution

Use the Sony 3600 Format to export EDLs from AVID Media Composer.
Published Date: Feb 18, 2012

iTunes 2: How to Use the Same Library in Mac OS 9 and Mac OS X

This document explains how to set up iTunes 2 in Mac OS 9 and Mac OS X to use the same music library.
This article has been archived and is no longer updated by Apple.
You can share your music library between the Mac OS 9 and Mac OS X versions of iTunes 2 by making an alias of the iTunes folder, inside your Documents folder. The iTunes folder contains the iTunes Music Library file and the iTunes Music folder with your encoded songs. **Important:** These steps do not work with iTunes 3. You cannot share music libraries between Mac OS 9 and Mac OS X if you use iTunes 3.

To use the Mac OS 9 music library with Mac OS X:

1. Drag the iTunes folder that may already exist in the Documents folder of your Mac OS X home to the Trash.
2. Make an alias of the iTunes folder that is inside your Documents folder on your Mac OS 9 startup disk.
3. Drag the alias to the Documents folder that is inside your Mac OS X home.
4. Rename the alias from "iTunes alias" to "iTunes".

Now, when you use iTunes for Mac OS X, it will follow the alias and use your music library from Mac OS 9.

To use the Mac OS X music library with Mac OS 9:

1. Drag the iTunes folder that may already exist in your Documents folder on the Mac OS 9 startup disk to the Trash.
2. Make an alias of the iTunes folder that is inside the Documents folder in your Mac OS X home.
3. Drag the alias to the Documents folder that is on your Mac OS 9 startup disk.
4. Rename the alias from "iTunes alias" to "iTunes".

Now, when you use iTunes for Mac OS 9, it will follow the alias and use your music library from Mac OS X.
Published Date: Feb 18, 2012

iTunes 1.1: System Requirements

This article outlines the system requirements for iTunes 1.1.
This article has been archived and is no longer updated by Apple.
To use iTunes 1.1 music software, your computer must meet the following system requirements:

Listen to music

- Any Macintosh Computer with built-in USB ports
- Mac OS 9.1
- Internet connection for CD database

Make an audio CD

- Macintosh computer with internal Apple CD recording drive
- A qualified third-party USB or FireWire CD recording drive. Please see the iTunes Web site at http://www.apple.com/itunes/ .

Published Date: Feb 18, 2012

Final Cut Pro 2.0: Unexpectedly Quits When Capture Hardware Not Present

In rare circumstances, Final Cut Pro 2.0 may unexpectedly quit and generate a Type 2 error if the selected analog capture hardware is not present and the sequence settings are set for DV.
This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro unexpectedly quits with a Type 2 error.

Solution

Install the selected analog capture hardware or change the capture presets to something appropriate, like DV.

Published Date: Feb 18, 2012

AlisaShare: User Limit "around" 62

I have the following configuration:

- DEC VAX 6000 series running VMS 5.3 PCSA and AlisaShare

- All-Ethernet environment

The VAX is dedicated to desktop services, including file and print sharing. When more than 62 users log on to the VAX using AlisaShare, the process locks up and must be restarted. Even when this limit is approached and users log off, the process remains locked. The VAX is currently serving over 200 Macintosh and MS-DOS systems.

I spoke with Alisa Tech Support and was told the limit for AppleShare in general was 62 users and could not go beyond that. They suggested starting a second Alisa Process to cover additional needs, but I am reluctant to do this because of the extra time needed to administer it.

I know of the 50-user limit of Apple's AppleShare server software and the 254-node limitation of AppleTalk Phase 1, but not of a maximum limit of 62 simultaneous users.

Do you know of any such limitation? If yes, is there a workaround? If not, what could be the source of the problem?

This article has been archived and is no longer updated by Apple.

We contacted Alisa Technical Support and they told us that AlisaShare has a user limit of "around" 62 users. This is not an AppleShare limit. Starting another process is the only way we know to work around this problem.

Published Date: Feb 18, 2012

Mac OS X Server: GUI Does Not Support Non-Contiguous Subnet Mask

Network Preferences will not accept a subnet mask that is not contiguous so the configuration must be edited manually.
This article has been archived and is no longer updated by Apple.

Symptom

An alert box appears with a message that the mask is not valid.

Solution

Manually edit `/etc/iftab` and change the subnet mask to the required one.
Published Date: Feb 18, 2012

Data Access Language (DAL): Distributed Sessions

I am very interested in the Data Access Language, especially in relation to a DB2 database. Does DAL support accessing the IBM mainframe via distributed-session, 3270-connectivity products like Avatar's distributed session product or Tri-Data Netway?
This article has been archived and is no longer updated by Apple.
Data Access Language (DAL, formerly CL/1) uses a connection definition in the hosts.cl1 file when making connection to a DAL host server. The following mainframe interfaces are currently supported by DAL:

- MacDFT 1.1 with Apple Coax/Twinax Card connection
- MacDFT 1.1 with Apple TokenTalk NB card connection
- MacDFT 1.1 with Apple Serial NuBus Card Connection
- Tri-Data Netway 1000/2000 connection
- Avatar MacMainFrame connection
- DCA MacIrma connection

CVT and DFT sessions are supported byt all these connection methods.
Published Date: Feb 18, 2012

iTunes for Mac OS X: Set Sleep to Never When Burning Audio CDs

Your computer may stop responding and iTunes will fail to successfully burn an audio CD if the computer or display goes to sleep.
This article has been archived and is no longer updated by Apple.

Symptom

The computer stops responding, or "freezes," and iTunes fails to create a usable audio CD.

Solution

Update to iTunes 4.0.1 or later. The current version of iTunes can be downloaded from the iTunes download page (http://www.apple.com/itunes/download/).

Published Date: Feb 18, 2012

iTunes: USB CD-R Drives Should Be Set to 2x Burn Speed

You should set your USB CD-R drive to 2x burn speed when you make an audio CD with iTunes.
This article has been archived and is no longer updated by Apple.

Symptom

iTunes does not successfully burn an audio CD on a USB CD-R drive if the burn speed is set higher than 2x.

Solution

You should set your USB CD-R drive to 2x burn speed when you make an audio CD. iTunes may not be able to successfully burn an audio CD at speeds higher than 2x on some USB drives. To set your drive to 2x speed, follow these steps:

1. Choose Preferences from the iTunes menu (Mac OS X) or Edit menu (Mac OS 9).
2. Click the Advanced tab or the CD Burning tab (depending on your version of iTunes).
3. Choose 2x from the Burn Speed pop-up menu.
4. Click OK.

Published Date: Feb 18, 2012

iTunes 1.1.1 for Mac OS X: Click Burn Before Inserting Blank Discs

You should open the iTunes application and click Burn before inserting a blank disc.
This article has been archived and is no longer updated by Apple.

Symptom

When you insert a blank CD, an alert box appears with a message that asks if you to continue, eject, or initialize the volume (disc).

Solution

1. Click Continue.
2. Click Burn in iTunes to create the CD.

To avoid this message, click Burn before inserting a blank disc. If you can't eject a blank CD after you've inserted it, try clicking the eject button in iTunes.

Published Date: Feb 18, 2012

DVD Studio Pro 1.0.1: Clipped Frames When Encoding With MPEG 2 Into PAL

This article describes an issue that you may experience when encoding with MPEG 2 into PAL.
This article has been archived and is no longer updated by Apple.

Symptom

When you encode with MPEG 2 into PAL and then open the clip in DVD Studio Pro, the last few seconds are clipped.

This does not happen if you encode into NTSC.

Solution

This issue is addressed in DVD Studio Pro 1.1. To get more information about DVD Studio Pro and to download the latest update, visit the DVD Studio Pro product page at:

http://www.apple.com/dvdstudiopro/

Published Date: Feb 18, 2012

A/UX: How It Handles Multiple Monitors and Function Keys (9/94)

I have some problems with A/UX:

1) Since A/UX supports only one monitor, which monitor will A/UX use on a Macintosh SE/30 with an external monitor (RasterOps)?

2) The command shell in A/UX uses a VT100 definition in the termcap file. How are the VT100 keys mapped to the Apple extended keyboard (like the VT100 keypad, PF1-PF4)?

This article has been archived and is no longer updated by Apple.
A/UX uses only the internal monitor when running on a Macintosh SE/30. A/UX running on a Macintosh II class machine will always use the video card installed in the lowest number slot.

The PF1 through PF4 function keys on the extended keyboard are supported under the A/UX 3.0 CommandShell terminal emulation. Use the "Keys" pull down menu.

Article Change History:
23 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

A/UX 2.0: How to Protect the Macintosh OS Partition

I want to put in a lab of A/UX systems to teach UNIX on. In A/UX 2.0b9 I found a hole for lab use. That is, you can boot A/UX; log in as guest, root, or regular account; and throw away the System folder from the Macintosh OS boot partition. If the system is then powered down, it can't be restarted. This is a serious problem for public-access types of facilities. Is this also in the final?

This article has been archived and is no longer updated by Apple.
This problem remains in the released version, but here's a temporary solution:

1) Format the A/UX drive using Silverlining from La Cie.

2) Password protect the Macintosh OS partition using Silverlining.

3) Put only a System file and the A/UX Startup application on the Macintosh OS side. NO Finder should be put on the Macintosh OS side.

4) Set A/UX Startup as the startup application after you have started up from a floppy or another disk.

A/UX 2.0 will not recognize the password-protected disk and will not mount it. Because the Macintosh OS side has only a System file and the A/UX Startup application, no one can short-circuit the boot into A/UX and mess with the Macintosh OS files.

However, two possibilities remain for tampering with the Macintosh OS side. Making a bootable floppy that has a Finder on it from A/UX could be troublesome. A clever hacker could use "dp" to remove the password protection on the Macintosh OS side. However, proper file protections could stop this sort of thing. You might also have to protect power switches.

In A/UX 3.0, A/UX Startup includes a password feature that can make the MacPartition unavailable to all users except root.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

Published Date: Feb 18, 2012

Mac OS X 10.0: Cannot Assign a Name to LPR Printers

Mac OS X 10.0 through 10.0.3 do not offer a feature to name an LPR printer.
This article has been archived and is no longer updated by Apple.

Symptom

You are unable to change a printer's IP address to a name.

Solution

These versions of Mac OS X 10.0 do not include a feature to change the IP address to a name in the Print Center.
Published Date: Feb 18, 2012

Mac OS X Server 10.0: Mail Server Email Addresses Can Use Long Name

Mac OS X Server's Mail Server will work with email addresses using the user's long or short name.
This article has been archived and is no longer updated by Apple.
When setting up the Mail Server, you can use a user's long name, and are not limited to the eight-character short name.
A user's long name is limited to 63 characters.

If you plan to use the long name you should only use alphanumeric characters, underscores, and dashes, which are 'safe' characters. You should avoid spaces, punctuation marks, and other 'special' characters.

Technically, the email RFCs permit spaces and many other 'special' characters, but typical conventions avoid them, so you should avoid them for best compatibility with other email clients and servers.
Published Date: Feb 18, 2012

TA44514_AFE_Incompatibility_with_AUX__(TIL06087).pdf

AFE: Incompatibility with A/UX 2.0

Article Change History

08/31/92 - REVIEWED
*For technical accuracy

AFE (under A/UX 2.0) fails to initialize DSDD disks as MS-DOS 720K, with the error "Initialization Failed!" The same disks formatted fine on an MS-DOS machine, another Macintosh running AFE, and the same A/UX Macintosh booted under Macintosh OS. The results were the same on several different disks regardless of whether DOS Mounter was running or not.

This article has been archived and is no longer updated by Apple.
AFE isn't completely compatible with A/UX 2.0, although formatting 720K DOS disk was the only problem I found with it. It would mount and translate both 720K and 1.44MB DOS disks with no problems.

Published Date: Feb 18, 2012

Sherlock: "Another process changed the volume during the search" Alert

If you change the contents of a disk or volume that Sherlock is searching, Sherlock stops searching and an alert box appears.
This article has been archived and is no longer updated by Apple.

Symptom

Sherlock stops searching and an alert box with this message appears:

> "Unable to search the volume '<VolumeName>'. Another process changed the volume during the search. Please wait for the process to finish and try again."

Figure 1 Sherlock alert box

Solution

This alert appears if you change the contents of a disk or volume while Sherlock is searching. You change the contents of a disk or volume by saving or copying a file to it, or by dragging an item to the Trash or to another disk or volume. To prevent this alert box from appearing, avoid changing the contents of a disk or volume while Sherlock is searching.
Published Date: Feb 18, 2012

WebObjects 4.5: End of Support Notice

This article contains an important WebObjects announcement.
This article has been archived and is no longer updated by Apple.
In 2001-05, Apple released both WebObjects 5 and WebObjects 4.5.1. WebObjects 5 represents the future of WebObjects, allowing users to deploy all-Java solutions built using WebObjects' award-winning technology. WebObjects 5 is available worldwide through The Apple Store, Apple retail stores, and selected resellers.

WebObjects 4.5.1 is a transitional product designed for the use of existing WebObjects 4.5 customers. This release allows deployment of Objective-C based WebObjects applications on Mac OS X 10.0, and includes a number of improvements for all platforms. All customers currently using WebObjects 4.5 should upgrade to this new release. WebObjects 4.5.1 is only available by telephone order from The Apple Store.

An upgrade offer is available for WebObjects 4.5 customers to upgrade to WebObjects 4.5.1. This offer expires on 2001-09-14. Please visit http://www.apple.com/webobjects/ or your regional WebObjects page for more details.

Effective 2001-07-02, Apple will no longer make WebObjects 4.5 licenses available. However, the license keys included with WebObjects 4.5.1 may still be used with WebObjects 4.5 deployments, allowing you additional time to transition.

Apple typically supports the current release of WebObjects, as well as the latest update to the previous release. In accordance with this practice, on 2001-11-01, Apple will no longer make WebObjects 4.5 technical support available. Apple continues to provide regular fee-based support and updates for WebObjects 4.5.1 and we expect to do so for some time to come.

Additionally, effective 2001-12-31, Apple will discontinue the availability of WebObjects 4.0.1 licenses and technical support. Please plan accordingly.

Apple will of course continue to fulfill its obligations under existing contracts to license and support software products that may be subject to this notice.

Questions or comments may be sent to webobjects@apple.com.
Published Date: Feb 18, 2012

Desktop Skills Tutorial: Sounds Are Distorted When QuickTime 5.0.1 Is Installed

When QuickTime 5.0.1 is installed, the sounds associated with the Desktop Skills tutorial are distorted.
This article has been archived and is no longer updated by Apple.

Symptom

Sounds generated by the Desktop Skills tutorial are distorted.

Solution

Download and install QuickTime 5.0.2. There are two ways to do it:

- Open the QuickTime Player application.
- Choose Update Existing Software from the Help menu.

-Or-

- Download the QuickTime 5.0.2 installer from the QuickTime Web page (http://www.apple.com/quicktime/download/).

Published Date: Feb 18, 2012

Windows Internet Explorer 5.5 SP2 and 6.0: Broken QuickTime Graphic in Web Pages

Visit the QuickTime Web site to download an update if you see a graphic of a broken QuickTime logo on a Web page.
This article has been archived and is no longer updated by Apple.

Symptom

A graphic of a broken QuickTime logo appears on a Web page.

Solution

1. Visit the QuickTime Web site. A dialog box will appear to confirm installation of the QuickTime ActiveX control.
2. Accept the QuickTime ActiveX control. The software will download and install.

For more information, particularly for Web developers and Webmasters, see "QuickTime: Broken Plug-In Icon With Internet Explorer 5.5 SP2 and 6.0 for Windows."

Published Date: Feb 18, 2012

Final Cut Pro 1.2.1, 1.2.5: Device Qualification

This document can help you select appropriate equipment to use with Final Cut Pro 1.2.1 and 1.2.5.
This article has been archived and is no longer updated by Apple.

United States and Canada NTSC Format	Device Protocol	1.2.1 Qualified	1.2.5 Qualified	More Info
Canon Elura	FireWire Basic	X	X	Yes
Canon Elura2	FireWire Basic		X	
Canon GL1	FireWire Basic	X	X	Yes
Canon Optura Pi	FireWire Basic	X	X	Yes
Canon Optura	FireWire Basic	X	X	
Canon Ultura	FireWire Basic	X	X	Yes
Canon Vistura	FireWire Basic	X	X	
Canon XL1	FireWire Basic	X	X	
Canon ZR	FireWire Basic	X	X	
Canon ZR10	FireWire Basic	X	X	Yes
Panasonic AG-DV2000	FireWire		X	
Panasonic AJ-D250	FireWire Basic		X	Yes
Panasonic PV-DV100	FireWire Basic		X	Yes
Panasonic PV-DV200	FireWire Basic		X	Yes
Panasonic PV-DV400	FireWire Basic		X	Yes
Panasonic PV-DV600	FireWire Basic		X	Yes
Panasonic PV-DV800	FireWire Basic		X	Yes
Sony DCR-PC1	FireWire	X	X	
Sony DCR-PC10	FireWire	X	X	Yes
Sony DCR-PC100	FireWire	X	X	
Sony DCR-TRV7	FireWire	X	X	Yes
Sony DCR-TRV8	FireWire	X	X	
Sony DCR-TRV9	FireWire		X	
Sony DCR-TRV10	FireWire	X	X	
Sony DCR-TRV11	FireWire		X	
Sony DCR-TRV103	FireWire		X	
Sony DCR-TRV103/110	FireWire	X		
Sony DCR-TRV120	FireWire		X	
Sony DCR-TRV310	FireWire	X	X	
Sony DCR-TRV320	FireWire	X	X	
Sony DCR-TRV510	FireWire	X	X	
Sony DCR-TRV520	FireWire	X	X	
Sony DCR-TRV720	FireWire		X	
Sony DCR-TRV900	FireWire	X	X	
Sony DCR-TRV7000	FireWire	X	X	
Sony DCR-VX1000	FireWire	X	X	
Sony DCR-VX2000	FireWire		X	
Sony DHR-1000	FireWire	X	X	
Sony DSR-11	FireWire		X	Yes
Sony DSR-20 (Digital VCR)	FireWire	X	X	Yes
Sony DSR-30 (Digital VCR)	FireWire	X	X	
Sony DSR-40	FireWire	X	X	Yes
Sony DSR-PD100A	FireWire	X	X	
Sony DVMC-DA1 (DV-Analog Box)	FireWire	X		Yes
Sony DVMC-DA2 (DV-Analog Box)	FireWire		X	Yes
Sony DVMC-MS1	FireWire	X		

Sony GV-D300	FireWire	X	X	Yes
Sony GV-D900	FireWire	X	X	Yes
Sony DSR-PD150	FireWire		X	

Japanese NTSC Format	Device Protocol	1.2.1 Qualified	1.2.5 Qualified	More Info
Panasonic NV-C5	FireWire		X	
Panasonic NV-MG3	FireWire		X	
Sony DCR-PC3	FireWire	X	X	
Sony WVD-9000	FireWire	X		Yes

Additional information

Canon Elura (NTSC)
This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Canon GL1 (NTSC)
This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Canon Mini DV MV3i (PAL)
This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Using Assemble Edit, the sequence consistently appears 5 frames before the set In Point. When using the tuner scripts, the sequence will appear 3 frames before the set In Point.

Canon MV20i (PAL)
This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified..

Canon MV200i (PAL)
This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Canon MV30i (PAL)
This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Canon Optura Pi (NTSC)
Timecode refresh of DV tapes not recorded on the Optura Pi will stutter in Final Cut Pro 1.2.5 and on the Optura Pi LCD screen. This may result in dropped frame warnings, or timecode break detection warnings after capturing clips. Use only tapes that were recorded on the Optura Pi for editing.

This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Canon Ultura (NTSC)
This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Canon XM-1 (PAL)
This camera needs the DV Tuner 2 and CMP Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 2" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Canon ZR10
Using Assemble Edit to print Final Cut Pro 1.2.5 projects to tapes that have been continually used and worn may contain audio drops. If you experience this problem, use a new tape.

Panasonic PV-DV100
This camera also needs the DV Tuner 1 and CMP Override Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These are included with Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 1" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Panasonic PV-DV200, PV-DV400, PV-DV600, and PV-DV800
These devices and the Panasonic PV-DV100 have similar FireWire hardware so they should be compatible with Final Cut Pro 1.2.5. These devices were not tested but are being considered compatible based on the test results of the PV-DV100.

These cameras also require the DV Tuner 1 and CMP Override Scripts to optimize device control over FireWire with Final Cut Pro 1.2.5. These files are included with the Final Cut Pro 1.2.5 installer and updater. Once installed, locate the folder called "Extras" and you will find "DV Tuner 1" and "CMP Override". Drag these two files into the Final Cut Pro Plugins folder before launching Final Cut Pro. These Scripts should NOT be installed when using other DV devices, unless specified.

Sony DCR-TRV7
When batch capturing clips widely separated by timecode, you may receive an incorrect error message stating that Final Cut Pro was "...unable to find timecode..." Individually capture clips separated by 3 minutes or more when using this camera.

Sony DSR-11
If the deck is switched from NTSC to PAL (or vice versa) while importing into Final Cut Pro, you must restart the computer to reset the FireWire bus for the signal change to be recognized.

Sony DVMC-DA1
The Sony DVMC-DA1 is no longer available from Sony but is supported for Final Cut Pro 1.2.5.

Sony DVMC-DA2
If your device is only equipped with the LANC device control connection, LANC will not transmit timecode to Final Cut Pro. However, you may use the media converter functions to convert video for transmit over FireWire. Device control will be available when using LANC however, timecode will be omitted preventing usage of such functions as, Batch Capture, and Capture Clip. These functions require a timecode reference to operate.

Aurora Video Systems Igniter
You must use version 1.2 of the Igniter driver with Final Cut Pro. Onscreen VGA video playback may suffer slightly in certain situations, especially with high data rates. Setting your display color depth to thousands instead of millions, setting the Igniter playback preview size to quarter, or setting Playback Preview mode to Computer Only will all help increase the onscreen playback performance. Additionally, the Igniter card supports –10dBu audio. If you are using +4dBu audio, you must use a mixer or an inline pad to adjust the incoming audio levels. The Analog Upgrade card for the Igniter supports +4dBu audio. The Igniter uses a compression ratio of 1.5:1 at its best setting. Data rates can vary due to the nature of the material being captured..

Digital Voodoo D1 Desktop 64 AV
Version 4.8.1 of the D1 Desktop driver has been qualified. The D1 Desktop Firmware revision 26 has been qualified. 10 Bit data rates are about 26.7 Megabytes/second and require a robust disk drive subsystem. Due to high data rates, 10 Bit sequences with upwards of 8 tracks of audio may require a mix-down of audio tracks for final playback.

DC30Plus
Video play back on the Mac monitor is not a true representation of the video quality. In order to see the actual video quality, video must be played out to

a television or NTSC monitor.

Make sure you are using a video card capable of overlay (for example, ATI RagePro.) Set your Monitor to Thousands of Colors and Final Cut Pro View size windows to 50 percent, this will improve playback on the VGA monitor. Try reducing the Overlay size using the DC30plus control panel, set to very small or small if overlay is not updating the window correctly.

Optimal performance with Final Cut Pro is video frame size at 640 by 480 NTSC. Earlier versions of DC30plus capture cards are not able to handle +4dBu from Professional sources. A mixer may be used to adjust the levels between the source and DC30plus card.

NewerTechnolgy – FireWire 2 Go
If you are using Final Cut Pro on a PowerBook G3, turn off all "Energy Saver" settings while using FireWire Out/In for DV capture and playback in Final Cut Pro.

Panasonic AJ-D250
The AJ-D250 requires a software upgrade to support the optional FireWire (IEEE 1394) interface. All VTRs shipped after 2000-09 include this software upgrade. If you have an older deck, Panasonic will update the software for a flat fee of 150 USD at an authorized service center. Please contact Panasonic for additional details.

Pinnacle Systems TARGA Ciné engine
To better handle the high data rate requirements of uncompressed video, set the size of the Final Cut Pro Canvas and Viewer windows to less than 95 percent on slower computers.

Pinnacle Systems TARGA 2000 SDX Studio
TARGA 2000 SDX Real-Time and Accelerated effects are not enabled in Final Cut Pro. This capture card requires TARGA 3.1.1 drivers to perform correctly.

Pinnacle Systems TARGA 2000 DTX
This card requires TARGA 3.1.1 drivers to perform correctly.

RATOC Systems CBFW2 FireWire CardBus
Turn off all "Energy Saver" settings while using FireWire Out/In for DV capture and playback in Final Cut Pro. We recommended not using the PowerBook Sleep function while using Final Cut Pro. CBFW2 card is to be used with the PowerBook G3.

Sony DSR-40
All Edit to Tape functions must be used with Apple FireWire device control protocol.

When using Black and Code, the deck will cue to PAUSE mode. You must hit stop manually on the deck to start Black and Code. Black and Code will start automatically.

Log & Capture Mode Issue with the PowerBook (FireWire) computer.
The following Final Cut Pro qualified DV devices require Mac OS 9.0.4 in order for Log & Capture mode to work correctly:

Sony DSR-20
Sony GV-D300
Sony GV-D900
Sony PC-10
Sony TRV-7
Sony TRV-9
Sony TRV-9E
Sony WV-D9000

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Mac OS 9: Cannot Install Because System is "Too Large"

During an upgrade installation of Mac OS 9, an alert box appears with a message that says installation cannot continue because the System file is "too large".
This article has been archived and is no longer updated by Apple.

Symptom

While performing a Mac OS installation over an existing System Folder, an alert box appears with this message:

> "The file 'System' on the disk is too large to accommodate the installation. Try removing 'System' and install again."

Products Affected

- Mac OS 9.0 through 9.2.1

Solution

1. Open the System Folder.
2. Open the file named System.
3. Remove any non-Apple resources you may have added such as alert sounds or keyboard layouts. These resources can be reinstalled after you have updated the operating system.
4. Try performing the Mac OS 9 installation again.

Published Date: Feb 18, 2012

Mac OS 9.2: iTunes and Volume Control Using the Apple Pro Keyboard Volume Keys

This article explains how the Apple Pro Keyboard volume keys work in conjunction with iTunes and system volume with Mac OS 9.2 and later
This article has been archived and is no longer updated by Apple.

Symptom

The system volume does not change when using the Apple Pro Keyboard volume keys, only iTunes volume changes.

Solution

This is normal. When iTunes is open, iTunes controls the volume keys. You can change the volume in iTunes, but not the system volume.

Quitting iTunes allows the system volume to be changed using the keyboard volume keys.

Published Date: Feb 18, 2012

LaserWriter: Remote Status Feedback (11/94)

I am using the LaserWriter IINTX in PostScript batch mode, attached to a Hewlett-Packard workstation. The printer's location makes it impossible to see the status lights. Can one write a program to read the status and notify the user of a condition requiring operator intervention?

What is the difference between "PostScript batch" and "PostScript interactive" modes? Would "PostScript interactive" give me the capabilities I need? Are these modes described anywhere?

This article has been archived and is no longer updated by Apple.
PostScript batch mode is the mode to use. To quote page 275 of the PostScript Language Reference Manual (available from Addison-Wesley):

"In batch mode, a job consists of the execution of a single file containing a PostScript program."

The manual goes on to say:

"In interactive mode, a job consists of an arbitrarily long dialogue in which the user issues a PostScript statement and the server executes the statement and prompts for the next one."

Page 282 of the manual discusses status queries:

"The LaserWriter provides a status query facility that enables the host or user to determine what the LaserWriter is doing. The LaserWriter responds to a status query asynchronously with respect to normal job execution; that is, it sends a response immediately, regardless of what has gone on before or how much input data has been buffered. This facility is intended primarily to enable 'spoolers' (printer control programs) to keep track of the activities of LaserWriters under their control."

"The status query mechanism works differently depending on whether AppleTalk or serial communications is in use, but the syntax and semantics of the response are the same in either case."

"In case of AppleTalk, a request to open a connection to a busy LaserWriter yields a rejection packet whose data consists of a status message. There is also a separate status request packet that yields the same information. The path over which the status response packet travels is logically separate from the connection through which the server is receiving its current job."

"In case of serial communication, receipt of a control-T character from either channel (9-pin or 25-pin connector) elicits a one-line status message over the same channel. This channel need not be the one through which the server is receiving its current job. The message is bracketed by the text sequences '%%[' and ']%%' to enable host software to extract the message from ordinary data generated by the job being executed."

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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iMac: I/O Ports Identified and Explained

This document identifies the input/output (I/O) ports of iMac computers.
This article has been archived and is no longer updated by Apple.
The input/output ports of iMac computers are illustrated in Figure 1 and Figure 2.

Figure 1 Input/output ports of iMac computers with tray-loading disc drives

Figure 2 Input/ouput ports of iMac computers with slot-loading disc drives

Each of the ports are alphabetically labeled. Find the corresponding letter in this table to identify the port.

Label	Port	Links
A	Sound Input	**iMac: Sound Input Port Specifications**
B	Sound Output	**iMac: Sound Output Port Specifications**
C	USB	**USB: FAQ (1 of 4)**
D	Ethernet	**Macintosh: Connecting to an Ethernet Network**
E	Interrupt	**iMac: How to Install an iMac Firmware Update**
F	Reset	**iMac: How To Force a Restart**
G	Modem	**V.90 Protocol: Connectivity Discussion**
H	FireWire	**FireWire Ports: Specifications** (http://www.apple.com/firewire/)

For more information about the devices that can be attached to iMac ports, see document 30649, "**iMac: Frequently Asked Questions (2 of 2) -- Can I attach external devices to iMac?**"
Published Date: Feb 18, 2012

Mac OS 9.1, 9.2.1: No Scroll Bars in Finder Windows

If you connect to a file server using the Launcher, the scroll bars in Finder windows disappear.
This article has been archived and is no longer updated by Apple.

Symptom

After you connect to a file server by clicking its icon in the Launcher, Finder windows no longer have any scroll bars.

Solution

Use any of these workarounds:

- Click the Launcher window, then click a Finder window. The scroll bars reappear.
- Connect to server volumes using the Chooser or an alias on the desktop instead of the Launcher.
- Continue to use the Launcher to connect to server volumes, but add the server and your name and password to the keychain in the log-on dialog. Be sure to give Finder access to the keychain by checking the box "Allow 'Finder' to access keychain without warning."

Published Date: Feb 18, 2012

DVD Player 3.0: Subtitles Disappear After Using Forward or Backward Controls

When playing a movie from a DVD-Video disc using DVD Player 3.0 (included with Mac OS X 10.1), subtitles can disappear after clicking the Forward or Backward controls.
This article has been archived and is no longer updated by Apple.

Symptom

If you have turned on subtitles while playing a movie from a DVD-video disc and then click the Forward or Backward control, when you resume play by pressing the space bar the subtitles are turned off.

Solution

Turn off the subtitles and then turn them on again.

1. Click the right side or bottom of the Controller to show the additional controls.
2. Click the Subtitle button to cycle through the available language choices. The choices appear briefly in the Viewer window.

You may also be able to choose subtitles using the disc's interactive menus.

Note: Not all DVD-Video discs have subtitles or work with this feature.
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Macintosh Plus: Serial Driver Differences Of The 128K ROM

This article describes issues with RAM and ROM based serial drivers when the Macintosh Plus was introduced.
This article has been archived and is no longer updated by Apple.
When connected to third party printers, the newer ROM-based Macintosh Plus serial driver occasionally doesn't work, possibly because of differences between the old RAM and ROM drivers and the newer ROM driver.

If you have recently upgraded your system to a Macintosh Plus and your printer no longer works with some of your applications, you may have to change from Xon/Xoff (Software) to DTR (hardware) type handshaking, if your printer has this option.

There were originally three different serial drivers, two RAM serial drivers and a ROM serial driver. The RAM drivers had features that the ROM driver didn't. One version of the RAM driver was for use with the 128K and 512K Macintosh and one version was for use with the Macintosh XL. All serial drivers default to 9600 baud, 8 bits data, no parity, and two stop bits with the ROM serial driver supporting CTS hardware handshake and the RAM driver supporting Xon/Xoff software handshake. The ROM driver would terminate input requests when an error occurred. The RAM driver would not terminate with errors. It can be seen that, depending on which driver was used by an application, a user could access certain built-in functions.

The newer serial driver in the Macintosh Plus 128K ROM has some differences from all the previous drivers. The new driver verifies that the serial port is correctly configured and free; if not, an error is returned. When opened, the new driver defaults to hardware handshake ON (as did the old ROM driver). When opened, the new driver also asserts the DTR line and negates that line when closed. There have been new control calls implemented that let the application control the input data flow from an external device, as well as set control options, and modify the translation of parity default characters.

Further information on the old RAM and ROM serial drivers can be obtained from Inside Macintosh Vol. II, Page 245-255. Further information on the newer ROM serial driver can be obtained from Inside Macintosh Vol. IV, Page 225-228.

Published Date: Feb 18, 2012

HomePage: Site Names That Begin With a Period Can‘t Be Seen in an iDisk

If you create a site in HomePage that starts with a period, the corresponding iDisk folder is not visible in the Finder.
This article has been archived and is no longer updated by Apple.

Symptom

If you create in HomePage that starts with a period, the corresponding iDisk folder is not visible in the Finder.

Solution

Remove the period as the leading character of the site name in the HomePage Manager. This will allow the folder to be seen in the iDisk.
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.Mac: HomePage Page Numbering System Changed

In .Mac HomePage 3.0 pages are incremented by order created.
This article has been archived and is no longer updated by Apple.
With previous HomePage-created sites, the HTML name of the page only included a number if it was the second or greater page of that category. For example, the first photo album created was titled PhotoAlbum.html, the second photo album was PhotoAlbum1.html, the next photo album was PhotoAlbum2.html, and so forth.

Since HomePage 3.0, the pages no longer number this way. Instead of counting how many pages of any one template have been created, the numbers now reflect how many pages in total have been created. Thus, if your first page is a photo album, it will be PhotoAlbum1.html. If your next page is an iMovie page, it will be iMovieTheater2.html, even though there was no iMovieTheater1.html.
Published Date: Feb 18, 2012

A/UX 2.0: Slot Manager and Device Drivers (6/93)

I want to use a NuBus accelerator card (MacDSP) with A/UX 2.0. I got it to work under the Macintosh OS. However, when I try to get it to work under A/UX, the software says that it cannot find the device driver for the DSP NuBus card. What needs to be done to get A/UX to recognize this? Do I need to write a custom device driver for A/UX? Why does Apple map serial applications like MacTerminal correctly through the /dev/tty driver and not map SCSI devices and/or NuBus boards (Slot Manager)?

This article has been archived and is no longer updated by Apple.

Yes, a NuBus card used under A/UX must have a device driver written for it, or it will not be recognized as a valid device, and it will not function. Actually, this is similar to what we have in the Macintosh OS. For example, a .ENET driver is installed in the System file when you use the Macintosh II EtherTalk NB card, and the Apple TokenTalk NB card requires A/ROSE to function.

Therefore, although the Slot Manager provides the basic functionality of recognizing and communicating with NuBus cards at system startup, it is actually the manufacturers' software that initializes the cards and lets the system use them. This software uses the Slot Manager to integrate the cards into the Macintosh OS.

Although it provides excellent Macintosh OS compatibility, A/UX 2.0 cannot provide this low-level hardware communication in the same fashion as the Macintosh OS and remain UNIX. UNIX uses device drivers of a particular format to communicate with hardware, and just as we have had to do with the NuBus cards we support, manufacturers wishing their cards to work with A/UX must either support Apple's drivers (as in third-party video cards) or write their own.

Article Change History:
17 Jun 1993 - Retitled to show A/UX 2.0 in title.
07 Sep 1993 - Reviewed for technical accuracy.

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.Mac: HomePage Created Subfolders May Not Be Modified in iDisk

When additional Web sites are created through HomePage, a subfolder is created in the Sites folder of the iDisk using the same name as the site. While the contents of this folder may be viewed, the folder itself and its contents cannot be modified. Attempting to modify the contents of this folder will result in an alert.

This article has been archived and is no longer updated by Apple.

Symptom

An alert box appears when you try to copy files to a HomePage created folder in the Sites folder of your iDisk.

Solution

It is not possible to use a HomePage created subfolder to store files or Web pages. Files may be stored at the root level of the Sites folder, or you may create your own subfolder by choosing New Folder from the File menu.

Published Date: Feb 18, 2012

Mac OS 9: "You are not permitted to change File Sharing settings" Alert

If file sharing is turned on, Limited Finder or Panels users may see a file sharing-related alert when the computer wakes from sleep, restarts, or is shut down.
This article has been archived and is no longer updated by Apple.

Symptom

If you are logged in as a Limited Finder or Panels user, when you shut down, restart, or wake the computer from sleep, an alert box with this message appears:

> "You are not permitted to change File Sharing settings."

Solution

This alert box appears because you are logged in as a user that does not have privileges to make file sharing changes. To prevent this alert box from appearing, log out before choosing Sleep, Restart, or Shut Down from the Special menu.
Published Date: Feb 18, 2012

MacDFT, TokenTalk, and Error 32804

I am having problems with a Macintosh IIci with Apple TokenTalk NB card and MacDFT hooked to an IBM host running TSO. When I call up MacDFT 1.1, I set my terminal type to Model 3, then begin to log on. After typing my log on and password, a dialog box appears:

Session 1: Request 14: Error 32804

I can log on and run terminal sessions just fine, but this error message may appear one more time during the session. The manual gives no indication of what this problem may be.

Another, and possibly related, symptom is that file transfer, which worked fine under version 1.0, does not work; the file transfer always times out at the file transfer dialog box. Any suggestions?

This article has been archived and is no longer updated by Apple.
We suspect that both of these problems are being caused by an improperly configured Log Mode Table on the host. Specifically, we are looking at the PSERVIC field in the Log Mode Table that has the following format:

```
02 80 00000000 2050 1850 7F 00
| | | | | | |
| | reserved | | | reserved
| | | | |
| Query bit | | Screen Size Switch
| | |
LU Type | Alternate Screen Size
|
Default Screen Size
```

Where:

1) LU Type is the device type. 02 is a display device.

2) Query bit determines file transfer ability. You need the first digit of this byte set to 8 or higher to enable DFT file transfer.

3) Default Screen Size and Alternate Screen Size are values determining the terminal model being used. The following table shows the possible settings:

Model 1 1828
Model 2 1850
Model 3 2050
Model 4 2B50
Model 5 1B84

4) Screen Size Switch sets your ability to switch between the default and alternate display types. If this is set to 7F, you can. If it is set to 7E, you cannot.

In your case, we suspect that the Query bit and Default Screen Size fields need to be reset, based on the functionality you desire. It is quite likely that the settings are still those used when MacDFT 1.0 was being used through a Coax/Twinax card in CUT mode.

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TA44535_iPod_Frequently_Asked_Questions.pdf

iPod: Frequently Asked Questions

Learn the answers to some of the frequently asked questions (FAQ) regarding iPod.

This article has been archived and is no longer updated by Apple.

1. Is iPod compatible with my computer?
2. How do I tell which iPod I have?
3. What music (jukebox) software do I need on my computer to use iPod?
4. How do I transfer music between my computer and iPod?
5. I have a computer at home and one at work. Can I update my iPod music collection from more than one computer?
6. Can I update more than one iPod with my computer?
7. I have both a Mac and a PC. Will my iPod work on both?
8. Can I use my existing iPod for Mac on a PC, or my iPod for Windows on a Mac?
9. Can I use iPod while running, or doing other activities? Will my music skip?
10. How does iPod provide skip protection?
11. How much music does iPod hold?
12. What if my music collection exceeds the storage capacity of iPod?
13. Will music sound as good on my iPod as on my CD player?
14. What is the equalization (EQ) feature on iPod?
15. Can I standardize the volume for all the music tracks in my MP3 player?
16. What audio formats does iPod work with?
17. What is Audible?
18. Can I connect iPod to my home stereo?
19. Can I connect iPod to my car stereo?
20. How long does the battery last?
21. How do I charge iPod?
22. Can iPod charge while my computer is asleep?
23. How does the hard drive feature of iPod work?
24. Can I start up my computer using iPod?
25. Is there a clock on my iPod?
26. How do I add contacts and notes to my iPod?
27. How do I update my calendar on my iPod?
28. How long does my iPod service warranty last?
29. How long is iPod complimentary telephone support?
30. Where do I find help for my iPod?
31. How do I clean iPod?
32. What iPod accessories can I purchase?

Using iPod with your computer

Question: Is iPod compatible with my computer?
Answer: iPod is compatible with Macintosh computers running Mac OS X and PCs running Windows 2000 or Windows XP.
For additional information, see iPod: System Requirements.

Question: How do I tell which iPod I have?
Answer: It's easy to see which iPod model you have. Some of the things you can do include checking if it has a scroll wheel, a touch wheel, or a Click Wheel and checking the size of its hard drive. See Identifying different iPod models for more details.

Question: What music (jukebox) software do I need on my computer to use iPod?
Answer: iPod comes with iTunes for Macintosh and iTunes for Windows.

iPod is fully integrated with iTunes. iTunes allows you to "rip" tracks from CDs into MP3 or AAC format and organize your music library by creating playlists. And every time you plug iPod into your computer, your music library--complete with playlists--is automatically transferred over FireWire or USB 2.0. See the iTunes website for upgrades to iTunes.

Question: How do I transfer music between my computer and iPod?
Answer: iPod offers multiple ways to transfer music from your computer. You can set the transfer mode in iTunes 7 or later by selecting the iPod icon in the source pane to reveal the iPod settings. The following modes can be configured on the iPod:

- Automatically update all songs and playlists. This is the default mode, in which your entire music library, including playlists, is automatically synced to your iPod. If the music library on your computer exceeds the iPod storage capacity, iTunes will offer to choose a selection of songs to sync to iPod.
- Automatically update selected playlists. With this option, iTunes automatically copies only the playlists you have selected to iPod when you connect it to the computer. This option can be selected by accessing the Music tab of the iPod settings.

- Manually manage music. You can also choose to transfer music to iPod manually. This allows you to drag and drop individual songs and playlists from iTunes to iPod. You can find this option by accessing the Summmary tab of the iPod settings.

Question: I have a computer at home and one at work. Can I update my iPod music collection from more than one computer?

Answer: Yes. When you first connect iPod to your computer, iPod recognizes that computer as its "home" computer. Each time you connect, iPod automatically downloads the music library stored on it. When you connect iPod to a different computer, iTunes will inform you that iPod is linked to a different iTunes library and will ask whether you wish to erase iPod's contents and sync with the new computer's library. If you will be connecting to multiple computers frequently, configure your iPod to manually manage music. This will allow you to selectively drag songs, albums, or playlists from the second computer to your iPod without compromising the existing music.

Synchronization generally occurs only in one direction, from your computer to your iPod. This means you typically cannot transfer music, automatically or manually, from your iPod to a computer, and you cannot use iPod to copy a music library from one computer to another. An exception to this is the transfer purchases feature which allows you to restore purchased iTunes content to your computer from your iPod. Additionally, if you legally are allowed to copy music or other media files, you can configure your iPod as a storage drive to move media files.

Question: Can I update more than one iPod with my computer?
Answer: Yes. Each iPod communicates a unique device identification number to your computer, allowing you to take advantage of automatic music transfers to your iPod even if you share a computer with another iPod user. You can choose to automatically update your entire music collection on multiple iPod players or choose to update selected playlists, allowing you to transfer custom playlists to individual iPod players.

Question: I have both a Mac and a PC. Will my iPod work on both?
Answer: No, not at the same time. iPod is configured for either Mac or PC. You can use iTunes 7 or later to restore iPod to work with a Mac or a PC. See "Restoring iPod to factory settings" for more information. **Note:** Using the iPod for Mac on a PC, or using the iPod for Windows on a Mac, is not supported by Apple. FAT32 is the format used by Windows, and while some FAT32 iPod models may work with your Mac, Apple only supports using the iPod shuffle in FAT32 format on Mac. For more information see the iPod shuffle Frequently Asked Questions (FAQ).

Question: Can I use an iPod formatted for Mac on a PC, or an iPod formatted for Windows on a Mac?

Answer: It is not possible to use an iPod formatted for Mac with Windows. This is because Windows does not support the HFS Plus file system and therefore will not see the drive. When you connect an iPod formatted for Mac to your PC, iTunes will prompt you to restore the iPod.

iTunes will allow you to use an iPod formatted for Windows on a Mac; however, Apple currently only supports using the iPod shuffle in FAT32 format on Mac. For more information see the iPod shuffle Frequently Asked Questions (FAQ).

Skip Protection

Question: Can I use iPod while running, or doing other activities? Will my music skip?
Answer: iPod was designed for people with an active lifestyle. It is compact and lightweight enough to take with you wherever you go. It was designed to fit comfortably in the palm of your hand or to be slipped into a pocket or purse for easy transport. iPod offers up to 20 minutes of skip protection — twice that of other hard drive-based MP3 players on the market — so you can enjoy outdoor athletic activities without missing a beat. Also check out the skip-free iPod shuffle and iPod nano.

Question: How does iPod provide skip protection?
Answer: In addition to the hard drive, iPod has a memory cache. It is made up of solid-state memory, meaning that it has no mechanical or moving parts, so it is not affected by movement of the device. iPod skip protection works by preloading up to 25 minutes of music to the cache at a time. iPod plays music from the memory cache rather than the hard drive, so even rigorous activities won't cause music to skip.

Storage

Question: How much music does iPod hold?
Answer: iPod comes in many storage capacities from 512 MB to 80 GB.[2] The amount of music iPod can hold depends on the compression rate of your songs. At 128 kilobits per second (kbit/s), the most common compression rate used for MP3s, 20 GB is equivalent to over 5000 four-minute songs, or more than 500 CDs. At the near-CD-quality 160 kbit/s compression rate, 20 GB equals over 4000 four-minute songs, or 400 CDs.

iPod shuffle includes capacities of 512 MB and 1 GB for up to 120 or 240 AAC format songs respectively.

Question: What if my music collection exceeds the storage capacity of iPod?
Answer: If you have more music in iTunes than you can fit on iPod, you can choose to update selected playlists only or update manually. With the first option, only the tracks in the selected playlists (rather than the entire music library) are downloaded to iPod when you connect. With the manual update option, you manage what goes into your iPod by dragging and dropping selected songs or playlists into iPod.

Audio

Question: Will music sound as good on my iPod as on my CD player?

Answer: iPod is designed to provide the best-quality sound. iPod has a powerful 60 mW amplifier so it can deliver audio as loud as you want. It also has a 20 Hz to 20 kHz frequency response, which means you can hear distortion-free music at the lowest or highest pitches. Even the iPod headphones are designed to give you the best-quality sound. The earbud-style headphones rely on Neodymium transducers, a rare earth magnet that significantly enhances frequency response and overall sound quality. Most other headphones use aluminum, cobalt, or ceramic drivers; at the same size, the Neodymium driver is five times as powerful. Because the strength of the driver increases the accuracy of the sound, the iPod headphones provide a high-energy listening experience while minimizing distortion.

To ensure CD-quality sound, be sure to use a compression setting of 160 kbit/s (the default setting in iTunes) or higher when you "rip" tracks from your CD into MP3 format, or 128 kbit/s in MP4 format (AAC).

Question: What is the equalization (EQ) feature on iPod?
Answer: An equalizer allows you to adjust various audio frequencies within the sound spectrum (much like the bass and treble controls on a stereo system). Equalization can be used to optimize audio playback for a specific room, genre of music, or individual's listening preference. The iPod comes standard with over 20 equalization presets, such as Jazz, Rock, or Bass Booster. Choose your EQ preset in the Settings menu.

Question: Can I standardize the volume for all the music tracks in my MP3 player?
Answer: Music CDs are all mastered differently, with large discrepancies in volume between songs on different albums. With iPod for the Mac, you can standardize the volume of all the songs in your music library with the Sound Check feature in iTunes 3 or later. You can turn Sound Check on or off by choosing Sound Check in Settings in the main iPod menu.

Question: What audio formats does iPod work with?
Answer:

- Mac: AAC (up to 320 kbit/s), MP3 (up to 320 kbit/s), MP3 Variable Bit Rate (VBR), WAV, AIFF, Audible.
- Windows: AAC (up to 320 kbit/s), MP3 (up to 320 kbit/s), MP3 Variable Bit Rate (VBR), WAV, Audible.

For additional information see "iPod: About compatible song formats". Click here for iPod shuffle compatible formats.

Question: What is Audible?
Answer: Audible is a service that provides digital spoken versions of over 18,000 audiobooks and audio programs such as daily digests of the Wall Street Journal and The New York Times, iPod can play the Audible format. You can listen to Audible files using iTunes 4 or download them to your iPod for listening on the go.

Using iPod in Your Home and in Your Car

Question: Can I connect iPod to my home stereo?
Answer: Yes. With its powerful 60 mW amplifier and 20 Hz to 20 kHz frequency response, iPod will sound great on your home stereo. Third-party stereo adapters are available for listening to your iPod music library using home stereo speakers. Compatible devices must be self-powered and support audio output through a 3.5 mm headphone jack. For optimal sound quality when using external speakers, set the iPod volume at less than half the maximum output and adjust your listening volume through your stereo controls. This prevents overamplification, which can cause distortion and reduce audio quality.

Question: Can I connect iPod to my car stereo?
Answer: Yes. iPod will also sound great on your car stereo. Use an extension cable with 3.5 mm stereo connectors on each end to connect iPod to your car stereo system's auxiliary input, or use a cassette adapter if your car stereo doesn't have a sound input port. These items can be purchased at stores that sell car stereo accessories, or at the Apple Store.

Battery

Question: How long does the battery last?

Answer: The built-in rechargeable battery provides between 8-20 hours of music playtime[3] depending on your iPod model. See "Accurately determine your iPod battery life" for more specific information.

Question: How do I charge iPod?
Answer: There are three ways to recharge the built-in battery. First, use the 6-pin FireWire cable or high-power USB cable that came with iPod and connect it to your computer. **Note**: Only certain iPod models will charge directly over USB (iPod shuffle, iPod mini, and Fifth Generation iPod). Second, If you use the 4-pin-to-6-pin FireWire cable or if you don't have access to your computer, you can charge iPod from a standard electrical outlet an AC power adapter. Third, if you have an iPod with a dock connector and have a dock, just place iPod into its dock.

If you are a frequent traveler, you can purchase the World Travel Adapter Kit, a set of "duckheads" with prongs that fit different electrical standards, so you can charge your iPod through any electrical outlet around the world. The World Travel Adapter Kit includes six AC adapter plugs for use in North America, Japan, China, the UK, continental Europe, Korea, Australia, and Hong Kong.

Question: Can iPod charge while my computer is asleep?
Answer: Yes, in some cases. If you connect the iPod to your computer by FireWire, and your computer is sleeping and also connected to AC power, in most cases the iPod will charge. If the iPod does not charge when connected this way, either wake the computer or connect the iPod

directly to an AC power adapter.

Non-music Features

Question: How does the hard drive feature of iPod work?
Answer: iPod can double as a hard drive for your computer. This allows you to transfer files and applications from your computer to the iPod and take them with you wherever you go. iPod is smart enough to keep your data files separate from your music collection so that they will not be accidentally erased when you are updating your music.
See Using your iPod as a hard disk for more information.

Question: Can I start up my computer using iPod?
Answer: Yes, iPod can be loaded with system software and used as a startup disk for your Mac or to install system software on your Mac. Using iPod to start up your Mac with system software is an unsupported feature. iPod cannot be used to start up a PC.

Question: Is there a clock on my iPod?
Answer: Yes, iPod has a digital clock so you can keep track of the time wherever you go — especially convenient for working out.

Question: How do I add contacts and notes to my iPod?

Answer:

iTunes can automatically transfer contacts stored in Address Book to your iPod. To enable syncing of Address Book contacts:

1. Open iTunes and connect your iPod to your computer.
2. Select the iPod icon in the Source pane of iTunes.
3. Click the Contacts tab.
4. Select the "Sync Address Book contacts" checkbox.

iPod is also compatible with popular applications such as Microsoft Entourage, Microsoft Outlook, and Palm Desktop.[4] Simply export your contacts as vCards into your iPod, and you can access names, phone numbers, and addresses on the go. For instructions on creating notes click here.

Question: How do I update my calendar on my iPod?

Answer: iTunes can automatically transfer calendar data stored in iCal to your iPod. To enable syncing of your iCal calendars:

1. Open iTunes and connect your iPod to your computer.
2. Select the iPod icon in the source pane of iTunes.
3. Click the Contacts tab.
4. Enable the "Sync iCal calendars" checkbox.

iPod also supports industry-standard iCalendar and vCalendar files, which can be exported by many applications including Microsoft Entourage, Microsoft Outlook, and Palm Desktop. iCal also works with the iPod calendar. Simply drag your iCalendar or vCalendar files to your iPod, and you can access your calendar even when you are away from your computer.

Service and Support

Question: How long does my iPod service warranty last?
Answer: iPod comes with a one-year limited hardware warranty. An AppleCare Protection Plan (APP) for iPod is available. For more information, see the APP for iPod website.

Question: How long is iPod complimentary telephone support?
Answer: Newer iPods come with complimentary telephone support within the first 90 days. The complimentary support offering applies to:

- iPod classic
- iPod nano
- iPod shuffle
- iPod touch

Question: Where do I find help for my iPod?
Answer: iPod comes with extensive AppleCare built-in service and support, including onscreen help in iTunes, online support via the Apple Support Discussions Forum and Knowledge Base, and 90 days of complimentary phone support.

Question: How do I clean iPod?
Answer: Click here for information on how to clean iPod.

Accessories

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Question: What iPod accessories can I purchase?
Answer: A range of Apple and third-party accessories is available to enhance your iPod. For prices and availability, visit the Apple Store.

- Carrying case with belt clip
- iPod remote and earphones
- Extra AC adapter
- Extra USB or FireWire cables
- World Travel Adapter Kit
- Car tape deck adapter
- Car power adapter
- Splitter cable

Notes

iPod and iTunes are for legal or rightholder-authorized copying only. Don't steal music.

1. Capacity based on average song length of 4 minutes and 128 kbit/s encoding, resulting in a 4.8 MB file.
2. 1 GB = 1 billion bytes; actual formatted capacity less.
3. Rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced. Battery life and number of charge cycles vary by use and settings.
4. Not all applications are supported.

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Final Cut Pro 2: No After Effects Filters in French and German Versions

In French and German versions of Final Cut Pro 2, After Effects filters do not appear.
This article has been archived and is no longer updated by Apple.

Symptom

After adding After Effects filters to the appropriate location, they do not show up in Final Cut Pro 2.

Solution

Apple is seeking a solution to this issue.
Published Date: Feb 18, 2012

iTunes 2: How to Burn an MP3 CD

With iTunes 2, you can burn and read MP3 Audio CDs.
This article has been archived and is no longer updated by Apple.

About MP3 CDs

Using iTunes 2.0 or later, you can burn a disc as an MP3 CD. MP3 CDs can hold 150 songs (about 10 hours of music) on a single CD-R disc. Typical audio CDs can only hold about 15 songs, or 74 to 80 minutes of music. (MP3 CDs hold more songs because the songs are compressed.)

You can play MP3 CDs on other computers and on consumer CD players that are compatible with the MP3 CD format.

How to burn an MP3 CD

iTunes 2 automatically gives you the option to create an MP3 CD whenever you burn a playlist that exceeds the length of a standard audio CD (74 or 80 minutes, depending on the CD-R type.)

Follow these steps to set up iTunes 2 to always burn MP3 CDs:

1. Choose Preferences from the iTunes menu (Mac OS X) or Edit menu (Mac OS 9).
2. Click the CD Burning tab.
3. Click MP3 CD to enable that option.

Note: An MP3 CD will only appear in iTunes' Source list if it was created with iTunes 2. MP3 CDs created with another application or device will not appear in the Source list, but will appear on the desktop as a data disc.

Additional information

To learn how to set the play order of songs on an MP3 CD, see technical document 60931 "**iTunes 2: How to Set the Play Order of Songs on an MP3 CD**".

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iTunes 2: When Radio Tuner Listings Are Refreshed

iTunes 2 connects to the Internet to refresh the Radio Tuner listings in three instances outlined in this document.
This article has been archived and is no longer updated by Apple.
iTunes 2 connects to the Internet to refresh the Radio Tuner listings in these three instances:

1. When you click Refresh.
2. When you click Radio Tuner in the Source list for the first time, or when you reinstall iTunes 2.
3. When you click on a stream's disclosure triangle for the first time.

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iTunes 2: How to Adjust Sound Enhancer

Sound Enhancer is a feature introduced with iTunes 2
This article has been archived and is no longer updated by Apple.

About Sound Enhancer

Sound Enhancer is an Apple-developed digital sound processing technology introduced in iTunes 2 that adds additional life and richness to audio playback, improving the listening experience with headphones and with external speakers.

How to Adjust Sound Enhancer

Sound Enhancer is turned on by default. You can adjust the level of Sound Enhancer by following these steps:

1. Choose Preferences from the iTunes menu (Mac OS X) or Edit menu (Mac OS 9).
2. Click the Effects tab.
3. Slide the fader between low and high to adjust how much Sound Enhancer is applied to your music.
4. Click Sound Enhancer to deselecting the checkbox and turn Sound Enhancer off.

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iTunes 2: Radio Tuner Temporarily Hidden While iPod Updates Music Library

The iTunes Radio Tuner is temporarily hidden while your iPod automatically updates the music library.
This article has been archived and is no longer updated by Apple.

Symptom

The Radio Tuner is hidden whenever your iPod automatically updates the music library.

Solution

Wait until the update is complete before using the Radio Tuner.

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iTunes 2: Audio CD Skips When Played on Iomega Predator Drive

Use the computer's internal disc drive to play audio CDs with iTunes 2.
This article has been archived and is no longer updated by Apple.

Symptom

When you play an audio CD in an Iomega Predator drive, songs may skip.

This symptom does not happen with previous iTunes 1, or when you play MP3 CDs.

Solution

Use the computer's internal disc drive to play audio CDs.
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iPod: Computer Stops Responding if Put to Sleep When iPod Is Connected

Your computer may stop responding ("freeze") if it goes to sleep with an iPod connected to it.
This article has been archived and is no longer updated by Apple.

Symptom

The computer stops responding ("freezes") if it goes to sleep with an iPod connected to it.

Solution

1. Restart the computer (if necessary).
2. Do not put the computer to sleep when the iPod is connected.
3. Turn off sleep in the Energy Saver control panel (Mac OS 9) or the Energy Saver pane of System Preferences (Mac OS X).

Reset iPod. See technical document 61705, "**iPod: How to Reset**" for steps to reset your iPod.

Note: When you reset iPod all your music and data files are saved. Some customized settings may be lost.
Published Date: Feb 18, 2012

iTunes 2: About MP3 CD Format

iTunes 2 uses a hybrid Mac OS Extended and ISO 9660 format when it burns an MP3 CD.
This article has been archived and is no longer updated by Apple.
iTunes 2 uses a hybrid Mac OS Extended (HFS Plus) and ISO 9660 format when it burns an MP3 CD. This means that when you use the CD with a Macintosh computer, the disc will appear as a Mac OS Extended volume. When you use the CD with a non-Macintosh computer or an MP3 disc player, it will appear as an ISO 9660 disc.

For information on how to create an MP3 CD in iTunes 2, see technical document 60924 "**iTunes 2: How to Burn an MP3 CD**".

About the ISO 9660 standard

iTunes burns MP3 discs using the ISO 9660 level 2 standard and the Joliet filename extension to that standard. ISO 9660 level 2 allows 32-character filenames that use uppercase Roman letters (A to Z), the numbers 0 to 9, and an underscore. Joliet is an extension to ISO 9660 that allows filenames to use 64 Unicode characters. **Important:** Songs with filenames that use non-Roman characters may only appear as a number: "__.001.MP3", for example.

Notes

1. If you create an MP3 CD in the Finder and drag MP3 files to that disc, the Finder creates an ISO 9660 disc. It does not create a hybrid Mac OS Extended and ISO 9660 disc.
2. An MP3 CD will only appear in iTunes' Source list if it was created with iTunes 2. MP3 CDs created with another application or device will not appear in the Source list, but will appear on the desktop as a data disc.

Published Date: Feb 18, 2012

iTunes 2: Battery Saver Option Dimmed in Mac OS X

The preference in iTunes to conserve battery power on portable computers is not an option in Mac OS X.
This article has been archived and is no longer updated by Apple.

Symptom

In the Advanced tab of iTunes Preferences, the Battery Saver option is dimmed.

Solution

This feature is not yet available in iTunes 2 for Mac OS X.
Published Date: Feb 18, 2012

iTunes: Some Sound Format Files Cannot Be Played on iPod

iTunes 2.0 and later can play some kinds of sound files that iPod cannot play. These file will not be copied to your iPod when you update your music library.
This article has been archived and is no longer updated by Apple.
iTunes 2.0 and later can play some kinds of sound files that iPod cannot play. These file will not be copied to your iPod when you update your music library.

iPod cannot play sound files in these formats:

- snd
- NVF (Nomad voice files)
- QuickTime
- mp2
- mp1

iPod can play sound files in these formats depending on how they are compressed:

- aiff
- wav

iPod 1.3 and later can play mp4 (MPEG4-AAC) files.
Published Date: Feb 18, 2012

DVD Player 3.0: Subtitles Not Centered

On some computers, the subtitles may be shifted to the right making them difficult or impossible to read when playing DVD-Video discs with DVD Player 3.0 in Mac OS X.
This article has been archived and is no longer updated by Apple.

Symptom

DVD subtitles are shifted to the right.

Solution

Download and install Mac OS X 10.1.2 or later. Use the Software Update pane of System Preferences or download the update from Apple Software Downloads (http://www.apple.com/swupdates/).
Published Date: Feb 18, 2012

iTunes 2: Includes Updated Disc Burning Software

iTunes 2.0.1 includes updated disc burning software, which allows iTunes to burn CDs with short or no gaps in between songs.
This article has been archived and is no longer updated by Apple.
iTunes 2.0.1 for Mac OS 9 includes Authoring Support 1.1.4. This version of Authoring Support allows iTunes to burn CDs with short or no gaps between songs.

iTunes 2 for Mac OS X includes an updated Disc Recording framework, which has the same feature.

To download iTunes 2.0.1 or later, visit the iTunes Web site (http://www.apple.com/itunes/).
Published Date: Feb 18, 2012

iTunes 2: System Requirements

This document outlines the system requirements to use iTunes 2.
This article has been archived and is no longer updated by Apple.
To use iTunes 2 music software, your computer must meet the following system requirements:

Hardware

- iTunes 2 works with all Apple computers that have built-in USB ports
- Using iTunes 2 with iPod requires a computer with a built-in FireWire port
- Audio CD burning requires a supported CD-RW drive

Listen to music

- Mac OS 9.0.4 or later (Mac OS 9.2.1 or later is highly recommended)
- Mac OS X 10.1 with SecurityUpdate10-19-01 installed (1), or later
- Internet connection for CD database

Make an audio CD

- Mac OS 9.1 or later (Mac OS 9.2.1 or later is highly recommended)
- Mac OS X 10.1 with SecurityUpdate10-19-01 installed (1), or later
- Macintosh computer with internal Apple CD recording drive
- A compatible third-party USB or FireWire CD recording drive.

Compatible MP3 players

In addition to iPod, iTunes 2 works with a number of third-party players.

Notes

1. The Mac OS X SecurityUpdate10-19-01 can be installed using the Software Update pane of System Preferences. You can also download it from Apple Featured Software (http://www.apple.com/swupdates/).

Published Date: Feb 18, 2012

Epson LX-800 Printer Connectivity

Can an Epson LX-800 printer be directly attached to a Macintosh?

This article has been archived and is no longer updated by Apple.
The Epson LX-800 is a 9-pin dot-matrix parallel printer. Connecting it to a Macintosh would require the use of an optional serial interface and a driver designed for Epson printers. Many third parties listed in the Menu Library on AppleLink produce drivers for the Epson line of printers.

Published Date: Feb 18, 2012

iPod: How to Navigate Menus

This document explains how to navigate the menus in iPod.
This article has been archived and is no longer updated by Apple.
To navigate the menus in iPod you will only use the Scroll wheel, Menu button and the center Select Button. See Figure 1.

Figure 1: iPod Scroll wheel, Menu button and center Select button

Press the Menu button to go to the main menu or to go back a menu.

To select a menu choice use the scroll wheel to scroll to the item, then press the center Select button.

If there is a right arrow (>) to the right of a menu item, pressing the Select button leads to another list of choices, or a new menu.

While a song is playing you can use the navigation buttons to navigate the menus without stopping the current song. You could change the settings such as Repeat, Contrast, or Sleep Timer. If you navigate to another song and press the center Select button it will stop the current song and start the new song.

Note: The Previous/Rewind and Next/Fast-forward buttons are not used when navigating the menus. They are used to fast-forward or rewind the currently playing song, or to play the previous or next song regardless which menu you might be in.
Published Date: Feb 18, 2012

Macintosh-to-NCR ITX Connectivity

Can a Macintosh communicate with an NCR System 10000 running ITX operating system? If so, can this software control file transfer to a specific disk on the NCR system? If not, do you know of a third-party software package that provides either or both of the capabilities? This request involves a school district decision regarding the use of Macintosh as administrative computers and front ends to their NCR mainframe.

This article has been archived and is no longer updated by Apple.
We contacted the local NCR office to find out what was required in connecting to an NCR system running ITX. They said that a dumb terminal (MacTerminal in VT100 would work) was all that was required for one session. There is special software for the PC world (ITX Windows for PC) that allows multiple connections to the system, but we have been unable to find information on a Macintosh version. The local engineer suggested that you contact Central Dispatch at their local NCR office for detailed information on what is required for their particular system.

Further, we found the following software in the Macintosh Buyer's Guide on AppleLink:

MacQT - Macintosh terminal emulation and file transfer

MacQT (Macintosh Quick Terminal) provides emulation of an ADDS Viewpoint (a.k.a., NCR 7901) and NCR 7900 connected to an NCR host running UNIX or NCR's ITX or other operating system. It lets a user run any program on the host system, just as though they were working on a dumb terminal. Emulation is fast and thorough. MacQT will transfer, in either direction, sequential ASCII files or spool (print out) files. Host software is provided where necessary for file transfer. Contact Rasmussen Software, Inc (check the Technical Info library for details) about MacQt.

Published Date: Feb 18, 2012

iTunes 2: About Connecting Your MP3 Player

You can connect your MP3 player to your Mac to use it with with iTunes 2.
This article has been archived and is no longer updated by Apple.
You can transfer songs from your library to a portable MP3 player, such as the Apple iPod. iTunes works with several players. For the latest information, visit the iTunes Web site.

Connect your MP3 player to your computer with the FireWire or USB cable that came with the device. After a moment, the player's icon appears in the source list. If you are using the Apple iPod and iTunes is set to update it, all your iTunes songs are transferred to iPod automatically.

If your iPod is not set up to automatically update, you can drag songs from the iTunes library or a playlist to the player's name in the source list.

Some players, such as iPod, have additional options. Use the buttons in the lower-right corner to access additional settings.

When you're transferring songs to your player, be sure that your computer does not go to sleep.

For more information about iPod, see iPod Help, or go to www.apple.com/ipod/ .
Published Date: Feb 18, 2012

iTunes 2: Unicode ID3 Tags With Double-Byte Characters Appear as Garbled Text

When using double-byte characters, iTunes 2.0 and 2.0.1 incorrectly format Unicode ID3 tags on songs they encode, and the Unicode tags of songs encoded with other application programs and subsequently edited with iTunes 2.0 or 2.0.1.
This article has been archived and is no longer updated by Apple.

Symptom

When using double-byte characters, iTunes 2.0 and 2.0.1 incorrectly format Unicode ID3 tags on songs they encode, and the Unicode tags of songs encoded with other application programs but edited with iTunes 2.0 or 2.0.1. Tags for these songs appear as garbled text.

iTunes 2.0.2 properly formats Unicode ID3 tags, and automatically corrects the formatting for songs that were encoded by iTunes 2.0 or 2.0.1. However, it does not correct ID3 tags with double-byte characters, for songs encoded with another program and subsequently edited using iTunes 2.0 or 2.0.1. For these songs, iTunes 2.0.2 displays ID3 tags with garbled text.

Solution

If you are using iTunes 2.0 or 2.0.1, download and install iTunes 2.0.2 or later. It is available from the iTunes Web site (http://www.apple.com/itunes/). iTunes 2.0.2 can automatically correct Unicode ID3 tags on songs for tracks improperly encoded with iTunes 2.0 or 2.0.1

If you are using iTunes 2.0.2 and Unicode ID3 tags display incorrectly, you can still play songs without any issues. However, the ID3 tags of songs encoded with another program and subsequently edited using iTunes 2.0 or 2.0.1 will appear as garbled text.

Apple expects to release a version of iTunes with a feature that can manually fix incorrectly formatted Unicode ID3 tags.
Published Date: Feb 18, 2012

MacTerminal: Eliminating the X0 Command

I have discovered that MacTerminal sends out a command that is not always accepted by the telephone company. If you do the automatic dialing, using Dial in the Phone menu, the Macintosh sends the following:

ATS0=0 E0 V0 X0 H0 cr
AT cr
ATDT number cr

The problem is the X0. This puts the modem in a "blind dial mode." In other words, the modem does not wait for a dial tone before it starts to dial. This doesn't always work, depending on what kind of telephone system there is.

Is there any way of changing this command sequence, so that MacTerminal doesn't send X0?

This article has been archived and is no longer updated by Apple.
To change the X0 in MacTerminal's dial string to an X2 or X4 requires the use of a file editing utility such as FEdit or SEdit. Make a working copy of MacTerminal first, and open it from the utility. Do an ASCII search for "ATS0" (the 0 is a zero). Within one block, there should be two occurrences of "ATS0=0E0V0X0H0". Edit the "X0" to "X2", being careful not to add any extra text. Write the sector back to disk.

It would also be a good idea to modify MacTerminal's version resource, so that users can easily tell this copy has been modified. Using ResEdit, open MacTerminal's vers resource ID#1. Modify two strings as follows:

Abbreviated string "2.3.1"
Change it to "2.3.1.x2"

Get Info string "2.3.1 Copyright c Apple Computer, Inc. 1983-1989"
Change it to "2.3.1.x2 Copyright c Apple Computer, Inc. 1983-1989"

Remember that this is an unsupported patch, and could cause problems if MacTerminal encounters result codes it doesn't expect. By changing the X0 to X2 or X4, you immediately expand the set of result codes that MacTerminal may see. If it doesn't handle these well, the results can be unpredictable.

Published Date: Feb 18, 2012

iPod: "Storage device was not properly put away" Alert When You Disconnect FireWire Cable

When FireWire disk mode is turned on, an alert box appears if you disconnect iPod without first choosing Put Away (Mac OS 9) or Eject (Mac OS X) from the File menu, or clicking the eject button in iTunes.
This article has been archived and is no longer updated by Apple.

Symptom

When you disconnect iPod's FireWire cable, an alert box appears with one of these messages:

Mac OS X 10.1
"The storage device that you just removed was not properly put away before being removed from this computer. Data on the device may have been damaged or lost. In the future, please put away the device (Choose its icon and Eject it or Drag it to trash) before removing the device."

Mac OS 9
"A FireWire disk has stopped responding. The problem must be corrected to prevent damaging the disk's contents. Please check all FireWire connections. If you added, removed, or turned a FireWire device on or off, try undoing what you did."

Solution

You should always put away iPod's hard disk icon before disconnecting the FireWire cable. Follow these steps.

Mac OS 9

1. Reconnect the FireWire cable to iPod. The alert box is dismissed.
2. Put away the iPod hard disk icon by dragging it to the Trash, or click its icon and choose Put Away from the file menu or Eject from the Special menu. You can also use the keyboard shortcuts by pressing the Command-Y keys or Command-E keys. In iTunes you can select iPod in the playlist and click iTunes' eject button.

Mac OS X 10.1

1. Click OK to dismiss the alert.
2. Reconnect the FireWire cable to iPod.
3. Put away the iPod hard disk icon by dragging it to the Trash, or click its icon and choose Eject from the File menu. You can also use the keyboard shortcut by pressing the Command-E keys. In iTunes you can select iPod in the playlist and click iTunes' eject button.

Published Date: Feb 18, 2012

iTunes 2.0: "Preferences could not be displayed" Alert

If you have a large number of files in your music library, you may need to increase iTunes memory allocation to set preferences or use iPod.
This article has been archived and is no longer updated by Apple.

Symptom

When you click the Effects, Import, or Burn tabs in the iTunes Preferences panel, an alert box with this message appears:

> "The application preferences could not be displayed because there isn't enough memory available. Try quitting other running applications or quit iTunes and increase its preferred memory setting."

Solution

The iTunes music library can list approximately 32 000 songs. If you have a lot of songs and experience slow performance, if you use iPod, or if alerts like the one above appear, follow these steps:

- Quit open applications that you are not using to make more memory available to iTunes.
- Increase iTunes preferred memory setting:
    1. Quit iTunes, if necessary.
    2. Select the iTunes application program icon.
    3. Choose Get Info from the File menu.
    4. Choose Memory from the Show pop-up menu.
    5. Make the Preferred memory larger, and close the window.
    6. Repeat step 5 if alerts continue to appear.

Published Date: Feb 18, 2012

Microsoft Word: Repairing Corrupted Documents

I have designed a table/chart in Microsoft Word 4.0. Superpaint 2.0 was used to rotate some of the headings and insert large bullets.

When printing the document, I get the beginning of the table in Palatino (the desired font) and Helvetica, but later in the document the Palatino font is being replaced by Courier. I checked "no font substitution," but got the same result. The chart printed fine with LaserWriter 5.2, but this problem occurs with LaserWriter 6.0 or above. What happened with the new version of the driver?

This article has been archived and is no longer updated by Apple.
When we printed your document here, it printed incorrectly every time--not only with LaserWriter 6.0 and 6.0.1. This suggests that the problem is some type of file corruption.

When a Microsoft Word file is corrupted, Microsoft suggests saving the file under a different name in RTF format, closing it, opening it again, and saving it again in regular Microsoft Word 4.0 format. When opening the RTF format file, Microsoft Word will ask if you would like to convert the file from RTF to regular Microsoft Word format. Say yes. This process will take a few minutes.

We tried this process with the file you sent, and all tables in the document printed with the correct font (Palatino).

Published Date: Feb 18, 2012

DVD Player 3.0.1: Unexpectedly Quits When You Use 256 Colors

Using DVD Player 3.0.1 while the display is set to 256 colors can cause the application to unexpectedly quit. In Mac OS X the option for 256 colors is unavailable on most systems. It is available on the Power Macintosh G3 (Blue and White) computer, and may be available on systems with third-party video cards that did not come with the computer.

This article has been archived and is no longer updated by Apple.

Symptom

DVD Player unexpectedly quits if the display is set to 256 colors.

Solution

1. Choose System Preferences from the Apple menu.
2. Click Displays.
3. Choose thousands or millions from the Colors pop-up menu.

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iTunes 2: iPod Does Not Appear in Source List

If iTunes 2 is installed on a volume that is not used as the startup disk, iPod will not appear in the iTunes Source list.
This article has been archived and is no longer updated by Apple.

Symptom

iPod doesn't appear in the iTunes Source list even though you've connected it to the computer. This occurs when iTunes 2 is installed on a volume that is not used as the startup disk. If iPod displays this symptom, and iTunes is installed on the startup disk, see technical document 60950: "**iPod: Not Recognized in iTunes and/or Finder**".

Solution

Reinstall iTunes 2 so that it is in the Applications folder on the startup disk. iTunes 2 cannot recognize iPod if it is installed on a partition or volume other than the startup disk. Later versions of iTunes will only install on a startup volume and are not affected.
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A/UX 2.0: and dbm.h

I am working with a Macintosh IIfx with HD80 SC and 8MB RAM and A/UX 2.0. My group is currently operating an AT&T System V system and evaluating A/UX as a replacement for their current system. As part of this evaluation, we are taking their code and re-compiling it under A/UX 2.0. All of these questions concern the operation of the dbm function under A/UX 2.0.

1) Because dbm.h redefines null, it is a problem using standard I/O calls. Any workarounds available?

2) The dbm.h file lists several functions not described in the manual such as:
- makedatum
- calchash

3) The fetch function under dbm is described in the manual to return a pointer to data. However, in the dbh.h file, it is described as returning the data itself. Which is true?

This article has been archived and is no longer updated by Apple.

```
1) dbm.h redefines null to be a pointer instead of just 0, but nothing says
that you can't redefine it yourself within your function that wants to use
standard I/O library calls.  Or redefine your own NULL and use it as your NULL
reference.  Without specific examples, it's hard to give you a specific
workaround.

2) Anything you find in a header file that is not documented or obvious as to
its function is usually an internal declaration used for the program itself.
This is the case with the extra function declarations in the dbm.h file.

3) The fetch function returns the data itself, not a pointer to it.
```

Published Date: Feb 18, 2012

iTunes 2: Cannot Add MP3 Files to Library By Dragging Them to iTunes Window

To add MP3 files to iTunes 2 in Mac OS X (Simplified Chinese), choose Add to Library from the File menu instead of dragging the file to the iTunes window.
This article has been archived and is no longer updated by Apple.

Symptom

You may not be able to add MP3 files to the music library by dragging them in to the iTunes window.

Solution

Choose Add to Library from the File menu instead of dragging the files or folders to the iTunes window.

Published Date: Feb 18, 2012

Final Cut Pro 3: Finder Attempts to Open FCP For Mac OS X When You Open Project Files In Mac OS 9

In Mac OS 9, if you double-click on project files, Final Cut Pro text files, or other files with a Final Cut Pro icon Final Cut Pro 3 for Mac OS X may try to open and an alert box may appear. This issue only occurs if Final Cut Pro 3 for Mac OS 9 and Mac OS X are both installed.
This article has been archived and is no longer updated by Apple.

Symptom

An alert box with this message appears:

> "Final Cut Pro requires certain software that is missing This version of Final Cut Pro requires Mac OS X."

Solution

1. Drag the Final Cut Pro 3 for Mac OS 9 application to the Desktop.
2. Drag it back to its original location.

This should cause the Finder to update the desktop database and prevent this issue from recurring.
Published Date: Feb 18, 2012

ATalk Phase 2: Extracting Zone Multicast Addresses

I manage a large Ethernet network supporting Macintoshes and VAX systems. To manage the network traffic, we want to install filtering bridges to contain multicast packets within defined parts of the internet.

I understand that the Ethernet destination address for AppleTalk Phase 2 isn't broadcast, and zone multicasts are supported. How do you get access to the zone name/multicast address mapping for the Internet, as this is held within the bridges in the ZIT (Zone Information Tables)? We would need to dump the ZIT so that the bridge can be configured, but I can't find any utility that will extract the zone table from the Internet router. Do you know how this can be done?

This article has been archived and is no longer updated by Apple.
There are no utilities that we know of to extract the zone multicast address from the routers of AppleTalk Phase 2 networks. You could use any of the new Macintosh-based Ethernet monitor programs (EtherPeek from the Avant Garde Group or Netminder from NEON Software) to extract the information.

There may be some problems even after you have the data. Zone multicast addresses are assigned on a dynamic basis, using an algorithm that gets the seed number of the multicast address from the zone name itself. If the zone names were changed, the multicast address could also change. There is also a problem where different zones can be assigned the same multicast address, in which case if you blocked one zone you would block all zones that are assigned to that multicast address.

I think you will find a small savings in packet traffic for the amount of work involved in setting up this non-standard approach to segmenting their network. Zone multicast traffic accounts for only a very small amount of the over all traffic present on the net. If you really want to segment your traffic, look at installing some Ethernet-based routers instead of the bridges. Routers are a much cleaner way of isolating network traffic in such situations.

You could also program their bridges to isolate all of the AppleTalk multicast addresses; the addresses start at 0x090007000000 and end at 0x0900070000FC. 0x0900007FFFFF is also used as the general AppleTalk broadcast address.

Published Date: Feb 18, 2012

Final Cut Pro: Do Not Use High ASCII Characters In FXScripts

If copyright (©), registered (®), or other special characters are used in FXScripts on systems using double-byte text, an alert box with this message appears: "FXScript Error: Missing 'code'". To eliminate this issue, the special characters should be removed from the script.
This article has been archived and is no longer updated by Apple.

Symptom

An alert box with this message appears:

> "FXScript Error: Missing 'code'"

Solution

Do not use high ASCII characters when creating FXScripts.
Published Date: Feb 18, 2012

Final Cut Pro 3: After Effects Plugin Presets Have No Effect

Some After Effects plugins include several presets settings. In some circumstances selecting those presets has little or no effect.
This article has been archived and is no longer updated by Apple.

Symptom

Selecting an After Effect plugin preset produces unexpected results.

Solution

Apple is seeking a solution to this issue. You can avoid this issue by ensuring that frames of the clip you are trying to apply the effect to are not shown in the Canvas or Viewer. You can either close the Canvas and/or Viewer windows or move the playhead in the timeline to another clip.
Published Date: Feb 18, 2012

Final Cut Pro: Title Safe Boundaries Change With Window Size

If you use the Text Generator in Final Cut Pro you may notice the Title Safe area is not consistent when changing canvas size. The Text Generator seems to violate the Title Safe area when viewed at 100 percent but not at smaller percentages.

This is only cosmetic. Once the text is rendered you will notice during playback it actually is within the Title Safe area.
This article has been archived and is no longer updated by Apple.

Symptom

The Text Generator seems to violate the Title Safe area when viewed at 100 percent but not at smaller percentages.

Solution

Render the text so that the Title Safe area is accurate. Apple is seeking a solution to this issue.
Published Date: Feb 18, 2012

Final Cut Pro 3: JKL Keyboard Shortcuts Stop Functioning in Log and Capture

JKL keyboard shortcuts can sometimes stop working in Log and Capture after opening the Live Waveform Monitor and Vectorscope window from the Log and Capture window. You can restore functionality by closing and reopening the Log and Capture window.
This article has been archived and is no longer updated by Apple.

Symptom

JKL keyboard shortcuts stop functioning in Log and Capture.

Products Affected

- Final Cut Pro 3
- Mac OS X

Solution

You can restore functionality by closing and reopening the Log and Capture window. Apple is investigating a more complete solution.
Published Date: Feb 18, 2012

Final Cut Pro 3: Bold Effects May Not Be Available for Software Real-Time

Effects and transitions that appear in bold in the Effects menu or Effects tab in the Browser may not be available for software real-time playback. The number and kinds of effects available for software real-time depend on the performance of the computer.
This article has been archived and is no longer updated by Apple.

About real-time effects

If you have a Power Mac G4 or PowerBook G4 that is qualified for G4 real-time Effects as outlined in the product specification, please be aware that products at the lower end of the speed range may not be able to preview all effects in real-time. Not all boldfaced items are available for real-time preview on all computers. Boldfaced items should be taken to represent the range of real-time effects that is possible at the highest end. This is the intended behavior of the program.

In order to check that G4 real-time effects are available on your computer (in either OfflineRT format or DV format) insert a static graphic into the Timeline. A static graphic may be text or a freeze frame made from a video clip that matches the resolution of the format you are working in. Real-time preview of a static graphic is available on any computer on which G4 real-time effects are available.

If a green render bar is visible in the Timeline, then your computer is properly set up for software real-time previews. If a static graphic is not available for real-time preview, your computer may not be properly set up. Refer to the manual for setup instructions.

Symptom

Effects and transitions appear in a bold face font, but have a red render bar when placed in the timeline.

Solution

OfflineRT is a suitable alternative to those seeking G4 real-time effects, but with computer that are not capable of using a wide range of the possible effects on their computer in the DV format. OfflineRT is designed with mobile editing in mind, and is the best format for those seeking G4 real-time effects on a PowerBook.

In Final Cut Pro 3.0.2 and later, the bold real-time effects listed in the Effects menu are accurate for each specific computer. The menu items are bold only if your computer can use real-time effects.
Published Date: Feb 18, 2012

Applesoft: Numeric Comparison Issues

When two numbers print as equal, though an IF statement indicates they're not, the least significant bits in the internal binary storage format of those numbers are different.

Also, sometimes Applesoft's math package doesn't give the answer you expect because Applesoft calculations are done in a 32 bit binary floating point format, which have no exact equivalents to most numbers.
This article has been archived and is no longer updated by Apple.
Applesoft's PRINT statement truncates a number that is extremely close to being an integer. For example, 3^2 and 3*3 will both print as 9 but won't compare as equal. Printing 3^2 - 3*3 will result in 3.7252903E09, while the expression 3^2 = 3*3 is false.

Also, Applesoft uses natural logarithms to calculate many of its trancendental functions, which adds small errors to the results.

To avoid comparison problems, round Applesoft real numbers to a specific number of decimal places.

Use the formula: X = INT(X*P+.5)/P

where P=10 for 1 decimal place, P=100 for 2 decimal places and P=1000 for 3 decimal places, etc.
Published Date: Feb 18, 2012

Apple II Silentype manual A2L0034/030-0095-00: Errata

This article has been archived and is no longer updated by Apple.

Page 11... The procedure for printing a High-Res image doesn't work, since Pascal clears the High-Res buffer when you go to the Filer. We suggest modifying the program as shown below:

```
Program Sprio;

USES Turtlegraphics, Applestuff;
Var angle, distance : integer;
CH : Char; (* added *)

Begin
angle := 0;
While not Keypress Do
Begin
InitTurtle;
Pencolor (white);
For distance := 0 to 99 Do
Begin
Move (2 * distance);
Turn (angle);
End;
angle := angle + 5;
End;
CH:=CHR (17); (* added *)
Unitwrite (6,CH,1,0,12); (* added *)
Textmode
End.
```

Page 13...The discussion on "Echoing to the screen" assumes that you have already done a PR#1 before you do the T command.

Page 18...The discussion in the last paragraph assumes that you have already done a PR#1 before you do the Q command.

Page 38...Line 4, "for the right margin is 2" should be "for the left margin is 2"

Page 39...Program line 6040 should end with Then Goto 6070

Published Date: Feb 18, 2012

iPhoto: How to Spell Check

This document explains how to use the Spell Check feature in iPhoto.
This article has been archived and is no longer updated by Apple.
To spell check in iPhoto:

1. Select a text box.
2. Choose Spelling from the Edit menu, then choose Check Spelling from the submenu.
3. Repeat steps 1 and 2 for each text box.

Important: Only the selected text box is checked--not the entire page or document.
Published Date: Feb 18, 2012

Final Cut Pro 3.0: "Out of memory" Alert When Importing Photoshop Files

Final Cut Pro 3 for Mac OS X does not import Photoshop files that have empty layers, and an alert box may appear with an "Out of memory" message.

This article has been archived and is no longer updated by Apple.

Symptom

When you import a Photoshop file an alert box with this message appears:

> "Out of memory"

The file is not imported.

Solution

Use one of these solutions:

- Delete empty layers from the Photoshop files.
- Use Final Cut Pro for Mac OS 9.

Published Date: Feb 18, 2012

Hard-Disk Recovery: Third-Party Products

What do you recommend for recovering data from a "soft-crashed" hard-disk?
This article has been archived and is no longer updated by Apple.
There are at least two products available:

- Norton Utilities for the Macintosh by Symantec Corp.
- TechTool Pro by MicroMat Computer Systems.

They offer diagnostic software including hard drive diagnostics, data recovery, other utilities.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

iPhoto 1.0: External Editing Application Does Not Open Photo

If you have selected an external editing application in iPhoto preferences, the application may not open the photo when you double-click it in iPhoto if you have changed the photo's filename in the Finder.
This article has been archived and is no longer updated by Apple.

Symptom

Double-clicking a photo in iPhoto opens the external editing application, but the photo does not open inside that application.

Solution

This issue may be caused if you changed the photo's filename in the Finder. Change the filename back to the original to resolve the issue.
Published Date: Feb 18, 2012

Final Cut Pro 3: QuickTime Version Remains 5.0.2

Final Cut Pro 3 requires and includes QuickTime 5.0.4. However, you may notice after installing QuickTime 5.0.4 that the QuickTime version remains at 5.0.2.
This article has been archived and is no longer updated by Apple.

Symptom

QuickTime version says 5.0.2 even though 5.0.4 has been installed.

Products Affected

- Final Cut Pro 3
- QuickTime 5.0.2

Solution

Because QuickTime 5.0.4 only updates two lower level components, the version reported by the QuickTime Settings control panel in Mac OS 9 and the QuickTime pane in System Preferences in Mac OS X will still state version 5.0.2.

You can be assured that QuickTime 5.0.4 is installed correctly if the Final Cut Pro 3 application opens successfully. If QuickTime 5.0.4 or later hasn't been properly installed, the application will notify you, then quit.
Published Date: Feb 18, 2012

Auto-Restart after Power Failures: An ADB Device

Is there any way to restart a Macintosh II, Macintosh IIx, or Macintosh IIfx server after a power failure?

This article has been archived and is no longer updated by Apple.
There is no software that restarts a Macintosh after a power failure. However, we heard of a new ADB device that restarts a Macintosh after a power failure--just the thing for a remote server or router. It is called JumpStart, from ARCOM. For more details, search the Technical Info library under "ARCOM Electronics Inc."

Published Date: Feb 18, 2012

iTunes 2: Window Titles Are Blank

If your monitor is set to display 256 colors, window titles in iTunes may be blank.
This article has been archived and is no longer updated by Apple.

Symptom

Window titles in iTunes are blank.

Solution

Increase the number of colors in the Monitors control panel (Mac OS 9), or the Displays pane of System Preferences (Mac OS X) to Thousands or more.

Published Date: Feb 18, 2012

iTunes: "Error -208 Cannot Open iTunes Music Library" Alert

The iTunes Music Library file may be unusable if an alert box with the message "Error -208 Cannot Open iTunes Music Library" appears.
This article has been archived and is no longer updated by Apple.

Symptom

An alert box with this message appears:

> "Error -208 Cannot Open iTunes Music Library"

Solution:

1. Find the iTunes Music Library file. In Mac OS 9, this file is normally located in the iTunes folder in your Documents folder. In Mac OS X, the iTunes Music Library is located in either the Documents or Music folders. These folders are located in your Home folder; choose Home from the Finder's Go menu.
2. Drag the iTunes Music Library file to the Trash.
3. Optional: Find the "com.apple.iTunes.plist" file in your Preferences folder (~/Library/Preferences) and drag it to the Trash. This will reset your iTunes preferences, and cause the iTunes Setup Assistant to open so iTunes can search for all your music files again.
4. Open iTunes. A new iTunes Music Library file is created. You may need to recreate your playlists, and manually add music files back into your library.

Published Date: Feb 18, 2012

iTunes 2: Alert Appears When You Disconnect Nomad While Uploading

An alert box with an unintelligible message appears if you disconnect a Nomad Jukebox while a song is being uploaded.
This article has been archived and is no longer updated by Apple.

Symptom

An alert box with an unintelligible message appears if you disconnect a Nomad Jukebox while a song is being uploaded. The message says: "Attempting to write to media module 'Internal Disk' failed with error..." (Figure 1).

Figure 1 iTunes alert box

Solution

Wait for the song to upload before disconnecting the Nomad Jukebox.

Published Date: Feb 18, 2012

iPhoto: Revert to Original Dimmed After Editing With an External Editor

After editing a picture with an external editor, the Revert to Original command is dimmed in the File menu.
This article has been archived and is no longer updated by Apple.

Symptom

Revert to Original is dimmed in the File menu after you edit a photo with an external editor.

Solution

1. Import a picture into iPhoto.
2. Crop the picture within iPhoto.
3. Use the external editor to perform other edits.
4. Revert to original is no longer dimmed.

Published Date: Feb 18, 2012

iPhoto: Thumbnail Does Not Update After Photo Is Edited

After editing and saving a photo with an external editor, the thumbnail in iPhoto does not update to show the edits.
This article has been archived and is no longer updated by Apple.

Symptom

After editing and saving a photo with an external editor, the thumbnail in iPhoto does not update to show the edits.

Solution

Follow these steps to update the thumbnail:

1. Select the photo that you want to edit.
2. Edit the photo with the external editor application.
3. Save changes.
4. With the photo still selected, click Edit in iPhoto.
5. Click any of the iPhoto edit functions (Red Eye, for example).
6. Choose Undo from the Edit menu.
7. Click Organize.

The thumbnail should now be updated.
Published Date: Feb 18, 2012

Final Cut Pro 3: Issue Capturing Timecode Beyond Hour 23

Capturing video with timecode that extends beyond 23:12:00;00 can result in media with incorrect timecode information.
This article has been archived and is no longer updated by Apple.

Symptom

Batch captured clips appear with no media connected. Trying to import the clip results in "File unknown" alert. Reconnecting the clip results in no connection to media. Capture displays hour 0 as its current timecode.

Solution

Final Cut Pro 3.0.4 addresses this issue. The update to Final Cut Pro 3.0.4 is available from this document "**Final Cut Pro 3.0.4 for Mac OS X: Information and Download**."

If you are unable to update to Final Cut Pro 3.0.4 at this time, then there are several options available listed below.

Capture the video using Capture Now. Capturing in this way results in a timecode track that is always 0, which is undesirable if you will need to recapture any of your clips (if you're doing an online edit, for example).

OR

Duplicate the tape to another tape with new timecode. This requires two compatible video decks and incurs generation loss if analog I/O is used.

OR

Restripe the timecode if your video deck has this capability.

Published Date: Feb 18, 2012

iTunes 2: How to update Rio firmware

You can use iTunes 2 to update the firmware on a Rio MP3 player.
This article has been archived and is no longer updated by Apple.
If you have a Rio MP3 player, you can use iTunes to update its built-in software.

1. Connect the Rio to your Mac, then select the Rio in the source list.
2. Click the Options button in the lower-right corner of the iTunes window.
3. Click Upgrade Firmware, then choose the upgrade file you obtained from the manufacturer.

Firmware updates are available occasionally, and may not be necessary for all Rio models. See the SonicBlue Web site for information about your device.
Published Date: Feb 18, 2012

iTunes 2: About the symbols next to songs

When you import songs and work with playlists, symbols next to songs show their status.
This article has been archived and is no longer updated by Apple.
A moving zigzag means a song is being imported. A green checkmark means iTunes has finished importing the song.

An exclamation point means the song file can't be located. It may have been moved or deleted.

A globe means the song is stored on the Internet, and "streamed" to you (via the Internet) when you click to play it.

A black checkmark means the song will be included in your next action. For example, only songs with black checkmarks are imported.

A speaker means the song is currently playing. When importing a song you're also listening to, you see a moving zigzag instead of the speaker.

When you eject a CD, the symbols disappear. For more status information, watch the display at the top of the iTunes window.
Published Date: Feb 18, 2012

MacDFT: IBM 4700 Connectivity

I have installed MacDFT with the Apple Coax/Twinax Card. I am interested in setting up a 4700 connection using MacDFT also. Tests have gone well, apart from some problems related to the keyboard. For instance, the string generated from a Clear in a 4700 configuration is different from the one generated from a 3278.
This article has been archived and is no longer updated by Apple.
The 4700 series of Control Units are specialized controllers sold by IBM, typically to banks. This series includes the 4700, 4701, and 4702. The 8770 Control Unit is also a specialized controller sold by IBM to finance companies. These are specialized controllers, and there is no stated support for them with MacDFT.

One solution might be to set MacDFT up for CUT mode emulation. When MacDFT is in CUT mode, much of the terminal and communication processing is done by the controller. In this case, this may help eliminate or minimize any keyboard mapping discrepancies.

It is also possible there is an RPQ installed, which is a specialized remapping program. When using RPQ, you can usually go back to any "default" key by pressing "Alt" and the appropriate key. For example, to execute a Clear when using a RPQ, press Alt and Clear. With MacDFT, because the Alt key isn't mapped, you'll need to assign a key to the Alt-Clear sequence using the Keyboard mapping feature. This is documented in Chapter 5 of the "MacDFT User's Guide."

Other companies use a different strategy with RPQs. DCA sells different keyboard layouts for the Macintosh for some of the different RPQs commonly used.

If no RPQ is installed, you might be able to remap any errant keys using the keyboard mapping feature anyway.
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iTunes 2: How to add a music file to your library

If you have an MP3 file that you've downloaded or obtained elsewhere, you can add it to your music library.
This article has been archived and is no longer updated by Apple.
Drag the MP3 file to the library.

A reference to the file is added to the library, but the file is not copied or moved. If you drop a folder or disk on the Library, all the audio files it contains are added.
Published Date: Feb 18, 2012

iTunes 2: How to organize your music library

The library is where you find and organize the songs you've imported into iTunes.
This article has been archived and is no longer updated by Apple.

1. Click the Browse button to display a list of all your songs, organized by album and artist.
2. To sort the list, click the column heading. (For example, click Song to sort by song title.)
3. To reverse the sort order, click the triangle in the selected column's heading.
4. To rearrange the columns, drag the headings into the order you want. To resize a column, drag the borders between the column headers.
5. To display the musical genre of an album when you're browsing, choose Preferences from the iTunes application menu. Then click Show Genre When Browsing in the General pane.

Published Date: Feb 18, 2012

iTunes 2: How to add songs from CDs to your music library

You can add songs from your favorite CDs to the library. Songs are encoded and stored on your hard disk so you can listen to them without having the original CD. The default encoding format is MP3.
This article has been archived and is no longer updated by Apple.

1. For the best performance and results, use the computer's internal CD drive to import songs.
2. Insert an audio CD in your Mac. After a moment, the songs on the CD are listed in the iTunes window.
3. Click to remove the checkmark next to any songs you don't want to add to your library.
4. Click the Import button to add the selected songs to your library. The display area at the top of the iTunes window shows how much time it will take to import each song, compared to the time it takes to listen to the song. To cancel import, click the small X next to the progress bar.

iTunes plays songs while they're being imported. Click the Pause button to stop playback; the import will continue. You can work with iTunes while songs are being imported.
Published Date: Feb 18, 2012

UNIX: Access to Macintosh File System

Do we have any documentation of what type of access is available in A/UX 2.0 to access the Macintosh side from UNIX applications? This would include writing programs or shell scripts that manipulate Macintosh programs or data in a Macintosh file system.

This article has been archived and is no longer updated by Apple.

You can write hybrid applications that can access Macintosh volumes but retain a UNIX interface. To do this, you must use the calls provided in the Toolbox. These calls are documented in "Inside Macintosh" with the differences documented in the "A/UX Toolbox" manual.

Standard Macintosh applications can, of course, use both UNIX and Macintosh file systems simply by making the standard Macintosh File Manager calls. If these calls are used to access a UNIX file system, they are mapped internally to the appropriate UNIX routines instead, without the Macintosh application being aware of any differences.

On the other side, UNIX programs cannot see or use the Macintosh volumes. The "ls" binary is a perfect example of this. Because it was written using the standard UNIX libraries, it cannot access any Macintosh volumes. Because of this, shell scripts are also incapable of accessing Macintosh volumes. It is conceivable that you could write your own version of "ls" that uses the Toolbox but retains the same interface as the existing command. At that point, you could then use the command from within a shell script.

The A/UX Development Tools product is a full development package supporting this type of development.

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Apple II Memory Expansion Card: Using it on the Apple IIGS

This article has been archived and is no longer updated by Apple.

The Apple II Memory Expansion Card does not function as Apple IIGS RAM. The card appears as a volume on your desktop; the volume name refers to the slot the card's in e.g., slot four = '/RAM4'. You should be able to format and rename as well as write to the memory card as a standard ProDOS volume.

To increase performance, the Apple IIGS's DeskTop program does recognize the Apple II Memory Expansion card and loads itself into the RAM card.

Published Date: Feb 18, 2012

LaserWriter IINTX: Setting the Mode Software Switch

The new LaserWriter IINTX ROMs apparently allow software switching between the AppleTalk and RS-232 input modes. Has anyone written these files?

This article has been archived and is no longer updated by Apple.
Yes, the new version of the "LaserWriter IINT/NTX Owner's Guide" details the commands necessary to switch modes. This manual is included with new LaserWriter IINTX models, and with all ROM upgrades. Appendix C of the manual, "Connecting to and Printing with an MS-DOS Computer," covers this and related issues in relative detail. We definitely recommend reading it, but below we have copied some of this section, which should be useful to you.

Although the section assumes use of a DOS computer, the PostScript code is the same for a Macintosh. Simply remove the DOS specific lines and download the file with the LaserWriter Font Utility.

Selecting an operating mode

If you have a LaserWriter IINT:

*** Details on setting the LaserWriter IINT modes omitted ***

If you have a LaserWriter IINTX:

There are two ways to set the LaserWriter IINTX operating mode:

- You can use the DIP switches to set the mode.

- You can use software switching (sending a program to the printer) to set the mode. Software switching works only with LaserWriter IINTX printers that use PostScript Rev 3.0 or later. Check your printer's startup page to see what Rev it uses.

If you plan to set the printer mode once or infrequently, use the DIP switches to set the mode. If you plan to change operating modes frequently, you should use software switching to set the mode. Both methods are described here.

Setting the Mode with DIP Switches

You can set the LaserWriter IINTX to work in PostScript mode, to emulate a Diablo 630 printer, or to emulate a Hewlett-Packard LaserJet+ printer. Set the switches on the LaserWriter IINTX as follows.

PostScript Mode

If you plan to use software that supports PostScript, switch 2 should be down, and switches 3 and 4 should both be up. Switch 1 can be up or down.

Diablo Emulation

If you plan to use the Diablo emulator, switches 2 and 3 should be down and switch 4 should be up. Switch 1 can be up or down.

LaserJet+ Emulation

If you plan to use the LaserJet+ emulator, switches 2, 3, and 4 should be down. Switch 1 can be up or down.

Setting the Mode with Software Switching

Software switching can be used to set both the software mode used by the printer (PostScript or an emulator), and the hardware mode used by the printer (serial or AppleTalk).

To change the software mode using software switching, you send a program to the printer that changes a value called softwareiomode. To change the hardware mode using software switching, you send a program to the printer that changes a value called hardwareiomode.

The LaserWriter IINTX supports four values for softwareiomode:

0 (PostScript batch mode)
1 (PostScript interactive mode)
2 (Diablo 630 emulation)
5 (HP LaserJet+ emulation)

The LaserWriter IINTX supports two values for hardwareiomode:

0 (serial communication)
2 (the AppleTalk communication protocol)

To use software switching to select a hardware and software operating mode, type the following PostScript program at the DOS prompt and send the program to the LaserWriter IINTX:

```
cd \\
copy con set.mod
(Macintosh file begins here)
serverdict begin 0 exitserver
statusdict begin
S setsoftwareiomode
H sethardwareiomode
(Macintosh file ends here)
Control - Z
```

Instead of typing S in the line where it appears in the program, type the value for the software mode you want to set (0, 1, 2, or 5).

Instead of typing H in the line where it appears in the program, type the value for the hardware mode you want to set (0 or 2).

The program that changes your hardware and software modes is now saved in a file called SET.MOD. To send the program to the LaserWriter IINTX, type this line at the DOS prompt:

```
type SET.MOD > COM1
```

Substitute COM2 for COM1 in the line above if the LaserWriter II is connected to the COM2 port on your computer.

Typing the line given above and pressing return sets the software and hardware operating modes on the LaserWriter IINTX.

Switching from an Emulator to PostScript on the LaserWriter IINTX

There is a quick way to switch from either the Diablo 630 emulation or the LaserJet+ emulation and go into PostScript batch mode. Simply type into a file the command sequence Escape-Delete-Zero, followed by a Control-D, and print the file to the LaserWriter II. When you send this file, the LaserWriter II resets itself to PostScript batch mode.

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You‘re unable to burn a CD in iTunes

Check hardware
This article has been archived and is no longer updated by Apple.

To create audio CDs with iTunes, you must have a compatible CD-RW drive and Mac OS X 10.1 or later (Mac OS X 10.1.5 or later is recommended).

All Apple internal CD-RW drives work with iTunes. To see if iTunes works with an external drive, choose **Preferences** from the **iTunes** menu, then click the CD Burning tab. If your drive is listed, it will work with iTunes.

Make sure your computer and display are not set up to go to sleep.

If you've made a CD and it seems to stutter when played back in your external CD-RW drive, try playing it in your internal CD drive or in a stereo system. Some external drives may not play CDs properly.

If your CD burn is unsuccessful and your external drive becomes unresponsive, turn it off and on to reset it.

Make sure your burner is listed as a device or volume in Apple System Profiler. If not, check to make sure it is connected correctly and set up to burn discs.

Check iTunes settings

If you have set the Gap Between Songs to 5 seconds in iTunes preferences, try setting it to something shorter, such as 2 seconds.

Make sure you've chosen the correct disc format for the files you're trying to burn to your CD or DVD. To create an audio CD, you need to choose Audio CD in the Burning pane of iTunes preferences. To create a CD with any type of audio file that iTunes supports (MP3, AAC, AIFF, and so on), you need to choose "Data CD or DVD" in the Burning pane of iTunes preferences.

Songs that aren't selected are not burned to a disc and are dimmed during a burn. If none of the songs in a playlist are selected, you will see the alert "None of these items in this list can be burned to CD."

Set the burn speed in iTunes to 2x:

1. From the **iTunes** menu (Mac OS X) or **Edit** menu (Mac OS 9), choose **Preferences**.
2. iTunes 5: Click the Advanced tab and then click the Burning tab. iTunes 3 and 4: Click the Burning tab.
3. Choose 2x from the **Preferred Speed** pop-up menu. If the burn is successful, keep trying a faster burn speed until you are unable to burn successfully, then set the burn speed to the last successful speed.

Check CD media

Use a different brand of CD media that is 74 or 80 minutes long. Apple sells blank CDs at the Apple Store that should work with iTunes. Click on Music to find the discs.

If you are using CD-RW (instead of CD-R) discs, only use CD-RW discs that are rated from 1x to 4x speed.

Update your software

For Mac OS X, use Software Update to make sure you have the latest version of Mac OS X and iTunes.

For Mac OS 9, use Software Update to make sure you have the latest versions of Mac OS 9 and Authoring Support.

Quit other applications

Quit all other open applications before burning a CD.

Quit the Classic application environment in Mac OS X. You can do this in the Classic pane of System Preferences.

Allow the drive to complete the burn before you do anything else with the computer. Wait to browse the Internet or listen to music with iTunes until the burn is complete.

Other things to check

If your playlist includes songs that were purchased from the iTunes Store (iTunes 4 only), you can only burn 7 copies of the same playlist to an audio CD. If you can't burn a CD that contains purchased songs, make sure you haven't tried to burn the same playlist 7 times. Additionally, if the song has not been authorized to play on the computer, it will not burn.

When you insert a blank CD, a message asks you to continue, eject, or initialize the volume (disc). Click Continue, then click the Burn button in

iTunes to create the CD. To avoid this message, click the Burn button before inserting a blank CD.

If you can't eject a blank CD after you've inserted it, click the Eject button in iTunes.

Tips for external USB CD-R burners

In addition to the steps above, try these additional steps if you have an external USB CD-R burner.

To create CDs with a USB CD-RW drive, set the burn speed in iTunes to 2x. Choose **Preferences** from the **iTunes** menu (Mac OS X) or **Edit** menu (Mac OS 9), then click Advanced tab (iTunes 5) and then the Burning tab. Choose **2x** from the **Preferred Speed** pop-up menu.

Disconnect all other USB devices except the mouse and keyboard.

If you are using a USB hub, disconnect it, and connect the drive directly to the computer's built-in USB port.

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Sending SunView to MacX Server

Article Change History

01/15/93 - REVIEWED
* For technical accuracy.

I was trying to install MacX. Everything went fine until I tried to have my Sun computer send "SunView" to my MacX server. It didn't work. Instead of the client appearing on my screen, it showed the console screen. I tried the same thing with a VT100 terminal, and the same thing happened.

I know SunView is a "windowing" environment, but is it an X Window System? Isn't Sun's X Window System called OpenLook? Can SunView be a X client?

This article has been archived and is no longer updated by Apple.
SunView is Sun's older window system and is not an X client. Together, SunTools and SunView provide functionality similar to that provided by X Windows and X Windows-based applications -- that is, SunView provides a programming interface and basic windowing capabilities similar to X Windows. But this system is NOT X Windows, it is Sun's proprietary windowing environment, and is best thought of as a competitor to X Windows.

X is now the default window system shipping with new products (as of July 1990). Previously X was an unbundled product, available free from MIT or available from Sun for a media and documentation charge.

XNeWS is Sun's X server that interprets X protocol and PostScript (NeWS protocol). OpenLook is a functional specification for the "look and feel" of the user interface (by AT&T). X clients generally use X toolkits (like XView, XT+, OLIT, and so on), but they could simply make Xlib calls.

Thus, SunView is not an X Window System nor an X client; you can't display it on MacX. If the Sun machine has the Xlib and applications, you should be able to start one using a command similar to:

/usr/bin/xcalc -display mac:0,0

where "mac" is the Macintosh node name defined in the host's file.

Published Date: Feb 18, 2012

VAX: Need to Use Non-PostScript Printer

Is there software that lets the Macintosh print to a non-PostScript printer (for example, the LN03 or LA210 connected to a VAX via RS-232)?

This article has been archived and is no longer updated by Apple.
We don't know of a product that lets you do this. For non-PostScript printers connected to a VAX via RS-232, you normally have to save the file as text only, and send this file to the VAX queue, using the device name of the printer captured by that queue.

If you have DECnet support on the Macintosh, you can use the DECnet COPY command to copy the file to the VAX, using the VAX node name and printer device name as the destination (for example, ENGVAX::LPA0:, where "ENGVAX" is the DECnet node name of the VAX, and "LPA0:" is the printer name).

If you don't have DECnet on the Macintosh, you have to transfer the file to the VAX first, using a terminal emulation program and XModem or Kermit, and use a VAX/VMS DCL command to print the file.

Published Date: Feb 18, 2012

A/UX 3.0 and X Installation Problems

Article Change History

01/15/93 - REVIEWED
* For technical accuracy.
01/15/93 - REVISED
* Updated article to A/UX 3.0.

Due to the size of the A/UX partitions, I decided to load X Window System in a separate partition. Modifying the path parameter in .profile and .login should provide the proper support for this location. It didn't work. It continued looking in the /usr/xxx/X11 directories versus /App/usr/xxx/X11 as was stated in the .profile command. What other supporting files need to be modified for this redirection? We accomplished the task via the link command "ln -s /xxx/xxx /xxx".

This article has been archived and is no longer updated by Apple.
The files X, X11, and X11R3 in the /usr/bin/X11 directory contain references to the /usr/bin/X11 and /usr/lib/X11 directories. There are several ways to get around this. You could add the environment variables $X11BINDIR and $X11LIBDIR to your .login or .profile files, setting them to the location of the new X lib and bin directories. If you are using the Bourne shell you would then export them, or if you're using the csh you would create them as environment variables (that is, with setenv(1)). You could also just link the new directories to the old locations, making symbolic links between the old and the new. Or you could modify the /usr/bin/X11/[X X11 X11R3] scripts to reflect the new directory locations. Any of these procedures should solve your problem.

Published Date: Feb 18, 2012

Token Ring Cards: Incompatible with A/UX

Can I use TokenTalk NB Card under A/UX.

This article has been archived and is no longer updated by Apple.

You cannot run the Apple TokenTalk NB card or the Apple 4/16 Token Ring NB card under A/UX at this time.

Published Date: Feb 18, 2012

AppleTalk Routers that Support TCP/IP

I want to install twenty Macintosh IIfx systems on an Ethernet. I don't want to connect my Macintosh IIfx directly to the Ethernet backbone. Now, I am looking for a router that can route Ethernet to Ethernet. Apple's Internet Router is no solution because I need TCP/IP routing.

Do you know of a TCP/IP and AppleTalk router (hardware or software) that can route between two Ethernets, not only LocalTalk to EtherTalk.

This article has been archived and is no longer updated by Apple.
There are a couple of alternatives. The NRC (Network Resources) router is a TCP/IP and AppleTalk combined router that runs on a Macintosh II class system. They also offer hardware based stand-alone routers that perform the same function. Cisco Systems and ACC (Advanced Computer Communications) both offer Ethernet-to-Ethernet routers that support both AppleTalk and TCP/IP.

Published Date: Feb 18, 2012

Parallel AppleTalk Internet Routers

What route does an AppleTalk message take if you have two AppleTalk Internet Routers connected in parallel? For example, if you have an EtherTalk backbone with two AppleTalk Internet Routers to a LocalTalk-based network, how and what decides which route the message takes?

This article has been archived and is no longer updated by Apple.
LocalTalk nodes use the router contained in the A-ROUTER variable. This variable is updated every time the node sees an RTMP packet. The source network number and node number of the RTMP packet are copied into the A-ROUTER variable. Sometimes, the packet travels to the EtherTalk backbone via the first router, and sometimes it travels to the EtherTalk backbone by the second router.

The best routing algorithm is implemented in EtherTalk 2.0, TokenTalk 2.0, and AppleTalk Phase 2 for A/UX and MS-DOS. It can, theoretically, be added to LocalTalk nodes at a later date.

In the past, a non-router node has not kept much information on how to get to other networks. A node kept track only of the address of one router on its local network, assuming that the router would know how to reach the rest of the Internet. Whenever the node had a packet to send to a different network, the node sent the packet to the one router it knew about.

Generally, this algorithm didn't cause any problems. However, in very large, bridged Ethernets or Token Rings, it can be inefficient, because the one router that a node knows about can be quite far away and not the best router to use.

With AppleTalk Phase 2, nodes can optionally keep information on how best to get to other networks. When a node that uses the best-routing algorithm gets a packet from another network, it looks at the address of the last router that forwarded the packet. This is the router it uses to get to that distant network in the future.

Published Date: Feb 18, 2012

QuickTime for Windows: How to Determine Which Edition and Version Is Installed

This document explains how to determine which edition and version, such as Pro Player, of QuickTime is installed on a computer with Microsoft Windows installed.
This article has been archived and is no longer updated by Apple.
For Macintosh computers, see technical document 25220: "**QuickTime for Macintosh: How to Determine Which Edition and Version Is Installed**."

How to determine which edition is installed

1. Click the Start menu, choose Settings, then choose Control Panel (see Figure 1).

Figure 1 Opening the Control Panel window

2. Open the control panel named QuickTime (see Figure 2).

Figure 2 QuickTime control panel

3. Choose Registration from the pop-up menu (see Figure 3).

The field named QuickTime Key indicates which edition of QuickTime is installed. In Figure 3, QuickTime Pro is installed.

Figure 3 QuickTime Pro is installed

How to determine which version is installed

1. Click the Start menu, choose Settings, then choose Control Panel (see Figure 1).

Figure 1 Opening the Control Panel window

2. Open the control panel named QuickTime (see Figure 2).

Figure 2 QuickTime control panel

2. Choose About QuickTime from the pop-up menu. The version number appears below the pop-up menu. In Figure 4, QuickTime 5.0.2 is installed.

Figure 4 QuickTime Pro is installed

Upgrading to QuickTime Pro

For information on upgrading to QuickTime Pro, visit the QuickTime Web site (http://www.apple.com/quicktime/).

For information on the differences between QuickTime and QuickTime Pro, see technical document 24374: "**Differences Between QuickTime and QuickTime Pro**"

Published Date: Feb 18, 2012

AppleTalk for VMS: Router Issues

I am having a problem with AppleTalk for VMS when connecting Macintoshes to other computer systems. If I use Liaison as a gateway between LocalTalk and Ethernet, I don't get any response from the AlisaTalk software on the VAX. I said that the RTMP table is not correct, so there is no connection between the networks. If I remove Liaison from the Macintosh and connect it directly to the Ethernet, there is no problem. I do not believe this is a problem with Liaison, because I have the same problem with Shiva FastPath.

Is this a known problem? Can you explain?
This article has been archived and is no longer updated by Apple.
There are two possible areas that might be causing the problems you are seeing.

The first has to do with AppleTalk Phase 2 versus AppleTalk Phase 1. It is possible that you have installed the Phase 2 version of AppleTalk for VMS without realizing it, and you are trying to use Phase 1 routers, like Liaison. There are two ways you can test this:

1) Open the ATKBRIDGE.LOG file on the VAX and check the version of AppleTalk for VMS that is being run. If it says you are running version 2.1, you are running the Phase 2 version of ATK/VMS.

2) On the machine you are running Liaison, run the Internet Router instead. If you run the Internet Router without the Phase 2 Upgrade Utility installed, and you can see the services, you are running AppleTalk Phase 2 on the VAX. If you cannot see the services, and then you install the Upgrade Utility along with Phase 1 EtherTalk on the router and you can see the services, you are running Phase 1. We also know that it is something about the other routers causing the problems.

The other area you should investigate if it is not a Phase 1 versus Phase 2 issue is network numbers. AppleTalk for VMS is a router. In the default configuration, it has specifications for two networks, the Ethernet the VAX is connected to and the virtual network running inside the VAX. When you add the other router to the network, you have to ensure:

1) AppleTalk for VMS and the new router have the same network number specified for the Ethernet.

2) The virtual network has a unique network number specified for it.

3) Any other networks connected to the new router have unique network numbers as well.

Each router has a different method for specifying network numbers. For AppleTalk for VMS, this information is maintained in the PORTDESC.TXT file in the AppleTalk directory.
Published Date: Feb 18, 2012

A/UX 2.0: IBM "ftp" Problem

I am having problems with A/UX 2.0 and "ftp". When I do this:

Account Read

I get the message message:

230 Working directory is RVFC60 191 (read only)
Segmentation fault (core dump)

The network components are A/UX on an Ethernet connected to an IBM 8232 gateway through a Cisco Systems router to an IBM 3090 running IBM TCP/IP. The IBM operating system being used is VM/XA CMS. The CMS volume referenced in the error message has a proper READ password and is accessible using the same technique from a Sun Workstation.

The process worked once, but I'm not sure why. It has failed consistently ever since. Can you explain?

This article has been archived and is no longer updated by Apple.

We have duplicated the problem you describe, and it will be submitted as a bug report to A/UX Engineering. One workaround is to enter the "account" command by itself and then input the account information when "ftp" prompts you for it. This seems to prevent the core dump and lets "ftp" function normally. This problem is resolved in A/UX 3.0.

Published Date: Feb 18, 2012

A/UX 2.0: Various Issues

Can you help me with these A/UX 2.0 questions and problems?

1) "adb" does not seem to work. Therefore, I cannot debug my program. We have ordered MacsBug.

2) When using "sfgetfile" and "sfputfile," why is my home directory in "/"? It creates bad pathnames when I try to get something from

/usr/mgb/images/image1

The path I get from "sfgetfile" is

/mgb/images/image1

3) When I log in to A/UX after it says that it is starting "session for mgb", it clears the screen. Is this correct?

4) If I am "mgb" and I do a "df" disk free command, I get different values from when I am the "root". Try these next lines:

% df
xxx xxx xxx xxx
% su
# df
yyy yyy yyy yyy #

where x and y are different by about 10000 blocks.

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```
1) Use MacsBug version 6.2 or later.

2) The reason for this behavior is that under A/UX you have a virtual root that
  is accessible by all users (one at a time).  A/UX 2.0 puts your personal
  user directory onto the desktop so that you see it when you log in.  To do
  this, the Finder has "to play some games" with the UNIX file system to make
  this seem like what the Finder expects.  Folders on the desktop are at the
  root level under the Macintosh OS, so we had to try to emulate that behavior
  under A/UX.  This is why your path to your home directory appears as "/".
  It may be more proper from a UNIX standpoint to map the directory to its
  real location, but if you need that functionality use "open" or "fopen"
  instead of "sfgetfile".

3) No, that's not the correct behavior.  Check the contents of your .login
  file.

4) A/UX now uses the Berkeley file system.  As "root" you have no limitations
  on its use, as a normal user, there is a 10% overhead attached to each
  partition that is not available to a normal user.  This prevents unnecessary
  disk thrashing if the partitions become full.
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Published Date: Feb 18, 2012

A/UX: NFS Auto-Mount and other Support Issues (9/94)

1) What are secured RPCs, and does Apple support this in A/UX?

2) Does A/UX 3.0 have the NFS auto-mount feature? Also, what is auto-mount?

3) Does Apple support TCP/IP over Token Ring with A/UX?

This article has been archived and is no longer updated by Apple.
1) Secure RPC is an additional authentication flavor for ONC RPC that uses a public-key system to ensure that nobody is passing forged credentials over the wire.

The RPC protocol allows arbitrary authentication "flavors". Normally, the flavor "NULL" is used, or "UNIX", which carries around a UID and GID list, must be used from a reserved port to be trusted. The idea was that secure RPC would use DES encryption, based on keys obtained through a public-key distribution scheme.

Unfortunately, I don't know anyone who has successfully set up secure RPC (the primary application is, of course, secure NFS). There are also some ad-hoc changes done by Athena to use Kerberos authentication to NFS.

It differs from non-secure RPC in that it uses a different authentication flavor. ONC RPC supports multiple flavors of credentials:

AUTH_NONE - No credentials; the server has no idea who the user was who made the request, so there better not be any risks of an unauthorized user making the request.

AUTH_UNIX - UNIX user ID, group ID, and group list passed over the wire; if you work hard enough, and it's not *that* difficult, you can send somebody else's user ID over the wire--NFS servers often map user ID 0 to the user ID for "nobody", and may do other mappings, but few other servers do that kind of mapping.

AUTH_DES - "network name" passed over the wire, which is converted to the appropriate native machine credentials (for UNIX, a user ID, group ID, and group set) on the server. The credentials are encrypted using a public-key system, which makes it more difficult to forge credentials, but, allegedly, the public-key cryptosystem in question *is* breakable if you burn enough cycles.

"Secure RPC" in SunOS/ONC terms is RPC using AUTH_DES authentication.

Other flavors of authentication can be added by developers.

There is a very good writeup on Secure RPC in the "Security Features Guide" (part number: 800-1735-10), May 1988 for SunOS 4.0.x, section 6.3 "RPC Authentication." This information was moved to "Network and Communications Administration" (part number 800-3805-10), March 1990 in the SunOS 4.1 DocBox set, section 14.9 "RPC Authentication".

2) The auto-mount feature of NFS provides a mechanism to mount automatically NFS exported filesystems on the fly. This allows dynamic mounting of NFS partitions without having to explicitly mount the partitions from within the "/etc/fstab" file or by using the mount(1) command.

A/UX 2.0 does NOT have the NFS automount feature. However, A/UX 3.0 DOES have this feature.

3) There are no plans to support Token Ring under A/UX. Therefore, there are no plans to support TCP/IP running over Token Ring.

Article Change History:
1 Sept 1994 - Reviewed.

Support Information Services

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Zone Problems Caused by Old Phase 1 Routers

I have a Phase 1 network with FastPaths bridging between LocalTalk and Ethernet. It has a problem seeing a defined as 0, which is causing some network problems. What is the cause of this?

This article has been archived and is no longer updated by Apple.
The problem you're seeing is caused by older Phase 1 routers that are seeing the new-style, Phase 2 non-extended RTMP packets. New-style, non-extended RTMP packets have a special tuple as the first tuple in the set. This tuple contains 2 bytes of 0 and 1 byte used for an RTMP version number (0x82,131 decimal).

Older Phase 1 routers do not understand that this tuple is not a valid network tuple and, instead, interprets it as a distant network. This is usually reported as network 0, 131 hops away. This should not cause any significant problems for your network, but you should try to get all of your routers updated to the most recent releases available from the different vendors.

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About the iPhoto Library folder

The iPhoto Library folder, located in your Pictures folder, contains photos you have transferred from your digital camera or other sources using iPhoto.
This article has been archived and is no longer updated by Apple.
About the iPhoto Library folder

Photos in the iPhoto Library folder are organized by the date they were taken. You can view all photos in your iPhoto Library folder from within iPhoto by clicking the Photo Library icon:

The iPhoto Library folder also contains any albums you create using iPhoto. Your photos aren't actually stored within each album; instead, the albums contain references to the photo files stored elsewhere in the iPhoto Library folder. This way, you can add the same photo to several different albums without actually duplicating the image file.

The iPhoto Library, as well as iPhoto CDs, contain a hierarchy similar to the one pictured in Figure 2. The hierarchy always begins with iPhoto Library, then contains a folder titled the year the picture was taken, followed by a folder for each month, and the day of the month under that. Finally, there are a number of files and folders. The Data folder contains data files that link photos to their thumbnails, which are located in the main date directory (09 pictured here) and in the Thumbs folder.

Important: Do not modify the contents of the iPhoto Library folder from outside the iPhoto application.

Use iPhoto to delete, duplicate, or modify any photos in the iPhoto library. Modifying the contents of the iPhoto library from anywhere but the iPhoto application could result in a library that is unusable and may cause photos and albums to no longer appear in iPhoto.

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System 6.0.x, 7.x: How They Handle 4MB SIMMs

If a SIMM bank is filled with 4MB modules (giving 16MB), will 8MB be used by System Software 6.0.x, or will the system not know what to do with these SIMMs? We are concerned that these SIMMs will bomb the system.
This article has been archived and is no longer updated by Apple.
System software 6.0.x is a 24-bit operating system. When a Macintosh system is running system software 6.0.x, the Macintosh is in 24-bit mode. In 24-bit mode, the Macintosh II family of computers has the address space starting at $00 0000 through $7F FFFF (8MB) reserved for system RAM. The SIMM sockets use the entire system RAM address range of $00 0000 through $7F FFFF, which equals 8MB of RAM.

As you can see from this, with 24-bit addressing, installing four 4MB SIMMs would give you 8MB of usable RAM. The memory configuration under "About This Macintosh..." (About the Finder with System 6) will report 16MB installed, but 8MB is usable with the remainder being assigned to the system software. The extra memory assigned to the system software is unusable. In the case of the Macintosh LC, 2MB RAM is on the logic board. If you install two 4MB SIMMs, the Finder will report that 10MB of RAM installed. 8MB of RAM is usable.

With System 7, you have the option of turning on 32-bit addressing in 32-bit clean ROM computers, with the exception of the AV and Power Macintosh models which operate in 32-Bit mode at all times. (MODE32 installed on computers running System 7 versions prior to 7.1 or the 32-Bit System Enabler installed on computers running 7.1 will enable 32-bit operation). This allows addressing above 8MB in those computers that physically support more than 8MB of RAM.

A/UX is also a 32-bit operating system that can address above 8 megabytes of RAM. A/UX supports up to 256MB of physical RAM.

In 32-bit mode, the Macintosh II family of computers (which includes the Macintosh SE/30) has the address space starting at $0000 0000 through $3FFF FFFF (1 gigabyte) reserved for system RAM. NuBus RAM cards may use address $0000 0000 through $3FFF FFFF to add system RAM. The SIMM sockets use address $0000 0000 through $07FF FFFF, which equals 128MB of RAM.

Here's a list of the current Macintosh systems and the maximum physical memory that the SIMM sockets support:

Macintosh System	Maximum Physical RAM
Non 32-Bit clean systems	
Macintosh Plus	4MB
Macintosh SE	4MB
Macintosh SE/30	128MB + #
Macintosh II	32MB * ##
Macintosh IIx	32MB * #
Macintosh IIcx	128MB + #
Macintosh Portable	9MB #
Macintosh Portable (backlit)	8MB
32-Bit Clean systems	
Macintosh Classic	4MB
Macintosh Classic II	10MB
Macintosh Color Classic	10MB
Macintosh LC	10MB
Macintosh LC II	10MB
Macintosh LC III	36MB
Macintosh LC 475	36MB
Macintosh LC 520	12MB
Macintosh LC 550	36MB
Macintosh LC 575	36MB
Macintosh LC 630	36MB
Macintosh IIci	128MB +
Macintosh IIsi	65MB +
Macintosh IIfx	128MB +
Macintosh IIvi	20MB
Macintosh IIvx	68MB
Macintosh Quadra 610	68MB
Macintosh Quadra 630	36MB
Macintosh Quadra 650	132MB
Macintosh Quadra 660AV	68MB
Quadra 700	68MB +
Quadra 900	256MB +

Quadra 800	136MB
Quadra 840AV	128MB
Quadra 950	256MB +
Power Macintosh 6100/60	72MB
Power Macintosh 7100/66	136MB
Power Macintosh 8100/80	264MB
Macintosh Performa 200	10MB
Macintosh Performa 400	10MB
Macintosh Performa 405	10MB
Macintosh Performa 410	10MB
Macintosh Performa 430	10MB
Macintosh Performa 450	36MB
Macintosh Performa 460	36MB
Macintosh Performa 466/467	36MB
Macintosh Performa 475	36MB
Macintosh Performa 476	36MB
Macintosh Performa 550	36MB
Macintosh Performa 600	68MB
Macintosh Performa 63X	36MB
PowerBook 100	8MB
PowerBook 140	8MB
PowerBook 145	8MB
PowerBook 160	14MB
PowerBook 165	14MB
PowerBook 165c	14MB
PowerBook 170	8MB
PowerBook 180	14MB
PowerBook 180c	14MB
PowerBook Duo 210	24MB
PowerBook Duo 230	24MB
PowerBook Duo 250	24MB
PowerBook Duo 270c	32MB
PowerBook Duo 280c	40MB

Requires the 32-Bit System Enabler with System 7.1 or MODE32 with versions of System 7 earlier than 7.1.

Requires the 32-Bit System Enabler with System 7.1 or MODE32 with versions of System 7 earlier than 7.1, as well as the FDHD upgrade kit and PMMU (The FDHD upgrade has been discontinued).

+ These models are designed to handle 16 megabyte SIMMs but only 4 megabyte SIMMs are officially supported by Apple at this time.

* There are two different reasons that the Macintosh II and the Macintosh IIx can't support the higher density SIMMs. First, the Macintosh II ROM startup code doesn't know about 4MB SIMMs and won't start up.

Second, the Macintosh IIx ROM does know about 4MB SIMMs, but standard 4MB SIMMs won't work on the Macintosh IIx. This is because JEDEC, the committee overseeing the standardization of new solid-state devices, added an additional built-in test mode to high-density DRAMs. The test mode is invoked by a sequence of electrical signals which was ignored by earlier-generation DRAM. This specification for 4MB SIMMs was changed after the Macintosh IIx was developed. At the time the Macintosh IIx was developed, in theory, 4MB SIMMs should have worked. It wasn't known at the time that the specification would be changed. The result is that the current standard 4MB SIMMs don't work on the Macintosh IIx.

There are special 4 Megabyte SIMMs available that have a PAL chip which will allow their use in the Macintosh II and IIx. You'll need to contact the SIMM vendor or manufacturer to see if they have these special SIMMs available.

This subject is described in detail in Tech Note #176.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
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Macintosh IIfx: Serial Switch for Bypassing the IOP (6/97)

On the Macintosh IIfx, is there a way to disable or bypass the IOP (I/O Processor) that controls the SWIM and ADB, so that copy-protected programs that access the ADB hardware directly work properly?

I've been told that there is a cdev available that lets the user bypass the IOP for the SCC chip, enabling compatibility with serial devices that don't work with the IOP on the Macintosh IIfx. Is this true? If yes, where can I get this cdev?

This article has been archived and is no longer updated by Apple.

There is no way to bypass the IOP that controls the SWIM and ADB. The companies that sell the copy-protected programs need to modify their programs to work properly on the Macintosh IIfx.

It is possible to bypass the IOP that controls the serial ports. Attached is a control panel called "Serial Switch" that makes this possible. To bypass the IOP, just select "Compatible" in the Serial Switch control panel.

The cdev has two modes:

- Faster, when the IOP is used
- Compatible, enabling third-party developer's code to address the SCC hardware directly bypassing the IOP.

After choosing a different mode, you'll need to restart your system.

This software is available for individual use through online services that services that Apple post software updates to.

The CDEV is also available from Software Licensing for those developers who want to distribute it with their products. The yearly fee is $50 per product it is to be distributed with. No limit is set on the number of copies that can be distributed by a developer. For more information, search for "Apple Software Licensing" or call 408-974-1010.

These articles can help you locate software updates mentioned here:

* Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

* Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

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Softcard III: Diskette compatibility with Apple II CP/M

This article has been archived and is no longer updated by Apple.
The diskette organization used in the Apple II Softcard CP/M and the Apple III Softcard CP/M are identical. This means that files generated on either system is readable by the other. However, the Softcard III CP/M System File does not work correctly on an Apple II, and visa-versa.

Some programs were designed with specific hardware in mind and may not work correctly on the Apple III. Several examples are MBASIC, GBASIC, and FORTRAN supplied by Microsoft.
Published Date: Feb 18, 2012

Macintosh: How System Heap Size Is Allocated (11/94)

1) Where is the heap size stored on a volume?

2) If I adjust a heap size on a volume and copy that System Folder to another empty drive, will the boot blocks be set to the new modified size?

This article has been archived and is no longer updated by Apple.
The default heap size is stored in the boot blocks of a startup volume. For System Software 6.0.4 and System Software 6.0.5, the default size 128K.

Note: When the System Software 6.0.5 System Tools disk is booted on a Macintosh SE with 1MB RAM, the System heap takes up 188K of RAM. The default System heap size is used as a guideline; the heap size is increased, if necessary.

The boot blocks, including the default heap size, are taken from the source disk, unless that disk does not have a valid copy of the boot blocks or if it is a file server. In these cases, the boot blocks are taken from the "boot" resource in the System file being copied.

Article Change History:
28 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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TA44616_AUX_CDROM_in_AUX_File_System_Format_(TIL06132).pdf

A/UX 2.0: CD-ROM in A/UX File System Format

Is anyone doing CD-ROMs with an A/UX file system rather than hfs? I am setting up an A/UX anonymous ftp server for a university that would like to have CD-ROMs connected for public access.

This article has been archived and is no longer updated by Apple.

```
Yes, it is possible to have a CD-ROM in A/UX file system format mounted under
A/UX and accessed by local or remote users.  The distributed A/UX CD-ROM is an
example of this.
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ATTO Technology, Inc.

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This article has been archived and is no longer updated by Apple.
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Fibre channel and SCSI storage connectivity solutions including SCSI host bus adapters, RAID software, end-to-end fibre channel and Storage Area Network (SAN) solutions.
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MacroMind Director 2.0 Bug: Conflict with On Location

Is there anything about peculiar about the ON Location update (special edition of Desktop Focus)?

This article has been archived and is no longer updated by Apple.

No, there is nothing pecuilar about On Location. Rather, the problem was with MacroMind Director release 2.0. Disabling the ON Location INIT was the temporary workaround. The solution is to get release 2.0.1 of MacroMind Director. It fixes the bug.

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Caring for iPod‘s battery

Here are some tips to care for iPod's internal battery.
This article has been archived and is no longer updated by Apple.

- Keep iPod comfy:
  - Operating temperature range: 32 ° F to 95 ° F (0 ° C to 35 ° C)
  - Storage temperature range: -4 ° F to 113 ° F (-20 ° C to 45 ° C)
- Do not leave iPod in a vehicle's interior when parked in the sun. Temperatures may reach up to 150 ° F (65 °C).
- Do not leave iPod exposed to direct sunlight for extended periods of time.
- Do not charge iPod while it is in a carrying case or cover.
- Put iPod to sleep to save battery life. Press the Play button until iPod goes to sleep.
- Charge the battery every 14 to 18 days when not in use. Even when iPod is off it is in a sleeping state that requires power. Without use, iPod's battery needs to be charged about every 14 to 18 days to be ready for use.
- If iPod displays a "Low Battery" icon, connect it to the Apple iPod Power Adapter and plug the power adapter into an electrical outlet. You may also be able to charge iPod by connecting it to your computer. Make sure the computer is turned on, and is not set to go to sleep.

For more information about charging iPod's battery, see article 61127: Charging iPod's internal battery.

Related documents

61127: Charging iPod's internal battery
61434: Tips and tricks to get the most out of iPod's battery
61118: How to turn iPod on and off

Published Date: Feb 18, 2012

Softcard III: Accessing Apple III system clock under CP/M

This article has been archived and is no longer updated by Apple.

The Apple III clock is accessible from machine language under CP/M. There are two call addresses in BIOS used to read and set the clock. Both use a common 18 byte area for returning the Date/Time or for setting the clock. If no clock is installed, the byte at 0DFE0H is 00H.

To Set Clock: Call 0DF89H

To Read Clock: Call 0DF86H

Example: Friday, March 21, 1982, 1:27 PM and 41.234 seconds is represented as the ASCII string: "1982032161327412 34".

Addresses Contents
Hex ASCII
Year: 0DFE0H 31 (1)
0DFE1H 39 (9)
0DFE2H 38 (8)
0DFE3H 32 (2)
Month: 0DFE4H 30 (0)
0DFE5H 33 (3)
Day: 0DFE6H 32 (2)
0DFE7H 31 (1)
Day of week: 0DFE8H 36 (6) (1=Sunday)
Hour: 0DFE9H 31 (1)
0DFEAH 33 (3)
Minute: 0DFEBH 32 (2)
0DFECH 37 (7)
Second: 0DFEDH 34 (4)
0DFEEH 31 (1)
Tenths: 0DFEFH 32 (2)
Hundrenths: 0DFF0H 33 (3)
Thousands: 0DFF1H 34 (4)

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iTunes 2: "Error-50" Alert Appears When Burning a CD

When you burn an audio CD with iTunes 2, an alert box may appear if one of the MP3 song files is damaged.
This article has been archived and is no longer updated by Apple.
One of the MP3 song files is damaged. Make sure you are using the latest version of iTunes, then encode the song again.
Published Date: Feb 18, 2012

AppleShare PC: 3.5-Inch and 5.25-Inch Install Disks

My office does not have a dual 5.25-inch drive PC. This makes it cumbersome to copy AFE the files, because when I find that they are the wrong ones, and have to go back to AFE. What files does install.exe look for when doing the four different installs (printing, printing, file access, and so on)?

This article has been archived and is no longer updated by Apple.
AppleShare PC 2.0 shipped with both a 3.5-inch 720K install disk, and a set of 5.25-inch 360K install disks. The files contained on the 5.25-inch disks are no different than those on the 3.5-inch disk; they're just divided across two disks. However, as you have found, the distribution of the files is important.

Until you get the new version, you can make a functional set by creating two disks with the file distribution listed below. After you copy all the files, Disk #1 will have approximately 4K available, and disk #2 will have approximately 33K available. Neither has enough space for MS-DOS system files.

Workstation Disk #1

LSL COM AARP COM ENET3CII DEF LTALKP DOC
COMPAT COM ATALK COM ENET3CMC DEF ENET3CII DOC
LTALKP COM ASP_WS COM DSTARLT DEF ENET3CMC DOC
LTALK COM PAP_WS COM DSTARMC DEF TOKNRING DOC
ENET3CII COM PAP_SRV COM TOKEN_M DEF DSTARLT DOC
ENET3CMC COM INSTALL EXE TOKEN_S DEF ASHARE MEM
TOKNRING COM LTALKP DEF TOKEN_L DEF README DOC
DSTARLT COM LTALK DEF LTALK DOC APRINT COM

Workstation Disk #2

DA EXE DA HLP REDIR 310 REDIR 400
DA OVL ANET EXE REDIR 320 MINSES EXE
DA DTA ASHARE COM REDIR 330

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Internet Explorer 4.5: "The Identity Certificate Uses an Unknown Signature Algorithm" Alert

Update your version of Internet Explorer to avoid an alert box with the message "The identity certificate uses an unknown signature algorithm."
This article has been archived and is no longer updated by Apple.

Symptom

When you browse a secure Web site an alert box with this message appears:

> "The identity certificate uses an unknown signature algorithm."

Solution

All versions of Internet Explorer later than 4.5.1, including all Mac OS X versions, are not affected by this issue.

Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.

The following document can help you search for a particular vendor's address and phone number:

Document 17159: "**Locating Vendor Information**"

Published Date: Feb 18, 2012

iMovie 2 for Mac OS 9: Aurora Igniter INIT Causes Clips to Move to the Trash

The Aurora Igniter INIT system extension causes imported clips in iMovie to be moved to the Trash .
This article has been archived and is no longer updated by Apple.

Symptom

When the Aurora Igniter INIT system extension is installed, clips imported into iMovie 2 for Mac OS 9 are placed directly in iMovie's Trash rather than the shelf.

Solution

Use the Extensions Manager control panel to turn off the Aurora Igniter INIT.

1. Open the Extensions Manager control panel.
2. Turn off the Aurora Igniter INIT by clicking the checkbox next to its name.
3. Restart the computer.

If you need the Aurora Igniter INIT to be enabled for other applications, turn it on using the Extensions Manager control panel, then restart the computer.

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Published Date: Feb 18, 2012

iMovie 2 for Mac OS X: Unable to Import Some JPEG and GIF Images

JPEG and GIF files without file types cannot be imported into iMovie for Mac OS X. Some images may be available in the Import dialog, some are dimmed. These images can be opened in other applications, like Preview.
This article has been archived and is no longer updated by Apple.

Symptom

Some JPEG and GIF files cannot be imported into iMovie. Some images are available in the Import dialog, some are dimmed. iMovie 2 for Mac OS 9 can import the images.

Solution

If Preview can open the files, you can use Preview to export the images for use with iMovie. Follow these steps:

1. Open the Preview application.
2. Choose open from the File menu.
3. Select and image and click Open.
4. Choose Export from the File menu.
5. Choose JPEG or PICT from the Format pop-up menu.
6. Choose a destination folder.
7. Click Save.
8. Import the images into iMovie.

You can also use a third-party utility to manually add file type/creator codes to the affected file(s).
Published Date: Feb 18, 2012

German iTunes 2.0.3 for Mac OS 9: Installation Fails

Installing German iTunes 2.0.3 for Mac OS 9 fails with an unexpected End Of File error.
This article has been archived and is no longer updated by Apple.

Symptom

If you install German iTunes 2.0.3 on a computer with German Mac OS 9, when an earlier version of iTunes version was installed, an alert box with this message appears: "End of File," and the installation fails.

Solution

1. Drag the iTunes application to the Trash. (You do not need to delete the Plug-ins folder.)
2. Choose Empty Trash from the Special menu.
3. Install iTunes 2.0.3.

The iTunes application and all Apple-supplied plug-ins are installed.
Published Date: Feb 18, 2012

HyperCard 2.0: New Product Features (2 of 2)

This article has been archived and is no longer updated by Apple.

HyperTalk Enhancements

- The Script Editor supports numerous of new features:

- Modeless windows (several open at same time)
- Search and Replace
- Commenting and uncommenting selected lines
- Undo for cut, copy, paste, clear, and typing operations
- Horizontal scrolling (for 2-page display)
- Triple-clicking to select a line
- Allows setting of debugging checkpoints

- The HyperTalk Compiler replaces the HyperTalk interpreter used in earlier versions. As a result, HyperTalk scripts run faster in HyperCard 2.0 (as much as three times faster). Handers are compiled automatically on the first execution of the handler and the compiled code is cached in RAM to be available for subsequent calls to that handler. The compiled handler remains in memory until that memory is needed for other handlers. When HyperCard 2.0 quits, the compiled HyperTalk code is flushed from memory, so only the HyperTalk source code is saved to disk.

- The HyperTalk Debugger engages when a execution encounters checkpoint. These checkpoints are inserted in the source code using the script editor. You can also enter the debugger by pressing Command-Option-Period.

- Background Processing: With HyperCard 2.0, you can switch to another application under MultiFinder while a script is running, and the script will continue to execute while HyperCard 2.0 is in the background. Other functions, like sorting and compacting also work while HyperCard 2.0 is in the background. HyperCard 2.0 yields to MultiFinder at the following times:

- At the completion of a HyperTalk line.
- When the busy cursor rotates (sorting, compacting, and printing)
- During the execution of the Show Cards and Wait commands

HyperCard 2.0 notifies the user whenever user intervention is required.

- XCMD Enhancements: The XCMD interface in HyperCard 2.0 is an extension of the XCMD interface originally implemented in HyperCard. HyperCard 2.0 provides the means for XCMDs to create and manage their own windows and menus and to call the sound manager directly. HyperCard 2.0 uses this XCMD window interface to implement the Script Editor and Debugger.

- Color Windows: While the card window does not support color, an XCMD can own a color window that supports bit depths of up to 24-bits. This lets the stack creator display a color picture while inside of HyperCard.

- Sound Control: Now, XCMDs can call the sound manager directly for increased control over sound from an XCMD.

Miscellaneous. Enhancements

- Custom Menus: The entire menu bar and its contents can be controlled by a HyperTalk script. This lets stack creators add, modify, or remove any menu items. As a result, you can make stacks that look like stand-alone applications, without having to resort to XCMDs.

- Palettes: HyperCard 2.0 has a feature which lets users create palettes,

similar-to the Tools palette and the Patterns palette. To create these palettes, you must create a PICT resource that defines the visual part of the palette. This can be created in many of the popular paint programs and can be in color. You must also create a PLTE resource to define the rectangles for the buttons in the palette and the HyperTalk scripts that are executed when each is pressed. Creating a palette does not require coding in languages like Pascal, C or Assembly.

- Icon Editor: HyperCard 2.0 has a built-in icon editor, so that you can create or modify icons without the use of utilities such as ResEdit.

The editor displays a "fat-bits" representation of the icon, in which you can click within the image to toggle bits on or off. There are also several menu commands that further help you edit icons. They include the commands Flip Horizontal, Flip Vertical, Frame, Gray, Invert, Mirror Horizontal, Mirror Vertical, Rotate 90 degrees, Shadow, and Pickup.

- Marked Cards: Now, each card has a Mark property that lets a user or HyperTalk handler flag a card for some reason. Usually, this feature is used by a HyperTalk script during a search for cards that contain information that matches a certain criteria. Each card that contains that information is then marked. Once the appropriate cards have been marked, they can be processed as needed.

This feature is used with the HyperCard 2.0's report-printing capabilities to select which cards will be included within a report. For example, in a quiz the developer could mark the cards the student got wrong and print those cards out for later review.

- Visual Effects: In the past, visual effects have only worked on monitors set to 1 bit per pixel. HyperCard 2.0 supports visual effects on monitors set up to 8 bits per pixel. There are two new visual effects--Stretch and Shrink.,

To help make it easier for stack developers to use visual effects, HyperCard 2.0 has a visual effects selection dialog for buttons. This dialog is illustrated below.

- Dynamic Dialog Sizing: Most of the HyperCard 2.0 dialogs, including the Ask and Answer dialogs, can now hold more text and size themselves to fit the amount of text. The previous limit was one line of text. This limit has been raised to approximately 240 characters, and as many lines that can be displayed on a classic, nine-inch Macintosh screen. For example, if a stack pathname is too long to fit on a single line, the Stack Info dialog will resize itself to fit up to five lines to accommodate the pathname.

- Painting Enhancements: New special effects have been added to HyperCard 2.0's Options menu.These effects work on graphical selections chosen with HyperCard 2.0's paint Selection tool. The four new effects are:

- Rotate to provides free rotation of graphics about the center of the selection.

- Slant to stretch the selection into the shape of a parallelogram, making the image appear slanted.

- Distort to let you stretch a corner of the selection arbitrarily in two directions

- Perspective to stretch the selection into the shape of a parallelogram or trapezoid, making the image appear to have perspective depth.

- Stack Security: When protecting stacks, HyperCard 2.0 has the two new possibilities of Can't Peek and Can't Abort. Can't Peek lets stack developers protect confidential script source code from users. Can't Abort

prevents users from pressing Command-Period to stop execution of a HyperTalk handler. When this protection is set, execution of handlers cannot be prematurely halted by the user.

Note: Both of these features should be used with care. In most cases, it is advisable to lock only copies of the stack, and not the original stack.

Published Date: Feb 18, 2012

GARFIELD 2 and MDEF Virus: Definition

The GARFIELD 2 virus, also known as MDEF, was discovered 13 August 1990. It is a variation of the GARFIELD virus that originated at Cornell University. It renumbers the system menu definitions of System files, resulting in odd menu behavior, no menu pop-down, odd system behavior, and odd application behavior.

This article has been archived and is no longer updated by Apple.

To add a new virus definition to SAM 2.0, enter the following information:

Virus Name: GARFIELD

Resource Type: MDEF

Resource ID: 0

Resource size: ANY

Search String: A9A92F0CA9AA2F0CA9B0

String Offset: ANY

Published Date: Feb 18, 2012

Saving contact information from Address Book to iPod‘s Contacts list

The easiest way to save contact information to your iPod is to use iSync. You can also use the Mac OS X Address Book application to save contact information as a vCard on your iPod.
This article has been archived and is no longer updated by Apple.

1. Make sure iPod is set up to be used as a hard disk you can store files on.
2. Connect iPod to your computer. iPod appears as a hard disk on your desktop or in a Finder window.
3. Double-click the iPod disk icon.
4. Open the folder named "Contacts".
5. Open the Address Book application program.
6. Drag the names of contacts from Address Book to the Contacts folder.

iPod can work with up to 1000 contacts.

Related document

61361: Address Book: How to Add Someone to Your Address Book
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CDEF Virus: Definition

The CDEF virus was discovered 15 August 1990. It is a non-destructive virus that adds devices to the Desktop file.

This article has been archived and is no longer updated by Apple.

To add a new virus definition to SAM 2.0, enter the following information:

Virus Name: CDEF

Resource Type: CDEF

Resource ID: 1

Resource size: 510

Search String: 45463F3C0001487A0046A9AB

String Offset: 420

Published Date: Feb 18, 2012

NEC DM-3000P Monitor: Connecting to a Macintosh

What are the specifications for the cable to connect a Macintosh to an NEC IPS-100 Monitor?

This article has been archived and is no longer updated by Apple.

According to NEC technical support, the most efficient way to connect the Macintosh (with the older Apple 8-bit video card) is to use a cable from Inline, Inc. (part number is IN9021). This connects the 15-pin connector on the older Apple 8-bit video card to the 34-pin connector on the DM-3000P.

At this writing, NEC had not tested this cable with the newer Apple video cards, but it may work unless there is a problem with the configuration of the sense pin connections on the new cards. The sense pins are used to let the new video cards know what mode to use.

Inline checked the configuration information and said that there is no need for the NEC IPS-100 Computer Interface when connecting the DM-3000P to the Macintosh. Their IN9021 cable, which is 15-pin-to-34-pin, is all that is needed to connect the two.

For further information on Inline, search the Tech Info Library using "Inline, Inc."

Published Date: Feb 18, 2012

Macintosh: How to Connect to UPI News Service

Can I connect to the UPI wire service from a Macintosh?
This article has been archived and is no longer updated by Apple.
According to UPI (United Press International), all you need is a:

* Modem
* Communications program
* Subscription to the UPI service

News services like UPI are aimed at media clients: newspapers, magazines, radio, and television. Direct connections to these services are more expensive than the average individual can afford. For those interested in news services, an alternative is to use commercial network services like CompuServe or GEnie. These are far less expensive, but contain a wide range of information.

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Macintosh 12" RGB Display: Software Compatibility

This article has been archived and is no longer updated by Apple.

Several applications do not recognize the Apple Macintosh 12" RGB Display as being 512 x 384 pixels instead of 640 x 480. This leads to windows that are partially off the screen. ColorStudio 1.0 and PixelPaint 2.0 are two applications with this problem. In some cases, the windows can be resized -- but in others, there is no way to work with the application and restarting the system is the only way out.

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Softcard III: Selecting 40-Column and 80-Column Text Modes

This article has been archived and is no longer updated by Apple.
There are several ways to switch to either 40 or 80 column mode in the CP/M environment. One way is to write a short assembly language program, assemble it, then load it as a .COM file. Another way is to use the BASIC's CHR$ functions to change modes. Don't forget to reset the viewport when changing to 80 column mode. Refer to the Standard Device Drivers Manual for further information.

Below are two assembly language programs which allows you to set 40 or 80 column modes from the CP/M command level. Enter these in your ED.COM editor, then assembled them using ASM.COM. Once assembled, load them into .COM files using the Load utility on the CP/M System Disk.

```
;
; Forty.COM
;
BDOS EQU 0005H ; BDOS entry point
WARM EQU 0000H ; Warm start entry point
PRINT EQU 9 ; Print string command
;
ORG 0100H ; Beginning of TPA
;
LXI D,CMDS ; Point to command string
MVI C,PRINT ; Set-up BDOS command
CALL BDOS ; Call BDOS to print string
JMP WARM ; Warm start return to CP/M
;
CMDS: DB 16 ; Set text mode
DB 1 ; To 40 column mode
DB 28 ; Clear viewport command
DB '$' ; End print string command
;
End
```

```
;
; Eighty.COM
;
BDOS EQU 0005H ; BDOS entry point
WARM EQU 0000H ; Warm start entry point
PRINT EQU 9 ; Print string command
;
ORG 0100H ; Beginning of TPA
;
LXI D,CMDS ; Point to command string
MVI C,PRINT ; Set-up BDOS command
CALL BDOS ; Call BDOS to print string
JMP WARM ; Warm start return to CP/M
;
CMDS: DB 16 ; Set text mode
DB 2 ; To 80 column mode
DB 1 ; Reset viewport
DB 28 ; Clear viewport command
DB '$' ; End print string command
;
End
```

From Microsoft BASIC, use:

A. To switch to 40 Column mode:

```
100 Print CHR$(16) + CHR$(1) + CHR$(28)
110 End
```

B. To switch to 80 Column mode:

```
100 Print CHR$(16) + CHR$(2) + CHR$(1) + CHR$(28)
110 End
```

Published Date: Feb 18, 2012

Mac OS X: Application Opens But Doesn‘t Use Classic

Symptom

An application or installer opens, but doesn't use Classic. The application's plug-ins don't work without Classic.

Products affected

- Mac OS X

Solution

Some applications are made to work with both Mac OS 9 and Mac OS X. If you double-click one of these applications while using Mac OS X, it will open as a Mac OS X application without starting Classic.

However, some Classic applications have plug-ins and other resources that are only available if you use them with Classic. Some installer applications, for example some third-party printer driver installers, will automatically detect whether they are opened in Mac OS 9 or Mac OS X and only install the components appropriate to that operating system.

To avoid this issue, you can have the application or installer always open using Classic.

Select the application or installer and choose Show Info (Mac OS X 10.1 or earlier) or Get Info (Mac OS X 10.2 or later) from the File menu, then select the checkbox to have the application open using Classic.

Note: If the installer application is located on a read-only volume, such as an installation CD, it, and any files it needs for installation, must be copied to a read-write volume first. If you cannot install in this way, contact the manufacturer of the software for compatibility information and further assistance.

This article has been archived and is no longer updated by Apple.
Published Date: Feb 18, 2012

Macintosh IIsi: Application Software Compatibility

This article summarizes the software compatibility issues at the introduction of the Macintosh IIsi.

This article has been archived and is no longer updated by Apple.

The Macintosh IIsi Was Widely Seeded

In the United States alone, over 300 developers received Macintosh IIsi seed units. Many other developers received full documentation, and were able to test their products at Apple. This was the most extensive seeding and testing of a new computer in recent history.

Of the applications on which Apple had compatibility information, 97% either worked with the Macintosh IIsi, or were in the process of being revised. The other 3% were discontinued products.

Compatibility Issues

FPU: Apple identified about twenty application programs that required an FPU (and did not have an alternate non-FPU version). Many of the color paint programs that fell in this category were revised to work on all Macintosh models. However, most CAD/CAM programs and other high-end graphics/math programs still require an FPU. We will identify these applications on all compatibility lists.

Microsoft Excel: Version 2.2a or higher is recommended for all Macintosh IIsi and Macintosh LC configurations. Microsoft offers a free upgrade from 2.2 to 2.2a.

Monitor size: Several programs did not work properly on the Apple Macintosh 12-inch RGB Display, because they assumed a minimum 640-pixel by 480-pixel size. These programs were in the process of being revised.

Macintosh SE/30 cards: Some Macintosh SE/30 cards did not work with the Macintosh IIsi, due to incorrect timing and physical dimensions. All cards that followed the guidelines in Apple's "Cards and Drivers" manual work correctly.

NuBus power requirements: Some NuBus cards exceeded the 15W power maximum specification. These cards were primarily the high-end graphics and video cards. We asked developers of these cards to include, in their manuals, references to power if they exceeded the maximum specification. We also included a caution in the Macintosh IIsi manual.

Sound: The new sound input software made it necessary for some developers to update their software. Latest versions should work with the new Macintosh models.

AppleTalk: An AppleTalk problem in System 6.0.6 was fixed in System 6.0.7, which shipped with all Macintosh IIsi and Macintosh LC systems sold in the United states.

Published Date: Feb 18, 2012

Macintosh IIsi: Compatibility With Selected Software 1/93

Apple recommends that customers use the latest versions of Macintosh software that are compatible with their Macintosh hardware. Apple compiled the following list from information received from many software developers. These developers have recommended certain versions of their software for use with the Macintosh IIsi computer.

This article has been archived and is no longer updated by Apple.

This is not a comprehensive list of programs, or versions of programs, that are compatible with the Macintosh IIsi. Please contact your dealer or the software developer if you have any questions. They can help you identify the newest version of a particular program and tell you how to upgrade if necessary.

Developer	Program/Version	Telephone
Abacus Concepts, Inc.	StatView II 1.03 (1)	800-666-7828
	StatView SE+Graphics 1.03	
	SuperANOVA for Mac II 1.1 (1)	
	SuperANOVA for Mac+ 1.1	
ACI US, Inc.	4th Dimension 2.0.11, 2.1	408-252-4444 ext. 4
Adobe Systems, Inc.	Font Porter 1.0	415-961-0911
	Illustrator 3.0	
	Photoshop 1.0.7	
	Streamline 1.0 and above	
	Type Align 1.0 and above	
	Type Library All versions	
	Type Manager 2.0	
	Type Reunion 1.0 and above	
Aldus	Freehand 2.02	206-628-2320
	PageMaker 3.02, 3.02CE,4.0	
	Persuasion 2.0	
	PrePrint 1.0 (1)	
Altsys	Fontographer 3.1 and above	214-680-2060
	Metamorphosis 1.5 and above	
	The Art Importer 2.0 and above	
Apple Computer, Inc.	MacTerminal 2.3.1 and above	408-996-1010
Articulate Systems, Inc.	Voice Link 1.0	800-443-7077
	Voice Link S/W 1.0	
	Voice Navigator 2.0	
	Voice Navigator II 2.0	
Ashlar Incorporated	Vellum 2.0 (1)	408-746-3953
Borland	Full Impact 2.0	408-438-7436
	FullWrite Professional 1.5	
Blyth Software, Inc.	Omnis 3 Plus 3.308	415-571-0222
	Omnis 5 All versions	
Broderbund	BannerMania 1.0	800-521-6263
	Drawing Table 1.0	
	DTP Advisor 1.0	
	Jam Session 1.1.1	
	Playmaker Football 1.1.1	
	Playroom 1.1	
	Printshop 1.3.2	
	SimCity 1.2c	
	Type 1.0	
	Typestyler 1.5	
	Where in Europe is Carmen Sandiego? 1.1	
	Where in the USA is Carmen Sandiego? 1.1	
	Where in the World is Carmen Sandiego? 1.2	
	Where in Time is Carmen Sandiego? 1.0	
CE Software, Inc.	Alarming Events 1.0.1	515-224-1995
	Amazing Paint 1.0.1	
	Calendar Maker 3.0.1	

DiskTop 4.0
In/Out 1.0.1
QuicKeys 1.2.1
QuicKeys 2 2.0
QuickMail 2.2.3
Central Point Software MacTools Deluxe 1.0 503-690-8080
Claris Corp. Claris CAD 2.0v1 408-727-8227
FileMaker Pro 1.0
HyperCard 2.0
MacDraw II 1.1v2
MacPaint 2.0
MacProject II 2.1v3
MacWrite II 1.1v2
SmartForm Assistant 1.1v2
SmartForm Designer 1.1v2
Computer Associates AccPac/Simply Accounting 1.1 800-531-5236
Dayna Communications DOS Mounter 1.2 801-972-2000
Deltapoint, Inc. DeltaGraph 1.5 800-367-4334
TASTE 1.0
Electronic Arts Studio/1 1.0 800-245-4525 (6)
Studio/8 2.0
Studio/32 1.0
Farallon Computing Farallon Sound Driver 1.2 415-596-9000
LW Status 1.0.2
MacRecorder Sound System 2.0.3
MediaTracks 1.0.1
NodeHint 1.0.2
PhoneNET CheckNET 1.0.2
PhoneNET Manager's Pack 1.0
RegisterName 9.0
StarCommand 2.2
Timbuktu 3.1.2
Timbuktu/Remote 2.0.1
TrafficWatch 1.0.8
Fifth Generation Systems, DiskLock 2.0 504-291-7221
Inc. Fastback II 2.5
File Director 1.0
Pyro! 4.0
Suitcase II 1.2.6
SuperLaserSpool 2.02
SuperSpool 5.0
GeoQuery Corporation GeoQuery 2.01 800-541-0181
Informix Software, Inc. Wingz 1.1a 913-492-9922
Innovative Data Design MacDraft 2.0, 2.1 415-680-6818
Interleaf Interleaf Publisher 3.6 & above 617-577-9800
Intuit, Inc. Quicken 1.5 800-624-8742
LetraSet DesignStudio 1.02 800-343-TYPE
FontStudio 1.0 (4)
ImageStudio 1.7
LetraStudio 1.53
Ready,Set,Go! 4.5a
MacroMind, Inc. Accelerator 2.0.1 415-442-0200
Director 2.0.1
Player 2.0.1
Three-D .90 (1)
Mainstay AntiToxin 1.3 and above 818-991-6540
Capture 3.0 and above
ClickPaste 1.1 and above
MacFlow 3.1.5 and above
MacSchedule 2.0.4 and above
MarcoPolo 1.01 and above
MarkUp 1.03 and above
V.I.P. 2.51
Microsoft Corporation Excel 2.2a and above 206-454-2030
File 2.0a and above

Mail 2.0 and above
Office 1.0 and above
Powerpoint 2.01 and above
QuickBASIC 1.00b and above
Word 4.0a and above
Works 2.0b and above
Odesta Corporation Double Helix 3.0 708-498-5615
Oracle Oracle For Macintosh 1.2 800-ORACLE1
PeachTree (Symmetry) atOnce! 1.01 602-998-9106
Quark, Inc. QuarkStyle 1.01 303-934-0784
QuarkXPress 2.12, 3.00
Aldus Consumer Division Digital Darkroom 1.1 619-695-6956
Super 3D 2.1 (3)
SuperCard 1.5
SuperPaint 2.0
Softsync/BLOC Accountant Professional 1.0 and above 800-933-2537
SuperMac Technology DiskFit 1.5.1 408-245-2202
Network DiskFit 1.5.1
PixelPaint 2.1 (5)
PixelPaint Professional 2.0 (2)
Sentinel 2.2
Symantec Corporation MORE 3.0 800-441-7234 (7)
SAM II 2.03
SUM II 2.0
Think C 4.02
Think Pascal 3.01
Symmetry Software Corp. Acta 1.0 and above 602-998-9106
HyperDA II 2.0
KeyPlan 1.0 and above
Mariah 1.0
T/Maker Company WriteNow 2.0, 2.2 415-962-0195
WordPerfect Corporation WordPerfect 1.0.5 800-451-5151

footnotes
---
(1) Requires floating-point math coprocessor
(2) Application scheduled to ship fourth quarter 1990.
(3) Requires floating-point math coprocessor to run color.
(4) Use disk labeled "Mac Plus 68000".
(5) Requires 13" RGB monitor. Application scheduled to ship 10/31/90.
(6) from California: 415-572-2787
(7) from California: 800-626-8847

This partial list of third parties and third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation by Apple Computer, Inc. All product specifications and descriptions were supplied by the products' vendors or suppliers. Apple Computer, Inc., has no information about the testing procedures and compatibility verification conducted by the products' vendors and suppliers. Apple Computer, Inc., assumes no responsibility with regard to the selection, performance, or use of these products or vendors. All understandings, agreements, or warranties with respect to the software in this list, if any, take place directly between the vendors and the prospective users. Apple Computer, Inc., makes no warranties as to the completeness or accuracy of this list.

Article Change History:
27 July 1993 - Company title updated from Fifth Generation Systems to Fifth Generation Systems, Inc.
15 January 1993 - Updated, vendor information.

Published Date: Feb 18, 2012

Macintosh IIsi: Expansion Card Compatibility

This article describes some of the compatibility issues between the Macintosh IIsi and NuBus and 030 direct cards. To determine if a given card has any of the following problems with the IIsi, the manufacturer of the card should be contacted.

This article has been archived and is no longer updated by Apple.

CARD POWER REQUIREMENTS

Some NuBus cards exceed the 15-watt limit for NuBus cards. In the case of Macintosh II models with multiple NuBus slots, an empty NuBus slot usually provides some margin. Because the Macintosh IIsi is a one-slot system, that margin does not exist. As a result, it is more critical that the 15-watt power requirement for NuBus cards be maintained in the Macintosh IIsi.

For example, the Apple Macintosh Display Card 8*24 GC takes slightly more power, due to the processor and on-board memory, than the NuBus power specification of 15 watts. However, after the completion of initial tests, Apple is able to recommend using the card with the Macintosh IIsi in normal operating environments. Apple is continuing testing for elevated temperature environments. We will publish results of these tests as they become available. Until then, we do not recommend the combination of Macintosh IIsi and Macintosh Display Card 8*24 GC in environments where the temperature is expected to regularly exceed 32 C or 90 F.

For more information on Macintosh Display Card 8*24 GC, search under "Macintosh IIsi" and "Display Card 8*24 GC".

With regard to third-party cards, we have found the vast majority to be completely compatible and to work reliably with the Macintosh IIsi. In those few instances where the power specification exceeds the NuBus specification, or if you have any questions or concerns about a specific product, contact the vendor. In Apple's case, we can now recommend all of our displays cards across the line of NuBus-capable Macintoshes.

CARD SIZE

NuBus and 030 Direct cards that deviate from the size specifications of each type of card may experience fit problems. Also, NuBus cards that are a two-card set, such as a video card and an accelerator, will not work in the Macintosh IIsi.

CLOCK SIGNAL

Macintosh SE/30 cards that depend on the 16-MHz clock speed of the Macintosh SE/30 do not work with the Macintosh IIsi because the clock speed of the Macintosh IIsi is 20 MHz.

Published Date: Feb 18, 2012

Mac OS 8.6: JPEG Pictures and Movies Appear Blank With QuickTime 5.0.5

On certain computers with Mac OS 8.6, pictures or motion JPEG files may appear blank when QuickTime 5.0.5 is installed.
This article has been archived and is no longer updated by Apple.

Symptom

JPEG pictures or motion JPEG files appear blank or have poor playback.

Solution

Delete the QuickTime JPEG Update file from the Extensions folder by following these steps:

1. Open the System Folder.
2. Open the Extensions folder.
3. Open the QuickTime Extensions folder.
4. Drag the QuickTime JPEG Update file to the Trash.
5. Choose Empty Trash from the Special menu.

Published Date: Feb 18, 2012

iMovie 2.1.1 for Mac OS X: Scrambled Thumbnail Images in the Timeline

In some situations, thumbnail images for clips may become garbled or scrambled. This can happen after performing a Split Clip function, followed by an Undo and then a Redo action.
This article has been archived and is no longer updated by Apple.

Symptom

Thumbnail images for clips may appear garbled or scrambled.

Solution

The thumbnail is a visual representation of the media contained in your clips. The symptom described above is cosmetic, and does not affect your video content. Apple is investigating possible solutions for this. If you
split the clip again, the first clip will keep the scrambled thumbnail, while the second clip generates a new thumbnail.

To work around this behavior while keeping the same clip length, you can apply an effect such as Brightness/Contrast, with flat settings, so the clip and its thumbnail are re-rendered.

1. Select an affected clip in the Timeline. (See Figure 1.)

Figure 1 An affected clip

2. Click Effects.
3. Choose an effect like Brightness/Contrast or Adjust Colors.
4. Choose a setting which most closely matches your current image. (See Figure 2.)

Figure 2 Selecting an effect

5. Click Apply. The clip and thumbnail will be rendered again. (See Figure 3.)

Figure 3 A re-rendered clip

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Final Cut Pro 3: AE Plug-in Performance With External Video

Certain third-party After Effects plug-ins can take longer than normal to update in Final Cut Pro each time a settings change is made to them in the Viewer if a video monitor is connected through FireWire. Because filters in Final Cut Pro must render for both the RGB screen as well as for the video out signal, you can eliminate this delay by setting External Video to Off (Command-F12).

This article has been archived and is no longer updated by Apple.

Symptom

The watch cursor appears for a long period every time a setting is changed in a third-party After Effects plug-in.

Products Affected

- Final Cut Pro 3 for Mac OS 9 or Mac OS X

Solution

Set External Video to Off (Command-F12)

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LaserWriter: Password Reset (12/94)

A "Trojan horse" program has been circulating that sets the password of PostScript LaserWriters to a value other than the default "0" -- preventing printing with Apple's driver. It does not duplicate itself like a virus, and is not widespread, but can be embedded in any PostScript code being sent to a LaserWriter.

This article has been archived and is no longer updated by Apple.
The symptoms of the trojan horse include the printer's name appearing in the Chooser dialog box, but when someone tries to print, the error message "Invalid Access" may appear. If the Print Monitor is in use, the error message "Job cannot be printed, but the document is OK" may appear.

Apple is providing a utility program that resets the password of PostScript LaserWriters to the default "0". This allows users to again access the printer. If a customer experiences the above symptoms, use this utility before deciding to replace the LaserWriter's controller board.

This utility only works on the LaserWriter, LaserWriter Plus, LaserWriter IINT, LaserWriter IINTX(J) and the Personal LaserWriter NT printers.

The binary attachment mentioned in this article is enclosed and available only in the AppleLink version of the article.

Article Change History:
01 Dec 1994 - Combined similar article with this one.
30 Sep 1994 - Reviewed for technical accuracy.
02 Feb 1993 - Updated to explain how to locate the binary attachment.

Support Information Services
Published Date: Feb 18, 2012

DVD Studio Pro: About Defining a Startup Action

This document describes the Startup Action property, and why you may want to set this property.
This article has been archived and is no longer updated by Apple.
When authoring a DVD-Video disc using DVD Studio Pro, you have the option to choose the "startup action". This is the function that tells the disc what to do when it's inserted into a DVD player. For example, you might set your startup action to go directly to a main menu, or to display a copyright warning screen.

It's generally wise to set the startup action property when authoring a disc. While the DVD specification allows for a startup action to be undefined, a disc without the startup action property defined requires some action by the user. Most users expect to be presented with a menu or some information when they put a DVD-Video disc into their player. Also, some players may not play discs that don't have a startup action defined.

The Startup Action property is located under the General section of the Property Inspector. For more information, consult the DVD Studio Pro manual.
Published Date: Feb 18, 2012

iPod: Screen Is Dark After Charging in a Carrying Case

iPod's screen may become temporarily dark if you charge it in a carrying case.
This article has been archived and is no longer updated by Apple.

Symptom

The screen becomes temporarily dark if you charge iPod while it is in a carrying case.

Solution

You should not charge iPod while it is in a carrying case. Remove iPod from any case before charging it.

Published Date: Feb 18, 2012

iTunes: How to Overcome 32 000 Song Library Size Limitation

iTunes 2 music libraries are limited to 32 000 songs. You can overcome this limitation by creating multiple libraries.
This article has been archived and is no longer updated by Apple.
Note: iTunes 4 no longer has this limitation. See <**http://www.apple.com/itunes/**> for information on updating to iTunes 4.

A single iTunes 2 music library can hold 32 000 songs. To accommodate more songs, you can create additional music libraries. Follow these steps;

1. Locate the "iTunes Music Library (2)" file inside the iTunes folder (in Documents).
2. Create a folder called "Backup" and copy the iTunes Music Library (2) file to it. If you make a mistake or change your mind about creating multiple Music Library files, you can go back to using this backup file.
3. Create a folder called "Library 1" and copy the iTunes Music Library (2) file to it.
4. Create a folder called "Library 2" and copy the iTunes Music Library (2) file to it.
5. Repeat for each increment of 32 000 songs. For example, if you have more than 64 000 songs, make two Library folders, if you have more than 96 000 songs, make three Library folders, and so forth.
6. Open iTunes, add, delete, or change the songs in the Music Library for the first 32 000 songs.
7. Quit iTunes, copy "iTunes Music Library (2)" mentioned in step 1 into Library 1.
8. Open iTunes, add, delete, or change the songs in the Music Library for the next 32 000 songs.
9. Quit iTunes, copy "iTunes Music Library (2)" mentioned in step 1 into Library 2.
10. Repeat for each 32 000 increment of unique songs

To access each of the different Music Libraries, copy the respective "iTunes Music Library (2)" file to the iTunes folder (in Documents), replacing the "iTunes Music Library (2)" file that is there. **Important:** If you accidentally move the file instead of copying it, make sure you move it back to the respective folder, or else you may have to redo some of the setup steps.
Published Date: Feb 18, 2012

iDVD 2: Unexpectedly Quits When Opening Tutorial

You may not be able to open the iDVD tutorial if you are not a Mac OS X Admin user.
This article has been archived and is no longer updated by Apple.

Symptom

iDVD unexpectedly quits when you open the iDVD tutorial.

Solution

Follow these steps to alter the iDVD tutorial so that it may be opened by non-Admin users:

1. Log in as an Admin user.
2. Open the iDVD 2 folder.
3. Press the Option key while dragging the Tutorial folder to the Desktop. A copy of the Tutorial folder is made on the desktop.
4. Rename the original Tutorial folder in the iDVD folder to "Tutorial (original)".
5. Select the new Tutorial folder on the desktop.
6. Choose Show Info from the File menu. A new window appears.
7. Choose Privileges from the pop-up menu.
8. Choose Read & Write from the Everyone pop-up menu.
9. Click Apply.
10. Drag the new Tutorial folder from the Desktop into the iDVD 2 folder.

Non-Admin users should now be able to open the iDVD tutorial.
Published Date: Feb 18, 2012

Macintosh: Which Models Provide SCSI Termination Power

On Macintosh systems with third-party internal SCSI hard drive, does the drive need to provide termination power, or does the Macintosh supply this power?

This article has been archived and is no longer updated by Apple.

The Macintosh Plus, Macintosh Portable, and some Macintosh PowerBook computers do not provide SCSI termination power. All other Macintosh computers with SCSI drives provide internal termination power. Macintosh computers which utilize an IDE-style hard drive do not supply termination power.

These PowerBook computers supply termination power

- PowerBook 2400
- PowerBook 3400
- PowerBook G3
- PowerBook G3 series
- PowerBook Duo series

These PowerBook computers do not supply termination power

- PowerBook 100 series
- PowerBook 500 series
- PowerBook 1400

Published Date: Feb 18, 2012

Final Cut Pro 3: Orange Viewer/Canvas Windows

Final Cut Pro will display an orange frame in the Viewer or Canvas window to indicate that video cannot be played in the current configuration. Reasons you may see the orange frame include low video memory, low system memory, or using incompatible video cards.
This article has been archived and is no longer updated by Apple.

Symptom

In either the Viewer or Canvas, an orange frame is displayed instead of the expected video. Audio plays normally.

Solution

Try one or more of the following:

- Make sure you are using a video card that works with RAVE
- Lower the display resolution
- Lower the display color bit depth
- Disconnect a second monitor if one is connected
- Resize the Canvas window to no more than 100 percent

Published Date: Feb 18, 2012

iPod: About Software Update

This document explains how the iPod Software Updater works when you download it from the Software Update pane of System Preferences (Mac OS X), or the Software Update control panel (Mac OS 9).
This article has been archived and is no longer updated by Apple.
You can download iPod Software Updater from Apple Software Downloads, the iPod download page, or you download it using the Software the Software Update pane of System Preferences (Mac OS X), or the Software Update control panel (Mac OS 9).

iPod Software Updater will appear in the Mac OS Software Update feature whether you have an iPod or not. If you don't have an iPod and want to make the update inactive so it won't appear, follow the steps in "Mac OS X: How to Make a Software Update Inactive or Active".

If you have an iPod, you can download the iPod Software Updater by following these steps:

1. Open Software Update.
2. Click Update Now. The iPod Software Updater appears in the list of available updates.
3. Click the checkbox in the Install column.
4. Click Install. The update is downloaded into the iPod Software Updater folder, inside of the Utilities folder, inside the Applications folder in Mac OS X, or inside the Applications (Mac OS 9) folder in Mac OS 9. If you have moved or renamed the Utilities folder in Mac OS X, a new Utilities folder will be created inside the Applications folder. The Software Update installation will then proceed in this new folder. If you have moved or renamed the Utilities folder in Mac OS 9, the Software Update installation will not work. In this case, you should download the update from Apple Software Downloads.
5. Connect iPod to your computer using the included cable.
6. Open iTunes.
7. iTunes will check the Utilities folder for the update, compare the versions of iPod software, and offer to install the later update.
8. Click OK. iTunes installs the update.

Related documents

60944: iPod: How to Update
Published Date: Feb 18, 2012

Final Cut Pro 3.0: Screen Goes Dark After Making Edits to Tape

After making several edits to tape, the screen goes dark.
This article has been archived and is no longer updated by Apple.

Symptom

After making several edits to tape (ETT), the screen goes dark. Restarting the computer temporarily resolves the issue.

Solution

- Upgrade to Mac OS X 10.2

Published Date: Feb 18, 2012

TA44651_Softcard_III_Problems_using_RS_PRINTER_and_CPM_(TIL00616).pdf

Softcard III: Problems using .RS232, .PRINTER and CP/M

This article has been archived and is no longer updated by Apple.

Both the .RS232 and .PRINTER drivers were designed to use the built in serial port (Port C) on the Apple III. If one configures the CP/M system such that both of these drivers are active and assigned to logical devices, the first attempt to send or receive characters causes the system to crash with an inverse S D (System Death) displayed on the console. Reboot your system to recover.

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Final Cut Pro: Updaters Require Original Application Name

Updaters for Final Cut Pro will not install correctly if the application name has been modified. For example, if the program name has been changed from "Final Cut Pro" to "Final Cut Pro 3.0.1".
This article has been archived and is no longer updated by Apple.

Symptom

- When you try to install and update, an alert box appears with a message that says no software could be found.

or

- The installer appears to work, but the installation is incomplete.

Solution

Change the name of the application back to "Final Cut Pro" and run the installer again.
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Final Cut Pro 3: Clip Appears Black When Applying Round Rectangle Matte

This document describes an issue with using masks with a round rectangle shape in Final Cut Pro 3 for Mac OS X.
This article has been archived and is no longer updated by Apple.

Symptom

After applying a matte with a mask shape of "round rectangle", the clip appears black after rendering.

Solution

Use a different shaped mask.

OR

Use Final Cut Pro 3 for Mac OS 9.
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Mac OS X 10.1, QuickTime 5: Third-Party Components Do Not Install

Third-party components of QuickTime 5 do not install if the user's preferred language is Brazilian Portuguese, or Danish.
This article has been archived and is no longer updated by Apple.

Symptom

Third-party components of QuickTime 5 do not install if the user's preferred language is Brazilian Portuguese, or Danish.

Solution

As a workaround, users familiar with English may install the components by following these steps:

1. Open System Preferences.
2. Click International.
3. Click the Language tab (if necessary) and drag English to the top of the list.
4. Choose Log out from the Apple menu.
5. Log in.
6. Connect to the Internet.
7. Open the QuickTime Player application.
8. Choose Update Existing Software from the QuickTime Player application menu. The software updates will now install.

When you've finished installing the updates, you can set the language back to Brazilian Portuguese, or Danish following the same steps.
Published Date: Feb 18, 2012

iPod 2.0: Certain Asian Characters Are Not Displayed

iPod Software 2.0 does not display certain characters.
This article has been archived and is no longer updated by Apple.

Symptom

iPod does not display certain Asian language characters. This includes some Japanese shift JIS characters, characters in the ATOK15 input palette, and some Korean characters. For example, a Japanese song called "GO(star)FIGHT(star)WIN" appears correctly in iTunes, but appears as GOFIGHTWIN on iPod.

Solution

This document will be updated when more information is available.
Published Date: Feb 18, 2012

iPhoto: 40-Character Limit on Photo Captions When Creating a HomePage

When using iPhoto's HomePage feature to create a Web page, you are limited to 40 characters for the caption on each photo, as opposed to the 80-character limit when using Apple's HomePage feature through .Mac.
This article has been archived and is no longer updated by Apple.

Symptom

When writing captions for photos using iPhoto's HomePage feature, you cannot create photo captions longer than 40 characters.

Solution

Use iPhoto to create a "photo album" homepage with captions of 40 characters or less. If you need to create a photo caption that is greater than 40 characters, log on to the .Mac Web site (http://www.mac.com/) after creating the page in iPhoto, select the page you just created and click Edit. You will then be able to modify the photo captions, up to 80 characters each.
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Final Cut Pro: How to Export Chapter Markers to DVD Studio Pro 1.5

DVD Studio Pro 1.5 translates markers placed in Final Cut Pro 3.0.2 and later as DVD chapter markers. The "What is new in DVD Studio Pro.pdf" file, included with DVD Studio Pro 1.5, incorrectly describes the steps for exporting media containing chapter and compression markers from Final Cut Pro.

This article has been archived and is no longer updated by Apple.

Enhanced Chapter Marker Feature

In addition to letting users set and move chapter markers in DVD Studio Pro, DVD Studio Pro 1.5 translates markers placed in Final Cut Pro 3.0.2 and later as DVD chapter markers. This simplifies the process of creating DVD chapter markers and ensures frame-accurate placement. There must be at least one second between chapter and compression markers or they will be ignored. When creating multi-angle material, you must place chapter and compression markers in exactly the same locations for all of the streams to be compatible. Chapter and compression markers only work with non-drop frame (NDF) timecode.

Figure 1 Edit Marker window

To insert chapter and compression markers in Final Cut Pro 3.0.2 and later projects:

1. In the Timeline, place the playhead exactly where you want to place the marker.
2. Press the M key twice to open the Edit Marker dialog.
3. Type a name for your marker. This name will be preserved when you bring the resulting MPEG-2 stream into DVD Studio Pro 1.5.
4. Click either Add Chapter Marker or Add Compression Marker. If you add a chapter marker, DVD Studio Pro 1.5 adds a chapter marker to the resulting MPEG-2 stream. If you add a compression marker, DVD Studio Pro 1.5 forces an I-frame (a video frame with no temporal compression) at the marker point, but does not add a chapter marker.
5. Click OK.
6. Repeat as needed. You can add as many as 99 chapter markers to each video stream.
7. When you have finished adding markers and are ready to export your finished project to the MPEG-2 format, choose Export from the File menu, then choose QuickTime Movie from the submenu.
8. Select MPEG-2 as the file type in the Export dialog. You can adjust the bit rate and other settings of the video by clicking Options. When you import the resulting MPEG-2 stream into DVD Studio Pro 1.5, it will have the chapter markers embedded within it.

Published Date: Feb 18, 2012

SunView Applications Cannot Run Under A/UX

Article Change History

09/07/92 - REVIEWED
* For technical accuracy.

Can SunView applications run under A/UX?

This article has been archived and is no longer updated by Apple.

SunView is a proprietary windowing system, specific to Sun's operating system. Without a way for a A/UX system to emulate a Sun, SunView applications cannot run under A/UX.

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Boris Calligraphy 1.1 and Final Cut Pro 3: Canceling Out of Title3D or Title Crawl Requires Clip Be Re-Rendered

When using the Title3D or Title Crawl features of Boris Calligraphy 1.1 with Final Cut Pro, canceling out of the Boris dialog when modifying an existing, pre-rendered clip may cause the render cache for that title to be reset, even if no changes were made.
This article has been archived and is no longer updated by Apple.

Symptom

When using the Title3D or Title Crawl features of Boris Calligraphy 1.1 with Final Cut Pro, canceling out of the Boris dialog when modifying an existing, pre-rendered clip may cause the render cache for that title to be reset, even if no changes were made.

Solution

If you encounter this situation, you must to re-render that particular title within your sequence.

This does not affect Calligraphy 1.0, where canceling an operation in the Boris dialog does not invalidate your render cache.

Note: This document contains information about third-party products. This document is provided for informational purposes only and Apple makes no guarantees about the information contained in this document. Furthermore, Apple technical support does not supply support for the use of third-party products.
Published Date: Feb 18, 2012

Final Cut Pro 3: Memory Requirements Reset After Updating to 3.0.2

After updating Final Cut Pro 3 for Mac OS 9 to version 3.0.2, the memory settings as seen in the Finder Get Info window will be reset to their defaults. This can cause the application to unexpectedly quit when opening large projects that require a lot of memory.
This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro runs slower or unexpectedly quits when opening large projects.

Products Affected

- Final Cut Pro 3 for Mac OS 9

Solution

Increase the Preferred Memory setting for the application. For more information see technical document 18278:"**Mac OS: Assigning More Memory to an Application Program**".
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TA44661_Macintosh_BASIC_Compilers_and_Interpreters_(TIL06162).pdf

Macintosh: BASIC Compilers and Interpreters

Article Change History

01/20/93 - UPDATED
* Vendor information.
10/10/90 - REVIEWED
* For accuracy.

What BASIC language compilers and interpreters are available for the Macintosh?

This article has been archived and is no longer updated by Apple.
BASIC language compilers and interpreters are available for the Macintosh from the vendors listed below.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

- Complete BASIC, from Complete Technologies

- True BASIC, from True BASIC, Inc.

- QuickBASIC, from Microsoft Corp.

- NKR BASIC Interpreter and NKR BASIC Compiler, from PenWare, Inc.

- ZBASIC, from Zedcor

Published Date: Feb 18, 2012

QuickTime 6: How to revert to QuickTime 5

If you have installed QuickTime 6 and wish to revert to an earlier version of QuickTime, follow the appropriate directions in this document. This article has been archived and is no longer updated by Apple.

Mac OS 8.6 through Mac OS 9

If you are using a Macintosh computer with Mac OS 8.6 through Mac OS 9 , follow the steps in "QuickTime: How to Uninstall QuickTime on a Macintosh" to remove QuickTime 6.

Once you have successfully uninstalled QuickTime 6 you should reinstall QuickTime 5, which is available from the Apple Software Downloads.

Mac OS X 10.1 through 10.1.5

If you are using a Macintosh computer with Mac OS X 10.1 through 10.1.5, follow the steps in "QuickTime 5 Reinstaller for Mac OS X: Information and Download" to remove QuickTime 6 and reinstall QuickTime 5.

Windows

If you are using a Windows-compatible computer follow the steps in "QuickTime: How to Uninstall QuickTime on a Windows-Compatible Computer" to remove QuickTime 6. When ready to install, see "QuickTime: How to Install on Windows"

Once you have successfully uninstalled QuickTime 6 you should reinstall QuickTime 5, which is available from the Apple Software Downloads.

Published Date: Feb 18, 2012

iPhoto: Rotated Photos May Not Appear Rotated in Other Applications

Photos rotated in iPhoto may not appear rotated in other applications.
This article has been archived and is no longer updated by Apple.

Symptom

If you drag a photo rotated in iPhoto to another application, such as Mail, or to other document window, the photo is not rotated in the other application window or document.

Solution

Export the rotated photo first before using it in another application.

1. Select the photo in the iPhoto Organize or Edit window.
2. Choose Export from the File menu.
3. Click the File Export tab.
4. Change export options if desired.
5. Click Export.
6. Name and save the photo.
7. Import the saved photo into the other application or document.

Published Date: Feb 18, 2012

Final Cut Pro 3: Imported EDLs May Need .edl Filename Extension Added

Cinema Tools exports EDL files without a ".edl" filename extension. However, Final Cut Pro only recognizes EDLs with a ".edl" filename extension. You may need to manually add it.

This article has been archived and is no longer updated by Apple.

Symptom

The EDL you are trying to import in Final Cut Pro appears dimmed in the navigation dialog and cannot be imported.

Solution

Add the ".edl" filename extension to the file before importing it into Final Cut Pro.

Published Date: Feb 18, 2012

Final Cut Pro: EDL Issue With Overlapping Transitions

This document describes an issue that can occur when importing an EDL into Final Cut Pro that references video tracks and transitions in a certain configuration.
This article has been archived and is no longer updated by Apple.

Symptom

After exporting and importing an EDL an effect may disappear when a superimposed video track has a transition that begins before the underlying track, which also has a transition that extends beyond the superimposed track. This is best understood with screenshots.

If the original timeline looks like this:

Figure 1 Original timeline

Then after exporting an EDL and importing, it will look like this:

Figure 2 Modified timeline

Solution

Add the missing effect after reconnecting the video.
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Final Cut Pro 3: ShuttlePRO Plug-In Not Needed

The plug-in for the Contour Design ShuttlePRO multimedia controller is no longer needed with Final Cut Pro 3. Leaving it installed can cause Final Cut Pro 3 to erroneously report that an unsupported enabler file is installed.
This article has been archived and is no longer updated by Apple.

Symptom

When opening Final Cut Pro 3 an alert box with this message appears:

> "One or more unsupported enabler files are installed. Blue render bars will appear in the Timeline to indicate areas of real-time playback that may drop frames as a result of this non-standard configuration."

Solution

Delete the Jog Enhance plug-in file which is located in the following location-

Final Cut Pro 3.0 : Plugins : Jog Enhance

The feature performed by this plug-in is part of Final Cut Pro 3.0 and later.
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Cinema Tools 1.0: Nested Sequences May Result In Inaccurate Cut Lists

Nested sequences in Final Cut Pro can result in inaccurate cut lists produced by Cinema Tools. Nested sequences do not maintain their relationship to the Cinema Tools database.

This article has been archived and is no longer updated by Apple.

Symptom

Cut lists created from Cinema Tools contains erroneous information such as duplicate clips.

Solution

Avoid using nested sequences when producing cut lists from Cinema Tools.

Published Date: Feb 18, 2012

iTunes: FireWire and USB CD-R Compatibility With Mac OS 9

This document outlines which FireWire and USB CD-R drives are compatible with iTunes when used with Mac OS 9.
This article has been archived and is no longer updated by Apple.

FireWire and USB CD-R Compatibility

Making Custom CDs
Using Mac OS 9.1 or later you can create custom audio CDs that you can play in your car, portable CD player and home stereo system using iTunes. You can also make custom MP3 CDs, standard audio CDs and data CDs directly from the Finder using Disc Burner.
Â
Using FireWire and USB CD-R external drives
With Mac OS 9.1 or later you can create CDs using many FireWire and USB CD-R external drives. For better performance and reliability, use FireWire CD-R drives.

To see if your CD-R drive is supported, open iTunes then choose Preferences from the Edit menu. Click the Advanced tab. In the CD Burning section of the Preferences window, check to see if your drive is listed. If it is listed then your Macintosh recognizes and works with your CD-R drive and you can use it to burn CDs. For more information about identifying the firmware and mechanisms of your CD-R drive, see technical document 60849:"Mac OS: How to Determine a CD or DVD Drive's Mechanism and Firmware Version".
Â
FireWire and USB CD-R drives tested with iTunes
Below is a list of drives and their corresponding mechanisms and firmware that support CD burning on Macintosh computers running Mac OS 9. Some CD-R drives do not reliably play music or import songs into MP3 format. You may find that using the built-in CD/DVD drive works better for these tasks. To see a list of drives that are compatible with Mac OS X 10.2, see the storage compatiblity Web site (http://www.apple.com/macosx/upgrade/storage.html).
Â
Drive compatibility may vary due to manufacturers' use of multiple mechanisms or firmware versions in the same CD-R product. This compatibility list includes only those combinations tested by Apple.

This list assumes that you have the latest Apple CD-R burning software installed. Make sure you have installed Authoring Support Update 1.1.5, or later. It is available from Apple Software Downloads (http://www.apple.com/swupdates/).

FireWire CD-R Drives	Mechanism	Firmware
Buffalo CD-RW L8432 8x 4x 32x	Plextor PX-W8432Ti	1.08
Buffalo CD-RW B1210 12x 10x 32x	Plextor PX-W1210TA	1.05
BUSlink RW-1232 FM	LiteOn LTR-12101B	LS3D
BUSlink RW-1640 FM	LiteOn LTR-16101B	TSOL
CD CyClone CDRevo FireWire 24x10x40	Sanyo CRD-BP1500P	6.34
EZQuest Boa 8x 8x 32x	Teac CD-W58E	1.0A
EZQuest Boa 12x 10x 32x	Teac CD-W512EB	2.0B
EZQuest Boa 16x 10x 40x	Sanyo CRD-BP1400P	5.3
EZQuest Boa 16x 10x 40x	Teac CD-W516EB	1.0A
EZQuest BOA 24x10x40x	Sanyo CRD-BP1500P	6.34
Fantom FireWire 8x 4x 32x	Plextor PX-W8432T	1.05
LaCie 4x 4x 24x Pocket FireWire	Teac CD-W24E	1.0A
LaCie 16x 10x 40x	Yamaha CRW2100E	1.0G
LaCie 8x 4x 32x	MKE CW-7586	1.06
LaCie 12x 10x 32x FireWire	Sanyo CDBP-121032A	1.02
LaCie 16x10x40x FireWire	Sanyo CDBP-161040A	5.29
LaCie PocketDrive 8x	Sony CRX700E	1.1k
LaCie 24x10x40x SE2100	Sanyo CRD-BP1500	1.44
Logitec 12x10x32 LCW-P1210BF	Plextor PX-W1210TA	1.05
Logitec LCW-R2010DBFU	Yamaha CRW2200E	1.0D
QPS Que! Fire 8x 4x 32x Firewire	Samsung SW-208B	BQ01
QPS Que! Fire 8x 4x 32x FireWire	Plextor PX-W8432T	1.07
QPS Que! Fire 12x 10x 32x Firewire	Plextor PX-W1210A	1.07
QPS Que! Fire 12x 10x 32x Firewire	Teac CD-W512E	2.5C

QPS Que! Fire 16x 10x 40x FireWire	Teac CD-W516EB	1.0A
QPS Que! Fire 16x 10x 40x FireWire	Plextor PX-W1610A	1.0
QPS Que! Fire 16x 10x 40x FireWire	Sanyo CRD-BP1500P	6.34
RATOC FR-CW84 FireWire CD-RW	MKE CDRRW07	1.0
Sony Spressa CRX-120EX	Sony CRX-120E	1.0j
Sony Spressa CRX-1600L-A2 12x 8x 32x	Sony CRX-160E	1.0E
VST 4x 4x 20x Portable FireWire	Ricoh RW8040A	1.13
VST SmartDisk Portable FireWire CD-RW 8X	TEAC CD-W28E-93	1.1A
Yamaha CRW2200IX-VK	Yamaha CRW2200	1.0D
Yamaha CRW2200FXZK	Yamaha CRW2200	1.0D

USB CD-R Drives	Mechanism	Firmware
EZQuest Boa 4x 4x 32x	Teac CD-W24E	1.0A
Freecom Portable 8X4X32X	Philips CDD4801	2.0
Freecom Traveler 4X4X20X	Ricoh RW8040	1.15
Iomega Predator CD-R 4x 4x 6x	Iomega ZipCD650 USB	P1.9
Iomega CD-RW 4x 4x 6x	Iomega ZipCD650 USB	11.1
LaCie 4x 4x 24x Pocket USB	Teac CD-W24E	1.0A
LaCie PocketDrive 8x	Sony CRX700E	1.1k
LaCie 8x 4x 32x	MKE CW-7586	1.06
LaCie 4x 4x 8x	Mitsumi CR-4802TE	2.1D
Sony CRX-1650L-A2	Sony CRX-161l	TY3
Sony Digital Relay	Sony CRX-10U	n/a
Sony Spressa CRX-100EX	Sony CRX-100E	1.1j

Expansion Bay CD-R Drives	Mechanism	Firmware
VST 4x 4x 8x Exp. Bay Module	Ricoh RW8040A	1.3

Playing Music and Importing Songs

Some CD-R drives do not reliably play music or import songs into MP3 format. You may find that using the built-in CD/DVD drive works better for these tasks.

Â

CD Burning Tips

If you have issues burning CDs, you should use the CD-R and CD-RW media that is available from the Apple Store (http://www.apple.com/store/).

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Note: If you plan on using other CD burning software along with iTunes or for additional help, see the iTunes Support page (http://www.info.apple.com/usen/itunes/) or contact your drive vendor.

Related Documents

30929 Mac OS: Extension Conflict Troubleshooting/Extensions Manager Features

60805 iTunes 1.1: Third-Party Disc Burning Software Stops Working

60807 About iTunes 1.1 Document and Software

Published Date: Feb 18, 2012

Final Cut Pro 3.0.2: Can‘t Set Keyframes in Video Tab of Viewer

Final Cut Pro 3.0.2 introduced an issue where keyframes cannot be set in the Video tab of the Viewer window.
This article has been archived and is no longer updated by Apple.

Symptom

Clicking Keyframe or pressing Control-K has no effect.

Solution

Add the keyframe from the Motion tab of the Viewer window.
Published Date: Feb 18, 2012

Disc Recording Update 1.3.4: Compatible FireWire CD-R drives

This document lists additional FireWire CD-R drives that are compatible with Disc Recording Update 1.3.4.
This article has been archived and is no longer updated by Apple.
Disc Recording Update 1.3.4 allows iTunes and the Finder to burn CD-R disc using the FireWire CD-R drives listed in the table below.

FireWire CD-R drives	Drive mechanism	Firmware version
LaCie CDRW 16x10x40 U&I	Philips CDD4911/33	B1.5
LaCie 40x12x48 U&I	CDBP-401248A	1.0
EZQuest Boa FireWire 40x12x48	Teac CD-W540E	1.0b
LaCie 40x12x48 U&I	TEAC CD-W540E	1.0B
LaCie U&I CD-RW 48x12x48	LITE-ON LTR-48125W	VS01
LaCie U&I CD-RW 40x12x48	LITE-ON LTR-40125S	ZS08
Iomega CD-RW 40x12x48	IOMEGA CDRW2304FEXT-B	ZOX2

This update requires Mac OS X 10.1.5 or later. To update to the latest version of Mac OS X, open System Preferences, choose Software Update from the View menu, then click Update Now. In the Software Update window, click the checkbox to select the items you want to install, then click Install. Type an administrator name and password. This update works with all computers that have built-in USB or built-in FireWire. ports.

CD-R drive manufacturers often use different drive mechanisms in the same CD-R drive. The drive models and mechanisms listed above are the only combinations tested and approved by Apple.

For the latest information and answers to technical support questions, see the Apple Support Web site (http://www.apple.com/support/).
Published Date: Feb 18, 2012

Mac OS X: About Backing Up and Restoring Your Files

This article has been archived and is no longer updated by Apple.
Published Date: Feb 18, 2012

Mac OS X 10.1: Name and Short Name Fields Go Blank When You Click Password Tab

As you create a new user in the Users pane of System Preferences the "Name" or "Short Name" fields go blank if you click the Password tab before moving the cursor out of the fields.
This article has been archived and is no longer updated by Apple.

Symptom

As you create a new user in the Users pane of System Preferences the "Name" or "Short Name" fields go blank if you click the Password tab before moving the cursor out of the fields.

Solution

When creating a new user in the Users preference pane, you should enter the text in the fields then press the Tab key to move to the next field before clicking the Password tab to enter the new user's password.
Published Date: Feb 18, 2012

QuickTime 6: About QuickTime Pro Keys

This document discusses QuickTime 6 Pro keys.
This article has been archived and is no longer updated by Apple.

What is QuickTime Pro?
QuickTime Pro is an upgrade to QuickTime that unlocks editing and creation features that enable you to:

- Create slide shows with images from a digital camera
- Build Media Skins to display your media files in a custom environment
- Encode and transcode media in dozens of formats, including MPEG-4
- Edit using simple cut, copy, and paste functions
- And much more

To get the most out of QuickTime Pro, take a look at the helpful books and CD-ROMs about QuickTime on the QuickTime Tools & Tips page.

Can I automate workflows?
On a Macintosh, you can use AppleScript and QuickTime Pro to automate most any workflow, from the simple to the complex. Visit the Apple Script website for hundreds of QuickTime-compatible scripts.

Will my QuickTime 4 or 5 Pro key work with QuickTime 6?
Because QuickTime 6 includes royalty-bearing technologies, a new QuickTime Pro key is required to unlock Pro functionality in QuickTime 6. If your key no longer works, visit the Apple Store to purchase a new one.

I want to use my QuickTime 4 or 5 Pro key, but I've installed QuickTime 6. What do I do?
You'll need to run an earlier version of QuickTime, which are available from the Apple Support website.

Will a QuickTime Pro key for Windows work on a Mac, and vice versa?
No. QuickTime Pro keys are platform-specific. Windows keys will work on all supported Windows platforms. Macintosh keys will work on all supported Mac operating systems, including Mac OS X.

How do I enter my registration key?
Keys are entered in the QuickTime Registration panel, either in the QuickTime control panel (Mac OS 8.6, 9, and Windows) or QuickTime Preferences (Mac OS X). For detailed instructions, visit the QuickTime key install help site.

I've lost my QuickTime Pro key. What should I do?
If you bought your QuickTime Pro key in the Apple Store, visit the Apple Store again and log in using your account. Visit the Software Purchases area to retrieve your key. If you did not buy it in the Apple Store or you don't see your key when you log in to the Apple Store, call your local store's telephone number.

I have my key but have lost the program. How can I get it again?
Simply download QuickTime for free from the QuickTime Download page. During the installation process you will be prompted to enter your username and key, which will unlock QuickTime Pro.

Related documents

301521 "Quicktime Pro versions 6 and 7 FAQ"
58453 "QuickTime Pro Key: Retrieving a lost key"
25227 "QuickTime Pro for Windows: How to Enter the Registration Key"
93858 "Upgrading to QuickTime Pro"
Published Date: Feb 18, 2012

iTunes: About Using Audible Spoken Word Files

You can use iTunes 3 and iTunes 4 to listen to Audible spoken word files, including audio books, spoken magazines, and newspapers.
This article has been archived and is no longer updated by Apple.
iTunes 3 and iTunes 4 can play Audible spoken word files (format 2, 3, and 4 only). For more information about these files, see the Audible Web site (http://www.audible.com/).

Once you have downloaded an Audible file, you can add it to your iTunes library just like you add any other file. **Note:** iTunes does not have a feature that allows you to listen to streaming Audible files.

To make sure that iTunes is selected as the application you want to use to listen to Audible files:

1. Quit all other Internet applications
2. Open iTunes
3. Choose iTunes > Preferences
4. Click General (if necessary)
5. Click Set.
6. Click OK

If an Audible file does not open in iTunes when you double-click it, you can open the file by dragging its icon on top of iTunes' icon in the Dock.

Using Audible files with iTunes counts as an additional Audible account. If you have exceeded your account limit, contact Audible for help.

iTunes can only sync Audible files to iPod. It cannot sync them to other kinds of portable players that are compatible with iTunes.

If you connect iPod to a computer using iTunes 2, iPod won't be able to play Audible files until you connect it to a computer using iTunes 3 or later. **Important:** In order to play Audible files on iPod, you must install iPod 1.2 software or later.

Related Documents

75338 **iTunes 3: How to Create CDs From Audible Content**
93189 **iTunes 4: How to Create CDs From Audible Content**

Published Date: Feb 18, 2012

iTunes 3: Before You Install

This document outlines steps you should take before installing iTunes 3.
This article has been archived and is no longer updated by Apple.
Before you install iTunes 3, you should:

- Quit iTunes 2 if it is open.
- Delete the iTunes 2 application if you dragged it outside of the Applications folder. If you do not delete it before installing, some files, including Help files, may not be updated correctly. The Read Me file for iTunes 3 states that you should delete iTunes 2 before installing iTunes 3. This is only necessary if you dragged the file outside the Applications folder.
- Consider updating your iPod to iPod Software 1.2 or later (when it becomes available) in order to take advantage of the feature of iTunes 3.
- Make sure you don't have an empty iTunes folder in the Music folder. If you have created a folder named "iTunes" in your Music folder, iTunes 3 will use that folder for your music library. If your music library is not in the ~Music/iTunes/ folder and is in the Documents folder instead, your library will appear to be empty. Quit iTunes 3, rename the folder to "iTunesOld", for example, and reopen iTunes 3.

Published Date: Feb 18, 2012

QuickTime 5: MIDI Files Played in Classic Sound Distorted

In some configurations of QuickTime 5 for Mac OS 9, MIDI files may sound distorted when played from a Classic program in Mac OS X.
This article has been archived and is no longer updated by Apple.

Symptom

MIDI files sound distorted.

Solution

Upgrade to QuickTime 6 for Mac OS 9
Published Date: Feb 18, 2012

iPod Software 1.0 with MusicMatch: How to Uninstall

This document explains how to uninstall or "remove" iPod for Windows Software 1.0.
This article has been archived and is no longer updated by Apple.
Follow these steps to uninstall iPod for Windows Software 1.0.

1. Open the Control Panel.

2. Double-click Add/Remove Programs. The Add or Remove Programs window appears. See Figure 1.

Figure 1 Add or Remove Programs window

3. Click Change or Remove Programs, if necessary.

4. Select iPod for Windows in the "Currently installed programs" list.

5. Click Change/Remove. The InstallShield Wizard opens. See Figure 2.

Figure 2 InstallShield Wizard window

6. Click Remove, then click Next.

7. Click OK to confirm that you want to uninstall the software. A Setup Status panel informs you of the progress. Once it is finished, the iPod for Windows Software is removed.

Note: You can follow these steps to uninstall the MUSICMATCH iPod Plug-in and theMUSICMATCH Jukebox software that were installed by the same installer as the iPod for Windows Software.

Published Date: Feb 18, 2012

iPod for Windows Software 1.0: How to Format iPod‘s Hard Disk

This document explains how to format iPod's hard disk so you can use it with a Windows-compatible or Macintosh computer.
This article has been archived and is no longer updated by Apple.

Formatting the disk for Windows

1. Make sure your computer meets the system requirements to use iPod for Windows Software 1.0. For more information on the system requirements, see technical document 60971, "**iPod: System Requirements**."

2. Find the iPod for Windows Software 1.0 CD-ROM disc that came with your iPod, and insert it into your computer's disc drive. **Note:** This software is not available to download from Apple's Web site.

3. Install iPod for Windows Software 1.0. For more information see technical document 61669, "**iPod for Windows Software 1.0: How to Install**".

4. Connect iPod to your computer using the FireWire cable that came with iPod. If your computer does not have a FireWire port see the Apple Store (http://www.apple.com/store/) for compatible FireWire cards you can install in your computer.

5. Open Updater and restore the software.
    1. Choose the Updater from the Start menu: Programs > iPod.
    2. Click Restore.
    3. Follow the directions on the screen.

After following these steps, iPod's hard disk has been formatted as FAT32, and will work with computers that have a compatible version of the Windows operating system.

To verify that iPod has been formatted for Windows, see technical document 61672, "**iPod 1.2: How to Determine iPod's Hard Disk Format**".

Formatting the disk for Macintosh

If you have installed iPod for Windows Software on iPod, and want to change it so that it only works with a Macintosh, you will need to restore iPod using the Macintosh version of the iPod Software Updater.

For more information on the how to restore iPod with the Macintosh version of iPod Software Updater see technical document 60983: "**iPod: How to Restore**."

Published Date: Feb 18, 2012

iPod Software 1.2: Differences Between Mac and Windows Versions

This document outlines the differences between iPod 1.2 software for Macintosh and Windows.
This article has been archived and is no longer updated by Apple.
Due to differences between iTunes 3 and MusicMatch software, the following iPod 1.2 features are not available when iPod for Windows Software 1.0 is installed:

- Audible.com spoken word file playback
- Sound Check
- browse by composer
- play counts
- play dates
- my rating
- per-song EQ settings (general EQ settings work as expected.)
- Smart Playlists

Note: MusicMatch Jukebox, included with iPod for Windows, has an feature called Volume Leveling that is similar to Sound Check. However, the Volume Leveling feature is not part of iPod for Windows Software 1.0. Using Volume Leveling has no effect when playing songs on iPod.

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iPod for Windows: If FireWire does not charge iPod

If iPod doesn't charge when you connect it to your computer, you should connect it to the Apple iPod Power Adapter instead.
This article has been archived and is no longer updated by Apple.

Symptom

- iPod doesn't charge when you connect it to your computer.
- The clock frequently needs to be reset.
- iPod doesn't shut off while connected to a Windows-compatible computer that goes to sleep.
- iPod doesn't go into Disk Mode while connected to a Windows-compatible computer that went to sleep and then awoke.

Products affected

- iPod for Windows

Solution

The FireWire (IEEE 1394) ports on some Windows-compatible computers may not be powered, and may not charge iPod when you plug it in. A port that only accepts a 4-pin cable is not powered.
6-pin FireWire port and icon

4-pin FireWire port and icon (requires separate adapter and does not charge iPod)

To determine you can charge iPod with your computer's FireWire port:

1. Connect iPod to your computer using the iPod FireWire cable. You may need to use a 4-pin to 6-pin FireWire adapter.
2. Check to see if iPod's battery charge indicator in the top right corner is animating. If so, iPod is charging. If not, it is not charging. You should connect iPod to the Apple iPod Power Adapter instead, especially before using it with your computer.

To charge iPod using the Apple iPod Power Adapter:

1. Disconnect iPod from your computer.
2. Connect iPod to the power adapter using the FireWire cable that came with iPod.
3. Plug in the power adapter to a working electrical outlet.

iPod will indicate when the battery is fully charged.

Tip: iPod mini and iPod (Click Wheel) can also charge while connected via a high-powered USB 2.0 port.

Related documents

93691: Tips for charging iPod and connecting to your computer
93339: iPod (with Dock Connector): How to Connect the iPod Dock Connector to FireWire and USB 2.0 Cable

TA44680_iPod_for_Windows_If_FireWire_does_not_charge_iPod.pdf

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QuickTime 5 for Windows: QuickTime Player Unexpectedly Quits

QuickTime Player may unexpectedly quit if you have installed and uninstalled a series of different versions of QuickTime 6 and QuickTime 5.
This article has been archived and is no longer updated by Apple.

Symptom

QuickTime Player 5 may unexpectedly quit if you have done the following:

1. installed QuickTime 6 Public Preview
2. added a favorite .mp4 movie
3. upgraded to the final version of QuickTime 6.0
4. uninstalled QuickTime 6
5. installed QuickTime 5

Solution

Delete the QuickTimeFavorites.qtr file. It is located in these locations:

Windows NT: C:\\WINNT\\profiles\\All Users\\Application Data\\QuickTime
Windows 98 and Me: C:\\Windows\\All Users\\Application Data\\QuickTime
Windows 2000 and XP: C:\\Documents and Settings\\All Users\\Application Data\\QuickTime
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WebObjects 5.1: How to Find the Version of WebObjects and Other Software Installed in Mac OS X

This document provides sample Java code to extract the version of each software package installed on the Mac OS X computer without having to look for the version number of each package in the directory `/Library/Receipts`.
This article has been archived and is no longer updated by Apple.
The sample function can be defined in any class suitable to your program.

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Sample Code

In this example, the method

```
public static NSDictionary productVersions()
```

is defined in the file Application.java in a WebObjects application project.

```
import java.io.*;
import com.webobjects.foundation.*;
import com.webobjects.appserver.*;
import com.webobjects.eocontrol.*;

public class Application extends WOApplication {

      private static NSDictionary _productVersions = null;

    public static void main(String argv[]) {
        WOApplication.main(argv, Application.class);
    }

    public Application() {
        super();
        System.out.println("Welcome to " + this.name() + "!");

        /* ** Put your application initialization code here ** */

         System.out.println("Version information:\\n" +
            formattedDictionary(productVersions()));
    }


    public static NSDictionary productVersions() {
        if ( _productVersions != null) return _productVersions;

        // Go to the /Library/Receipts directory to get the software version
        String receiptsDirString = "/Library/Receipts";
        File receiptsDir = new java.io.File(receiptsDirString);

        if (!receiptsDir.exists() || !receiptsDir.canRead())
            return NSDictionary.EmptyDictionary;

        // Extract the version information from each package Contents,
        // Resources folders and software_version file
        try {
            String packageFiles[] = receiptsDir.list();
            int length = packageFiles.length;
            NSMutableDictionary packages = new NSMutableDictionary(length);

            for (int i = 0; i < length; i++) {
                String packageName = packageFiles[i];
                String packagePath = receiptsDirString + "/" + packageName +
                    "/Contents/Resources/software_version";
                File versionFile = new File(packagePath);

                if (versionFile.exists()) {
```

```
                    StringBuffer versionString = new StringBuffer();
                    try {
                        LineNumberReader reader = new LineNumberReader(
                            new InputStreamReader(
                            new FileInputStream(versionFile)));
                        String line = reader.readLine();

                        while (line != null) {
                            versionString.append(" " + line);
                            line = reader.readLine();
                        }
                    }
                    catch (IOException e) {
                        // Flag the exception and return an empty string
                        System.out.println("Raised IOException");
                        return NSDictionary.EmptyDictionary;
                    }
                    if (versionString.length() > 1) {
                        String packageVersion = versionString.substring(1);
                        NSArray packagesForVersion =
                            (NSArray)packages.objectForKey(packageVersion);

                        if (packagesForVersion == null) {
                            packages.setObjectForKey(new NSArray(packageName),
                                packageVersion);
                        }
                        else {
                            NSMutableArray packageVersHolder =
                                new NSMutableArray(packagesForVersion);
                            packageVersHolder.addObject(packageName);
                            packages.setObjectForKey(packageVersHolder,
                                packageVersion);
                        }
                    }
                }
            }
            _productVersions = packages;
            return _productVersions;
        } catch (SecurityException e) {
            return NSDictionary.EmptyDictionary;
        }
    }

    // Make product versions dictionary more readable by alphabetizing by
    // package name and writing each package on its own line.
    public static String formattedDictionary(NSDictionary aDict) {
        String packageVersionString = aDict.toString();
        packageVersionString = packageVersionString.substring(1,
            packageVersionString.length() - 2);
        NSArray packageStrings =
            NSArray.componentsSeparatedByString(packageVersionString, "; ");
        try {
            packageStrings = packageStrings.sortedArrayUsingComparator(
                NSComparator.AscendingStringComparator);
        } catch (NSComparator.ComparisonException e) {
        }
        return packageStrings.componentsJoinedByString(";\\n");
    }
}
```

Usage

The _productVersions NSDictionary contains the following:

- The keys are the version strings for the different packages.
- The values are the packages for that version string.

Using the above code will generate the following output:

```
Version information:
{
    "DVDPlayerUpdate 3.1.1 (build 1B203)" = (DVDPlayerUpdate.pkg);
    "Epson Print Drivers 1.1 1.1 (build 4L13)" = (EpsonPrintDrivers.pkg);
    "Mac OS X 1.0 (build 5S66)" = (NetworkingUpdate.pkg);
    "Mac OS X 1.0 (build 5U6)" = (SecurityUpdateJuly2002.pkg);
...
```

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Final Cut Pro 3: Cursor Artifacts With Mac OS X 10.2

When using Final Cut Pro 3 with Mac OS X 10.2, you may notice some artifacts near the cursor when playing material in the Viewer. This only occurs with NVIDIA video cards.

This article has been archived and is no longer updated by Apple.

Symptom

You see slight distortion near the cursor when playing material in the Viewer.

Solution

The artifacts are purely cosmetic and can be ignored.

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iPod 1.2: Backlight Briefly Turns on at Midnight

iPod's backlight may briefly turn on at midnight.
This article has been archived and is no longer updated by Apple.

Symptom

The backlight turns on for about a second at midnight (00:00).

Solution

The iPod's internal clock is adjusted at midnight. During the adjustment, the backlight may briefly turn on for a second. You can prevent this by turning off the backlight feature. Choose Settings > Backlight timer > Off. The brief amount of time the backlight turns on does not affect overall battery performance.

Published Date: Feb 18, 2012

iPod 1.2: iPod Scripts for Mac OS X 10.1 Do Not Import Contacts

This article has been archived and is no longer updated by Apple.

The iPod Scripts for Mac OS X 10.1 that were posted on the AppleScript Web site do not work with iPod 1.2 software, or with Mac OS X 10.2.

Symptom

- With Mac OS X 10.2, the iPod scripts do not open.
- With Mac OS X 10.1 through 10.1.5 the iPod scripts seem to work, but only the first contact appears on iPod. The other contacts that were imported using these scripts do not appear.

Products affected

- iPod software 1.2
- Mac OS X 10.2
- Mac OS X 10.1 through 10.1.5

Solution

Do not use these scripts to import contacts if you are using Mac OS X 10.2 (or later) or iPod Software 1.2 (or later).

If you have used these scripts with iPod Software 1.1 and then upgraded to iPod Software 1.2, follow the instructions in these technical documents to remove the current contacts file and reload contacts:

60920: "**iPod: Frequently Asked Questions**", question 27
93678: "**iPod: Importing Contacts and Appointments**"
Published Date: Feb 18, 2012

About the Do not disconnect and OK to disconnect screens for iPod

This article has been archived and is no longer updated by Apple.

Learn about the disconnect screens that are part of iPod software.

iPod has two disconnect screens. They let you know when it is safe to unplug iPod from your computer's USB or FireWire port. Incorrectly disconnecting iPod while it is in use can damage data on iPod, or the computer's hard disk.

The first screen appears when you connect iPod to the computer.

"Do not disconnect" screen.

As long as iPod is connected to the computer, and you have not ejected it from the Finder or iTunes, the "Do not disconnect" screen appears.

To disconnect iPod from your computer, you must first eject it. Follow the instructions in "**Disconnecting iPod from your computer**". Once you have ejected iPod, the second disconnect screen appears.

"OK to disconnect" screen

You may now safely unplug the FireWire or USB cable from iPod.

1. When you first connect iPod to your computer, the "OK to disconnect" screen may briefly appear until the computer recognizes iPod is connected. This is normal.
2. These screens do not appear if your computer is in sleep mode. Wake your computer before disconnecting iPod.
3. These screens do not appear if iPod is connected to the Apple iPod Power Adapter. You may disconnect iPod from the Apple iPod Power Adapter at any time.

If your iPod displays this message but is not connected to a computer, or another device such as iPod Camera Connector, reset it to remove it from disk mode.

To avoid this behavior in the future, make sure that you safely disconnect your iPod prior to disconnecting it from your computer.

Published Date: Feb 18, 2012

iPod (touch wheel): Jumpy or erratic touch wheel operation

This document explains how to get the best performance from iPod's touch wheel
This article has been archived and is no longer updated by Apple.

Symptom

iPod's touch wheel seems to behave erratically jumping from one menu to another.

Solution

The iPod touch wheel models do not have a scroll wheel. They have a touch wheel. See Figure 1.

Figure 1 iPod touch wheel

With no moving parts, the touch wheel is more durable than the scroll wheel, and less vulnerable to dust, dirt, or sand.

The touch wheel, like the trackpad on an iBook or PowerBook, works on the principle of coupling capacitance. It relies on the electrical charge in your finger to measure movement. As your finger moves over the surface, the touch wheel evaluates the change in capacitance between two layers of measurement electrodes built into the surface of the touch wheel, and translates that to menu movement.

To assist with touch wheel issues:

- Make sure that only one part of your finger touches the touch wheel. You cannot use a pen or other object--the touch wheel is designed to work only with a finger. Also make sure that you are not resting another finger on or very close to the touch wheel. The touch wheel may interpret this as the other finger touching it, and make the wheel react as if moved in that direction. If you suspect either of these is causing the your issue, set the iPod on a table or flat surface, and then raise your wrist in the air and touch the touch wheel with only the tip of a finger. If the symptom goes away, you know that one of the above is the cause: you need to adjust the position of your finger or manner of handling.
- If you are in a very humid environment that causes moisture to collect on the touch wheel, or your hands are damp from being washed or exercise, the touch wheel may act erratically. Using a soft dry cloth or tissue (without lotion) dry off the touch wheel. In some very humid environments, you may need to use, as a temporary measure, a dry tissue (without lotion) or thin piece of paper over the touch wheel. As with all Apple products, iPod was only designed to function properly in certain operating and storage environments. These specifications are listed in iPod's User Manual.
- Oil or lotion can cause the same issue as moisture. Remember, some tissues have lotion, and some cleaning-cloth materials may leave a residue, causing the touch wheel to work poorly.
- Jewelry may also cause interference. Try removing rings or bracelets to see whether the jumpy or erratic behavior disappears.
- For best control, you should move your finger all the way around the touch wheel, instead of making small movements in the same spot.

Note: With the scroll wheel, some users used the Select button to turn the wheel. This does not work with the touch wheel.
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iPod 1.2: About the Browse Menu

This document describes the Browse menu in iPod Software 1.2.
This article has been archived and is no longer updated by Apple.
iPod Software 1.2 introduces the Browse menu. It is available from the main menu. See Figure 1.

Figure 1 iPod 1.2 Browse menu

In the Browse menu you choose to view songs by Artists, Albums, Songs, Genres, or Composers.

Artists

This menu choice displays a list of all the different artists in iPod's music library. It works the same as in iPod Software 1.1, but is now located in the Browse menu.

Albums

This menu choice is new to iPod Software 1.2. It is a quick way to see a list of all the albums stored on iPod. As with iPod Software 1.1, you can see this same album list by selecting Artists, then All.

Songs

This menu choice displays a list of all the song titles in the iPod's music library. It works the same as in iPod Software 1.1, but is now located in the Browse menu.

Genres

This is new to iPod Software 1.2. When selected, it lists all the different genres that are stored in iPod. Genre is an ID3 tag that you can set in iTunes.

Composers

This option is new to iPod Software 1.2 and iTunes 3. The composer tag can be used to distinguish several versions of the same song written by the same composer, but performed by different artists.

Examples

1. Two versions of Prokofiev's Piano Concerto no. 3 are stored on iPod. One is performed by Martha Argerich, and the other by Yefim Bronfman. The Composer tag for each song is filled in with Sergei Prokofiev. The Artist tag is filled in by the unique artist playing Piano Concerto no. 3.

2. Another use of the composer tag is to identify the DJ of a DJ-mixed album. These albums consist of songs performed by different artists that are mixed together (compiled) by a DJ. By entering the DJ's name as the composer, the song's artist can be populated in the Artist tag.

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iPod 1.2: About the Clock

This document describes the Clock feature in iPod Software 1.2, and explains how to set the clock and make other settings.
This article has been archived and is no longer updated by Apple.
iPod Software 1.2 introduces a Clock feature. It displays the time and date.

Follow these steps to view the clock:

1. Select Extras from the main menu.
2. Select Clock from the Extras menu.

Important: iPod does not have a backup battery to preserve the date and time if the battery fully discharges. If that happens, you should charge the battery, then reset the time and date.

Clock Synchronization with Mac OS X

If you connect iPod to a computer that has Mac OS X 10.2 (or later) installed, iPod's clock is synchronized to the date and time of the computer. This does not require that you open iTunes. **Note:** If the computer's date and time are incorrect, iPod's clock will also be incorrect.

Clock Settings

There are two settings that are associated with the clock that can be changed in the Date & Time settings:

- Set Time Zone
- Set Date & Time

Set Time Zone

Follow these steps to set the time zone:

1. Select Settings from the main menu.
2. Select Date & Time from the Settings menu.
3. Select Set Time Zone from the Date & Time menu.
4. Select your time zone from the list.

Important: The "time zones" that iPod uses are not really time zones. They are Universal Coordinated Time (UTC) offsets. For this reason, several actual time zones are "missing" (such as the three Australian and New Zealand time zones). If your time zone is not listed, you should choose the city/zone/place that represents the UTC offset for your time zone.

Time Zones for regions are not in alphabetical order. They are in "world order," starting at the international date line and moving eastward.

When using iPod's Calendar, it is important that the time zone be set correctly for the calendar alarms to work.

Set Date and Time

Follow these steps to set the date and time:

1. Select Settings from the main menu.
2. Select Date & Time from the Settings menu.
3. Select Set Date & Time from the Date & Time menu. The hour will highlight, displaying up and down arrows.
4. Scroll to change the hour, then press Select. Each setting will highlight in turn, and you set it in the same fashion.
5. After setting the year, press the Select button to return to the Date & Time menu.

There are no settings to change the way either the date or time is displayed. You cannot choose to display a 24-hour clock, and if you choose English as your default language, the date will be displayed as DD Month YYYY.

Depending on the language iPod is set to use, the date and time format will change accordingly.

Related documents

61681 "**iPod 1.2: Check Clock Time After Updating, Restoring, or Resetting**"
61682 "**iPod 1.2: Backlight Briefly Turns on at Midnight**"

TA44689_iPod_About_the_Clock.pdf

Published Date: Feb 18, 2012

Mac OS X 10.2: iTunes 3 May Not See iPod if Its Name Is Changed

On a computer with Mac OS X 10.2 installed, your iPod will not appear in the iTunes 3 Source list if you renamed it since iTunes 3 was last opened.
This article has been archived and is no longer updated by Apple.

Symptom

iPod does not appear in the Source list.

Solution

This issue is addressed in Mac OS X 10.2.1. For more information on installing the latest updates for your computer, see technical document 106704, "**Mac OS X: How to Update Your Software**".
Published Date: Feb 18, 2012

Softcard III: CP/M Reference Manual -- Errata

This article has been archived and is no longer updated by Apple.

Page 13... The top line should read:

REName Command

REN ufn1=ufn2

Published Date: Feb 18, 2012

Macintosh LC and Macintosh IIsi: Sound Input

Article Change History

06/21/93 - REVIEWED
* To confirm specifications of Sony and Radio Shack cables.

This article is about the sound input circuitry for the Macintosh LC and Macintosh IIsi.

This article has been archived and is no longer updated by Apple.
The Macintosh LC and Macintosh IIsi computers have built-in mono 8-bit sound input circuitry. This hardware is supported by the System 7.0 Sound Manager, which is included in System 6.0.7.

An electret microphone and a plastic holder to attach the microphone to the front of a monitor are included with the system. The microphone has a male miniature stereo phone connector. Customers can use any commercially available microphone that does not require an external power source.

An attenuated RCA adapter cable, with a male miniature phone connector on one end and two female RCA connectors on the other steps down the voltage level of the incoming signal. Devices such as CD players or tape players provide line out signals at a higher level than the 20 millivolt - 600-ohm impedance expected by the sound input circuitry. If you use a non-attenuated RCA adaptor cable in the audio-in jack, you will not hurt the system and it will still digitize the signal, but it may be very distorted.

If you use an attenuated RCA adapter cable as an audio-out cable, it may or may not work, depending on what you're connecting to. A standard RCA adapter cable is recommended for audio out. If the microphone is plugged into the audio-out jack, no sound will come out of the jack or the internal speaker.

Both Sony and Radio Shack sell attenuated RCA cables. The Sony part number is RK-G128 and the Radio Shack part number is 42-2461-A.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

Final Cut Pro 3: Get IHA Utility Doesn‘t Recognize Double-Byte Computer Names

The Academic Lab version of Final Cut Pro 3 comes with a utility called Get IHA Carbon, which assists in the creation of the list of authorized computers. When using this utility in Mac OS X, computers with names that contain double-byte characters (such as any Japanese character) do not appear in the list of authorized computers.
This article has been archived and is no longer updated by Apple.

Symptom

The computer name does not appear in the Lab Machine List after using the Get IHA Carbon utility.

Solution

- Remove double-byte characters from the Computer Name in the Sharing preference pane.

OR

- Start the computer from Mac OS 9 and use the Get IHA PPC utility instead.

Published Date: Feb 18, 2012

iPod for Windows Software 1.0: Read Me

This document contains the Read Me file for iPod for Windows Software 1.0.
This article has been archived and is no longer updated by Apple.

About iPod for WindowsÂ®

iPod for Windows includes MUSICMATCH Jukebox Plus software equipped with plug-in software for Apple's iPod. Use MUSICMATCH Jukebox Plus and the iPod plug-in software to organize music from your CD collection, then transfer songs to iPod for listening on the go. For more information go to http://www.apple.com/ipod/ .

Requirements

To use iPod for Windows, you must have a PC with the following:

- A 300 MHz Pentium (or better) microprocessor
- MicrosoftÂ® Windows MEÂ®, Windows 2000Â®, or Windows XPÂ®
- Built-in or Windows-certified FireWire card (IEEE 1394)
- At least 96 MB RAM (at least 128 MB for Windows XP)

How to install

Insert the iPod for Windows CD. The installer should run automatically. If it does not, open the CD-ROM icon in My Computer and double click the Setup icon. Click the "Install" button in the installer window and follow the on screen instructions to complete the registration and installation of the iPod for Windows software.

Don't forget to use the MUSICMATCH Jukebox Plus registration number included on the CD packaging to register your copy of MUSICMATCH Jukebox. The registration will allow you to make use of all of the features of MUSICMATCH Jukebox Plus for free, a 19.99 USD value!

For more information

MUSICMATCH Jukebox includes extensive built-in help about using the application and about using iPod. To access iPod Help, open MUSICMATCH Jukebox and choose MUSICMATCH Jukebox Help from the Help menu. Then click Apple iPod Help. For MUSICMATCH support online, go to http://www.musicmatch.com/ .

In addition, the Apple Support web site is available to help you 24 hours a day, 7 days a week. You'll find comprehensive product information as well as technical assistance and software updates. Apple's Knowledge Base contains current and recent product technical information, troubleshooting tips, and how-to articles. Apple Discussions offers a variety of forums for product-specific information and feedback. For more information, go to http://www.apple.com/support/ipod/ .

We value your input. To submit feedback on iPod for Windows software, go to **http://www.apple.com/feedback/ipod.html** . (**Note:** The URL in the Read Me file included with iPod was incorrect.)

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Macintosh Classic 1MB Memory Expansion Card Pinouts

This article gives the pinouts for the Macintosh Classic 1MB Memory Expansion Card.

This article has been archived and is no longer updated by Apple.

1 - Gnd Ground
2 - Gnd Ground
3 - +5 VDC+5 VDC
4 - +5 VDC+5 VDC
5 - CASCH*Column Access Strobe - High Bank C
6 - CASCL*Column Access Strobe - Low Bank C
7 - CASEL*Column Access Strobe - Low Bank E
8 - CASEH*Column Access Strobe - High Bank E
9 - CASDH*Column Access Strobe - High Bank D
10 - CASDL*Column Access Strobe - Low Bank D
11 - SIMM.IN* SIMMs installed
12 - EXP.IN* Expansion Card installed
13 - RD(3) Data Bit 3
14 - RD(2) Data Bit 2
15 - RD(0) Data Bit 0
16 - RD(1) Data Bit 1
17 - RD(7) Data Bit 7
18 - RD(6) Data Bit 6
19 - RD(4) Data Bit 4
20 - RD(5) Data Bit 5
21 - RD(11)Data Bit 11
22 - RD(10)Data Bit 10
23 - RD(8) Data Bit 8
24 - RD(9) Data Bit 9
25 - FRA(9)Address Line 9
26 - FRA(4)Address Line 4
27 - FRA(3)Address Line 3
28 - FRA(5)Address Line 5
29 - FRA(2)Address Line 2
30 - FRA(6)Address Line 6
31 - FRA(1)Address Line 1
32 - FRA(7)Address Line 7
33 - FRA(0)Address Line 0
34 - FRA(8)Address Line 8
35 - FRAS* Row After Strobe
36 - FRMRW*Memory Read Write
37 - RD(15)Data Bit 15
38 - RD(13)Data Bit 13
39 - RD(14)Data Bit 14
40 - RD(12)Data Bit 12
41 - +5 VDC+5 VDC
42 - +5 VDC+5 VDC
43 - Gnd Ground
44 - Gnd Ground

Connector Type: Dual In Line 44-pin

Published Date: Feb 18, 2012

iPod for Windows with MusicMatch: iPod synchronizes, but there are no songs or playlists

You use MUSICMATCH Jukebox to synchronize iPod in Windows, but there are no songs or playlists on iPod when the update is complete.
This article has been archived and is no longer updated by Apple.
This can happen if you have enabled the "Selected playlists synchronization," option, but did not select a playlist(s).

Select one or more playlists that contain songs, then perform the synchronization.

Related document
93719: "iTunes updated iPod, but where's the music?"
Published Date: Feb 18, 2012

iPod with MusicMatch: Installation Troubleshooting Steps

This document lists steps that may help you resolve issues installing iPod for Windows software.
This article has been archived and is no longer updated by Apple.
Follow these steps to troubleshoot the installation of iPod for Windows software:

1. System Requirements
Make sure your computer meets the system requirements to use iPod for Windows. See technical document 60971, "**iPod: System Requirements**".

2. Make sure you are logged in as a Windows Administrator user if you're using Windows 2000 or Windows XP.

3. Make sure the iPod for Windows CD is not dirty or scratched.

4. Quit out of all other application programs before installing.

5. Quit of the Installer and try to install again.
If you accidentally started several instances of the Installer, quit out of all instances before opening the Installer again.

6. Restart your computer.

7. Earlier version of MUSICMATCH Jukebox
If you already have an earlier version of MUSICMATCH Jukebox installed, and are having issues installing the version that came with iPod for Windows, uninstall (remove) the previous version of MUSICMATCH Jukebox, and then install the iPod for Windows software. To uninstall MUSICMATCH Jukebox, click 'Start' from your Windows Taskbar, go to 'Settings/Control Panels/Add/Remove Programs' and select MUSICMATCH Jukebox from the Install/Uninstall tab.

8. Do not Change Focus
If you change focus off the installer onto another application, some of the user interface elements of the Installer may not function properly, such as pop-up menus. If this happens, try double-clicking the Back button twice, and then click Next to refresh the Installer window.

9. Must Install on C Drive
iPod for Windows software must be installed on the C drive in order to work.

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iPod: Does Not Appear in MUSICMATCH Jukebox

This document lists steps you can take when your computer recognizes iPod, but MUSICMATCH Jukebox does not.
This article has been archived and is no longer updated by Apple.

Symptom

Your computer recognizes iPod when you connect it to the FireWire port, but MUSICMATCH Jukebox does not.

Solution

In MUSICMATCH Jukebox, your iPod should appear in the PortablePlus window under the Attached Portable Devices folder.

Figure 1 PortablePlus window

If the PortablePlus window is not open, you can open it by choosing "Download Files to Portable Devices" from the File menu.

If iPod does not appear in MUSICMATCH Jukebox's Attached Portable Device folder list, follow these steps in order until iPod appears. When iPod appears, you can stop.

System requirements
Make sure your computer meets the system requirements to use iPod for Windows. See technical document 60971, "**iPod: System Requirements**".

Must be iPod for Windows
iPod for Windows Software will only recognize iPod for Windows. You cannot use iPod for Macintosh with a Windows-compatible computer. To see which model of iPod you have, follow the instructions in technical document 61672, "**iPod 1.2: How to Determine iPod's Hard Disk Format**".

iPod charged or getting power
iPod must either be getting power from the FireWire bus, or have a charge for it to be recognized. For more information see technical document 61676, "**iPod for Windows: Does Not Charge When Connected to Your Computer**".

Quit and re-open MUSICMATCH Jukebox
Quit MUSICMATCH Jukebox, then re-open it.

Restart the computer
Restart your Windows computer.

Reconnect iPod
If you see the "OK to disconnect" screen on iPod:

1. Unplug iPod.
2. Wait until iPod displays the Main menu.
3. Plug iPod back in to the computer.
4. Open MUSICMATCH Jukebox if it does not open by itself.

If you see the "Do not disconnect" screen on iPod:

1. Eject or "unmount" iPod using one of the recommended ways listed in technical document 61724, "**iPod for Windows: How to Eject and Disconnect iPod From Your Computer**"
2. Unplug iPod.
3. Wait until iPod displays the Main menu.
4. Plug iPod back in to the computer.
5. Open MUSICMATCH Jukebox if it does not open by itself.

Reset iPod
Reset iPod. For more information see the technical document 61705, "**iPod: How to Reset**".

Restore iPod
Restore iPod. For more information see technical document 60983, "**iPod: How to Restore**". **Warning:** The restore process cannot be undone

and all of your data and music will be deleted. You should always keep a backup of all of your important data.

Software installed/reinstall
Make sure the iPod for Windows software is installed from the iPod for Windows CD that came with iPod. Verify that the iPod Watcher appears in the system tray. Reinstall the iPod for Windows software. For more information see technical documents 61669, "**iPod for Windows Software 1.0: How to Install**" and 61817, "**iPod for Windows 2.0: How to Install**".

Important: iPod for Windows software must be installed on the C drive.

Install/remove FireWire drivers
The FireWire card drivers included with Windows XP may work with your computer's FireWire card. In some cases, the card's manufacturer may publish later drivers with better performance than those included with Windows XP. If you have followed the other troubleshooting steps in this document, and iPod still does not appear in MUSICMATCH Jukebox, consider installing these drivers, which are generally included on a CD-ROM disc with the card, or are available from the manufacturer's website. If you have already installed them, consider removing them and using the drivers included with Windows XP instead.

Related documents

61711: "**iPod for Windows: Computer Doesn't Recognize iPod**".
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iPod for Windows with MusicMatch: How to Eject and Disconnect iPod From Your Computer

This document explains how to correctly eject or "unmount" iPod from a Windows-compatible computer.
This article has been archived and is no longer updated by Apple.
When iPod is used as an external FireWire hard disk, or is set to Manually Update, you must correctly eject it before you unplug the FireWire cable to protect the data on iPod, and on your computer. You should never disconnect iPod from any computer while iPod's screen says "Do not disconnect". Disconnecting in this state could damage data.

There are several ways to properly eject iPod in the Windows operating system:

- Eject button in MUSICMATCH
- Safe Remove Hardware in the system tray
- iPod Watcher in the system tray

Eject button in MUSICMATCH

Follow these steps to eject the iPod from within the Music Match Jukebox application.

1. Select iPod in the MUSICMATCH Jukebox PortablesPlus window:

Figure 1 PortablePlus window

2. Click Eject at the lower-left of the MUSICMATCH Jukebox PortablesPlus window:

Figure 2 Eject button in PortablePlus window

3. An alert box appears. Click Yes.

4. There is about a 15 second wait before iPod is ejected . The MUSICMATCH Jukebox PortablesPlus window displays two status messages: "Ejecting iPod. Please wait..." and "It is now safe to disconnect iPod."

5. When iPod has been ejected, the screen says, "OK to disconnect."

6. Unplug iPod.

Safe Remove Hardware in the system tray

Follow these steps to eject the iPod using the Unplug or Eject Hardware Tool in the Windows System Tray.

Follow these steps to eject iPod using the Safely Remove Hardware icon in the system tray:

1. At the bottom-right of the screen, click the "Safely Remove Hardware" icon:

Figure 3 "Safely Remove Hardware" icon

2. Click the pop-up menu. In this example for Windows Me it reads, "Stop IEEE 1394 Disk-Drive[F:]"

Figure 4 Pop-up menu

3. When the Safe To Remove Hardware message appears, click OK.

4. Make sure you see the "OK to disconnect" screen on iPod, then disconnect it from the computer.

iPod Watcher in the system tray

Follow these steps to eject iPod using the iPod Watcher icon in the system tray:

1. Make sure no applications are using iPod, including MUSICMATCH Jukebox.

2. Click the iPod icon in the system tray, and choose Unmount from the pop-up menu.

Figure 5 iPod Watcher in the system tray

3. An alert box appears. Click OK.

4. Make sure you see the "OK to disconnect" screen on iPod, then disconnect it from the computer.

Do not use right button on mouse to eject iPod

Warning: You should not use the contextual menu eject option by right-clicking on the iPod hard disk icon in the My Computer window.

Figure 6 Contextual menu that appears when you right-click iPod's hard disk icon
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iCal 1.0: Dragging Calendar Name to Finder Does Not Export It

iCal Help indicates that you can export a calendar by dragging its name to the Finder. This feature is not available in iCal 1.0.
This article has been archived and is no longer updated by Apple.

Symptom

When you drag a calendar's name to the desktop or a Finder window, nothing happens. The calendar is not exported even though iCal's Help document indicates that it should work.

Solution

The iCal help content is in error. This feature is not available in iCal 1.0. To export a calendar, click its name to select it, then choose Export from the File menu.
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QuickTime 6 for Windows: Does Not Save Favorites and Recent Items

Some Windows-compatible computers with QuickTime 6 do not save items in the Open Recent menu and Favorites list.
This article has been archived and is no longer updated by Apple.

Symptom

The Open Recent menu and Favorites list always appear empty.

Solution

Apple is investigating a solution to this issue. This document will be updated as more information becomes available.
Published Date: Feb 18, 2012

Macintosh LC, IIsi: Keys Take Place of Programmer‘s Switch

This article gives the keystroke combination that takes the place of the programmer's switch on the Macintosh LC and Macintosh IIsi.

This article has been archived and is no longer updated by Apple.
The Macintosh LC and Macintosh IIsi do not have a programmer's switch.

Here are the key combinations for the Reset and non-maskable interrupt (NMI) functions:

- Control-Command-Power generates a reset.

- Command-Power generates an NMI.

Note: MacsBug 6.2b1 or later (available from APDA) needs to be installed for the non-maskable interrupt to happen when the Command and Power keys are pressed.

These key combinations are similar to those used in the Apple IIGS.

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Final Cut Pro 3 and Final Cut Express 1.x: "An error occurred finding one or more of the specified capture scratch volume(s)" Alert

When using Final Cut Pro 3 or Final Cut Express with some versions of Mac OS X, having a solidus ("/"), or "forward slash character" in clip or pathnames can set scratch disk paths to invalid locations, causing unexpected behavior during capture.
This article has been archived and is no longer updated by Apple.

Symptom

An alert box with this message appears:

> "An error occurred finding one or more of the specified capture scratch volume(s). Verify that both audio and video scratch disks are set in the Preferences."

Figure 1 Final Cut Pro alert box

Solution

For Mac OS X 10.2
Update to Mac OS X 10.2.3 or later. Use the Software Update preferences or search at the Apple Downloads page (**http://www.info.apple.com/support/downloads.html**).

For Mac OS X 10.3
Do one of the following:

- Upgrade to Final Cut Pro 4 or Final Cut Express 2.
- Avoid using the solidus in clip names, or any part of the path to the clip including the hard drive name. If you have already tried to capture a clip with a solidus in the name and the alert box above appeared, you should delete it from the clip name and capture the clip again.

  If you are using Cinema Tools for Final Cut Pro, you should also ensure that your telecine logs do not contain a solidus in clip names. You may want to use a word processor to replace all occurrences of "/" with another character such as "-". TextEdit, which comes with Mac OS X, can help you do this.

Published Date: Feb 18, 2012

iCal 1.0: How to Go to Any Date

This document gives two shortcuts for going to any date.
This article has been archived and is no longer updated by Apple.
To go to a date that falls within a few months of the current date:

1. Click the triangles in the mini-month list to see a few months ahead.
2. Click the date in the mini-month.

To go to any date, particularly those that are more than a few months away, follow these steps:

1. Choose New Event from the File menu.
2. Change the year or month in the "from" field to the year or month you want to go to using the arrows.

The iCal window displays that year or month. From here, you can choose any day in that month from the mini-month calendar on the left.
Published Date: Feb 18, 2012

Mac OS X 10.2, iTunes 3: CD Burning at High Speed Fails

With Mac OS X 10.2, burning an audio CD or MP3 CD using iTunes 3 may fail if you burn at a high speed (such as 24x).
This article has been archived and is no longer updated by Apple.

Symptom

Burning an audio CD or MP3 CD fails when you burn at a high speed.

Solution

Update to Mac OS X 10.2.1 or later. You may use the Software Update pane of System Preferences to update your software, or download the update from Apple Software Downloads (http://www.apple.com/swupdates/).
Published Date: Feb 18, 2012

QuickTime 6 for Windows: Multiple Alert Boxes With the Same Message Appear

This document describes an issue that can occur if a non-Admin user deletes the QuickTime preference file.
This article has been archived and is no longer updated by Apple.

Symptom

- Multiple alert boxes with the same message appear.
- QuickTime Player stops responding.

Solution

1. Log in to Windows as an Admin user.
2. Open QuickTime Player. The preference file is recreated, which should resolve the issue.

Published Date: Feb 18, 2012

iDVD 2.1: Slideshow Project Does Not Burn on First Try

When you burn a DVD-R that contains a slideshow, the disc may not burn on the first try.
This article has been archived and is no longer updated by Apple.

Symptom

When you burn an iDVD project that contains a slideshow:

- the burn process stops at Step 2.
- the DVD-R disc, which is still blank, is ejected.
- a prompt tells you to insert a blank disc.
- the pointer turns into a spinning disc.

Solution

After iDVD ejects the blank disc, wait a few minutes for the spinning disc to turn back into a pointer. Then, reinsert the disc you were using. iDVD should complete the burn this time.

Published Date: Feb 18, 2012

iSync 1.0: Older Events Still Copied From iCal to Palm

The "older events" setting in the iSync conduit pertains to information on the Palm, not from other sources.

This article has been archived and is no longer updated by Apple.

In the iSync conduit settings, accessed through Palm's HotSync Manager application, there is an option for "Don't sync Calendar records older than:". This option is intended for records on the Palm. If this box is checked, records on the Palm older than the time period specified in the pop-up menu are not synched to iCal. Records written to the Palm by iSync are not affected by this option.

Published Date: Feb 18, 2012

Macintosh Classic: RAM Upgrades and 1MB Memory Expansion Card

How do I upgrade the RAM in my Macintosh Classic? What are the possible configurations and do I have to use the 1MB Memory Expansion Card?

This article has been archived and is no longer updated by Apple.
With the Macintosh Classic, Apple introduced a new memory expansion module called the Macintosh Classic 1MB Memory Expansion Card. This card is necessary to add additional RAM to a Macintosh Classic. A 2MB Macintosh Classic comes with this card installed.

Apple's memory expansion card has 1MB of memory soldered on. In addition, it carries two SIMM sockets to allow expansion with 150ns (or faster) 256K or 1MB SIMM strips (Macintosh Plus or Macintosh SE SIMMs or better). Both SIMMs must be populated at the same time with the same size RAM SIMMs in both sockets. Either low- or high-profile SIMMs can be used. A jumper must be changed if the SIMM sockets are used. You cannot use 4MB RAM SIMMs.

The following are valid memory configurations:

1 MB - Using 1MB on main logic board (MLB) only
2 MB - 1MB on MLB plus 1MB memory expansion card with no SIMMs
2.5 MB - 1MB on MLB plus 1MB memory expansion card with two 256K SIMMs
4 MB - 1MB on MLB plus a 1MB memory expansion card with two 1MB SIMMs

As with the Macintosh Plus and SE, the Classic's system memory can be extended only to 4MB. In the memory map, after the 4MB RAM space, there is the system ROM.

Published Date: Feb 18, 2012

Macintosh LC: Expansion Slot

This article is about the Macintosh LC's PDS (processor-direct slot) expansion slot.

This article has been archived and is no longer updated by Apple.
You can expand the Macintosh LC via a 96-pin expansion connector located on the main logic board. This is Apple's first 68020 PDS, requiring a new slot definition. Expansion cards will be approximately 3-inches by 7-inches in size and will lie horizontally above the logic board within the Macintosh LC. An opening in the back of the Macintosh LC accommodates a connector the size of a DB-15. The expansion connector is supplied with the following voltages, and must be limited to the following current load:

Voltage	Current
+5	800 mA
-5	20 mA
+12	200 mA

Power limitations allow dissipation of no more than 4 watts, all of which can be taken from +5, or from any combination of the three voltages -- but the total cannot exceed 4 watts.

Here are the pinouts for the Macintosh LC PDS connector for columns A, B, and C:

A1 - Sound
A2 - /SLOTIRQ
A3 - /AS
A4 - /DSACK1
A5 - /HALT 68020 Halt
A6 - FC2
A7 - FC0
A8 - /RMC
A9 - D31 Data bit 31
A10 - D28 Data bit 28
A11 - D25 Data bit 25
A12 - D22 Data bit 22
A13 - D19 Data bit 19
A14 - D16 Data bit 16
A15 - D13 Data bit 13
A16 - D10 Data bit 10
A17 - /BGACK
A18 - A1 address bit 1
A19 - A26 address bit 26
A20 - A23 address bit 23
A21 - A20 address bit 20
A22 - /
A23 - D2 Data bit 2
A24 - D1 Data bit 1
A25 - A4 address bit 4
A26 - A6 address bit 6
A27 - A11 address bit 11
A28 - A9 address bit 9
A29 - A16 address bit 16
A30 - A18 address bit 18
A31 - FAN
A32 - +12V

B1 - Analog Ground
B2 - R/W

B3 - +5V
B4 - +5V
B5 - SIZ1
B6 - Ground
B7 - C16M
B8 - Ground
B9 - D30 Data bit 30
B10 - D27 Data bit 27
B11 - D24 Data bit 24
B12 - D21 Data bit 21
B13 - D18 Data bit 18
B14 - D15 Data bit 15
B15 - D12 Data bit 12
B16 - D9 Data bit 9
B17 - /BR
B18 - A31 address bit 31
B19 - A25 address bit 25
B20 - A22 address bit 22
B21 - /IPL2
B22 - D3 Data bit 3
B23 - D5 Data bit 5
B24 - D0 Data bit 0
B25 - A2 address bit 2
B26 - A12 address bit 12
B27 - A13 address bit 13
B28 - A8 address bit 8
B29 - A15 address bit 15
B30 - A17 address bit 17
B31 - A// Clock
B32 - Ground

C1 - /FPU
C2 - /DS
C3 - /BERR
C4 - /DSACK0
C5 - SIZ0
C6 - FC1
C7 - /RESET
C8 - /BG
C9 - D29 Data bit 29
C10 - D26 Data bit 26
C11 - D23 Data bit 23
C12 - D20 Data bit 20
C13 - D17 Data bit 17
C14 - D14 Data bit 14
C15 - D11 Data bit 11
C16 - D8 Data bit 8
C17 - A0 address bit 0
C18 - A27 address bit 27
C19 - A24 address bit 24
C20 - A21 address bit 21
C21 - /IPL1
C22 - D4 Data bit 4
C23 - D6 Data bit 6
C24 - D7 Data bit 7
C25 - A3 address bit 3
C26 - A5 address bit 5
C27 - A7 address bit 7
C28 - A10 address bit 10
C29 - A14 address bit 14
C30 - A19 address bit 19
C31 - FC3
C32 - -5V

TA44710_Macintosh_LC_Expansion_Slot_(TIL06177).pdf

Published Date: Feb 18, 2012

Final Cut Pro 3 for Mac OS 9: Green or Blue Tint With RT Material and 16-Bit Color

When using Final Cut Pro 3 in Mac OS 9 with certain ATI video cards, you may see green or blue tinted video when playing back real-time-rendered material if the monitor is set to 16-bit color ("Thousands" in the Monitors control panel).
This article has been archived and is no longer updated by Apple.

Symptom

Real-time-rendered material plays back with a blue or green tint.

Solution

1. Open the Monitors control panel.
2. Click Millions to change the Color Depth.

Published Date: Feb 18, 2012

iCal 1.0: Broken Links in iCal Help

When you open iCal Help, the links do not work if Italian or German is selected as the preferred language in System Preferences.
This article has been archived and is no longer updated by Apple.

Symptom

When you open iCal Help for the first time, the links in the Help Center window do not work.

Solution

Resize the Help Center window. This workaround resolves the issue. You do not need to repeat this step in the future (unless for some reason you delete the Help Viewer preferences file).
Published Date: Feb 18, 2012

Final Cut Pro 3: Issue With Exporting Video Using Limit Option

Video exported using the "Limit capture/export file segment size" option can result in clumps of damaged frames in the resulting video.
This article has been archived and is no longer updated by Apple.

Symptom

After importing segmented video, clumps of frames containing multi-colored static appear during playback.

Solution

1. Choose Preferences from the Final Cut Pro menu (Edit menu in Mac OS 9), then Scratch Disks from the submenu.
2. Deselect the "Limit capture/export file segment size" checkbox.

Published Date: Feb 18, 2012

Final Cut Pro 3: Subframe Audio Scrubbing Does Not Work With RTMac Card

Subframe audio scrubbing does not work with Final Cut Pro 3 when a Matrox RTMac card and drivers are installed.
This article has been archived and is no longer updated by Apple.

Symptom

When subframe audio scrubbing (FCP 3 User's Manual Volume 2 page 428), no audio is heard.

Solution

Do one of the following:

- Disable the Matrox control panel and restart the computer.
- Remove the Matrox RTMac card from the computer.

Published Date: Feb 18, 2012

TA44715_Macintosh_LC_Video_Timing_(TIL06179).pdf

Macintosh LC: Video Timing

This article gives the video timing modes for the Macintosh LC.

This article has been archived and is no longer updated by Apple.
The Macintosh LC supports 3 different timing modes:

- Macintosh 12-inch RGB Display's 512x384
- Macintosh 12-inch RGB Display's 560x384 (generated by Apple IIe card, 4-bit only)
- Macintosh 12-inch Monochrome Display, Macintosh High-Resolution Monochrome, Macintosh High-Resolution RGB (640x480)

In 640x480 mode, Macintosh LC uses the CPU clock (31.3344 MHz) as the pixel clock. This is opposed to the 30.24 MHz clock that is normally specified. This results in 32 extra pixels per scan line. The 640 active pixels are centered in the active video field with 16 black pixels placed on either side. Horizontal and vertical scan rates remain the same. A visual distortion from square pixels will occur, making the pixels 3% too narrow. The Macintosh 12-inch Monochrome display will be able to correct for this distortion, but the current monochrome and RGB monitors will not.

The 560x384x4 Apple IIe mode is selectable only when an Apple IIe card is present. The card is necessary because the 17.234 MHz oscillator required for this video mode is located on the Apple IIe card itself.

Published Date: Feb 18, 2012

AppleCare Protection Plan CD: Includes Multi-Lingual Version of TechTool Deluxe

Some versions of the AppleCare Protection Plan CD include multi-lingual versions of TechTool Deluxe.
This article has been archived and is no longer updated by Apple.
AppleCare Protection Plan CDs with version 3.0.2 of TechTool Deluxe can work in multiple languages.

Mac OS X

When you start up the computer from the CD, or open the installer from the TechTool Deluxe X partition of the CD, the following TechTool Deluxe language selection dialog appears:

Figure 1 TechTool Deluxe X dialog

The available languages are:

- English
- French
- German
- Japanese

Mac OS 9

When used with Mac OS 9, the TechTool Deluxe CD partition contains the following items:

Figure 2 TechTool Deluxe window

The disc includes three versions of the TechTool Deluxe application:

- TechTool Deluxe
  The English language version
- TechTool Deluxe 2.5.7 F
  The French language version
- TechTool Deluxe 2.5.7 J
  The Japanese language version

Published Date: Feb 18, 2012

Softcard III Installation and Operation Manual: Errata

This article has been archived and is no longer updated by Apple.

Page 87... Item 4 should read:

4. When the A> prompt appears, type:

SOSXFER A:Driver.SOS=B:Driver.SOS

Published Date: Feb 18, 2012

QuickTime 6: About Carbon Sound Manager Update 6.0.2

This document describes the Carbon Sound Manager Update 6.0.2, which is available through the Software Update pane of System Preferences.
This article has been archived and is no longer updated by Apple.
The Carbon Sound Manager Update 6.0.2, a component of QuickTime 6, improves reliability and performance of some applications that access Carbon Sound Manager. It is available through the Software Update pane of System Preferences. If the version of QuickTime 6 you installed does not require the update, it will not appear in the list of available updates. You only need to install the Carbon Sound Manager Update if it appears in the Software Update pane. This update is not necessary with QuickTime 6.1 or later.
Published Date: Feb 18, 2012

iMovie 3.0: Titles of Clips on Shelf Appear Pixelated

After you capture a clip, the titles of clips on the shelf appear blurry, or choppy (pixelated).
This article has been archived and is no longer updated by Apple.

Symptom

After you capture a clip, the titles of clips on the shelf appear blurry, or choppy (pixelated). This may also occur after the screen dims.

Solution

Quit iMovie 3, then reopen the application.

Published Date: Feb 18, 2012

iMovie 3.0: Restore Clip Button Is Distorted

When you apply an effect to a clip, the Restore Clip button becomes distorted.
This article has been archived and is no longer updated by Apple.

Symptom

When you apply an effect to a clip, the Restore Clip button becomes distorted. Other parts of the window may be distorted, too.

Solution

Quit iMovie 3, then reopen the application.
Published Date: Feb 18, 2012

An iMovie clip‘s title is blurry after viewing it in full-screen

After you watch a clip in full-screen mode, the clip's title is blurry.
This article has been archived and is no longer updated by Apple.
This can happen with iMovie 3.0 or 3.0.1 and Mac OS X 10.1.5

The solution is to quit iMovie 3, then reopen the application.
Published Date: Feb 18, 2012

iMovie 3.0: Dragging MP3 File From Audio Pane to Desktop Moves the Original File

If you drag an MP3 file from the Audio pane to the desktop, the original file is moved to the desktop.
This article has been archived and is no longer updated by Apple.

Symptom

When you drag an MP3 file from the Audio pane to the desktop, the original file is moved to the desktop. iTunes no longer recognizes where the song is located.

Solution

1. Double-click the MP3 file to re-add it to the iTunes Music Library.
2. Drag the file back to the iTunes Music folder in your Home (~/Music/iTunes/iTunes Music). Note: The iTunes Music folder may be in your Documents folder.

Published Date: Feb 18, 2012

Installing iPod Software 2.0 for Windows

Before you install
This article has been archived and is no longer updated by Apple.
The entire installation process can take up to 20 minutes to complete.

Bringing any other windows or applications in front of the Installer windows may confuse the Installer, causing it to always present the Installer windows behind all other applications and windows, or make pop-up menu selections in the Installer window work incorrectly. If this happens, double-click the Back button twice, then click the Next button to refresh the Installer window.

If at any time a dialog appears asking to install a driver for the iPod's hard disk, dismiss it and do not click OK.

How to install

1. Insert the CD into the computer's disc drive.
2. After a short wait, the Choose Setup Language window appears, shown here.

If the installer does not open automatically:
   1. Open My Computer.
   2. Open the CD.
   3. Double-click the "setup" install icon, shown here.

3. The configuration progress bar appears, shown here.

4. When the iPod for Windows V2.0 window appears, click Install, as shown here.

5. The iPod Serial Number dialog box appears. Type in iPod's serial number, as shown here. The serial number is engraved on iPod's metal case.

Tip: Enter an 11-character iPod serial number to enable the Next button.

The serial number is also available in iPod's menu system.

6. Click Next. The Software License Agreement window appears, shown here. Read the text. If you agree, click Yes.

7. Select your country or region and click Next, as shown here.

8. If your country is not shown, select Show All to reveal other choices.

9. Click Next. When Registration Information appears, fill out the appropriate information and click Next.

10. Fill in the registration window, then click Next.

11. The "iPod needs to be configured" message appears. This message will appear even if an iPod is not connected to the computer, or if the iPod has already been formatted for Windows.

If iPod has already been configured for use with Windows, click Cancel. You can always run the iPod Software Updater at a later time to convert iPod for use with Windows.

If iPod has not been configured for use with Windows, click the OK button. This will restore iPod from within the Installer. This process can take several minutes. (The iPod Software Updater does not open.) **Warning:** This erases iPod and changes its format to FAT32. All data on iPod will be lost.

12. After many installation windows appear and disappear, the Choose Destination Location window appears. Click Next. When the Choose Destination Location window appears, click Next to accept the default location (C:\\Program Files\\iPod).

Important: iPod for Windows software must be installed on the C drive. If it is not, when you restart the computer an alert with this message will appear, "The iPod Watcher did not load due to an error."

13. There is about a two-minute delay while iPod for Windows installs, many windows will appear and disappear during this process:

14. The iPod for Windows User Guide 2.0 installer automatically opens and installs with no user interaction.
15. The MUSICMATCH Jukebox installer automatically opens.

Published Date: Feb 18, 2012

Old HD-20 and New Macintosh SE/30

What must one do to access a (non-SCSI) HD20 disk drive attached to the disk drive port on the new Macintosh SE/30? I tried placing the old "HD20" file in the System Folder, but it didn't work.

This article has been archived and is no longer updated by Apple.
Using the criteria of "Macintosh SE/30 AND NON-SCSI" search AppleLink's Technical Info library for the article "Macintosh SE/30: Doesn't Work with an Apple Hard Disk 20." The following is more information on this subject:

The (non-SCSI) Hard Disk 20 does not work with the Macintosh SE/30. The Macintosh SE/30 has the same logic board and ROM as the Macintosh IIx, which does not support the Hard Disk 20. Therefore, the code to support the drive is not included in the ROM of the Macintosh SE/30.

There are ways of retrieving the data from a Hard Disk 20 for use on the Macintosh SE/30. First, using a Macintosh Plus or Macintosh SE, transfer the data to another hard disk that the Macintosh SE/30 can read. The necessary equipment and steps to do this are:

To transfer data from a Hard Disk 20 to the internal drive, these items are required:

- Macintosh Plus or Macintosh SE

- Formatted, blank HD20 SC, HD40 SC, or HD80 SC and cables

- System 6.0.3 Tools Disk (included with the Macintosh SE/30)

Once you have the necessary items, follow these steps:

1) Hook up the Hard Disk 20 and the HD20 SC, HD40 SC, or HD80 SC to the Macintosh Plus or Macintosh SE.

2) Insert the System Tools disk in the internal drive.

3) Turn on both drives, wait 10 seconds, and then turn on the computer.

4) Use the Find File DA and look for a file called System on the Hard Disk 20.

5) There should be one file called System, and it should be located in the System Folder. If there is more than one System file, return to the desktop and trash the other System files on the Hard Disk 20.

6) Select all the files and folders on the Hard Disk 20 and any files that may be on the desktop and drag them to the HD20 SC, HD40 SC, or HD80 SC.

7) After the copy is finished, hook up the HD20 SC, HD40 SC, or HD80 SC to the Macintosh SE/30.

8) Select the files from the HD20 SC, HD40 SC, or HD80 SC and drag them to the internal hard drive. If there is no internal hard drive, drag them to the drive you will be using.

9) Update the System files to System 6.0.3 using the Installer Script (located on the System Tools Disk) for the Macintosh SE/30.

Additionally, we have included an INIT Utility that reads the data from the Hard Disk 20 and puts it on the internal hard disk of the Macintosh SE/30. As with all INITs, place it in the System Folder of the startup disk. The Hard

Disk 20 will now be visible when you start up with the Hard Disk 20 turned on.

Warning: Do not try to write to the Hard Disk 20. Trying this can result in the loss or corruption of data on the Hard Disk 20.

When the Hard Disk 20 icon is visible, you can drag the files from the Hard Disk 20 onto the internal hard disk of your Macintosh SE/30.

The code for the INIT Utility is not supported by Engineering, and no changes will be made to it. Be very careful when using this Utility and do not distribute it. Once you have copied the Hard Disk 20 to your Macintosh SE/30, be sure to remove this Utility from your System Folder.

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Keynote 1.0: About Making Text Italics or Bold

This document describes issues using italic or bold text with some themes in Keynote.

This article has been archived and is no longer updated by Apple.

Some Keynote themes use fonts that are not available in italics or bold typeface versions. If you want to change your font to one that can be italicized or made bold, choose Format > Font > Show Fonts. In the Fonts window, select a font in the Family column. Available typefaces appear in the Typeface column.

Published Date: Feb 18, 2012

Keynote 1.0: Tables and Charts in QuickTime Export Are Partly Covered With White or Are Fragmented

If tables or charts are partly covered with white or appear fragmented when you export to QuickTime, try exporting the slideshow again.
This article has been archived and is no longer updated by Apple.

Symptom

When you export a slideshow to a QuickTime movie, tables and charts are partly covered with white, or appear fragmented.

Solution

Try exporting the slideshow again. The tables and charts should appear properly in the second export.
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A/UX 2.0 and Native X11: Frequently Asked Questions

This article contains frequently asked questions (FAQ) about A/UX 2.0 and Native X11.

This article has been archived and is no longer updated by Apple.

Question: Can you configure "native" X11 to use an "azerty" keyboard?

Answer: On an "xterm" window, we think that the X client application called "xmodmap", a keyboard modifier utility for X, could be used to alter the X keyboard map and key symbol table. For example, on a standard Apple Macintosh keyboard, to change the capital letter "A" to a capital letter "Q", you would use the command: xmodmap -e "keycode 20 = A".

For more details, please see the xmodmap (1) manual pages.

Question: How can I configure "native" X11 to have a 24-bit display?

Answer: The current distributed Macintosh A/UX "native" X server, which is based on X11R4, supports only 1-bit (monochrome) and 8-bit (8 bits per pixel, 256 colors) displays.

Published Date: Feb 18, 2012

Keynote 1.0: Bulleted Text Was Deleted When You Exported

Bulleted text may be deleted when you export a slideshow to PowerPoint.
This article has been archived and is no longer updated by Apple.

Symptom

Bulleted text is deleted when you export a slideshow to PowerPoint.

Solution

Because Microsoft PowerPoint and Keynote deal differently with bulleted text, some bulleted text items may be lost when you export a Keynote document to PowerPoint. If you hide the bulleted text on a slide (by deselecting the Show Body checkbox in the Slide Inspector), it will be deleted from the outline when you export.

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Keynote 1.0: Too Much Space Between Lines of Text

Install the Mac OS X 10.2.3 update if the text of slides imported from PowerPoint is too far apart.
This article has been archived and is no longer updated by Apple.

Symptom

There is too much space between lines of text on slides you imported from PowerPoint--even when the line spacing is set to 0. You can't set the line spacing to a negative value.

Solution

Install the Mac OS X 10.2.3 update. It is available from the Software Update pane of System Preferences, or from the Apple Software Downloads website (http://www.apple.com/swupdates/).
Published Date: Feb 18, 2012

Keynote 1.0: Double-Clicking Chart Doesn‘t Do Anything

To edit a chart, click the Chart icon in the toolbar.
This article has been archived and is no longer updated by Apple.

Symptom

Double-clicking a chart doesn't do anything.

Solution

Clicking more than once on a chart selects various subregions of the chart (columns, text, and so forth). To edit a chart, click the Chart icon in the toolbar.
Published Date: Feb 18, 2012

Keynote 1.0: You Can‘t Scroll Slides in "Slides Only" View

Press Page Up and Page Down to scroll through slides in "Slides Only" view.
This article has been archived and is no longer updated by Apple.

Symptom

If you choose Slides Only from the View menu, you cannot move forward or backward between slides. The scroll bar only lets you move up and down on individual slides.

Solution

Press the Page Up and Page Down keys to move from slide to slide.
Published Date: Feb 18, 2012

Keynote 1.0: QuickTime Movie Begins Playing Immediately

QuickTime movies you place in a slide begin playing immediately during a presentation.
This article has been archived and is no longer updated by Apple.

Symptom

QuickTime movies you place in a slide begin playing immediately during a presentation. The User's Guide states that the poster frame displays until "you start the movie." However, you can't start the movie. It simply starts by itself.

Solution

You can delay starting a movie if you make the movie "build in". Assign it a build type and order in the Build Inspector.
Published Date: Feb 18, 2012

A/UX 2.0: "apropos dt"

"apropos dt" yields nine occurrences of the line "Mon Apr 23 xx:xx:xx PDT 1990". This is a minor annoyance, but why does it happen?

This article has been archived and is no longer updated by Apple.

The repeated time-stamped "Mon Apr 23 xx:xx:xx PDT 1990" lines displayed with the "apropos dt" command are caused by the /usr/lib/whatis database file. The "apropos dt" displays any line matched with the "dt" string (not case sensitive) from the /usr/lib/whatis file. The workaround to this minor annoyance is to remove these time stamp lines from the /usr/lib/whatis file.

Published Date: Feb 18, 2012

Final Cut Express 1.0: Arrow Keys in Control Tab Cause Program to Quit

Pressing the arrow keys on while the control tab is active in the Viewer window can cause the program to unexpectedly quit.
This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Express unexpectedly quits.

Solution

Update to the latest version.

Published Date: Feb 18, 2012

Final Cut Express 1.0: Keyframe Settings in Motion Tab Are Not Recognized

In some situations, keyframe settings in the motion tab of the Viewer window are not recognized.
This article has been archived and is no longer updated by Apple.

Symptom

After setting a keyframe in the motion tab of the Viewer window, changes are not visible when playing the clip.

Solution

Update to **Final Cut Express 1.0.1**.
Published Date: Feb 18, 2012

Final Cut Express: How to Capture From Non-Controllable Device

Learn how to capture from non-controllable devices such as analog-to-DV converters in Final Cut Express.
This article has been archived and is no longer updated by Apple.
Final Cut Express versions 1.0.1 and later can capture from non-controllable devices using the following steps:

1. From the **Final Cut Express** menu, choose **Easy Setup**.
2. From the **Setup For** pop-up menu, choose either **DV-NTSC DV Converter** or **DV-PAL DV Converter** depending on whether you're working with NTSC or PAL material.
3. From the **File** menu, choose **Capture**.
4. Cue your footage to at least five seconds before the desired recording point, and press play on the camera or deck.
5. Click the Now button in the Capture area of the Capture window. This button is in the lower-right area.
6. When done recording, press the Esc (Escape) key on your keyboard.

If you are using Final Cut Express 1.0, then **update** to Final Cut Express 1.0.1 or later to obtain this feature.
Published Date: Feb 18, 2012

Final Cut Express 1.0: Imported iMovie 3 Projects Don‘t Include Adjusted Volume

iMovie allows you to adjust the volume of a clip by using a volume slider in the main window. However, after importing an iMovie project whose volume has been adjusted into Final Cut Express, the clip volume remains at its original level.
This article has been archived and is no longer updated by Apple.

Symptom

iMovie 3 projects imported into Final Cut Express use the volume of the clips as originally captured from the camera or video device.

Solution

Use the audio tools in Final Cut Express to adjust the volume to its desired level.
Published Date: Feb 18, 2012

Final Cut Express 1.0: Extracted Audio From iMovie Projects Contains Original Files

Projects imported from iMovie where the audio has been extracted and changed contain audio tracks for both the original audio and the changes to the extracted audio. For example, an iMovie project with extracted audio that has been deleted in iMovie will still have the original audio in Final Cut Express.

This article has been archived and is no longer updated by Apple.

Symptom

Changes to extracted audio in iMovie are not reflected in Final Cut Express

Solution

Make the desired changes to the audio tracks from within Final Cut Express.

Published Date: Feb 18, 2012

Final Cut Express 1.0: "DV - NTSC 32 kHz" Easy Setup Uses 48 kHz Audio

The Easy Setup titled "DV - NTSC 32 kHz" mistakenly uses 48 kHz audio.
This article has been archived and is no longer updated by Apple.

Symptom

32 kHz audio imported using the "DV - NTSC 32 kHz" Easy Setup needs to be converted to 48 kHz during playback

Solution

Update to **Final Cut Express 1.0.1**.
Published Date: Feb 18, 2012

A/UX 3.0: Configuring sendmail (10/95)

I have some problems using mail on TCP/IP with A/UX 3.0.

I can receive messages, but I can't send them. When I use "mailq" to see the messages in the queue, I see: "Deferred: Host Name Lookup Failure" for all messages I tried to send. I haven't modified the mail configuration files. I just wrote the name of the remote host on "/etc/hosts" to use on the mail command. I know the connection works fine on the host supporting A/UX because I can use Telnet, ftp, and so on.

Can you help?

This article has been archived and is no longer updated by Apple.
As shipped, A/UX 3.0 works only with local mail. To get either UUCP or network mail working, you need to reconfigure the /usr/lib/sendmail.cf file. To use the TCP/IP-based (Ethernet) mail, you must have a nameserver running on the network.

NOTE: With A/UX 3.1 these changes are not necessary.

If a fully qualified domain name is the only form of mail address that a user on the computer will generate, modify the file /usr/lib/sendmail.conf/cf/aux.mc so that it contains your Internet domain name. Here is the line to change, as installed from the standard A/UX distribution:

define(DOMAIN, 'DDaux.apple.com')

Change aux.apple.com to your Internet domain name as specified in the /etc/resolv.conf file.

After modifying aux.mc, enter this sequence of commands to make a new sendmail configuration file:

cd /usr/lib/sendmail.conf/cf

make aux.cf

The result of the make command is a file called aux.cf. Move aux.cf to the configuration filename that sendmail uses, by entering this command:

mv aux.cf /usr/lib/sendmail.cf

Now startup sendmail by typing:

/usr/lib/sendmail -bd -q30m

The -bd option causes sendmail to run as a daemon. The -q30m option causes sendmail to process the local mail queue every 30 minutes.

Refer to the A/UX Network System Administration manual chapter on Setting Up Network Mail for further details.

Article Change History:
16 Oct 1995 - Changed title to reflect A/UX 3.0, and added A/UX 3.1.
12 Sep 1994 - Updated for A/UX 3.0.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

Final Cut Express 1.0: Before You Install

This document outlines the system requirements for Final Cut Pro Express 1.0.
This article has been archived and is no longer updated by Apple.

System Requirements

You'll need the following equipment for Final Cut Express 1.0:

One of the following computers:

- Power Macintosh G3/300 megahertz (MHz) or faster with built-in FireWire
- Powerbook G3/400 MHz or faster with built-in FireWire
- iMac 350 MHz or faster with built-in FireWire
- iBook (Dual USB) 500 MHz or faster with built-in FireWire
- eMac
- Xserve

Hardware and video equipment:

- A CD or DVD drive
- 256 MB RAM (384 MB or greater required for G4 Real-Time editing)
- A 6 GB, Audio/Video rated disk driver (20 GB or greater recommended)
- Dual monitor support (optional)
- The correct FireWire or device control cable and any additional cables you may need for connecting your deck or camcorder to your computer
- A DV (digital video) source, such as a camcorder or deck connected to your computer via a FireWire port (FireWire is also referred to as IEEE 1394 or Sony iLink.)

Note: G4 Real-Time editing requires a single or dual processor Power Macintosh G4 500 MHz or faster computer (PowerBook G4 667 MHz or faster recommended for real-time mobile DV editing).

Software:

- Mac OS X 10.2.2 or later
- QuickTime 6.0.2 or later

Published Date: Feb 18, 2012

Final Cut Express 1.0: Late-Breaking News

This document contains important late-breaking information about Final Cut Express.
This article has been archived and is no longer updated by Apple.
This document contains important late-breaking information about Final Cut Express. For the latest information about product updates, tips and techniques, and qualified third-party devices, visit the Final Cut Express website (http://www.apple.com/finalcutexpress/).

iDVD Chapter Marker Limit
iDVD has a chapter marker limit of 36 chapters. If you have assigned more than 36 chapter markers to your movie in Final Cut Express, it will not open in iDVD.

Final Cut Pro Project Files May Not Be Opened by Final Cut Express
Project files created using Final Cut Pro are not supported in Final Cut Express. However, project files created in Final Cut Express may be opened in Final Cut Pro.

Opening an iMovie Project in Final Cut Express
You can open and edit movies created in iMovie with Final Cut Express. To open an iMovie project, follow these steps:

1. In Final Cut Express, choose Open from the File menu.
2. In the dialog that appears, select the iMovie project you want to open. The iMovie project opens in the Browser and contains the sequence and clips as they appeared in the iMovie clips shelf.
3. Double-click the sequence to open the iMovie project in the Timeline.]
4. Render the sequence.

About iMovie DV Files
Imported clips are linked to the original clips captured in iMovie (found in your iMovie projects Media folder). These clips are iMovie DV files and are encoded differently from the QuickTime files Final Cut Express captures.

- DV Stream files do not have timecode tracks, so media imported from iMovie project files cannot be recaptured. All imported source media must be preserved for future reediting.
- Imported iMovie DV files may not play back or Print to Tape in real time without being rendered.

Important: Final Cut Express does not import iMovie sound effects, titles, and transitions. Only applied effects are imported. Importing project files from iMovie 2 or earlier may result in one large clip.
Published Date: Feb 18, 2012

Keynote 1.0: Stops Responding During Slide Show

Keynote 1.0 may stop responding or unexpectedly quit during a slide show presentation.
This article has been archived and is no longer updated by Apple.

Symptom

Keynote stops responding or unexpectedly quits during a slide show presentation.

This issue has been reported most often when using 500 MHz iBook computers with Mac OS X10.2.3, but other models may be affected.

Solution

Update to Mac OS X 10.2.4. Information on how to update to Mac OS X 10.2.4 is available in technical document 107362 "**Mac OS X: About the Mac OS X 10.2.4 Update**."

Published Date: Feb 18, 2012

Final Cut Express 1.0: Unexpectedly Quits While Opening

Final Cut Express can unexpectedly quit when opening if effects windows are open in icon view.
This article has been archived and is no longer updated by Apple.

Symptom

When you try to open Final Cut Express, an alert with this message appears:

> "The application Final Cut Express has unexpectedly quit."

Solution

Delete the Final Cut Express 1.0 Prefs file so that the application can open normally. The file is located at the following path in your home folder: ~/Library/Preferences/Final Cut Express User Data/Final Cut Express 1.0 Prefs

The application should now open and work normally.

To prevent the issue from happening again, update to Final Cut Express 1.0.1.
Published Date: Feb 18, 2012

Final Cut Express and Final Cut Pro: Chapter Markers Require iDVD 3

Chapter markers in material exported from Final Cut Express and Final Cut Pro do not appear in iDVD 2 because iDVD 2 does not have a DVD chapter marker feature. iDVD 3 introduces DVD chapter support and recognizes Final Cut chapter markers.
This article has been archived and is no longer updated by Apple.

Symptom

Chapter markers do not appear in iDVD 2.

Solution

Open the material with iDVD 3.

Published Date: Feb 18, 2012

Keynote 1.0: Imported Slideshows Are Slow on Certain Slides

You may need to group graphic elements before importing them into Keynote.
This article has been archived and is no longer updated by Apple.

Symptom

Some slides from an imported slideshow seem particularly slow when you view them. They contain many graphic elements.

Solution

Group the graphic elements before importing the slideshow in Keynote.
Published Date: Feb 18, 2012

Keynote 1.0: Conflict With Some Versions of "Default Folder" Utility

Earlier versions of the utility "Default Folder" may cause Keynote to unexpectedly quit.
This article has been archived and is no longer updated by Apple.

Symptom

After placing a movie or sound file in a Keynote presentation file, the application unexpectedly quits.

Solution

Check to see if the utility "Default Folder" is present in System Preferences. To resolve the issue, update to a later version of Default Folder, or disable the utility by turning it off from the Default Folder preference pane.

Default Folder is available from the St. Clair Software website (http://www.stclairsw.com/).

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Published Date: Feb 18, 2012

Keynote 1.0: Slides Play Slowly When "Scale slides up to fit monitor" Option Is On

If slides play slowly after you turn on the "Scale slides up to fit monitor" option, decrease the display resolution instead.
This article has been archived and is no longer updated by Apple.

Symptom

Slides play slowly after you turn on the "Scale slides up to fit monitor" option in Keynote Preferences. This seems to particularly affect slides with charts and chart builds.

Solution

1. Open Keynote.
2. Choose Keynote > Preferences.
3. Deselect the "Scale slides up to fit monitor" option.
4. Click Open Display Preferences.
5. Choose a smaller screen resolution.

Published Date: Feb 18, 2012

DVD Studio Pro 1: Does Not Create Images for 80 mm DVD-Video Discs

DVD Studio Pro 1.0 and later does not have a feature to create images for the 80 mm DVD-Video disc format.

This article has been archived and is no longer updated by Apple.

DVD Studio Pro does not have a feature to create images for the 80 mm DVD-Video disc format. DVD Studio Pro outputs images suitable for 120 mm discs only. Many consumer DVD players cannot properly play 80 mm DVDs unless the size is explicitly set in the authoring software.

Published Date: Feb 18, 2012

A/UX: Frequently Asked Questions (11/95)

This article contains frequently asked questions (FAQ) about A/UX?

This article has been archived and is no longer updated by Apple.
Question: Do customers get the source code for A/UX and X Windows?

Answer: No, the source code is not included in the normal distribution of A/UX and X Windows System. However, it will be available from APDA on special request when released. As far as we know, the source for the current release of A/UX 3.0 has not been made available to APDA. The information for source won't be listed on the APDA catalog since it is a special request item and it requires lots of "License Agreement Signatures".

Question: Does the TCP/IP implementation follow "Host requirements (RFC 1122 and 1123)"?

Answer: According to A/UX Network Engineering, A/UX 3.0 TCP/IP implementation does follow the RFC 1122 and RFC 1123 (Host requirements).

Question: Does the NFS implementation have the same functionality as SunOS 4?

Answer: The NFS implementation under A/UX runs the same NFS version (protocol release 2.0 and implementation source 3.2) as SunOS 4.0.x does. However, the "mount daemon" feature (which is supported in SunOS 4.0.x) is not included.

Question: Can you give quota restrictions on users over NFS?

Answer: No disk quota on users is implemented under the A/UX Berkeley file system.

Question: What backup system do you recommend?

Answer: A/UX supports Apple Tape Backup 40SC. You can also use Dantz
Retrospect and any backup media they support.

Question: Is the X Window System 11.3 or 11.4 (I have read that some parts are 11.4)?

Answer: The current release of X Window System for A/UX 3.0 is based on 11R4.

Question: Do the GNU products run on A/UX (GNU-EMACs, gcc, g++)?

Answer: We have heard that some people on the network have run GNU products on A/UX.

Question: Do the "cdb" and "adb" debugging programs have the same functionality as "dbx"?

Answer: "cdb" and "xdb" are third-party products. We haven't tried them nor compared their functionality. However, we know that "cdb" is an interactive, source-level debugger for C and assembly-language programs, and it supports programs generated from the C compiler included with A/UXor from third-party compilers that generate Common Object File format symbol tables.

Question: Is the C implementation compliant with ANSI X3J13?

Answer: The A/UX C compiler is not compliant with ANSI X3J13.

Question: Is there a C++ (AT&T Cfront 2.0)?

Answer: Try Oasys's C++.

Question: Is there a Pascal compiler (compliant with the ISO-standard)?

Answer: This is not supported by Apple. Look for third-party solutions.

Question: Is there a Cross assembler for MC68020 systems?

Answer: This is not supported by Apple. Look for third-party solutions.

Question: Is the ADA cross compiler compliant with ANSI-83?

Answer: This is not supported by Apple. Look for third-party solutions.

Question: Is there a system for delaying execution of processes to a later time (some sort of "batch system")?

Answer: The "cron" or "at" under A/UX allows you to schedule tasks for later time.

Question: Are there tools for distributed programming (similar to SUN ONC or Apollo NCA)?

Answer: This is not supported by Apple. Look for third-party solutions.

Article Change History:
28 Nov 1995 - Updated format and added keyword.
02 Sep 1994 - Reviewed. Changed permission to Everyone.

Support Information Services
Published Date: Feb 18, 2012

A/UX 2.0: Troubleshooting AppleShare File Server Access Problem

I have A/UX 2.0 running on a Macintosh IIx with 5MB RAM and an HD160 SC. I can access the LaserWriters on the network easily from the Chooser and CommandShell, but I'm having a problem accessing the file servers. I am using a LocalTalk-only connection. The file servers appear in the services window on the right side of the Chooser window just as they do while I'm in Macintosh OS, and I can mount those servers while in Macintosh OS.

I noticed that the bottom right area of the Chooser window did not have the normal text/buttons included--"AppleTalk; ON; OFF". When I try to mount the file servers while in A/UX, the system shows the watch cursor and gives this alert message: "No response from server. Please try again."

Can you help?

This article has been archived and is no longer updated by Apple.

Unfortunately, we can't reproduce this symptom. We are running AppleTalk via a LocalTalk-only connection without any problem. Both printing and AppleShare services work properly.

It sounds strange that you can access the LaserWriter but not the AppleShare server on the AppleTalk network.

When an AppleShare server is selected, the bottom right area of the Chooser window should show an "OK" button and a "User Name" input dialog box. We don't see the "AppleTalk; ON; OFF" text in the window.

Here are some areas to check:

- Is the server you tried to mount up and running? Did you get the same "No response from server ..." message when you select another server?

- Is the Apple Internet Router running AppleTalk Phase 2?

- Make sure that the default port for AppleTalk via LocalTalk is the printer port (tty1), which must be set with the getty disabled.

- Make sure that the "interface = localtalk0" line in /etc/appletalkrc is set.

- When AppleTalk is shutdown via "appleTalk -d" and you try to bring it up again, the Mac 32 environment needs to be run again to make AppleTalk effective again. This can be done using the "Logout" and "mac32; screenrestore" sequences or by restarting the system.

- Use "appleTalk -s" to see the AppleTalk status.

Published Date: Feb 18, 2012

iMovie 3 stops responding during effect preview

In Mac OS X 10.1.5, choosing a menu item while iMovie previews an effect, transition, or title may cause the application to stop responding or unexpectedly quit.
This article has been archived and is no longer updated by Apple.
This issue does not occur with Mac OS X 10.2 or later.

Tip: Wait for the preview to finish before choosing a menu item.
Published Date: Feb 18, 2012

iMovie 3: How to Switch From NTSC to PAL

iMovie initially set all projects to PAL or NTSC video depending on the type of camcorder or device you connect to the computer, or the format of the first video you import.
This article has been archived and is no longer updated by Apple.
To set new projects to be NTSC or PAL, follow these steps:

1. Update to iMovie 3.0.3 or later. It is available from the iMovie website (http://www.apple.com/imovie/). iMovie 4 is available as part of iLife (http://www.apple.com/ilife).
2. Open iMovie.
3. From the **iMovie** menu, choose **Preferences**.
4. Change "New Projects are:" to either NTSC or PAL.

Published Date: Feb 18, 2012

iMovie 3: How to Export to iDVD 2

This document explains how to export footage from iMovie 3 to iDVD 2.
This article has been archived and is no longer updated by Apple.
Follow these steps to export iMovie 3 projects to iDVD 2:

1. From the **File** menu, choose **Export**.
2. From the **Export** pop-up menu, choose "**To QuickTime**".
3. From the **Formats** pop-up menu, choose "**Full Quality DV**".
4. Click Export.
5. Type a name for the exported movie and click Save.

Place the exported movie file into your iDVD 2 project.

Note: Chapter markers are not a feature of iDVD 2. To export chapter markers from iMovie 3 to an iDVD project, use iDVD 3.
Published Date: Feb 18, 2012

Keynote 1.0: Themes Are Not Found if Installed on UFS Format Disk

If your startup disk is formatted with the UNIX File System (UFS), Keynote's themes are not available.
This article has been archived and is no longer updated by Apple.

Symptom

When you open Keynote, there are no available themes.

Solution

Use Keynote on a startup disk formatted using the Mac OS Extended format (sometimes called HFS Plus). Keynote's themes are not available if your startup disk uses the UNIX File System (UFS).

Published Date: Feb 18, 2012

MacX and xgif: Why Color Table Change Causes Slow Display

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

Why is MacX so slow when a client changes the color table? The change of a single table entry seems to cause a substantial delay in the displayed pixel and is accompanied by some strange color changes in the current table (for example, color flashes).

What is the problem? Is there a way around this so that the display update is as clean and fast as the stand-alone X11 server?

This article has been archived and is no longer updated by Apple.
The problem that you are experiencing is most likely due to the way the X client application uses the Color Lookup Map. We have seen a difference between the two versions of the xgif program. The old version of xgif (which uses the default colormap) causes the most slowness. The new version (which uses the colormap routine in the Xlib) behaves much faster. Here are examples of C code used by the two versions of xgif:

Old version:
```
#define DefaultColormap(pty, scr) (((dpy)->screens[(scr)]).cmap)
theCmap = DefaultColormap(theDisp, theScreen);
```

New version:
```
theCmap = XCreateColormap(theDisp, rootW, theVisual, AllocNone);
```

We also experienced similar effects (color flashing and/or changing) on the Native X11 server.

Published Date: Feb 18, 2012

Final Cut Express 1.0.1: Device Control Settings Dialog Appears In Localized Versions

When you first open Final Cut Express, an option to choose a device preset appears. In the localized (Japanese, French, German) versions of the application, if you choose the DV Converter preset then you also see an option to select Device Control Settings. If the incorrect device control setting is chosen, the program will not be able to capture from a DV converter.
This article has been archived and is no longer updated by Apple.

Symptom

- An unexpected dialog appears when you first open a localized version of Final Cut Express.

  or
- You are unable to capture from a DV converter device with a localized version of Final Cut Express.

Solution

Be sure to choose Non-Controllable Device in the Device Control Settings window. See Figure 1.

Figure 1 Japanese version of the Device Control Settings window

Follow these steps If you already selected a different setting and cannot capture from a DV converter:

1. If the application is open, choose Final Cut Express > Quit.
2. Click the Finder icon in the Dock.
3. Choose Go > "Go to Folder".
4. Type: ~/Library/Preferences/
5. Click Go.
6. Drag the folder named "Final Cut Express User Data" to the Trash.
7. Open Final Cut Express.
8. Choose the desired preset, and if asked, choose Non-Controllable Device from the pop-up menu. If you see a dialog stating "Unable to locate the external video device...", click "Continue" to proceed.

Published Date: Feb 18, 2012

iPod For Windows 1.2.6: Only Apple Logo Appears When Restoring Over iPod for Macintosh

Your iPod may "freeze" only displaying an Apple logo if it is an early iPod for Macintosh model and you restore it using iPod for Windows 1.2.6 software. This document explains how to return your iPod to working condition.
This article has been archived and is no longer updated by Apple.

Symptom

Your iPod for Macintosh "freezes" only displaying an Apple logo after you restore it using iPod for Windows 1.2.6 software.

Note: Reformatting your iPod for Macintosh to work with Windows is an unsupported operation.

Solution

1. Reset your iPod and force it into FireWire mode. See technical document 61584, "**iPod: Only Apple Logo Appears When You Turn on iPod**" for instructions.
2. Restore iPod using the software that was included with it (iPod software 1.2.2 or earlier).
3. Reset iPod. See technical document 61705, "**iPod: How to Reset**" for steps to reset your iPod. Note that iPod will continue to appear not to work until it restarts.
4. Update to iPod 1.2.6 for Macintosh.

Published Date: Feb 18, 2012

iPod 2.0: MusicMatch Doesn‘t Open When You Connect iPod to Your Computer

MusicMatch does not open automatically when you connect iPod to your PC. iPod does appear under Attached Portable Devices in MusicMatch when you open MusicMatch manually.
This article has been archived and is no longer updated by Apple.

Symptom

MusicMatch does not open automatically when you connect iPod to your PC. iPod does appear under Attached Portable Devices in MusicMatch when you open MusicMatch manually.

Solution

1. Connect iPod to the computer.
2. Choose iPod Manager in the Start Menu.
3. Click the Change Home Application button.
4. Click the disclosure triangle in the Select Home Application window.
5. Choose MusicMatch JukeBox from the list.
6. Click OK.
7. Close iPod Manager.

Published Date: Feb 18, 2012

TA44762_Super_Serial_Card_Manual_Errata__(TIL00619).pdf

Super Serial Card: Manual Errata (12/96)

Listed below are corrections to the Super Serial Card Owner's manual.

This article has been archived and is no longer updated by Apple.

Page 5

The second paragraph under "Preparing the SSC for Printer Mode" should read:

If the triangle on the jumper is pointing toward the word "Modem", remove the block, using an IC Extractor if necessary, then carefully reinsert it so the triangle is pointing towards the word "Terminal"."

Page 13

The example for Applesoft BASIC should read:

Applesoft BASIC: Print CHR$(9); "command"

Page 21

The second paragraph under "Preparing the SSC for Communication Mode" should read:

If the triangle on the jumper is pointing down toward the word "Terminal", remove the block, using an IC Extractor if necessary, then carefully reinsert it so the triangle is pointing toward the word "Modem"."

Page 36

The last two lines of the paragraph titled "A Terminal Mode Example" should read:

"...BASIC program to an Applesoft program, substitute CHR$(4) for D$, and CHR$(1) for A$. Leave out program lines 40 and 42."

Page 54

In the section that starts "$C08A+s0 Command", bit 1 of the Command Register should be set to 0 to enable the receiver to cause interrupts.

Article Change History:
16 Dec 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Apple GS/OS Error Messages: Where to Find Explanations

I am trying to copy files from an Apple IIGS to an Apple HD40 SC. The Apple IIGS consistently returns the error message 8020. I cannot find this error message anywhere.

1) What is the error message?
2) Where can I find a definitive article on GS/OS error messages?
This article has been archived and is no longer updated by Apple.
1) The error description is "invalid request." The programmer's constant is "DrvrBadReq". Since the error number is 8020 instead of 0020, the error is coming from the Finder, not directly from GS/OS. An error code directly from GS/OS would be in the format of "00xx". An error code passing through the Finder has the high bit set and produces a format of "80xx". Where "xx" is the actual error code.

2) Both Volume 1 and Volume 2 of the "GS/OS Reference" has an Appendix E containing the GS/OS error codes and the message related to that code. The individual system call description indicates which GS/OS errors that call may return. System Loader error messages are given within the System Loader call description section.
Published Date: Feb 18, 2012

iPod for Windows 2.0: Basic Troubleshooting and How to Avoid Issues

This document provides basic troubleshooting steps and tips and explains how to avoid issues.
This article has been archived and is no longer updated by Apple.

How to Avoid Issues

- Install the latest updates and service packs from Microsoft.
- Watch iPod's screen. The disk activity indicator (looks like two arrow spinning in a circle) appears in the upper left corner of the screen. Before doing anything on the iPod (viewing the contents in Explorer, disconnecting, and so forth) wait for the arrows to stop spinning.
- In the installer, make sure you follow the instructions that appear on the screen. The exception is if Windows interrupts the installer and asks you to restart your computer before the iPod installer has finished.
- Setting up iPod for the first time can take some time. Be patient. Windows ME performance is not as good as with Windows XP, and can take up to 4 minutes to display the safe to disconnect message during the Configuration step.
- Before you restart your computer, remove iPod from its cradle, or eject it from the file system. See technical document 61724, "**iPod for Windows: How to Eject and Disconnect iPod From Your Computer**".

Basic Troubleshooting

When you run into an issue that you did not expect with the iPod connected to your Windows PC, you can generally resolve it by doing the following:

1. Check to make sure the cables are securely connected to the iPod and to your PC.
2. Wait until disk activity stops on your iPod. Click the disk eject button in the system tray. It has a disk icon with a green arrow pointing to the left on top of it. Select "Stop IEEE 1394 Device". Wait for the "Safe To Remove Hardware Device" message to appear and click OK. Unplug iPod then reconnect it.
3. Repeat the last step you performed on your PC before you encountered the behavior you did not expect.
4. Quit MUSICMATCH Jukebox and reopen it.
5. Restart your PC.

If you still experience issues, and the basic troubleshooting in the iPod Users Guide does not help, try restoring iPod's software.

For advanced troubleshooting steps, see technical document 61903, "**iPod for Windows 2.0: Advanced Troubleshooting**".
Published Date: Feb 18, 2012

iPod for Windows 2.0 with MusicMatch: Advanced Troubleshooting

This document outlines advanced troubleshooting steps for iPod for Windows 2.0. For basic troubleshooting steps, see technical document 61902, "**iPod for Windows 2.0: Basic Troubleshooting and How to Avoid Issues**".
This article has been archived and is no longer updated by Apple.
As shipped from the factory, iPod's hard disk is formatted as a Mac OS Extended format (HFS Plus) volume. When you connect iPod to a PC, iPod for Windows 2.0 software reformats the disk using the Windows (FAT32) format. If iPod does not appear in MusicMatch the first time you connect it after installing the software, the disk may be still formatted as a Mac OS Extended disk. You can check the disk format in the About Screen in the Settings menu. If it does not say "Windows" then reinstall the iPod software and check again to make sure it formatted the disk using the Windows (FAT32) format.

If iPod still does not appear in MusicMatch, close MusicMatch and reopen it. If iPod still does not appear, use the Windows Safe Remove feature to remove iPod, wait until disk activity stops on iPod, then disconnect and reconnect iPod.

If iPod does appear in MusicMatch, but its screen says "Do not disconnect," open iPod Manager and make sure MusicMatch Jukebox is the Home Application. If it is not, click "Change Home Application," and select "MusicMatch" from the dropdown box. Stop iPod by clicking on the disk eject icon in the system tray. (It has a disk icon with a green arrow pointing to the left on top of it.) Select "Stop IEEE 1394 Device". Wait for the "Safe To Remove Hardware Device" message to appear and click OK. Unplug iPod then reconnect it.

If iPod does appear in MusicMatch, but you see menus on iPod's screen, make sure disk mode is turned on. Click on iPod Manager in the system tray, or open it by choosing Start Menu > Programs > iPod > iPod Manager. Make sure the "Enable disk Mode" option is selected, then disconnect and reconnect iPod.

If your iPod does not appear in MusicMatch, check to make sure you can view the contents of iPod's hard disk in Windows Explorer. If you can't, reset iPod. See technical document 61705, "**iPod: How to Reset**" for instructions. If you've made sure iPod's disk is formatted for Windows (see the first step in this document), and you've made sure you have the latest updates from Microsoft installed on your computer, also make sure iPod appears in Device Manager and is working properly. (There no yellow exclamation point or red X over its icon.) If it does not, reconnect iPod, open the iPod Updater application, and follow the instructions to restore iPod to factory settings.
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iPod for Windows: Delay While MusicMatch Connects to iPod

If your iPod is full, there may be a delay of a few minutes while MusicMatch connects to iPod.
This article has been archived and is no longer updated by Apple.

Symptom

iPod doesn't appear in MusicMatch until several minutes after you connect it to your computer.

This may happen more often when iPod's hard disk is full.

Solution

Wait for MusicMatch to finish scanning iPod's hard disk. This could take about 10 minutes if iPod's disk is full.

Published Date: Feb 18, 2012

How to uninstall MUSICMATCH Jukebox

Follow these steps to uninstall MUSICMATCH Jukebox, part of iPod Software 2.0 for Windows.
This article has been archived and is no longer updated by Apple.

1. In Control Panels, select "Add or Remove Programs."
2. Select MUSICMATCH Jukebox in the list of currently installed programs, and click Change/Remove.

3. Click Yes to confirm you wish to completely remove MUSICMATCH Jukebox.

4. The program uninstalls MUSICMATCH Jukebox.
5. Click OK.

Related documents

61930: Uninstalling iPod Software 2.0 for Windows
Published Date: Feb 18, 2012

Apple IIGS: Does Not Output Serial Data to Printer Problem/Cure

Problem: Printer does not print when properly configured with an Apple IIGS and connected to the built-in serial port.

This article has been archived and is no longer updated by Apple.

Before you start:

- Familiarize yourself with Apple IIGS technical procedures

- Perform diagnostics per technical procedures

Perform the following in the event that diagnostics did not yield a serial port failure:

Cure 1: A problem might exist with printer switch settings or Apple IIGS Control Panel settings.

Action: Check DIP switch settings on printer and built-in control settings on the computer (see note 1). Reconfigure switches and/or control settings in the computer. Test the system by printing a file to the printer.

Cure 2: A problem might exist with the serial port circuitry that is not being detected by performing diagnostics.

Action: Remove and replace the logic board with a known-good exchange module. Test by printing a file to the printer.

Note 1: The Apple IIGS Control Panel settings can be reset to their defaults by holding down the Ctrl - Command (Open Apple) keys and then pressing the reset key. When the menu appears, select option #2, which says, "Set system standards and 60Hz". The system then automatically re-boots.

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iPod for Windows: How to Update MUSICMATCH Jukebox

This document explains how to upgrade the MUSICMATCH Jukebox software that was designed to work with iPod.
This article has been archived and is no longer updated by Apple.
MUSICMATCH publishes an application called MUSICMATCH Jukebox.

A version of MUSICMATCH Jukebox that works with iPod is included with some models of iPod, such as iPod for Windows, and the iPod (with Dock Connector)
models.

Not all versions of the MUSICMATCH Jukebox software work with iPod.

Only upgrade MUSICMATCH Jukebox using the program. Do not download the latest version from MUSICMATCH's website. It may not work with iPod.

Follow these steps to check for an update to the MUSICMATCH Jukebox software installed from the iPod CD:

1. Connect to the Internet.
2. Open MUSICMATCH Jukebox
3. Choose Options > Update Software.
4. If an update to the version of MUSICMATCH Jukebox that works with iPod is available, you will see instructions on how to download the latest version that is compatible with iPod.

Important: The version of the MUSICMATCH Jukebox software that works with iPod may not always be the same version of the MUSICMATCH Jukebox that you can download from MUSICMATCH's website.

Make sure iPod is using the latest version of the iPod Software that is compatible with your iPod model. See these technical documents:

60944, "**iPod: How to Update**"
61907 "**Identifying different iPod models**"

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Installing MUSICMATCH Jukebox Software

The MUSICMATCH Jukebox installer automatically opens after Apple's iPod Software installer is finished. Follow these steps to install and set up MUSICMATCH Jukebox.
This article has been archived and is no longer updated by Apple.

Installing Software

1. After the iPod for Windows installer is finished, the MUSICMATCH Jukebox installer open about 30 seconds later.

2. When the Welcome window appears, read the text, and click Next:

3. When the Software License Agreement window appears, read the text, and click Yes if you agree:

4. Fill out the User Registration information and click Next:

You must complete the Year of Birth and E-mail fields to continue. If you click Next and have not filled out these fields, a window appears prompting you to go back and fill out the information:

5. When the Personal Music Recommendations window appears, read the text and select the "Yes (recommended)" or "No" option, and click Next:

If you click Next without selecting "Yes (recommended)" or "No", a dialog appears requesting you to make a selection:

6. When the Installation Options window appears, select the type of installation you want, then click Next:

If you select Express (Recommended), the Copying MUSICMATCH Jukebox Files progress bar appears:

For about a minute, a few more progress windows appear while MUSICMATCH Jukebox continues its installation.

7. If you select Custom, the following dialog boxes appear (otherwise skip to Step 9):
    - You can specify where the software is installed by clicking the Browse button:

Unlike the iPod for Windows software, the MUSICMATCH Jukebox software works properly if installed on a hard disk volume other than C.

    - The Music folder destination can be specified:

- The radio cache can be turned on or off:

- The program icons location can be selected:

- Shortcut locations can be selected:

- File type associations (to MUSICMATCH Jukebox) can be selected:

8. After clicking Next, MUSICMATCH Jukebox begins the installation:

For about a minute, a few more progress windows appear while MUSICMATCH Jukebox continues its installation.

9. Next, the Welcome to MUSICMATCH iPod Plug-in window appears. Click Next:

10. Click Yes to the license agreement if you agree:

11. The MUSICMATCH Jukebox upgrade key is located on the cover sleeve of the installation CD. Enter the key when prompted, then click OK:

Entering the upgrade key allows you to install the MUSICMATCH Jukebox Plus version of MUSICMATCH Jukebox. The Plus version has many extra features not available in the MUSICMATCH Jukebox Basic version (such as CD burning, label making, and so forth.). For a complete list of MUSICMATCH Jukebox Plus features, see to the MUSICMATCH homepage. Both the Basic version and the Plus version have the same iPod support feature set.

12. If the key was entered correctly, the following dialog box appears:

If you selected Cancel or do not type in the correct upgrade key, the Basic version of MUSICMATCH Jukebox is installed. Either version of the MUSICMATCH Jukebox software allows you to manage iPod. The additional features in the Plus version have no direct impact on managing iPod with MUSICMATCH Jukebox.
If the CD sleeve is not available during installation, the upgrade key can be entered later from the MUSICMATCH Jukebox application.

13. As the installation finishes, an alert appears:

14. When the InstallShield Wizard Complete window appears, select one of the two options, then click Finish. Restart the computer after installation:

15. After restarting, you can open MUSICMATCH Jukebox. When it is first opened, these two windows appear:

At this point, you can use MUSICMATCH Jukebox to manage music files. If you are unfamiliar with MUSICMATCH Jukebox's features, use the Help menu in the MUSICMATCH Jukebox window, or go to the Learning More section of the MUSICMATCH website.

Related documents

61817: Installing iPod Software 2.0 for Windows
Published Date: Feb 18, 2012

iPod 2.0.1: Poor Sound Quality From the Dock‘s Line Out Port

If the USB 2.0 cable is connected to the dock, any compressed music files (such as .mp3, or .wav) may have poor sound quality if you listen to them using the dock's line out port.
This article has been archived and is no longer updated by Apple.

Symptom

The sound quality from the dock's line out port is poor.

This happens when the dock is connected to your computer using the Dock Connector to USB 2.0 + FireWire cable, and the equalizer (EQ) is turned on.

Solution

Use one of these solutions:

- Turn off the equalizer.
- Take iPod out of the dock.
- Disconnect the Dock Connector to USB 2.0 + FireWire cable from the computer. It's OK to keep the FireWire part of the cable plugged into the AC power adapter.

Published Date: Feb 18, 2012

800K Eject INIT: Not Needed with 400K Drives

Does the Apple 800K Eject INIT "park" 400K drives?

This article has been archived and is no longer updated by Apple.
The 800K Eject INIT does not need to "park" the head of a 400K drive. The problem this patch is intended to fix occurs only with the upper head assembly when the disk shutter catches on the upper head as the disk lifts and ejects. Because the 400K drive has only a lower head assembly, there is no danger, and it isn't necessary to park its head. This also holds true for the patch included in System Software 6.0.4 and later Systems. The heads of 400K drives are not parked.

Published Date: Feb 18, 2012

A/UX 2.0: E-Machines ROM Upgrade for T19/24 Card

What do I need to do to make my E-Machines T19/24 card work with A/UX 2.0?

This article has been archived and is no longer updated by Apple.

E-Machines reports that they have a ROM upgrade for their T19/24 card that makes it work with A/UX 2.0.

Published Date: Feb 18, 2012

HyperSpeller XCMD Available for HyperCard

Do you know of any spell checkers that work with HyperCard?

This article has been archived and is no longer updated by Apple.
HyperSpeller by Foundation Publishing is a utility that adds spell-checking and search/replace capabilities to HyperCard. HyperSpeller is implemented as two external commands (XCMDs): SpellCheck and FindChange. An installer application places the externals in the Home stack. After installation, SpellCheck and FindChange commands can be issued from HyperCard's message box or a HyperTalk script. The HyperSpeller dictionary file is approximately 164K. It must reside in the System Folder or the same folder as HyperCard.

The user can specify the checking range. For example, "SpellCheck" for the entire stack, "SpellCheck 30" for card 30 on, and "SpellCheck 12,12" for card 12 only. The dialog box clearly states where the suspect word is found. The user can then ask for suggestions, click on the Learn button, or Skip the word to ignore it. A small text box in the dialog shows a limited amount of the context in which the suspect word is found. For users with small monitors, the spelling dialog box can be "zoomed" smaller or larger, allowing the HyperCard card to be more visible.

The FindChange feature gives search and replace capabilities to HyperCard. The Find/Change dialog allows the user to specify "whole word", "match case", "change all", and "Change, then Find". As with the SpellCheck dialog, there is a zoom box that makes the dialog smaller or larger.

For more details, search the Technical Info library under "Foundation Publishing".

Published Date: Feb 18, 2012

LW IINTX ROM Upgrade: Wrong Font Utility Shipped

My LaserWriter IINTX ROM Upgrade Kits has version 1.0 of the LaserWriter Font Utility. Shouldn't I have gotten version 2.0?

This article has been archived and is no longer updated by Apple.
Many of the LaserWriter IINTX ROM Upgrade Kits have been shipped with version 1.0 of the LaserWriter Font Utility. They should have included version 2.0. This is a known problem in the build process. Currently shipping units should have version 2.0. However, if you received the wrong version, version 2.0 is available on AppleLink in the Apple Software Updates board. Use this path:

Apple Software Updates
Macintosh
Peripheral System Software
Apple LaserWriters
Personal LaserWriter NT
Installation Disk
Other

Published Date: Feb 18, 2012

Data Access Language (DAL): Server Compatibility

Are versions 1.1 and 1.2 of the CL/1 Server for VMS compatible with AppleTalk for VMS 3.0?
This article has been archived and is no longer updated by Apple.
The existing versions of the CL/1 Server for VMS are 1.0 and 1.1, which are compatible only with AT VMS 2.0, 2.0.5, 2.0.6, and 2.1; not 3.0.

The Data Access Language Server for VMS version 1.2 is shipping as part of DEC PATHWORKS (formerly LanWORKS) for Macintosh, which includes AppleTalk for VMS 3.0. If purchased separately, DAL 1.2 is supported under ATVMS 3.0 OR any one of 2.0, 2.0.5, and 2.0.6 (but not 2.1).

Note: The DAL Client requires a DAL Server. It will not connect successfully to an existing CL/1 Server, and a CL/1 Client will not work with a DAL Server. DAL Server/Client 1.2 will replace existing CL/1 Server/Client 1.1. The released version of PATHWORKS for Macintosh includes DAL Server/Client 1.2.

PATHWORKS for Macintosh (including AppleTalk for VMS 3.0) has been shipping since early autumn 1990 as has DAL Server/Client 1.2.
Published Date: Feb 18, 2012

TA44777_MacintoshtoTandem_Connectivity_Distributed_Sessions_(TIL06199).pdf

Macintosh-to-Tandem Connectivity: Distributed Sessions

I need a gateway product to give networked Macintosh computers access to Tandem computers. Essentially, I am looking for a NetWay 2000-type product for Tandem computers.
This article has been archived and is no longer updated by Apple.
For terminal emulation, TCP/IP and Telnet are available from Tandem.
MacMenlo, from Menlo Business Systems, won't work over TCP/IP, but you can do TTY with TCP/Connect, from Intercon, or even with NCSA's Telnet.

For message passing, we suggest, in addition to TCP/IP, a MacX25 Server. This works relatively well.

Published Date: Feb 18, 2012

MousePaint: Double High-Res Graphics Not Supported

Does MousePaint support double high-res graphics?
This article has been archived and is no longer updated by Apple.
MousePaint does NOT support the use or printing of Double Hi-Res graphics.
Published Date: Feb 18, 2012

UPIC: Interfacing the Epson MX-80 Printer

This article has been archived and is no longer updated by Apple.

* Table 2-2, which was to appear on page 10 of the Universal Parallel Interface Card manual, was left out. Refer to the identical table 4-2 on page 19.

* The Epson printer does not work properly with an Apple II parallel interface cable. Wire the cable as specified in table 2-1 on page 8.

* The UPIC switch must be set to Auto.

* The SOS driver configuration block must be set to the values in table 4-2 on page 19 for the Epson MX-80.

Published Date: Feb 18, 2012

Macintosh-to-Sun/UNIX File Transfer

We have a high-end Crossfield Studio color scanner/separation system that I am expanding to provide for a Macintosh front-end. We recommended a Macintosh IIfx with an Ethernet NuBus card and K-AShare file server software to communicate with a Sun SPARCstation (K-AShare is AFP-compatible file server software for UNIX hosts and is sold by Mt. Xinu.)

The reason for the Sun is that the RIP software (StudioLink 2.0) runs only in a UNIX environment. The purpose of the RIP software is to translate the PostScript files from the Macintosh into a native bitmap file that the Crossfield Studio system can understand.

The proposed functionality of the Macintosh-to-Sun link is to provide file transfer to and from the Sun. Once a file is transferred to the Sun, it's archived on a hard disk for eventual processing by the Crossfield system. The Crossfield system is configured around a PDP mini-computer running RSX 11M Version 4.2 operating system. For tying the Sun and PDP systems together, both Digital and Crossfield recommended using DECnet over Ethernet.

Should we have DECnet connecting the Macintosh to the Sun? Is the use of K-AShare an appropriate choice, or is there a better way to connect a Macintosh to a UNIX machine for file transfer capability?

This article has been archived and is no longer updated by Apple.
You should be able to do file transfer between the Macintosh and the Sun using either TCP/IP, DECnet, or the K-Ashare product.

The native networking protocol on the Sun platform is TCP/IP, so you can run MacTCP to communicate between the Macintosh and the Sun.

There are products like TSSnet that allow DECnet on the Macintosh. Sun does provide DECnet on their machines, but we believe you have to pay extra for it.

There should be no compatibility problems for the Sun running all these protocols, because they can share the same Ethernet.

More importantly, there are two things you should take into consideration:

1) Select the product that provides the easiest way for the Macintosh users to transfer files to the Sun. With an AFP-compatible file server, the Macintosh users can just drag the file to the server icon. Using TCP/IP or DECnet, they would need to learn FTP or DECnet COPY, which are not too complicated, but less Macintosh-like.

2) Once the file is transferred to the Sun, can the StudioLink/Crossfield system process the file without any problems? Remember a Macintosh file has a resource fork and a data fork. A minicomputer-based AFP-compatible server stores these as two separate files. Some tests should be done to ensure that the data fork portion file can be processed by the StudioLink/Crossfield system. Also, test to ensure that, if the file needs to be accessed by the Macintosh users afterwards, this can be done.

Published Date: Feb 18, 2012

Data Access Language (DAL): Developer Issues

We have some questions about the use of Data Access Language (DAL).

1) DAL can be ordered from APDA. Does this mean that there will be considerable development work needed when using DAL in the scheme of database access?

2) Using ClearAccess, how much programming and level of knowledge is needed to access Rdb on the VAX system? What utilities or "hooks" are available from DAL that will let me access Rdb via ClearAccess? Do I need to know DAL well before I can use ClearAccess to access the Rdb database?

3) Can our resellers just sell DAL like they do with other applications (like EtherTalk NB Cards, or TokenTalk NB Cards, and so on)? From what I understand, it seems that DAL is a useful tool only if the person using DAL really understands database systems and using DAL utilities to extract and update the information.

4) This pertains to using DAL. If I have a 4th Dimension flat file, and I want to send it to the Rdb database to have it stored as an Rdb record, what must I do and what is the prerequisite (knowledge or software/hardware requirements) before I can do this transfer? Do I, for example, need to convert this 4th Dimension file into an Rdb-readable format for it to update the Rdb record?
This article has been archived and is no longer updated by Apple.
1) Yes, Data Access Language is a development language, and development work is involved to link desktop applications to data processing systems on mainframes and minis. However, for commercial and custom developers, Data Access Language lowers barriers to entry for them. Thus, products and custom solutions can be developed faster/easier because less detailed technical knowledge is required.

Data Access Language is often described as a standard connectivity language that links desktop applications to host data. It is more than just a language; it is really a group of carefully inter-related elements. The elements are the Language, the API, and the Development Aids. Often, the user wants access to different systems without having to worry about protocols, systems, or anything else. Relational databases are becoming more popular because of their ease of use, ease of administration, and application independence. SQL language emerges as a convention for data access language adopted by relational database vendors. SQL, however, is still not a standard. DAL lets software developers create desktop applications with seamless connectivity to DP data and applications without leaving the desktop world. It handles physical network specifics, insulates the desktop application from the operating system, RDBMS, and SQL specifics.

2) The ClearAccess DAL interface provides a series of dialog boxes that let users build queries by pointing and clicking. Users do not need familiarity with all the details of DAL or SQL. End users without knowledge of programming and SQL can access the databases via the dialog boxes, which build the SQL statements for them. The amount of knowledge required really depends on how complex the database access is going to be. A background in relational databases would also help.

3) Again, it really depends on the solutions. For simple ad-hoc queries and databases updates, DAL with a HyperCard or ClearAccess interface will let end users do the job without a lot of training. For complex, customized business applications that need to take advantage of the Macintosh interface, some serious planning and design should be done. Large companies with an in-house MIS programming staff should be able to do this task.

4) You can tell 4th Dimension to export this file with certain delimiters, transfer the file to the VAX, and import it into Rdb. This can be done without using DAL. You must be familiar with the export capabilities of 4th Dimension, know how to transfer the file to the VAX, and know how to import it into VAX/Rdb.

If this is going to be done by end users on a routine basis, please note that DAL provides 4th Dimension External procedures that let 4th Dimension applications act like CL/1 clients and create distributed applications on the Macintosh. You must know how to program 4th Dimension External procedures to export the data to the DAL server on the VAX host. You should also know how to install the DAL software on both the VAX and the Macintosh and the standard network connection between the Macintosh and VAX host.
Published Date: Feb 18, 2012

AppleTalk Phase 2: SNAP Encapsulation with OUI=0

My problem is that the AppleTalk Phase 2 ARP uses a SNAP encapsulation with an OUI=0 ("Organizational Unique Identifier"). Because Translating FDDI/Ethernet bridges use this OUI to pass Ethernet 2 packets to FDDI and back, an AppleTalk ARP gets converted to an Ethernet 2 packet when passed from FDDI to Ethernet. This packet format is not accepted by Apple host implementations. Therefore, it's not possible to use AppleTalk Phase 2 with FDDI with translating bridges between two AppleTalk hosts.

We need a solution.

This article has been archived and is no longer updated by Apple.
The all-zeros "Organizational Unique Identifier" (OUI) was not specifically intended to be used for translating Ethernet frames to 802.2/SNAP. Its original intent was (and is) not completely clear; all that was generally agreed upon was:

1) The low-order 16 bits of the SNAP protocol discriminator indicated an Ethernet protocol type.

2) The format of the data part of the SNAP packet was the same as the format of the data part of the Ethernet packet of this protocol type.

This "general agreement," as far as we know, was never written down. AppleTalk Phase 2 and TCP/IP both adopted this convention. The unfortunate difference is that, on an Ethernet/802.3 data link, AppleTalk Phase 2 runs on top of 802.3 (and 802.2) and TCP/IP runs on top of Ethernet. Thus, for a TCP/IP Ethernet node to communicate with a TCP/IP 802.2 node (on Token Ring or FDDI, for example), some type of packet translation must be done. On the other hand,for an AppleTalk Phase 2 Ethernet node to communicate with any other AppleTalk Phase 2 802.2 node (on Ethernet, Token Ring, or FDDI), no such translation is necessary (in fact, such translation MUST NOT occur).

This makes it somewhat difficult to build a bridge that "transparently" allows both forms of communication. However, all that really has to be done is for the bridge to contain a small table of Ethernet protocol types that either should, or shouldn't, be translated in this manner. Obviously, the smaller the table, and the less translation done, the better the overall performance. Any bridge between Ethernet and an 802 media that does not translate any OUI zero packets will prevent TCP/IP nodes (and any others using the same OUI convention) from communicating between the two media. Any bridge between Ethernet and an 802 media that translates all OUI zero packets will prevent AppleTalk nodes (and any others with an OUI of zero that don't expect translation) from communicating between the two media. In both cases, routers can, of course, be set up to accomplish the communication.

A somewhat equivalent problem could exist if two bridges are used to connect two Ethernet/802.3 data links across an 802 backbone (say, FDDI). In this case,some type of translation/encapsulation of Ethernet (non-802.3) packets must be performed to allow them to be passed across the 802 backbone. There are many ways to do this, one of which seems to be translating all Ethernet packets to OUI zero packets, shipping them across the backbone, and then converting them back. This, however, does not work for any OUI zero packets that start out on the Ethernet/802.3 data link. Such packets will not be translated on the way into the backbone, but will be incorrectly translated before being delivered on the destination Ethernet. Such packets should be forwarded entirely without translation.

In terms of actual product implementations, unfortunately, DEC is already testing an Ethernet-to-FDDI bridge that translates all OUI zero packets and, thus, does not work with AppleTalk Phase 2. They are aware of this issue. At

the recent 802 meetings in Denver, it became clear that this type of translation is not part of the 802.1d (Macintosh Bridging) standard, but is something that many bridge manufacturers want to include as a non-802-standard option with their products. Most have said that they will have some type of translation (or non-translation) table to ensure that it works with all known protocols.

Published Date: Feb 18, 2012

Serial Line Interface Protocol (SLIP) and MacTCP

I heard that Apple supports SLIP (Serial Line Interface Protocol) added on to MacTCP. Could you explain SLIP? Will MacTCP (future versions) support SLIP?

This article has been archived and is no longer updated by Apple.
SLIP is an asynchronous, serial line protocol developed for running TCP/IP over serial communications lines in a point-to-point configuration. SLIP was developed to transmit IP packets over low-speed, sometimes noisy, asynchronous communications lines where error recovery and an efficient line protocol are needed. The SLIP protocol is now being replaced with a new serial line protocol named "PPP", which uses a more efficient means of establishing a point-to-point IP connection.

MacTCP 1.0.2 includes hooks that let third-party developers write different link-layer modules. This makes possible the development of interfaces to SLIP, PPP, and to any other link layer that someone may need, like broadband, X.25, FDDI, and so on. Apple does not provide support in MacTCP for SLIP or any other serial line protocol; these have to come from third-party developers.

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A/UX 2.0: Display Card 8/24 in a Macintosh IIfx

I thought that the Display Card 8/24 supported the Two-Page Monochrome Monitor under A/UX 2.0, provided you use 1-bit mode. But I have an installation where this did not work. The system was a Macintosh IIfx (upgraded from a Macintosh II). A/UX was supplied as an official released seed version of 2.0. Knowing that there were some early beta cards that would not work, I checked the card. It was clearly labeled "trident" and was ordered through regular channels (no indication of being beta).

After a clean installation, the machine would freeze with a blank screen during the startup process. It appeared to go through A/UX loading, but froze when it was building the Macintosh side. After swapping the card and monitor with a regular color monitor and card, things started up fine.

Can you explain?

This article has been archived and is no longer updated by Apple.

It is not always true that the Display Card 8/24 and a Two-Page Monochrome Monitor work under A/UX 2.0 on a Macintosh IIfx set to 1-bit mode. We tested a Macintosh IIfx, running A/UX 2.0, with a Display Card 8/24 and a Two-Page Monochrome Monitor:

We did a cold start (power-off, then power-on) in 1-bit mode. A/UX 2.0 didn't start up and froze during the startup process. However, if the interrupt button (on the right side of Macintosh IIfx) was pressed, A/UX continued the startup with no problems.

If the Autolaunch command within the #startup shell was modified to have only the "launch" command (without the -s option, load symbol table in the kernel), A/UX 2.0 started up successfully in 1-bit mode.

The Display Card 8/24 and Two-Page Monochrome Monitor seem to start up A/UX 2.0 fine on other Macintosh II machines, including the Macintosh IIx.

Published Date: Feb 18, 2012

A/UX: Using "dd" To Copy Partitions (9/94)

One way of copying A/UX disks is to do a "dd" copy of the various partitions. This is particularly useful on large disks, or when a CD-ROM is not available. However, if you do a "dd" copy, the file system is also copied. This may cause problems on drives that do not like the way Apple has fine-tuned the file system for its files (some drives come with their own parameter files for creating file systems--so that the Generic file is not used).

1) Is this true?

2) Does it make a difference if you specify "rdsk" or "dsk"?

3) Are there better ways to install A/UX on large disks (in particular, allowing larger root&usr partitions), like special versions of tar?

This article has been archived and is no longer updated by Apple.
1) Yes, "dd" is often used to do an entire image copy from one hard drive to another of the same size. For instance, to copy an Apple HD80 SC to another Apple HD80 SC, use this command:

dd if=/dev/dsk/c0d0s31 of=/dev/dsk/c5d0s31 bs=20k

It also can copy file system by file system (with the same size). For example, to copy one A/UX root file system to another, do:

dd if=/dev/dsk/c0d0s0 of=/dev/dsk/c5d0s0

Since it is an imaging copy from one hard drive to another, everything, including partition map and super block information in the file system, is copied to the destination disk or partition. Therefore, size differences are significant. If you "dd" an entire HD80 SC to an HD160 SC, only 80MB is usable on the HD160 SC.

The two hard drives do not necessarily have to be the same brand. For instance, you can copy from an Apple HD80 SC to a third-party 80MB hard drive, or copy the root file system from an A/UX CD-ROM drive to an Apple HD80 SC A/UX root file system.

2) There is no particular difference when specifying "dsk" or "rsk"; they give the same result. However, specifying "rdsk" (raw device I/O) seems to be much faster than "dsk" (block device I/O) because, under raw I/O, there is no block transfer size constraint by the file system logical block size--it can transfer many disk blocks per disk operations.

3) If the non-standard procedures section in the "A/UX Installation Guide" documentation does not meet your needs, you can install A/UX on large disks with larger Root&Usr partition than the standard size. For instance:

- Initialize and partition the large disk with the desired Root&Usr size. This can be done using the vendor formatter software or the A/UX "dp" utility.

- Make a new root file system. For example:

newfs -s size device-file type

- Mount the new root file system on a directory. For example:

mount /dev/dsk/c5d0s0 /big

- Use "cpio" to copy the standard A/UX Root&Usr file system to a new one. For example:

```
find / -depth -print | cpio -pdlmu /big
```

Article Change History:
23 Sep 1994 - Reviewed
31 Aug 1992 - REVIEWED For technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

DAL: Needs MacDFT 1.1 & MacMainFrame Network Adapter

I installed DAL (formerly CL/1) for VM/CMS onto an IBM 370. The installation on the host seems okay. I was able to execute the icl1 module on the host. When I tried to connect to the host using a Macintosh, the connection failed. When I tested the connection using cl1 Tester, which comes with the DAL Developer's Toolkit, I got Error -10646. What could have caused this problem?

Here is a list of the hardware and software I used:

- Apple Coax/Twinax cable with MacDFT version 1.0.
- DAL Server for VM/CMS version 1.1
- DAL Developer's Toolkit version 1.1

This is the configuration I used for the host.cl1:

vma:3270mac:VMCMS:CUT:A
vma:login:1:\\mRUNNING\\slogoff\\r\\mcontinue\\r\\mVIRTUAL\\svmexit\\r:1800:6000:\\^x:\\M
logon\\svm\\r\\mVIRTUAL\\r\\muserid\\slogon\\u\\r\\mpassword\\p\\r\\w20\\n\\w20\\mReady\\n

Also, I would like to test the connection with the Avatar MacMainFrame card. I was told that I need the network adapter from DCA (formerly Avatar). What is this network adapter?
This article has been archived and is no longer updated by Apple.
Error -10646 translates to "Cannot Load Network Adapter", the driver associated with the communications board in use. From your description of the problem, the most likely reason for this is that MacDFT 1.1 is required. Update the software, and everything should work as advertised.

The network adapter is DAL driver software, specific to MacMainFrame. It is available from DCA (formerly Avatar).

As of DAL release 1.2 all DAL releases ship with all the available network adapters. You non longer need to contact the network communications companies for the individual DAL pieces.
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APT Routers Support Device Security Across Zones

How can I get device security across AppleTalk zones?

This article has been archived and is no longer updated by Apple.
APT has announced an update to their AppleTalk routers. They now support device security across zones. Users can hide a LaserWriter, file server, or shared modem from anyone not in their zone.

Users in different zones can be allowed different sets of access to different devices. For example, Zone A may have no access to your LaserWriter but still have access to a file server, while Zone B has access to all LaserWriters but not AppleTalk ImageWriters or NetModems.

APT routers connect multiple LocalTalk, Ethernet, WAN, and Serial networks, and they support AppleTalk Phase 2.

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A/UX : Backup and Restore Functions

Is special software required to back up A/UX drives? If files are restored, does UNIX need to be notified in any way?

This article has been archived and is no longer updated by Apple.

All versions of A/UX come with software utilities, such as "dump.bsd" and "restore", to back up and/or restore A/UX file systems from a disk drive to a tape backup device. Third-party tape drives can be used if they support the tape driver.

You run the "rdump" and "rrestore" utilities to back up and restore a remote UNIX file system to and from the tape drive. Other utilities, like "cpio", "tar", and "dd", can also be used to back up or restore individual file(s) in different formats.

To create a backup:

```
tar cvbf 16 /dev/rmt/tc<#> <filename>
```

where <#> is the SCSI id number of the tape device and <filename> is the name of the directory or file to backup. Or use:

```
dump.bsd 0ubf 16 /dev/rmt/tc<#> /dev/dsk/c0d0s0
```

where <#> is the SCSI id number of the tape device and an entire filesystem is specified.

Note that the tar command uses a filename specification while the dump.bsd command uses a device name specification.

To check what is on a tar backup, you can get a "table of contents" with

```
    tar tvf /dev/floppy0
or
    tar tvf /dev/rmt/tc#
```

where # is the SCSI id of the tape device.

To extract files from a tar backup:

```
    cd <dir where you want files to go>
    tar xvf /dev/rmt/tc#
```

When files are restored, they are automatically restored to the original format, depending on the command option(s) used.

For more information on the backup and restore functions, please refer to manual pages rdump(1M), dump.BSD(1M), restore(1M), rrestore(1M), tar(1), cpio(1), and dd(1).

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Pascal III: Apple II Parallel Printer Interface Cable Issue

You may have problems using Pascal III with the Apple II Parallel Printer Interface cable, since Pascal requires different error handshaking than the cable is able to support.

This article has been archived and is no longer updated by Apple.

Rewire the cable to the pin specifications on page 16 of the Universal Parallel Interface Card manual.

Published Date: Feb 18, 2012

A/UX: Optimizing for Current Memory (8/93)

I have an 8MB Macintosh IIfx running A/UX that I want to optimize for performance at that memory configuration. I have read the Tech Info Library article "A/UX: How to Improve File Access Speed", and I have some questions.

If you run a "newconfig" command while under A/UX, will it automatically build a new kernel that is optimized for the current memory in the system? Will "autoconfiguration" at startup time notice that I have more physical memory than the kernel is optimized for and carry out this kconfig command for me?

This article has been archived and is no longer updated by Apple.
Prior to A/UX 3.0 when a "newconfig" command is used to build a new kernel, the file "/newunix" is used as the base for the new kernel. Therefore, the new kernel (/unix) parameter values, like NBUF, NINODE, NFILE, and so on, will be reset to the default from /newunix. To keep the current kernel parameter values when the new kernel is built, use this:

```
# cp /newunix /newunix.orig #! Save the original newunix
# kconfig -n /unix #! Modify kernel parameters
# cp /unix /newunix #! Copy the current kernel to newunix
# newconfig #! reconfig the new kernel
```

The new kernel will be built with the current kernel parameters.

If you want to build a new kernel based on the original, the /newunix.orig can be copied back any time. For example, cp /newunix.orig /newunix.

With A/UX 3.0 and higher, the above process is not necessary because the parameter values, like NBUF, NINODE, NFILE, and so on, are kept and become part of the new kernel.

If there is new hardware (like an EtherTalk NB Card) to be added to the system, A/UX will automatically configure it when A/UX is started up. The file "/newunix" is also used as the base for the new kernel.

Here is a description of booting/launching decision:

When A/UX Startup is launched, by default, it performs:

* AutoRecovery, which checks the root file system with the command:

/dev/default

If the file system check is successful, do:

* AutoLaunch with the command: launch

The launch command first checks the default kernel against the hardware. Because no kernel is specified on the command line, the contents of file /nextunix, which is /unix, is used by launch. If the kernel matches the hardware, the /unix kernel is used to start up A/UX. If the kernel doesn't match the hardware, the launch command uses the /newunix kernel instead to build the new kernel, and the new kernel is placed on /unix.

Article Change History:
18 Aug 1993 - Updated to include A/UX 3.x, and reviewed for technical accuracy.
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MacX: MacTCP Configuration Problem

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

I'm having a problem setting up MacTCP (to use MacX). I'm trying to run MacX from the Macintosh OS (as opposed to A/UX). I have an Ethernet connection between my Macintosh IIx and a RISC UNIX box running X/MOTIF over TCP/IP. The entire Ethernet consists of the UNIX box, two TCP/IP X-stations, and three Macintoshes. There are no routers, gateways, Domain name servers, RARP, or BootP servers on the Ethernet. The Macintoshes can talk to each other via EtherTalk just fine. Also, I can see the UNIX box and X-stations communicate by running EtherPeek on one of the Macintoshes.

I installed the Communications Toolbox, moved the MacTCP Tool (that came with MacX) into the "System Folder:Communications Folder", and moved the MacTCP CDEV files into the System Folder. I also followed the advice in the "MacTCP Setup Tips".

I configured MacTCP (the CDEV) by bringing it up in the Control Panel. I selected:

- Ethernet (as opposed to LocalTalk)
- Address "Manual" (and entered 192.0.0.4)
- No Routing
- No Domain Name information

I restarted. (The AppleTalk connection is set to LocalTalk.)

When launched, MacX displays an alert with the message: "None of the connection tools are working at the moment--check that they are properly installed and restart MacX. Until this is done, no incoming X-client connections can be accepted."

I tried this with both the MacTCP files that came with MacX and those I got separately from APDA, and had the same results.

Specific Questions
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1) How do I tell MacX what the address of the UNIX box is, or if MacX is really a network "server" on Ethernet, how do I tell it what its name is?

2) Is the MacTCP host file needed?

3) Does the Communications Toolbox tool MacTCP expect anything special of the MacTCP CDEV?

Additional Information

I have a copy of NCSA Telnet (for MacTCP) that will not run on the Macintosh IIx described above. Unfortunately, it doesn't display an error message; it just displays its initial banner and quits after about 5 seconds.

Can you help?

TA44793_MacX_MacTCP_Configuration_Problem_(TIL06218).pdf

This article has been archived and is no longer updated by Apple.
According to the information that you provided, the MacX and MacTCP installation procedure seems to be correct. One thing that should be made more clear is the "MacTCP Tool" must be put in the "System Folder:Communications Folder" folder.

We found that there is a problem using the IP address 192.0.0.4 in the MacTCP configuration, which we think is not a valid class C network number. In a class C network, 192.0.0 is a reserved network number, and it should not be used by any MacTCP configuration. This might be the reason that MacX is displaying the warning message. IP address 192.0.1.4, for instance, can be used as a valid IP number.

Make sure that the network number specified in the MacTCP IP address is valid and is the same network number as the other UNIX machine on the Ethernet.

If MacX and the UNIX box are configured correctly and connected on the network, their IP addresses should be known to each other. Also, on a UNIX box, you can issue the "ping" utility to send an ICMP packet to a MacX server to see if it is up or not. On the MacX server side, you can run the "MacTCP Spy" to see if the MacTCP is up running.

MacX is just a network "display" server, not a network server, in general, like an NFS. If your MacTCP is configured with a Domain name server, all name inquiries can be via the Domain name server. The host file is not necessarily needed. The "MacTCP Tool" does not need a "special" version of the MacTCP CDEV.

Published Date: Feb 18, 2012

TA44795_UPIC_Interfacing_the_OKIDATA_A_printer_(TIL00622).pdf

UPIC: Interfacing the OKIDATA 83A printer

This article has been archived and is no longer updated by Apple.
To connect an Okidata 83A printer to an Apple III Universal Parallel Inteface Card using an Apple II parallel cable, make the following adjustments:

DCB : 00 00 40 00 5A

Printer : All switches off
Jumper set to B

Published Date: Feb 18, 2012

A/UX: File System Limits

Article Change History

10/17/90 - REVIEWED
* For technical accuracy.

What is the limit of the A/UX file system?

This article has been archived and is no longer updated by Apple.
The total size of an A/UX file system (both UFS and SVFS) is measured in blocks. The number of blocks is stored in each file system's super block with the declaration of "long fs_size". This value can be stored up to 2**32 blocks. The block size of the file system in UFS, for instance, can be 512 bytes, 1K, 2K, 4K, or 8K. In SVFS, the default file system block size is 1K.

From the number of blocks and the file system block size, the maximum size of an A/UX file system ranges from 2**32 Kbytes to 8*2**32 KB.

Published Date: Feb 18, 2012

Printers: Difficulties With 9-Part Forms

Can you recommend a third-party printer product that prints a 9-part tractor feed form?

This article has been archived and is no longer updated by Apple.

We were unable to find a printer on the market that prints a 9-part form. The closest we found was one manufactured by Toshiba that prints up to 6-part forms.

The problems encountered with 9-part forms concern the print head. To put enough power behind the pins of a dot matrix to print on the ninth part of the form, the pins will penetrate the first and probably the second part of the form, leaving holes. Also, the pins often get caught in the form as it moves and are bent and the print head needs to be replaced. Unfortunately, printers designed for microcomputer use just aren't up to the task of printing 9-part forms.

Daisy-wheel printers have similar problems. The energy demanded to print through nine layers would break a plastic print wheel and bend metal print wheels out of shape.

Even heavy-duty Printronix line printers are rated only to 6-part forms.

We suggest that you contact the paper company that makes the 9-part forms and ask what printers they recommend for use with these forms.

Published Date: Feb 18, 2012

AlisaTerminal: Now Supports More Zones

We have had a problem with a WAN. The backbone is connected via cisco routers. They are still mostly at Phase 1. The network worked flawlessly, except for AlisaTerminal. It would look for the DECnet gateway and then hang. After numerous attempts to resolve the problem with Alisa, Alisa agreed that AlisaTerminal had "problems" negotiating with more than 39 zones. (We had a little over 100.)

This article has been archived and is no longer updated by Apple.

Alisa now has an updated AlisaTerminal, available from their Technical Support.

We tested the new AlisaTerminal, and it appears to work with 100 zones. The new AlisaTerminal has an added function--you can force additional queries of the network by pressing the Command key and clicking on the Host dialog box.

Published Date: Feb 18, 2012

A/UX 2.0: Restricted Login Problem

I want to set up a restricted account through the chroot command. The man pages for login say that you should be able to do this by using a "*/etc/passwd" in the place of a shell to be executed at startup. I tried to duplicate the problem and documented it below. If this is a bug that is not fixable in the near future, can you suggest a way to set up a restricted account, so that it has no way of getting to /? How is this done on the patch server?

Man page excerpt from login:

If the last field is *, then a chroot(2) is done to the directory named in the directory field of the entry. At that point, login is re-executed at the new level, which must have its own root structure, including /etc/login and /etc/passwd.

User toad's login sequence, it looks like it is trying to execute "*".

Apple Computer A/UX (ebc_A/UX)

login: toad
*: No such file or directory
No shell

Entry for user toad in /etc/passwd

toad::1009:1002:,,,:/users/toad:*

Directory structure for users/toad. The files are all linked rather than exact copies. The shared library file was set up in case there was a problem, given the problems I had with anonymous ftp.

ebc_aux.root # cd /users/toad
ebc_aux.root # ls
README
bin
etc
shlib
ebc_aux.root # cd bin
ebc_aux.root # ls -la
total 110
drwxr-xr-x 2 root gp1002 512 Aug 27 17:34 .
drwxr-x--- 5 toad gp1002 512 Aug 27 17:35 ..
-rwsr-xr-x 2 root root 53468 Apr 10 06:49 login
ebc_aux.root # cd ../etc
./etc: bad directory
ebc_aux.root # cd ..
ebc_aux.root # cd etc
ebc_aux.root # ls -la
total 8
drwxr-xr-x 2 root gp1002 512 Aug 27 17:32 .
drwxr-x--- 5 toad gp1002 512 Aug 27 17:35 ..
-rwxr--r-- 2 root sys 1068 Aug 27 18:37 passwd
ebc_aux.root # cd ..
ebc_aux.root # cd shlib
ebc_aux.root # ls -la
total 164
drwxr-xr-x 2 root gp1002 512 Aug 27 17:35 .
drwxr-x--- 5 toad gp1002 512 Aug 27 17:35 ..
-rwxr-xr-x 2 root root 81684 Apr 10 05:48 libc_s

This article has been archived and is no longer updated by Apple.

This is a bug in the A/UX 2.0 login(1) command. You would not be able to reproduce this by logging in to the

console under A/UX 2.0. This feature is a part of the System V login(1) command, which is not executed when logging in to the A/UX console. Instead the /mac/bin/Login program is called, and it does not understand the "*" syntax in the /etc/passwd file. Even when logging into the serial ports or the console when /mac/bin/Login is not present, the chroot does not work. This is one reason why the patch server is still running A/UX 1.1.1.

You should use rsh(1) as a replacement for the functionality that has been lost in the A/UX 2.0 login command until a fix is provided. rsh would normally be the way to accomplish restricted login anyway.

Published Date: Feb 18, 2012

MacTCP: Gateway Address; TokenTalk Support

Here are two MacTCP 1) What is the "gateway address" box? I know that this is not the address box for a DDP/IP gateway (like a FastPath) for providing server-based addressing. The MacTCP Admin manual mentions that this "gateway address" has something to do with network access when full RIP support is not available.

2) I've seen that MacTCP works with "TokenTalk" (not native TCP support for Token Ring). Is this an "officially supported" configuration?

This article has been archived and is no longer updated by Apple.

1) The MacTCP Control Panel setting for the "gateway address" does not have any function in relation to the DDP/IP gateway used for TCP/IP encapsulation in AppleTalk. The "gateway address" is used when MacTCP is talking native TCP/IP over Ethernet. If your network does not have a RIP (Route Information Protocol) process running on a router connected to the network, the default gateway address is used to locate routes to "smart" gateways, which might be connected to much larger outside networks, like the Internet. Most BSD UNIX systems are capable of running a RIP process.

2) Yes, we support running TCP/IP encapsulated in AppleTalk over Ethernet, Token Ring, or LocalTalk. The physical media does not play a large part in the ability of an encapsulating protocol to function properly.

Published Date: Feb 18, 2012

TokenTalk Support For Novell Token Ring

I understand that there is still no driver available that lets Netware for the Macintosh support Apple's TokenTalk NB Card in Novell's Token Ring environment. Is there a workaround to this problem?

I am running Novell Netware (version 2.15, revision C) on a Token Ring with a PS/2 as server. They have both the compact and modular Macintoshes.

An article mentioned a workaround using an Macintosh IIcx, running as a router between the Macintoshes on TokenTalk and the PS/2 server.

"The router will consist of a TokenTalk NB Card and an EtherTalk Card running to the PS/2 Model 80 running whatever Ethernet card they choose that will work with EtherTalk (that is, 3COM, and so on)."

What I'm not clear about is whether the PS/2 server running Netware automatically supports routing between Ethernet packets and Token Ring packets (on the Novell Token Ring side). Is there additional software required on the PS/2 server?

Will this configuration support transparent file and print services for the Macintoshes as well as electronic mail between the Macintoshes and Novell Token Ring machines?

This article has been archived and is no longer updated by Apple.
Novell has stated that TokenTalk support can be ordered. This will be a new version of VAP (Value-Added Process), which supports AFP (Apple Filing Protocol) 2.0 and TokenTalk.

All Netware operating systems provide an internal router that lets a Netware server connect to four different networks. No additional software is required. Note that the routing service can also be moved out of the server and into a non-dedicated workstation.

Macintosh, DOS, and OS/2 workstations can share data and resources. Macintosh users should see information stored on the network server as icons. Other workstations on the network (PCs running DOS, OS/2, or Windows 386) should see the folders and file icons from the Macintosh listed as directories and subdirectories in their workstation formats. DOS, OS/2, and Macintosh users can share Apple LaserWriters and other Apple printers. Using an E-mail package that supports Netware Message Handling Service (MHS), the back-end store-and-forward messaging server, you should be able to send E-mail messages and text, data, binary files between different LANs, and wide area networks.

Published Date: Feb 18, 2012

TokenTalk NB Card: Compatibility of RasterOps Video Card

I have been having compatibility problems with RasterOps video cards and Apple's TokenTalk NB Card.
This article has been archived and is no longer updated by Apple.
RasterOps identified and corrected some problems with their 224/724 cards. The problems occurred on Macintosh computers with a 224/724 card and TokenTalk NB Card.

1. No video on the 224/724 card at powerup.
2. Selecting 24 bits/pixel on the 224/724 card causes pixels to change color under the cursor (and at random on the startup screen).
3. Zones and servers appear and disappear.
4. In all of the above cases, eventually a bus error (ID=1, sometimes ID=28) system bomb occurs.

The fixes are hardware rework. All finished goods and cards shipped since early May 1990 should contain this fix. Customers with problems should contact the RasterOps Technical Support department.
Published Date: Feb 18, 2012

UPIC: Interfacing the C. Itoh 8510A printer

This article has been archived and is no longer updated by Apple.
This is the cable configuration to connect an Apple III Universal Parallel Interface card to a C.Itoh 8510A printer.

Universal Parallel Interface C.Itoh 8510A
Pin Function Pin Function

1 Shield Ground 17 Chassis Ground
2 Acknowledge 10 Acknowledge
3 Not used - Not connected
4 Not used - Not connected
5 Not used - Not connected
6 Printer in check 32 Fault
7 Not used - Not connected
8 Strobe out 1 Strobe in
9 Printer empty 12 Printer empty
10 Data bit 0 (LSB) 2 Data bit 0
11 Data bit 1 3 Data bit 1
12 Data bit 2 4 Data bit 2
13 Data bit 3 5 Data bit 3
14 Data bit 4 6 Data bit 4
15 Data bit 5 7 Data bit 5
16 Data bit 6 8 Data bit 6
17 Data bit 7 (MSB) 9 Data bit 7
18 Printer on-line 18 Select
19 Printer Power-on 19 +5 volt
20 Signal Ground 16 0 volt

Apple III Universal Parallel Printer driver configuration block:

ERRMASK: E8
ERRSTAT: C8
AUTOLF: 40
CTRLWRD: 00
TIMEOUT: 0A

C.Itoh 8510A Switch selection:

Switch one: Switch two:
1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8
0 1 0 0 0 1 1 1 0 0 0 0 0 0 1 0

Published Date: Feb 18, 2012

TA44805_AUX_Limited_Macintosh_OS_Disk_Space_(TIL06231).pdf

A/UX: Limited Macintosh OS Disk Space

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

My A/UX hard drive doesn't have any of the usual Macintosh software like Font/DA Mover, HD SC Setup, and so on.

This article has been archived and is no longer updated by Apple.
Because most of the drive is taken by A/UX, the Macintosh partition is very small. A lot of the usual Macintosh utilities just don't fit.

Published Date: Feb 18, 2012

TA44806_AUX_The_bin_Folder_(TIL06232).pdf

A/UX: The /bin Folder

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

What does the /bin folder do on the Macintosh partition and what happens if I throw it out?

This article has been archived and is no longer updated by Apple.
The /bin folder is used by the SASH application. Without it, SASH can't execute some commands. You can backup /bin and take it off the hard drive, then if SASH tries to find a command and can't find it, replace it from /bin.

Published Date: Feb 18, 2012

TA44807_AUX_XR_without_EtherTalk_Card_(TIL06233).pdf

A/UX: X11R3 without EtherTalk Card

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Can I run X11R3 without an EtherTalk card?

This article has been archived and is no longer updated by Apple.
Yes, if you have the client/server software in the local system,
X doesn't use the board at all to execute the server/client routines.

Published Date: Feb 18, 2012

TA44808_AUX_and_Macintosh_OS_Coexistence__(TIL06235).pdf

A/UX and Macintosh OS Coexistence (4/95)

I thought A/UX and Macintosh OS could coexist.

This article has been archived and is no longer updated by Apple.
They can. Both operating systems exist on the same physical disk. To switch operating systems, restart the Macintosh.

Macintosh applications can be run under the A/UX Finder: a Mac OS environment running on top of A/UX. Further, A/UX applications can be written to look like Macintosh applications if they use the A/UX Toolbox, with windows, icons, and so on.

Article Change History:
26 Apr 1995 - Made correction of typographical errors.

Support Information Services
Published Date: Feb 18, 2012

TA44809_AUX_The_FILES_file_(TIL06236).pdf

A/UX: The FILES file

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Can I remove the FILES file from the root directory?

This article has been archived and is no longer updated by Apple.
Yes, you can. The FILES file contains a list of all the files on the disk. You can delete it or back it up to a floppy.

Published Date: Feb 18, 2012

A/UX: Launching from a Non-Root Directory (8/94)

Can I launch A/UX from a kernel on an external disk drive in a directory other than root?

This article has been archived and is no longer updated by Apple.
You should be able to launch a kernel from anywhere--including a floppy disk.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

TA44811_AUX_Use_ControlC_for_Break_Key_(TIL06239).pdf

A/UX: Use Control-C for Break Key

Article Change History

10/10/90 - REVIEWED
* For technical accuracy.

Where's the break key in A/UX?

This article has been archived and is no longer updated by Apple.
There is none. Use Control-C instead.

Published Date: Feb 18, 2012

Universal Parallel Interface Card Manual: Errata

This article has been archived and is no longer updated by Apple.
Page 8...The UPIC's pin 9 should connect to pin 24 on the IDS printers instead of to pin 12, as shown in Table 2-1.

Page 9...The note located next to the pointing hand symbol reads "Version 4.0 of the Utilities Diskette". This is referring to the current version of the System Utilities Diskette.

Page 27...Paragraph 3, third line should read "Output, Apple B sets..."

Page 30...The end of the third line under the heading "CTRLWRD" should read "negative; that is, it's clocked on the falling edge where 0V is "low"."

Page 30...In the last paragraph, the third and fourth lines should read: "When the receiving program reads a carriage return character, it should write a carriage". The Get statement returns a one character string equal to CHR$(13) if it receives a carriage return.

Page 41...The first line of the listing just below the middle of the page should read:

STA PORTA,Y ;Place character in Port A

Page 48...The first line under "Toggle the Linefeed Switch (K)" should read: "If the Printer L.F. switch on the UPIC is set to AUTO, the K...".

Page 48...The paragraph just above the "eye" symbol should read: "When the Printer L.F. switch is in the Norm position, this command has no effect."

Reference Card - Printer Mode
The CTRL-I command sequence for TAB mode in BASIC is:

Implement BASIC tabs T E
Do not implement BASIC tabs T D
Published Date: Feb 18, 2012

TA44813_AUX_PMMU_Use_(TIL06240).pdf

A/UX: PMMU Use

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How does A/UX use the PMMU?

This article has been archived and is no longer updated by Apple.
The PMMU is used to handle virtual memory, by translating between virtual addresses and physical addresses.

Published Date: Feb 18, 2012

A/UX: "/etc/newunix: /etc/uninstall.d/ae6: not found" Error

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I got the error: "/etc/newunix: /etc/uninstall.d/ae6: not found".

This article has been archived and is no longer updated by Apple.
Enter the command: ls /usr/uninstall.d/ae6

The output should be: /etc/uninstall.d/ae6

If it isn't, then the directory is missing. Re-create the directory and replace the files from your system backups.

1) Enter the command: mkdir /etc/uninstall.d

2) Enter the command: chmod 755 /etc/uninstall.d

3) Enter the command: chown bin /etc/uninstall.d

4) Enter the command: chgrp bin /etc/uninstall.d

5) Replace the files from your system backups or A/UX distribution disk.

Published Date: Feb 18, 2012

A/UX: "/etc/newunix: /etc/uninstall.d/toolbox: not found" Error

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I got the error: "/etc/newunix: /etc/uninstall.d/toolbox: not found"?

This article has been archived and is no longer updated by Apple.
Enter the command: ls -d /etc/uninstall.d

The output should be: /etc/uninstall.d

Look for a file named "toolbox" in the directory. If the directory is there, but the file isn't, replace the file toolbox from your system backups.

If the directory is missing, re-create the directory and replace the directories files from your system backups.

1) Enter the command: mkdir /etc/uninstall.d

2) Enter the command: chmod 755 /etc/uninstall.d

3) Enter the command: chown bin /etc/uninstall.d

4) Enter the command: chgrp bin /etc/uninstall.d

5) Replace the files from your system backups or A/UX distribution disk.

Published Date: Feb 18, 2012

TA44816_AUX_System_requests_initlevel_(TIL06243).pdf

A/UX: System requests "initlevel"

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Why does the system ask for initlevel when I boot?

This article has been archived and is no longer updated by Apple.
A request for initlevel means the file /etc/inittab was empty. Somehow, you lost its contents. Mount one of the Eschatology partitions and copy the file from there. Remember to unmount the Eschatology partition when you are done. Test your work by rebooting the system. By the way, in A/UX 2.0, Eschatology becomes AutoRecovery.

Published Date: Feb 18, 2012

TA44817_AUX_LaserWriter_typescriptlog_Installation_Problem_(TIL06246).pdf

A/UX: LaserWriter "typescript...log" Installation Problem

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I am having problems installing a LaserWriter under A/UX. Why does it seem to think that "typescript...log" is the device?

This article has been archived and is no longer updated by Apple.
There is a link between typescript...log (that whole line of stuff) and the actual LaserWriter device. Reinstall the LaserWriter, without other printers installed. Then type ADD_LW and it'll work fine.

Published Date: Feb 18, 2012

A/UX: Autoconfig Cannot Find Drivers Error

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I got the error: "Warning cannot find driver(s) for device ID XX Version X.X".

This article has been archived and is no longer updated by Apple.
For any slot card that Autoconfig cannot find a module in the kernel with a matching board and version number, Autoconfig prints a warning message to the system console.

For example, if autoconfig cannot find the driver for an Ethernet card you have installed, it prints a message similar to the following:

Warning cannot find driver(s) for device ID 5 Version 7.0

It is just an informational warning and does not signify any real error.

If the card is a monitor card, then the error is irrelevant, since the card will work with the default monitor kernel driver.

Published Date: Feb 18, 2012

A/UX: "Initiate single-user mode, unknown id root" Error

When booting into single-user mode, I get the error: "initiate single-user mode, unknown id root".
This article has been archived and is no longer updated by Apple.
You need to replace your /etc/passwd file. Somehow, the entry for root has been removed from /etc/passwd file.
Published Date: Feb 18, 2012

TA44820_Visicalc_III_Column_insertion_problem_(TIL00625).pdf

Visicalc III: Column insertion problem

This article has been archived and is no longer updated by Apple.

If column 254 has be used in a given session, Visicalc assumes that there isn't anymore room; therefore, it doesn't allow you to insert additional columns. To recover, save the file to disk, then reload it to reset Visicalc's pointers.

Published Date: Feb 18, 2012

TA44821_AUX_Where_to_Find_Startup_Script_Files_(TIL06250).pdf

A/UX: Where to Find Startup Script Files

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

What directory is searched, by default, for startup script files?

This article has been archived and is no longer updated by Apple.
By default, the /etc/master.d directory is searched for script files.

Published Date: Feb 18, 2012

TA44822_AUX_Specifying_the_Startup_Program_File_(TIL06252).pdf

A/UX: Specifying the Startup Program File

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How do you specify the file in which startup programs are listed?

This article has been archived and is no longer updated by Apple.
The Autoconfig command's "-S" flag option puts a list of startup programs in the specified file.

Example command line: autoconfig -S /etc/startups.list

This command line will cause Autoconfig to put a list of the startup programs into the file /etc/startups.list.

Published Date: Feb 18, 2012

TA44823_AUX_Automatic_Startup_(TIL06253).pdf

A/UX: Automatic Startup

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How do I get A/UX to boot automatically when I start up the hardware?

This article has been archived and is no longer updated by Apple.
Follow these steps:

1) From the Macintosh OS, select the A/UX icon.

2) Pull down the Special menu and select the command Set Startup.

3) Set the startup to A/UX Startup. Click OK.

4) Restart the machine.

Published Date: Feb 18, 2012

A/UX: How to Start Up in Macintosh OS, System 6

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Is there any way to change the startup application, so that my system does NOT start up in A/UX?

This article has been archived and is no longer updated by Apple.
To set startup to JUST the Macintosh OS in System 6, do the following steps:

1) If A/UX already launches automatically, then cancel the automatic launch sequence.

2) Quit from the A/UX Startup.

3) Make sure nothing is selected; click in the open desktop area.

4) Pull down the Special menu and select the Set Startup command.

5) Click the OK button.

Conversely, to set startup to A/UX Stand-alone shell automatically, and hence have A/UX boot automatically, do the following steps:

1) Make sure you are at the Finder level.

2) Click the A/UX Startup icon.

3) Pull down the Special menu and select the Set Startup command.

4) Click on the OK button.

Published Date: Feb 18, 2012

A/UX: Discovering Which Drivers Are in the Kernel (9/94)

How do you find out what drivers were built into the A/UX kernel?

This article has been archived and is no longer updated by Apple.
The "module_dump" command displays a list of the modules built into the specified kernel file.

Example: module_dump /unix

This command line will display a list of the modules built into the kernel file "/unix".

The output looks similar to this:

Name Major Flags Board_ID Version Prefix #Dev #Cont Addresses
scc 0 0x0001 0 00000000-00000000 0 0
scsi 24 0x0001 0 00000000-00000000 0 0
tty 0 0x0001 0 00000000-00000000 0 0
streams 0 0x0001 0 00000000-00000000 0 0
slots 0 0x0002 0 00000000-00000000 slots 0 0
toolbox 4 0x0002 0 00000000-00000000 ui_ 0 0
BNET 0 0x0002 0 00000000-00000000 BNET 0 0
ae6 0 0x0008 8 00000000-2147483647 ae6 1 2 <b> <d>
nfs 0 0x0002 0 00000000-00000000 nfs 0 0

Support Information Services
Published Date: Feb 18, 2012

TA44826_AUX_Where_to_Find_Startup_Programs_(TIL06259).pdf

A/UX: Where to Find Startup Programs

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

What directory is searched, by default, for startup programs?

This article has been archived and is no longer updated by Apple.
By default, the /etc/startup.d directory is searched for startup programs.

Published Date: Feb 18, 2012

Printing from Visicalc III

This article has been archived and is no longer updated by Apple.
The driver file on the Visicalc III diskette is set up with two drivers: .PRINTER, which is the default printer driving the Silentype, and .QUME, the driver for the RS-232 port. Two ways to get output to the Qume are:

A. Use the System Configuration Program to rename the existing .PRINTER to .SILENTYPE, then rename .QUME to .PRINTER.

B. Send the information to the printer as if it were a file.

For the Silentype: For the Qume:

/P /P
P F
.QUME
Then enter the lower right coordinate of the part of the worksheet you want printed.
Published Date: Feb 18, 2012

TA44828_AUX_About_etcstartup_(TIL06260).pdf

A/UX: About /etc/startup

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

What does the text in /etc/startup mean?

This article has been archived and is no longer updated by Apple.
Each line in the file /etc/startup lists the startup program to be executed at system boot time and the arguments to be passed.

The options are as follows:

"-M" followed by a number specifies the major device number.

"-C" followed by a number specifies the number of controllers associated with this module in the system.

"-D" followed by a number specifies the number of devices per controller.

"-S" specifies the NuBus slot in which the controller exists.

For example, the line:

/etc/startup/TEST -M 9 -C 1 -D 1 -S 11

within the /etc/startup file indicates that the TEST module has a major device number of 9, has one slot associated with it in the system, has one device per slot card, and is installed in slot 11.

Published Date: Feb 18, 2012

A/UX: About the newunix Command (8/94)

What is newunix?

This article has been archived and is no longer updated by Apple.
The newunix command begins the process of configuring a new kernel by installing or uninstalling the appropriate scripts and driver object files needed by the Autoconfig(1M) command.

The newunix command is replaced and updated by the newconfig command in A/UX 2.0 and 3.0.

Article Change History:
22 Aug 1994 - Reviewed and changed title.
31 Aug 1992 - REVIEWED for technical accuracy and updated to include A/UX 3.0.

Support Information Services

Published Date: Feb 18, 2012

A/UX: How to Create an NFS Kernel (9/94)

How do you create an NFS kernel?

This article has been archived and is no longer updated by Apple.
For A/UX 3.0, to make a kernel that supports NFS, open the Command Shell window and enter this command:

newconfig nfs

If this is the first time that the Ethernet driver has been included in a kernel on this computer, newconfig displays the prompts that allow you to define the TCP/IP connection for this machine. Regardless of whether the computer has already been configured to connect to a TCP/IP network, the newconfig command also prompts you for information about NIS.

In addition to making a new kernel, the newconfig command enables nfsd, biod, mount, rpc.statd, and rpc.lockd in the /etc/inittab file. Enabling nfsd is required for the computer to be an NFS client.

When newconfig is done, increase the number of kernel memory buffers by running the kconfig command:

kconfig /unix

NMBUFS=1000

(CONTROL-D)

If the computer has 8 MB or less of physical memory, you should also increase the value of MAXCORE by entering this command while running kconfig:

MAXCORE=0x60000

If the computer has more than 8 MB of physical memory, the memory allocation routines in the kernel dynamically adjust the value of MAXCORE. The new values for MAXCORE and NMBUFS cause the allocation of more of the kernel memory buffers that NFS uses, which improves server performance.

Choose Restart from the Finder's Special menu. When A/UX is up, the computer should be an NFS file server.

To verify, log in and run ps to see that the appropriate number of nfsd processes are running. You can determine that number by checking the nfsd entry in the /etc/inittab file. The default number is 4.

If the nfsd processes are not running, check the nfsd entry in /etc/inittab and restart your computer again. Next, verify that the pathnames specified in /etc/exports can be mounted. To do so, enter this command:

showmount -e

This is an example of the response, assuming that the entry is /etc/exports on hostname1 is

/usr/catman -access=hostname2

The response would be

export list for hostname1:
/usr/catman -access=hostname2

Finally, check /etc/inittab to verify that the entries in your file match the entries shown here:

nfs3:2:wait:/etc/nfsd 4 # set to "wait" for NFS server

nfs4:2:wait:/etc/biod 4 # set to "wait" for NFS client

nfs5:2:wait:/etc/rpc.statd # set to "wait" for NFS status monitor

nfs6:2:once:/etc/rpc.lockd # set to "once" for NFS lock manager

nfs8:2:once:/etc/mount -at nfs > /dev/syscon 2>&1 # set to "once" for NFS

For additional information, refer to the A/UX Network System Administration manual.

Article Change History:
06 Sep 1994 - Major changes to article to describe process for A/UX 3.0.
31 Aug 1992 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

A/UX: How to Build a Kernel Without Networking

How do you build a kernel without networking?

This article has been archived and is no longer updated by Apple.
To build a kernel using the Autoconfig command:

1) Log on to the system as "root".

2) Enter the command: /etc/newunix nonet

3) Enter the command: autoconfig

The output of the Autoconfig command might look similar to this:

Warning cannot find driver(s) for device ID 5 Version 7.0 Ignore the message: 'ld warning: file /tmp/kernAAAa02712 has no relocation info' if it appears. ld warning: file /tmp/kernAAAa02712 has no relocation information

Module Board Prefix Major Flags
====== ===== ====== ===== =====
0: scc 0 init-??? present char
1: scsi 24 init-??? present block
2: tty init-??? present
3: streams init-??? present
4: slots slots init-normal included lib
5: toolbox ui_ 4 init-normal included char fork ex

The last few lines of information sorted by columns describe the modules currently included in the kernel. You should not see any lines in the output that contain "nfs", "bnet", or "ae6".

Note: To make use of the new kernel, you must reboot the system.

Article Change History:
31 Aug 1992 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

A/UX: How to Reset Baud

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How do I reset the baud rate to 9600 on a particular port?

This article has been archived and is no longer updated by Apple.
Type the line:

stty 9600 < /dev/tty{port number}

Published Date: Feb 18, 2012

A/UX: How to Control Baud Rates and Other Serial Port Settings

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

When I set up baud rates and control serial port parameters, the settings revert to default values on boot up and at random times. I want to know how to control the baud rate setting and other serial port parameters. Is there a file that has these default values?

This article has been archived and is no longer updated by Apple.
For printer ports, you should use a printer interface script, as in /usr/spool/lp/model, to set port speed. For applications, set port speed via termio or ioctl.

Published Date: Feb 18, 2012

A/UX: How to Connect a Node to a Host

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Do I have to have any software running to connect a node to a host? I want to run my Macintosh Plus as a node.

This article has been archived and is no longer updated by Apple.
Just make sure that a getty is running at the appropriate speed on the port the node is connected to. The getty is set up in the file /etc/inittab, and must be turned on to "respawn".

Published Date: Feb 18, 2012

A/UX: How to Turn Off the Bell in Kermit

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How can I turn off the bell in kermit?

This article has been archived and is no longer updated by Apple.
You must modify kermit source code under A/UX. Just comment out all occurences of "putchar(BEL)" in the code and recompile.

Published Date: Feb 18, 2012

Converting Visicalc II files to Visicalc III

This article has been archived and is no longer updated by Apple.
A utility program included with the Apple Writer III Utilities diskette converts Visicalc II files to Visicalc III files. Here's how to use it:

1. Save your Visicalc II program to diskette; press /SS "filename".
2. Boot your Apple Writer III text file converter program.
3. Convert said files to Apple III.
4. Load the converted file into Visicalc III; press /SL "filename".
5. When you hear the beeping; press control C.
6. Save to disk; press /SS "filename".
7. Load the converted file; press /SL "filename".

Published Date: Feb 18, 2012

TA44837_AUX_NFS_Client_NFS_Server_Defined__(TIL06270).pdf

A/UX: NFS Client, NFS Server Defined (9/94)

What is an NFS client? An NFS server?

This article has been archived and is no longer updated by Apple.
An NFS client is a UNIX system that has mounted file systems of another UNIX system. The UNIX system which lets these file systems be mounted over the network by clients is called the NFS server.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

A/UX: Configuring the Kernel for an NFS Server

How do I install NFS (configure the kernel) for an NFS server?
This article has been archived and is no longer updated by Apple.

```
If you are using A/UX 2.0 or 3.0, bring the system to single-user mode and type the command:

   newconfig nfs

Then, follow the steps below:

1) Edit /etc/exports to specify hosts eligible to mount file systems from
  this server. In this file, you will specify what partitions you will
  allow to be mounted and what systems may be mounted.

  For example: to let anyone on the system "hostname1" mount a file
  partition named "/u1", you would enter the line to /etc/exports:

      /u1   hostname1

2) Check that a file system has been exported to this system; enter the
  command-line: showmount -e

  The output should look similar to the following:

      /     hostname1
      /users   hostname1 hostname2
```

Published Date: Feb 18, 2012

A/UX: How to Mount a Remote NFS System Manually (9/94)

How do I manually mount a remote NFS file system?

This article has been archived and is no longer updated by Apple.
The following steps use fictional directory and system names to give an example of how to manually mount a remote file system.

1) Log on the system as "root".

2) You will need a directory on which you will mount the remote file partition. Let's call the directory "mntdir".

3) Enter the line: mkdir /mntdir

This creates the directory mntdir in "/".

4) Next, we need the name of the remote file partition. We'll use the /usr/catman directory on the remote system "my_system_name" as an example.

5) Enter the line: mount my_system_name:/usr/catman /mntdir

This command line mounts the /usr/catman from the system "my_system_name" onto the "/mntdir" on the local system.

6) To check that the partition is actually mounted, type the command "mount" and press Return. Among the output, you should find one line for the remote partition just mounted:

my_system_name:/usr/catman on /mntdir

Support Information Services
Published Date: Feb 18, 2012

A/UX: How to Mount a Remote NFS System Automatically (9/94)

How do I make a remote NFS file system mount automatically at startup?

This article has been archived and is no longer updated by Apple.
1) Log on the system as "root".

2) First, remember that you will need a directory on which you will mount the remote file partition. Let's call the directory "mntdir".

3) Create the directory mntdir in "/"; enter the command-line:
mkdir /mntdir

4) You need the name of the remote file partition. Use the /usr/catman directory on the remote system "my_system_name" as an example.

5) Edit the file /etc/fstab. This file contains a list of file partitions that will automatically be mounted at boot time.

6) Add the line: my_system_name:/usr/catman /mntdir nfs rw,soft 0 0

7) Save the file and exit the editor.

8) Shut the system down.

9) Bring the system back up into multi-user mode.

10) The names of the local and remote partitions will be listed as they are automatically mounted.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy

Support Information Services

Published Date: Feb 18, 2012

TA44841_AUX_The_etcbiod_Daemon_Defined__(TIL06274).pdf

A/UX: The /etc/biod Daemon Defined (9/94)

What is /etc/biod?

This article has been archived and is no longer updated by Apple.
/etc/biod is a Network File System (NFS) daemon. The biod daemon starts a number of asynchronous block I/O daemons. This daemon is used on an NFS client to handle the read-ahead and write-behind of buffer cached blocks.

Support Information Services
Published Date: Feb 18, 2012

TA44842_AUX_The_etcnfsd_Daemon_Defined_(TIL06275).pdf

A/UX: The /etc/nfsd Daemon Defined

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

What's /etc/nfsd?

This article has been archived and is no longer updated by Apple.
/etc/nfsd is a Network File System (NFS) daemon. The nfsd daemon starts the NFS server daemons that handle client file system requests.

Published Date: Feb 18, 2012

A/UX: Daemons Needed for NFS (9/94)

What daemons need to be running for NFS?

This article has been archived and is no longer updated by Apple.
By using the "ps" command, you can determine if all the NFS daemons necessary for an NFS server are running.

1) Log on to the system as "root".

2) Enter the line: ps -ef

3) If all the necessary daemons are running, you should find these lines within the output:

root 98 1 0 09:42:27? 0:00 /etc/portmap
root 100 100 0 09:42:28? 0:00 /etc/nfsd 4
root 102 100 0 09:42:29? 0:00 /etc/nfsd 4
root 103 100 0 09:42:29? 0:00 /etc/nfsd 4
root 104 100 0 09:42:29? 0:00 /etc/nfsd 4
root 116 1 0 09:42:37? 0:00 /etc/inetd

The above lines may not appear together, and the numbers in the columns may differ on your system.

If you don't have the nfsd 4 lines appear, you may try the following procedure to start the /etc/biod daemon.

1) Log on as "root".

2) Edit the file /etc/inittab

3) Enter these changes:

- Change this line: nfs4:2:off:/etc/biod 4

- To this line: nfs4:2:wait:/etc/biod 4

- Change this line: nfs8:2:off:/etc/mount -at nfs > /dev/syscon 2>&1

- To this line: nfs8:2:once:/etc/mount -at nfs > /dev/syscon 2>&1

4) Now, when your system is booted into multi-user mode, the daemon will automatically be started.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1994 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

A/UX: How to Use showmount

How do I use showmount?

This article has been archived and is no longer updated by Apple.
The "showmount" command lists remotely mounted or exported file systems. The showmount command executed with no options lists the systems which have file systems remotely mounted from your system. Here is some example output from "showmount":

my_system_name
grumpy

This output tells us that the systems "my_system_name" and "grumpy" have partitions mounted from your system.

The showmount command has three options:

"-d" This option displays a list of the directories being remotely mounted from your system.

"-e" Prints a list of exported file systems.

"-a" Displays a list of hosts/remotely mounted directories sorted by hostname.

By using the "-a" option with the /usr/etc/showmount command, you can get a list of directories remotely-mounted from your system, sorted by the hostnames on which they are mounted.

Example output from the command line "showmount -a":

machen:/
machen:/users
redpony:/usr
redpony:/usr/catman

This example shows that the system "machen" has the "/" and "/users" partition mounted on his system while the system "redpony" has "/usr" and "/usr/catman" remotely mounted.

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TA44845_AUX_Specifying_a_Terminal_as_VT_(TIL06279).pdf

A/UX: Specifying a Terminal as VT-100

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

How do I specify my terminal as VT-100?

This article has been archived and is no longer updated by Apple.
In the Bourne shell (sh), type

set TERM=vt100
export TERM

In the C shell (csh), type

setenv TERM vt100

Published Date: Feb 18, 2012

Pascal III: Changing text modes

This article has been archived and is no longer updated by Apple.
The Write and Writeln procedures are unable to send the necessary control sequences to change the text mode to 40 columns black and white; use the Unitwrite procedure instead. The correct syntax is:

```
Program Demo;
Var ans :String;

Procedure Control (number:integer);
Var tryit :CHAR;
Begin
tryit := CHR (number);
Unitwrite (1, tryit, 1, , 12);
End;

Begin
Control (16);
Control (0);
Readln (ANS);
End.
```

Published Date: Feb 18, 2012

A/UX: nfsstat Defined (9/94)

Article Last Reviewed: 6 September 1994

What's nfsstat?

This article has been archived and is no longer updated by Apple.
The nfsstat command displays or initializes information about the Network File System (NFS) and Remote Procedure Call (RPC) interface to the kernel.

The nfsstat command executed without any options will give you a complete output of NFS, RPC, server and client statistical information.

For more information, see the manual page for nfsstat or the A/UX Network System Administration manual chapter on Configuring and Managing the Network File System.

Here is example output displayed from the command line "nfsstat":

```
Server rpc:
calls badcalls nullrecv badlen xdrcall
27018 0 0 0 0

Server nfs:
calls badcalls
27018 0
null getattr setattr root lookup readlink read
0 0% 94 0% 0 0% 0 0% 25604 94% 0 0% 10 0%
wrcache write create remove rename link symlink
0 0% 0 0% 0 0% 0 0% 0 0% 0 0% 0 0%
mkdir rmdir readdir fsstat
0 0% 0 0% 1293 4% 17 0%

Client rpc:
calls badcalls retrans badxid timeout wait newcred
4526 0 0 0 0 0 0

Client nfs:
calls badcalls nclget nclsleep
4526 0 4526 0
null getattr setattr root lookup readlink read
0 0% 4 0% 0 0% 0 0% 4266 94% 0 0% 0 0%
wrcache write create remove rename link symlink
0 0% 0 0% 0 0% 0 0% 0 0% 0 0% 0 0%
mkdir rmdir readdir fsstat
0 0% 0 0% 252 5% 4 0%
```

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

TA44848_AUX_How_to_Initialize_NFS_RPC_Statistics__(TIL06281).pdf

A/UX: How to Initialize NFS RPC Statistics (9/94)

Article Last Reviewed: 6 September 1994

How do I initialize NFS RPC statistics?

This article has been archived and is no longer updated by Apple.
The output of the nfsstat command is cumulative; statistics are added to the existing total since boot time. By using the "-z" flag option, these statistics can be zeroed. Zeroing the statistics makes it easier to troubleshoot NFS from a known point.

Refer to the A/UX Network System Administration manual chapter on Configuring and Managing the Network File System for more information on nfsstat.

Article Change History:
06 Sep 1994 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

TA44849_AUX_RPC_Defined__(TIL06282).pdf

A/UX: RPC Defined (10/95)

What's RPC?

This article has been archived and is no longer updated by Apple.
RPC is the acronym for "Remote Procedure Call". RPC is a collection of library routines that lets a program make procedure invocations on other machines across the network.

Article Change History:
30 Oct 1995 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

TA44850_AUX_NFS_and_AppleShare_Volumes_on_LocalTalk__(TIL06283).pdf

A/UX: NFS and AppleShare Volumes on LocalTalk (9/94)

Article Last Reviewed: 6 September 1994

What applications are available that let an A/UX system serve as a file server for a Macintosh network over EtherTalk?

This article has been archived and is no longer updated by Apple.
In A/UX 3.0, System 7's FileSharing is completely supported and allows this kind of access.

Here are some systems that make it possible to mount NFS volumes
(whether A/UX or UNIX) as AppleShare volumes on a LocalTalk network:

uShare from Information Presentation Technologies

GatorShare CS from Cayman.

Article Change History:
06 Sep 1994 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

A/UX: How to Mount a Berkeley File System (9/94)

Can I mount a Berkeley File System?

This article has been archived and is no longer updated by Apple.
If you do not have A/UX 2.0 or 3.0, the only way to mount a Berkley File System is using NFS; you can't mount directly to a physically-connected drive.

With A/UX 2.0 and 3.0, you can mount Berkeley, System V, and NFS volumes locally and across the network.

Refer to the A/UX Network System Administration manual chapter on Configuring and Managing the Network File system.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy

Support Information Services

Published Date: Feb 18, 2012

A/UX: Location of Ethernet Card device File (8/94)

Where is the device file for the Ethernet card located?

This article has been archived and is no longer updated by Apple.
It's in the kernel. A/UX is based on System V and does not use device files as Berkeley does.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

A/UX: Accessing TCP/IP from Macintosh OS

Can I use a Macintosh II and Ethernet card to access a TCP/IP network from the Macintosh OS?

This article has been archived and is no longer updated by Apple.
Yes, with NCSA Telnet (version 2.5). For more information, search the Tech Info Library under "NCSA Telnet".

Article Change History:
5 Apr 1993 - New version of Telnet.
Published Date: Feb 18, 2012

A/UX 3.0: How to Set tty to Work With cu (8/94)

What tty do I use with cu?

This article has been archived and is no longer updated by Apple.
The Macintosh has two serial ports called tty0 and tty1. The cu command is used to dial out and requires complete control of the serial port you tell it to use. That means that the getty process, which runs on serial ports waiting for users to dial in, must not be active on a serial port that is being used for dial-out purposes.

To set up the serial port so that it can be used for either dial-in or dial-out purposes, modify the /etc/inittab file so that the value of the action field of the serial port is respawn. Here is an entry for tty0:

00:2:respawn:/etc/getty tty0 mo_2400 # Port 0 (modem)

When you are finished editing /etc/inittab, run init q to stop any getty process that may currently be running on the port.

The cu command uses the /usr/lib/uucp/Devices file to get the information it needs about the device to use when establishing the connection. Here is an entry in the Devices file for a Hayes 2400 baud modem attached to tty0:

ACU tty0 - 2400 hayes

Here is an example of a minimal cu command line that specifies a telephone number:

cu 4155551212

When a telephone number appears on the cu command line, cu searches the Devices file for an entry that begins with ACU. Since we set up the Devices file with a line that starts with ACU, it will attempt to dial through serial port 0 (modem) at 2400 baud.

NOTE: The A/UX Network System Administration manual chapter on "Setting Up the UUCP System" contains complete descriptions of the procedures outlined above.

22 Aug 1994 - Updated for A/UX 3.0 and /usr/lib/uucp/Devices file.
08 Aug 1992 - REVIEWED For technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

A/UX: How To take and put With cu (6/93)

How do I take and put files with cu?

This article has been archived and is no longer updated by Apple.
Use the ~%take and ~%put commands.

Once you have made a successful connection with cu from local_machine to remote_machine, you may take & put files with the following commands:

~%take filename

This command takes the file filename from remote_machine and puts it in the current directory on local_machine. The command:

~%put filename

puts the file filename from local_machine to the current directory on remote_machine.

If you do not want the file filename to be put in the current directory, specify an absolute pathname (although this is not recommended).

Article Change History:
23 Jun 1993 - Revised to give more detail about commands.
31 Aug 1992 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

A/UX: How to Login via a Serial Port (9/94)

How do I login via a serial port?

This article has been archived and is no longer updated by Apple.
1) With the power to the system off, connect a straight-through serial cable from your A/UX system to the terminal or system that will be acting as a terminal.

2) Boot A/UX to multi-user mode. To put the system into multi-user mode, you can either type "init 2" at the command line or edit the file /etc/inittab to change default run level from "s" (single user mode) to "2" (multi-user mode).

3) Start a getty on the port used for login. Do this by editing one of the bottom two lines in /etc/inittab. One line changes the settings for the modem port, while the other one changes the settings for the printer port. The default entry for the modem port reads:

00:2:off:/etc/getty tty0 at_9600 # Port 0 (modem); set to 'respawn'

Change the word "off" to "respawn, so that it looks like:

00:2:respawn:/etc/getty tty0 at_9600 # Port 0 (modem); set to 'respawn'

Article Change History:
23 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

Apple IIGS: VCR Connection

This article has been archived and is no longer updated by Apple.

Here's how and why to connect your Apple IIGS to a VCR.

How: use a normal Apple IIGS video cable to connect the Apple IIGS's video output to the VCR's camera input. (Video cables are available in several lengths.) Set the VCR to "camera."

Why: This arrangement lets you use the television that's connected to the VCR as a computer monitor -- and you don't have to use an RF modulator. Because the VCR thinks the computer is a camera, you can save whatever the computer displays on video tape. Use a drawing program, for example, to make title screens for your live-action videos, or use an animation program to make your own cartoon videos.

Published Date: Feb 18, 2012

A/UX: How to Do Remote Printing (9/94)

How can I do remote printing?

This article has been archived and is no longer updated by Apple.
On A/UX 2.0

You can run remsh, using cat in the local system and lp through the remote shell on the system where the printer is connected. Here is an example in which "mysys" is the host name:

cat file1 | remsh mysys lp

On A/UX 3.0

The operating system recognizes remote printer indications in the file /etc/printcap. /etc/printcap contains configuration information used by the lpr print spooler. If you plan to connect a printer directly to a remote computer on the network, a user on the local Macintosh can print on that printer by using the -P remotehost option to lpr if the /etc/printcap file on the Macintosh is set up. Edit the file /etc/printcap and find these lines:

Remote UNIX line printer

Change 'RemoteHost' to actual name of the remote UNIX host

remote|remote line printer:\\

:lp=:rp=lp:rm=RemoteHost:sd=/usr/spool/lpd/Remote:

Change RemoteHost to the host name of the computer to which the printer is directly connected.

Article Change History:
08 Sep 1994 - Reviewed.
31 Aug 1992 - Added info about A/UX 3.0.

Support Information Services

Published Date: Feb 18, 2012

A/UX: The /etc/exports File

Article Change History

08/31/92 - REVIEWED
*For technical accuracy

What's the file /etc/exports used for? What is its format?

This article has been archived and is no longer updated by Apple.
NFS file servers use the /etc/exports file to control which file systems can be mounted by which systems on the network. Entries in /etc/exports specify a file system name that can be remotely mounted. The file system name is left justified and may be followed by a list of hostnames or netgroup names separated by spaces or tab characters.

If a hostname or netgroup name follows the file system name, export permissions are limited to the host(s) or netgroup(s) specified. Otherwise, it is open to everyone.

A number sign (#) anywhere on a line begins a comment that remains in effect to the end of the line.

An example /etc/exports file could look like:
/
/usr/catman my_system_name

In this example, the "/" partition is exported to any system on the network. The "/usr/catman" partition, however, is only exported to the system named "my_system_name".

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TA44860_AUX_The_etcfstab_File_(TIL06293).pdf

A/UX: The /etc/fstab File

Article Change History

08/31/92 - REVIEWED
* For technical accuracy

What's the file /etc/fstab used for?

This article has been archived and is no longer updated by Apple.
The file /etc/fstab contains a list of local and remote partitions that are used by the local system. The mount command uses this list to mount those partitions when the system boots up into multi-user mode.

Published Date: Feb 18, 2012

A/UX: /etc/inittab Defined (9/94)

What's /etc/inittab?

This article has been archived and is no longer updated by Apple.
The /etc/inittab file is read by init, the first process started by an A/UX system when it starts up. Init looks at /etc/inittab to see which processes to execute at startup time. Examples include the Macintosh Finder environment with A/UX 3.0, NFS capability, and networking daemons.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy

Support Information Services

Published Date: Feb 18, 2012

A/UX:/etc/nfsd Defined (9/94)

What's /etc/nfsd?

This article has been archived and is no longer updated by Apple.
/etc/nfsd is a Network File System (NFS) daemon. The nfsd daemon starts the NFS server daemons that handle client file system requests.

Support Information Services
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A/UX: How to Determine Which Partitions Are Being Exported

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How do I find out which partitions are being exported from another system on the network?

This article has been archived and is no longer updated by Apple.
By using the "-e" options with the /usr/etc/showmount command and specifying a hostname, you can get a list of the partitions that are being exported from another system on the network.

For example, to get a list of exported directories from the system "macaux," enter the line:

showmount -e macaux

The output could look like this:

export list for macaux:
/s1 everyone
/ everyone

This output tells us that the "/" and "/s1" directories from the system "macaux" are being exported to everyone.

Published Date: Feb 18, 2012

Applesoft: OVERFLOW ERROR in first line of program

Applesoft returns an OVERFLOW ERROR when the first number it encounters after booting is a negative one.
This article has been archived and is no longer updated by Apple.
Typically, the negative number is a 'CALL -936", which is easily substituted with "HOME".
Published Date: Feb 18, 2012

Pascal III: Comparison to Apple II Pascal (1 of 2)

This article has been archived and is no longer updated by Apple.
The majority of Apple II Pascal programs can be recompiled then executed on the Apple III without modification. The following is summary of significant differences between Pascal II and Pascal III. Please refer to the Apple III Pascal Programmer's Manual, Volume 2, starting on page 128, for additional information.

OTHERWISE Clause in CASE Statement:

Pascal III provides an OTHERWISE clause in the CASE statement. The OTHERWISE clause allows you to enter a statement that is executed if none of the cases are executed. Refer to chapter 5 of the Apple III Pascal Programmer's Manual.

SOS Pathnames:

SOS Pathnames are different from the Pascal filenames used on the Apple II. Pascal III supports both types of names, as explained in the Apple III Pascal Introduction, Filer, and Editor manual.

SOS Device Driver Support:

Pascal III supports SOS device drivers as "I/O units." See Chapters 10 thru 12 in the Standard Device Drivers Handbook.

Graphics:

The Apple III screen graphics modes driven through the SOS graphics driver differs significantly from the Apple II. Therefore, a new unit named PGRAF is supplied as a high-level interface to the graphics driver. Refer to the Standard Device Driver manual for additonal information on the SOS graphics driver.

Turtlegraphics is available only for compatibility with the Apple II. Refer to Appendix K of the Apple III Pascal Programmer's Manual.

New Procedures:

The AppleStuff unit contains Date, TimeOfDay, ClockInfo, and SetTime procedures for reading and setting the Apple III system's internal date and time. See Appendix D of the Apple III Pascal Programmer's Manual.

New Data Types:

The ByteStream and WordStream types are provided for use as types of Var parameters in procedure and function definitions. See Chapter 3 of the Apple III Pascal Programmer's Manual.

Real Arithmetic:

For operations on type Real values, Pascal III conforms to the IEEE floating-point standard. Under default conditions, the difference between the Pascal III and Apple II Pascal is invisible, unless the program performs operations giving exeception results, such as division by zero. See Appendix F of the Apple III Pascal Programmer's Manual for complete details.

The Apple Pascal Numeric SANE package, available for both the Apple II and Apple III, establishes a universal mathematic environment for the two systems.

Library Files and Units:

Each Pascal III codefile can have a "program library" file associated with it in addition to the System.Library file. Thus, library units are more convenient; furthermore, programs may have up to 48 segments at run time.

When compiling a unit, it is no longer necessary in all cases to use the Compiler's swapping option.

Published Date: Feb 18, 2012

A/UX: How to Print a List of Exported File Systems

How do I print a list of exported file systems?

This article has been archived and is no longer updated by Apple.
By using the "-e" option with the /usr/etc/showmount command, you can quickly list the directories you have exported to other systems on the network.

Example output from the command line "showmount -e" executed the command line from the system "my_system_name":

export list for my_system_name:
/users machen redpony
/ machen redpony

This example says that the directories "/" and "/users" are exported to the systems "machen" and "redpony" only.

In A/UX 3.0, /etc/exportfs can be used. With no options, all exported file systems are listed.

Published Date: Feb 18, 2012

A/UX: How to Monitor NFS Activity (9/94)

How can I monitor NFS activity?

This article has been archived and is no longer updated by Apple.
The nfsstat command displays or initializes information about the Network File System (NFS) and Remote Procedure Call (RPC) interface to the kernel. It is a good way to monitor NFS activity and load.

The nfsstat command executed without any options gives you a complete output, displaying the NFS, RPC, server and client statistical information.

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31 Aug 1992 - REVIEWED for technical accuracy

Support Information Services

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TA44868_AUX_NFS_Configuration__(TIL06303).pdf

A/UX: NFS Configuration (9/94)

What files are modifed when configuring a system to be an NFS server?

This article has been archived and is no longer updated by Apple.
The following files are modified in some way when installing NFS:

/etc/inittab
/unix
/etc/fstab
/etc exports

The /etc/inittab file must be modified to start the BNET and NFS daemons.

The kernel, /unix, must be recreated to include the NFS modules.

The /etc/fstab file is a list of the local and remote partitions which are to be mounted automatically at boot time.

The file /etc/exports contains a list of the file partition which the server system will allow to be remotely mounted by other systems on the network.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy

Support Information Services

Published Date: Feb 18, 2012

TA44869_AUX_The_nobody_Login_Account__(TIL06304).pdf

A/UX: The "nobody" Login Account (9/94)

Article Last Reviewed: 6 September 1994

How do I modify /etc/passwd for NFS? What's the "nobody" login account for?

This article has been archived and is no longer updated by Apple.
The /etc/passwd file must contain a login account for "nobody".

Enter the line: grep nobody /etc/passwd

The response should be:

nobody:*:65534:65534::/:

If this line does not appear, modify the /etc/passwd file to include it. This account is used by NFS to disallow root access via NFS.

For system security reasons, the super-user does not have access permissions on remote file systems. This is implemented by mapping UID 0 ("root") to UID 65534 (unsigned representation of -2 in 2's complement notation) on all NFS client systems. The super-user on an NFS client has the same permissions as a user with the UID -2.

The login account "nobody" has the UID 65534 (-2).

Article Change History:
06 Sep 1994 - Reviewed.

Support Information Services

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A/UX: Fields in /etc/fstab (9/94)

What are the fields in the file /etc/fstab?

This article has been archived and is no longer updated by Apple.
The file /etc/fstab consists of a number of lines like:

/dev/dsk/c0d0s0 / 5.2 rw 1 1
hostname1:/usr/catman /usr/catman nfs ro,soft 2 2

Fields are separated by blanks or tabs. A number sign (#), as the first non-space character, begins a comment.

The first field in each line specifies the device on which the local partition to be mounted exists. For a remote file partition, it contains the hostname of the system on which the remotely-mounted file system really exists, and then a colon (:), followed by the absolute path name of the file partition as it exists on the server system.

The second field is the local mount-point. For a local system file partition, the device pathname is specified. For a remote file partition, you should see the remote host's name and the full pathname of the file partition to be mounted.

The third field is the type of file system. This may be 4.2, 5.2, nfs, or ignore. If this field is ignore, the entire line is ignored. This feature lets you keep remote mounts that you do not want to mount routinely in /etc/fstab when you boot the system.

The fourth field contains options that are passed to the mount command. Some of the valid options include:

- "rw" specifying that the mounted file system is readable and writable.

- "ro" specifying that the mounted file sytem is read-only.

- "soft" If a file system is mounted read-only, this option lets the client system keep running using only local data, when the server system goes down.

The fifth field is a dump-level parameter used by the dumpfs command.

The last field is the fsck pass number; this number indicates in what order the partition will be checked by fsck. Partitions on different physical drives may be checked at the same time. This field value is not used on remote file systems.

Support Information Services
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A/UX: Solution to "RPC_PROG_NOT_REGISTERD" Error

Article Change History

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* For technical accuracy.

I tried to mount a remote file system and got the error:

mount: <hostname> server not responding: RPC_PROG_NOT_REGISTERD

This article has been archived and is no longer updated by Apple.
Check to see that the /etc/initd daemon is running.

1) Log on to the system as "root".

2) Enter the line:

ps -ef| grep mount

The output should look like this:

root 317 107 0 Apr 25 ? 0:05 rpc.mountd

If you did not get this output, do these steps:

1) Enter the line:

grep inetd /etc/inittab

You should see this output:

net9:2:respawn:/etc/inetd

The inetd daemon starts the rpc.mountd daemon. If the output does not match the above output, edit the file /etc/inittab and change that line so that it does.

2) Shut the system down into single-user mode;

sync; sync
init 1.

3) Bring the system back up into multi-user mode

init 2

Published Date: Feb 18, 2012

A/UX: Solution to "mount: no such file or directory"

I'm trying to mount a file system and keep getting the error:

mount: <file system> no such file or directory

This article has been archived and is no longer updated by Apple.
Be sure that the file system you specify really exists.

1) Is the file system pathname spelled correctly?

2) Is the directory pathname you specified actually there?

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A/UX: Solution to "mount: not in export list for " Error

I tried to mount a file system and got the error:

mount: not in export list for <host>

This article has been archived and is no longer updated by Apple.
Enter the line:

showmount -e

followed by a space and the name of the of the host from which the file system you are mounting exists.

The output displayed lists all the file systems that the remote host has exported and to which systems it has exported them.

Here is example output from the command line, "showmount -e macaux":

export list for macaux
/cmd/src everyone
/s1 my_system_name sleepy grumpy

In this example, "my_system_name", "sleepy", and "grumpy" systems have permission to mount the file system "/s1". No other system has permission. However, "/cmd/src" can be mounted remotely by any system on the network.

If the name of your system is not included in the export list for a particular file system, you cannot mount that file partition. Consult with the system administrator of that host to have your system added to the export list.

Here is another example output from the command line, "showmount -e macaux":

export list for macaux
/cmd/src everyone
/s1 my_system_name sleepy mispeled

In this example, "my_system_name", "sleepy", and "mispeled" systems have permission to mount the file system "/s1". No other system has permission. However, "/cmd/src" can be mounted remotely by any system on the network.

The system "misspelled" is not spelled correctly in the export file, so that system cannot mount that partition. Consult with the system administrator of that host to have your system correctly spelled in the export list.

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A/UX: Solution to "network unreachable" Error

I tried to mount a remote file system and got the error:

network unreachable

This article has been archived and is no longer updated by Apple.
This could be because the Ethernet card or cable connection is not working correctly. Here are four trouble-shooting steps:

1) Make sure that the Ethernet cable from the Ethernet card to the rest of the network is connected and seated properly and snugly.

2) Check that there is not a broken connection in the main network cable itself.

3) Check that cables do not show any physical signs of damage. Ethernet cables should not be crimped, bent, or squished.

4) Replaced all cables that show excessive wear.

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Pascal III: Comparison to Apple II Pascal (2 of 2)

This article has been archived and is no longer updated by Apple.

Memory Organization:

An Apple III operating SOS or Pascal has different memory organization than when running Apple II Pascal. The amount of memory available is somewhat greater on the 128K Apple III than on the Apple II.

Memory organization could effect an Apple II program run on a Apple III, if the program depends on pointer values created when running on an Apple II and stored on a diskette.

Similarly, an Apple II program that depends on specific Apple II hardware addresses does not work on the Apple III. This could for example affect Apple II Pascal programs designed to drive the Silentype printer; though such programs could be revised to use the Apple III Silentype driver described in the Standard Device Drivers Handbook.

The UNITSTATUS Procedure:

The UNITSTATUS procedure is supported for device oriented I/O. See Chapter 12 of the Apple III Pascal Programmer's Manual.

Runtime Segment Table:

The runtime segment table allows for 64 segments instead of 32. See Chapter 15 of the Apple III Pascal Programmer's Manual.

Conditional Compiling:

The Apple III Pascal Compiler allows conditional compilation. See Appendix F of the Apple III Pascal Programmer's Manual.

CHAINSTUFF Unit:

Since Apple III Pascal has no "system swapping" mode, the SWAPON and SWAPOFF procedures are absent from the CHAINSTUFF unit.

Compiling Apple II Code:

The Pascal III compiler can compile code to run on the Apple II. Refer to Appendix F of the Apple III Pascal Programmer's Manual.

File Variable Size:

Every declared file in an active procedure requires 1,100 bytes of memory.

Compiler Options:

Option names can be spelled out.

Because Compiler options always end with a comma, all can be chained together except for the Include option. The Comment option cannot contain a comma and the Resident option does not accept a list.

Procedure Complexity:

The Apple III larger memory supports more complex code than the Apple II.

System Globals:

Users of the {$USER-} option may find that their programs are not portable.

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A/UX: Solution to "mount: : Not owner" Error

I tried to mount a file system and got the error:

mount: <directory>: Not owner

This article has been archived and is no longer updated by Apple.
You must be logged in as "root" when mounting partitions.

Enter the line:

whoami

The output should be: "root". If it isn't, log in as "root" and try the mount again.

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A/UX: "NFS server not responding..." Error (9/94)

I tried to mount a file system and got the error:

NFS server <hostname> not responding, still trying

This article has been archived and is no longer updated by Apple.
Check to see that the remote system (the one with the file system you're trying to mount) is available.

Enter the line:

ruptime

Here is an example of the kind of output you might see:

grumpy down 0:11
sleepy up 36+00:41
snow up 21:54

The system "grumpy" is down. Because the host is down, the NFS file systems aren't available and won't be available until the host comes back online.

Article Change History:
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Support Information Services

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A/UX: How to Make an NFS Daemon Run (9/94)

My NFS daemon isn't running. Why not?

This article has been archived and is no longer updated by Apple.
Was the nfs daemon started in /etc/inittab? If not, follow these steps:

1) Log on as "root".

2) Edit the file /etc/inittab

3) Change the line

nfs3:2:off:/etc/nfsd 4 # set to "wait" for NFS server

to:

nfs3:2:wait:/etc/nfsd 4 # set to "wait" for NFS server

4) Enter the line: telinit q

5) Enter the line: ps -ef | grep nfsd (or, ps-a | grep nfsd in the C shell)

The output should resemble the following:

root 93 1 0 10:00:34? 0:00 /etc/nfsd 4
root 94 1 0 10:00:35? 0:00 /etc/nfsd 4
root 95 1 0 10:00:35? 0:00 /etc/nfsd 4
root 96 1 0 10:00:35? 0:00 /etc/nfsd 4

Note that the numbers in the columns may differ on your system.

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06 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy.

Support Information Services

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TA44879_AUX_NFS_Defined__(TIL06313).pdf

A/UX: NFS Defined (9/94)

What is NFS?

This article has been archived and is no longer updated by Apple.
NFS is the abbreviation for "Network File System".

NFS lets UNIX systems, connected by an Ethernet network, share file systems or partitions remotely (that is, over the network); it lets one UNIX system on the network share and access the disk space of another system on the network. This helps conserve disk space and allows the sharing of resources. For example, printers, or the on-line manual pages are often placed on an NFS volume for global access by everyone on the network.

An NFS client (the remote system) may mount a file partition of the NFS server (the system on which the actual disk space for the partition exists). This is all transparent to the user. The user can access the remote file system as though it were a local disk.

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31 Aug 1992 - REVIEWED for technical accuracy

Support Information Services

Published Date: Feb 18, 2012

A/UX: Solution to "/etc/fstab: No such file or directory" Error

I tried to mount a file system and got the error:

/etc/fstab: No such file or directory

This article has been archived and is no longer updated by Apple.
The name of the file system that you are trying to mount does not exist in the file /etc/fstab.

1) Log onto the system as "root".

2) Edit the file /etc/fstab.

3) Add an entry for the file system that you are mounting.

Published Date: Feb 18, 2012

A/UX: Solution to "mount: already mounted" Error

I tried to mount a file system and got the error:

mount: <file system> already mounted

This article has been archived and is no longer updated by Apple.
Follow these steps:

1) Log onto the system as "root".

2) Enter the line: mount

A list of the currently mounted file systems will be displayed.

Example output:

/dev/dsk/c0d0s0 on / type 5.2 (rw,noquota)
/dev/dsk/c0d5s0 on /users type 5.2 (rw)
macaux:/s1 on /earlw1 type nfs (rw,soft)

If the file system you trying to mount is listed, then it is already mounted. You may unmount the file system and mount it again to be sure.

1) Enter the command

umount

followed by a space and the absolute pathname of the file system directory. For example, the command "umount /users" unmounts the /user partition.

2) Enter the command

mount

followed by a space and the device name of the file system to be mounted, a space, and the absolute pathname of the directory on which the file system will be mounted. For example, the command

mount /dev/dsk/c5d0s0 /users

mounts the file system associated with the device "/dev/dsk/c5d0s0" on the directory /users.

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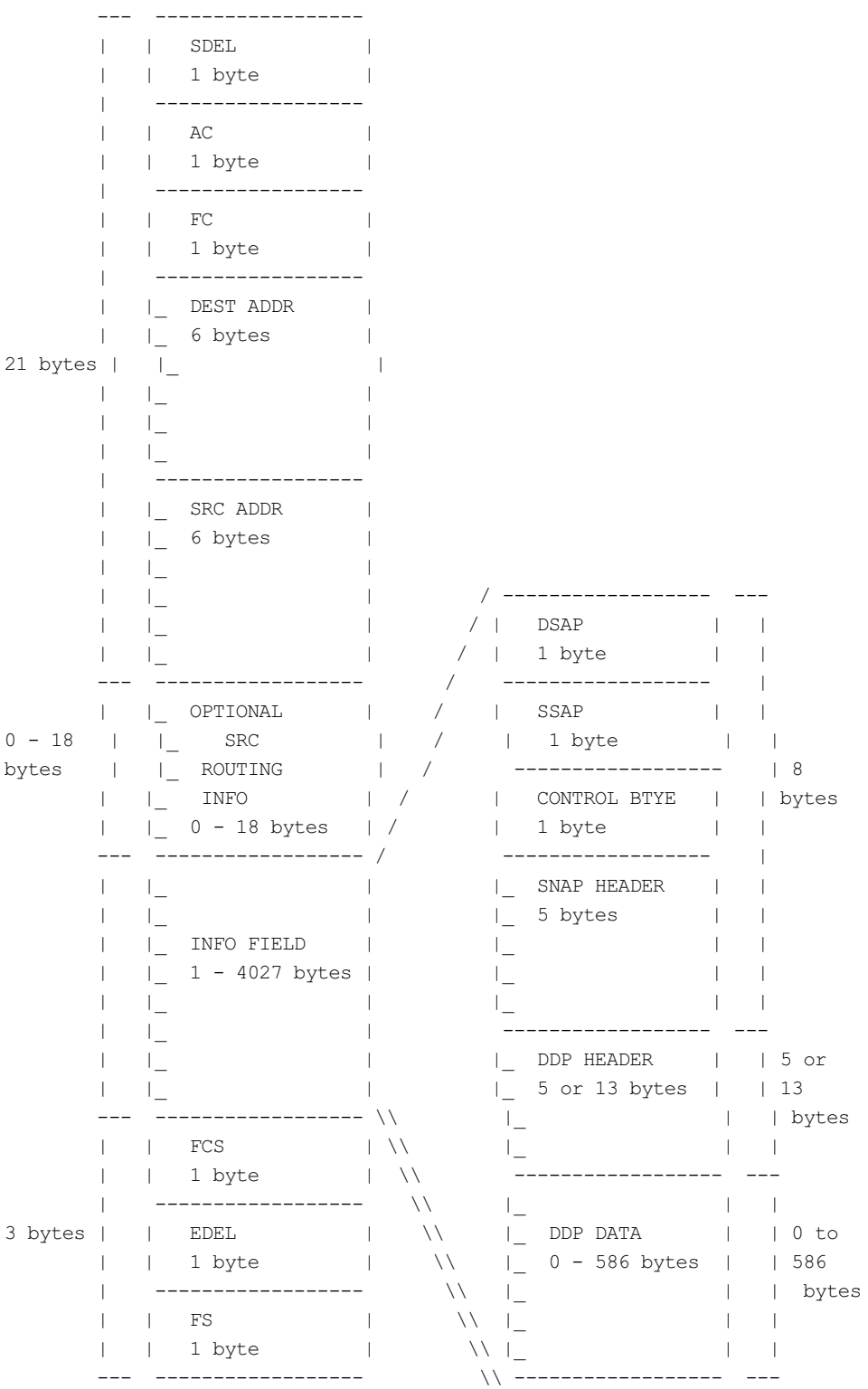
Token Ring: Packet Format

This is a drawing of the Token Ring Packet Format.
This article has been archived and is no longer updated by Apple.
Token Ring Packet Format



Token Ring Packet Data Information

- Maximum Token Ring Packet Size: 4051 bytes
- Minimum Token Ring Packet Size: 4 bytes
- Maximum TokenTalk Packet Size: 649 bytes
- Minimum TokenTalk Packet Size: 37 bytes

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LaserWriter IINTX: Dual Connection to Macintosh and PC

Is it possible to connect a LaserWriter IINTX (with rev 2.0 ROMs) to a Macintosh, through an AppleTalk connection AND to an IBM PC, through a serial connection?

I want to have both cables connected at the same time and select the appropriate port to print from. How do I change from HP LaserJet mode to PostScript mode without changing the DIP switches?

Can I simultaneously have a serial connection and an AppleTalk connection with a LaserWriter IINTX?
This article has been archived and is no longer updated by Apple.
The LaserWriter IINTX will not support simultaneous serial and LocalTalk connections. We recommend that if you are switching between both kinds connections you should disconnect the cable you're not using.

However, it is possible to connect a LaserWriter to an AppleTalk network and to an IBM PC, using software switching to change between the two.

- You must have the LaserWriter IINTX ROM upgrade to switch both ways.
- The following instructions assume that there is a LocalTalk connection to the LaserWriter through the RS-422 port, a serial connection to the IBM PC through the RS-232 port, and all DIP switches are up (default AppleTalk PostScript).
- Remember that the LaserWriter will need some time to respond to the procedures outlined below. Its Ready light flashes while the LaserWriter is setting each of these parameters. Wait for this light to stop flashing before you send another command, or the LaserWriter may not receive all of the next command.

Caution: If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

To Switch From an AppleTalk Connection To a Serial Connection

Step 1
To disable the RS-422 port, set its baud rate to 0. Send this PostScript file to the LaserWriter:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin
9 0 0 setsccbatch
9 0 0 setsccinteractive
<Control-D> %(if in interactive mode)
%
% end PostScript Code
%=========================================================
```

This prevents the printer from sending serial information over the AppleTalk network, causing unpredictable results.

Step 2
To set the LaserWriter to work in LaserJet Plus mode through the serial (RS-232) port, send this PostScript file to the LaserWriter:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin
5 setsoftwareiomode
0 sethardwareiomode
<Control-D> %(if in interactive mode)
%
% end PostScript Code
%=========================================================
```

The LaserWriter now uses the RS-232 port, as if it were a LaserJet Plus. The LaserWriter no longer understands PostScript, is not available over the network, and does not appear in the Chooser.

But the IBM PC can now talk to the LaserWriter. To confirm this, type this command at the DOS prompt:

```
MODE COM1:96,n,8,1,p
```

This tells the IBM PC to send information at 9600 baud, the default for the LaserWriter through the serial port. You can now print as though you were connected to a LaserJet Plus.

To Return To a PostScript LaserWriter Over an AppleTalk Network

Step 1
Send a file containing the characters Escape, Delete, 0, and Control-D. The best way to do this is to use BASIC to explicitly put these characters in a file. For example, use this BASIC program:

```
open "psreturn.txt" for output as #1
print #1,chr$(27);chr$(127);"0";chr$(4)
close #1
```

and send this file to the LaserWriter using this command from the DOS prompt:

```
TYPE PSRETURN.TXT > COM1
```

whenever you want to switch to a PostScript LaserWriter.

The LaserWriter is now in PostScript mode and using serial communication. You can send PostScript programs from the IBM PC through the RS-232 port, and the LaserWriter will respond.

To Switch Back to AppleTalk Communication Through the RS-422 Port

Step 1
At the DOS prompt, create this PostScript program:

```
COPY CON SET.MOD
%============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin
0 setsoftwareiomode
2 sethardwareiomode
<control-Z>
%
% end PostScript Code
%============================================================
```

Step 2
Send the program to the LaserWriter with the DOS command:

```
TYPE SET.MOD > COM1
```

(this will take some time).

The LaserWriter is now back in AppleTalk PostScript mode, using the RS-422 port.

Step 3
Set the baud rate of the RS-422 port back to what it was. This can be done from your Macintosh using this PostScript program:

```
%============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin
9 9600 0 setsccbatch
9 9600 0 setsccinteractive
%
% end PostScript Code
%============================================================
```

This assumes that you want to set the baud rate to 9600. Change this number if you want another rate.

This is not the LocalTalk baud rate; it is the baud rate that would be used if you connected serially to the RS-422 port. You are not required to set this number back to what it was to work over LocalTalk, but it is the default number set in the printer.

The LaserWriter's settings should now be what they were when you started.
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MacTerminal 3.0: How To Send "Break"

A customer wants multisession support from MacTerminal 3.0 running on a Macintosh connected to a DEC terminal server. He needs to be connected to the LocalTalk network to print during sessions.

His terminals let him use a "break" key to switch between different sessions that the terminal server is maintaining for the particular terminal.

He wants to be able to watch three sessions at the same time in different windows on a two-page display.

What is the ASCII code to put a DEC terminal server into a new session?

This article has been archived and is no longer updated by Apple.
There is no ASCII code for the BREAK signal. The data line can be in two conditions:
- MARK (negative voltage, binary 1), or
- SPACE (positive voltage, binary 0).

The data line is normally in MARK condition; it is in the SPACE condition only while a frame is being transmitted. A longer-than-normal SPACE condition, around 100 to 600 milliseconds, is used as a special signal known as a BREAK.

The "Send Break" command in MacTerminal 3.0 sends a long break (3.5 seconds) across the open connection, which has the same effect as choosing the corresponding Break key from the keyboard. The "Send Break" command in MacTerminal 3.0 is under the Sessions menu; its keyboard equivalent is Command-Y.

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Pascal III: Error code summary

This article has been archived and is no longer updated by Apple.

System Failures

01 Re-entrant system call
02 Interrupt not found
03 Too many nested interrupts
04 Unable to allocate NMI
05 Event queue overflow
06 Stack overflow
07 Invalid request code
08 Reserved
09 Memory size less than 64K bytes
0A Invalid volume control block
0B Invalid file control block
0C Invalid allocation block
0D Pathname buffer overflow
0E
0F Invalid buffer number
10 Invalid buffer request

Pascal Execution Errors

1 Value range error
2 No procedure in segment table
3 Exit from uncalled procedure
4 Stack overflow
5 Integer overflow
6 Divide by zero
7 NIL pointer reference
8 Program interrupted by user
9 System I/O error
10 User I/O error
11 Unimplemented instruction
12 Floating point error
13 String overflow
14 Program HALT
15 Programmed break-point

Pascal I/O Errors

0 No error, normal I/O completion
1
2 Bad unit number
3 Illegal operation (e.g. read from Printer:)
4
5 Lost unit, no longer on line
6 Lost file, file no longer in directory
7 Illegal pathname
8 No room, insufficient space on diskette
9 No unit, unit not on line
10 No such file in specified directory
11 Duplicate pathname
12 Attempt to open an already open file
13 Attempt to access a closed file
14 Bad input format, error in reading number
15 Ring buffer overflow, input arriving too fast
16 Write protect error, diskette is protected
17
18
19 Too many files open for system to handle
20..31
32 (SOS) Invalid request code

33
34 (SOS) Invalid control parameter list
35 (SOS) Character device not open
36 (SOS) Device not available
37 (SOS) Resource not available
38..43
44 (SOS) Invalid byte count
45 (SOS) Invalid block number
46..47
48..63 (SOS) Device specific error
64 (SOS) Device error, bad address or bad data on diskette
65 (SOS) Too many character files open
66 (SOS) Too many block files open
67 (SOS) Invalid file reference number
68..72
73 (SOS) Directory full
74 (SOS) Incompatible file format
75 (SOS) Unsupported storage type
76 (SOS) Attempted read past end of file
77 (SOS) File position out of range
78 (SOS) Illegal access attempted
79 (SOS) User's buffer too small
80 (SOS) File busy
81 (SOS) Volume format neither SOS nor Apple II
82
83 (SOS) Invalid value in list parameter
84 (SOS) Out of memory for SOS system buffer
85 (SOS) Buffer table full
86 (SOS) Invalid system buffer parameter
87 (SOS) Duplicate volume error
88..126
123..127
(SOS) System call error

Published Date: Feb 18, 2012

A/UX: How Users Can Shut Down Without Root Access (9/94)

A system administrator at an A/UX site wants to give users the ability to power off their machines, but without giving them root access. Is the following procedure a suitable way to power down the machine? Here is what he did:

1) He modified the /mac/bin/Login file with ResEdit, changed the string
Guest to poweroff (STR# resource), and modified the dialogs accordingly.

2) He compiled the following C program and named the executable poweroff:

poweroff.c

```
#include <stdio.h>

main(argc, argv)
int argc;
char *argv[];

{
setuid(0);
argv[0] = "reboot";
execl("/etc/reboot", "reboot", "-h", 0); /* -- run reboot */
/* -- NOTREACHED */
}
```

3) Poweroff* was put in the /root directory and given these permissions:

```
# ls -l /root/poweroff
-rwsr-xr-x 1 root root 2373 Aug 17 18:20 /root/poweroff
```

4) An account called "poweroff" was added to /etc/passwd that executes
/root/poweroff when a user logs in under that name (or selects the
power-off radio button in the Login screen). For example:

```
# grep poweroff /etc/passwd
poweroff::8:1000:user shutdown account:/root:/root/poweroff
```

The only possible problem with this is that a user could log on to another user's machine and shut it down. Giving the user a power-off password makes this unsuitable for installations where there is limited network discipline.

This article has been archived and is no longer updated by Apple.
Your C code seems to meet the customer's need: shutting down A/UX without being root.

This additional code can be included in the poweroff.c to prevent a remote user from shutting down the system:

```
char *ttyname();
char *p;
char *d="/dev/ttyC";

p=ttyname(0);
if (strncmp(p, d, 9) != 0) {
fprintf(stderr, "%s: not a CommandShell type of window\\n", argv[0]);
exit(1);
}
```

Article Change History:
23 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

TA44887_LaserWriter_No_Backup_Utility_for_NonComposite_Fonts_(TIL06321).pdf

LaserWriter: No Backup Utility for Non-Composite Fonts

The documentation with the LaserWriter IINTX I/O board revision 3.0 upgrade tells users to back up the fonts stored on a hard disk connected to the LaserWriter IINTX before doing the upgrade. How do I make a backup of the fonts disk?

This article has been archived and is no longer updated by Apple.
At present, there are no utilities specifically for backing up fonts stored on a LaserWriter hard disk.

Before installing the ROM upgrade, use the LaserWriter Font Utility (it comes with the LaserWriter IINTX) to reformat the hard disk. After installing the ROM upgrade and restarting the system, re-install fonts from the original floppy disks. (If you purchased your fonts from Adobe, already installed on a hard disk, contact Adobe for the procedure.)

Composite fonts are an exception: with the new version of the LaserWriter Font Utility (version 2.0.1, shipping with upgraded printers), you can back up composite fonts to floppy disks. (Composite fonts are small fonts hooked together to support Kanji and Chinese characters, which require more than the 256 characters supported in a single PostScript font.)

Published Date: Feb 18, 2012

LaserWriter: Printing Non-PostScript Files from a PC

Some customers report problems printing to a PostScript LaserWriter from MS-DOS PCs equipped with LocalTalk PC Cards. From the PC, the printer appears in the Chooser and can be selected -- but it won't print such files as AUTOEXEC.BAT.

This article has been archived and is no longer updated by Apple.
The problem may be that the LaserWriter was connected for use with PostScript files instead of plain text files. When AppleShare PC connects to a LaserWriter for PostScript use, it sends the raw data directly to the LaserWriter without modification. This doesn't work for typical DOS text files because they aren't in PostScript format.

The Epson emulation mode accepts standard text files and converts them to PostScript format before sending them to the LaserWriter. This is the mode you should use for printing AUTOEXEC.BAT and other non-PostScript files created by applications that support PostScript printing.

For most users, the best way to set up AppleShare PC is to make two connections to the LaserWriter: one for PostScript and the other for plain text. For instance, use LPT2 as the Epson connection and LPT3 as the PostScript connection. This uses slightly more conventional memory, but it allows you to print either type of document without altering configurations.

Published Date: Feb 18, 2012

Ethernet: DDP Client With DDP Type=69 ID

While checking Ethernet traffic, we noticed a large number of short (60-byte) EtherTalk packets (Phase 1) of an unknown protocol type. We opened the packet and found that they were DDP Type=69. The Ethernet is heavily loaded, especially with LAVC (Local Area VAX Cluster) traffic, and the apparently exclusive use of minimum size packets is a concern.

Can you identify the application that uses/produces these packets? We use 3COM servers and the older 3+Share Macintosh client software.

This article has been archived and is no longer updated by Apple.
There is no way to tell which vendor creates packets with DDP Type=69 because Apple does not assign or control the use of DDP Type beyond $0F.

We don't know if the packets come from the 3COM server, but you could try to find the Ethernet node by matching the 48-bit Ethernet source address in the 802.3 header and the Ethernet adapter hardware address.

Published Date: Feb 18, 2012

MultiGate Mac: General Information

MultiGate Mac is a software router/gateway for Macintosh II computers from Network Resources Corporation. It supports

* AppleTalk and TCP/IP routing

* IP in DDP encapsulation (MacIP support for MacTCP clients)

* Up to five Ethernet cards and one LocalTalk.

This article has been archived and is no longer updated by Apple.
MultiGate Mac can run as a concurrent AppleShare application, or under MultiFinder or System 7 with a mail gateway. The only requirement is that an additional Ethernet card be used for other services besides the gateway, because MultiGate Mac requires dedicated cards for routing.

MacIP support lets MacTCP clients on LocalTalk access TCP/IP host computers. MultiGate Mac can be used to connect an AppleTalk internetwork to a TCP/IP backbone and provide IP in DDP encapsulation for up to 254 Macintosh computers anywhere on the AppleTalk internetwork. Flexible IP support allows for static addressing via MacTCP, MacTCP server mode, or a combination of the two.

MultiGate Mac also supports an alternative host access scheme, based on the MultiGate Stream Protocol. This user-friendly protocol is highly efficient on limited-bandwidth networks (LocalTalk, for example).

MultiGate Mac supports full TCP/IP interior gateway routing between Ethernet segments. This includes support for RIP, proxy-ARP, and RFC-950 subnetting. SNMP support is also provided.

Configuration

ConfigureIt!, a HyperCard stack, makes it easy to configure the gateway. ConfigureIt! builds a text file that is read by the gateway at startup. (This file can also be edited using TeachText.)

When MultiGate Mac reads the configuration file, it does extensive error checking to make sure the configuration is valid. It checks for syntax errors in the configuration file, and when the network protocols are initialized, it checks for such items as valid network numbers, consistent subnet masks, duplicate addresses, etc. If it detects an error, the gateway logs a message to the monitor, detailing the problem. The user can then correct the problem and try again.

Once the gateway is running, it continues to monitor the network. It shuts down only if it encounters a serious network error. In such a case, it logs a message to the monitor.

Operations Interface

A password-protected Operations Interface is accessible via any computer capable of establishing a Telnet session. This powerful interface provides detailed information on gateway status, port statistics, and gateway configuration. It also provides detailed network information, including AppleTalk routing information, with statistics on network usage, IP routing, encapsulation mapping tables and activity, ARP and AARP tables, "pinging" of AppleTalk or IP devices, tracking and logging of network error packets, and so on.

The error tracking feature is useful for isolating network faults; it lets the user view the first 100 bytes of each protocol layer in an error

packet that has been saved. This information can be used to pinpoint the offending entity. Over 100 network errors on the AppleTalk and IP networks are tracked.

Features of the Telnet Interface
---

* Prints AARP tables (AT->EN mapping tables).

* Prints ARP tables (IP->EN mapping tables).

* Prints the gateway configuration.

* Evaluates expressions in octal, decimal, and hex.

* DNS lookups of names.

* Can dump specific portions of router memory (like MacsBug).

* Prints a summary of various errors and events recorded by the router including: packets dropped due to unknown AT network, packets dropped due to unknown EN address (via AARP), hop count overflow, error packets saved by router. Over 100 types of error packets are saved. The first 100 bytes of each protocol layer can be dumped for analysis to determine originating device, destination, type of packet, etc. Many events other than those listed above are recorded by the gateway.

* Logs errors to your screen in real time.

* Can define the format packets are logged with.

* Can log packets to/from a given address of given type in real time.

* Can shut down the gateway.

* Dumps address mapping for IP-in-DDP encapsulation.

* Prints summary of each TCP<->MSP connection.

* Prints the detailed state of a specific connection.

* Dumps the entire AT<->IP mapping tables.

* Dumps NBP address tables.

* Does an NBP lookup and prints the results.

* Dumps info about packet buffer at a given address.

* Sends and times Echo packets to the named host (AppleTalk or IP).

* Can restart the gateway.

* Dumps the RTMP tables for all AppleTalk nets.

* Dumps the RIP tables for all IP nets.

* Gives the RTMP or RIP entry for a defined network#.

* Prints the status of the gateway and detailed statistics on each port.

* Traces connections.

* Displays current software version.

* Flushes the ARP/AARP entry for a particular address.

* Dumps the RTMP table for each net in that zone.

Security

The current version of MultiGate Mac provides the following:

* Filtering of inbound Telnet sessions to connected networks

* The ability to declare a network insecure. This means that the gateway won't respond to RTMP tables and RIP tables on a given network, unless the router providing the tables is statically configured in the gateway configuration file.

MultiGate 2000

The functionality of MultiGate Mac is also available with NRC's dedicated LocalTalk-to-Ethernet hardware router, MultiGate 2000. The software module, called IPGate, provides all the features of MultiGate Mac other than Ethernet-to-Ethernet routing. Instead of logging start-up errors to the screen, IPGate logs them to NVRAM and then reboots from PROM code (ensuring that the router will come back up). MultiGate Manager Jr. can then be used to retrieve the error code from NVRAM. Users can then analyze the error, make the appropriate corrections to the router configuration, and then download a new image to the router.

For more information, search on "Network Resources".

Published Date: Feb 18, 2012

Macintosh IIci: Built-in Video Memory Usage

I have a problem with a Macintosh IIci with 1MB of RAM, which allows only the Black/White option in the control panel -- even though the monitor is RGB. Is there a way to increase the RAM video to allow using 256 colors?

This article has been archived and is no longer updated by Apple.
A Macintosh IIci system with 1MB RAM supports up to 256 colors or grays, using RAM-based video (RBV). This chart details how much memory is used:

2 Colors/Grays (1-bit) 64K
4 Colors/Grays (2-bit) 96K
16 Colors/Grays (4-bit) 160K
256 Colors/Grays (8-bit) 320K

A 1MB Macintosh IIci system using 8-bit video would, in effect, be a 704K system. This is not recommended, because it doesn't leave much memory for the System software and application programs.

A 1MB Macintosh IIci system defaults to 64K of memory allocated for video. A Macintosh IIci system with more than 1MB defaults to 320K of memory allocated for video.

Here's how to adjust the amount of memory allocated to video:

1) In the Control Panel, select the Monitors CDEV.

2) Hold down the Option key. The icon that represents the built-in video will contain a very small Macintosh in addition to the monitor number.

3) Click on the "Options..." button.

The setting in the top half of the dialog allows the user to select the gamma table that is to be used to compensate for phosphor luminosity characteristics of specific monitors. This setting is not unique to the Macintosh IIci and has nothing to do with the amount of memory that is allocated to video RAM.

The bottom half of the dialog, labeled "Memory Allocation For Built-In Video", contains the radio buttons for setting how much memory is allocated to video. This setting limits the maximum number of colors/grays that will be supported.

Published Date: Feb 18, 2012

A/UX 2.0: How To Turn Off 32-Bit Clean Warning Message

How do I remove the 32-bit clean warning that appears when I launch an application? I know A/UX checks a certain bit within the application, but I don't know which one.

This article has been archived and is no longer updated by Apple.

```
In A/UX 2.0, there are two ways to set the bit:

* From an A/UX CommandShell window, issue the command:

 /mac/bin/changesize +32BitCompatible 'Pathname:Application'

 For example:

 /mac/bin/changesize +32BitCompatible 'MacPartition:MS Word:Microsoft
  Word'

* From A/UX MultiFinder Desktop, open the Macintosh application with the
 ResEdit program, open the SIZE resource, look for the "32 Bit
 Compatible" flag, and set it to 1.
```

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AutoCAD Rel 10: Macintosh IIci and IIfx Require Version C5b

This article has been archived and is no longer updated by Apple.

There are several versions of AutoCAD Rel 10. The version that was shipping before the announcement of the Macintosh IIci was Version C5. With the release of the Macintosh IIci, certain incompatibilities appeared. Autodesk released Version C5b to accommodate the Macintosh IIci and Macintosh IIfx. Contact your AutoCAD distributor for the new version.

Published Date: Feb 18, 2012

AppleCD SC: Device Driver Status Calls

My questions concern the AppleCD SC's SCSI driver. In my application (written in C), I do a Status Call #98 (called GET SIZE). I receive back 11 words (22 bytes):

08 00 00 4A DA
23 00 3C 85 C8
00 4A F9 B8 20
00 00 4B 01 1A
20 24

1) Is this the standard size to be returned by this call?

2) Is there a minimum and maximum size?

3) What is the format of this response?

This article has been archived and is no longer updated by Apple.
The information you're looking for is in the AppleCD SC Developer's Guide, available from APDA. It describes all of the device driver Status calls for the AppleCD SC, including the inputs and the outputs for each Status call.

In response to your specific questions about Status call 98 (GetSize):

1) The default block size is 2048 bytes.

2) The legal block sizes (in bytes) for the AppleCD SC driver are:
512, 256, 1024, 2048, 2336, and 2340

3) The GetSize Status call will return in scParam + 0 the currently assigned logical block size of the AppleCD SC. In other words, in the first two bytes (one word) it returns the logical block size, which by default is 2048.

In your example, the first two bytes are 08 00. 0800 in hex translates to decimal 2048 -- the default size set for the AppleCD SC. The remaining 20 bytes are not used for this call.

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TA44896_Apple_IIGS_Use_System_Disk_After_ROM_Upgrade_(TIL00633).pdf

Apple IIGS: Use System Disk 2.0 After ROM Upgrade

This article has been archived and is no longer updated by Apple.

Anyone who upgrades the ROM in an Apple IIGS should then use only the system software on System Disk 2.0 or later versions.

Published Date: Feb 18, 2012

HyperCard 2.0: "Link to" Problem on 68000-Based Systems

I'm having a problem with HyperCard 2.0. I get an ID=02 bomb when I do the following:

Create a new stack.
Create a new button.
Use "Link to" to link the button to this card.
Use "Link to" to link the button to this card.

It's the second LinkTo function that causes the bomb.

This article has been archived and is no longer updated by Apple.
This is a known problem that seems to occur only on 68000-based Macintosh systems.

As a workaround, delete the line "go to card xxxx" from the button's script before modifying the link.

Published Date: Feb 18, 2012

EtherTalk NB Card: Revisions L and M Are Functionally Identical

What are the differences between revision L and revision M of the Apple EtherTalk NB Card?

This article has been archived and is no longer updated by Apple.
As of November 14, 1990, the Apple EtherTalk NB Card started shipping as revision "M". The revision M EtherTalk NB Card has no functional modifications or differences from the revision L EtherTalk NB Card. The revision from "L" to "M" was made because of a process change in manufacturing and not because of any bug fixes or enhancements to the card.

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A/UX: Solution to "/etc/mtab: No such file or directory" Error

Article Change History

08/31/92 - REVIEWED
*For technical accuracy

I tried to mount a file system and got the error:

/etc/mtab: No such file or directory

This article has been archived and is no longer updated by Apple.
(A) Check for /etc/mtab. The file /etc/mtab must exist for the mount command to work.

1) Log onto the system as "root".

2) Enter the line, "ls -l /etc/mtab".

The output displayed should look like this:

-rwxr-xr-x 1 root sys 147 Apr 25 14:07 /etc/mtab

The size and modification date of this file will differ on your system.

If the output is "/etc/mtab not found", then, the file /etc/mtab is missing and must be created. This series of command lines will create the file /etc/mtab with the correct permissions and ownerships:

1) Enter the line: touch /etc/mtab

2) Enter the line: chgrp sys /etc/mtab

3) Enter the line: chmod 755 /etc/mtab

(B) Check Permissions on the file /etc/mtab.

Incorrect permissions on the file /etc/mtab could cause this error.

1) Log onto the system as "root".

2) Enter the line: ls -l /etc/mtab

The output displayed should look like this:

-rwxr-xr-x 1 root sys 147 Apr 25 14:07 /etc/mtab

The size and modification date of this file will differ on your system.

3) If the first column of the output displayed does not equal:

-rwzr-xr-x

enter the line: chmod 755 /etc/mtab

This will correct the file permissions.

Published Date: Feb 18, 2012

Denon CD-ROM Problem Solved with System Software Upgrade

My Denon CD-ROM doesn't seem to work with my Macintosh (running System Software 6.0). I have driver version 1.2.

This article has been archived and is no longer updated by Apple.
Your Denon CD driver, version 1.2, is incompatible with System 6.0. Upgrading to System Software 6.0.3 or later should solve the problem.

Published Date: Feb 18, 2012

Macintosh Plus: SCSI Device and Driver Support Limits

How many SCSI drivers does the Macintosh Plus support according to Apple's specifications? Are there any restrictions on the type or nature of those drivers?

This article has been archived and is no longer updated by Apple.
There are no "published" specifications regarding how many SCSI drivers the Macintosh Plus can have loaded into memory at one time. A typical SCSI driver uses about 5K of memory. If you attached seven SCSI devices, you would use around 35K of memory for their drivers. This 35K or even 50K does not pose a problem. The real problem you have with the Macintosh Plus and SCSI devices is the electrical limitation. Four to five devices is probably the maximum that you can put on the SCSI bus due to the load placed on the SCSI bus by the SCSI devices.

Published Date: Feb 18, 2012

Pascal III Editor: Inserting control characters

This article has been archived and is no longer updated by Apple.
The Pascal Editor recognizes 32 different control characters. The trick to producing them is to press the OPEN-APPLE key together with whatever key is required to obtain the desired control character, as described in the table on p. 136 of the Standard Drivers Manual. These characters go into the file with their high bit set to one, but that probably won't be a problem: most programs and peripherals ignore the high bit anyway.
Published Date: Feb 18, 2012

LaserWriter IINTX: Printing HPGL Files from a PC

Can I write HPGL files from a PC to a Macintosh LaserWriter IINTX without converting them to PICT or PostScript?

This article has been archived and is no longer updated by Apple.
Briefly, the LaserWriter IINTX emulates an HP LaserJet Plus. LaserJets use PCL, not HPGL. A PC printing an HPGL print job cannot print to a LaserWriter IINTX.

Hewlett-Packard uses different printer control languages, including HPGL and PCL, for their different printers. HPGL is commonly used by CAD/CAM type programs for outputting to plotters. PCL is used by more common, generic programs for outputting to HP LaserJets and similar printers.

Apple's PostScript LaserWriters emulate Diablo 630s. Additionally, the LaserWriter IINTX emulates an HP LaserJet Plus; therefore, a program that uses PCL and is LaserJet-Plus-compatible can print to the LaserWriter IINTX when the LaserWriter IINTX is in its LaserJet Plus emulation mode. Again, you cannot print an HPGL print file directly (without file translation) on the LaserWriter IINTX.

If you want to print to an Apple LaserWriter, you must use a program that supports a Diablo 630, LaserJet Plus, or PostScript-compatible printer. If your program and drivers do not support these types of printers, you need to export and, possibly, translate the data before importing the data to a program that does--whether that program runs on a PC, Macintosh, or another system. Software that might help you includes PlotView and CADMOVER.

PlotView (formerly called MacHP) from Stevens Creek Software allows you to open and display Macintosh HPGL files on a Macintosh, and copy and paste them into other Macintosh programs for embellishment before printing to a LaserWriter. If you can use Apple File Exchange or a similar program and perform a generic text translation on the PC HPGL file, you can then open it with PlotView. This may work, but may require a little experimentation and manipulation with ResEdit or similar programs. Another option is to write your own AFE translator.

Another program that may work is called CADMOVER from Kandu, which a 2-D/3-D Macintosh-based vector graphics translation utility, with bidirectional IGES, DXF, PICT, MacDraw, Minicad+, MacConcept, HPGL, Minicad+, Dimensions, Hyperspace, and Space Edit.

We feel the easiest solution would have been to select a program on the PC that also prints to a PostScript printer or, at least, use a program that can save the file in a format (not just an HPGL print file) that can also be read by other Macintosh or PC programs that can print to a PostScript printer. There may be PC programs that open HPGL files and save in a more commonly used file format.

Published Date: Feb 18, 2012

MacX25: Fully Compatible with Tymnet

Can MacX25 be used with the Tymnet public network? Are there any limitations?

This article has been archived and is no longer updated by Apple.

MacX25 is fully compatible and certified with Tymnet. We don't know of any limitations regarding MacX25 running with Tymnet.

Published Date: Feb 18, 2012

Internet Router: Local Net Setup Conflict

Regarding the AppleTalk Internet Router, what conditions cause the Local Net Setup Conflict statistic (shown in the Port Statistics window)? How do you locate and correct the problem?

This article has been archived and is no longer updated by Apple.
The AppleTalk Internet Router manual states:

"A Local Net Setup Conflict error is reported if another router on a network that is directly connected to this router lists a conflicting network number or range for that network."

This statement indicates that there is another router on the same physical cable as the AppleTalk Internet Router that is advertising a network number or range for that physical cable that is different from the network number or range in use by the AppleTalk Internet Router. The key to correcting the problem is to locate the routers that are attached to the physical cable with the problem and verify that they all are using the same network number or range for that physical cable.

Published Date: Feb 18, 2012

A/UX 2.0: TeX Format Software

What is your suggestion for TeX format software for A/UX 2.0?

This article has been archived and is no longer updated by Apple.

```
TeXtures is available from Blue Sky Research.  It is not A/UX-specific, but
it seems to work with A/UX 2.0.  For more details, search the Technical Info
library under "Blue Sky Research."
```

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A/UX: Troubleshooting Tape Backup Problems

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I haven't been able to back up much of anything. I tried to back up my X11R4 source disk (about 72MB), and "tar" keeps failing on the second tape. I tried:

tar clvbBf 16 72000 - | tcb > /dev/rmt/tc1

and tcb failed with an I/O error after about seven files were written to the second tape.

I tried:

tar clvBf 72000 - | tcb > /dev/rmt/tc1

and got the same error in the same place.

I also tried:

tar clvbBf 16 72000 /dev/rmt/tc1

This command backed up well into the second tape (but very slowly) and failed with a memory fault error.

The cmdo dialog for tar (using the tape cartridge) generates a command line:

tar clvbBf 16 4500 /dev/rmt/tc1

which writes only 4500 512-byte blocks to the tape.

Express Tape (a commercial backup product) fails on the third tape, when I try to back up the root partition.

I noticed the "time slice" parameter has dropped from 60 ticks to 5 ticks. If I run the "plaid" demo and a few more xdemos, things grind to a halt much more quickly than in version 1.1. (I have not yet received the A/UX driver that turns on the cache for the accelerator.)

Can you help?

This article has been archived and is no longer updated by Apple.
The first thing we noticed was a minor typo in each of the above command--they lack the input file(s) or directories. The first one, for example, should have an input file (/source-tree, for instance) specified in the command line:

tar clvbBf 16 72000 - /source-tree | tcb > /dev/rmt/tc1

We can't reproduce the problem. We used the command below to back up the entire root (/) directory onto two tape cartridges without any I/O error.

tar clvbBf 16 72000 - / | tcb > /dev/rmt/tc1

The problem with the "tar" command failing on the second tape cartridge may be bad spots on the second tape cartridge. Try replacing that tape cartridge with a new one.

The time slice parameter SLICE is set to 5 by default. However, the kconfig(1M) still states 60. This is an inconsistency. Try adjusting to a different value to fit your needs.

Published Date: Feb 18, 2012

A/UX 2.0: NBUF Values

I have an 8MB Macintosh. NBUF has a value of 337. The buffer size appears to have doubled since the last release--I was running with NBUF=1000 in A/UX 1.1. Should NBUF be increased? Do you have any tuning suggestions?

This article has been archived and is no longer updated by Apple.

In A/UX 2.0, the default NBUF value is 10% of the available memory after A/UX is booted, and the SBUFSIZE now is 2048 instead of 1024. The value of NBUF can be adjusted to fit your environmental needs via the "kconfig -n /unix" command. Increasing the number of buffers reduces the memory available for applications and may cause more paging.

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Macintosh: Key Caps desk accessory

This article has been archived and is no longer updated by Apple.

The Key Caps desk accessory is used to show the current keyboard mapping - that is, which keys correspond to which characters. It is especially useful for showing the characters accessed by the Option key, which are not typically displayed on the keyboard itself. The Key Caps menu, available when the DA is open, allows you to select and view any font available in your system. Key Caps can also be used to "type" characters into the Key Caps desk accessory using the mouse to click on letters. The characters can then be copied and pasted into another application if your keyboard is broken or inaccessible.

To print the Key Caps layout take a snapshot of the screen and print it. Search on "Screen Dump" for more information. It's not possible to screen dump the keys displayed on the Key Caps screen when the option key is pressed down. If you want a printout of the characters produced when pressing the option key, type them into an application, such as MacWrite or MacPaint, then print using the print dialog box.

To display all the characters in a given font, use ResEdit or the simple MS-BASIC program below.

```
10 c = 32
15 l = 0
20 Print CHR$(c);
25 c = c +1
30 l = l+1
35 If c > 255 Then End
40 If l < 50 Then 20
45 Print
50 Goto 15
```

This program prints the default (Geneva 12-point) key caps to the default screen. Add the following lines to your program to print other fonts and sizes contained on the BASIC disk:

```
5 CALL TEXTFONT (typeface)
--0 is system font, 2 is New York, etc.; refer to the Microsoft BASIC manual.

7 CALL TEXT SIZE (size)
--9, 12, 14 or whatever sizes are on the disk.
```

Published Date: Feb 18, 2012

Printing: High-Volume Solutions from Printronix

My company does high-volume printing (about 50,000 pages a month). Do you have a solution fthat can handle this volume? The printer should be a 300 to 400 lpm printer. Can you help?

This article has been archived and is no longer updated by Apple.
We have seen Printronix P300-XQ and P600-XQ line printers working with Macintosh computers. This particular configuration used a serial-to-parallel converter to attach the Macintosh serial port to the parallel port of the Printronix. An ImageWriter driver with "Draft" selected was used as the printer driver. Again, this is not a support solution although it seems to work.

An alternative (although still unsupported) could include any mini/mainframe line printer that works with ASCII-based systems and a printer driver construction set, from DataPak Software, called Printer Interface II. Printer Interface II lets the user customize several aspects of the printer driver providing a method to send the correct printer control codes to the mini/mainframe line printer.

The Printronix P300-XQ does 300 to 400 lpm. The Printronix P600-XQ does 600 to 800 lpm. The lower numbers represent compressed printing; the higher numbers represent standard draft mode.

For more details, search the Technical Info library under "Printronix" and "DataPak Software"

Published Date: Feb 18, 2012

B-trieve: There‘s No Equivalent for the Macintosh

Do you know of a B-trieve equivalent for the Macintosh? I would like to port DOS applications to the Macintosh using B-trieve. Whatever version they use must be able to co-exist on Netware and share the same database. Can you help?

This article has been archived and is no longer updated by Apple.

We haven't found a solution that is compatible with B-trieve files. We spoke with Novell and found that they have nothing planned and don't know of any compatible Macintosh solutions. There are b-tree libraries for Macintosh, but they aren't compatible with B-trieve files.

Published Date: Feb 18, 2012

Personal LaserWriter NT: Upgrading RAM to 8MB

The Personal LaserWriter NT literature states that you can upgrade the RAM in the printer to 8MB. How is this done?

This article has been archived and is no longer updated by Apple.

The Personal LaserWriter NT has two SIMM sockets that can accept either 1MB or 4MB SIMMs. Because both SIMMs must be of the same density, the total RAM can be either 2MB or 8MB. The Personal LaserWriter NT ships with two 1MB SIMMs. Therefore, the only upgrade path is to replace the two 1MB SIMMs with two 4MB SIMMs.

The requirements for the 4MB SIMMs are the same as for standard Macintosh II SIMMs, but they must be rated at 100ns or faster. They must also fit in a significantly smaller space than the Macintosh II family allows. This eliminates 4MB SIMMs made from lots of 1MB DRAM chips.

Here are several vendors that advertise compatible 4MB SIMMs:

The Chip Merchant
MacCenter
MacSystems/Lifetime Memory Products
Memory Plus
Stratum Technologies

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History
23 July 1993 - Company title updated from MacSystems to MacSystems/Lifetime Memory products.
14 September 1992 - Reviewed. for technical accuracy.

Published Date: Feb 18, 2012

A/UX: AppleShare, GatorBox and Oracle (8/94)

I have an existing LocalTalk-based network currently accessing an AppleShare File Server. I want to set up an Oracle database under A/UX and would like to be able to access the database from existing Macintoshes on LocalTalk. At the same time, I want to be able to access the A/UX system as an AppleShare file server.

I think I can use a GatorBox with GatorShare to set up the A/UX system as a server. Can the workstations talk to the Oracle database with this type of setup?

This article has been archived and is no longer updated by Apple.
You are correct that you need the GatorBox. However, GatorShare lets Macintoshes access an NFS server as if it were an AFP server. Oracle supports MacTCP connection via both LocalTalk and straight over Ethernet. The A/UX Macintosh does not have to be an NFS file server.

Also, you should be able to access the Oracle database and use the NFS server mounted on your desktop simultaneously.

The Macintosh running A/UX should have the full Oracle database software for A/UX. All other Macintoshes that need to access the server should be running MacTCP and the Network Station Oracle software. This Network Station software includes SQLNET for TCP and other utilities minus the database. In this case, your workstations communicate with the server via TCP/IP and SQLNET (not using AFP or NFS protocols), so you don't need GatorShare.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

Canon Fax to Macintosh Connectivity Solution (11/94)

I'm trying to interface my Canon Laser Fax machines models L770 and L920 to a Macintosh II. The Canon machines feature RS-232 interfaces. Has anyone heard of Fax software for the Macintosh that lets these machines work with a Macintosh?

This article has been archived and is no longer updated by Apple.
We don't know of any Fax software that lets you interface a Macintosh with a Canon laser printer/Fax machine. Some manufacturers that design Fax machines license their interfaces to other Fax manufacturers. If the Canon laser printer/Fax machine was designed to interface to a computer, and if the interfacing logic is similar to an existing Fax machine, perhaps some existing software for another Fax machine might also work with the Canon laser printer/Fax.

Some third-party products support fax machines that use interfaces similar to the TE Fax (Relisys), AppleFax (Apple Computer), Flex Fax (Circuit Research), Orchid Modem (Orchid), and ProModem (Promethus Products). However, we don't know of any specific software available for the Macintosh that lets you interface to this product from Canon.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
28 Nov 1994 - Reviewed for technical accuracy.
02 Sep 1993 - Removed reference to BackFax as company is out of business.

Support Information Services
Published Date: Feb 18, 2012

Macintosh-to-Siemens/Nixdorf Connectivity

I need to connect a Macintosh to a Siemens mainframe H60, running the PS2000 Operating System. I also need to connect a Macintosh to a Nixdorf M15-8870, running under UNIX.

Can you help?

This article has been archived and is no longer updated by Apple.
We contacted Siemens in the U.S., and they don't know of a solution for the Macintosh to connect to their H60 mainframe running BS2000 Operating System. In general, their H60 supports TCP/IP and RS-232, communication protocols and interfaces for terminals, modems, and IBM PCs connections. Because MacTCP and RS-232/422 are supported by Macintosh, you can make a simple connection between a Macintosh and the Siemens H60 mainframe. However, we don't have any specific connectivity solutions for a Macintosh and the H60 mainframe.

According to Nixdorf, there is no 8870 model running under UNIX, but their Targon/31/35 series does run UNIX. The 8870 models run under Nixdorf's proprietary operating system called NIROS. The 8870 models support multi-users, RS-232, CCITT V.24 interfaces, SDLC, BSC, asynchronous and synchronous protocols, and IBM 2780/3780/3740/3270 protocols.

Again, you can connect to the two machines, provided the underlying protocols and/or interfaces are supported by both machines (Macintoshes and third parties).

Published Date: Feb 18, 2012

MacX & MacTCP: "unimplemented co-routine error 12" (11/94)

I am running a Macintosh Portable with MacTCP and MacX. When starting up MacX, I get the error message "unimplemented co-routine error 12." I get the same error message when I try to use NCSA Telnet without MacTCP. The same configuration worked on other Macintoshes.

Do you know of any problems using these two software components on a Macintosh Portable?

This article has been archived and is no longer updated by Apple.
The problem may be improper installation of CommToolbox, MacTCP, and/or MacX. We tested both MacX and NCSA Telnet 2.3 on a Macintosh Portable and didn't have any problem. Here are some things to check:

- Make sure that the CommToolbox is properly installed and that the "Communications Folder" folder was created in the "System Folder".

- Make sure that the "MacTCP" and "AdminTCP" CDEVs are in "System Folder" and that the "MacTCP Tool" comm tool is in the "Communications Folder" folder.

- Make sure that all MacX fonts are installed in the "MacX Fonts" folder.

- Make sure that MacTCP is properly configured on the network.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

A/UX 2.0: "settc" and daiw" Commands

I cannot find two programs: "daiw" (the TROFF output formatter for the ImageWriter) and "settc" (set type and creator) commands under A/UX 2.0. I checked a "known good" master of A/UX 2.0, and I got this:

grep -i daiw /FILES
/mac/lib/cmdo/d/daiw Commando dialog source script for the daiw command
/usr/catman/u_man/man1/daiw.1.z formatted manual entry for daiw(1)

This indicates that there is a Commando dialog and a man page, but no executable daiw command. A "find" on the entire file system produced similar results.

Likewise, I searched for "settc":

grep -i settc /FILES
/usr/catman/u_man/man1/settc.1.z formatted manual entry for settc(1)

As you can see, there is a man page, but nothing else. Have these commands been removed from A/UX 2.0? Will they be replaced?

This article has been archived and is no longer updated by Apple.

```
We verified that neither the /usr/bin/daiw command (and its associated fonts
/usr/lib/font/deviw/*) nor the /mac/bin/settc program is present in the
released version of A/UX 2.0.  Manual pages for settc (1) and daiw(1) are
still available though.

The missing "settc" had been reported by others; "settc" has been replaced
by the "setfile" command in the /mac/bin directory in A/UX 2.0. However,
there is no manual page entry for "setfile".  According to A/UX Engineering,
the "setfile" command syntax is the same as MPW:

  setfile [options] file

options include:

  -a attributes   # attributes (lowercase = 0, uppercase = 1)
  -c creator      # file creator
  -d date         # creation date (mm/dd/yy [hh:mm[:ssIIAM|PM]])
  -l h,v          # ICON location (horizontal, vertical)
  -m date         # modification date (mm/dd/yy [hh:mm[:ssIIAM|PM]])
  -t type         # file type

Note: Period (.) represents the current date and time.

The following attributes may be used with the -a option:

   L   Locked
   V   Invisible
   B   Bundle
   S   System
   I   Inited
   D   Desktop
   M   Shared (can run multiple times)
   A   Always switch launch (if possible)
```

Published Date: Feb 18, 2012

Personal LaserWriter NT: PageMaker 4.0 APD Workaround (8/95)

Where can I get the APD file that's needed by a Personal LaserWriter NT running PageMaker 4.0? (Evidently, the LaserWriter II version of APD works, but it displays spurious messages while you use it.)

This article has been archived and is no longer updated by Apple.
APD (Aldus Printer Definition) are files that Aldus provides primarily to their PageMaker customers. Apple does not supply Aldus Printer Definition files to PageMaker customers. Apple and third-party printer manufacturers do provide information to Aldus, so they can create their APD file for the specific printers.

Aldus Technical Support indicated that a Personal LaserWriter NT APD would be available sometime in the future. In the meantime, they provided a workaround for the only known issue when using the LaserWriter IINT APD with the Personal LaserWriter. A dialog box appears after the Print menu item has been selected. The dialog states:

Check printer type.

If you have trouble printing to
"{name of printer}" change "Printer:" from
"{current APD}" to "{printer type}"
in the Print dialog box.

For the described situation, it would read:

Check printer type.
If you have trouble printing to
"{name of printer}" change "Printer:" from
"LaserWriter IINT" to "LaserWriter
Personal NT" in the Print dialog box.

To eliminate this dialog box from the printing process, do these steps:

1) Copy the exact names in the "{current APD}" field and in the "{printer type}" field of the "Check printer type" dialog. In this case:

"{current APD}" = "LaserWriter IINT"
"{printer type}" = "LaserWriter Personal NT"

and Quit PageMaker.

2) Make a copy of the "LaserWriter IINT.apd" file.

3) Open the copy with a word processor or text editor.

4) Locate all occurrences of "LaserWriter IINT" and change to "LaserWriter Personal NT".

5) Save the copied and modified file in text format with the name "LaserWriter Personal NT.apd". Be sure the .apd extension is included.

6) Exit the word processor/text editor and restart the Macintosh.

7) Launch PageMaker, go to the Print dialog box, and select "LaserWriter Personal NT" from the "Printer:" popup menu.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:

23 Aug 1995 - Made minor corrections.

Support Information Services
Published Date: Feb 18, 2012

AppleShare PC: 3COM EtherLink MC Card Problems

I have an IBM PS/2 model 55SX with 1MB RAM, 3COM EtherLink/MC card, MS-DOS 3.3, and AppleShare PC 2.01. The server is a Macintosh IIfx with HD80 SC and 4MB RAM with AppleShare 2.0, Internet Router 2.0, and a 3COM Ethernet card. The printer is a LaserWriter IINT. I can reach the printer. The PS/2 recognizes the server on the network, but can't mount it. For example, the F2 button is not enabled in the Chooser on the PS/2. The system asks me to run REDIR, but when I do, I get a Divide Error.

Here is the CONFIG.SYS file:

```
buffers=8
country=047, 865, c:\\dos\\country.sys
device=c:\\dos\\ANSI.sys
device=c:\\dos\\display.sys con:=(ega,865,1)

files=20
lastdrive=g
device=pro.sys 8 2 2
device=eth523.sys
device=buf.sys
device=idp.sys
device=spp.sys
device.lgl.sys
devise=epath.sys
```

This article has been archived and is no longer updated by Apple.
After unsuccessfully trying to duplicate the problem, I noticed what you entered for the CONFIG.SYS file. It looks like the 3COM installer was used at some time before trying AppleShare PC. All 3COM software must be inactive for AppleShare PC to operate. The 3COM software and the AppleShare PC drivers conflict with each other.

Remove the following lines from the CONFIG.SYS file:

```
device=pro.sys
device=eth523.sys
device=buf.sys
device=idp.sys
device=spp.sys
device=lgl.sys
device=epath.sys
```

It is also a good idea to remove any lines from the AUTOEXEC.BAT file that reference 3COM software. These lines will begin with runminds, msredir, or nb.

Published Date: Feb 18, 2012

DAL: Teradata DB Support

I want to buy Teradata equipment, and I want an ad hoc query tool. Teradata offers something I haven't seen yet--EQT. Is there any relationship between that and the EQT for DAL (formerly CL/1)? Because we are interested in ClearAccess, when can we expect a DAL driver for the Teradata?

This article has been archived and is no longer updated by Apple.

We don't know of EQT from Teradata (now NCR/Teradata Corp.). From what we understand, the datamodels provided by Teradata database machines, like DBC/1012 models 2 and 3, are relational, and they are SQL-based. So it is possible to write a Data Access Language adapter for it.

As of release 1.3 DAL for MVS servers (TSO and VTAM) also support Teradata access.

EQT (Executive Query Tool) is a query tool developed by Red Brick Systems. It provides point-and-click access to relational databases, regardless of the workstation platform, the database server, or the server hardware. It runs on Macintosh and DOS Windows. Future releases will run on the OS/2 Presentation Manager, and UNIX workstations. It can retrieve data from Teradata, Oracle, Ingres, Sybase, DB2, Informix, and Rdb databases.

EQT for CL/1 is an old name for an announced product called Claris Query Tool, which uses three mechanisms to access databases: Data Access Language (DAL from Network Innovations), DB Library (Sybase), and SQL-Net (Oracle). The Claris Query Tool will be shipped in 1991. For more information about Claris Query Tool, please contact Dennis Ryan, Product Manager at Claris.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

Folder Cannot Be Deleted: How to Fix

There is a folder that I cannot delete from an AppleShare server. I have rebuilt the desktop, reinstalled system software and AppleShare, and even started the server without AppleShare, so I could try to throw the folder away directly. Also, any file that is put into this folder disappears.

What is causing this to happen? Could it be bad sectors on the disk? How can it be most easily fixed?
This article has been archived and is no longer updated by Apple.
The most likely cause of the problem you describe is a corrupted directory structure. This type of problem could happen either on an AppleShare server or an individual Macintosh. Here is what we suggest:

1) Use Disk First Aid on the volume; this will sometimes repair slightly damaged directories.

2) Run "The Norton Utilities for the Macintosh", "Symantec Utilities for the Macintosh", or equivalent package to try to repair the volume. These utilities can repair damaged directories that Disk First Aid cannot.

3) Back up all the data on the hard disk and reformat it. This will solve the problem if all else fails.
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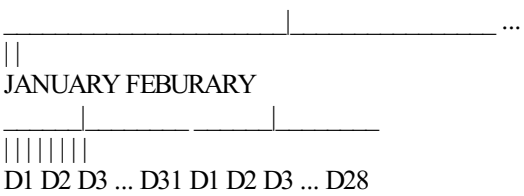
Pascal III: Listing large directories

This article has been archived and is no longer updated by Apple.
The Pascal III Filer reads the entire directory into memory before printing any of it, and so the number of files in a directory is limited. With a 128K Apple III, this limit is approximately 500 files; a ProFile with a directory containing more than 500 files, then, can cause problems.

SOS was designed to accomodate subdirectories so that large numbers of files can be stored and used with ease. A complex daily log of transactions, for instance, might be arranged like this:



This way, the pathname to the data for the last day of Feburary would be:

/PROFILE/TRANSCTIONS.82/FEBURARY/D28

By making use of SOS's ability to accomodate subdirectories, then, you can store far more than 500 files, as long as you never exceed the 500-file limit within any single directory.
Published Date: Feb 18, 2012

Macintosh II: Connecting NTSC Devices to the Macintosh

I have a 25-Inch Sony Trinitron KX-2501A, a 40-Inch Mitsubishi VS-4003R and a Sony high-resolution projector, Model VPH722Q1.

I want to be able to use them for a presentation.

How can I tie these displays (RGB and/or composite) into a Macintosh II? Eventually, I want a capability for all three displays.

This article has been archived and is no longer updated by Apple.
We have been unable to track down any information on the Sony Trinitron KX-2501A. Generally, when a Sony product has the Trinitron title it is a consumer-level display unit. Extrapolated from that, it most likely provides NTSC input rather than RGB input.

The Sony VPH722Q1 is an NTSC composite projector. To provide the high-quality Macintosh images to which people are accustomed, a video projector that accepts RGB input at a horizontal scan rate of 22 MHz should be used. Generally, these projectors are known as having data projection capabilities. The Sony VPH722Q1 is not considered by Sony as a data projection unit.

The Mitsubishi VS-4003R accepts only NTSC input. Using the above assumption concerning the Sonys and the fact that the Mitsubishi is NTSC, the following information applies to connecting NTSC devices to the Macintosh.

The Macintosh standard video output is RGB. To display this video output on a NTSC device certain things need to take place:

- The typical scan rates for RGB are much higher than that of NTSC; this scan rate must be lowered to meet the NTSC RS-170-A specifications.

- RGB is a component video signal, NTSC is a composite video signal; the RGB signal must be converted to the composite signal.

- The RGB cable is a multi-conductor cable. The NTSC cable is a two-conductor cable. The device that does the RGB-to-NTSC conversion typically provides the correct output connector for NTSC, and sometimes provides a pass-through for RGB.

The scan rates are determined by the video card residing in the Macintosh. Therefore, the first item to address is the video card to be used. Some video cards are designed as RGB scan rates only. Some can be configured to the appropriate rate. Others can output NTSC scan rates only. If you have a video card that can be configured to the correct rate, the addition of the converter and cable is all that is required. If your current card is RGB only, then you need a new card.

Once a video card configurable to NTSC scan rates is present in the Macintosh, the next step is to locate a converter box that works with the particular video card in use. Sometimes this box is available only from the manufacturer of the video card, other times third parties provide a selection to choose from. This depends on the card.

When a converter box that works with the video card is located, the remaining step is to plug the NTSC output of the box into the NTSC input of the monitor. This is exactly like plugging a VCR into a television. Most often this is a RCA-type phono plug to RCA-type phono plug cable.

The other common connector is the BNC connector. Adapters are available to convert the connectors from one style to the other. The newer converter boxes appearing on the market also offer an S-Video connection. These connectors are

mini-4 connectors (similar to Apple's Mini-8 connectors). They are found on newer televisions, monitors, Hi-8mm/Super-VHS/EdBeta video cassette recorders, and camcorders. The S-Video connection yields a higher-quality image than the usual NTSC signal. S-Video, however, is still an NTSC signal.

There are image issues when sending the Macintosh screen to NTSC devices, due to the lower-quality image of the NTSC environment. The simplest rule is" "develop your presentation on an NTSC monitor". Most of the other issues fall into place if this rule is followed.

You can minimize other issues facing NTSC images with these tips:

- Use larger font sizes -- 24 points minimum.

- Use color palettes designed for the NTSC environment (MacroMind Director includes an NTSC palette).

- Use larger graphic images, small details disappear.

- Use two-pixel-wide horizontal lines to avoid flicker.

- Centering the information, outer edges disappear from display (known as NTSC safe area or TV safe area).

The Macintosh Display Card 4/8, 8/24, and 8/24 GC can be used with NTSC/S-Video devices by including either RasterOps' Video Expander Box or Truevision's VIDI/O Box. Both of these RGB-to-NTSC converters let the new Macintosh Display Cards' signal be sent to NTSC/S-Video televisions and video recorders. For additional information about the details of connecting the Macintosh Display Cards to NTSC, search under "Macintosh and NTSC".

Published Date: Feb 18, 2012

LaserWriter IINTX: Serial Connection Parameters

I have a LaserWriter IINTX attached serially to a Novell Netware server and am trying to print PostScript files. But it's not working.

The LaserWriter is configured for PostScript, serial interface, and DSR/DTR handshaking. The port settings are 9600 baud, no parity, 7 data bits, 1 stop bit, and no XON/XOFF. The server settings match and the cable is a full handshake cable.

This article has been archived and is no longer updated by Apple.
Check the data bits setting; the default LaserWriter IINTX setting is for 8 data bits. Switching the server to 8 data bits, or the LaserWriter to 7 data bits should solve the problem. The new "LaserWriter IINT/NTX Owner's Guide" correctly states that 8 data bits is the default. Also, check the following to be sure all settings are correct.

It sounds like you have the server connected permanently to the serial port. We are assuming that the DIP switches are set for this configuration. The DIP switches should be set to:

Switch 1: Down
Switch 2: Down
Switch 3: Up
Switch 4: Up
Switch 5: Up
Switch 6: Down

This sets the LaserWriter IINTX RS-232 port to 9600 baud and the RS-422 port to 0 baud and sets the LaserWriter to PostScript batch mode and DSR/DTR handshaking. These will remain as the default settings for the LaserWriter until the switches are changed.

The other default settings that you cannot set with the DIP switches are no parity check, 8 data bits, and 1 stop bit. You change these parameters and those set with the DIP switches by using PostScript.

The PostScript code that you need to send to the LaserWriter IINTX to change these parameters is:

```
serverdict begin 0 exitserver
statusdict begin PORT BAUD OPTIONS setsccbatch
```

In place of PORT, you need to put the number of the port you want to change. Replace PORT with 9 for the RS-422 port and with 25 for the RS-232 port. The BAUD parameter is simply the data transfer rate you want to use.

The OPTIONS parameter is a little more difficult. You need to know what kind of parity you want to use, what kind of handshaking you want to use, how many data bits, and how many stop bits. Use Table C-1 on page 121 of the LaserWriter IINT/NTX Owner's manual (Table C-5 on page 153 of the new manual) to find the option numbers.

In your case, for the RS-232 port at 9600 baud with no parity, DSR/DTR handshaking, 7 data bits, and 1 stop bit, this is the PostScript program:

```
serverdict begin 0 exitserver
statusdict begin 25 9600 36 setsccbatch
```

Download this PostScript program to the LaserWriter IINTX to see if setting the data bits to 7 fixes the problem.

TA44928_LaserWriter_IINTX_Serial_Connection_Parameters_(TIL06371).pdf

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Lanier WP Systems: File Transfer to/from Macintosh

I am looking for a file transfer solution between the Macintosh and a stand-alone Lanier word processing system. Do you have any ideas?

This article has been archived and is no longer updated by Apple.
There are a couple of possible solutions. However, they are really good only for infrequent or one-shot transfers. If you want to consistently transfer the files, there isn't a really good solution like Apple File Exchange translators, because it is unlikely that the Lanier word processor uses a format for its disks that could be read by AFE. The other matter is the format of Lanier word processing files.

The first possibility for transferring the files from the Lanier would be to print the files out of a Lanier serial port directly into a terminal program like MacTerminal running on the Macintosh. This would require that the Lanier has a serial port and can print to that serial port. It would also require that you have the appropriate cable to connect the Macintosh to the Lanier. A drawback to this method is that you lose all of the formatting of the Lanier files.

The second possibility is to use a data conversion service. One that we know of that can work with Lanier and Macintosh formats is Pivar Computing Services. Search the Technical Info library under "Pivar" for details.

Published Date: Feb 18, 2012

MacTerminal 3.0 Availability and Upgrade Information

What is the availability of MacTerminal 3.0?

This article has been archived and is no longer updated by Apple.
MacTerminal 3.0 is the current version of MacTerminal, and you should be able to order it through your Apple dealer or a software mail order catalog service.

There is no upgrade path for upgrading earlier versions of MacTerminal to version 3.0. Customers will have to purchase the latest copy of MacTerminal to get the 3.0 version.

Article Change History:
10 March 1994; Changed to include update Information.

Support Information Services
Published Date: Feb 18, 2012

HyperCard 1.2.5: Using "find" Command To Search Specific Field

When I use the find command in HyperCard 1.2.5 to locate a string in a specific field, I get matches in all fields. It works correctly in HyperCard 2.0.

This article has been archived and is no longer updated by Apple.

The HyperCard 1.2.5 "Find" command is documented on pages 106 and 107 of the "HyperCard Script Language Guide: The HyperTalk Language". Using the "Find" command to search on a specific field works only for background fields. If you do a search on a card field, the string will be found in all fields with the text that matches the search criterion.

The find command is more flexible and powerful in HyperCard 2.0.

Published Date: Feb 18, 2012

MultiFinder: Background Print Monitor Errors

Article Change History

1/20/93 - UPDATED
* Vendor information.
2/02/91 - REVIEWED
* For accuracy.

I have two problems that involve MultiFinder Background Printing. The problems show up on multiple Macintosh computers running Macintosh System Software Version 6.0.5 and LaserWriter Driver Version 6.0.

1) After printing a document, the Print Monitor window shows that the print job is "Processing". However, nothing happens (for several hours, if left alone). Only by going into the System Folder and double-clicking Print Monitor will the job finally be released.

2) When trying to print a document, a dialogue box comes up and says "Print Monitor found an internal problem, where=6; why=-37." Replacing Print Monitor and reinstalling the system did not correct this situation.

This article has been archived and is no longer updated by Apple.
These problems are probably related.

* "where=6" is a Print Monitor error: open working directory failed.

* "why=-37" is a System error: dNmErr, a bad name error.

We recommend the workarounds below; do them in the listed order. We advise printing after each step or every couple of steps to see when the problem is eliminated.

1) Throw away the Spool Folder (a new one will be created automatically next time you use Print Monitor).

2) Repair the volume with Disk First Aid.

3) Repair the volume with Norton Utilities from Peter Norton Computing, (acquired by Symantec Corp and/or SUM Tools from Symantec, or perhaps PC Tools/Macintosh from Central
Point Software. (For address and phone information, search the Tech Info Library under the company names.)

4) Check for and eliminate any viruses.

5) If none of the above works, backup any information you wish to save and then reformat the drive.

Published Date: Feb 18, 2012

Using MacX under Macintosh OS With DECwindows on VAX (1/95)

To use DECwindows clients using MacX under the Macintosh OS, what files need to be on the VAX and what files need to be on the Macintosh?

This article has been archived and is no longer updated by Apple.
On the Macintosh side, for the MacX server to work properly, the Macintosh should be installed and configured with MacX, MacTCP, and CommToolbox. You should have the MacTCP tool in the Communication Folder within the System Folder. On the VAX site, if the DECwindows client is running under VMS, you need to get the "PATHWORKS for Macintosh" software from DEC, which includes some fonts and communications tools for both Macintosh OS and VAX/VMS. If the VAX is running under Ultrix or UNIX, no special files are needed, because TCP/IP transport is usually supported in UNIX OS.

Note: The READ ME file that comes with the MacX lists a few known problems/reasons/solutions for MacX and X11 client applications and troubleshooting tips.

Article Change History:
30 Jan 1995 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

A/UX: POP (Post Office Protocol) Information (9/94)

I want to use TCP/Connect II with smtp and A/UX. It needs software called POP. Do you have this software? What are its functions? Is it standard on other UNIX systems?

This article has been archived and is no longer updated by Apple.
There are three versions of POP (Post Office Protocol): POP, POP2, and POP3. The detailed specification of POP is described in RFC 918 (obsolete), RFC 937, RFC 1081, and RFC 1082.
Basically, the intent of the original Post Office Protocol (POP) was to let a user's workstation access mail from a mailbox server. It uses the Simple Mail Transfer Protocol (SMTP) to post mail from the workstation to the mailbox server. The POP protocol is dependent on TCP (Transmission Control Protocol). Below is the POP protocol:

The server is listening for a connection with the protocol. When a connection is opened, the server sends a greeting message and waits for commands. When commands are received, the server acts on them and responds with replies.

The client opens a connection, waits for the greeting, then sends the USER and then the PASS commands to establish authorization to access mailboxes. The client begins a mail reading transaction with either an RDEL (to read and delete all messages from a mailbox) or a RETR (to simply read all messages from a mailbox). The server opens and locks the mailbox and responds with the number of characters in the mailbox. Then, the client asks for the data to be sent by issuing the RCEV command. The server responds by sending the mail data.

When all the data has been received, the client sends the RCVD command. If the transaction started with the RDEL command, the server now deletes the mail data from the mailbox. In any case, the server closes and unlocks the mailbox. The client terminates the session with the QUIT command. POP2 is designed for an environment of workstations and servers on a low-delay, high-throughput, local networks (like Ethernets). The POP2 server is listening on TCP port 109.

POP3 lets a workstation dynamically access a maildrop on a server host. Usually, this means the POP3 is the means a workstation (client) uses to retrieve mail from the server. The POP3 server listens on TCP port 110.

Any UNIX system (like A/UX) that supports TCP can implement a POP server. There is public domain POP server software available from UC Berkeley at the following Internet address (via ftp "anonymous" and any password):

lilac.berkeley.edu 128.32.136.12

or

jagubox.gsfc.nasa.gov

Article Change History:
12 Sep 1994 - Reviewed. Added info on jagubox.
31 Aug 1992 - Reivewed.

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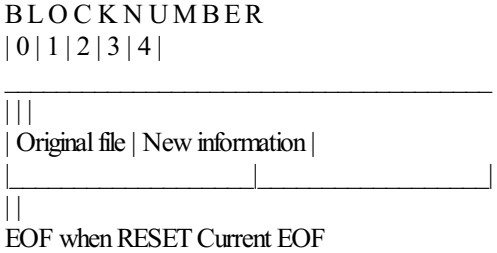
Pascal III: SEEK

This article has been archived and is no longer updated by Apple.
SEEK has a problem when used with an Apple II Pascal formatted diskette. When SEEKing a record that has been added to the file since the last RESET, it either takes a long time to find the record, or else Pascal stops with a System Failure error.

This commonly happens when you increase a file's size with PUTs and then use a SEEK to access one of the new records. Further operations on the file may destroy it.



For example: a SEEK to a record in the last half of block 2, block 3 or 4 causes undesirable results.

If you must extend a file, RESET the file before using SEEK.
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AppleTalk for VMS 2.0.6: Fixes Error Message Issues

I get error messages (one every 10 secs.) generated on the VAX/VMS coming from AppleTalk. I am using AppleTalk for VMS 2.0 on one machine and AppleTalk for VMS 2.0.5 on another one. Is this allowed? The error messages are related to the exchange of RTMP packets. The errors are on the operator.log files or via the reply/enable command. This is the error message:

%ATK-W-INVPACREC, Invalid packet received
DECTECTED IN ROUTINE RTMPSktListener 1
This article has been archived and is no longer updated by Apple.
One of the major changes between AppleTalk for VMS 2.0 and 2.0.5 is that the definition of an invalid packet was changed to exclude a large number of packets that had previously been accepted as valid. This was done because a number of the packets that were previously being accepted were actually very badly-formed packets and were causing the bridge process to crash.

However, things were tightened up so much that packets that valid were rejected. Version 2.0.6 resolves this, and you should get it from the same source from which you got version 2.0.5.

Using version 2.0.6 may resolve your problems. It is also possible that there are bad RTMP packets being generated on the network. In this case, you will continue to receive the warning messages. The ATKBRIDGE.LOG file will contain the actual packets that are being rejected, and you can often identify the sender from the data in this log file.

Either way, you should be using the latest version (2.0.6) on both VAX systems. Version 2.0 has a large number of problems, so the machine running that version should be upgraded.

Finally, if at all possible, you should move everything to AppleTalk Phase 2 and PATHWORKS (formerly LanWORKS). That is the direction we are headed, and you should use AppleTalk for VMS 2.0.6 and 2.1 only as interim releases, until you are ready to install PATHWORKS.
Published Date: Feb 18, 2012

Monitor Cables: Pinout Information

From time to time, I need pin-out details for various Apple monitor cables. Do you have a chart of this information?
This article has been archived and is no longer updated by Apple.
Here is the pin-out information for various Apple monitor cables. The Apple part number is molded into the connector housing of all Apple monitor cables. For additional information on signal descriptions see the "Guide To The Macintosh Family Hardware" available from APDA and Addison Wesley.

Cable Part #: 590-0161
Used On: Hi-Res Monochrome Monitor, Hi-Res RGB Monitor

DB-15	Description	DB-15
1	Red Video Gnd	1
2	Red Video	2
3	Comp. sync	3
4	Comp. sync Gnd	4
5	Green Video	5
6	Green Video Gnd	6
7	N/C	7
8	N/C	8
9	Blue Video	9
10	N/C	10
11	N/C	11
12	N/C	12
13	Blue Video Gnd	13
14	N/C	14
15	N/C	15
Shell	Shield Gnd	Shell

Cable Part #: 590-4161
Used on: Hi-Res Monochrome Monitor, Hi-Res RGB Monitor,and future monitors

DB-15	Description	DB-15
1	Red Video Gnd	1
2	Red Video	2
3	Comp. sync	3
4	Sense ID 1	4
5	Green Video	5
6	Green Video Gnd	6
7	Sense ID 2	7
8	N/C	8
9	Blue Video	9
10	Sense ID 3	10
11	Comp. sync Gnd	11
12	N/C	12
13	Blue Video Gnd	13
14	N/C	14
15	N/C	15
Shell	Shield Gnd	Shell

Cable Part #: 590-0615
Used on: Portrait Display, Two-Page Display

DB-15	Description	DB-25

1	H. sync Gnd	14
2	V. sync Gnd	12
3	Sense ID 3	10
4	Sense ID Gnd	*
5	C. sync	3
6	H. sync	15
7	V. sync Gnd	11
8	Sense ID 2	7
9	Sense ID 1	4
10	C. sync Gnd	N/C
A1(in)	Blue Video	9
A1(out)	Blue Video Gnd	13
A2(in)	Green Video	5
A2(out)	Green Video Gnd	6
A3(in)	Red Video	2
A3(out	Red Video Gn	1
Shell	Shield Gnd	Shell

* Note that pins 4, 7, 10 are tied together on the DB-15 side

Cable Part #: 590-0574
Used on: Portrait Display, Two-Page Monochrome Display

DB-25	Description	DB-25
A1(in)	Mono Video	A1(in)
A1(out)	Mono Video Gnd	A1(out)
1	H. sync Gnd	1
2	V. sync Gnd	2
3	Sense ID 3	3
4	Sense ID Gnd	4
5	C. sync	5
6	H. sync	6
7	V. sync Gnd	7
8	Sense ID 2	8
9	Sense ID 1	9
10	C. sync Gnd	10
Shell	Shield Gnd	Shell

Cable Part #: 590-0562
Used on: Two Page Display

DB-25	Description	DB-25
A1	Mono Video	A1
A2	75* termination	A2
A3	75¢ termination	A3
1	H. sync Gnd	1
2	V. sync Gnd	2
3	Sense ID 3	3
4	Sense ID Gnd	4
5	C. sync	5
6	H. sync	6

7	V. sync Gnd	7
8	Sense ID 2	8
9	Sense ID 1	9
10	C. sync Gnd	10
Shell	Shield Gnd	Shell

Cable Part #: 590-0536
Used On: AppleColor RGB, AppleColor 100 (replaces original cable)

DB-15	Description	DB-15
1	Red Video Gnd	1
2	Red Video	2
3	Comp. sync	3
4	N/C	4
5	Green Video	5
6	Green Video Gnd	6
7	N/C	7
8	N/C	8
9	Blue Video	9
10	XRGB8 (Apple ///)	10
A1(in)	N/C	11
A1(out)	N/C	12
A2(in)	Blue Video Gnd	13
A2(out)	N/C	14
A3(in)	N/C	15
Shell	Shield Gnd	Shell

VGA Adapter 513-0091-A
Used On: ASD 17 and ASD 21 monitor

HD-B15F	Description	DB-15M
1	Red Video	1
2	Green Video	5
3	Blue Video	9
4	ID Bit 1	4
5	H Sync Gnd	14
6	Red Gnd	2
7	Green Gnd	6
8	Blue Gnd	13
9	DDC 5V	8
10	V Sync Gnd	11
12	DDC (SDA)/ID Bit 3	10
13	H Sync	15
14	V Sync	12
15	DDC (SCL)/ID Bit 2	7

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Mouse Compatibility: Macintosh Plus and Apple II Computers

My official Apple mouse works on my Macintosh Plus, but not on my Apple II computer. What does this mean?

This article has been archived and is no longer updated by Apple.

There are two vendors for the mouse that works with the Macintosh Plus and Apple II line. If you switch mice between systems, the mouse may not work.

One vendor's mouse works with both lines, and the other works only with the Macintosh Plus:

- The mouse identified as "Made in the US" works on both computers.

- The other is identified as "Made in Japan".

All service stock is of the compatible version (P/N 661-0400).

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IINTX w/Rev 3 ROMs: Format HD w/LW Font Utility 2.0.2

I recently upgraded my LaserWriter IINTX logic board with revision 3 ROMs. The third-party fonts cause initialization errors when printing. However, if I move the same external hard disk to a non-upgraded LaserWriter IINTX, these fonts print just fine. Where's the problem?

This article has been archived and is no longer updated by Apple.
The LaserWriter IINTX with Rev 3 ROMs does not work properly with a hard disk formatted with the LaserWriter Font Utility 1.x. You need to reformat the disk and copy the fonts back onto the hard disk using the LaserWriter Font Utility 2.0.2. There is no way to make this procedure easier.

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Macintosh Portable: TCP/Connect & NCSA Telnet Compatibility

I recently read that versions of NCSA Telnet, including NCSA Telnet 2.3 and the current version of TCP/Connect, do not work with the Macintosh Portable.

Is this a MacTCP (driver) problem or is it purely application-based? Should TCP/Connect II offer a solution?

This article has been archived and is no longer updated by Apple.
The incompatibility is with the applications, not with MacTCP. InterCon told us that the latest version of TCP/Connect (version 1.0.1) does work properly with the Macintosh Portable. As of November, NCSA was preparing version 2.4 of NCSA Telnet. Version 2.4 will work with the Macintosh Portable. For more information, please contact: NCSA and InterCon Corp. Both are listed in the Technical Info library.

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Macintosh SE 2/40 Upgrade: SIMM Requirements

To upgrade a Macintosh SE 2/40, do the two additional 1MB SIMMs need to be the same speed as the original 2MB SIMMs?

If so, is there any way to determine the speed of the installed RAM without opening the Macintosh SE case?

This article has been archived and is no longer updated by Apple.
The Macintosh SE 2/40 requires SIMMs that are 150ns or faster. If the SIMMs already in the Macintosh SE are 120ns, you can add two more that are 150ns. The important thing is that the SIMMs in each group (group A is SIMM slot 1 and 2; group B is SIMM slot 3 and 4) must be the same speed.

The only way to tell the speed of the RAM installed is to look at the RAM chips themselves. Typically the 120ns RAM chips will have a "12" printed on them and the 150ns RAM chips will have a "15".

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Pascal III: Accessing the extra memory (1 of 5)

This article has been archived and is no longer updated by Apple.
Apple III Pascal is upwardly compatible from Apple II Pascal. One of the constraints this imposed on the design of Pascal III was the restriction of the data space to 64K bytes. This restriction has been made clear on all specifications of the product. However, since the system uses additional space for SOS, drivers, graphics, the interpreter and code segments, this restriction may still interfere with programs that use large quantities of data.

To illustrate the steps involved in accessing more data, below are some small assembly routines. They ask SOS to allocate more space for the program, allow transfers of data back and forth to that space, then deallocate the space. On top of that is built a simple string package which stores up to 128K of string values in this space. Though the memory within this space may be managed only in the simplest of ways, the space can still be very useful.

The routines consists of three portions:

A. An assembly language routine containing macros that the SOS interface needs.

B. A fancy version of MOVELEFT that moves bytes from one location in banked memory to another. It understands the memory addressing of the Apple III, and so it increments pages accordingly.

C. A Pascal unit that uses the first two programs to implement the string routines.

```
; Macro Definitions

.Macro Pull
; Pull 2 bytes off the stack and store them
PLA
STA %1
PLA
STA %1+1
.EndM

.Macro Push
; Load 2 bytes and put them on the stack
LDA %1+1
PHA
LDA %1
PHA
.EndM

.Macro Return
; Load the return address, PUSH it and RTS
Push %1
RTS
.EndM

.Macro EnterProc
; Save the return address
Pull %1
.EndM

.Macro EnterFunc
; Save the return address and kill the 4 byte bias
EnterProc %1
PLA
```

```
PLA
PLA
PLA
.ENDM

.Macro PushTrue
; Put a Boolean True on the stack
LDA #0
PHA
LDA #1
PHA
.ENDM

.Macro PushFalse
; Put a Boolean FALSE on the stack
LDA #0
PHA
PHA
.ENDM

.Macro P_A_Word
; Copies a word from a Pascal Var to assembly language
.If %1 & 0FF00 <> 0
WrongOrderInA_P_Word
.ENDC
LDY #0
LDA (%1),Y

STA %2
INY
LDA (%1),Y
STA %2+1
.ENDM

.Macro A_P_Word
; Copies a byte from a assembly lang word to a Pascal word
.IF %2 & 0FF00 <> 0
WrongOrderInA_P_Word
.ENDC
LDY #0
LDA %1
STA (%2),Y
INY
LDA %1+1
STA (%2),Y
.ENDM

.Macro P_A_Byte
; Copies a byte from a Pascal byte to assembly language
.If %1 & 0FF00 <> 0
WrongOrderInP_A_Byte
.EndC
LDY #0
LDA (%1),Y
STA %2
.ENDM

.Macro A_P_Byte
; Copies a byte from assembly language to a Pascal word
.If %2 & 0FF00 <> 0
WrongOrderInA_P_Byte
.ENDC
LDY #0
LDA %1
STA (%2),Y
```

```
TYA
INY
STA (%2),Y ; Clear highbyte of Pascal var
.ENDM

.Macro SOSCall
; Framework for calls to the SOS memory manager
BRK
.Byte %1
.Word %2
.ENDM

Temp1 .EQU 0E0
Temp2 .EQU 0E2
Temp3 .EQU 0E4
Temp4 .EQU 0E6

; Procedure Allocate(Var NumPages,Segnum,Bank,SegBase:
integer);external;
; {allocates a chunk of SOS memory:
; Input:
; NumPages: Maximum number of pages to try for.
; Output:
; NumPages: Number of pages actually allocated.
; SegNum: SOS Segment number (for deallocate)
; Bank: Starting address bank number
; SegBase: Starting address byte address ($0200..$9E00)}
```

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Serial NuBus Card: Pinout Information

This article contains the pinouts for the Serial NuBus (NB) Card.
This article has been archived and is no longer updated by Apple.
Here are Apple Serial NB Card D-62 Connector Pinouts. There are two types of cables, the Hydra cable with four RS-232-C connectors, and the V.35 cable with one RS-232-C connector and one V.35 connector.

The term "RS-232" as used here refers to a signal that is single-ended and driven between +/-12V.

The terms "RS-422" and "X.21" as used here refer to a signal that is differential and driven +/-, measured differentially.

Pin #	Signal	Function
1	+CA1F	X.21 Control, +CHA1, OUTPUT
3	-CA1F	X.21 Control, -CHA1, OUTPUT
6	+CB1F	X.21 Control, +CHB1, OUTPUT
8	-CB1F	X.21 Control, -CHB1, OUTPUT
16	+IA1	X.21 INDICATION, +CHA1, INPUT
44	1DCDA/-IA1	RS-232 Data Carrier Detect/X.21 INDICATION, -CHA1, INPUT
11	+IB1	X.21 INDICATION, +CHB1, INPUT
49	1DCDB/-IB1	RS-232 Data Carrier Detect/X.21 INDICATION, -CHB1, INPUT
62	GND_1	CHA1 GND
57	GND_2	CHB1 GND
52	GMD_3	CHA2 GND
47	GND_4	CHB2 GND
41	GND_5	EXTRA GND
37	GND_6	EXTRA GND
2	232TXDA1	TX DATA, CHA1, RS-232, OUTPUT
7	232TXDB1	TX DATA, CHB1, RS-232, OUTPUT
12	232TXDA2	TX DATA, CHA2, RS-232, OUTPUT
17	232TXDB2	TX DATA, CHB2, RS-232, OUTPUT
4	1RTSA	READY TO SEND, CHA1, RS-232, OUTPUT
9	1RTSB	READY TO SEND, CHB1, RS-232, OUTPUT
14	2RTSA	READY TO SEND, CHA2, RS-232, OUTPUT
19	2RTSB	READY TO SEND, CHB2, RS-232, OUTPUT
5	1CTSA	CLEAR TO SEND, CHA1, RS-232, INPUT
10	1CTSB	CLEAR TO SEND, CHB1, RS-232, INPUT
15	2CTSA	CLEAR TO SEND, CHA2, RS-232, INPUT
20	2CTSB	CLEAR TO SEND, CHB2, RS-232, INPUT
43	1DSRA	DATA SET READY, CHA1, RS-232, INPUT
48	1DSRB	DATA SET READY, CHB1, RS-232, INPUT
53	2DSRA	DATA SET READY, CHA2, RS-232, INPUT
58	2DSRB	DATA SET READY, CHB2, RS-232, INPUT
45	1DTRA	DATA TERMINAL READY, CHA1, RS-232, OUTPUT
50	1DTRB	DATA TERMINAL READY, CHB1, RS-232, OUTPUT
55	2DTRA	DATA TERMINAL READY, CHA2, RS-232, OUTPUT
60	2DTRB	DATA TERMINAL READY, CHB2, RS-232, OUTPUT
46	1RIA	RING INDICATOR, CHA1, RS-232, INPUT
51	1RIB	RING INDICATOR, CHB1, RS-232, INPUT
56	2RIA	RING INDICATOR, CHA2, RS-232, INPUT
61	2RIB	RING INDICATOR, CHB2, RS-232, INPUT
54	2DCDA	DATA CARRIER DETECT, CHA2, RS-232, INPUT
59	2DCDB	DATA CARRIER DETECT, CHB2, RS-232, INPUT

39	2RXCA	RECEIVE CLOCK, CHA2, RS-232, INPUT
40	2RXCB	RECEIVE CLOCK, CHB2, RS-232, INPUT
38	2TXCA	TRANSMIT CLOCK, CHA2, RS-232, INPUT
42	2TXCB	TRANSMIT CLOCK, CHB2, RS-232, INPUT
13	2TXDA	RECEIVE DATA, CHA2, RS-232, INPUT
18	2TXDB	RECEIVE DATA, CHB2, RS-232, INPUT
21	+422TXCA1	+TRANSMIT CLOCK, CHA1, RS-422, INPUT
22	-422TXCA1	-TRANSMIT CLOCK, CHA1, RS-422, INPUT
29	+422TXCB1	+TRANSMIT CLOCK, CHB1, RS-422, INPUT
30	-422TXCB1	-TRANSMIT CLOCK, CHB1, RS-422, INPUT
25	+422RXCA1	+RECEIVE CLOCK, CHA1, RS-422, INPUT
26	-422RXCA1	-RECEIVE CLOCK, CHA1, RS-422, INPUT
33	+422RXCB1	+RECEIVE CLOCK, CHB1, RS-422, INPUT
34	-422RXCB1	-RECEIVE CLOCK, CHB1, RS-422, INPUT
27	+422TXDA1	+TRANSMIT DATA, CHA1, RS-422, OUTPUT
28	-422TXDA1	-TRANSMIT DATA, CHA1, RS-422, OUTPUT
35	+422TXDB1	+TRANSMIT DATA, CHB1, RS-422, OUTPUT
36	-422TXDB1	-TRANSMIT DATA, CHB1, RS-422, OUTPUT
23	+422RXDA1	+RECEIVE DATA, CHA1, RS-422, INPUT
24	-422RXDA1	-RECEIVE DATA, CHA1, RS-422, INPUT
31	+422RXDB1	+RECEIVE DATA, CHB1, RS-422, INPUT
32	-422RXDB1	-RECEIVE DATA, CHB1, RS-422, INPUT

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Serial NB Card: Custom versus Extender Cable

I am using MacX25 and a Serial NB card. The synchronous modem is located in a different room from the Macintosh, about 10 meters away. Is it possible to get a connecting cable? What is the maximum length we can reach with RS-232 cable between Macintosh and modem?

If this cable does not exist yet, we need specifications to build such cable with a J-62 on one side and one RS-232-C on the other.

This article has been archived and is no longer updated by Apple.
We recommend contacting a cable distributor like Black Box and ordering one of their straight-through extender cables. This is far less expensive than having a custom "62-25"-pin cable built. It is also a faster solution, as this cable is fairly common and available in a variety of lengths. Request a cable with all pins attached, with one plug and one socket. You might want to describe the cable length (10 meters plus 3 feet, the length of the "Hydra" cable, which is within RS-232-C specification of 50 feet), and the data rates you intend to use.

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Macintosh Communications Toolbox: Wyse Terminal Emulation

I'm looking for a supplier of terminal emulation software that will do the Wyse 50 type terminal. Our N&C Product manager tells me that the Wyse is a superset of the VT102 emulation, but I don't think the VT102 has enough functionality.

I'm thinking about the Macintosh Communications Toolbox as a route to supply this requirement. Can I get the technical details required to assess how difficult it will be to provide the appropriate communications tools to emulate the Wyse?

This article has been archived and is no longer updated by Apple.
Mainstay hasn't distributed their Telescape terminal emulation software for awhile. So, unless you already have a copy and want to invest development effort into a discontinued product, this probably isn't the development environment for you. We don't know of any other third parties that offer a Wyse terminal emulator, even one where you have to write a script like with Telescape.

However, the Macintosh Communications Toolbox may be the ideal development tool for you. There is a Macintosh Communications Toolbox folder on the Apple Developer Web page on the internet at:

http://devworld.apple.com

Here you'll find general Macintosh Communications Toolbox information. This includes product information, common questions and answers relating to the Communications Toolbox, tools and sample code, listings of third-party products that support the Communications Toolbox, and ongoing discussions on the Comm Toolbox. More technical details are found in the "Macintosh Communications Toolbox," and the "Communications Tools, Basic Connectivity Set" packages from APDA.

A more straightforward solution is to use another terminal emulator, if possible; many hosts will support VT100, VT52 or other terminals. Perhaps emulating another terminal will give you the capabilities you require.

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TA44950_AUX_and_SGML_Standard_Generalized_Makeup_Language_(TIL06395).pdf

A/UX and SGML (Standard Generalized Makeup Language)

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Is there a version of SGML (Standard Generalized Makeup Language) for A/UX 2.0?

This article has been archived and is no longer updated by Apple.
We don't know if SGML runs under A/UX. However, SoftQuad, Inc. does have some software products related to SGML for the Macintosh OS. Their products include:

- SoftQuad RulesBuilder is an Interactive editor for creating SGML DTDs (Document Type Definitions), which, when compiled, also acts as a SoftQuad Author/Editor rules files.

- SoftQuad Author/Editor CALS is a text entry system that provides easy access to the power of structured editing based on SGML, the U.S Government's publishing standard for the Computer-Aided Acquisition and Logistics Support Initiative (CALS).

- SoftQuad Author/Editor is a context-sensitive text entry system that meets the requirements of the Standard Generalized Markup Language (SGML).

For more details, search the Technical Info library under "SoftQuad."

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A/US 2.0: Pinnacle 650 Optical Drive

Is the Pinnacle 650 drive supported by the A/UX 2.0 drivers?
This article has been archived and is no longer updated by Apple.
According to Pinnacle Micro Technical Support, the Pinnacle 650 read-write optical disk drive and its accompanying driver work with A/UX 2.0.
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TA44952_Apple_IIGS_DOS_and_Hard_Drives_(TIL06397).pdf

Apple IIGS: DOS 3.3 and Hard Drives

Is it possible to partition the hard drive of a Apple IIGS, so one partition contains DOS 3.3 and applications and the other contains GS/OS? I tried it, and now the IIGS can't recognize DOS 3.3 floppy disks.

This article has been archived and is no longer updated by Apple.
DOS 3.3 was created when hard disk drives were only a dream for microcomputers. Thus, DOS 3.3 and previous versions understand only the 140K 5.25-inch disks. DOS 3.3 does not understand the 3.5-inch disk and hard-disk environments. When hard disks did appear for the Apple II family and DOS 3.3 was still the operating system of choice, individual hard-drive manufacturers devised independent schemes for dividing their products into multiple 140K volumes so DOS 3.3 could work with the hard drives. ProDOS was created to overcome the limits that DOS 3.3 imposed on storage volumes.

GS/OS would require a File System Translator (FST) to recognize the 5.25-inch disks of the DOS 3.3 operating system. However, the FST would be of no assistance in providing DOS 3.3 partitions on a hard disk, because the lack of hard-disk support is a limitation of DOS 3.3 itself, not the FST.
To use DOS 3.3 applications on an Apple IIGS requires restarting from a 5.25-inch DOS 3.3 disk.

Published Date: Feb 18, 2012

A/UX: Moniterm Monitor Compatibility Issue

My group just received ten copies of A/UX 2.0 and ten Macintosh IIci systems. We are using Moniterm 21-inch color monitors. The Macintosh OS boots fine. When the system switches to A/UX, the monitor goes blank during the boot process. Is this a known Moniterm problem? Is there a workaround? Tech support at Moniterm didn't have a clue what A/UX was and had never heard of a problem.
This article has been archived and is no longer updated by Apple.
Typically, third-party video cards have had incompatibilities with A/UX. This goes back to A/UX 1.0. The manufacturers of the cards have had to release new ROMs to get their video cards (and therefore displays) to function properly with A/UX. SuperMac, RasterOps, and other manufacturers have done this.

Because there is no software workaround possibility, the burden of compatibility with the A/UX video drivers rests with the hardware manufacturer.

We will contact Moniterm's tech support and bring the issue up with them again. We suggest that the customer do the same if they want to use these monitors with A/UX 2.0. There may not be too much hope of a solution, if they are not even aware of A/UX. Furthermore, it would be unlikely that there would be a quick solution since ROM upgrades typically take a while.

The other route would be to try similar video cards and monitors from a third-party company that supports A/UX, and this may be the only solution depending on Moniterm's response.
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Applesoft: Understanding FRE(0)

This article discusses the PRING FRE(0) command.
This article has been archived and is no longer updated by Apple.
PRINT FRE(0) displays the amount of memory available for Applesoft varibles.This value may be negative due to the way Applesoft handles integer numbers on 48K systems. Numbers greater than 32767 appear to have 65536 subtracted from them; in such a case, add 65536 to the value returned in order to get the number of free bytes.

For example:
1000 PRINT FRE (0) - 65536 * (FRE (0) < 0)

PRINT FRE(0) can cause the Apple to hang when it's executed in command mode immediately after loading your program from a diskette or using Applesoft RENUMBER. This hang is due to the variable pointers not resetting properly. Type CLEAR before entering PRINT FRE(0) to return the expected results.

The following program checks the memory for string variables; however, it doesn't give the expected results.

```
10 DIM A$(100)
20 B$ = "ABC"
30 FOR I = 1 TO 100
40 A$(I) = B$
50 PRINT FRE (0) + 65536
60 NEXT I
```

Since B$ is assigned to a string constant in line 20, and the pointer for A$(I) is assigned B$ (line 40), the PRINT statement in line 50 prints the same number. If we change line 40 to read:

```
40 A$(I) = B$ + "D"
```

the program uses memory for each assignment, because concatenation creates a new string in the free memory space each time the new line 40 is executed.
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Pascal III: Accessing the extra memory (2 of 5)

This article has been archived and is no longer updated by Apple.

```
.PROC Allocate,4
FindSeg .EQU 41

SegBase .EQU Temp1
Bank .EQU Temp2
SegNum .EQU Temp3
NumPages .EQU Temp4

EnterProc RetAddr

PULL SegBase
PULL Bank
PULL SegNum
PULL NumPages

P_A_Word NumPages,Pages

SOSCall Find_Seg,Param
BEQ $1 ; If it worked,great
SOSCall Find_Seg,Param ; Else try again!
$1 BEQ $2
LDA #0 ; 2 failures ==> return 0 pages
STA Pages
STA Pages+1

$2 LDA SPage ; Send back starting address
LDY #1 ; in high byte!!
STA (SegBase),Y
DEY
TYA
STA (SegBase),Y

A_P_Word Pages,NumPages
A_P_Byte SBank,Bank
A_P_Byte Seg, SegNum

Return RetAddr

Param .BYTE 06
SrchMde .BYTE 02 ; Can cross more than one boundary
SegId .BYTE 30 ; First user segment?
Pages .WORD
SBank .BYTE
SPage .BYTE
.WORD
Seg .BYTE

RetAddr .WORD

.PROC DeAllocate,1
; PROCEDURE DeAllocate(SegNum:INTEGER); EXTERNAL;
Release_Seg .EQU 45
EnterProc RetAddr
PULL SegNum

LDA SegNum
BEQ Ret ; Don't release all segs!

SOSCALL Release_Seg,Param
Ret Return RetAddr
```

```
Param .BYTE 1
SegNum .WORD ; Only first byte used by SOS, but PULL
; needs 2
RetAddr .WORD

.END
```

```
; This file contains an assembly language procedure which moves
; bytes from one bank to another. Use this from Pascal to get
; access to the rest of the bank space in larger machines.
; This can allow you to do SOS Request-Seg calls and use
; that area for data storage for later use or to pass to an
; assembly procedure. This procedure does two slightly difficult
; things :
;
; 1. it avoids holes in bank memory map, and
; 2. it switches banks on both source and destination at the
; right times.
;
; Pascal declaration is:
; PROCEDURE FetchBytes(SrcBank:INTEGER; Source:INTEGER;
; DstBank:INTEGER; Dest:INTEGER;
; PageCount:INTEGER; Count:INTEGER
; ); EXTERNAL;
;
; The procedure will copy 256*PageCount+Count bytes from
; Source (a bank pointer to bank pair starting with SrcBank) to
; Dest (a bank pointer to bank pair starting with DstBank);
; A SrcBank or DstBank of -1 means "in Pascal's bank pair"
; Thus FetchBytes(-1,Atsign(S),-1,Atsign(D),0,C) ==
; MoveLeft(S,D,C)
;
; RESTRICTIONS:
; 1. Equivalent to a moveleft (ascending transfer)
; 2. Cannot reach top and bottom (system) banks,
; and "real" addresses must be offset
; by $2000 to render bank addresses
;
; ALGORITHM:
; 1. If we're moving X*65535 +Y*256 + Z bytes, then
; 2. First move Y pages to clear middle byte of Count
; 3. Then use middle byte to move X*256 pages,
; 4. Finally, move Z bytes in last page.
; ==========================================================
; MACRO Defs
.MACRO PULL
PLA
STA %1
PLA
STA %1+1
.ENDM

.MACRO PUSH
LDA %1+1
PHA
LDA %1
PHA
.ENDM
```

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Using British Keyboard on U.S. Macintosh

Can I use my British keyboard with an American Macintosh?

This article has been archived and is no longer updated by Apple.
There are a couple of ways to use the Apple Desktop Bus British keyboard with a United States system. Both involve modifying the System Software running on the Macintosh.

The first method is to install the British System software on the Macintosh. This makes all of the necessary resources available, so you can use the machine exactly as you would in the UK.

The second method is to take the necessary resources from a British System Tools disk and install them in the System file on the Macintosh in question. If all you want is to map your keyboard properly, then you need the British 'KCHR' resource. You can use ResEdit to transfer a copy of this resource from the British System to the System file on the Macintosh. Once you've done this, choose the British keyboard mapping through the use of the Keyboard CDEV in the Control Panel.

If you want British sorting as well as British numerical and date formats, then you must copy all the British "itlX" resources too, where the "X" includes b,k,1,2,3,4. At this point, you would probably do better installing the British software, because the international software typically includes keyboard mapping for US keyboards, too.

Either way, the keyboard will function properly with a Macintosh manufactured in the United States.

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HyperCard 2.0: Earlier XCMDs and XFCNs Compatibility

Is there a list of XCMDs and XFCNs that are known to work with HyperCard 2.0? I am converting a mission-critical application from HyperCard 1.2.5 to HyperCard 2.0. The application uses a lot of WindowIt XCMDs and MitemView.

This article has been archived and is no longer updated by Apple.

As of October, 1990, there was no published list of external routines compatible with HyperCard 2.0. Because the list of available routines changes every day, we doubt that there will ever be such a list. Testing results have shown that better than 80 percent of the tested externals work fine with HyperCard 2.0. We know this is not the answer you're looking for, but it's all we have.

For information on specific XCMDs and XFCNs, we suggest you contact the developer directly.

WindowIt, originally from Third Wave Computing and then Heizer Software has been returned to the original developer. As far as we know, it will not be modified to support HyperCard 2.0.

Published Date: Feb 18, 2012

DAL: Shared Access to Rdb Database

I am having a problem with shared access to an Rdb database under DAL. Here are commands from the VMS $ prompt and their results:

```
$ icl1
Network Innovations Interactive CL/1 Demo
Execution begins...
CL/1 version 1.11
Execution Completed Successfully

begin> OPEN RDB DBMS ;
more> USE LOCATION "CL1$SYSTEM" ;
more> OPEN RDB DATABASE "CL1DEMO" FOR SHARED READONLY ;
more> GO
begin> SELECT * FROM OFFICES; PRINTALL ;
more> GO
.
.
.
data from above database displayed
.
.
.
```

Meanwhile, from another process (once the above user has attached to the database and started a transaction), the following command:

```
$ RMU/DUMP/USERS CL1$SYSTEM:CL1DEMO
```

shows that the above DAL commands produced a read/write transaction on the RDB database. From all the tests I have done, no read-only transaction is possible on an Rdb database using DAL.
This article has been archived and is no longer updated by Apple.
The symptom you described is one of the restrictions and limitations with DAL and Rdb. Basically, DAL provides protection using a model based on databases and tables, while Rdb uses a model based on protection. We checked with Network Innovations, and they have provided the DAL 1.2 Technical Notes, in which item #10 describes the restrictions and limitations with DAL and Rdb. The following is the text for that note.

DAL Technical Note # 010
Data Access Language (DAL) and Rdb

This tech note discusses restrictions and limitations with DAL and Rdb.

The Rdb DBMS adapter for the DAL Server is best viewed as a VAX/VMS C application which uses Rdb's Dynamic SQL interface to access Rdb databases. Accordingly, any DAL user who intends to access Rdb databases should ensure that his or her account is set up with the proper VMS privileges and quotas required by Rdb. DAL users should also note that any current restrictions or problems in Digital's Rdb and Dynamic SQL will also affect the DAL Rdb DBMS adapter.

For example, when Rdb performs arithmetic operations on floating point data types such as the SQL aggregate function AVG(), Rdb rounds any decimal result to a whole number. Consequently, DAL client queries containing aggregate functions on decimal or float datatypes will return rounded numbers when executed in Rdb.

Listed below are some specific Rdb related problems and their workarounds or explanations:

- Problem #1: Referring to multiple databases by dbaliasname (AuthID)

To support multiple Rdb databases, the DAL Server Rdb Database Adapter uses the DECLARE SCHEMA statement in Rdb's Dynamic SQL for each database opened. In Rdb, each database or schema is referenced by an "authorization identifier" or AuthID. DAL uses the dbaliasname specified in an OPEN DATABASE statement as the AuthID. (Or when a dbaliasname is not specified, the database name is used as the alias and AuthID by default). For example:

dbaliasname AuthID

- open database "sample"; sample sample
- open database "reservations" alias "test"; test test

Normally, the DAL Server keeps track of the AuthID for you. However, if you mix normal DAL statements with Rdb statements (via the DAL EXECUTE IMMEDIATE statement), you may need to use the AuthID when referring to tables, views, and indexes or when using the Rdb SET TRANSACTION statement. When referring to tables by the dbaliasname in DAL, the correct syntax is:

dbaliasname!table_name sample!offices

Rdb uses a period "." instead of an exclamation point "!" when referencing a table by the schema's AuthID:

AuthID.table_name sample.offices

(Note: DAL uses the period "." to prepend an owner name to a table. For example, sample!mark.offices in DAL indicates the table offices owned by mark in the database whose dbaliasname is sample.)

So, when using DAL's EXECUTE IMMEDIATE statement to set a transaction mode for a database or to reference a table, be sure to use the database's dbaliasname as the AuthID. For example:

```
open rdb dbms;
open rdb database "daldemo" alias test in location "msad$system";
execute immediate "create table small (text char(20))";
commit;
insert into test!small values ("xyz");
execute immediate "update small set text = 'small fails' where text = 'xyz' ";
rollback;
insert into test!small values ("xyz");
execute immediate "update test.small set text = 'test.small works' where text =
'xyz' ";
commit;
```

- Problem #2: Table Locking with DAL and Rdb

DAL provides a model for specifying the type of "protection" or "locking" desired when using a database or specific table. Both the OPEN DATABASE and OPEN TABLE statements allow for update modes (READONLY/UPDATE) and sharing modes (SHARED/PROTECTED/EXCLUSIVE). The default mode is UPDATE and PROTECTED. Typically this would mean that the user has a "READ/WRITE" lock on the particular table or database. The sharing and update modes are advisory and are passed on to the DBMS only WHEN APPROPRIATE.

Rdb provides a some what different model for specifying protections that does not map well with the DAL model. Rdb uses an extension to SQL transactions - the SET TRANSACTION statement - to signal the type of locking mechanism desired for that transaction. SET TRANSACTION modes are not persistent across subsequent transactions; they must be specified at the beginning of each new transaction or the default mode of "READ WRITE" and "SHARED" will be used.

DAL update and shared modes are not transaction based; that is, in the DAL model, update and shared modes are "global" session modes and are independent of beginning and committing sessions. Consequently, when a DAL user opens a Rdb database or table, specifying a particular update or shared mode, the Rdb transaction modes are NOT changed. The DAL Server does not alter the Rdb transaction modes because they CANNOT be changed in the middle of a Rdb transaction. One would have to commit the current transaction and begin a new transaction, setting the transaction modes as desired.

There are two possible problems:

1) PROBLEM: Lock Conflicts caused inserts and updates while using the Rdb default transaction modes.

SOLUTION: Commit as early and often as possible. Generic DAL applications should commit often to free any locks against tables and indexes accessed. Otherwise, other users might be locked out of one or more tables.

2) PROBLEM: User wants to specify READ ONLY to prevent locking.

SOLUTION: Applications tailored to Rdb can explicitly begin new transactions with the desired locking and update modes by using the Rdb SET TRANSACTION statement via the DAL EXECUTE IMMEDIATE statement. Below are examples:

```
open rdb dbms;
open rdb database "daldemo";
execute immediate "SET TRANSACTION READ ONLY;" in Rdb;
...queries....
commit; /* ends this transaction with READ ONLY */
insert into ....
```

commit;

- Problem #3: Attempting to query directly against the Rdb System Relations occasionally fails. For example, the following query fails:

SELECT RDB$RELATION_NAME FROM RDB$RELATIONS;

Explanation: When DAL is asked to do a query, it checks the syntax and content of the query statement to ensure that the columns and tables asked for exist in the database and to determine the data types of the results. Certain system relations contain columns with a "SEGMENTED STRING" data type (seg_str). This data type is not supported in SQL interface for Rdb 3.xxx (but will be supported in Rdb 4.0). Even though the column queried is not of the type seg_str, DAL looks at the entire structure (column names, data types, and lengths) to check for correct syntax and content. And in doing so, Rdb generates the following error code when it encounters a column with a seg_str: SQL-F-INVSSCONV, Invalid conversion for segmented string column RDB$VIEW_BLR.

WORKAROUND: Use the execute statement to create a view that specifies the non-seg_str columns desired. Then use DAL to query the view. This way, the DAL server's table look-up won't stumble on columns with the data type seg_str. The following example does this:

```
Execute immediate "create view temp as
select rdb$relation_name from rdb$relations";
commit ; /* don't forget to commit */
Select rdb$relation_name from temp;
```

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Macintosh: Connecting to LAN-Based SQL Servers

I am implementing LAN-based SQL servers and would like to connect a Macintosh into that environment. I am looking at three products to run on an OS2/LAN Manager machine: Sybase, SQL Server, and Gupta. What can you tell me about connecting a Macintosh into these products?

This article has been archived and is no longer updated by Apple.

Sybase confirmed that a Macintosh can access SQL Server, if you have the DB Library and HyperDB Library for the Macintosh. These libraries are extra and not part of the basic SQL Server product. Connections are TCP/IP over Ethernet.

SQL Server is the name of the Database Server by Microsoft-Sybase. The Server runs on OS/2, and uses Named Pipes as the network protocol. Named Pipes is a network extension to OS/2--Microsoft's answer for interprocess communications on DOS or OS/2 PC LANs.

Gupta Technologies' SQL Base servers run on either DOS or OS/2, and uses NetBIOS as the network protocol. Gupta told us that there is no way to connect a Macintosh to SQL BASE.

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Router Security Features

My company is having problems with our Ethernet backbone. Everyone is on the Ethernet, but one division controls all access to the net.

People from different divisions can see into the corporate office's zone and services. They can also print on corporate's LaserWriters. The corporate office wants to block transmission into their area but let everyone in the corporate office see services outside of their area. The corporate office needs access to the IBM hosts and VAX systems which are all on the backbone but in different divisions. Thus, total isolation is out of the question.

Right now, we connect our local divisions together with VitaLink boxes and T1 lines. I thought the VitaLink could do some of the above. But, even if they could, the one division controls them. The best solution for corporate is to find a router/bridge that has the above blocking/filtering features. If this is not possible, is there a device that at least allows controlled access to LaserWriters?

This article has been archived and is no longer updated by Apple.
There are several options available to allow zone and device hiding, but most of these products are LocalTalk to Ethernet routers like the Shiva FastPath or the Cayman GatorBox. There is one product that may provide the type of security you require; the NRC Macintosh-based Multigate router provides Ethernet-to-Ethernet routing and provides the ability to define parts of your network as insecure.

See the explanation below for a complete description of the options available for each device. Here is a summary of AppleTalk router security features:

LOCALTALK TO ETHERNET ROUTERS

Cayman Systems GatorBox

Zone Filtering:
Zone filtering prevents users in the filtered zone from seeing other zones on the network to which they are connected. This also prevents users in zones outside of the filtered zone from seeing devices in the filtered zone.

Laser Filtering:
Laser filtering is, in a sense, a subset of zone filtering. Where the zone filtering shields all of the devices from the outside, laser filtering lets you hide just the LaserWriters from anyone outside of its AppleTalk zone. This also prevents users in the filtered zone from seeing LaserWriters in other zones.

Tilde Filtering:
Tilde filtering lets you hide any device with a tilde character at the end of its name, so that it cannot be seen by anyone outside of its zone.

Shiva FastPath

Stay in Zone:
The stay-in-zone option prevents users in the filtered zone from seeing other zones on the network to which they are connected. This also prevents users in zones outside of the filtered zone from seeing devices in the filtered zone.

LaserWriter Security:
LaserWriter security is, in a sense, a subset of zone filtering. Where the zone filtering shields all of the devices from the outside, laser filtering lets you hide just the LaserWriters from anyone outside of its AppleTalk zone. This

also prevents users in the filtered zone from seeing LaserWriters in other zones.

Tilde Security:
Tilde filtering lets you hide any device with a tilde character at the end of its name, so that it cannot be seen by anyone outside of its zone.

NRC 2000

Insecure:
The insecure option lets you define sections of your Internet as "insecure." An insecure network's routing information is not propagated to any other section of the network, thus providing a way to control who can access the secure sections of the Internet.

APT

APT has announced an update to their AppleTalk routers. They now support device security across zones. Users can, for example, hide their LaserWriter from anyone not in their zone. You can also hide other devices, like file servers and NetModems.

The user can let other users on different zones and create different sets of access to different devices. For example, Zone A may have no access to your LaserWriter, but still have access to a File Server, while Zone B has access to all LaserWriters, but not AppleTalk ImageWriters or NetModems.

APT routers connect multiple LocalTalk, Ethernet, WAN, and Serial networks together, and supports Phase II AppleTalk. DDP/IP encapsulation is in the works.

ETHERNET TO ETHERNET ROUTERS

NRC Multigate Macintosh

Insecure:
The insecure option lets you define sections of your Internet as "insecure." An insecure network's routing information is not propagated to any other section of the network, thus providing a way to control who can access the secure sections of the Internet.

Cisco (CGS/MB/AGS)

The cisco router offers the ability to set up access lists that permit controlled access to your network. Access lists are set up to filter all in-bound network traffic from any network listed in the access list. Only traffic from networks not listed in the access lists is permitted into your network. Traffic from your network is still propagated to all other segments of your Internet.

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Pascal III: Accessing the extra memory (3 of 5)

This article has been archived and is no longer updated by Apple.

```
.MACRO SetBank
; This macro saves %1 (an extended address bank pointer) in Save%1
; and pops the new value. The code follows a convention that if the new
;
; 1. check the address currently pointed to by corresponding word
; in Zero page, and
; 2. modify it and %1 (bank register) to make sure the address does
; not point to zero page of bank pair to avoid holes in the memory
; map.
;
; Zero page wraparound during execution taken care of by main loop.

LDA %1
STA Save%1 ; Save old one

PLA ; Get low order byte of new bank
CMP #0FF ; Don't use if = to -1
BEQ $1
ORA #80 ; Set extended addressing on
STA %1 ; And save bank

$1 LDA %1-1601+1 ; Check for zero page reference of
; starting pointers (rest of
; algorithm guarantees it will never
BNE $3 ; happen again)
LDA #80 ; If was nn:00xx , change to
; nn-1:80xx
STA %1-1601+1
DEC %1

$3 PLA
.ENDM

; The following macro guarantees that the base pointer %1 will not
; wrap into zero page during next 256 increments of the pointer.
.MACRO TestWrap
LDA %1+1 ; Before moving each page,
; check for wraparound
CMP #0FF
BCC $1
SBC #80
STA %1+1
INC %1+1601
$1 .ENDM

;=============================================================
; Main procedure
.PROC FetchBytes,6

Source .EQU 0E0 ; Zero page pointer to read
; bytes through
SrcBank .EQU 1601+Source
Dest .EQU 0E2 ; Zero page pointer to write
; bytes through
DstBank .EQU 1601+Dest

; temps
Count .EQU 030 ; Three byte counter of # of bytes to move
SaveDstBank .EQU 033 ; Allow us to restore Pascal bank at end
SaveSrcBank .EQU 034 ; of subroutine
```

```
;=============================================================
; Initializations

PULL RetAddr ; Get information off stack

; Convert 4 bytes of page/byte count to
; three byte integer
PULL Count

PLA ; low order byte of page count
CLC
ADC Count+1 ; add two (low order) page counts
; together
STA Count+1
PLA ; now get high order byte
ADC #0 ; and add carry to high order count
STA Count+2

; now pull destination and source off stack
PULL Dest
SetBank DstBank
PULL Source
SetBank SrcBank

; END Initializations
;=============================================================
; test to see if we need to move another whole page.
MovePg TestWrap Dest ; guarantee copy loop works for next
TestWrap Source ; 256 bytes

LDA Count+1 ; Y pages to copy?
BNE PgLoop ; yes, go copy them
LDA Count+2 ; X chunks of 256 pages?
BEQ Partial ; no, just copy last fragment
DEC Count+2 ; yes,go copy it (count+1 now
; contains $100)

; now copy one page
PgLoop LDY #0 ; move one page. This is key loop.
$1 LDA @Source,Y ; get data
STA @Dest,Y ; store it
INY
BNE $1

; change to next page
INC Source+1
INC Dest+1
DEC Count+1
JMP MovePg
```

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LaserWriter: Source of Multi-bin Sheet Feeders

Is there a multiple-bin paper tray (holds 8 1/2 x 11, 8 1/2 x 14, and envelopes) for the LaserWriter IINTX?

This article has been archived and is no longer updated by Apple.
BDT Products, Inc. makes a multibin sheet feeder for the LaserWriter IINT/NTX. It's called LaserFeeder. They have two models.

- The Model 880 LaserFeeder has two paper bins and an envelope bin.
- The Model 890 LaserFeeder has three paper bins and an envelope bin.

The paper bins adjust to anywhere between 7.5 inches and 14 inches. Each bin holds 220 sheets. For more details, search the Technical Info library under "BDT Products."

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HyperCard 2.0 Tour: "forward" Handler Bug and Workaround

I cannot navigate through the whole HyperCard 2.0 Tour stack. When I get to card 56 of the tour, I cannot use the button for card movement forward. All other buttons function properly. The same thing happens if you are on card 58 and try to go back a card to the previous card.

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Clicking on the "Next" button or pressing the right-arrow key on card 56 calls a handler named "forward". "Forward" calls a SysEnvirons XFCN and bases its choice of which card to go to on the value returned.

The XFCN is aware of all released Apple keyboards. However, the only options for the version of the stack we have are "Macintosh Plus Keyboard", "Standard ADB Keyboard" (includes the Apple IIGS Keyboard), and "Apple Extended Keyboard" (includes both domestic versions). You will encounter problems if you use any keyboard not listed above.

We don't know whether the tour stack will be localized to correct this problem. As a workaround, you can replace the existing "forward" handler with the one below.

```
on forward
hide message box
put SysEnv() into mySys

visual effect wipe left
if item 6 of mySys = "Macintosh Plus Keyboard"
or item 6 of mySys = "Standard ADB Keyboard"
or item 6 of mySys = "Apple Extended Keyboard"
then
go card item 6 of mySys
else
go card "Apple Extended Keyboard"
end if
end forward
```

Before modifying the script, you must set userLevel to 5 to do scripting.

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Pascal III: Accessing the extra memory (4 of 5)

This article has been archived and is no longer updated by Apple.

```
; At this point, there is an assumption that
; 1. move partial page and
; 2. Testwrap on source and dest
; have been done so we can move at least 256 bytes without
; thinking about it again.
Partial LDA Count ; all done yet?
BEQ Return
LDY #0 ; now move (low byte of Count)
; # of bytes
$1 LDA @Source,Y
STA @Dest,Y
INY
CPY Count
BNE $1
;=============================================================
Return LDA SaveSrcBank ; and go home
STA SrcBank
LDA SaveDstBank
STA DstBank
PUSH RetAddr
RTS

Retaddr .WORD

.FUNC Atsign,1
; x := Atsign(Y) causes X to point to Y
PULL RetAddr
PLA
PLA
PLA
PLA
PUSH RetAddr
RTS

RetAddr .WORD
Loc .WORD
.END
```

```
=============================================================
{$SETC Debug := TRUE}
UNIT StringSpace;

INTERFACE
TYPE
STRING1 = STRING[1];
STRING255 = STRING[255];
STRPTR = INTEGER;

FUNCTION InitStringSpace(ColdStart:BOOLEAN): INTEGER;
PROCEDURE FreeStringSpace;
FUNCTION PutString(VAR S:STRING1; VAR WHERE:STRPTR):
BOOLEAN;
PROCEDURE GetString(Who:STRPTR; VAR S:STRING255);
{S had better be 256 bytes long!}
IMPLEMENTATION

VAR
SegNum, {segment number of memory chunk}
Bank, {what bank is chunk in}
Base, {start of chunk received (byte address)}
Tos, {next word to allocate}
```

```
{(base rel word address)}
Limit: INTEGER; {last word allocatable}
{(base rel word address)}

PROCEDURE Allocate(VAR NumPages,Segnum,Bank,SegBase:
INTEGER); EXTERNAL;
{allocates a chunk of SOS memory:
Input:
NumPages: Maximum number of pages to try for.
Output:
NumPages: Number of pages actually allocated.
SegNum: SOS Segment number (for deallocate)}
{ Bank: Starting address bank number
SegBase: Starting address byte address ($0200..$9E00)}

PROCEDURE DeAllocate(SegNum:INTEGER); EXTERNAL;

PROCEDURE FetchBytes(SrcBank:INTEGER; Source:INTEGER;
DstBank:INTEGER; Dest:INTEGER;
PageCount:INTEGER; Count:INTEGER
); EXTERNAL;

FUNCTION Atsign( VAR x:INTEGER):INTEGER; EXTERNAL;

FUNCTION InitStringSpace{(ColdStart:BOOLEAN): INTEGER};
VAR
NumPages:INTEGER;
TempBase:INTEGER;
BEGIN
IF ColdStart THEN BEGIN
FreeStringSpace;

{$IFC Debug}
WRITELN('How many pages to allocate?');
READLN(NumPages);
IF NumPages > 512 THEN NumPages := 512;
{$ELSEC Debug}
NumPages := 512;
{$ENDC Debug}

Allocate(NumPages,SegNum,Bank,TempBase);
Base := TempBase - {$2000}8192; {shift into}
{extended address}
Limit := NumPages*128 -32767-1; {128 = words/page}

{$IFC Debug}
WRITELN('Assembly results:');
WRITELN('Segment ',Segnum,' Allocated ',NumPages,
' pages',' in bank ',Bank,' at real address ',
TempBase);
IF Base MOD 256 <> 0 THEN
WRITELN(CHR(7),'bad base address');
{$ENDC Debug}

END;
Tos := -32767-1; {compiler doesn't like -32768}
InitStringSpace := NumPages;
END;
```

Published Date: Feb 18, 2012

Macintosh SE/30 Versus Macintosh IIfx: Video Speed

I have written code in Lightspeed C that makes many QuickDraw calls. When I run it on my Macintosh SE/30 with an external 19-inch mono monitor attached to a video card in the PDS, I notice that it runs significantly faster then when I run the same program on my Macintosh IIfx with either the Apple 4*8 card and the Apple 21-inch mono or an emachines 19-inch monitor also in black and white mode.

Is this because the PDS slot is faster than the NuBus slots or are there other factors? It seems that the 40 MHz Macintosh IIfx should be faster than the 16MHz Macintosh SE/30.

This article has been archived and is no longer updated by Apple.
Your assumption is correct. The Macintosh SE/30 PDS (processor direct slot) runs at 16MHz, while NuBus slots are limited to 10MHz. The increased bandwidth available to the PDS due to the 60 percent greater clock lets much more data pass than is possible with NuBus. NuBus overhead and arbitration widens this speed difference.

While the Macintosh IIfx itself runs much faster than the Macintosh SE/30, it cannot move data to the video RAM as quickly, because of this bus limitation. Programs which are calculation-intensive run much faster on the Macintosh IIfx, whereas programs that perform high-speed graphical operations can display faster on the Macintosh SE/30. The deciding factor is a matter of how many bits are being pushed across the bus to video RAM.

The current Macintosh II family shares the 10MHz NuBus speed. To alleviate this shortcoming caused by NuBus compatibility requirements, the Macintosh IIfx has its own PDS that is even faster than the Macintosh SE/30 PDS. It runs at the full speed of the Macintosh IIfx I/O bus, which is 20MHz, and is, therefore, capable of twice the bandwidth of NuBus, and 25 percent more than the Macintosh SE/30 PDS.

Unfortunately, we do not yet know of any compatible video cards. Although the Macintosh IIfx PDS looks similar to the Macintosh SE/30 PDS, the two slots are not at all compatible. We do not know of any cards in development and wouldn't think that this would be in any company's priorities. Macintosh graphics acceleration is tending toward specialized, dedicated graphics processors, like our 8/24GC card, that are NuBus cards and compatible across the Macintosh II family.

If you require faster video than the Macintosh IIfx can provide, your best alternative is to evaluate graphics accelerator cards. Two sources for such cards are Radius and SuperMac Technology. The Apple 8*24GC card is another option.

Published Date: Feb 18, 2012

Connecting to ABANET via Telenet

I need to connect to ABANET. According to the information I received from ABANET they can be reached through Telenet. How can I reach ABANET via Telenet. I have a connection to the Belgian DCS network (Packet network, X.25).

This article has been archived and is no longer updated by Apple.

It sounds like ABANET has subscribed with Telenet, a X.25 Public Data Network provider, to get access to the X.25 PDN via Telenet. As a subscriber on a PDN, ABANET would have been given a unique address, not unlike your telephone number, that could be broken down into the world zone, country zone, a network digit and network terminal number.

Therefore, to reach ABANET from another X.25 PAD, like MacX25, you just need their address. From MacX25 you enter that address in the "Host Address" or "Called Address" field. Then, open the connection via a terminal communication tool (MacTerminal 3.0, White Pines Mac241, or the like). Their address will be understood by your local PDN provider's packet-switching equipment and your call request will be routed through whatever PDN networks are required to reach ABANET.

Published Date: Feb 18, 2012

AppleShare: Processors, RAM, and User Limits

I understand that AppleShare is limited to 50 concurrent users in its current version, but what is the technical reason behind this seemingly arbitrary limit? I've heard something having to do with the number of sockets allowed per node and that each AppleShare user requires the use of two socket addresses? Can you explain?

This article has been archived and is no longer updated by Apple.
The AppleShare concurrent user limit is hard-coded, based on performance assumptions made about the number of users a given type of server could support. Depending on what type of Macintosh you have and its quantity of RAM, a certain amount of memory is allocated to support that number of users.

A 68000- or or 68020-based server with 1MB of RAM supports up to 25 users -- but a 68020 or "higher" CPU with 2MB or more of RAM lets AppleShare support up to 50 users.

Published Date: Feb 18, 2012

A/UX: Monitoring Memory Use (8/94)

How can I see the MEMORY usage that is being given to UNIX background tasks, UNIX command shell tasks, the Macintosh Finder shell, and the Macintosh applications running within it?

I am trying to find the optimum amount of RAM to reduce the amount of paging and swapping.

For example, when configuring a system for 16MB of virtual memory, with 8MB of physical RAM, it is difficult to predict when swapping occurs. Running SoftPC in these conditions sometimes brings the machine to a halt because the Finder seems to be "swapped out".

This article has been archived and is no longer updated by Apple.
Currently, we don't know of any particular memory monitoring program for A/UX. However, in a CommandShell window the "pstat -m; sleep 5" in a "do while loop" may constantly report the current available memory.

From the Finder desktop, the "About This Macintosh..." DA from Apple Menu will display memory allocation information for all Finder Desktop programs including CommandShell.

To monitor the memory use for each component--like UNIX tasks, CommandShell, Macintosh applications, and so on under A/UX--you need a program that understands the A/UX kernel memory management, that can support simultaneous access by both 24- and 32-bit applications, and is compatible with the existing Macintosh OS Memory Manager. Such a program probably needs to hack /dev/kmem, /mac/bin/{mac24, mac32}, /mac/bin/startmac, and so on.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

Pascal III: Accessing the extra memory (5 of 5)

This article has been archived and is no longer updated by Apple.

```
PROCEDURE FreeStringSpace;
BEGIN
IF SegNum <> 1 THEN De_Allocate(SegNum);
END;

PROCEDURE Convert(Who:STRPTR;
VAR TempBank,TempAddr:INTEGER);
BEGIN
TempBank := Bank;
IF Who >= 0 THEN BEGIN
{must be in second half of chunk}
TempBank := TempBank+2;
{$IFC DEBUG}
WRITE('+');
{$ENDC DEBUG}
END;
TempAddr := Who+Who+Base;
IF (TempAddr < Base) AND (TempAddr >= 0) THEN BEGIN
{must be in third bank of this half}
TempBank := TempBank+2;
{$IFC DEBUG}
WRITE('2');
{$ENDC DEBUG}
END;
{$IFC DEBUG}
WRITE('(',TempBank,':',TempAddr,')');
{$ENDC DEBUG}
END;

FUNCTION PutString {(VAR S:STRING1;
VAR WHERE:STRPTR): BOOLEAN};
VAR
NewTos:INTEGER; {if this succeeds, where will Tos be?
(base relative word pointer)}
TempBank,
TempAddr: INTEGER; {real bank address of string}
BEGIN
{check for space overflow; this is tricky due to negative
addresses:
(if limit is positive (i.e. we have at least 32k words))
Tos + - (note: 0 is +)
═══════════════ CMP means Overflow if newtos > limit
n | EW means impossible situation
e + | CMP CMP (must have already overflowed)
w | OVFL means overflow
t | OK means no overflow possible
o - | OVFL CMP
s |
(if limit is negative (i.e. we have less than 32k words))
Tos + -
═══════════════
n |
e + | EW OVFL (=CMP)
w |
t |
o - | EW CMP
s |
}
{$IFC DEBUG}
WRITE('Storing "',S,'" at ',tos);
{$ENDC DEBUG}
```

```
NewTos := Tos+(LENGTH(S)+2) DIV 2;
IF (Tos < NewTos) AND (NewTos < Limit) THEN BEGIN
PutString := TRUE;
Convert(Tos,TempBank,TempAddr);
FetchBytes(-1,AtSign(S),TempBank,TempAddr,0,Length(s)+1);
Where := Tos; {hand back pointer}
Tos := NewTos;
END ELSE BEGIN
PutString := FALSE;
END;
{$IFC DEBUG}
WRITELN;
{$ENDC DEBUG}
END;

PROCEDURE GetString{(Who:INTEGER; VAR S:STRING255)};
VAR
TempBank,
TempAddr: INTEGER; {real bank address of string}
BEGIN
{compute real address of string in memory}
{$IFC DEBUG}
WRITE('Getting ',Who);
{$ENDC DEBUG}
Convert(Who,TempBank,TempAddr);
FetchBytes(TempBank,TempAddr,-1,AtSign(S),1,0);
{$IFC DEBUG}
WRITELN(' ==>'",S,"");
{$ENDC DEBUG}
END;

BEGIN
SegNum := -1;
END.
```

Published Date: Feb 18, 2012

MacDFT: Frozen Screen and LOGMODE Frame Sizes

I have a Token Ring problem related to MacDFT. When configuration on the host changes, MacDFT doesn't work.

Configuration
Macintosh IIcx with Token Ring Card
AROSE Prep 1.1.1
Macintosh DFT 1.1

I am using my own LOGMODE table on the host. The following is copied from the file TCBMODE ASSEBLE R1. Here is the default logmode that works:

M2SDLCQ MODEENT LOGMODE=M2SDLCQ
FMPROF=X'03'
TSPROF=X"03'
PRIPROT=X'B1'
SECPROT=X'90'
COMPROT=X'3080'
RUSIZES=X'8587'
PSERVIC=X'028000000000185000007E00'

This is IBM's mode. Here is a different logmode that is unique to my site.

TBR3180 MODEENT LOGMODE=TBR3180

FMPROF=X'03'
TSPROF=X"03'
PRIPROT=X'B1'
SECPROT=X'90'
COMPROT=X'3080'
RUSIZES=X'87C7'
PSERVIC=X'028000000000000000000300'

The problem is that when I use my own logmode, the screen freezes the session, and the user has to do a terminal reset to return to normal. This problem is consistently reproducible. The same problem does not occur when using Avatar or MacIrma products.

This article has been archived and is no longer updated by Apple.
The system network administrator asked for the "I" and "T" frame sizes supported on our TokenTalk NB card, and this turns out to be the source of the problem. The frame sizes are fixed at 256 and can't be modified. You chose to provide multiple configurations for the frame sizes depending upon the user's needs. If you make the change to Apple's supported size, your system should work fine on the released version of MacDFT.

Published Date: Feb 18, 2012

AppleShare PC: Minimum Files Needed for File Services

What is the bare minimum for AppleShare/PC files needed to access FILE SHARING only? The following is the list of files I am currently loading, and I need to free up at least 60K of RAM:echo off.

C:\\ASPC\\LSL
C:\\ASPC\\ENET3CII /NAME=ETHER$
C:\\ASPC\\AARP
C:\\ASPC\\ATALK
C:\\ASPC\\ASP_WS
C:\\ASPC\\AppleShare
C:\\ASPC\\MINSES
C:\\ASPC\\REDIR
C:\\ASPC\\ANET AUTO

Any chance I could take some of these out?

This article has been archived and is no longer updated by Apple.
You have the minimum files necessary for what you want. Depending on the type of hardware you are using, it may be possible to load some parts of AppleShare PC into high memory (you need a 386 machine with a minimum of 1MB of RAM). This would free up more than the 60K that you are looking for.

If you want to check the files you do have, you could re-run the Installer and specify file services only, that will install the minimum set.

Published Date: Feb 18, 2012

MacX Under A/UX: When xcalc Doesn‘t Accept Keystrokes (4/93)

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

When running MacX under A/UX I noticed that I couldn't type to the xcalc client running under A/UX. However, both X for A/UX and eXodus handled the keystrokes.

This article has been archived and is no longer updated by Apple.
xcalc doesn't accept keystrokes when displayed in rootless style. This has been reported to A/UX Engineering. A workaround is to display xcalc in a rooted window, as you were doing with native X and eXodus.

Instead of this:

xcalc -display <yourmac>:0.0

Use this:

xcalc -display <yourmac>:0.1

The ".1" causes xcalc to be displayed in the rooted monochrome window. In this style, it seems to work fine. For more information on rooted versus rootless windows, refer to chapter 1, page 12, of the Apple MacX manual from the A/UX manual set.

This has been fixed in A/UX 3.0 and MacX 1.2.

Published Date: Feb 18, 2012

Macintosh-to-HP/UX Connectivity

I have an HP9000 running HP/UX and a LocalTalk network with many Macintosh systems and connected by Farallon's PhoneNET StarController system. I would like to convert the LocalTalk system to run Ethernet (Farallon has the PhoneNET StarController EN, which should do the job).

However, HP's implementation of TCP/IP runs across 802.3 networks and not Ethernet. Our TCP/IP implementation (via MacTCP) pumps out Ethernet packets and not 802.3. I want to connect the Macintosh computers to the HP/UX system to do file transfer (no file conversion necessary), terminal emulation, and SMTP.

Can you suggest any third-party gateways that can convert Ethernet packets to 802.3 on an Ethernet-based StarController EN network? Do you see any potential implementation problem based on the PhoneNET StarController EN to HP/UX?
This article has been archived and is no longer updated by Apple.
The product of choice for this type of conversion seems to be the cisco router. If you want to translate HP 802.3 to Ethernet on the same cable, you can configure the cisco to do that. It's been in the product for three or four years. 802.3 to Ethernet was one of their original design goals.

If you want or need a bridge, HP bridges work fine with both Ethernet and HP 802.3 encapsulation. For more details, search the Technical Info library under "cisco."
Published Date: Feb 18, 2012

TA44980_LaserWriter_Printing_on_Heavy_Paper_(TIL06437).pdf

LaserWriter: Printing on Heavy Paper

Can any LaserWriter print on 65-pound paper (card stock used on shelves)?

This article has been archived and is no longer updated by Apple.
The "LaserWriter II Owner's Guide" specifies the paper at:

16-lb. to 20-lb. photocopy or typewriter bond (60 to 80 g/m2) in normal mode; up to 36-lb. (135 g/m2) stock in manual mode with face-up tray open.

We don't know of a way to use a LaserWriter to print on 65-pound paper. The LaserWriter paper path will not support paper of that thickness, nor is there enough heat to fuse the toner through paper that thick.

You can, of course, use the LaserWriter to print labels and stick them to any thickness of paper. Labels as large as 8.5 X 11 are available.

Published Date: Feb 18, 2012

Personal LaserWriter NT Software Switching

Is it possible to soft switch the Personal LaserWriter NT between PostScript and HP Emulation? The PostScript code for the LaserWriter IINTX doesn't seem to work.

This article has been archived and is no longer updated by Apple.
You are correct, the PostScript code for the LaserWriter IINTX for software mode switching does not work on the Personal LaserWriter NT. The "setsoftwareiomode" value, which is used in the LaserWriter IINTX to set the mode, is not defined in the Personal LaserWriter NT.

However, you can use software switching to switch the Personal LaserWriter NT temporarily from PostScript to HP LaserJet+ or Diablo emulation. To emulate the HP LaserJet+, send the following PostScript to the Personal LaserWriter NT:

```
statusdict begin
currentfile /hpcl emulate
```

To emulate the Diablo, send the following PostScript to the Personal LaserWriter NT:

```
statusdict begin
currentfile /Diablo emulate
```

This DOES NOT work the same way software switching to set the mode on a LaserWriter IINTX works. As soon as this job is completed, the Personal LaserWriter NT will change back to PostScript mode. Therefore, you must send this code at the beginning of each job with the job appended to it. To do this, you could put the previous PostScript code in a file, say "hpcl.ps". Then, to print a job in HP LaserJet+ mode from a PC, type:

```
copy hpcl.ps+filename.txt lpt
```

This would send the file you want printed in the same job as the PostScript code that switches the Personal LaserWriter NT to HP LaserJet+ mode. If these files are sent separately, the Personal LaserWriter NT will have already reset back to PostScript mode before the file to be printed reaches the printer.

As this PostScript must be sent with every job, a file cannot be printed straight from a program to the Personal LaserWriter NT. The file would have to be saved to disk, and then sent to the Personal LaserWriter NT as specified above.

You can also set the pushwheel switch on the Personal LaserWriter NT for HP LaserJet+ or Diablo emulation. Switch position 2 sets it to HP LaserJet+ mode, and switch position 3 sets it to Diablo mode.

Published Date: Feb 18, 2012

Personal LaserWriter NT: How to Print IBM ECS Characters

Article Change History

05/18/93 - CORRECTED
* To correct PostScript code found in the article

Please give me some information about the use of the IBM Extended Character Set ECS in the Personal LaserWriter NT.

- Can you use ECS with standard Macintosh software (e.g., word processing)?

- Can you use ECS with SoftPC?

- How can we use ECS from a PC running AppleShare PC?

This article has been archived and is no longer updated by Apple.
The ECS character set in the Personal LaserWriter NT is implemented as an extension to Diablo emulation, as opposed to an independent PostScript font. In fact, it is designed to behave like the IBM PC Graphics ECS print wheel for Diablo 630 daisy wheel printers. This creates some interesting requirements for its use with different host computer environments and also imposes some limitations on how the special characters can be used.

Each of the three scenarios you list requires its own sequence of steps to print documents using ECS characters. Although the setup for each is different, the basic procedure is the same. It follows these basic steps:

1) Connect to the LaserWriter in PostScript mode.

2) Send code that enables ECS.

3) Switch to Diablo emulation.

4) Print the desired characters.

Unfortunately, Diablo emulation is not documented well in the "Personal LaserWriter NT Owner's Guide." Although code is provided to enable ECS, no mention is given of software mode-switching or the other options available for the DiabloDefaults dictionary. We'll cover the required basics here, and also provide a list of the different dictionary values and their meanings.

Setting the Personal LaserWriter NT to Diablo mode with the thumb-wheel switch requires disabling network access. Because of this, we'll avoid hardware switching in our examples and stick with software switching. We're assuming a Macintosh and Personal LaserWriter NT connected to an AppleTalk network along with an IBM PC using AppleShare PC.

Enabling ECS in the LaserWriter requires the following code. It can be entered in a text file and then downloaded using the psdump utility.

```
serverdict begin 0 exitserver
statusdict begin
DiabloDefaults /ecs true put
saveDiabloDefaults
```

This will persist, until it is forced back by the same code using "/ecs false" in place of "/ecs true". You needn't repeat his step, unless it has been intentionally reversed.

Now, we switch to Diablo emulation and send the desired text to be printed. Software switching of the Personal LaserWriter NT differs from hardware switching (and from software switching of the LaserWriter IINTX) in that it only persists until the end of the print job. Any Diablo text or ECS characters must be appended to the switching code or be treated as a separate print job:

```
statusdict begin currentfile /diablo emulate
This text will be printed as if the Personal LaserWriter NT
were a Diablo 630.
```

If the above lines were downloaded to the LaserWriter with psdump, the second two lines would be printed verbatim. If there were special ECS characters, those would be printed as well.

We can't show any of the actual ECS characters in this article, but we can show you how to generate them. The ECS character set is essentially an expanded version of the standard Diablo character set. The special characters lie in the ASCII ranges below 31 and above 126. The following Microsoft BASIC program creates a text file with the special characters in the high range of 127 through 255.

```
10 open "ECS_STUF.TXT" for output as #1
20 for i=127 to 255
30 print #1, chr$(i);
40 if (i-126)/70 = int((i-126)/70) then print #1, ""
50 next i
60 close #1
```

A similar HyperCard script could be used to create the file on a Macintosh.

```
on mouseDown
put "High ASCII ECS Chars" into filename
open file filename
repeat with i = 127 to 255
write numToChar(i) to file filename
if (i-126)/70 = (i-126) div 70 then write return to file filename
end repeat
close file filename
end mouseDown
```

To print these files, prefix them with the Diablo emulation PostScript code from above and download the result with psdump. The result should be a page with two lines of the high ASCII ECS characters.

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Pascal III: Typeahead Killer

This article has been archived and is no longer updated by Apple.
The following program demonstrates how to control the typeahead feature of the .CONSOLE driver. The Standard Drivers Manual and the Pascal Programmer's Manual explain how it works.

```
PROGRAM KILL_TYPEAHEAD;

VAR CH: CHAR;
COMMAND: INTEGER;

BEGIN
WRITE (CHR (28)); GOTOXY (0,12);
WRITE ('Typeahead: K)ill, R)estore, A)bort: ');
REPEAT
READ (KEYBOARD, CH);
UNTIL CH IN ['K', 'k', 'R', 'r', 'A', 'a'];
GOTOXY (0,12);
CASE CH OF
'K', 'k': BEGIN
COMMAND := 0;
UNITSTATUS (1, COMMAND, 19);
WRITE ('Typeahead is off.', CHR (31));
END;
'R', 'r': BEGIN
COMMAND := 128;
UNITSTATUS (1, COMMAND, 19);
WRITE ('Typeahead is on.', CHR (31));
END;
'A', 'a': WRITE ('Aborted...', CHR (31));
END; { CASE }
END.
```

Published Date: Feb 18, 2012

A/UX 2.0: No TCP/IP Protocol on LocalTalk Cable

I'm running A/UX 2.0 and want to use TCP/IP protocol on LocalTalk cable (TCP/IP embedded DDP)?

This article has been archived and is no longer updated by Apple.

A/UX 2.0 does not support TCP/IP protocol via LocalTalk cable. This means that no TCP/IP packets would go through the LocalTalk cable from or to an A/UX machine.

Published Date: Feb 18, 2012

A/UX: System Software Folders Under /mac/sys (8/93)

There are three different folders for System Software under /mac/sys. What are the corresponding roles of each?

This article has been archived and is no longer updated by Apple.
* The "Login System Folder" is where the A/UX Login Dialog resource is kept.

* The "Startup System Folder" is where the "A/UX Startup" initialization resource (the environment to start up, mac24 or mac32 and so on) is kept.

* The "System Folder" is where System Software (like CDEVs, INITs, and so on) is stored, much like the Macintosh OS System Folder.

Article Change History:
18 Aug 1993 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

A/UX 2.0: How to Customize Session Types

During the login phase, you can choose different logins (Session Type). How can I customize this environment -- to launch X, for instance?

This article has been archived and is no longer updated by Apple.

When the X11 Window System is installed, the X11 session automatically will be created in the /mac/lib/sessiontypes directory.

The code below shows how the X11 session is created from an X11.r resource file. The X11.r file is as follows:

```
/*
  * description file for X11 session type.
  */

resource 'STR#' (128) {
  {
/* The name that the user selects in the list box. */

     "X11";

/* The description of this session type. */

     "X11 is Apple's adaptation of the industry standard "
     "X Window System for A/UX. X11 is a pure X environment, "
     "and no Macintosh compatibility is provided.";

/* The command that gets executed for this session type. */

     "/usr/lib/X11/X";

/* Name of file to look for in user's home directory to run */
/* instead of command given above. */

     ".X11"

  }
};
```

Then the following commands create the X11 resource file:

```
/mac/bin/rez -i /:mac:lib:rincludes types.r X11.r
fcnvt -f -s Rez.out X11
rm -f Rez.out
```

With the above example, you can create your own session.

Published Date: Feb 18, 2012

Macintosh Portable: Use the Sound Manager From 6.0.7

I have developed an application in C through which I can connect a Portable to one of a phone switches and establish a session with the switch and then play some background music on the Portable. This code has worked on numerous Macintosh II systems, but fails on the Portable (quits the application, returning to Finder without a warning).

The Portable has 2MB of RAM and System 6.0.5. I am using identical pieces of code on both machines and the toolbox calls are the same. Some have suggested that there may be a difference in the sound architectures of the Macintosh II family and the Portable family that requires different calls to the Sound Manager for the Portable.

This article has been archived and is no longer updated by Apple.
The Sound Manager prior to System Software 6.0.7 was known to have problems. Our first suggestion is to install 6.0.7 on the Portable. The new Sound Manager does have additional functionality. However, all previous interface calls are still valid. The new Sound Manager has been totally rewritten, providing a more robust tool.

Because the application appears to be working in certain environments, it would seem one of the problems of the old Sound Manager becomes obvious when used on the Portable. Using the new Sound Manager shipped with 6.0.7 should provide a solution.

Published Date: Feb 18, 2012

LaserWriter: Macintosh SE Connection with ImageWriter Cable

I hooked up a LaserWriter IINT to a Macintosh SE for local printing using an ImageWriter cable, and it worked! Is this okay?

This article has been archived and is no longer updated by Apple.
When you connect to a LaserWriter in this fashion, you are in reality still running LocalTalk between the Macintosh and the LaserWriter. Although this works in most cases, it is not a supported configuration, and we do not recommend using it. Instead, use the proper cabling necessary to implement a LocalTalk connection between the LaserWriter and the Macintosh.

Published Date: Feb 18, 2012

Apple IIGS: VGC and ROM Upgrade

Beginning August 1, 1987, two free component upgrades have been available to Apple IIGS owners. This REA program ended on 31 March 1995.

This article has been archived and is no longer updated by Apple.

Overview

These are the two component upgrades:

- A new ROM chip corrects minor problems and provides enhancements for future software releases.

- A new Video Graphics Controller (VGC) chip corrects video display problems that may occur in double hi-res and standard text modes.

Look at the first three digits of the serial number on the bottom of the Apple IIGS to determine which of the two upgrades your computer needs. (This is only a general guide, because a given computer may have already undergone modifications after leaving the factory. For more specific information, see the "Upgrade Part Numbers" section later in this article.) These are the guidelines:

- Computers with the first three digits of the serial number 704 or lower, generally require both the new VGC and the ROM upgrade.

- Computers with the first three digits of the serial number 705 through 724 (inclusive), generally require only the new ROM.

- Computers with the first three digits of the serial number 725 or higher, generally require neither of the upgrades.

Upgrade Part Numbers

Because some systems may have had logic board swaps since date of purchase, it's best to check the individual VGC and ROM numbers on the main logic board to be sure of which upgrade is required.

- Replace any ROM chip numbered 344-0077-A with the replacement part 344-OO77-B.

- Replace any VGC chip numbered AMI 344SOO46-1 or AMI 344SOO46-A with the replacement part AMI 344SOO46-3, IMP 344SOO46, or IMP 344S0056.

- VGCs numbered AMI 344SOO46-2 or AMI 344SOO46-B need no replacement.

The repair extension program number is 0LR853.

***** IMPORTANT NOTE *****

This program expired on 31 March 1995 and is no longer available under an REA program. However, you can purchase the VGC IC and ROM chip as separate items. In order to pull the VGC chip off the logic board, you will also need the VGC IC extraction tool. Here are the parts you need:

342-0077 ROM, Apple IIGS
344S0046 VGC, Apple IIGS
076-0246 VGC IC Extraction Tool

Article Change History:
30 Sep 1996 - Added REA closing date and part numbers.

TA44989_Apple_IIGS_VGC_and_ROM_Upgrade_(TIL00645).pdf

Published Date: Feb 18, 2012

TA44990_ISDN_NuBus_Card_Supports_and_Wire_Circuit_.pdf

ISDN NuBus Card: Supports 2- and 4-Wire Circuit (11/94)

Regarding the ISDN Developer Platform product, does the Apple card support two or four wire connection?

This article has been archived and is no longer updated by Apple.
The BRI (Basic Rate Interface) is a 4-wire circuit to the switch (Northern Telecom or AT&T). Apple's ISDN card, in addition to the BRI, provides a 2-wire POTS (Plain Old Telephone Service) interface enabling you to connect a standard telephone to the switch via our board for analog services.

Article Change History:
28 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

LaserWriter 6.0.1: Changes that Address Timeout Problems

When LaserWriter 6.0.1 driver came out, there was a specification sheet describing what was in 6.0.1 and how it helped resolve network timeout problems with LaserWriter IINTs and LaserWriter IINTXs. Can you summarize what it said about timeouts?

This article has been archived and is no longer updated by Apple.
The LaserWriter 6.0.1 driver changed two timer settings:

Previously, if part of a print job, a packet, intended for the LaserWriter got lost and wasn't resent in time to reach the LaserWriter within 30 seconds, the print job would be flushed. This low-level timer was eliminated. (Now the PostScript job will timeout after 5 minutes if a packet is "permanently" lost.)

Additionally, if the printer was busy printing something, like multiple copies of a complex document, the connection timer could time out. Now, the Macintosh waits for 3 minutes (previously 2) for the printer to respond before timing out.

The first job is much more likely to occur on large networks where routers are used. The second problem is more prevalent with printing complex documents on the slower LaserWriters (e.g., a LaserWriter IINT as compared to a LaserWriter IINTX).

Published Date: Feb 18, 2012

Macintosh Portable: Touchbase External 9600-Baud Modem

I'm seeking a 9600 baud internal modem for the Macintosh Portable that is compatible with the Shiva NetModem v.32.

This article has been archived and is no longer updated by Apple.
As of October, 1990, we haven't heard of any internal 9600 baud modems for the Macintosh Portable. However, Touchbase Systems just announced an external portable modem, the WorldPort 9600.

The WorldPort 9600 is a portable V.32, 9.6Kb self-powered modem for laptop computers. The WorldPort 9600 supports full-duplex synchronous and asynchronous communications. The 8-ounce modem contains an EIA-232 port for direct connection to a laptop. It runs under its own 9V battery or via an optional external AC adapter

The 9600 features Trellis coding, echo cancellation, fallback speeds from 300 bits to 4.8 bits and MNP Class 4 error correction. It supports the Hayes AT command set and CCITT V.21, V.22, B.22bis, V.23, and Bell 103 and 212A standards.

Published Date: Feb 18, 2012

MacDFT: To Print Screen, Turn Background Printing Off

I am having problems printing screens with MacDFT 1.1. No matter what I do, the "Print Screen" option remains dimmed.

This article has been archived and is no longer updated by Apple.

To work around a bug in the Print Monitor, MacDFT does not allow "Print Screen" to be selected when background printing is on. To print screens with MacDFT, turn background printing off.

Published Date: Feb 18, 2012

A/UX: "vn_rele" Panic Message (9/94)

When I log out of a session on A/UX, I get the message:

panic: vn_rele

This happens on a Macintosh IIfx with miroGRAPH graphics board, Ethernet NB Card, 200MB Conner Drive (one UNIX partition, c0d0s0, partitioned with SilverLining).

What does the above panic message mean, what are its causes, and what do I do about them? These other panic messages were encountered when doing an "fsck" on the file system after the above panic message: "panic: free freeing free block" and "panic: ialloc_dup alloc".

The display on the above machine changes its size on booting A/UX (the menu bar gets squeezed downwards). Is this just a problem with the third-party monitor card? Does A/UX reset the monitor card on booting the kernel?

This article has been archived and is no longer updated by Apple.
It seems that you had a UFS root file system problem on the Conner hard drive.

The above "panic: vn_rele" message occurrs when the A/UX UFS file system tries to do a vn_rele function (release a vnode and decrement the reference count) to maintain its file system data structure. Panic occurs when the reference count reaches to 0. Both the "free freeing free block" and "ialloc_dup alloc" panic messages indicate that there is a bad free-block list and duplicate inode allocations in the UFS super block.

We don't know the parameters used when the UFS root file system was created on the Conner drive. These parameters (like the number of sectors, tracks, and cylinders) must be specific to the Conner drive.

If the parameters used to create a UFS file system do not match the drive, we suggest that you rebuild the UFS file system with the correct values. Otherwise, try to "fsck" the root file system (you can do the "fsck" in #startup mode) to make a clean root file system.

We haven't seen the menu bar squeezed problem on our third-party monitor while A/UX is booting. Check with the vendor about this problem. Yes, A/UX does a reset on the monitor card when the A/UX kernel is loaded.

Article Change History:
22 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

Pascal III: Intrinsic Units

This article has been archived and is no longer updated by Apple.
Intrinsic Units in Pascal allow the programmer to write and compile code in modules. The progammer can put the modules in a library; several different programs can then use them without a separate linking step. The unit is automatically loaded with the program code file when the program is executed.

The following is a simple example of how to write an intrinsic unit. It is a supplement to the information in chapter 14 of the Programmer's Manual.

First let's enter the unit. This unit has one function that asks for an integer number and returns that number doubled. From the editor, enter:

```
UNIT LIB2;
INTRINSIC CODE 10;

INTERFACE
FUNCTION DOUBLE (NUM:INTEGER):INTEGER;

IMPLEMENTATION
FUNCTION DOUBLE;
BEGIN
DOUBLE := NUM + NUM;
END;

BEGIN
WRITELN ('LIB2 INITIALIZATION');
END.
```

Save the file as LIB2, quit the Editor and compile the unit.

Now put the unit in a library. We suggest you use a program library for this test so that you won't have to modify the SYSTEM.LIBRARY. Here's how to do it:

```
Execute /PASCAL3/LIBRARY
The destination will be TEST2.LIB
The source is LIB2.CODE
Enter "=" to copy the entire codefile into the library
Enter "Q" to save the library and exit the program
Press return when asked for Notice?
```

When that's done, go back to the Editor and enter:

```
PROGRAM TEST2;

USES {$USING TEST2.LIB} LIB2;

VAR INT:INTEGER;

BEGIN
READLN (INT);
WRITELN (INT, ' times 2 equals ', DOUBLE (INT));
END.
```

Save the file as TEST2 and quit the Editor. Compile the program. The unit will be loaded automatically when the program is executed.
Published Date: Feb 18, 2012

DAL: Model 204 and IMS Databases Not Supported

Is there a database product called "Model 204" which runs on IBM mainframes? If so, is there any way for Data Access Language (DAL) to connect to it now or in the future? Can (or will) DAL interact with IMS data bases?

This article has been archived and is no longer updated by Apple.

Model 204 is an on-line and batch DBMS built on a proprietary inverted file access method. The system includes an integrated data dictionary for flexibility in defining and protecting data acquisition. An inverted file, relational system, like Model 204, can support applications that require very large data bases, high transaction volumes, and a large number of concurrent users--all with a high degree of flexibility and efficiency. In that respect, it differs significantly from the standard relational DBMSs that are notoriously slower and more cumbersome to manipulate.

The Model 204 system is fully integrated, with its own query language and communications interfaces to CICS, CMS, and Thorn EMI's Shadow II. It comes with its own 4GL and can support most popular third-generation languages.

Model 204 can also be configured in a mainframe-microcomputer environment with its PC/Workshop product. It also supports a LAN environment.

Currently, DAL supports neither Model 204 or IMS database. There is no plan in the near future for supporting these two products.

Published Date: Feb 18, 2012

Macintosh LC: PDS-Based Coax Card

Is there a coax board for the Macintosh LC? With its new form factor of 3 X 7 inches, none of the earlier cards fits. (Tri-Data Netways won't be used.)

This article has been archived and is no longer updated by Apple.
We assume that many vendors are looking into this, including Avatar as in the following article from "Apple Intro News". With Avatar Corporation's new MacMainFrame Series, Macintosh LC computer users can connect with IBM 3270 mainframes.

"The MacMainFrame Series for the Macintosh LC includes the MacMainFrame Coax Workstation, which offers a Coax-attached internal card that fits into your Macintosh LC 020 Processor Direct Slot for direct connection to an IBM 3270 network. It provides either 1-session CUT or 5-session DFT emulation. The MacMainFrame Coax Gateway provides Macintosh work groups with access to up to five IBM host sessions.

"The MacMainFrame Token Ring Workstation provides a direct connection to a Token Ring network giving you access to up to 8 IBM 3270 sessions. The MacMainFrame Token Ring Gateway allows Macintosh users in an AppleTalk environment to run host applications on an IBM host that resides on a Token Ring network.

"The MacMainFrame SDLC Workstation allows you to directly access host information over a local or remote Synchronous Data Link Control (SDLC) connection. The MacMainFrame SDLC Gateway provides a Macintosh work group in an AppleTalk environment with local or remote access to an IBM host over an SDLC connection."

Published Date: Feb 18, 2012

Macintosh: FTP Servers

Is there a product that supports an FTP server on the Macintosh that runs in the background? We have a requirement to send files from TCP/IP equipped VAX and UNIX machines to a Macintosh in the background. Does the Apple Comm Toolbox support this? Does the Comm toolbox support socket-level programming? What other products support socket-level programming?
This article has been archived and is no longer updated by Apple.
The CommToolBox does not provide support for socket-style programming while using MacTCP. There are currently no commercial products that provide a socket-style interface for MacTCP.

There are several commercial products that provide an FTP server for the Macintosh.

Visit the Macintosh Products Guide, an online catalog of over 15,000 products for the Macintosh, at:

http://guide.apple.com/
Published Date: Feb 18, 2012

A/UX: How to Rebuild Desktop (5/95)

How do you rebuild the desktop under A/UX?

This article has been archived and is no longer updated by Apple.
Follow these steps to rebuild the desktop:

1) Login to the A/UX Command Shell as root user.

2) rm /mac/sys/'System Folder'/.fs_cache

3) rm /mac/sys/'System Folder'/*Desk*

4) Logout and Login to the A/UX Finder environment.

5) When you see a dialog asking "Are you sure you want the desktop rebuilt..." click OK to rebuild the Desktop Database. Rebuilding the desktop may take some time, depending on the amount of local disk space attached.

An alternative to this method follows:

1) Logout and Login to the A/UX Finder environment

2) After the "Starting session for username..." dialog disappears, press and hold both the "Option" and "Command" keys until you see a dialog asking "Are you sure you want the desktop rebuilt...".

3) Click OK to rebuild the Desktop Database. Rebuilding the desktop may take some time, depending on the amount of local disk space attached.

Article Change History:
08 May 1995 - Revised article for more complete information.
23 Feb 1995 - Made correction.
17 Jun 1993 - Revised and Retitled to change focus of article.

Support Information Services
Published Date: Feb 18, 2012

Black & White Displays: Bibliography

When the Macintosh first came out, Apple cited studies indicating that a black on white display was superior to white/green/amber on black ones. The reasoning had to do with easier focusing due to a brighter screen closing the iris, and less adjustment required of the eye when looking between paper and screen. Can you cite the references we used to support these conclusions?

This article has been archived and is no longer updated by Apple.
There were two studies in 1980, and the information can be found in the following books:

* Radl. "Ergonomic Aspects of Visual Display Terminals"; London Taylor and Francis, 1980.

* Bauer and Cavonius. "Improving the Legibility of Visual Display Units through Contrast Reversal"; 1980.

There is also a newer book that summarizes the information in the other two books:

* Etienne Grandjean. "Ergonomics in Computerized Offices"; 1987.

Published Date: Feb 18, 2012

AppleTalk Network: Remote Dial-In Access from MS-DOS

I want to add a remote on-campus PC-compatible to our AppleTalk network, via a Northern Telecom SL-1. We're planning to install a Liaison router on the LocalTalk side. Is there an MS-DOS-based, asynchronous, dial-up Liaison client product available for the PC (like the Macintosh version)?

This article has been archived and is no longer updated by Apple.
With DOS Dial-In (a Shiva product) a remote PC can dial into a LocalTalk network and access files on a TOPS server or print to a LaserWriter. You will need the following at the remote site:

- PC with a COM port

- a modem (9600 bps recommended)

- DOS Dial-In software

- TOPS/DOS 3.0 software (FlashCard not needed)

On the network you need:

- a Macintosh or PC running with a TOPS volume published and either

- a Shiva TeleBridge or EtherGate with the same make and model modem; or

- IF you are using a V.32 Hayes-compatible modem on PC, a Shiva NetModem V.32

As of October, 1990, DOS Dial-In supports TOPS file-sharing only. AppleShare will be added very shortly. You can currently access E-mail with DOS Dial-In as well. You should use QuickMail, Microsoft Mail, or InBox. You need to use the TOPS drivers on the remote PC to use these mail packages with DOS Dial-In.

Solana also has a product, "PC NetAccess," through which MS-DOS computers can dial-in to an AppleTalk network via their R-Servers.

Editor's Note 22 June 1992: Solana has discontinued business to our knowledge, so we are unable to refer you to them directly for further information.
Published Date: Feb 18, 2012

Pascal III: Regular Units

This article has been archived and is no longer updated by Apple.
Regular Units in Pascal allow the programmer to write and compile code in sections. The programmer can then link the sections to form a single code file that will run without the need to refer to a library. The following is a simple example of how to write a regular unit. It is a supplement to the information in chapter 14 of the Programmer's Manual.

First let's enter the unit. This unit has one function that asks for an integer number and returns that number doubled. Enter the editor and enter:

```
UNIT LIB1;

INTERFACE
FUNCTION DOUBLE (NUM:INTEGER):INTEGER;

IMPLEMENTATION
FUNCTION DOUBLE;
BEGIN
DOUBLE := NUM + NUM;
END;

BEGIN
WRITELN ('LIB1 INITIALIZATION');
END.
```

Save the file as LIB1, quit the Editor and compile the unit. Now enter the program that will use LIB1:

```
PROGRAM TEST1;

USES {$USING LIB1.CODE} LIB1;

VAR INT : INTEGER;

BEGIN
READLN (INT);
WRITELN (DOUBLE (INT));
END.
```

Save this file as TEST1, Quit the Editor, and Compile TEST1. Now you have the code file for the unit and the program. The next step is to link them together. Enter L from command mode to get into the Linker.

```
The Host File is TEST1
The Lib file is LIB1
Just press return for the next two questions
The output file will be TEST1
```

Now TEST1 is ready to execute. Any time you change or re-compile either TEST1 or LIB1 you will have to re-link them.
Published Date: Feb 18, 2012

Macintosh LC: Compatibility W/ Selected Software (1 of 3) 1/93

To help ensure that you have an appropriate version of the application program you intend to use, Apple Computer, Inc., has compiled this list from information received from certain software developers. These developers have recommended certain versions of their software for use with the Macintosh LC computer. This is by no means a comprehensive list of programs or versions of programs that are compatible with the Macintosh LC.

Please contact your dealer or the software developer if you have any questions. They can help you identify the newest version of a particular program or tell you how to upgrade your current version if necessary. For best results, we recommend you use the latest versions of software and hardware products with your Macintosh LC.

This article has been archived and is no longer updated by Apple.

Developer	Application Program	Versions	Phone Number
Abacus Concepts, Inc.	StatView SE+Graphics	1.0.3	800-666-7828
Abacus Concepts, Inc.	SuperANOVA for Mac+	1.1	800-666-7828
ABC News Interactive	Health: AIDS	2.0	800-524-2481
ABC News Interactive	In The Holy Land	1.0, 2.0	800-524-2481
ABC News Interactive	Martin Luther King, Jr.	1.0, 2.0	800-524-2481
ABC News Interactive	The '88 Vote	2.0, 2.1	800-524-2481
ACI US, Inc.	4th Dimension	2.1	408-252-4444 ext. 220

ACI US, Inc. File Force 1.0 408-252-4444

ext. 220

Adobe Systems, Inc. Adobe Illustrator 3.0 415-961-0911

Adobe Systems, Inc. Adobe Photoshop 1.0 and above 415-961-0911

Adobe Systems, Inc. Adobe Streamline 1.0 and above 415-961-0911

Adobe Systems, Inc. Adobe Type Align 1.0 and above 415-961-0911

Adobe Systems, Inc. Adobe Type Library All versions 415-961-0911

Adobe Systems, Inc. Adobe Type Manager 2.0 415-961-0911

Adobe Systems, Inc. Adobe Type Reunion 1.0 and above 415-961-0911

Adobe Systems, Inc. Font Downloader 1.0 and above 415-961-0911

Adobe Systems, Inc. Font Porter 1.0 415-961-0911

Adobe Systems, Inc. TrueForm 2.0 and above 415-961-0911

Aldus Consumer Division Apache Strike 1.1 619-695-6956

Aldus Consumer Division Beyond Dark Castle 1.1 619-695-6956

Aldus Consumer Division Dark Castle 1.1 619-695-6956

Aldus Consumer Division Digital Darkroom 1.1a, 2.0* 619-695-6956

Aldus Consumer Division Enchanted Scepter 1.1 619-695-6956

Aldus Consumer Division Personal Press 1.0* 619-695-6956

Aldus Consumer Division Silicon Press 1.1 619-695-6956

Aldus Consumer Division Super 3D 2.1bw, 2.1a* 619-695-6956

Aldus Consumer Division SuperCard 1.5 619-695-6956

Aldus Consumer Division SuperPaint 2.0a 619-695-6956

Aldus Consumer Division World Builder 1.1 619-695-6956

Aldus Corporation FreeHand 2.02 206-628-2320

Aldus Corporation PageMaker 3.02, 3.02CE,

4.0 206-628-2320

Aldus Corporation Persuasion 2.0 206-628-2320

Altsys, Inc. Family Builder 3.2 214-680-2093

Altsys, Inc. FONTastic Plus 2.02 214-680-2093

Altsys, Inc. Fontographer 3.1 and above 214-680-2093

Altsys, Inc. Metamorphosis 1.5 and above 214-680-2093

Altsys, Inc. The Art Importer 2.0 and above 214-680-2093

Apple Computer, Inc. AppleLink 5.1.1 800-776-2333

Apple Computer, Inc. Font/DA Mover 3.8 800-776-2333

Apple Computer, Inc. MacTerminal 2.3.1 800-776-2333

Articulate Systems, Inc. Desktop Mike 1.1 800-443-7077

Articulate Systems, Inc. Voice Link 1.1 800-443-7077

Articulate Systems, Inc. Voice Navigator 2.0 800-443-7077

Authorware, Inc. Authorware Professional 1.5.3, 1.6* 612-921-8555

Authorware, Inc. SoundWave 1.2* 612-921-8555

Borland Full Impact 2.0 408-438-7436

Borland FullWrite Professional 1.5 408-438-7436

Broderbund BannerMania 1.0 800-521-6263

Broderbund Calculus 1.2 800-521-6263

Broderbund Drawing Table 1.0 800-521-6263

Broderbund DTP Advisor 1.0 800-521-6263

Broderbund Geometry 1.2 800-521-6263

Broderbund Jam Session 1.1.1 800-521-6263

Broderbund Printshop 1.3.2 800-521-6263

Broderbund Physics 1.2 800-521-6263

Broderbund PlayMaker Football 1.1 800-521-6263

Broderbund Playroom 1.0, 1.1 800-521-6263

Broderbund Shufflepuck Cafe 1.0 800-521-6263

Broderbund Type 1.0 800-521-6263

Broderbund TypeStyler 1.02, 1.5 800-521-6263

Broderbund Where in Europe is
Carmen Sandiego? 1.1 800-521-6263

Broderbund Where in the USA is
Carmen Sandiego? 1.1 800-521-6263

Broderbund Where in the World is
Carmen Sandiego? 1.2 800-521-6263

Broderbund Where in Time is
Carmen Sandiego? 1.0 800-521-6263

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*Application scheduled to ship fourth quarter 1990.

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Compiled in October 1990. 031-0720-A

Editor's note 18 June 1992: Borland Full Impact and Borland Full/Write Professional were previously listed as Ashton-Tate products.

Published Date: Feb 18, 2012

Macintosh LC: Compatibility W/ Selected Software (2 of 3) 3/93

To help ensure that you have an appropriate version of the application program you intend to use, Apple Computer, Inc., has compiled this list from information received from certain software developers. These developers have recommended certain versions of their software for use with the Macintosh LC computer. This is by no means a comprehensive list of programs or versions of programs that are compatible with the Macintosh LC.

Please contact your dealer or the software developer if you have any questions. They can help you identify the newest version of a particular program or tell you how to upgrade your current version if necessary. For best results, we recommend you use the latest versions of software and hardware products with your Macintosh LC.

This article has been archived and is no longer updated by Apple.

Developer	Application Program	Versions	Phone Number
CE Software, Inc.	Alarming Events	1.0.1	515-224-1995
CE Software, Inc.	Amazing Paint	1.0	515-224-1995
CE Software, Inc.	Calendar Maker	3.0.1	515-224-1995
CE Software, Inc.	DiskTop	4.0	515-224-1995
CE Software, Inc.	In/Out	1.0.1	515-224-1995
CE Software, Inc.	MockPackage Plus Utilities		515-224-1995
CE Software, Inc.	QuicKeys 2	2.0	515-224-1995

CE Software, Inc. QuickMail 2.2.3 515-224-1995

CE Software, Inc. Vaccine 1.0.1 515-224-1995

Chancery Software Mac School District

System 1.0 800-999-9931

Chancery Software Mac School Student

Information Systems 3.0 800-999-9931

Claris Corp. Claris CAD 2.0v1 408-727-9054

Claris Corp. FileMaker Pro 1.0v1 408-727-9054

Claris Corp. HyperCard 2.0 408-727-9054

Claris Corp. MacDraw II 1.1v2 408-727-9054

Claris Corp. MacPaint 2.0 408-727-9054

Claris Corp. MacProject II 2.1v3 408-727-9054

Claris Corp. MacWrite II 1.1v1 408-727-9054

Claris Corp. SmartForm Assistant 1.1v2 408-727-9054

Claris Corp. SmartForm Designer 1.1v2 408-727-9054

Dayna Communications

Inc. DOS Mounter 1.2 801-531-0600

Discis Knowledge Discis Books

Research (application) 1.01 800-567-4321

Discis Knowledge A Long Hard Day On

Research The Ranch 1.02 800-567-4321

Discis Knowledge Cinderella, The

Research Original Fairy Tale 1.02 800-567-4321

Discis Knowledge Heather Hits Her

Research First Home Run 1.02 800-567-4321

Discis Knowledge Moving Gives Me

Research a Stomach Ache 1.02 800-567-4321

Discis Knowledge

Research Mud Puddle 1.02 800-567-4321

Discis Knowledge Scary Poems

Research For Rotten Kids 1.02 800-567-4321

Discis Knowledge

Research The Paper Bag Princess 1.02 800-567-4321

Discis Knowledge The Tale of

Research Benjamin Bunny 1.02 800-567-4321

Discis Knowledge The Tale of

Research Peter Rabbit 1.02 800-567-4321

Discis Knowledge

Research Thomas' Snowsuit 1.02 800-567-4321

Don Johnston Dev. Equip. Ke:nx 1.0* 800-999-4660

Electronic Arts Studio/1 1.0 800-245-4525ã

Electronic Arts Studio/8 2.0 800-245-4525ã

Electronic Arts Studio/32 1.0 800-245-4525ã

Farallon Computing Checknet 1.0.2 415-596-9000

Farallon Computing Farallon MacRecorder

Driver 1.0 415-596-9000

Farallon Computing Farallon Sound Driver 1.2 415-596-9000

Farallon Computing Farallon Sound

Expansion Init 1.0.1 415-596-9000

Farallon Computing MacRecorder Sound

System 2.0.3* 415-596-9000

Farallon Computing MediaTracks 1.0.1 415-596-9000

Farallon Computing NodeHint 1.0.2 415-596-9000

Farallon Computing RegisterName 9.0 415-596-9000

Farallon Computing StarCommand 2.2 415-596-9000

Farallon Computing Timbuktu 3.1.2 415-596-9000

Farallon Computing Timbuktu/Remote 2.0.1 415-596-9000

Farallon Computing TrafficWatch 1.0.8 415-596-9000

Informix Software, Inc. Wingz 1.1a 800-438-7627

Intuit, Inc. Quicken 1.5 800-624-8742

LetraSet DesignStudio 1.01 800-343-8973

LetraSet ImageStudio 1.7 800-343-8973

LetraSet LetraStudio 1.53 800-343-8973

LetraSet Ready,Set,Go! 4.5a 800-343-8973

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*Application scheduled to ship fourth quarter 1990.

ãIn California, call 415-572-2787.

This partial list of third parties and third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation by Apple Computer, Inc. All product specifications and descriptions were supplied by the products' vendors or suppliers. Apple Computer, Inc., has no information about the testing procedures and compatibility verification conducted by the products' vendors and suppliers. Apple Computer, Inc., assumes no responsibility with regard to the selection, performance, or use of these products or the actions of the vendors. All understandings, agreements, or warranties with respect to the software in this list, if any, take place directly between the vendors and the prospective users. Apple Computer, Inc., makes no warranties as to the completeness or accuracy of this list.

Compiled in October 1990. 031-0720-A

Published Date: Feb 18, 2012

Macintosh LC: Compatibility W/ Selected Software (3 of 3) 2/95

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This article has been archived and is no longer updated by Apple.

Developer	Application Program	Versions	Phone Number
MacroMind, Inc.	Director	2.0.1	415-442-0200
MacroMind, Inc.	Player	2.0.1	415-442-0200
MacroMind, Inc.	MediaMaker	1.0	415-442-0200
Maxis	SimCity Supreme (color)	1.2c	415-376-6434
Maxis	SimEarth B & W	1.0	415-376-6434
Maxis	SimEarth Color	1.0c	415-376-6434
MECC	NumberMunchers	1.0	612-481-3660
MECC	WordMunchers	1.0	612-481-3660
Microsoft Corporation	Excel	2.2a	206-454-2030
Microsoft Corporation	File	2.0a	206-454-2030
Microsoft Corporation	Mail	2.0	206-454-2030
Microsoft Corporation	Powerpoint	2.01	206-454-2030
Microsoft Corporation	QuickBASIC	1.00b	206-454-2030
Microsoft Corporation	Word	4.0a,b,c	206-454-2030
Microsoft Corporation	Works	2.0d	206-454-2030
Oracle	Oracle for 4D	1.1	800-672-2531
Oracle	Oracle for Macintosh	1.2	800-672-2531
Scholastic	Algebra Shop	1.0	800-541-5513
Scholastic	Hidden Agenda	1.0	800-541-5513
Scholastic	Interactive NOVA: Animal Pathfinders	1.0	800-541-5513
Scholastic	Math Shop (series)	1.0	800-541-5513
Scholastic	Point of View: Civil War & Reconstruction	1.1	800-541-5513
Scholastic	Point of View: Overview of American History	1.1	800-541-5513

Scholastic Scholastic AI 1.0 800-541-5513

Scholastic Springboard Publisher
II 1.0 800-541-5513

Scholastic Success with Writing 1.0 800-541-5513

Softsync/BLOC Accountant, Inc.
Professional 1.0.5, 2.0 800-933-2537

SuperMac Technology DiskFit 1.5.1 and above
408-245-2202

SuperMac Technology Network DiskFit 1.5.1 and above
408-245-2202

SuperMac Technology PixelPaint Professional 2.0 408-245-2202

SuperMac Technology Sentinel 2.2 408-245-2202

Symantec Corporation MORE 3.0 Î800-441-7234

Symantec Corporation THINK C 4.02 Î800-441-7234

Symantec Corporation THINK Pascal 3.01 Î800-441-7234

Symantec Corp. SmartWorks 1.0 904-464-0016

Symmetry Software Corp. Acta Advantage 1.02 and above
800-624-2485

Symmetry Software Corp. atOnce! 1.10 800-624-2485

Symmetry Software Corp. HyperDA 1.2.3 800-624-2485

Symmetry Software Corp. KeyPlan 1.02 and above
800-624-2485

Symmetry Software Corp. PictureBase 1.2.3 800-624-2485

T/Maker Company WriteNow 2.2 415-962-0195

Wings For Learning Blockers and Finders 1.0 800-321-7511

Wings For Learning Physics Explorer:
Gravity 1.0 800-321-7511

Wings For Learning Physics Explorer:
Harmonic Motion 1.0 800-321-7511

Wolfram Research Mathematica Standard 1.2.2 217-398-6500

WordPerfect Corporation WordPerfect for the
Macintosh 2.0 800-451-5151

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Article Change History:
10 Feb 1995 - Formatting updated and removed 3pty keyword.
15 Jan 1993 - Updated Vendor names.

Support Information Services
Published Date: Feb 18, 2012

A/UX: Setup for Modem Autoanswer (8/94)

What setting is necessary to have a 1200 baud modem autoanswer from the modem port?

This article has been archived and is no longer updated by Apple.
In A/UX, if you have a problem talking with the modem, first try running stty -g /dev/tty0 -modem. This will disable modem control on the modem port. In the /etc/inittab subdirectory, make two changes to the line for the modem port as follows:

change the "off" to "respawn"

change the "at_9600" to "mo_1200"

Note: If you have a 2400 baud modem, the last expression should be "mo_2400".

Article Change History:
25 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

A/UX: Giving the System its Domain Name (6/93)

Why doesn't my system know its domain name?

This article has been archived and is no longer updated by Apple.
This is a consequence of having an empty /etc/inittab file. It happens because the /etc/sysinitrc file is not being executed. Once you recover the /etc/inittab file, the system domain name will be defined correctly.

Article Change History:
23 Jun 1993 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

A/UX: How to Adjust the Kernel Parameter NUBUFS

Article Change History

08/31/92 - REVIEWED

* For technical accuracy.

I want to connect to Ethernet. The figures for a 5MB configuration were typed

in. Running the command

netstat -r

brings up the message

mexpand returning 0

This article has been archived and is no longer updated by Apple.

A request to allocate memory to use for memory buffer space was denied. Wait a

short while, and see if the condition clears up before rebooting. You may

also consider increasing the size of the buffers available; adjust the kernel

parameter NUBUFS. To do this, follow these steps:

1) Log in as "root" and bring the system down into single-user mode.

2) Execute "kconfig -av | grep NMBUFS". It should return the network

memory buffers configured in the kernel. A/UX is distributed with

NMBUFS=500.

3) Type "kconfig -n /unix"

4) Type "NMBUFS=" followed by the number you would like to increase it to

followed by a carriage return. Try increasing the number of mbufs to

1000; type "NMBUFS=1000"

5) Type a Ctrl-D to exit kconfig. The shell prompt will reappear.

6) Execute "sync; sync; sync; reboot". The system will sync and reboot

itself. Bring it back up.

Published Date: Feb 18, 2012

Pascal II: Intrinsic Units compiler options RESIDENT & NOLOAD

You can get Apple Pascal version 1.1 to treat intrinsic units as segments (overlays) by using the noload (*$N+*) and the resident (*$R unit name*) compiler options. Units specified by these options are read in from the disk only when a reference is made to code contained within the unit. When the calling procedure is exited and all active references to the unit have been resolved, the unit is "swapped out" and the memory range can be used for other code segments. For more details on the use of these options, refer to pages 66-67 of the Pascal Language Reference Manual, and the Language Manual addendum.
This article has been archived and is no longer updated by Apple.
The unit code with the noload option will remain in memory until the calling procedure is exited. This may result in a stack overflow (out of memory) if control never exits from such a unit after it is called repeatedly from inside the same procedure. This is a known problem, and can be avoided by specifying the unit as "Resident" within that procedure or segment. Calling the unit from within a different procedure will also remedy this. The following examples illustrate this situation:

EXAMPLEA below will generate an out of memory STACK OVERFLOW error by repeatedly loading APPLESTUFF.

```
PROGRAM EXAMPLEA;
USES APPLESTUFF;

VAR I: INTEGER;

BEGIN (* MAIN PROGRAM *)
(*$N+*)
WRITE ('NUMBER OF WORDS AVAILABLE AT START OF PROGRAM : ');
WRITELN (MEMAVAIL);
FOR I:=1 TO 100 DO BEGIN
WRITELN (I,' ',MEMAVAIL,' WORDS');
NOTE (25,1) (* APPLESTUFF MUSIC ROUTINE *)
END;
WRITELN ('PROGRAM COMPLETED SUCCESSFULLY')
END. (* MAIN PROGRAM *)
```

EXAMPLEB uses the RESIDENT OPTION to prevent APPLESTUFF from being reloaded.

```
PROGRAM EXAMPLEB;
USES APPLESTUFF;

VAR I: INTEGER;

BEGIN (* MAIN PROGRAM *)
(*$N+*)
(*$R APPLESTUFF *)
WRITE ('NUMBER OF WORDS AVAILABLE AT START OF PROGRAM : ');
WRITELN (MEMAVAIL);
FOR I:=1 TO 100 DO BEGIN
WRITELN (I,' ',MEMAVAIL,' WORDS');
NOTE (25,1) (* APPLESTUFF MUSIC ROUTINE *)
END;
WRITELN ('PROGRAM COMPLETED SUCCESSFULLY')
END. (* MAIN PROGRAM *)
```

EXAMPLEC uses individual procedure to call APPLESTUFF routine, which allows unit to be released and then reloaded.

```
PROGRAM EXAMPLEC;
USES APPLESTUFF;

VAR I: INTEGER;

PROCEDURE PLAY;
BEGIN WRITELN (I,' ',MEMAVAIL,' WORDS');
NOTE (25,1) (* APPLESTUFF MUSIC ROUTINE *)
END;
```

```
BEGIN (* MAIN PROGRAM *)
(*$N+*)
WRITE ('NUMBER OF WORDS AVAILABLE AT START OF PROGRAM : ');
WRITELN (MEMAVAIL);
FOR I:=1 TO 100 DO PLAY;
WRITELN ('PROGRAM COMPLETED SUCCESSFULLY')
END. (* MAIN PROGRAM *)
```

Published Date: Feb 18, 2012

A/UX: The "mount: : Not owner" Mount Error

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I tried to mount a file system and got the error:

mount: <directory>: Not owner

This article has been archived and is no longer updated by Apple.
Do these two steps:

1) You must be logged in as "root" when mounting partitions.

2) Enter the line: whoami

The output should be: "root". If it isn't, log in as "root" and try the mount again.

Published Date: Feb 18, 2012

TA45013_AUX_ae_Interrupt_Errors_(TIL06481).pdf

A/UX: ae0 Interrupt Errors

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I am getting various ae0 interrupt errors a few minutes after system boot. NFS and BNET work fine until then.

This article has been archived and is no longer updated by Apple.
Try another slot or try another EtherTalk board. The errors indicate an EtherTalk hardware problem or connection problem.

Published Date: Feb 18, 2012

A/UX: Problems with rlogin and rcopy Commands (8/94)

I am having trouble with rcopy command. I can't rlogin either; the system says permission denied.

This article has been archived and is no longer updated by Apple.
Make sure that .rhosts are set up correctly on the Sun system and that you aren't logged in as root.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

A/UX: Network Reads Take Longer than Writes

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Reading data over a network takes longer than writing. The code writes data from a Macintosh II over a dedicated network to another Macintosh II running A/UX. By the time the write is done on the server, the client is only about 80% done.

This article has been archived and is no longer updated by Apple.
Engineering believes that reading takes longer because after the data is taken from the network, it has to go through the IP, TCP, or UDP translation and then to the system read buffer. As a solution, try increasing NBUFS size.

Published Date: Feb 18, 2012

800K Macintosh Disk: Sector and Track Info

I have three questions about 800K Macintosh disks:

1) How many sectors are there per side?

2) Is the top or the bottom of the disk used first for data storage?

3) What are the sync lengths of the tracks?

This article has been archived and is no longer updated by Apple.
1) The table below states the formatted capacity of the 800K media:

800K Disk Specifications

Bytes per Sector 512
Tracks per Side 80
Sectors per Track
Tracks 00-15 12
Tracks 16-31 11
Tracks 32-47 10
Tracks 48-63 9
Tracks 64-79 8
Sectors per Side 800
Sectors per Disk 1600
Bytes per Side 409600 (400K)
Bytes per Disk 819200 (800K)

2) The bottom of the disk is side 0; the top of the disk is side 1. The first sector, block 0, is on track 0 of side 0. The last sector, block 1599, is on track 79 of side 1.

3) A sector can be divided into four major sections. These are the header sync field, the header field, the data sync field, and the data field. These fields combined add up to 733.5 code bytes minimum.

Header Sync Field (6.25 bytes + sync overhead):

5 bit slip FF's minimum (FF,3F,CF,F3,FC,FF)

The header sync fields contain a pattern of ones and zeros that synchronizes the hardware state machine with the data on the disk. The header sync and headers field are written only when the disk is formatted. The formatter should make this field as large as possible, because this field buffers expansion of the previous sector's data field due to speed variation of the drive.

Header Fields (11 bytes):

The header field identifies the sector. The sub-fields are:

D5 AA 96 address marks: this identifies the fields as a header field
Track encoded low 6 bits of track number
Sector encoded sector number
Side encoded high 2 bits of track number and side bit:
decoded bit 5=0 for side 0, 1 for side 1
decoded bit 0 is the high-order bit of the track number
decoded bits 1-4 are reserved and should be 0
Format encoded format specifications:
decoded bit 5=0 for single-sided formats
decoded bits 0-4 define format interleave:
standard 2:1 interleave formats have 2 in the field

Checksum checksum formed by exclusive 'or' in the track, sector side, and format fields
DE AA bit slip marks: this identifies the end of the field
Off pad byte where the write electronics were turned off

Data Sync Field (6.25 bytes):

5 bit slip FF's (FF,3F,CF,F3,FC,FF)

The data sync field contains a pattern of ones and zeros that synchronizes the state machine with the data on the disk. This field is written whenever the data field is written.

Data Field (710 bytes):

The data field contains the actual data in the sector. The sub-fields are:

D5 AA AD data marks: this identifies the field as a data field
Sector encoded sector number
Encoded Data 524 bytes encoded into 699 code bytes; the first 12 data bytes are typically used as a sector tag by the operating system, and the remaining 512 bytes are used for actual data.
Checksum a 24-bit checksum encoded into 4 code byte
DE AA bit slip marks: this identifies the end of the field
Off pad byte where the write electronics were turned off

Published Date: Feb 18, 2012

AppleTalk for VMS 2.1 and 3.0: Compatibility with VMS 5.4

Has AppleTalk for VMS 2.1 & 3.0 been tested for compatibility with VMS 5.4?
This article has been archived and is no longer updated by Apple.
AppleTalk for VMS 2.1 was not tested with VMS 5.4, because VMS 5.4 was not released at the time version 2.1 was tested. However, AppleTalk for VMS 2.1 should work under VMS 5.4.

There is a larger issue here that ties into your question about AppleTalk for VMS 3.0. In fact, there is only one choice, and that is AppleTalk for VMS 3.0 (as part of PATHWORKS, formerly DEC LanWORKS). Version 2.1 was an interim release intended solely to provide AppleTalk Phase 2 compatibility until version 3.0 was released. AppleTalk for VMS 3.0 works under VMS 5.4, and that is the current VMS product superseding all other releases.

If you're running older, AppleTalk Phase 1, versions of AppleTalk for VMS, you should start moving toward AppleTalk Phase 2 and AppleTalk for VMS 3.0. The only potential difficulty here is if you have products that require the AppleTalk for VMS 2.x API. In this case, you can go to AppleTalk for VMS 2.1 until those products have been revised to support the new API of AppleTalk for VMS 3.0.
Published Date: Feb 18, 2012

DAL: Using $maxrows and SELECT Statement

I have PATHWORKS (LanWORKS BL/4) running on our MicroVAX 3400. The DAL server is version 1.2. If I go into IDAL, and set $maxrows to 0, a select statement returns nothing. My understanding is that the $maxrows is supposed to enable an an return unlimited amount of data.

This article has been archived and is no longer updated by Apple.
We assume that you also issued the "printall;" statement after the "select" statement. Otherwise, you will not see anything printed.

The System Variables $maxrows is initially set to null. Null is not 0 (zero). To set $maxrows to the initial value of null, you should set it to $null.

When $maxrows is set to a non-null value, the SELECT and FETCH statements stop fetching data from the database when they reach the number of rows specified by $maxrows. Setting $maxrows to 24, for example, yields a 24 rows of database results without waiting for an entire query to complete. Setting it to 0 will result in zero rows.

Published Date: Feb 18, 2012

TA45020_VinylCutting_Signmakers_for_Macintosh_(TIL06490).pdf

Vinyl-Cutting Signmakers for Macintosh

Is there such a thing as a vinyl-cutting signmaker for the Macintosh?
This article has been archived and is no longer updated by Apple.
We have two sources for you. The Roland Digital Group makes a machine that does precisely what you want.

Also, Mesac's "Epsi" product drives various vinyl cutters. Epsi converts PostScript to commands that cutters understand. Search the Technical Info library (under "Roland" or "Mesac" for contact information on these two companies.

Published Date: Feb 18, 2012

Same-Size Images Not Possible with Different Resolutions

I am writing medical-imaging software and want to connect two 19-inch monitors with different resolutions.

I have assumed that if one monitor has twice the resolution as the other, the object will be half the size on the higher-resolution monitor. Is there is a way, within the Macintosh OS or via a third-party utility, to have an object display the same size on both screens despite twice the resolution on one monitor?

This article has been archived and is no longer updated by Apple.
The QuickDraw graphics model does not provide a mechanism that allows for display systems (card and monitor) with different dots per inch (dpi) resolutions to display an image at the same size. QuickDraw assumes a display system has a resolution of 72 dpi. This means that a 2-inch square (144 by 144 dpi) on a Macintosh Plus screen (72 dpi) will be an 2.09-inch square on the AppleColor High-Resolution RGB Monitor (69 dpi).

Published Date: Feb 18, 2012

OfficeVision and Macintosh Connectivity: PIXI

I am looking for information on Macintosh-to-OfficeVision connectivity.
This article has been archived and is no longer updated by Apple.
There is a product for Macintosh-to-OfficeVision (and DISOSS) connectivity called PIXI (Personal Services Import Export) from IMI Computing. The product reportedly works in conjunction with DCA's MacIrma product. Its features include:

- Uploading and downloading Personal Services in-basket or filing cabinet entry(s) to the Macintosh. It also provides file transfer with both OfficeVision/MVS and Personal Services/CICS.

- Binary files can be transferred in native form for filing or distribution through Personal Services or DISOSS.

- PIXI MacIrma determines the document type as either RFT, EDITABLE, or PC FILE depending on the contents of the data. Macintosh ASCII files are automatically converted to EDITABLE if required. Macintosh RFT files are shared with other users unchanged (as RFT).

The product requires DCA's MacIrma hardware and APIs. On the host, you must also install the standard PIXI host component.

Published Date: Feb 18, 2012

TA45023_Multiple_System_Files_on_One_Macintosh_An_Update__(TIL06498).pdf

Multiple System Files on One Macintosh: An Update (12/94)

Under Macintosh Operating Systems 5.x and 6.x, multiple system files on a single volume virtually guaranteed file structure and performance problems. However, under 7.x it doesn't seem so demonstrable. Moreover, utilities like System Switcher suggest that there are now toggles to enable and disable a system file. I've seen a number of users who archive, sometimes deliberately, multiple system files on a volume, with or without such utilities. Are there known risks in doing this, and does Apple have a position regarding this practice?

This article has been archived and is no longer updated by Apple.
We still recommend only one System Folder per volume. We are aware of some potential risks involved with multiple System Folders on one volume. They are:

* Confusion - It is very easy to become confused, either for the user or for a third party application, with the presence of more than one System Folder on the hard drive.

* Disk Cache - In rare instances, information in the Disk Cache may not get written to the hard disk before restarting. If you were blessing a System Folder before restarting, then your Macintosh may not recognize that it has a System Folder.

* Hard Disk Problems - In some instances, users have experienced low level hard disk directory problems, which were heightened by having multiple System Folders. In these cases, a Macintosh typically tried to load Extensions, Control Panels, and Preferences from an unblessed folder, and not from the blessed System Folder.

* Third Party Utilities - Third party utilities for blessing or unblessing multiple System Folders alter information in the hard disk directory's boot blocks. This is not supported by Apple and may cause problems.

If a user, for whatever reason, needs to have multiple System Folders, it is critical that the other System Folders be deblessed correctly, as follows:

1) With System 7.0 and later, move the System file to the Preferences Folder (hiding the System file in this way deblesses the System Folder).

2) Close the System Folder and verify its state before restarting. A blessed System Folder has a Macintosh in its icon. A non-blessed System Folder does not.

3) Rename the deblessed System Folder to any name other than "System Folder".

Article Change History:
09 Dec 1994 - Complete rewrite of article.

Support Information Services
Published Date: Feb 18, 2012

Macintosh Chooser: How It Displays Names

I am designing some AppleTalk-based services and need to know how the Chooser "sorts" these items:

1) For a network "object" (like LaserWriter or AppleShare), the display of network resources accessible to you.

2) For a specific AppleShare server, the display of Volumes accessible to a user.

It appears that none of these lists is alphabetical (though life would be simpler for network designers if they were). I'm hoping that by better understanding how it DOES work, we can choose our assortment of network and volume names more intelligently so the appearance to users is more consistent.

This article has been archived and is no longer updated by Apple.
1) For System 6 and earlier, the Chooser does not sort the names at all; they are displayed in the order that they are received by the NBP lookup request. Under System 7, the list is alphabetical.

2) At the server, devices are displayed in Finder order: startup volume first, followed by SCSI drives in descending order of SCSI address, followed by devices connected via the drive port in the order returned by the getVolInfo call. At the workstation, the devices are displayed in exactly the opposite order, with the startup volume at the bottom of the list.

Published Date: Feb 18, 2012

Applesoft: OUT OF MEMORY Errors

There are only two ways to run out of memory in Applesoft. The most common reason for this error is either that your program is too large or it's using too many variables.
This article has been archived and is no longer updated by Apple.
The solution: trim down your program, keep the data on a disk, or chain your program in from the disk in segments.

The less common cause of this error is stack overflow. This problem is easily spotted, since after you receive the OUT OF MEMORY error, PRINT FRE(0) will tell you that there is still free memory. The 6502 stack, though, which Applesoft uses to save its recursive subroutine calls, is a limited resource; it's this stack that your program is overloading. Your program is overloading this stack in one or more of the folowing ways:

1. Too many FOR-NEXT loops
2. Too many GOSUBs
3. Excessively complex mathematical or string functions
4. GOSUBs with no RETURN
5. Improper recovery in ONERR GOTO routines
6. CALLs or interrupts that don't restore the stack properly

The effects of these functions are cumulative, so a combination of them could be causing your error.

Items one through four commonly occur in very complex programs. If one or more of these items is the cause of your problem, you can implement a program-controlled restart by executing the Applesoft routine CALL 54915; this routine clears the stack without clearing the variables by eliminating all pending FOR-NEXT loops, GOSUBs and formulas. Items one through four, though, have to do with your program structure, so when your program is cleanly structured you shouldn't have problems overloading the 6502 stack.

If a stack overflow is caused by running a cleanly-structured program, then that implies that the overflow is being caused by items five and/or six.

If you're using ONERR GOTO, carefully read pages 81, 82 and 136 of the (green and white) Applesoft BASIC Programming Reference Manual. There are two correct ways to leave the ONERR GOTO routine:

(1) use a RESUME so Applesoft can take care of the stack and re-execute the statement that caused the error
(2) use the stack recovery routine on page 82 or 136 before any GOTO statement.

(The example on page 136 is easier to implement.) If you're using Applesoft in ROM, replace the routine on page 136 with CALL -3288 and no POKEs.

When Applesoft executes a CALL, it does a 6502 JSR to the specified address. Other routines, such as those that handle interrupts from a peripheral card, also involve the 6502 stack. It's up to you to leave the stack the way you found it--so if you use any of these routines, make sure that you remove any bytes the pushed onto the stack so that the 6502's internal registers are maintained.
Published Date: Feb 18, 2012

Macintosh: Serial Port Voltage

What is the maximum voltage that the modem or printer port can handle on the "receiving data" pin of the Macintosh serial port.
This article has been archived and is no longer updated by Apple.
Engineering (and the manuals describing the receivers) indicates that the serial ports should be able to handle voltage ranges of +/- 25V.

The Quad Differential Line Receiver used on the Power Macintosh 6100, 7100, 8100, 9150 and the Quadra 630 family is rated to a maximum of +/- 25V on any differential input.

Published Date: Feb 18, 2012

Macintosh Portable: PDS Manual Correction

Article Change History

10/29/92 - REVIEWED
* To indicate that problem has been corrected in the manual

Is there a problem with figure 13-5 (a diagram of the Macintosh Portable 68000 Direct Slot) on page 280 of "Designing Cards and Drivers for the Macintosh Family"? In a real Macintosh Portable, the PDS connector is soldered on the board rotated 180 degrees.

I've heard the connector should be soldered as described in the book, which is the official way. Which one is correct, the book or the Macintosh?

This article has been archived and is no longer updated by Apple.
The manuals ("Guide to the Macintosh Family Hardware", second and third editions, and "Designing Cards and Drivers for the Macintosh Family", second edition) are in error. The signals and signal descriptions are correct, but the key for the slot is off by 180 degrees (that is, columns A and C should be swapped, as should be rows 1 and 32).

The manual "Designing Cards and Drivers for the Macintosh Family", third edition, has been updated and the Macintosh Portable PDS diagram has been corrected.

Published Date: Feb 18, 2012

HyperCard: HFSCopy External

Article Change History

09/01/92 - REVIEWED
* For technical accuracy

I am developing a HyperCard front end for software distribution via AppleShare servers and using the HFSCopy XFCN to copy files from servers to users' hard drives. I have also made stacks that do validation and audit trails (including MS Mail API) and log the user onto the server, based on certain access privileges. After logging on the user has to drag down the folders from the server manually. This may have to be the solution if the stack can automate the "copy."

HFSCopy works great the first time, but the next time it is executed, it won't work with a duplicate folder name on the user's hard disk. Is there a simple solution to this? Or do I have to verify the user's folders every time and/or rename the existing folder to "<folder name> old" or something like that?

How can I use HFSCopy without knowing the name of the destination hard drive? I don't want to require users to enter the name of their hard drive or the script to search for the volume name. A wildcard does not seem to work. I would like HyperCard to do the HFS Copy to the HyperCard launch volume. HyperCard knows where it is being launched from, so I need to tell the script this information. How can I access this information?

This article has been archived and is no longer updated by Apple.
You're right: the HFSCopy XFCN does not replace a folder with the same name. It does, however, return an error that you can check, as a way to work around this. Error -48 indicates a duplicate filename. You could write a script that uses a few XFCNs to index through the folder that you want to replace, deleting each of the files in the folder until the folder is empty, and then deleting the folder. Once this is done, you could then call the HFSCopy XFCN again, asking for the original folder. Because the folder no longer exists on your local disk, it will be copied successfully.

There are two XFCNs beyond HFSCopy that would help: FolderContents and DeleteFile.

The FolderContents XFCN returns the files and/or folders contained in a specified folder. Its syntax is:

FolderContents(Pathname, Ã,"Files"|"Folders"|"Both"╚Ã"noDialog:"errorGlobal╚)

where Pathname is a path to a folder to examine and parameter 2 is the literal string "Files", "Folders", or "Both".

This XFCN returns a carriage return delimited list (one file/folder per line) of all files, folders, or both files and folders (as per parameter 2) within the specified directory. The names of all folders will end in ":". The default is to list "both" files and folders. (The next version will be A/UX compatible.)

The third XFCN is DeleteFile, which deletes the file you specify. Specify the full pathname, as with the other two XFCNs. To delete a folder, that folder must be empty and you must trick the XCFN into thinking that the folder is a file. Therefore, delete everything in the folder, then call this XCFN once more using the folder name as a file name. In other words, where you would usually specify a folder name like "Hard Disk:folder1:", in this case, you omit

the last colon and pass the parameter "Hard Disk:folder1". Thus, DeleteFile will think the folder is a file, and--as long as the folder is empty--will delete it. Remember that if there are folders within folders you must work your way from the deepest folder out, deleting files and folders as you go.

To get HyperCard's full pathname, use the HyperCard command "the long name of stack home". From the result, you can derive the information you need.

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A/UX: X Window System, MacX Performance Help

I am running some performance benchmarks on the A/UX implementation of the native X Window System and MacX. I cannot reproduce some favorable benchmarks that I read about in "Digital Review." I need some specific, concrete steps that I can take to optimize A/UX for running native X Window System applications as a client and server.

I'm running A/UX on a Macintosh IIfx with 8MB RAM on a Hammer 330MB drive (formatted with La Cie's Silverlining).

Also, is there anything I can do other than increase the memory or select "faster bitmap graphics" for the MacX performance benchmarks?

This article has been archived and is no longer updated by Apple.
First, make sure that you are running the current release of "X Window System for A/UX". It includes "MacX for A/UX" and "Native X11 Window System for A/UX". This software comes standard with A/UX 3.0. Here are some notes about these two products:

For "MacX for A/UX", the display server and the included "xcalc" client application are based on X11R3.

For "Native X11 Window System for A/UX", the display server and the "xstdcmap" client application are based on X11R4. The Xlib, the Xtoolkit, and other client applications are based on X11R3.

Because the Native X11 server for A/UX is based on X11R4, the performance behavior on the display server should be much improved over the X11R3 server.

To run X Window System with A/UX efficiently, some kernel parameters need to be adjusted, because of the number of processes and amount of memory space required by both the display server and client applications in a network environment.

Use the command "kconfig -av" to display the current kernel parameters, and adjust these parameters, if necessary:

NBUF
NFILE
NINODE
NPROC
MAXUP
NMBUFS

For an A/UX with 8MB RAM, the suggested values for these parameters are:

NBUF=1000
NINODE=600
NFILE=400
NPROC=100
MAXUP=100
NMBUFS=1000

NMBUFS is allocated buffers for the network. You can adjust them, if necessary. The above can be done via the "kconfig -n /unix" command. Then use "sync;sync;sync;reboot" to effect the change.

For MacX, other than increasing the memory size of the MacX application (default is 1500K), we are not aware any other way to improve the performance. The suggested memory size of MacX is 2500K. Use "Get Info" to change the size under A/UX Finder.

If physical memory is your concern, you can use the "TBMEMORY" environment variable to increase your virtual memory under A/UX. For instance, to make a 16MB virtual memory, put these two lines in your .profile file, then logout and login to effect the change:

TBMEMORY=16m
export TBMEMORY

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Pascal: Speeding up Pascal text file reading (1 of 3)

This article has been archived and is no longer updated by Apple.
Although the READLN statement reads Pascal text files--for example:

```
READLN (FILEID, STRINGVARIABLE);
```

--this operation can be made much faster by using the routines contained in the following program. Three procedures do the work. Their operation is explained, line-by-line, below:

```
PROCEDURE FILLBUFFER;
(* Fills the working buffer with data
from the .TEXT file. *)
BEGIN
EMPTY := BLOCKREAD (INFILE,BUFFER,2) = 0;
(* Reads 2 blocks of the file into
BUFFER and leaves the variable EMPTY
equal to zero if the end of file
marker is not yet reached.*)
IF NOT EMPTY THEN BEGIN
(* If there is still unprocessed data
in the buffer, do this:*)
NOTNULLS := BUFSIZE +
SCAN (- BUFSIZE, <> CHR(0), BUFFER [1023]);
(* The length of a Pascal .TEXT file
should always be in multiples of 2
blocks. Since strings (lines) do not
span blocks, each block is likely to
contain nulls (ASCII ZERO) at the end.
This line returns the number of real
characters in the file, and discards
the null ones. *)
BUFINDEX := 0;
(* The working index into the buffer is
reset to zero after refilling the
buffer. *)
END;
END;

PROCEDURE OPENFILE (FNAME: STRING);
(* Opens the file using the name passed
by calling procedure.*)
BEGIN
IF ((POS('.text',FNAME) = 0) AND
(POS('.TEXT',FNAME) = 0)) THEN
FNAME := CONCAT (FNAME,'.TEXT');
(* Adds the .TEXT suffix if it's not
already there. *)

RESET (INFILE, FNAME);
(* Actually opens the referenced file. *)

FILLBUFFER; FILLBUFFER;
(* The first call to FILLBUFFER skips
over the 2 blocks of header
information on .TEXT files. The
second call actually fills the buffer
with information which will be used.*)
END;

PROCEDURE READFILE (VAR LINE: STRING);

(* Reads from the file and returns a string at a time in the variable LINE. A
```

word about the Pascal .TEXT file format: Lines are stored as ASCII
characters terminated with carriage returns. If a line contains any leading
spaces, and most Pascal source files contain some, these spaces are "packed"
into two bytes. The first byte is an ASCII DLE (decimal 16) signifying that
the line is packed. The second byte is a count of spaces to be expanded.
The Editor unpacks these lines automatically, as does a READLN from a file.
We do that operation ourselves in this procedure. The increase in speed is
because we are using highly specialized routine, whereas the READLN
intrinsic is very general in nature, accepting strings, integers and reals
from the keyboard as well as from files. Note that this format is optimized
for Pascal source files and it wastes two bytes for each and every line that
does not contain leading spaces. *)

VAR INDENT, LINELEN: INTEGER; (* INDENT is the number of
space characters to add.
LINELEN is the length of the
new string to be formed. *)

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Apple SuperDrive and 800K Disk Drive Compatibility

I have a Macintosh II with an 800K floppy drive. I want to upgrade to an Apple SuperDrive (formerly Apple FDHD). Can I still use the 800K drive and have a system with two floppy drives?

This article has been archived and is no longer updated by Apple.
When upgrading a Macintosh II system to include a SuperDrive, new ROMs (Macintosh IIx ROMs) and a SWIM chip (replaces the IWM) are installed. The 800K disk drive from the Macintosh II is supported and will continue to work as before. For more information, search under "Macintosh II 800K Drive".

Published Date: Feb 18, 2012

LaserWriter and LaserWriter II: How to Minimize Smudging

I am seeing a lot of smudging with the LaserWriter and LaserWriter II printers in our office. What's wrong? What can I do to minimize this?

This article has been archived and is no longer updated by Apple.
In most cases, smudging is due to the operation of the printer below the stated minimum 20 percent relative humidity. This often occurs in the winter when dry, cool air is brought inside and warmed up. Because of the latent humidity in the printer, paper, and toner cartridge, it takes approximately 24 hours for a change in humidity to reflect in the results. The condition of the printer, paper, and toner can all have a significant impact on the print quality. Changing parts or modules has no effect on a humidity-related problem.

Here are some suggestions for minimizing smudging:

* Use a humidifier in the vicinity of the printer and its paper. Try to maintain the humidity at a level of 40 to 70 percent.

* Place a moist sponge with the paper supply in a closed container (like sealed cabinet.) This does not control the humidity level within the printer or toner. This method, therefore, has limited effectiveness.

* Before inserting paper into the paper cassette, use a static-dissipating spray (e.g., Static Guard¬.)

* Clean the printer regularly to reduce toner deposits in accordance with the "Owner's Guide" recommendations.

In conclusion, the best solution is to operate the printer within its specified humidity range.

Published Date: Feb 18, 2012

Using Shiva NetSerials to Manage Shared Serial Ports

I have a decent-sized AppleTalk network (40 workstations, two servers, bridge, and so on). I need to add about 10 share-able serial ports to bridge into an existing Wang system. Ideally, I'd like to find some device like a com-port server, something with up to ten ports, that would manage the allocation of the ports. I have considered using ten Shiva NetSerials, but I don't like the "trial and error" method of finding an available NetSerial. Does anyone make a device like this?

This article has been archived and is no longer updated by Apple.

From your description it sounds as if you want a network communication "hunt group"-like service, that will automatically hunt for the next available communication server when the first communication server is busy. You can do this now with the Shiva NetSerials.

Just choose all of NetSerials you want in your "hunt group" through the Chooser and your call will be routed through whichever NetSerial is available. Because the NetSerial is an independent (after initial configuration) network device, you won't need to dedicate a computer to manage it.

For more details, search the Technical Info library under "Shiva."

Published Date: Feb 18, 2012

DBF Files: Accessing from Macintosh

Several people in my department are interested in using their dBASEIII+ or Clipper data files in the normal DBF file format by both MS-DOS users and Macintosh users. I'm thinking of solutions like FoxBASE+/Mac, dBFast/Mac, or 4th Dimension with dB_Interface from CT-DATA.

Could you summarize all the possible solutions that we could implement? Some of these people are looking for solutions with the DBF files on a file server somewhere in the network. Others just want to take the DBF files and transfer them from a PC to a Macintosh. One of them is specifically interested in a HyperCard solution.

Are there any HyperCard externals available that make direct access to DBF files possible? Is there a similar feature like the dB_Interface with 4th Dimension, for Omnis 5 from Blyth Software?

This article has been archived and is no longer updated by Apple.
We have a number of suggestions on how to access DBF files from a Macintosh.

The first solution is, as you mentioned, FoxBASE+/Mac. FoxBASE+/Mac Multi-User works together FoxBASE+/LAN to allow concurrent operation on a network that supports both MS-DOS and Macintosh users. Data on the network is available to both machines at the same time, and access and manipulation operations are done identically. If you want to transfer DBF files from a DOS machine to a Macintosh, conversion is required. The index files for FoxBASE+/Mac are different, however. The first time you use an index in FoxBASE+/Mac on a DBF file from a DOS machine, a new index file will be created.

HyperCard can also be used as a front end to DBF files. Nittany Development Group has a product called DBF-Access Tools for HyperCard. This is a set of XCMDs for HyperCard used to import and export data in a variety of different ways to and from DBF files. This is not multi-user, nor does it update any of the DBF index files. If data was exported from HyperCard to the DBF file, and you wanted to use dBASEIII PLUS with this DBF file again, you would need to reindex the database. Using DBF-Access Tools for HyperCard, the data in a DBF file could easily be read into HyperCard and manipulated.

Another HyperCard approach is a product called DashBoard from Symmetry. With DashBoard you can again read and write to DBF files. It updates the indexes of dBASE III files. Other applications, like FoxBASE or Clipper, will not have their indexes updated. This product is currently in beta form.

4th Dimension can access DBF files by using dBinterface Rapid from CTDATA. This is a set of externals for 4th Dimension that does high-speed, data conversion. Use it to move data between DBF files and 4th Dimension and the dBASE format. CTDATA also has a product called dBinterface Interactive. This gives you index support for DBF files and record-by-record access. It supports shared access via any AFP-compatible network, though the dBASE-compatible database must support multi-user access.

DbFast/Mac from Bumblebee Software will also read DBF files. This is a dBASE language development environment. It is a single-user database.

Finally, you can use Omnis 5 from Blyth Software. Omnis can import and export data from DBF files. The DBF files cannot be accessed by more than one user at a time, though. You can create a transaction where you import data, manipulate it, and then export the data back out to the DBF file. When exporting data from Omnis to the DBF files, the indexes are not updated.

People looking for multi-user solutions using DOS machines and Macintoshes at

the same time should look into FoxBASE+/Mac and 4th Dimension using dB_Interface from CTDATA. Converting data from DBF files on a DOS machine to a Macintosh is much easier, and you have quite a few options to choose from. The deciding point seems to be what application you want to run on the Macintosh.

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80MB Hard Drive: External to Internal Conversion

My 80MB external hard drive worked fine upon arrival. However, after I took it out of its case and made it an internal drive, it won't boot.

This article has been archived and is no longer updated by Apple.
The modified drive is probably not terminated automatically. To see if this is the problem, put a SCSI system cable with a SCSI Terminator on the external SCSI port. If it boots with the external terminator, then you need to have the jumpers on the bottom of the drive set to terminate it. Contact your authorized Apple service provider for this.

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A/UX: How to Share a LaserWriter with an Apollo Workstation

I have a Macintosh II, Apollo workstation (with Interleaf), and a LaserWriter. What do I need to print Apollo files on the printer?

Also, what can you tell me about Information Presentation Technologies' UShare software for networking Macintoshes and Apollos?

This article has been archived and is no longer updated by Apple.

One way to print Apollo files is to transfer the files to the Macintosh and then print from the Macintosh. To transfer files, make a direct, serial connection and then use Kermit or EtherNet and NCSA Telnet. The transferred files could then be printed.

UShare makes an AppleTalk board for the Apollo. With this board and Apollo host software, the Apollo becomes a host. Add print server software and you can spool files. You need the AppleTalk board for Apollo, UShare host software, and UShare print-server software. There is also an option for a mail program, if you need it.

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Pascal: Speeding up Pascal text file reading (2 of 3)

This article has been archived and is no longer updated by Apple.

```
BEGIN
IF BUFINDEX >= NOTNULLS THEN FILLBUFFER;
(* If the buffer needs refilling,
go and get another buffer. *)
IF NOT EMPTY THEN BEGIN (* If the file is not yet empty,
then do the following: *)
LINELEN := SCAN (BUFSIZE, = CHR(13), BUFFER [BUFINDEX]);
(* Set LINELEN to the number of
characters from the current
buffer pointer position
(BUFINDEX) to the next carriage
return in the buffer.*)
IF BUFFER [BUFINDEX] = CHR (16) THEN BEGIN
(* If the character at the buffer
index is an ASCII DLE, then we
have to unpack the leading
spaces. *)
INDENT := ORD (BUFFER [BUFINDEX + 1]) - 32;
(* Set INDENT to the number found
at BUFINDEX + 1, the number
of space characters to
insert. *)
(*$R-*)
LINE [0] := CHR (LINELEN + INDENT - 2);
(*$R+*) (* Turn off Range Checking so we can
manually change the string length. Set
the length of LINE to the number we had
already gotten plus the number of spaces
to unpack, throwing away two bytes for
the DLE and count bytes. Turn Range
Checking back on.*)
IF INDENT > 0 THEN FILLCHAR (LINE [1], INDENT, ' ');
(* If there are spaces, then fill in the
appropriate number of them, starting
with the first position in the new
string. *)
IF LINELEN > 2 THEN MOVELEFT (BUFFER [BUFINDEX + 2],
LINE [1 + INDENT], LINELEN - 2);
(* If the string is more than 2
characters long, then move the rest of
it from the buffer into the string
starting just after the leading spaces
previously inserted. *)
END ELSE BEGIN
(* No DLE character was found. That
means straight ASCII. *)
(*$R-*)
LINE [0] := CHR (LINELEN);
(*$R+*)
(* Turn Range Checking off, set the
length of the string to LINELEN, and
turn Range Checking back on. *)
IF LINELEN > 0 THEN MOVELEFT (BUFFER [BUFINDEX],
LINE [1], LINELEN);
(* Move the characters from the buffer
into LINE as above. *)
END;
BUFINDEX := BUFINDEX + LINELEN + 1;
(* Sets the pointer to the first
character of the next string in the
buffer for the next time through. *)
```

```
END;
END;
```

Here's a program that demonstrates the difference in speed between the two methods of reading strings:

```
PROGRAM QUICKREAD; (* Very fast line read routine *)
CONST BUFSIZE = 1024;
BUFLEN = 1023;
FILENAME = 'QWERTY9.TEXT';
(* Probably not on user disk *)
VAR LINE: STRING;
INFILE: FILE;
TEXTFILE: TEXT;
CH, OPTION: CHAR;
EMPTY, HELL_FREEZES_OVER: BOOLEAN;
ERROR: INTEGER;
NOTNULLS: 0..BUFSIZE;
(* # of non-null chars *)
BUFINDEX: 0..BUFSIZE;
(* Index within buffer *)
BUFFER: PACKED ARRAY [0..BUFLEN] of CHAR;
```

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TA45040_VAX_to_Macintosh_File_Transfer_(TIL06520).pdf

VAX to Macintosh: File Transfer

How do I download files from a VAX to a Macintosh?
This article has been archived and is no longer updated by Apple.
You can retrieve files from the VAX using either KERMIT or XMODEM.

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A/UX: How to List Remotely-Mounted Directories (8/94)

How can I find out which directories are remotely mounted?

This article has been archived and is no longer updated by Apple.
By using the "-d" option with the /usr/etc/showmount command, you can get a list of the directories that are remotely mounted on other systems on the network. It does not list the system hostnames, just the directories.

Example output from the command line "showmount -d":

/
/users
/usr
/usr/catman

Article Change History:
25 Aug 1994 - Reviewed and updated.

Support Information Services

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A/UX: How to Avoid Timeouts on an NFS Server

Heavy usage of the NFS server creates an NFS timeout. It happens, for example, when a heavy compilation is ocurring on the server. Is there any way to avoid this?

This article has been archived and is no longer updated by Apple.
Try increasing the timeo variable for NFS when the NFS systems are mounted at startup.

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A/UX: How to Make an NFS File System Mount Automatically (9/94)

My NFS file systems aren't mounting automatically.

This article has been archived and is no longer updated by Apple.
Usually, one of two things cause this. The first is that the NFS entry in /etc/fstab is incorrect. To check this, follow these steps:

1) Log on as "root".

2) Edit the file /etc/fstab. This file lists all of the partitions which should be automatically mounted when the system is booted into multi-user mode.

3) As needed, add an entry for each NFS partition that you would like mounted automatically. The format needed is displayed in /etc/fstab:

rhost_1:/filename /mnt ignore rw 0 0

rhost_1 is the name of the repote host. "filename" is the file system to be mounted. /mnt is the mount point, the directory to which the file system will be attached.

The other reason is that NFS file systems are mounted at startup only if the appropriate line has been altered in /etc/inittab. To see if yours is correct, follow these steps:

1) Log on as "root".

2) Enter the command:

grep mount /etc/inittab

You should see:

nfs8:2:once:/etc/mount -at nfs > /dev/syscon 2>&1

If this is not displayed, do these steps:

1) Edit the file /etc/inittab

2) Change the line

nfs8:2:off:/etc/mount -at nfs > /dev/syscon 2>&1

to

nfs8:2:once:/etc/mount -at nfs > /dev/syscon 2>&1

3) Save the file and quit the editor.

4) Shut the system down into single-user mode.

5) Bring the system back up into multi-user mode. The system will display the names of the local and NFS partitions as they are mounted.

The other reason that this happens is because you are in single-user mode. To find your run level, type

who -r

This should be displayed:

run-level 2 Apr 14 09:59 2 0 S

The number in the second column of the output should be a "2".

If it is an "S", your system is in single-user mode and must be booted into multi-user mode. To boot into multi-user mode:

1) Enter the command:

init 2

This will start the system booting into multi-user mode. During the booting process, it will ask if you'd like "the rest of the partitions" checked by fsck.

2) Press "Y" and Return.

When the system is up in multi-user mode:

1) Log on as "root".

2) Enter the command: df

The output will list all currently-mounted partitions, both local and remote.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

A/UX: Reasons Why NFS File Systems Don‘t Mount (9/94)

My /etc/inittab, /etc/fstab are configured correctly, and I'm in multi-user mode, but my NFS file systems still don't mount.

This article has been archived and is no longer updated by Apple.
There are two common reasons for this. The first is that the file /usr/etc/rpc.mountd is missing or corrupted. To check, enter the line:

ls /usr/etc/rpc.mountd

It should display:

/usr/etc/rpc.mountd

If it doesn't, the file /usr/etc/rpc.mountd must be restored from your backups or the A/UX CD-ROM.

A second reason is an incorrect entry in /etc/servers. To check this,

1) Log on as "root".

2) Enter the line:

grep mount /etc/servers

You should see:

rpc udp /usr/etc/rpc.mountd 100005 1

If you don't, follow these steps:

1) Edit the file /etc/servers by adding this line:

rpc udp /usr/etc/rpc.mountd 100005 1

2) Save the file and exit the editor.

3) Shut the system down into single-user mode.

4) Boot into multi-user mode. The names of the local and NFS partitions appear as they are mounted.

Article Change History:
06 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy.

Support Information Services

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A/UX: Solution to "RPC_MAP_FAILURE" Error

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I tried to mount a remote file system and got the error:

mount: <hostname> server not responding: RPC_MAP_FAILURE

This article has been archived and is no longer updated by Apple.
There are four, common reasons for this. First, check that you do not have an incomplete or marginal Ethernet connection. Follow these steps:

1) Are cables correctly seated on connectors?

2) Are cable in good condition physically? There should not be crimps or bends in the cable.

3) Check that all cables attached; make sure that none has been accidently disconnected.

A second reason is that the remote host from which you are mounting a file partition may be down. Check with the administrator of the system. You will not be able to mount any file system from that system until the remote host is up and running.

A third reason is that the /etc/portmap daemon may not be running. Check this by following these steps:

1) Enter the line:

ps -ef | grep portmap

The output displayed should look like this:

root 90 1 0 Apr 25 ? 0:04 /etc/portmap

The numbers in the output may differ on your system. If you do not receive this output, do these steps:

1) Log onto the system as "root".

2) Enter the line:

grep portmap /etc/inittab

The output should look like this:

nfs0:2:wait:/etc/portmap

If it doesn't, edit the file /etc/inittab and modify it to look this way.

3) Shut the system down into single-user mode; run-level S.

4) Reboot the system into multi-user mode; run-level 2.

A fourth reason is that the /etc/portmap daemon on the remote host isn't running. To check this, follow these steps:

1) Log onto the system as "root".

2) Enter the command

rpcinfo -p

followed by a space and the name of the hostname you wish to check. You should get a list of registered program numbers. If you don't:

3) Shut the system down into single-user mode; run-level S.

4) Bring the system back up into multi-user mode; run-level 2.

Published Date: Feb 18, 2012

Pascal: Speeding up Pascal text file reading (3 of 3)

This article has been archived and is no longer updated by Apple.

```
PROCEDURE FILLBUFFER;
BEGIN
EMPTY := BLOCKREAD (INFILE,BUFFER,2) = 0;
IF NOT EMPTY THEN BEGIN
NOTNULLS := BUFSIZE + SCAN (- BUFSIZE, <> CHR(0),
BUFFER [1023]);
BUFINDEX := 0;
END;
END;

PROCEDURE OPENFILE (FNAME: STRING);
BEGIN
IF ((POS('.text',FNAME) = 0) AND
(POS('.TEXT',FNAME) = 0)) THEN
FNAME := CONCAT (FNAME,'.TEXT');
RESET (INFILE, FNAME);
FILLBUFFER; FILLBUFFER;
END;

PROCEDURE READFILE (VAR LINE: STRING);
VAR INDENT,
LINELEN: INTEGER;
BEGIN
IF BUFINDEX >= NOTNULLS THEN FILLBUFFER;
IF NOT EMPTY THEN BEGIN
LINELEN := SCAN (BUFSIZE, = CHR(13), BUFFER [BUFINDEX]);
IF BUFFER [BUFINDEX] = CHR (16) THEN BEGIN
INDENT := ORD (BUFFER [BUFINDEX + 1]) - 32;
(*$R-*)
LINE [0] := CHR (LINELEN + INDENT - 2);
(*$R+*)
IF INDENT > 0 THEN FILLCHAR (LINE [1], INDENT, ' ');
IF LINELEN > 2 THEN MOVELEFT (BUFFER [BUFINDEX + 2],
LINE [1 + INDENT], LINELEN - 2);
END ELSE BEGIN
(*$R-*)
LINE [0] := CHR (LINELEN);
(*$R+*)

IF LINELEN > 0 THEN MOVELEFT (BUFFER [BUFINDEX],
LINE [1], LINELEN);
END;
BUFINDEX := BUFINDEX + LINELEN + 1;
END;
END;

PROCEDURE GETOPTION;
BEGIN
REPEAT
WRITELN;
WRITE ('OPTIONS: Q)uickread, R)eadln, E)xit ');
CH := ' ';
READ (KEYBOARD, CH);
UNTIL CH IN ['Q', 'q', 'R', 'r', 'E', 'e'];
IF CH IN ['E', 'e'] THEN BEGIN
PAGE (OUTPUT);
RESET (INFILE, FILENAME);
CLOSE (INFILE, PURGE);
EXIT (PROGRAM);
END;
END;
```

```
PROCEDURE PRINTFILE;
BEGIN
PAGE (OUTPUT); WRITELN;
CASE CH OF
'Q', 'q': BEGIN
OPENFILE (FILENAME);
REPEAT
LINE := '';
READFILE (LINE);
WRITELN (LINE);
UNTIL EMPTY;
CLOSE (INFILE);
END;
'R', 'r': BEGIN
RESET (TEXTFILE, FILENAME);
REPEAT
READLN (TEXTFILE, LINE);
WRITELN (LINE);
UNTIL EOF (TEXTFILE);
CLOSE (TEXTFILE);
END;
END; (* CASE *)
END;

PROCEDURE INIT;
VAR TEMP: STRING;
BEGIN
PAGE (OUTPUT); WRITELN;
WRITE ('One momemt, please...');
REWRITE (TEXTFILE, FILENAME);
WRITE (TEXTFILE, 'This is a test file written to ');
WRITE (TEXTFILE, 'demonstrate the ');
WRITE ('.');
WRITELN (TEXTFILE, '"QUICKREAD" program.');
WRITE ('.');
WRITELN (TEXTFILE);
TEMP := 'I"m melting.';
REPEAT
WRITE (TEXTFILE, 'TEST STRING --> ');
WRITELN (TEXTFILE, TEMP);
DELETE (TEMP, LENGTH (TEMP), 1);
WRITE ('.');
UNTIL TEMP = '';
WRITELN (TEXTFILE, ' AHHHHHHhhhhhh....');
WRITELN (TEXTFILE);
WRITE (TEXTFILE, 'Notice that using READLN takes much ');
WRITE (TEXTFILE, 'more time');
WRITELN (TEXTFILE, ' to read a long line');
WRITE ('.');
WRITELN (TEXTFILE, 'than it takes to read a short one.');
WRITE ('.');
CLOSE (TEXTFILE, LOCK);
WRITELN;
END;

BEGIN
INIT; (* Write a temporary file for *)
HELL_FREEZES_OVER := FALSE;
REPEAT
GETOPTIONS; (* Get users choice *)
PRINTFILE; (* Print the file *)
UNTIL HELL_FREEZES_OVER; (* Forever. *)
END.
```

TA45046_Pascal_Speeding_up_Pascal_text_file_reading_of__(TIL00653).pdf

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PLI‘s CD-ROM Drive Works with Macintosh and PCs

Do you know of a CD-ROM drive that can connect to both a stand-alone PC and Macintosh?

This article has been archived and is no longer updated by Apple.
Although computer-oriented CD-ROM periodicals list many such solutions, we haven't had ready access to most of them. We have tested the PLI CD-ROM drive and it worked as advertised:

"The PLI CD-ROM Drive is both compatible with the Macintosh and PCs; it reads CD-ROMs in all standard formats and plays audio CDs too. Headphone, analog, and digital audio output as well as external termination and SCSI ID switching are standard."

Check with computer dealers near you and read appropriate magazines for other products.

Published Date: Feb 18, 2012

Macintosh IIsi/LC: Sound CDEV Problem and Fix

If I open the Control Panel and select the Sound CDEV, then move the Control Panel window to the edge of the screen (either left or right), then click the "Add..." button to record a sound, the modal dialog window that opens is almost entirely off the screen. Because I'm unable to click a button to make this dialog go away, I'm stuck.

This article has been archived and is no longer updated by Apple.
There is a problem with the Sound CDEV. The only configurations affected are:

Macintosh LC or Macintosh IIsi, running System 6.0.7 and MultiFinder (there is no problem under Finder).

Press Command-Period and you will return to the sound CDEV.

Published Date: Feb 18, 2012

Macintosh Classic: Internal Power Connector Pin-outs

What are the pinouts for the internal power connector at location J12 on the Macintosh Classic logic board?

This article has been archived and is no longer updated by Apple.
Following are the pinouts:

Pin	Description
1	+12 volts
2	+ 5 volts
3	+ 5 volts
4	/VSYNC
5	/HSYNC
6	VIDOUT
7	Sound
8	-12 volts
9	PWM (Brightness control signal)
10	Ground
11	Ground
12	Ground
13	Ground
14	Ground

Published Date: Feb 18, 2012

Macintosh IIsi: NuBus Adapter Card Slot Number is 9

What is the NuBus slot ID for the Macintosh IIsi?

This article has been archived and is no longer updated by Apple.
The slot number for a Macintosh IIsi NuBus Adapter Card is 9. This corresponds to the first slot number on other NuBus-equipped Macintosh models.

Published Date: Feb 18, 2012

TA45051_Texas_Instruments_Emulates_VT_VT_VT_(TIL06535).pdf

Texas Instruments 928 Emulates VT320, VT220, VT52

For a Macintosh user, is there a substitute for the Texas Instruments TI928 terminal?

This article has been archived and is no longer updated by Apple.
The Texas Instruments TI928 terminal emulates VT320, VT220, and VT52 terminal types. It has RS-232-C and RS-423 capability and includes a printer port for a direct-connect printer.

Any Macintosh terminal emulation package capable of supporting the above terminal types should be a viable substitute for this terminal.

Published Date: Feb 18, 2012

TA45052_Personal_LaserWriter_SC_Scaling_Options_Not_UserAdjustable_(TIL06537).pdf

Personal LaserWriter SC: Scaling Options Not User-Adjustable

In the Personal LaserWriter SC print dialog, scaling options are presented as radio buttons in 25% increments. How can I choose some other scale, say 89%? Can I use someone else's drivers?

This article has been archived and is no longer updated by Apple.
The scaling options provided by the Personal LaserWriter SC driver are hard-coded.

We don't know of any compatible third-party drivers for the Personal LaserWriter SC. Current drivers from other LaserWriters will not work; the Personal LaserWriter SC is not software-compatible with third-party printers.

Published Date: Feb 18, 2012

Internet Router & 6.0.7: "Coprocessor not installed" error

I'm having a problem with System Software 6.0.7 and the AppleTalk Internet Router software 2.0. When installed on a Macintosh IIsi with a NuBus Adapter and a TokenTalk card (TokenTalk version 2.0 Arose Prep version 1.1) I receive a system error "Coprocessor not installed". When I install the Internet Router software on a Macintosh IIcx, the system does not recognize the router software.

This article has been archived and is no longer updated by Apple.
We tested the same configuration on a Macintosh IIsi acting as a router, and had no trouble installing or running the software.

We've heard complaints about the "Coprocessor not installed" message in varied situations with several different applications. Please see an article titled "Macintosh System Software 6.0.7: Troubleshooting (1 of 3) for more information on this error.

If you can't get the router software to run on the Macintosh IIcx, there may be a problem with the way you're installing or configuring it. We recommend you start the installation from scratch using the correct system installer disks to install System software, and the Apple Networks Product installer disk to install the network drivers and the router software. The router should load successfully after re-installation in a clean system.

Published Date: Feb 18, 2012

LaserWriter 6.0.1: Defaults to Black and White (11/94)

I want to change the default setting in LaserWriter 6.0.1 to black and white printing, because a customer does all of his printing is black and white. Can you help?

This article has been archived and is no longer updated by Apple.
Without going into the code of the print driver, it is not possible to alter the default setting. Subsequent versions of the driver now default to Black and White. If you require this for your default, it is recommended that you upgrade to a later version of the driver.

Article Change History:
28 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Pascal: Extra linefeeds on printer

This article has been archived and is no longer updated by Apple.

E(X)ecute APPLE3:LINEFEED to remedy the double spacing some printers show when used with Pascal. The program can be transfered to the diskette you boot (usually APPLE1: or APPLE0:) as SYSTEM.STARTUP and it will execute automatically when the system is booted. You may also include the text of this routine in your own programs; the text is also on the volume APPLE3:.

Published Date: Feb 18, 2012

Apple‘s Disability Resources (5/97)

What resources does Apple offer for individuals with disabilities, rehabilitation professionals, and special education teachers?

This article has been archived and is no longer updated by Apple.

This article describes Apple's disability-related information resources (managed by Apple's Worldwide Disability Solutions Group), as well as related assistive technology organizations.

Apple Computers Disability Resources

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Since 1985, when we created the industry's first Disability Solutions Group, Apple Computer has been at the forefront of making computer technology that meets the special needs of children and adults with disabilities around the globe. It is our belief that computers do not just make people more productive, but that they have an almost magical way of increasing an individual's independence. Self-expression. Participation. Choices. And self-esteem.

That's why our goal is, just as it was 10 years ago, to change the experience of disability in positive, constructive, and--where appropriate--dramatic ways.

Toward that end, we pay special attention to the design of our own products to ensure that they are fully accessible to individuals with disabilities. And we work with numerous Macintosh developers who offer a rich selection of add-on accessibility products for our computers.

Apple provides a series of disability-related information resources that are available to you. Chief among them is an information packet containing a comprehensive database of access products called the Mac Access Passport (MAP). This information is available free-of-charge by calling 800-600-7808 (voice), or 800-755-0601 (TTY).

Four short videotapes are also available through Apple's StartingLine; catalog at 800-825-2145 ($8/ea.; please refer to the Part# when ordering). The videotapes are:

Access

See how the lives of four people with disability have been transformed by Apple technology. 10 min. Part#APL829.

Chapter One

Explore ways that future technologies might enable people with disabilities. 10 min. Part#APL830.

Curb Cuts

Television personality Harry Anderson shows you what makes Macintosh the most accessible computer. 8 min. Part#APL831.

Independence Day

See how the Macintosh helps individuals with physical and learning disabilities improve the quality of their daily lives. 10 min. Part#APL832.

Finally, to receive printed information about Apple products and services, we encourage you to use our toll-free, automated fax system, AppleFAX, by calling 800-462-4396. The service is available 24 hours a day, 7 days a week (you must have a fax machine to use this service).

If you have any questions, comments, or thoughts that you would like to bring to our attention, you can contact us at any time at the following address:

Apple Computer, Inc.

One Infinite Loop, M/S 38-DS

Cupertino, CA 95014

800-600-7808 - voice

800-755-0601 - TTY

Apple's Disability Resources Online

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Imagine a place where the post office never closes. Where the library contains vast amounts of information-all at your fingertips. A place where discussions--small and large--are held around the clock. A place in which to hang out with old friends... and to make new ones. Imagine a place without boundaries. Imagine a place without tired stereotypes.

Apple Computer participates on several online information services in order to disseminate information and promote discussion about Macintosh assistive technology. While every online service has its own character and approach to disability content, one thing is consistent among the services listed below: they all offer the most current information from Apple Computer about Macintosh disability solutions.

Internet

Apple Computer's site on the World Wide Web is one of the most popular areas on the Internet. Available resources include information about all of Apple products and services, technical support, and extensive Macintosh and Newton software libraries. The central Apple Web site also contains information about Macintosh disability solutions, including the most uptodate version of the Macintosh Disability Resources database.

Path: To reach the main Apple Home Page, point your Web browser to:

http://www.apple.com or http://www.info.apple.com.

To reach Apple Computer's Disability Solutions home page, point directly to:

http://www.apple.com/disability/welcome.html.

For more information about Apple's presence on the Internet, email:

webmaster@apple.com

Other Online Services

In addition to the services listed above, Apple Computer occasionally distributes important information about Macintosh assistive technology on a variety of other online forums, including: America Online (disAbilities forum); Internet Newsgroups (misc.handicap and alt.education.disabled); CompuServe (Disabilities+ forum); Prodigy (Health forum); and GTE's SpecialNet (assistive.devices bulletin board).

Assistive Technology Resources

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We highly recommend that you contact the following organizations for additional information about technology for individuals with disability.

Alliance for Technology Access

2173 East Francisco Blvd., Ste. L

San Rafael, CA 94901

415-455-4575

The Alliance for Technology Access is a national network of non-profit resource centers that provide information and consultation about computer use by children and adults with disabilities.

Closing the Gap

P.O. Box 68

Henderson, MN 56044

612-248-3294

Closing the Gap publishes a bi-monthly newsletter and conducts an annual conference each October focusing on the use of computer technology by and for individuals with special needs.

HEATH Resource Center

1 Dupont Cir., NW, Ste. 800

Washington, DC 20036

800-544-3284

The HEATH Resource Center is a national clearinghouse for information about assistive technology, offering material to consumers, organizations, and universities.

Trace R&D Center

S-151 Waisman Center

1500 Highland Ave.

Madison, WI 52705

608-262-6966

The Trace R&D Center is a leading research and development site specializing in rehabilitation engineering and assistive technology tools. Trace publishes a comprehensive resource book of accessibility products.

Published Date: Feb 18, 2012

Intelligent Print Spoolers

I need an intelligent print server that can:

1) Sense the media in each printer and assign the right printer to the job coming in.

2) Automatically reassign print jobs to make optimum use of available resources.

This article has been archived and is no longer updated by Apple.

At this date, we are aware of no products that meet your requirements completely. For information on third-party products that may meet some of your requirements, search the Web and the Redgate Buyer's Guide for products from Mt. Xinu (K-Spool), Alisa, Pacer, Cooperative Printing Solutions (PServe), and Watcon (MacJanet).

Published Date: Feb 18, 2012

Chooser: Zone List Time-Out Values

I have 53 zones on the Northern Telecom Internet. It appears that the Chooser zone list display times out after approximately 40 zones have been displayed, when a single user is connected to the network at 2400 baud. (This timeout doesn't occur at 19,200 baud.) The site has a pair of Shiva TeleBridges and a pair of Hayes V Series 9600 V.42 modems on the network.

Can we use ResEdit to modify the Chooser's zone list time-out values?

This article has been archived and is no longer updated by Apple.
Here is some information about the Chooser that may be of help.

When the Macintosh Chooser is opened, several things happen.

The Macintosh first sends a ZIP GetZoneList request to whatever AppleTalk router it has stored as its "A-ROUTER" value (the last router this Macintosh received an RTMP packet from).

The GetZoneList command is sent to the router with the zone list index set to 1. This tells the router to return the zone list to the requesting workstation, starting with the first entry.

The ZIP GetZoneList command is sent using the ATP at-least-once (ALO) protocol.

The time-out value used for the ATP request is set to 1 second; the number of retries for this transaction is set to 5.

The Macintosh sends out the GetZoneList command and expects to hear back from a router within one second. This is reasonable, because the router is usually connected directly to the same cable that the requesting Macintosh is attached to.

The router replies to the GetZoneList command by sending a ZIP GetZoneList reply with the current zone list. If the zone list does not fit in one ZIP reply packet, the router indicates that there are more zones by setting a flag in the reply packet. The Macintosh requesting the zone list would then send another GetZoneList request to the router with the zone list index set to the number of the last zone name in the current reply packet plus one. This tells the router to then send the next chunk of zone names starting at index number X. A ZIP GetZoneList reply packet can usually hold around 40 zone names, but the exact number of zone names you will get into a single ZIP reply packet varies, depending on the length of the zone names themselves.

This may offer an explanation to why you have seen the symptoms you described.

The user opens the Chooser:

ZIP GetZoneList(index=1) -----> router
wait 1 second
re-transmit 2nd attempt
ZIP GetZoneList(index=1) -----> router
wait 1 second
re-transmit 3rd attempt
ZIP GetZoneList(index=1) -----> router
wait 1 second
re-transmit 4th attempt
ZIP GetZoneList(index=1) -----> router
wait 1 second
re-transmit 5th and last attempt
ZIP GetZoneList(index=1) -----> router

<----- router responds with a GetZoneList()
with the more to come flag set.

ZIP GetZoneList(index=40) -----> router
wait 1 second
no response
ZIP GetZoneList(index=40) -----> router
wait 1 second
no response
ZIP GetZoneList(index=40) -----> router
wait 1 second
no response
ZIP GetZoneList(index=40) -----> router
wait 1 second
no response
ZIP GetZoneList(index=40) -----> router
wait 1 second
no response

No response, so we give up and display the zones we've received so far in the Chooser. The user ends up seeing only 39 zones.

In summary, if the router does not respond back to the first GetZoneList request within one second, we re-send the request. If, at the end of five requests, we still haven't received a reply, we give up and display no zone list in the Chooser window. If we receive the initial zone list, and the router has marked the "more to come" flag, we will request the next set of zone names with the same time-out and retry values as used previously (1 and 5). This is how you can end up with partial zone lists.

There is no easy way to change the retry or time-out values associated with this ZIP transaction. The AppleTalk protocol suite was developed to be used on a local area network where high reliability and low round-trip delays are prevalent. Apple has no plans to change or adopt the protocol to suit every physical data link on which AppleTalk may be implemented. Several third-party companies have developed products that push the AppleTalk protocol to its limits when used with their asynchronous or wide-area network products.

Published Date: Feb 18, 2012

A/UX: MicroCom Modem Switch Settings

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

I am trying to attach a high-speed modem directly to A/UX, but it won't answer the phone. When I attach to the Macintosh OS and run Kermit, the modem answers the phone. If I attach it to a Xenix system, it answers the phone. We've got a MicroCom 9600+ and a MicroCom 2400+. AutoAnswer, Carrier Detect, and DTR active. Macintosh Plus to RS-232 (not Apple cable).

This article has been archived and is no longer updated by Apple.
The MicroCom modem Front Switch settings should be:

Switch 1 : Up Switch 2 : Down Switch 3 : Down Switch 4 : Up
Switch 5 : Up Switch 6 : Up Switch 7 : Up Switch 8 : Up

Rear Switch Settings should be:

Switch 1,2 : Down-Up
Switch 3,4 : Down-Up
Switch 5 : Down
Switch 6 : Up
Switch 7 : Down

Published Date: Feb 18, 2012

A/UX: How to Use mail in the term Program (9/94)

When I try to use mail from the term program, mail doesn't ask me for a subject or anything.

This article has been archived and is no longer updated by Apple.
The mail function is not exported, so instead of calling mail, term calls mailx. When in the term program, use the mailx command instead.

Article Change History:
13 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

A/UX: The "network unreachable" Remote Mount Error (8/94)

I tried to mount a remote file system and got the error:

network unreachable

This article has been archived and is no longer updated by Apple.
This could be because the Ethernet card or cable connection is not working correctly. Here are four troubleshooting steps:

1) Make sure that the Ethernet cable from the Ethernet card to the rest of the network is connected and seated properly and snugly.

2) Check that there is not a broken connection in the main network cable itself.

3) Check that cables do not show any physical signs of damage. Ethernet cables should not be crimped, bent, or squished.

4) Replaced all cables that show excessive wear.

Article Change History:
25 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

A/UX: How to Avoid VAX-to-Macintosh File Transfer Problems

Article Change History

08/31/92 - REVIEWED
*For technical accuracy

I transferred some files as text files from a VAX to a Macintosh using Kermit.
About every 10 files, I see garbage.

This article has been archived and is no longer updated by Apple.
The best way to do the transfer is to set the file type on both systems as
binary, not as text. It works with no problem that way.

Published Date: Feb 18, 2012

A/UX: Diagnostics for a "ping" Error

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

After executing ping on a remote Sun system, I got the error

ping:send to: network is down

and was logged off. I had all correct daemons running. When I run ruptime, it shows no systems up.

This article has been archived and is no longer updated by Apple.
Assuming that the systems were indeed up and running, do these diagnostic steps:

1) Reboot the system.

2) Check that cabling is correct.

3) Try another system to see if other systems can be seen.

4) Check that terminating resistors are in place.

5) Try reseating the Ethernet board. If that doesn't work, try a new board.

6) Check your IP address to see if it's valid.

7) Also, check your domain name.

Published Date: Feb 18, 2012

A/UX: Telnet and "ftp in" Problem Solved

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

I have a Macintosh IIx and an EtherTalk board. Telnet and "ftp out" work fine. Telnet and "ftp in" cause the following messages on the screen:

ae0: overflow NIC reset failed
ae6_intr: receive overflow warning

This article has been archived and is no longer updated by Apple.
Don't worry about it. It appears only on very high-traffic networks and won't crash the system. You can reduce the frequency of messages by doing some network tuning. If you want, you can increase the number of NMBUFS in the kernel with

kconfig -n /unix.

You can list your kernel parameters with

kconfig -avn /unix.

--- WARNING ---

Whenever changing kernel parameters, be sure to save a known-good working /unix file to another name. You can then use this kernel as a backup in case you create a non-functioning kernel.

Published Date: Feb 18, 2012

TA45065_AUX_What_who_Returns_(TIL06558).pdf

A/UX 2.0: What "who" Returns

When I do a who, it always says I am on console and on /dev/ttyp0.

This article has been archived and is no longer updated by Apple.

When you are using term (or Command Shell in 2.0), the multi-window terminal emulator, whoever launched term (or Command Shell in 2.0) is logged in on the console. The login windows generated by term (or Command Shell in 2.0) each have their own ptty (pseudo tty) port. That is why the who command shows two active login sessions even though only one person is actually using the system.

Published Date: Feb 18, 2012

Pascal: Saving a High-Res picture to a disk file

This article has been archived and is no longer updated by Apple.
Pascal graphics does not provide built-in routines to load or save the High-Res graphics screen to a disk file. The following program illustrates a simple method for saving and loading any High-Res screen created in a Pascal environment.

```
PROGRAM DEMOPIC;
(* *)
(* Program loads and saves high-res screen to disk *)
(* 12/79 based on "SLIDE SHOW" by Bill Atkinson *)
(* *)
USES TURTLEGRAPHICS, APPLESTUFF;
CONST HIRESP1 = 8192;
VAR CHEAT: RECORD CASE BOOLEAN OF
TRUE: (INTPART: INTEGER);
FALSE: (PTRPART:^INTEGER);
END;

PROCEDURE DRAWPICS;
(* *)
(* Draw some stuff on the high-res screen. *)
(* This can be replaced with any graphics routine. *)
(* *)
BEGIN
MOVETO (0,0); PENCOLOR (WHITE);
MOVETO (279,0); MOVETO (279,191);
MOVETO (0,191); MOVETO (0,0);
PENCOLOR (NONE);
MOVETO (75,95); WSTRING (' THIS IS A TEST ');
MOVETO(28,5); WSTRING ('<PRESS RETURN TO EXIT PROGRAM>')
END;

PROCEDURE ERROR;
(* *)
(* If error, program will terminate from here. *)
(* *)
BEGIN
TEXTMODE;
WRITELN ('ERROR ENCOUNTERED - PROGRAM TERMINATED');
EXIT (PROGRAM)
END;

PROCEDURE BLOAD (FILENAME: STRING);
(* *)
(* Blockreads the high-res buffer into memory. *)
(* *)
VAR I,IO: INTEGER;
F: FILE;
BEGIN
CHEAT.INTPART:=HIRESP1;
RESET(F,FILENAME); (* OPEN FILE FOR INPUT *)
(*$I-*)
IO:=BLOCKREAD(F,CHEAT.PTRPART^,16);
I:=IORESULT;
(*$I+*)
CLOSE(F);
IF (I <> 0) OR (IO <> 16) THEN ERROR;
END;

PROCEDURE BSAVE (FILENAME:STRING);
(* *)
(* Saves high-res picture to disk via blockwrite. *)
```

```
(* *)
VAR I,IO: INTEGER;
F: FILE;
BEGIN
CHEAT.INTPART:=HIRESP1;
REWRITE (F,FILENAME); (*OPEN NEW DISK FILE FOR OUTPUT*)
(*$I-*)
IO:=BLOCKWRITE (F,CHEAT.PTRPART^,16);
I:=IORESULT;
(*$I+*)
CLOSE (F,LOCK)
IF (I <> 0) OR (IO <> 16) THEN ERROR;
END;

BEGIN (* MAIN PROGRAM *)
INITTURTLE;
DRAWPICS;
BSAVE (':DEMO.PIC');
FILLSCREEN (BLACK); (* Clears high-res screen. *)
BLOAD (':DEMO.PIC');
REPEAT UNTIL KEYPRESS; (* Pause. *)
TEXTMODE
END.
```

Published Date: Feb 18, 2012

TA45067_AUX_Unwanted_Logoff_with_CtrlC_(TIL06560).pdf

A/UX: Unwanted Logoff with Ctrl-C

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

When using telnet or rlogin to log in to another system from the Bourne shell, the system logs me off when I hit Ctrl-C to interrupt a process.

This article has been archived and is no longer updated by Apple.
Use the C-shell (csh) and set the ignoreeof flag.

Published Date: Feb 18, 2012

A/UX: When "kterm" Command Doesn‘t Connect

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

The "kterm" command doesn't connect on a particular Macintosh II through a serial line. This same Macintosh has faster displays than our other machines. The same software worked okay on other machines.

This article has been archived and is no longer updated by Apple.
Here are some general diagnostic steps:

1) Try clearing PRAM and then reset the serial ports (turn them off and then on again).

2) Try different ports on the network.

3) Check hardware and see if the motherboard has a problem.

Published Date: Feb 18, 2012

A/UX: "deferred hostname lookup failure"

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Often, I get the message in the sendmail queue

deferred hostname lookup failure

when sending mail from a Macintosh to a Sun. Sending from the Sun to a Macintosh always works. The Sun can receive mail from other machines over the same net.

This article has been archived and is no longer updated by Apple.
A nameserver on the network that doesn't have the Macintosh II in its hosts file can cause this problem.

Published Date: Feb 18, 2012

TA45070_AUX_Terminal_Hanging_under_cu__(TIL06564).pdf

A/UX: Terminal Hanging under cu (8/94)

My terminal hung while using using cu.

This article has been archived and is no longer updated by Apple.
Try typing tilde period (~.) to close the current connection. If that doesn't work, type ~%cd

Article Change History:
25 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

Two Mirrored Backup Products

Is there a mirrored backup capability for the Macintosh in the Reflections software from Profyle Computers, Ltd in Oxon, England.

This article has been archived and is no longer updated by Apple.
Yes. For contact information, see the listing under "Profyle" in the Technical Info library. A similar type of backup utility was recently announced. Natural Intelligence publishes a product called Shadow that does automatic backup. They state that:

Shadow periodically copies the documents that have changed since they were last backed up. Shadow can backup onto any floppy disk, hard disk, removable disk, network server, or Finder-mountable tape drive.

Also, Golden Triangle has DiskTwin, a fault-tolerant, disk storage device for Macintosh II family computers. Golden Triangle states:

"DiskTwin is a Macintosh software package, facilitated by a proprietary NuBus add-in card, that automatically and transparently uses a second SCSI bus to make a real time copy of the contents of a primary hard drive onto a secondary hard drive. Technically, this operation is known as disk duplexing."

To the question "What is disk duplexing?", Golden Triangle responds:

"Disk duplexing is a technology today widely used in the mainframe and minicomputer world and in large microcomputer networks to ensure continuous operation. It is vital where end users simply cannot afford to lose any data or afford for a system to be down any amount of time. Now Golden Triangle uses proprietary software and hardware to bring this technology within economic reach of even a single Macintosh user."

Golden Triangle answers "How does DiskTwin work?" as follows:

"Drop the DiskTwin control panel device (CDEV) into your System Folder. Place the DiskTwin NuBus card into your Macintosh II. Attach a drive of the same kind as your primary disk onto the DiskTwin card. For example, if you have an Apple Quantum 80 internal, connect an Apple Quantum 80 external to the DiskTwin card. Restart your computer, and select the drive you want to twin. The twin is invisible to the Macintosh DeskTop, so it can't be used accidentally. When you do need it, you can immediately mount the twin onto the DeskTop from the DiskTwin CDEV. You won't even notice DiskTwin is working, so you can forget about it.

"But DiskTwin doesn't forget about you. DiskTwin runs continuously, creating a twin of your primary disk as often as you save to disk. Unlike software-only mirroring solutions, DiskTwin won't slow your system to a crawl. When your hard disk fails, mount the twin and you're back in business. Should the Macintosh SCSI hardware fail, your DiskTwin SCSI port remains operational."

Published Date: Feb 18, 2012

Macintosh IIfx: DCA MacIrma 1.7 Incompatibility

I find that the DCA MacIrma Entry Emulator does not work with the Macintosh IIfx. Is there a fix to this problem?

This article has been archived and is no longer updated by Apple.
MacIrma Entry Emulator version 1.22 and later is compatible with the Macintosh IIfx. Accompanying the MacIrma Entry Emulator version 1.26 is MacIRMA Workstation software and API.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

HyperCard: Dragging Over Text with Command Key Down

In HyperCard, when I hold down the command key while the pointer is over a text field (it doesn't matter whether the field is locked), the pointer changes from an insertion point to a hand. If I then drag this hand pointer over the field (still holding down the command key), up to one entire line of text is immediately copied into the message box. What is this feature called and what is it for?

This article has been archived and is no longer updated by Apple.
This feature has been a part of HyperCard for some time, but is not documented. Here's one way to take advantage of it:

You can write a handler that builds a find command in the message box, then "types" return to execute the command. For example, here's a handler that finds the next occurrence of whatever text has just been copied into the message box:

```
on mouseUp
put "find whole"&&quote&message&quote into message
repeat 2
-- The first find will be the text you just copied into the message box;
-- the second find will be the next one, if any.
type return
end repeat
end mouseUp
```

Each time you then press the return key (without changing the content of the message box), you'll go to the next occurrence of the same search string.

Published Date: Feb 18, 2012

HyperCard 2.0: Bypassing Dialog Boxes

When I use certain HyperCard 2.0 commands, either from the menu bar or from a script, I get a dialog box that must be responded to. Examples:

command	dialog box
Import Paint...	Import Paint from...
Export Paint...	Save Paint document as:

Is it possible to execute these commands from scripts, or from the message box, without having to respond to the dialog boxes? And is it possible to open a stack in new window from a HyperTalk script, also without dealing with a dialog box?

This article has been archived and is no longer updated by Apple.
Here are some commands that do what you want. In the examples, "stackname" represents either a stack name, or the path to a given stack.

The first one imports a bitmap from the specified MacPaint file to the card picture. It starts with the top-left corner of the MacPaint file, and clips to HyperCard's current card size. It requires that one of HyperCard's paint tools (such as the line tool) is first chosen.

```
choose line tool
import paint from file "stackname"
```

The next one creates a new MacPaint file, to which it exports the card image. This is the equivalent of doing a screen dump from HyperCard, but you get to choose the name of the output file in advance.

```
choose line tool
export paint to file "stackname"
```

Here's a command that opens a specified stack in a new window:

```
go "stackname" in new window
```

And one that creates a new stack and gives it a name:

```
create stack "stackname" <with backgroundname> <in new window>
```

The card size of the current stack becomes the card size of the new stack. If no background is specified, the new stack is created with a blank background. Otherwise, a copy of the specified background becomes the background of the new stack. If "new window" is specified, the new stack is created in a new window -- in other words, the old card window remains on-screen.

This one saves a copy of the specified stack under the new name you specify in advance:

```
save stack "stackname1" as "stackname2"
```

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Pascal: Exponents

This article has been archived and is no longer updated by Apple.
The calculation 10 ^ X is not included in the UCSD Pascal definition. The system intrinsic PWROFTEN ("power of ten") returns 10 ^ X, provided X is an integer in the range 0..37. (Please refer to page 45 in the Pascal Language Reference manual.)

The function EXP (in the library unit TRANSCEN) is of the form e ^ X, where X is a real number. The relationship between 10 ^ X and e ^ X is:

10 ^ X = e ^ (X LN 10) (LN = natural log)

Here is a simple program which illustrates the use of Pascal exponents:

```
PROGRAM EXPONENT;

USES TRANSCEND;

BEGIN
WRITELN ('10 ^ 3 = ',PWROFTEN(3));
WRITELN ('e ^ 3 = ',EXP(3));
WRITELN ('10 ^ 3 by the conversion = ',EXP(3*LN(10)));
END.
```

Published Date: Feb 18, 2012

A/UX: How to Copy Eschatology Partition

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I need to copy an A/UX system from one drive to another, but I have a problem with the A/UX Eschatology partition. I set up the partitions on the new drive as on the first drive, except for some free space, which I have configured as usr space. I did a dd copy of the root partition.

I then hoped that by doing an eupdate I would be able to update the Eschatology partition. When I try this (I am able to boot from the new drive without any problem), I get messages about the inability to mount s3 and attempt to unmount slice 3. (I have not defined any slice 3.) Further messages refer to typewriter problems and the like.

What is the problem? Why is eupdate attempting to mount a slice that doesn't exist?

This article has been archived and is no longer updated by Apple.
From what you described above, you copied only the root file system. You did not copy the Eschatology partition to the new drive. To copy the Eschatology partition, do the following (assuming X is the source disk SCSI ID and Y is the target disk SCSI ID), and assign slice 3 for the Eschatology partition:

```
# pname -cX -s3 "Eschatology 1"
==> /dev/dsk/cXd0s3
# pname -cY -s3 "Eschatology 1"
==> /dev/dsk/cYd0s3
# dd if=/dev/dsk/cXd0s3 of=/dev/dsk/cYd0s3 bs=20k
# pname -u /dev/dsk/cXd0s3
# pname -u /dev/dsk/cYd0s3
```

Then, you can issue the "eupdate" command, which updates /unix and network files like /etc/HOSTNAME, /etc/NETADDRS, ... for Eschatology partition. Make sure that before doing "eupdate" that the Eschatology partition is not pnamed or mounted, because the "eu" program automatically does all the "pname", "pname -u", "mount", and "umount" on the Eschatology partition.

You might have got the error message from "eupdate", because the Eschatology partition was still pnamed or mounted. "umount" and "pname -u" the Eschatology partition and do "eupdate" again. Other similar error message like

Can't mount...:No space left on device

might occur if the Eschatology file system is almost full. In that case, remove some of the files like /mnt/unix from the Eschatology file system and do "eupdate" again.

To remove file(s) from the Eschatology partition, you have to "pname" and "mount" the Eschatology partition first. For example, to remove "unix" from Eschatology partition then "eupdate":

```
# pname -cY -s3 "Eschatology 1"
==> /dev/dsk/cYd0s3
# mount /dev/dsk/cYd0s3 /mnt
# rm /mnt/unix
# umount /dev/dsk/cYd0s3
# pname -u /dev/dsk/cYd0s3
```

TA45076_AUX_How_to_Copy_Eschatology_Partition_(TIL06574).pdf

eupdate

Published Date: Feb 18, 2012

A/UX 2.0 ftime() and open()

I am doing some A/UX 2.0 benchmarks and am having problems in two areas that involve C code. First, I need the equivalent of the ftime function on a Sun for timing execution time. The second is how to do a synchronous write to disk. The usual "write (o_sync)" command doesn't seem to be working.

This article has been archived and is no longer updated by Apple.

```
1) As far as we can tell, the ftime() function call that appears in most BSD
  UNIX systems (including Sun UNIX) is obsolete and now replaced by the
  gettimeofday() function call.  A/UX has gettimeofday() but not ftime().

  From the structure returned by ftime() and the new structures used by
  gettimeofday(), it should not be difficult to use the new gettimeofday()
  instead of the obsoleted ftime().  The structure returned by ftime() is
  defined in <sys/timeb.h> of BSD UNIX as:

          struct  timeb
          {
               time_t          time;
               unsigned short  millitm;
               short           timezone;
               short           dstflag;
          };

The structures used by gettimeofday() are defined in <sys/time.h> as:

          struct timeval {
               long    tv_sec;     /* seconds since Jan. 1, 1970 */
               long    tv_usec;    /* and microseconds */
          };

          struct timezone {
               int     tz_minuteswest; /* Greenwich */
               int     tz_dsttime;     /* type of dst correct to apply */
          };

2) To do a synchronous write to DISK, the fsync (2) system call should be
  used after the write(2) or writev (2) system call.  The fsync (2) system
  call causes all in-core copies of buffers for the associated file to be
  written to a DISK.  See fsync (2) manual page for more information.

Note that the use of the O_NDELAY and O_NONBLOCK flags in the open() system
call for controlling I/O applies only to FIFOs and communication lines like
tty's.  See open (2) manual pages for more information.
```

Published Date: Feb 18, 2012

TA45078_Macintosh_and_CDI_Development__(TIL06576).pdf

Macintosh and CD-I Development (11/94)

I am interested in using the Macintosh to develop CD-I (compact disc interactive) applications. What can and cannot be done in this field?

* Is there a CD-I compatible player for the Macintosh?

* How would one develop an animation on the Macintosh and then transfer it to CD-I?

* Can sounds be created and manipulated on the Macintosh and then used on the CD-I?

This article has been archived and is no longer updated by Apple.

Currently, Macintosh is being used as a front-end device for assembling certain elements of CD-I. This is about the extent of what can be done with the Macintosh. Since the CD-I system is an alternative computer system to the Macintosh, we cannot duplicate a CD-I system exactly without accommodating the OS9 operating system.

The video portion of CD-I is compressed from analog video sources. Thus, preparing Macintosh animations for this format is the same as preparing animations for videotape. Using a program like MacroMind Director and an NTSC output video NuBus card, and recording the output onto videotape, would be the simplest way to provide video.

The quality of the compressed video coming from the CD-I compression methods is low compared to VHS tape. Generally, the playback of the video is around 12 frames per second for one quarter screen. The proposal provides for only 30,000 colors in the video image--far short of the Macintosh 24-bit capability.

Because CD-I uses digital audio, digital audio products from companies like Digidesign and New England Digital can be used for mastering the audio portion of the CD-I system. However, this master audio would then need to be sent through the CD-I compression method.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

ADB: Detection of TTL Signals for Network Shutdown

I'm looking for an ADB device that lets me monitor at least three TTL signals and control one TTL signal. I want to implement a Macintosh program that will handle a number of uninterruptible power supplies (UPSs). The intention is that the program can shut down a Macintosh network gracefully.

Using an ADB device will free a serial port from being dedicated to monitoring a few lines for a change of state. Is there a device able to handle the above TTL signals?

This article has been archived and is no longer updated by Apple.
We have not been able to find an ADB-based product that has these abilities. The Apple Desktop Bus is typically used for products such as keyboards, trackballs, mice, and so on, and it isn't likely that someone has worked on something of this nature.
Published Date: Feb 18, 2012

TA45081_Pascal_Clearing_the_video_screen_(TIL00658).pdf

Pascal: Clearing the video screen

This article has been archived and is no longer updated by Apple.
As described by Kenneth Bowles in Problem Solving Using Pascal, the routine CLEARSCREEN is a system function of the UCSD computer facility. By issuing a form feed to the standard Apple screen, the system intrinsic PAGE(OUTPUT) can perform a similar function on your system.

You can use the following procedure to clear the screen.

```
PROCEDURE CLEARSCREEN;
BEGIN
WRITE (CHR(12));
END;
```

As in the SETUP program, the procedure uses the character CHR(12) to clear the standard Apple video screen. Other external terminals may require a different value; for these terminals, modify the procedure by replacing CHR(12) with the appropriate control character (or characters) for "Erase Screen".
Published Date: Feb 18, 2012

Retrospect: Incompatible with ADIC MacBack 4000/8000

Why doesn't my copy of Retrospect work with the ADIC MacBack 4000/8000 models?
This article has been archived and is no longer updated by Apple.
Retrospect from Dantz doesn't work with the ADIC MacBack 4000/8000 models, because they are special tape jukeboxes.
Published Date: Feb 18, 2012

Macintosh Portable: Charging from 12-Volt Battery

Can the Macintosh Portable be charged from a 12-volt battery?

This article has been archived and is no longer updated by Apple.

Yes. One product that makes this possible is the Automobile Power Adapter from Lind Electronic Design. As we understand it, with the Adaptor, you can operate a Macintosh Portable while charging its battery from the 12-volt DC battery in an automobile, van, or boat. The adapter unit contains a voltage regulator and current-limit circuits that ensure safe computer operation and battery charging from a mobile power source. Lind includes cords for an automobile cigarette lighter and for the computer's power adapter jack with the adapter.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

AppleShare PC and LaserWriter Drivers

I installed AppleShare PC 2.01 on a PC on a mixed LocalTalk network. The Macintoshes in the workgroup use LaserWriter drivers version 6.0.1. It seems that AppleShare PC is not compatible with these drivers, and we get LaserWriter wars. Is there a fix or workaround?

This article has been archived and is no longer updated by Apple.
While the Macintosh LaserWriter drivers require a PostScript dictionary to be present in the LaserWriter, AppleShare PC does not. Printing from AppleShare PC to a LaserWriter connected as a PostScript device doesn't download anything other than the file being printed.

It does download an Epson emulation dictionary for each Epson job, but this persists only for the length of that job. It does not require or replace md (The Macintosh Laser Prep dictionary), and, therefore, won't cause any LaserWriter wars.

Theoretically, PC application that prints PostScript can wipe out md, or download its own dictionary that conflicts with 6.0.1. This is entirely dependent on the applications being used and could be tested by printing from each in turn until a conflict occurs.

We would first confirm that all of the Macintosh computers have LaserWriter and Laser Prep 6.0.1 installed. If so, check to see if one of the PC applications is causing the problem.

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A/UX: AppleTalk "lpr" Problem (9/94)

At the UNIX prompt, I type: lpr /etc/hosts

The file does not print, and I repeatedly get the following messages on the console:

/usr/spool/lpd/AppleTalk/ofilter: pipe: cannot open
/usr/spool/lpd/AppleTalk/ofilter: pipe: cannot create

I guess I should add that the lpr command uses the default entry in /etc/printcap file. In the unmodified version (as distributed) it is the AppleTalk entry, which should print on whatever printer is currently selected by the Chooser.

This article has been archived and is no longer updated by Apple.
To let the AppleTalk printing service run correctly under the A/UX BSD printer spooler (/usr/lib/lpd, lpr, ...), the following files under each printer directory (for example /usr/spool/lpd/AppleTalk) should be owned by user "daemon" and group "daemon":

drwxrwxr-x 2 daemon daemon .
drwxrwxr-x 7 daemon daemon ..
-rwxr-xr-x 3 daemon daemon ifilter
-rwxr-xr-x 3 daemon daemon ofilter
-rwxr-xr-x 3 daemon daemon nfilter
prw-rw---- 1 daemon daemon pipe

The error message "...: pipe: cannot open" most likely indicates that the ownership or groupship of any of the above files might have been incorrectly set. Check yours, correct them, then restart the "lpr" command.

Because "lp" is the default printer in the BSD printer spooler system, the "lp|at|AppleTalk" entry in /etc/printcap is chosen by the printer daemon (/usr/lib/lpd). /usr/lib/lpd then passes all input file(s) to be printed to a remote PAP (Printer Access Protocol) server for printing. This is done by the input/output filter programs (ifilter, ofilter) provided under individual printer directory (/usr/spool/lpd/AppleTalk), which is in turn invoked by the "atprint" program which directly copies data to a remote PAP server.

Under "lpr", the destination PAP server is chosen as follows:

If the -Pprinter option of "lpr" command or the environment variable PRINTER is used or set, then the output goes to a specific printer. Otherwise, the system-wide default printer, the "lp" entry in /etc/printcap, is chosen, which is also the AppleTalk printer. The default AppleTalk printer is then chosen via the Chooser, from the Control Panel, or through the at_cho_prn utility.

We assume that you have correctly configured and set the AppleTalk in A/UX kernel.

Article Change History:
09 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

A/UX 2.0.1: General Information

A/UX 2.0.1: General Information

This article has been archived and is no longer updated by Apple.

```
A/UX 2.0.1 is an incremental upgrade release to A/UX 2.0. It was
produced primarily to add support for the Macintosh IIsi.
A/UX 2.0.1 runs on all Macintosh models that support A/UX. There is no
CD version of the upgrade, however there is a CD available that contains
the full A/UX 2.0.1 release

Benefits and Features
---------------------
* Supports the Macintosh IIsi (with FPU installed)
* Supports multiple monitors on one Macintosh via the "Monitors" CDEV
* Supports adjustable mouse tracking via the "Mouse" CDEV
* Includes MacX 1.1
* Includes new version of the awk programming language
* Includes new version of the Korn shell, ksh-88
* Supports Macintosh System Software 6.0.7
* Is IEEE standard POSIX 1003.1-1990-compliant
* Includes version 5.65 of sendmail
* Includes changes to the A/UX header files, which provide function prototypes
 and ANSI symbol definitions for third-party ANSI C compilers
* Has asynchronous serial support
* Supports the use of function keys in CommandShell
* Mounts Macintosh HFS CD-ROM volumes to the desktop while logged in

CD-ROM Note
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To properly operate an AppleCD SC, the Apple CD-ROM INIT must be installed in
the System Folder of the Macintosh startup volume, and the AppleCD SC must be
powered on at startup.
```

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Graphics Tablet DB-9 and Stylus Pen Pinouts (RFI Version)

This article has been archived and is no longer updated by Apple.

DB-9 Connector (RFI Version)

Pin	Description
1	N.C.
2	N.C.
3	Signal ground
4	Y-Drive
5	X-Drive
6	Reset
7	N.C.
8	N.C.
9	-12 Volts

Stylus Pen (RFI Version)

Pin	Description
1	N.C. (Pin in Place)
2	Switch Low End (Red)
3	Inner Shield Wire (Black)
4	Inner Shield (Brown)
5	Switch (Orange)
6	N.C.
7	Pen Coil High (Yellow)
8	Pen Coil Low (Green)
9	Inner Shield (Blue)

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TA45088_Macintosh_XL_and_Lisa_Internal_K_disk_drive_(TIL00659).pdf

Macintosh XL and Lisa 2/10: Internal 800K disk drive

This article has been archived and is no longer updated by Apple.

An 800K internal floppy disk drive can be installed in a Lisa 2/10 or Macintosh XL.

The product is available from DAFAX Processing Corp.

Published Date: Feb 18, 2012

Macintosh Classic: Disk Errors May Be WDEF Virus

We have seen some strange error messages when inserting 800K diskettes, which have been formatted in a Macintos ah SE or Macintosh Plus, into a Macintosh Classic. When the disk icon appears on the desktop, and the user double-clicks on it, errors like "this is not a Macintosh Disk", "Error reading this diskette", and "Address error" appear.
This article has been archived and is no longer updated by Apple.
We have had reports of a variety of problems when users double-click on icons. The only situation that has been reproducible was traced back to the WDEF virus. Apparently, the WDEF virus causes this problem with System 6.0.7. (In earlier version of the system software, WDEF could be in the system, yet not create any major problems.)

Our suggestion is to use Disinfectant 3.7.1 or higher, or any of the other virus protection programs on the market, to check the Macintosh Classic for WDEF and eliminate the virus.

For information on downloading the latest version of Disinfectant refer to:
TIL aritcle 30487: "**Disinfectant: Macintosh Anti-Viral Utility**".

The Tech Info Library article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

System 6.0.7 Fixed Two System 6.0.6 Problems

What bugs does System 6.0.7 fix?
This article has been archived and is no longer updated by Apple.
System 6.0.7 fixes two System 6.0.6 bugs:

- When asked about the status of the AppleTalk driver, Gestault would return an indication that it was not installed, even though it was.

- System Software 6.0.6 had timing errors with the Apple Keyboard II which were accentuated on the Macintosh LC and Macintosh IIsi.

Both of these problems have been fixed in System 6.0.7.

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A/UX and 5.25-Inch Floppy Drives (8/94)

Is there a 5.25-inch UNIX floppy drive that can be used with A/UX? A customer, who is interested in A/UX, must be able to read floppies from a 386 SCO/UNIX machine with 5.25-inch floppy drives.

This article has been archived and is no longer updated by Apple.
We know of no 5.25-inch UNIX floppy drives for A/UX.

Dayna Communication has a 5.25-inch floppy drive for the Macintosh OS that recognizes MS-DOS format only.

The 5.25-inch floppy drive in HFSI's (Honeywell Federal Systems Inc.) WIS A/UX workstation, works only under A/UX 1.1.

Article Change History:
25 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

Apple Pascal 1.3: Startup Slot

What is the memory location for the slot number of the drive that Apple Pascal starts up from? How can I change that information or location so the computer will think it was booted from the RAM disk (to which I've already copied the appropriate system files)?
This article has been archived and is no longer updated by Apple.
The internals of Apple II Pascal are proprietary and confidential and we cannot divulge such information.

However, it is possible to completely load Apple II Pascal into an Apple II RAM Expansion card and start up from it. Here's how:

1) Once you have started Apple Pascal and you are at the command line, type F(ile.

2) At the second command line, type V(ols. Write down the volume number with 2048 blocks. This is your RAM Expansion Card volume number.

3) Format the RAM Expansion Card. Type Q(uit and then X(ecute. This will prompt you for a file name. Type "Formatter" and press Return. Formatter will ask you for a volume to format: type the volume number you wrote down in step 2, and press Return.

4) Do a wild card copy of all the files on Volume 4 to the volume number of your RAM Expansion Card. Type F(ile then T(rans. When you're asked "Transfer What File?", type "#4:=" and press Return. At the "to where?" prompt, type your RAM Expansion Card volume number followed by ":=" and press Return.

5) When the copying is finished, make your RAM Expansion Card the startup volume. Type Q(uit followed by another Q and Y. Finally, type Control-Reset.

6) At the Applesoft BASIC prompt, type "PR#" followed by the slot number of your RAM Expansion Card. Pascal should start up.

Apple Pascal supports a maximum of 128K RAM for system memory use, and the remaining RAM may be used as a RAM disk only.
Published Date: Feb 18, 2012

Macintosh IIsi/IIci/LC Built-in Video: No NTSC Output (11/94)

Can I display the Macintosh LC's output on an NTSC monitor? I looked into RGB-to-NTSC converters and found that the RasterOps Video Expander only works off a NuBus display card. My guess is that ComputerVideo's Video NTSC Encoder works the same way.

I know you can make a cable to pull black and white NTSC off Macintosh display cards. Given that, is there a way to pull NTSC off the built-in video on a Macintosh?

This article has been archived and is no longer updated by Apple.
While you can generate an RS-170 signal by shorting together pins on Apple's NuBus video cards, an NTSC compatible (not NTSC standard) signal cannot be generated by the built-in video ports of the Macintosh IIci, Macintosh IIsi, or Macintosh LC.

Lapis Technology produced a video adapter to allow the Macintosh LC to generate NTSC compatible video. Contact them for further information on pricing and availablility.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

Videotaping Apple RGB Monitor in PAL

Is it possible to videotape the Apple RGB monitor using a professional PAL video camera and VideoSync?

This article has been archived and is no longer updated by Apple.
Here's one solution:

1) Use VideoSync, and set it to stable scan rate.

2) Tape with a Sony BVP-7 professional Betacam SP PAL video camera.

3) Set the camera's built-in shutter to 1/100.

The picture should be quite stable. The only drawback is a very slight loss of exposure due to the shorter exposure time using the shutter.

Published Date: Feb 18, 2012

TA45095_Pascal_Interface_cards_in_peripheral_slot__(TIL00660).pdf

Pascal: Interface cards in peripheral slot #3

This article has been archived and is no longer updated by Apple.
The Pascal system will not appear to boot correctly on the standard Apple video if slot #3 has a Communications card, Serial card, or DC Hayes Micromodem card in it. Pascal reserves slot #3 for an external terminal, so when Pascal recognizes a card in this slot, it attempts to communicate with the assumed terminal and not with the default CONSOLE and SYSTERM (video and keyboard). Other cards may also cause this effect, which can be easily remedied by removing the card from slot #3.
Published Date: Feb 18, 2012

TA45096_Lisa_Converting_Documents_to_Macintosh_(TIL06601).pdf

Lisa: Converting Documents to Macintosh

Is there a product that converts Lisa documents to Macintosh format?

This article has been archived and is no longer updated by Apple.
You need the Lisa to Macintosh Migration Kit, available from Sun Remarketing. It converts LisaDraw, LisaWrite, LisaProject, and LisaCalc files to their Macintosh counterparts.

For the address of Sun Remarketing, search this library under "Sun Remarketing".

Published Date: Feb 18, 2012

TA45097_ProDOS_Filer_Changes_from__(TIL00661).pdf

ProDOS Filer 1.1: Changes from 1.0

These are the changes between Filer 1.0.1 and Filer 1.1.
This article has been archived and is no longer updated by Apple.
1) The critical speed tolerance of the formating routine was extended.

2) The format routine was made to allow for different size volumes in the same slot. The routine now correctly uses the UNIT number in the Device List in the Global Page as a pointer into the Driver Address table. Previously, the routine would only look at Drive 1 for the information on the size of the volume and would later write out an incorrect Bit Map and Directory after the formatting of the different device in drive 2.

3) The volume number is now transferred from source disk to destination disk in Volume Copy. The volume number on a format is now 1.

4) The 'DEVICE NOT FOUND' bug when trying to format previously unformated media was fixed.

The Formatter in ProDOS 1.0/Filer 1.0 would not format a disk in drive 2 if it had never been formatted. This problem also occurred in DuoDisks. The solution was to format the disk in DOS 3.3 and then re-format the disk with the Filer. We later released a new version of ProDOS 1.1.1 and the Filer 1.1.

5) The standard MLI QUIT call will now be executed when a selector is present.

6) Formating volumes consecutively will now start with a random 'nn' value ('/BLANKnn') in the default volume name and then continue increasing sequentially.

In addition, these are the changes made from Filer 1.0 to Filer 1.0.1

1) Interrupts were disabled during formating.

2) The BitMap create routines were corrected for all disk sizes.
Published Date: Feb 18, 2012

Hard Disk 20SC: Connecting a terminator

This article has been archived and is no longer updated by Apple.

The actual Small Computer Systems Interface specification from ANSI states that each END of the daisy chained cables are terminated. This indicates that the HD20SC manual is 'incorrect' and the Apple SCSI Cabling System manual is correct.

The diagram on page 15 of the "Hard Disk 20SC Owner's Guide" shows the terminator on the extra SCSI port. On page 5 of the HD20SC manual, it shows that when connecting a single HD20S to a CPU, the SCSI System cable should connect the 2 machines, while the SCSI Terminator connects to the other port on the hard drive.

The top diagram on page 12 of "The Apple SCSI Cable System" shows the terminator goes between the cable and the (one) peripheral device. Page 10 of the SCSI Cable System manual states that for the same configuration that the System cable should connect directly to the SCSI Terminator and the other end of the Terminator connects to the SCSI device (in this case HD20SC).

In truth, both ways work. However, if you were to check the amount of line noise on both one-device setups, you might find a bit more noise on the incorrectly placed terminator configuration.

The terminator should be placed on the SCSI input of the first device. If the configuration has more than one device or more than 10 feet of SCSI cable hooked together, a second terminator should be placed on the pass through of the last device. If the user has a self-terminated SCSI device, it should be the last device on the chain. You may refer to the Apple SCSI Cabling System manual for all of the correct configurations.

Published Date: Feb 18, 2012

VMS ENQLM: Quota Requirement for DAL/VAX/Rdb

I have problems while trying to use DAL with VAX/Rdb. I'm using DAL 1.2 (from DEC LanWORKS for Macintosh) with VAX/Rdb 3.1 under VMS 5.3. My connection (and associated processes) were killed when I try to use the IDAL utility with an account different than SYSTEM (or a copy of it). Some commands worked, (like DESCRIBE DATABASES) and some others (like SELECT) ended up with the connection terminated. I experimented and found that the solution was to set the ENQLM parameter for the user to a minimum value of 250.

I did not find any information about this in my documentation, and I know it's not a VAX/Rdb problem, because I can use VAX/Rdb SQL$ utility with the same ENQLM value without any problem. I have been able to reproduce the same problem on two CPUs, one MicroVAX 2000, and one 3300.
This article has been archived and is no longer updated by Apple.
As you might already know, on VMS, the Enqueue Quota (ENQLM) limits the number of locks a process (and its subprocesses) can own. VAX/Rdb uses RMS, which in turn uses the Lock Management Facility, to synchronize shared file access. One lock is used for every shared file, local buffer, global buffer section, and outstanding record lock. Users doing large amounts of file sharing should set the ENQLM to a large value. Typically, this number is recommended at 200. The DEFAULT account ENQLM is set at 100, so all accounts begin with a limit of 100 unless explicitly changed.

It is understandable why you need to increase ENQLM when selecting a large number of records from a database. Commands like DESCRIBE DATABASE do not require many locks and, therefore, worked with the low ENQLM. We don't know why Rdb SQL$ utility worked except for the speculation that IDAL might add the extra locking.

DAL support engineering told us that although they do not specify account quota requirements, in the documentation, they recommend changing user accounts quota to the VAX/Rdb requirements. The following are from VAX Rdb/VMS Installation Manual:

BYTLM (Byte Limit): at least 18,000 bytes
FILLM (Open File Quota): around 50 is an acceptable value
ENQLM (Enqueue Limit): at least 600 locks

The account should also have TMPMBX privilege.
Published Date: Feb 18, 2012

Mac IIci: EtherTalk & Apple Internet Router Problem (11/94)

Macintosh IIci systems running the AppleTalk Internet Router and EtherTalk have been found to "freeze up" in certain high-traffic situations. What can I do?

This article has been archived and is no longer updated by Apple.
The solution is to install EtherTalk on the Mainctosh IIci using the Network Products Installer that was released with System 6.0.7. This installs a new version of the .ENET driver in the System file that resolves the problem.

Published Date: Feb 18, 2012

TA45101_Cache_Cards_for_Macintosh_IIci_(TIL06624).pdf

Cache Cards for Macintosh IIci

Article Change History

02/09/93 - UPDATED
* Micron Technology acquired by Xceed Technologies
07/10/92 - REVIEWED
* For accuracy.

I need a cache card that plugs into the cache connector of the Macintosh IIci. What products are available besides the DayStar Fast Cache IIci?

This article has been archived and is no longer updated by Apple.

The only cache card for the Macintosh IIci that we know of, other than the Apple and DayStar cards, is the Micron Technology (acquired by Xceed Technologies) MBXC1. This card contains 128K of cache memory.

NOTE: As of September 1991, the Apple Macintosh IIci Cache Card is included with all Macintosh IIci computers.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

A/UX: "cpio" Does Not Support Symbolic Link Backups (8/94)

I have a question about cpio. I'm trying to back up the Macintosh System Folder under A/UX and the following command will back up only the unique files in the folder. The main problem is that an symbolic links in that folder do not get backed up.

Here is the command I'm using from the Command Shell:

```
cd /mac/sys/"System Folder"
ls -a | cpio -ovF > /dev/rfloppy0
```

This command installs the unique files on two successive floppies, but ignores the others. How can I get these files to be recognized by the cpio command?

This article has been archived and is no longer updated by Apple.
Symbolic links are analogous to aliases in the Macintosh OS. Neither the "cpio" nor "tar" commands under A/UX back up symbolic links. Rather, they copy only the symbolic names, not the actual data files.

In this case, you also need to copy the directories (/mac/lib/SystemFiles, for example) that contain the actual data files.

Article Change History:
25 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

TA45103_MacX_and_X_Window_System_for_AUX_Are_ICCCM_Compliant__(TIL06626).pdf

MacX and X Window System for A/UX Are ICCCM Compliant (9/94)

Is the MacX v1.0 server and X Windows for A/UX ICCCM compliant?

This article has been archived and is no longer updated by Apple.
ICCCM stands for "Inter-Client Communication Conventions Manual." Yes, MacX and X Window for A/UX are both ICCCM compliant. Most of X11R3 and later client applications and Window Managers are designed to meet the ICCCM conventions. The ICCCM really has nothing to do with the X server; the convention is to make sure that all applications running X cooperate properly with the Window Manager and share the system resources politely.

Although MacX is a server, it has a built-in Window Manager, the functionality of which is designed to conform to the ICCCM conventions.

Article Change History:
22 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

Macintosh IIsi: Use Excel 2.2a or Later

The Macintosh IIsi bombs when trying to use Excel 2.2. Does System 6.07 fix the problem? Is there a way to trick the Macintosh IIsi so that it doesn't assume it has a math coprocessor and lets you run Excel?

This article has been archived and is no longer updated by Apple.
There are known problems with Excel versions prior to 2.2a running on the Macintosh IIsi. Microsoft knows of the problem and suggests that affected customers upgrade to 2.2a or higher.

System 6.0.7 does not fix the problem with Excel, but is required for the Macintosh IIsi anyway. Be sure that you are using System 6.0.7 before troubleshooting further.

There is a way to make older versions of Excel ignore the FPU, or in the case of the Macintosh IIsi, not look for what isn't there. Hold down the Command, Shift, and Option keys at launch time (when double-clicking the Excel icon).

Published Date: Feb 18, 2012

DAL Access: Not Supported by Teradata Database

I have a Teradata Database Server (Model 1012) attached to an IBM Host Environment running VM/CMS.

I've been involved in a few VAX VMS DAL installations, but never one on the IBM side. What pieces are needed for the Macintoshes to be able to access the Teradata DBMS through the IBM Host?

My guess is:

* A Macintosh Client DAL Application or DA (ClearAccess, WingZ, HyperCard, and so on).

* On the Host, DAL for VM/CMS.

* A product called EQT.

* 3270 support on the workstation (IRMA, Avatar, Tri-Data, and so on).

* Correct 3270 API to support the hardware used.

That's where I am confused. EQT lets you do SQL queries through DAL on an IBM Host. Because Teradata is not one of the "supported" databases (Ingres, Informix, Sybase, and so on), it requires its own adapter. Is this correct?

If I go with the EQT Product, do I even need DAL on the Host? If EQT supports DAL, can I use products like WingZ to access?
This article has been archived and is no longer updated by Apple.
Before we answer your questions, let's look at what EQT does:

EQT (Executive Query Tool) is a Query Tool developed by Red Brick Systems. It provides point-and-click access to relational databases, regardless of workstation platform, the database server, or the server hardware. It runs on Macintosh and DOS Windows. Future releases will run on OS/2 Presentation Manager, and on UNIX workstations. It can retrieve data from Teradata, Oracle, Ingres, Sybase, DB2, Informix, and Rdb databases.

EQT for CL/1 is an old name for an announced product called Claris Query Tool which uses three mechanism to access databases: Data Access Language (DAL from Network Innovations), DB Library (Sybase), and SQL-Net (Oracle). Claris Query Tool will be shipped in 1991 but will not be able to access Teradata database machines. For more information about Claris Query Tool, contact Claris.

Red Brick Systems retains the right to market and support EQT for the Teradata Systems. For more information, contact Red Brick.

Claris Query Tool uses DAL as one of its mechanism to access databases. You have to use the EQT version from Red Brick Systems to access the Teradata databases. Red Brick uses Teradata's access mechanism.

EQT is a Query Tool to access databases. To our knowledge, you cannot use WingZ to access the Teradata database directly, because Teradata does not support the DAL access. You can, however, access the database using Red Brick's EQT and import the data (cut and paste) into the spreadsheet.

As of release 1.3 DAL supported access to Teradata's DBC/1012 DBMS but only under an MVS operating system.
Published Date: Feb 18, 2012

Worldwide Network: Missing Servers Issue

I have questions regarding the performance of a worldwide Liaison network. Servers are dropping off the network, and it seems to be a result of the network configuration.

I need to know what happens when I do a read of a file on an AppleShare server in a remote location over a slow link. In brief, I have a program in Toronto, London, Madrid, Zurich, Frankfurt, and Paris that reads a file from an AppleShare server in New York.

Sometimes the link (Liaison over an asynchronous line into the Tymnet packet Switched network) "breaks" and other times, we seem to "lose" the server. When we try to reconnect to the server, the branch locations sometimes do not "see" the server in the Chooser window for a long enough period to select the server physically. We cannot, therefore, restart the application. Their observation has been 15 seconds of availability. This does not always happen, but it happens too often to not lodge a complaint.

The application checks on and reports all sorts of errors on a read, and it does know when it cannot open a file, because a server is unavailable. I am doing PBHOpenDeny opens and PBRead calls. We have asked the Tymnetnetwork people to look into this, and they have asked the following questions:

1) When you open the Chooser window and select a zone, how do the lists of servers appear?

- How long does it take to get the list up?

- Why do some servers come into and disappear from the list?

- Why do some servers never appear in the Chooser window? Is this because the servers' response time is very slow, and, therefore, the response is ignored until the next request is broadcast? If so, how long is this window? (What is the maximum round-trip delay from the branch Macintosh to the AppleShare server and back?)

2) On a read, when a read request is sent to the remote AppleShare file server (from branch to New York) what is the timeout period before the packet is determined to be lost, and is thus retransmitted?

3) On a normal AppleShare read, if a data packet times out, how many retries are made before AppleShare decides that the link to the server is dead? Or, how long does AppleShare continue trying before it gives up?

4) If I do a read, should I always get back a response, or is it possible that if the Macintosh has lost the file server, AppleShare will be unable to respond, and that the reading application will appear to hang? This seems to happen sometimes, from what the branch people say. Sometimes, if we lose the link to New York, the whole Macintosh hangs and must be restarted.

This article has been archived and is no longer updated by Apple.
What version of Liaison are you using? Versions before 3.0 are no longer supported. Farallon purchased the product from InfoSphere and is offering support only for version 3.0 and later (3.0.5 is compatible with System 7.1), which fixed several bugs and added support for AppleTalk phase 2.

One issue in versions before 3.0 was the inability of Liaison to display zone lists when the zone list transverses more than one ZIP packet (around 40 zones depending on the size of the name). You should call Farallon to discuss the current issues the account is experiencing with the product. We cannot control how third-parties choose to implement routers and other such products based around AppleTalk. This can cause issues if the product was implemented in a way that the protocols were never designed to accommodate.

Because the AppleTalk protocols were never designed to work over slow asynchronous links or over wide-area networks, there are several issues that need to be addressed before AppleTalk can become a valid protocol for use in these types of environments.

Here are direct answers to your questions:

1) This is how it really works in a nutshell:

The Chooser sends out a Name Binding Protocol (NBP) packet looking for all devices of type XXXXXX, for example, type LaserWriter. It sets up a buffer of 512 bytes for the responses. The responses look like:

```
device name length          1 byte
  device name                 variable bytes      e.g. MyLaser-Hands off
  type name length            1 byte
  type name                   variable bytes      e.g. LaserWriter
  zone field length           1 byte
  zone name field             variable bytes      probably *
```

The Chooser gets a packet back for each device, i.e., each LaserWriter. When the 512-byte buffer is full of these packets, it stops looking for device names to display. This means that some LaserWriters might not be displayed immediately. If you leave the Chooser window open, however, the Chooser will continue to send out NBP lookups every 1.47 seconds.

Different LaserWriters could respond more quickly each time. In this case, you may see the Chooser show and hide various devices.

You can see from this that the number of devices Chooser can show depends on how long the type name is (like "LaserWriter") and how long the device names are. The number 18 is an average number, based on the device type being about 13 or 14 characters long and the device name being about 10 or 11 characters long. In System 7.0, the buffer size the Chooser will use will be increased to 1024. This means, on average, the Chooser can display about 36 devices.

2) This depends on the direction of the transfer. Workstation to Server copy takes 6 seconds and server to Workstation copy about 2 seconds.

3) Retries are set to infinite. The session timer for the connection is set to 2 minutes. This is really what dictates how long the reads are attempted before the transaction is aborted. The session timer is restarted each time a tickle packet is received by either the workstation or the server. Tickle packets are sent out every 60 seconds by both the server and the workstation to allow a way of detecting if the other end of the connection has gone down.

4) No, you aren't guaranteed a response, but the session timer should expire after 2 minutes and pop up a dialog telling you that the server has unexpectedly quit.

Published Date: Feb 18, 2012

Apple IIGS: Not Enough Disk space for 5.25 Desktop Disk

This article has been archived and is no longer updated by Apple.

There is no way to create a ProDOS 8 or ProDOS16 Desktop disk on a 5.25 floppy: there is just not enough disk space. However, a startup P8 (ProDOS 8) disk can be created. As an example, below are instructions of how to create a startup ProDOS 8 System Utilities disk.

1. Format a 5.25 disk

2. Copy these 5 files from System Utilities to the 5.25 disk:

a. P8 (ProDOS 1.2, found in the SYSTEM sub-directory)
b. SYSUTIL.SYSTEM *
c. GSSU0 *
d. GSSU1 *
e. GSSUE1 *

* These 4 files comprise the System Utilities program and can be found in the SYS.UTILS sub-directory. They must be kept in the same directory.

3. Rename the file 'P8' to 'PRODOS'

System Utilities may now be booted from the floppy disk. The files take up around 180 blocks and leave about 100 blocks for extra file storage.

Published Date: Feb 18, 2012

LaserWriter Driver 6.0.2: Resource for Printing Envelopes

What are the advantages of LaserWriter driver 6.0.2 over LaserWriter driver 6.0.1?

This article has been archived and is no longer updated by Apple.
LaserWriter driver 6.0.2 is included with System Software 6.0.7, in the Apple Color folder on the Printing Tools disk. The only difference between LaserWriter driver 6.0.1 and LaserWriter driver 6.0.2 is that LaserWriter driver 6.0.2 has an added resource for printing envelopes.

In Page Setup, you now have the options of either printing envelopes from the edge or from the center. This was done for the Personal LaserWriter.

Manual feed on a LaserWriter II has two paper guides which move in and out together, allowing you to print from the center. Manual feed on the Personal LaserWriter has only one paper guide, which moves from the edge out. You would, therefore, want to put the envelope all the way over to the edge. LaserWriter driver 6.0.2 gives you the option to do this.

Published Date: Feb 18, 2012

TA45109_AppleShare_PC_No_Support_For_Digitals_DEC_Network_Card_LC_(TIL06631).pd

AppleShare PC: No Support For Digital‘s DEC Network Card LC

Does Apple support Digital's DEC Etherworks LC card for the PC with AppleShare PC 2.0?

This article has been archived and is no longer updated by Apple.
AppleShare PC can work with any network card that has an ODI (Open Data-Link Interface) compliant MLID. However, the only MLIDs we know of are those supplied with AppleShare PC. We haven't heard of anyone writing one for a DEC Ethernet card, although it could be done.

If you know of someone interested in developing an MLID for a specific card, information is available from APDA in the form of the Open Data-Link Interface Developer's Guide, part number M0355LL/A. This document details the specification, and provides example source code for a working driver. For more details, search the Technical Info library under "APDA."

Published Date: Feb 18, 2012

How to Remove AppleShare PC Code from PC Memory

I am running AppleShare PC (2.01). Currently, WordPerfect runs on the PC (with 512K RAM) until I start AppleShare using ABOTH. After checking E-mail, which is the main reason I use AppleShare PC, I type AOFF to kill AppleShare, but WordPerfect no longer has enough room to fully execute. Only a warm reboot with Control-Alt-Del frees up the memory. Is there any way (short of rebooting) I can free ALL memory after typing AOFF?

This article has been archived and is no longer updated by Apple.

There is a way to remove all AppleShare PC code without rebooting. It requires the use of mark/release utilities. This kind of program is used to mark a position in memory so that TSR programs and drivers loaded later, like AppleShare PC, can be removed with the companion release program.

Published Date: Feb 18, 2012

Macintosh: Viewing CCITT Group IV Images

I understand that one or more vendors have products that let CCITT Group IV images be decompressed and viewed (pan, zoom, scan, and so on) on the Macintosh. What are the supporting products and companies?

The images we have are large 2-bit images of engineering drawings. They conform to the DOD CALS raster Specification, which is essentially 200 DPI CCITT G4.

This article has been archived and is no longer updated by Apple.
We found the following information concerning Creative Solutions' Compression, Expression and Rotation Board.

"A NuBus board that provides compression, expansion and rotation on image data.

"The Compression/Expansion/Rotation board performs all of the above functions on image data. The board features: compression or expansion throughput in excess of 16 million pixel elements per second; ROM with standard half duplex Macintosh device drivers that are installed automatically at startup; CCITT input driver reads data to a supplied buffer and returns the actual count read; conversion modes set via control calls to either input or output drivers; and accelerated hardware rotation of 32 by 32 pixel tiles."

For more vendor information, search under "Creative Solutions."

Published Date: Feb 18, 2012

Macintosh IIsi: NuBus Card Power Draw

Apple data sheets state that the Macintosh IIsi NuBus cards should not draw more than 13.3 watts of power. I'm interested in putting some Macintosh IIsi computers into a Token Ring environment where the TokenTalk NB Card draws 15 watts. Has this combination been tested, and if so what was the result?

This article has been archived and is no longer updated by Apple.

Because of the low-power design of many Macintosh IIsi components, the computer should be able to handle cards requiring up to 20 watts. Although this exceeds the normal, single-slot, NuBus specification, there is adequate power available in Apple supplied configurations. However, if you use third-party internal hard drives or other components that draw additional power, the power available to the NuBus card may be lower.

All Macintosh IIsi configurations we ship can handle the 15-Watt requirement of a TokenTalk NB Card. It has been tested, and is fully supported with the Macintosh IIsi.

Published Date: Feb 18, 2012

Macintosh IIsi: SCSI Connector

What is the power specification for the Macintosh IIsi SCSI connector?

This article has been archived and is no longer updated by Apple.
The only power provided by the Macintosh IIsi SCSI connector, besides logic levels, is the TPWR (Termination power) line. It cannot be used for anything besides supplying termination power for devices on the SCSI bus.

Published Date: Feb 18, 2012

DAL: New HyperCard 2.0 XCMDs and XFCNs

With the advent of HyperCard 2.0, does the DAL toolkit have new XCMDs and XFCNs? If I remember correctly, HyperCard 2.0 has a more powerful XCMD structure. Could the DAL HyperCard toolkit take advantage of these new features?

This article has been archived and is no longer updated by Apple.

According to DAL Technical Support, release 1.2, available from APDA, takes advantage of HyperCard 2.0 features. For more information about what's new and fixed in version 1.2, please read the file Read Me DAL 1.2 on the Install diskette.

Published Date: Feb 18, 2012

ANSI S1.29-1979: Bystander Position Definition

The American National Standard document ANSI S1.29-1979 defines bystander position:
This article has been archived and is no longer updated by Apple.
For equipment which does not require attention while in the operating mode, an operator position need not be defined. One or more bystander positions shall be selected and defined in the test plan or equipment specifications. The bystander position shall be 1.00 m away from the projection of the reference parallelepiped on the horizontal plane and 1.50 m above the floor.

If one or more bystander positions are defined, the A-Weighted sound pressure level shall be measured for the operating mode(s) and idle mode defined in Sec.5. Section 7.3.2.1 and Fig. 2 of ANSI S1.13-1971(R1976) may be used as guide to define bystander position around the machine. The measurements shall be carried out in accordance with the procedures of ISO DIS 6081.
Published Date: Feb 18, 2012

LaserWriter ROMs: PostScript Versions Explained

I have some technical questions about different versions of PostScript:

1) I thought that LaserWriter ROM versions 1.0, 2.0, and 3.0 correspond to versions 23, 38, and 47 of PostScript. However, in LaserWriter Plus printers the ROM contains 42.2. What happened to 47.0?

2) Also, when extracting information from a printer, CE Software's Widgets reports version 47.0 (1) for a LaserWriter IINT and a LaserWriter IINT which was upgraded to a LaserWriter IINTX. It also reports 51.8 (3) for a LaserWriter IINTX. What do the numbers in parentheses really stand for?

3) What is the difference between 47.0 and 51.8?

Adobe Technical Support said that these versions are functionally identical, which doesn't really answer my question.

This article has been archived and is no longer updated by Apple.
1) There is a an error in the LaserWriter Plus ROMs that gives the version number 42.2 if read from PostScript, even though the ROMs contain Version 47 of PostScript.

PostScript version 47 is different than PostScript version 38 in the following ways:

* It is slightly faster.

* It contained miscellaneous bug fixes.

* It added code to support SCSI hard disks (as in the LaserWriter IINTX).

The Rev 47, PostScript-code-equipped LaserWriters can function up to 25 percent faster when printing text or up to 40 percent faster printing bit-mapped graphics. PostScript version 38 is functionally equivalent to PostScript version 47 except for the above details.

2) CE Software's Widgets 3.0.4 issues two PostScript commands to get the "51.8(3)" from the LaserWriter IINTX with the latest ROMs. The first is the "version" command. This command returns a string that identifies the version of the PostScript language and interpreter being used. The second is the "revision" command. This command returns an integer designating the current revision level of the machine-dependent portion of the PostScript interpreter.

3) PostScript version 51.8 allows for the following enhancements:

* The entire font list is no longer searched when looing for a font. The search stops as soon as the font is found. This can save a lot of time if there is a hard disk attached and the font is a ROM font.

* Full support of software switching between emulations and ports. It is now possible to both switch into and out of an emulation mode via software.

* Improved support of multiple SCSI disks. You can now connect up to 8 SCSI hard disk drives to the LaserWriter IINTX SCSI port. Up to 80 percent of the hard disk with the lowest SCSI ID is used for font caching with the remainder of that disk and all of any other connected

hard disks used for downloaded fonts. Each hard disk is now formatted as a separate volume, which lets a user move a disk (other than the startup disk) between systems without needing to reformat.

* Additional characters in the HP Laser Jet+ emulation. Four characters have been added that had been left out of the original implementation of HP Laser Jet+ emulation.

* Improved default settings for HP Laser Jet+ bit map printing. Previously, bitmaps in HP Laser Jet+ mode were interpreted at 7-bit, thus ignoring a significant bit. The new ROMs default to 8-bit serial communications.

Note: These new ROMs are in all LaserWriter IINTX printers with a part number ending in 6004/A.

Published Date: Feb 18, 2012

TA45117_Personal_LaserWriter_NT_PostScript_Version__(TIL06641).pdf

Personal LaserWriter NT: PostScript Version 51.8

What version of PostScript is used by the Personal LaserWriter NT?

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter NT uses PostScript version 51.8.

Published Date: Feb 18, 2012

HyperCard 2.0: LaserWriter Driver 5.2 Print Problem (11/94)

I have been trying to resolve a HyperCard 2.0 printing problem. My system includes System 6.0.5, Finder 6.1.5, LaserWriter Version 5.2, AppleTalk driver version 53, and no INITs.

I'm unable to print cards from a stack that I have developed. When I try to "Print Card" from the File menu, I get a message "Processing Job" that stays on the screen indefinitely. The printer still thinks it is connected to this job, even after I cancel printing, so I have to restart the printer.

Oddly enough, this stack does print to a QMS PS2200 Laser Printer.

This article has been archived and is no longer updated by Apple.
We were able to reproduce the problem with the stack you sent. However, using LaserWriter driver version 6.x the card printed fine. Try upgrading to newer drivers; that may well solve the problem.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

DeskWriter Printer & Macintosh: Service Notice from Apple, H-P

This article contains an Apple Service Notice and its Hewlett-Packard counterpart sent out to Hewlett-Packard service providers on November 1, 1990.

This article has been archived and is no longer updated by Apple.

APPLE SERVICE NOTICE

Some Macintosh Serial Ports Affect Hewlett-Packard DeskWriter Printer Operation

Overview

==========

It has come to Apple's attention that some customers have been experiencing print problems when using a Hewlett-Packard DeskWriter printer and a Macintosh computer. Typically, the customer has purchased the computer and the printer at the same time. The customer connects the DeskWriter to the Macintosh printer port and configures the printer for serial mode. Usually the system works properly for several weeks or even several months; suddenly the printer will not print the selected text. When the DeskWriter will not print the selected text, the printer lights will flash, and the printer sometimes prints "Error Trap 10864".

If the cable is moved from the Macintosh printer port to the modem port, the DeskWriter prints properly; however, it may fail in a similar manner after a few weeks of use.

It is important to note that the Macintosh printer port may still be operational and may pass a diagnostic test or work normally with other print devices.

Customers have reported this when using a Macintosh II, Macintosh IIci, Macintosh IIcx, Macintosh IIfx, or Macintosh SE computer. The problem appears to be limited to a small number of these systems.

Solution

==========

Both Apple and Hewlett-Packard have conducted separate investigations and have isolated the cause to a component failure on the Macintosh logic board. When this failure occurs the sensing circuit in the DeskWriter causes the printer to switch to AppleTalk mode, thereby prohibiting further communication with the computer in serial mode.

To correct the problem Service Providers should replace the logic board on the Macintosh system. Systems within the warranty or AppleCare period should be repaired under these programs. For systems outside the warranty or AppleCare period contact Technical Operations for further instructions.

HEWLETT-PACKARD ANNOUNCEMENT

Some Macintosh Serial Ports Affect DeskWriter Printer Operation

For the past few months, Hewlett-Packard has been receiving a small number of customer reports that DeskWriter printers won't print on Macintosh computers. Typically, the customer has purchased both computer and printer at the same time. The customer connects the DeskWriter to the Macintoshes Printer port and configures it for serial mode. The system works properly for a few weeks or even a few months; then the printer does not print the selected text. The DeskWriter's lights flash, and the printer sometimes prints "Error Trap 10864." If the cable is moved to the Macintoshes Modem port, the DeskWriter works properly; however, it may fail in a similar manner after a few weeks have passed. This has occurred on Macintosh II, Macintosh IIci, Macintosh IIcx, Macintosh IIfx, and Macintosh SE computers.

Both Apple and Hewlett-Packard have conducted separate investigations and have isolated the cause to a component failure on the Macintosh logic board. We have determined that on a small number of Macintosh computers the resistances of the I/O lines degrade over time and eventually fall below the RS-422 specification. When this occurs, the sensing circuit in the DeskWriter causes the printer to switch to AppleTalk mode, thereby prohibiting further communication with the computer in serial mode.

It is important to note that the Macintoshes Printer Port may still be operational and may pass a diagnostic test or work normally with some other print devices. Hewlett-Packard's and Apple's joint recommendation is that any DeskWriter user who experiences this problem should return the Macintosh to an Apple- authorized service provider for repair, according to Apple's recommended procedures.

Apple will soon be issuing a statement (Apple's Statement is above) that further describes this problem, along with their technical recommendations. Until that time, service providers should contact their Apple Service Representative for instructions. In closing, Hewlett-

Packard would like to thank Apple for their cooperation and prompt response in this matter and express our regret for the inconvenience this has caused our mutual customers.

IMPORTANT NOTES (5/95)

This problem is limited to the Macintosh models listed above. If you have another model other than the one's listed above, your problem is not necessarily a hardware failure. In most cases, when you get an error message generated by the DeskWriter software mentioning that the serial port is in use, it is caused by using the serial DeskWriter printer driver, and having AppleTalk turned on.

In order to print using the serial DeskWriter printer driver, you must have AppleTalk turned off. If you need to use AppleTalk, use the AppleTalk DeskWriter printer driver.

Article Change History:
23 May 1995 - Added important notes.

Support Information Services
Published Date: Feb 18, 2012

AppleShare PC and Memory Allocation

I am using AppleShare PC and when I "convert printer" (F2), the memory is not being allocated. I'm running a PS/2 with DOS 3.3 and a Digital DayStar LT200 LocalTalk card.

This article has been archived and is no longer updated by Apple.
It sounds like you need to increase the AppleShare PC memory pool. At boot time, AppleShare PC sets aside an amount of memory for protocol stacks and connections to file and print servers. Each printer connection consumes 7K, so it is easy to exceed the default memory-pool size if you make more than one connection.

The amount of memory that AppleShare PC allocates is defined in the NET.CFG file, generally located in the directory with the other AppleShare PC files. The important line will be near the top of the file and should look something like this:

MEMPOOL 23K

Use EDLIN, or (preferably) a text editor you like, to increase the number. First, try making it 7K larger than its current setting. Save the changed file and reboot. The extra memory allocated should let you make the printer connection. Note that this additional memory will be taken from your available conventional memory, so it should not be larger than needed.

You may want to make sure you're not making unnecessary connections to printers that aren't being used. A leftover automatic connection may be using up your default memory pool when you don't need it. If possible, use the DA to "Review Auto-Connections" and remove those you don't use.

Published Date: Feb 18, 2012

AppleShare PC and Zone Limits

Does AppleShare PC have a 100-zone limit?

This article has been archived and is no longer updated by Apple.
AppleShare PC's only limit with respect to the number of zones it can work with involves the memory available in its memory pool when DA is run. This only affects making network connections using DA, and has no effect once those connections are made. Even then, the connections could still be made using manual ANET commands, even with thousands of zones. We use default installations of AppleShare PC here at Apple, where there are over 140 zones, and have no trouble using DA to make connections.

Problems can occur if the AppleShare PC memory pool is almost full. This is the memory that AppleShare PC allocates at startup and is configurable by changing the MEMPOOL setting in the NET.CFG file. If you are experiencing the "Not Enough Memory" message, increase this number by 1 or 2K and the problem should be eliminated. Because the NET.CFG file is read when AppleShare PC loads, the user must edit the file and then reboot the PC before the change can take effect.

Current versions of AppleShare PC actually require Phase 2 networks. This is frequently a problem when people upgrade from an old version (pre 2.0) and haven't upgraded all their services to be Phase-2-compliant. The AppleShare PC node cannot see Phase 1 services like AppleShare File servers running EtherTalk 1.x.

Published Date: Feb 18, 2012

MacX25: Problem Reports and Enhancement Request

We've noted the following problems with MacX25:

1) To use MacPAD, MacTerminal needs more than 512K of RAM free.

2) If you have a session open, and have disabled the PAD command mode, typing a Control-P seems to indicate that your session is closed, yet the MacPAD status still shows you as connected. Nothing could be found that would let the session be re-used again without doing an Open Connection.

3) MacX25 apparently cannot insert a calling address. At least, we can't find any option for this setting. We had to patch our network to make this work, as we validate the calling nua before the call is directed to its destination. We need the ability to trace a call for accounting purposes and for troubleshooting problems.

Its implementation should be based on the user ID and assigning each user an nua or sub-address (i.e., unique address). The sub-address would be easier to maintain, because the administrator would have to type only two digits instead of the whole nua. When using the sub-address scheme, the server would be assigned an nua like 10498001%%, where %% is replaced by the sub-address from the user ID.

4) MacTerminal seems to hang quite frequently, at least on a Macintosh IIci, when trying to change the PAD command mode while a connection is open (actually a "stuck" connection as described in question 2).

5) The installation of MacTerminal puts an INIT in the System file that seems incompatible with other INITs, namely with INITPicker (when using override). This INIT should be a separate file from the System file, so the user can control when and if the INIT should run.
This article has been archived and is no longer updated by Apple.
1) The minimum suggested memory size for MacPAD (MacTerminal or CommToolBox) is 1MB, though 2MB is recommended. The MultiFinder "Suggested Memory Size" is 560K for MacTerminal itself.

2) Questions 2 and 4 are related:

The "MacX25 User's Manual" (page 110) suggests you can go into the PAD command mode by entering Control-P. That means if you checked "enabled PAD command mode" (see "Connection Settings" on page 97), you can escape from data transfer (page 99), then enter any of your CCITT PAD commands from the keyboard. When you have checked "enabled MacPAD command mode", you can "escape" into MacPAD command mode by entering Control-P or by choosing Command Mode from the MacPAD menu.

However, if you have NOT checked "enable MacPAD command mode", you cannot enter a PAD command mode with the Escape key sequence or menu to escape to data transfer mode after starting a session. The host will interpret anything you enter through the keyboard as data. If you try to escape to command mode with a Control-P (Command Mode in the MacPAD menu is not available), the system may appear to hang. If you check Status in the MacPAD menu, it will show that you still have a live session. If you are patient, some hosts will time out (the ones we tested did so after 1 minute) and resume the data transfer.

During this time, the session menu gives you the option to open a connection, but doing so will hang your system. If your host never times you out, we recommend you quit MacTerminal, reboot, and restart your session.

3) We passed this enhancement request along. Thanks.

4) See the second item above.

5) We haven't had any conflicts with INITPicker 2.0 (or other INITs) and the INIT that the Communications Toolbox installs into the System file. We have used this combination on various systems including a Macintosh Portable, Macintosh IIci, Macintosh IIcx, and Macintosh IIx, running various versions of System Software including 6.0.4, 6.0.5, and 6.0.7. It is true, however, that INITPicker 2.0 cannot control the state of the INIT when it is installed in the System Folder. However, it is one less variable a user must monitor to conduct a successful communication session.
Published Date: Feb 18, 2012

TA45124_LaserWriter_How_to_Print_Diacriticals_(TIL00665).pdf

LaserWriter: How to Print Diacriticals

This article has been archived and is no longer updated by Apple.

There is a way to use the LaserWriter fonts' diacritical marks, the curved short-vowel symbol (shift-option-period) and the straight long-vowel symbol (shift-option-comma). To put these symbols directly above a vowel as is done with an accent or umlaut, you must create diacritical font characters using Fontographer, from Altsys Corp, or some other LaserWriter font utility.

Published Date: Feb 18, 2012

A/UX: YP and MacTCP Tool Problem (9/94)

I am using A/UX with Yellow Pages in an all-Sun environment to maintain my home directory on a remote Sun server. When I launch MacX, I get the message that "Connection Tool Cannot be Found". Thinking that the connection tool needs to be in the Extensions Folder within the Macintosh System Folder on the Home directory (on the remote Sun server), I ran "Systemfolder" from the command line. Upon logging off and back on, I was unable to complete the YPbind process.

I conclude that Macintosh System Folders are illegal on a Sun file system, or that YPbind cannot reconcile the Macintosh system resources with the home directory. In any case, I cannot think of any way to have MacX use the communications tool (MacTCP) from Root, or from any other local users.

This article has been archived and is no longer updated by Apple.
When executing a "systemfolder" command to create a personal System Folder under the user's home directory, it creates a "System Folder" under the user's home directory, copies files from /mac/lib/SystemFiles directory but not from the default /mac/sys/'System Folder' directory. The communication tools, which were stored in the /mac/sys/'System Folder'/Extensions directory, are not copied to the user's newly-created Extensions folder.

For users with their home directory on the remote YP and/or NFS server to launch MacX successfully, the MacTCP Tool must be manually copied into their own Communication Folder under the user's $home/'System Folder' directory. Otherwise, MacX complains with the following message:

An unexpected error has occurred: The Macintosh Communication Toolbox
could not be initialized because there are no communication tools
installed.

We have tested launching MacX in one A/UX without any problem from an account whose home directory resides (via nfs mount) in another A/UX YP and NFS server. We do not think there is a problem between Macintosh System Folders and Sun YP and NFS file system.

Regarding being unable to complete the YPbind process, was there any message indicating that you were unable to complete the YPbind process? Was the YPserv (YP server) running before YPbind (YP client) was started? We do not think that your problem (launching MacX) has anything to do with the YPbind or YPserver, unless the YP server and client were not up and running.

Try to copy the MacTCP Tool manually into the user's System Folder/Extensions folder, logout and login, then launch MacX again.

Article Change History:
2 Sept 1994 - Reviewed. Updated for A/UX 3.0.
31 Aug 1992 - REVIEWED for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

HyperCard 2.0: Using HyperDialer

I have a stack that was designed to use the HyperDialer as part of our office mail system. I recently began using HyperCard 2.0 and found that when HyperCard dials the tones to the speaker, they are either too fast or corrupted. This causes the dialing procedure to fail.

Is there a reason for this? If so, are there provisions in HyperCard 2.0 for greater control over dialing through the speaker?
This article has been archived and is no longer updated by Apple.
DataDesk International, manufacturer of HyperDialer, was unaware of any inconsistencies between HyperCard 2.0 and their product. They did say that if the numbers are dialed too quickly, the phone system will interpret them as trash and not dial appropriately.

While there are no new controls for HyperCard's "dial" command, we found that dialing each number in a separate command caused approximately a 10 percent delay in the dialed string.

Fast	10% Slower
on mouseUp dial "1234567890" end mouseUp	on mouseUp dial "1" dial "2" dial "3" dial "4" dial "5" dial "6" dial "7" dial "8" dial "9" dial "0" end mouseUp

You can further slow the dialed string by placing commas or semicolons between the numbers. A comma causes a one-second pause; a semicolon results in a ten-second pause.

```
on mouseUp
dial "1,2,3,4,5,6,7,8,9,0"
end mouseUp
```

For more information on HyperDialer, contact DataDesk International. For more details, search the Technical Info library under "DataDesk."
Published Date: Feb 18, 2012

Personal LaserWriter: Printing Envelopes

Article Change History

02/12/93 - REVIEWED
* Vendor information.

I'm trying to print envelopes with IJ Personal LaserWriter, but can't get a clean feed when using envelopes.

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter models have a somewhat more complex paper path than that of the LaserWriter II models. We have heard reports of problems with some envelopes, especially those made from a heavy stock.

Handling can be improved by using envelopes that are approved for use in laser printers and copiers, and by feeding to the face-up delivery tray. The recommended envelopes are No. 10 (standard business envelopes) or those specially made to withstand use in laser printers and copiers. Two manufacturers of such envelopes are James River Corporation (Groveton Division) and Avery. Check with your local office supply dealer or with the manufacturer.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

LaserWriter IINTX: RAM Allocation

How much RAM is needed to get a second page buffer with legal-size paper on LaserWriter IINTX?

This article has been archived and is no longer updated by Apple.
Additional RAM does not provide space for a "second page buffer" in the LaserWriter IINTX. We found the following information on page 122 of the "LaserWriter IINT/NTX Owner's Guide" (ROM revision 3.0 version):

Memory Upgrades

You can install up to 12MB of RAM in the LaserWriter IINTX. You can also add a font expansion card. These memory upgrades are not possible on the LaserWriter IINT.

RAM upgrades for the LaserWriter IINTX provide the following benefits:

* the ability to print very complex documents (graphics and CAD documents, for example) that might not print on printers with less memory

* faster performance on complex documents

* faster performance when using downloaded fonts

* faster performance when printing documents that have been scaled down from larger originals (organization charts, maps, flow charts, for example)

* The ability to increase the imageable area of a document (you can use more of a sheet of legal paper, for example)

Adding more RAM provides these benefits in three ways:

* More RAM allows more fonts to be downloaded (sent over the network) to the printer at any one time. The printer is less likely to need to retrieve large font files over busy network cables, saving you time and improving the performance of the entire network.

* More RAM increases the space available for font caching. Before the LaserWriter IINTX can print, it converts the PostScript outline fonts into bitmaps, which it stores (caches) in RAM. When the demand for RAM exceeds the supply, the printer discards the less recently used bitmaps in favor of the newer ones. When the discarded bitmaps are needed again, the printer must rebuild them. With additional RAM, the printer will need to rebuild bitmaps less often.

* Finally, more RAM gives your printer more space to store the calculations it uses to compute large or complex page layouts. This is why you can print more complex documents and use a larger imageable area when you install more RAM.

Published Date: Feb 18, 2012

A/UX: Installing/Deinstalling AppleTalk (9/94)

Article Last Reviewed: 8 September 1994

I have a problem with AppleTalk on A/UX:

1) AppleTalk is installed, and if I choose a LaserWriter in the Chooser, all is okay.

2) If I de-install AppleTalk with "newconfig appletalk" and then reboot, at the login dialog box, a message appears several times indicating that the system cannot find the LaserWriter I recently chose.

Is there anything else needed to de-install AppleTalk?

This article has been archived and is no longer updated by Apple.
The following are notes for installing and/or de-installing AppleTalk on A/UX:

* The "appletalk" module is configured with the standard A/UX kernel. You don't have to actually do "newconfig appletalk" in the first place. However, if you suspect that some modules of AppleTalk might be corrupted for some reason, you may de-install AppleTalk by doing "newconfig noappletalk", then re-install it by doing "newconfig appletalk".

* You may choose either EtherTalk or LocalTalk for printing on an AppleTalk network. This is controlled by the /etc/appletalkrc file with a line indicating which interface is used. For instance, to use LocalTalk, the following line needs to be specified:

interface = localtalk0

* The default LocalTalk printing port is the printer port (/dev/tty1). This port must be set to getty "off" in the /etc/inittab file.

* The following commands should be initiated whenever the interface is changed:

appletalk -d # bring AppleTalk down
modify the /etc/appletalkrc # choose AppleTalk interface
appletalk -u # bring AppleTalk up

* The "appletalk -s" command is useful to see if the AppleTalk interface is active, and to display LAP and DDP statistics.

* You may use "Chooser" from the Apple menu or use the "at_cho_prn" command from A/UX CommandShell window to choose your favorite printer.

* Two printer spoolers, Berkeley printer spooler (lpd) and AT&T System V printer spooler (lp), are available under A/UX. The default is "lpd".

For more information, refer to Chapter 3 "Connecting to an AppleTalk Network" in the A/UX Network System Administration documentation.

For the error messages appearing on the Login Dialog, you might check if both LaserWriter and Laser Prep are installed in A/UX or the Personal System Folder, and if it is compatible with the one currently used by that LaserWriter.

Article Change History:
08 Sep 1994 - Reviewed.

Support Information Services

TA45131_AUX_InstallingDeinstalling_AppleTalk__(TIL06656).pdf

Published Date: Feb 18, 2012

MacX and Extended Keyboard Mapping (5/95)

Can you give me some information about MacX and extended keyboard mapping?

This article has been archived and is no longer updated by Apple.
Unfortunately, there is no information on extended keyboard mapping in the "MacX User's Guide." However, according to MacX engineering, the PATHWORKS "MacX User's Guide" shows such a map in Chapter 1, Section "Mouse and Keyboard Differences". For example, the "Page Up" key is used to scroll to the beginning of a text field or to the top of a list.

Also, the user can use "xev", an X11 client to print contents of X events, to determine the keyboard mapping. "xev" is normally found in X11 client distribution. It is available in A/UX X11 Window System. The "xev" program creates a window and then asks the X server to send "events" whenever anything happens to the window. Events may include move, resize window, mouse clicked in, and keyboard typed in, and so forth. These reports can be displayed from the "Command Output" menu of the "Remote" menu in MacX.

Article Change History:
01 May 1995 - Reviewed for technical accuracy.

Support Information Services
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Macintosh II: Video Overview (2 of 3)

This is the second part of a three-part article describing how the Macintosh II produces video.
This article has been archived and is no longer updated by Apple.

STANDARD RGB DISPLAY SIGNAL

The Macintosh II Video Card uses an approximation of the RS343 display signal. (RS video standards are set by the Electronic Industries Association.) The RS343 display standard is essentially a monochrome video signal combined with a composite sync signal (horizontal and vertical scan control) with timings that produce a non-interlace, or progressive, scan. This means that the horizontal and vertical scan rates are timed to cause the display electron guns to produce even progressively horizontal scans. This is by comparison to the interlaced video standards. The importance of the RS343 standard is its provision for a timing and voltage level signal that allows the display and generation of high resolution video.

While the Macintosh II version of the RS343 signal varies somewhat, it essentially follows the guidelines necessary for connection to RS343 display devices. The major differences are:

- the separate TTL level composite sync signal found on pin 3
- the separate video lines used to produce RGB color
- a vertical scan rate of 66.67Hz to reduce screen flicker
- a voltage white level of 1 volt for its red and blue signals and 1.3 volts on its green signal

RS343 provides for a 60hz signal but has been changed to 66.67Hz on the Macintosh II Video Card to prevent the screen flicker visible at 60Hz. The inclusion of the analog composite sync found on pin 5 of the video card connector, called the green signal, allows for monochrome composite video.

COMPONENTS OF AN NTSC/RS170 TIMING SIGNAL

RS170 is a standard that defines the timing of broadcast video in the United States, Japan, and several other markets. It specifies a 15.75KHz horizontal and a 60Hz vertical interlaced scan frequency. Interlacing is the process by which two fields, called scan lines, are interleaved on the screen. Due to the limitations of video devices at the time of the RS170 standard's creation in 1957, the speed of broadcast signals and picture tubes required the image to be displayed in part. The solution allowed for the partial update of video pictures to remain unnoticed to the viewer. An RS170 video frame contains 525 lines and is displayed 60 times per second -- for a total of 15,750 lines, or 15.75KHz. Of these lines, only the odd or even lines are displayed with each frame. A total of 60 frames per second allows for 30 frames per second, or 30Hz update of each line. Like the RS343 standard, RS170 is strictly a timing specification for monochrome video signals. By combining three such signals to control individual red, green, and blue sweep circuits, a full color system can be created. The RS170 mode was included on the Macintosh II video card as a way for large screen projectors, not capable of high frequency scans, to display the Macintosh II video in the usual broadcast standard of RS170.

THE MACINTOSH VIDEO CARD RS170 MODE

To produce RS170 video, software can be written to logically select the proper timing values and pixel clock from the Macintosh II video card. The pixel clock is a 12.2727MHz oscillator built on the video card and is selected over the 30.24MHz oscillator used in the RS343 mode. With the selection of the RS170 mode, a red, green, and blue signal with a separate TTL composite sync are produced. An analog composite sync pulse is superimposed on the green channel, allowing this signal to drive broadcast devices such as a television, to produce a monochrome image.

NTSC VIDEO (RS170A)

This is not available directly from the Macintosh II video card, but can be produced from the video signals supplied.

When color televisions became available, studios had to decide how to place color onto the broadcast bandwidths delivering black and white signals. There being very little space to work with, the solution was to use a color subcarrier signal modulated onto the luminance signal. The luminance signal controls the intensity of the black and white image. To place the color signal, or chrominance, onto the video signal, an NTSC color encoder is used. This effectively combines the primary additive colors red, green, and blue into a wave form. An output device filters the color signal from the luminance signal and recalculates the original values. To connect an NTSC color encoder, outputs for horizontal sync, vertical sync, blanking period, red, green, and blue in RS170 levels are required. These signals are all available on the Macintosh II video card and are discussed in the document "About Macintosh II Video Signals."

Published Date: Feb 18, 2012

A/UX: AppleTalk Phase 2 and Ethernet Card Compatibility (8/94)

My group is having problems with third-party NuBus Ethernet cards and Phase 2 networks running on Macintosh II-class machines with A/UX 2.0. Is there a compatibility list of which cards support Phase 2 AppleTalk protocol? Is Apple's card fully compatible with EtherTalk 2.0 drivers using A/UX 2.0?

This article has been archived and is no longer updated by Apple.
We don't have a compatibility list of third-party Ethernet cards which support or don't support the AppleTalk Phase 2 protocols. Apple has left it to the developers to decide whether to write and implement a Phase 2 complaint driver for their cards. There is no conformity testing for third-party cards. This makes it difficult to compile a list of cards with known compatibility problems. We would suggest working closely with the manufacturer to ensure that any bugs in their drivers can be discovered and repaired.

The Apple Ethernet NB card is fully compatible with Phase 2 protocols when running under all versions of A/UX.

Article Change History:
26 Aug 1994 - Updated and reviewed.

Support Information Services

Published Date: Feb 18, 2012

A/UX 2.0: Unsupported Status csCode 8 (3/93)

I am getting the message "unsupported status csCode 8" under the A/UX 2.0 32-bit Finder. Do you have any suggestions?

Here's a copy of the console log:

Running on mc68020
mc68881 Floating Point Coprocessor ID 1
Onboard SCC serial driver.
fd:floppy driver ver 1.9; IWM chip, d0 is 800K (2 head)
mc68020 caching enabled
tc:Apple 40SC tape driver ver 1.4
Motherboard LocalTalk
total memory size: 8388608 bytes
available memory: 6033408 bytes
I/O Acceleration: version g21, maxba=7, maxwb=7
unsupported status csCode: 8
.
.
.
Scroll up in this window to see old console messages.

This article has been archived and is no longer updated by Apple.

It's been reported that the "unsupported status csCode: 8" error message is caused by applications that try to write a "SCRN 0" resource to the System file.

Further research reveals that the csCode: 8 is not included in the current supported control status code list (video.h) of the A/UX toolbox video driver. The following status codes are supported under A/UX 2.0:

```
#define cscGetMode 2
#define cscGetEntries 3
#define cscGetPages 4
#define cscGetBaseAddr 5
#define cscGetGray 6
#define cscGetVideoDefault 9
```

If any Macintosh application, like "After Dark 2.0", tries to use some video features not supported in the above list, it might have this problem too.

Note: After Dark is compatible with A/UX 3.0 because A/UX 3.0 supports the needed video calls.

Published Date: Feb 18, 2012

AppleTalk Traffic When Launching Local Application

I have a problem for which I have no explanation. If I have one or more file server volumes mounted (but none of the directory windows are open), and I try to launch a local file with a local application, there is a delay of several seconds during which the AppleTalk traffic indicators blink.

This delay does not always occur and its occurrence does not appear to be tied to any specific condition on the Macintosh. I don't understand why there should be any AppleTalk traffic when launching a local application.

This article has been archived and is no longer updated by Apple.
Any time an application is launched, all of the information about any changes that have taken place on any currently-mounted volumes needs to be written out. This is done by flushing each of the mounted volumes. This operation normally happens very quickly. However, updating volumes over a network can sometimes take time if the network is busy. This is not something that AppleTalk or AppleShare takes care of, but a job that the Finder does.

Published Date: Feb 18, 2012

MacTCP: BOOTP/RARP Server Priority

Can I change the order that MacTCP looks for server addresses? My problem is that MacTCP uses RARP first (which then times out after 8 seconds) before then using the BOOTP protocol. Is there a way I can rearrange the order so that BOOTP comes up first before having an 8-second delay?

This article has been archived and is no longer updated by Apple.
According to MacTCP Engineering, MacTCP remembers what protocol was successful in acquiring its IP address over startups, so that the successful protocol is tried first. In other words, once MacTCP has located and acquired an IP address from a BOOTP server it then uses the BOOTP server before trying the RARP server the next time MacTCP is used. The first time MacTCP is used, the RARP server may be tried first. However, this should not continue once the BOOTP server is located.

There is currently no way to configure MacTCP to select server priority via a control-panel device or by using ResEdit.

Published Date: Feb 18, 2012

A/UX: UFS Subdirectory Limit (9/94)

I came across an interesting limitation problem of A/UX 2.0: You can create only 1000 subdirectories within a directory. After that, mkdir won't make any more subdirectories. Instead, you get the message:

mkdir: another: Too many links

We need to create more than 1000 subdirectories inside one directory because the software we are porting to A/UX creates a directory for each department at the University, and there are more than 1000 departments.

This article has been archived and is no longer updated by Apple.
We have verified that there is a limitation on the number of subdirectories created within a directory under A/UX 2.0 UFS file system. The maximum is 1000. This is defined in the /usr/include/sys/param.h file with a line:

#define MAXLINK 1000 /* max links */

The maximum number of subdirectories under A/UX 3.0 is 32,767.

Article Change History:
2 Sept 1994 - Added information about A/UX 3.0.
26 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

A/UX: uucp and Mail Questions (9/94)

I am trying to write a script for an L.sys file that will let me connect to a 3B2/1000 machine via ISN using uucp. The beginning of the script looks like this:

"" ATD555-1212, expect nothing send dial string
2400 \\r\\r expect 2400 send two carriage returns

This is where the confusion starts. The carriage returns must be sent to set the line characteristics (autobaud). When I manually use cu to connect, the two carriage returns typed are not echoed, but a 4- or 5-line banner is sent back.

When I call with the line

uucico -r1 -sLAB -x9

the chat dialog cranks up and the number is dialed. However, when the modem answers, the 2400 is picked up by the script. The modem then flashes the TX light. I assume this means the carriage returns are being sent. However, the RX light never flashes and uucico hangs and eventually times out.

I don't believe the Welcome header is being sent. I have tried

\\r,,\\r

and several variations, i.e., more carriage returns and a variety of commas in various positions. I have a feeling that only one carriage return is being sent. This carriage return does not echo, and the program waits forever, because the header will not be sent.

1) Does uucico send characters one at a time and wait for the echo before sending the next one? This would account for the hang, because the first two carriage returns are munched by the autobaud mechanism.

2) If the answer to the above is yes, is there any workaround? I tried \\e\\r\\r but got the same results.

3) Assuming I can finally get the carriage returns processed and cause the header to be sent, do I have to process each line of the header with an "expect-send" pair, or can I simply "expect" the tail of the last line of the header?

I solved the problem of the autobaud not echoing characters. Recall that I have to send several carriage returns to get the attention of the system after I get the connect message from the modem. Instead of sending \\r\\r\\r (only one of the carriage returns evidently get sent), I now send

\\r\\c "" \\r\\c "" \\r\\c

It looks like the above line sends one carriage return and expects nothing, sends another carriage return and expects nothing, and sends one more carriage return.

This seems to do the trick. The header comes flying by and I can then negotiate into the nuucp login. Because I can send files to the machine without any problem, uucp seems to work okay. However, mail does not seem to work. I have tried:

mail name!user and
mailx name!user and
rmail name!user

After I exit the mail programs, nothing happens. There are no log files created in the spool area, and the phone never goes off hook. It seems like the letter drops into a black hole! If uucp works, why doesn't mail work? (I am using ksh.)

This article has been archived and is no longer updated by Apple.
Usually, people play trial-and-error on the "expect" and "send" strings in the L.sys to find communication line (modem or other device) characteristics, like "Connect", "Online", and other message outputs from the modem. uucico sends the "expect-send" pair of strings to the remote uucp host via the communication line. It depends on how the underlying communication device behaves itself. For example, does it require a carriage return or a new line or a couple of delays while in conversation mode? Below are special characters often used in the "expect-send" string:

\\r CARRIAGE RETURN
\\d DELAY for one second
\\c NO NL (No New Line)

A delay (\\d) is sometimes needed for uucico to wait for the communication line to complete its task before process the next string.

The "expected" and "send" string pairs are processed in that order. Yes, you may grab the last line of the display message as the "expected" string. For autobaud to work, you can try the '"' \\r\\c '"' \\r\\c "expect-send" sequences.

If uucp works, it does not necessarily mean that the "mail" should work. It depends on how the "sendmail" system is set up and configured. Is the "sendmail" program up and running on both machines?

The /usr/spool/mqueue/syslog file should record the reason for the mail problem. However, the /etc/syslogd daemon must be running to show the sendmail activity.

Article Change History:
13 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
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MacX: Adding X Fonts (5/95)

How and in what form are additional fonts added to MacX under A/UX and the Mac OS?

This article has been archived and is no longer updated by Apple.
The procedure is identical for adding X fonts for both A/UX and Mac OS to the MacX Font Director list. The Font Director is built in MacX, which can be invoked by selecting "Fonts..." from the Edit menu. The Font Director lets you view, add, and remove existing Macintosh fonts to and from the font directory list. It also compiles fonts from the BDF (Bitmap Distribution Format) files.

To add "X fonts" into the MacX Font Directory list, the X font must be converted into a BDF file, so that it can be compiled by the Font Director and added into the font directory list.

The public domain software called "snftobdf" converts a SNF font file into a BDF font file.

Article Change History:
01 May 1995 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

A/UX 2.0: Screen Dimmer Enhancement Request (6/92)

I am looking for A/UX-compatible screen-dimming software. I want it to be active once logged in and while at the login screen. For that to take place, will the application have to reside in multiple System folders?

This article has been archived and is no longer updated by Apple.

We know of some screen dimmers, like "Blackout v1.21" and "Pyro 4.0", that work under A/UX 2.0. "AfterDark" seems to have a problem with "unsupported status csCode ..." if the SCRN resource is not removed.

"Blackout v1.21" seems to work under both "before" Login screen and "after" Login screen. For "Blackout v1.21" to work on both "before" and "after" Login dialog screens, the "Blackout v1.21" puts both folders (/mac/sys/'Login System Folder' and the /mac/sys/'System Folder') in the System folder.

Published Date: Feb 18, 2012

RGB Cable Pinouts

I need the pinouts for the RGB video cable 590-4161-A.
This article has been archived and is no longer updated by Apple.
Here are the RGB video cable 590-4161-A pinouts.

Pin	Function
1	Red Video GND
2	Red Video
3	CSynch
4	Mon. ID 1
5	Green Video
6	Green Video GND
7	Mon. ID 2
8	N.C.
9	Blue Video
10	Mon. ID 3
11	CSynch GND
12	N.C.
13	Blue Video GND
14	N.C.
15	N.C.
Shell	Shield GND

Published Date: Feb 18, 2012

A/UX 2.0: 3270 Terminal Emulation

1) I am working on a Macintosh IIx with A/UX 2.0 and a Kinetics EtherPort II. The company where I work has lots of Sun systems, DOS machines, and IBM mainframes (even a few Crays). TCP/IP is the prevalent Comm protocol.

Using Telnet, we have no problem logging into IBM mainframes running TCP/IP. A/UX does not seem to have a 3270 terminal entry, so the 3270 screens don't appear as they should. Is there a 3270 type of term entry that will let the screens appear correctly under CommandShell?

2) I tried to use Intercon's TCP Connect II. This package does provide 3270 terminal types via Telnet. Running from A/UX, the program lets you log into a local Sun, but I can't seem to get across the router. The Intercon tech support engineer didn't have an answer other than running under Macintosh OS and setting the gateway address in the "Admin TCP" CDEV. Looking at the "MacTCP" CDEV under A/UX, the gateway field is 0.0.0.0 even though the route command has been run. Do you know why I can't get past the router from TCP Connect while running under A/UX?

This article has been archived and is no longer updated by Apple.

1) There is currently no 3270 termcap entry for a 3270 session in A/UX 2.0 /etc/termcap file.

However, there is a software package called tn3270, which, we believe, came with the 4.3BSD distribution. It provides a solution for talking to IBM hosts running VM/CMS with the University of Wisconsin who developed TCP/IP codes. The tn3270 also includes a file called "map3270", which contains mapping between characters entered from the keyboard and 3270 keys used by the "tn3270" program doing 3270 emulation from UNIX. Tn3270 requires the 4.3BSD curses to run.

Porting 4.3BSD tn3270 to A/UX or using the third-party tn3270 product would be the ideal solution.

"Admin TCP" is not needed by A/UX 2.0 MacTCP since TCP/IP is configured by A/UX "ifconfig" and other network services, like Domain nameserver and/or gateway. You only need "MacTCP" in the System Folder.

2) We have no experience with the TCP/Connect II software. Is there any control file provided by TCP/Connect II to specify the gateway and/or the domain name server to be used? Like in NCSA Telnet 2.3, the "config.tel" file may contain information on gateways and name servers. We have tested the NCSA Telnet 2.3 with MacTCP in A/UX 2.0 to a remote host via a gateway (router) without any problem. The gateway information is generated by the A/UX "/usr/etc/route" or the /etc/in.routed" process as all information in
A/UX MacTCP is disabled and can't be changed.

Published Date: Feb 18, 2012

AppleTalk: Configuring under A/UX (8/94)

To configure AppleTalk under A/UX, must bnet be configured? If yes, is it a bug or are the protocols stacks linked?

This article has been archived and is no longer updated by Apple.
Yes, to run AppleTalk you should have the "bnet" configured in the A/UX kernel. That means before doing "newconfig appletalk", the A/UX kernel must have been configured with "bnet". The reason is that AppleTalk modules link some modules from "bnet". The linked bnet modules include "m_get", "m_freem", and so on. In short, AppleTalk uses B-Net socket system calls to do inter-process communication for AppleTalk printing service. Note that the default A/UX 3.0 distribution is configured with "bnet" and "appletalk" driver modules.

It is not a bug; as you stated, the protocol stacks are linked.

Article Change History:
26 Aug 1994 - Reviewed and updated.

Support Information Services

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AppleShare Workstation Server Limit

I have a program that automatically backs up our server volumes from a workstation. The problem is that I need all the volumes to be mounted on the workstation for the automatic back up to work. I want to run the software on a 2.5MB Macintosh Plus with an 80MB hard drive running System 6.0.3. I am trying to mount 8 volumes. When I try to mount the fourth volume, I get a message about not being able to open any more volumes.

What is the limitation? RAM? System software? Would a different computer help: Macintosh SE, Macintosh II? How many volumes should a workstation be able to mount?

This article has been archived and is no longer updated by Apple.
There is a limitation in the number of servers that a given Macintosh computer can be logged on to at one time. The number of servers by machine is as follows:

Computer	Number of Servers
Macintosh Plus	3
Macintosh SE	8
Macintosh Classic	8
Macintosh Portable	8
Macintosh LC	18
Macintosh SE/30	18
Macintosh II	18
Macintosh IIx	18
Macintosh IIcx	18
Macintosh IIsi	18
Macintosh IIci	18
Macintosh IIfx	18
Macintosh PowerBook 100	18
Macintosh PowerBook 140	18
Macintosh PowerBook 170	18
Macintosh Quadra 700	18
Macintosh Quadra 900	18
Macintosh Classic II	18

There is also a limit in the number of volumes you can have mounted. When a volume is mounted, information about that volume is loaded into System and Finder memory. The amount of memory needed to mount a volume is dependent on the size of and the number of files on that volume.

Published Date: Feb 18, 2012

AppleTalk: Connecting to InteCom IBX

This article has been archived and is no longer updated by Apple.

To link up AppleTalk via an InteCom IBX switch, use the LANmark Ethernet on the IBX. LANmark is a featured product of InteCom, the IBX folks. The LANmark Ethernet is a slower (1Mhz vs 10 Mhz) version of an ordinary Ethernet. Then use a Kinetics PastPath Bridge to connect AppleTalk to the Ethernet. Both Kinetics and InteCom should be able to supply you and RPI with more detailed information.

Also, you can less expensively but not as elegantly use half-bridges such as those from Hayes and connect via Synch or Asynch Data Option Boards.

Published Date: Feb 18, 2012

Monitors: Earth‘s Magnetic Field Affects Performance

Variations in the earth's magnetic field can affect a monitor's performance, especially if it is moved from one hemisphere to the other.
This article has been archived and is no longer updated by Apple.
Monitors based on cathode-ray tube (CRT) technology, including those found in iMac computers, use precisely controlled magnetic fields to direct the flow of electrons to the red, green, and blue light emitting phosphors on the monitor. The earth's magnetic field varies in intensity throughout the world, which can affect the path of this electron beam. During manufacturing, CRT-based monitors are aligned in special areas called helmholtz cages that simulate the magnetic field the monitor is being aligned for. Monitors are typically aligned for the Northern Hemisphere or the Southern Hemisphere, and sometimes for the equatorial region.

A CRT-based monitor purchased in the Northern Hemisphere may not perform correctly if it is moved to the Southern Hemisphere. The reverse is also true because the earth's magnetic fields are not the same in each hemisphere. A monitor moved to another hemisphere may encounter color purity problems that cannot be adjusted out. It is technically possible to realign a monitor to work in a different hemisphere, but the skills and specialized equipment required make it prohibitively expensive for most purposes.

Liquid crystal displays, such as the Apple Cinema Display and the display of an iBook computer, are not affected by the earth's magnetic fields, and can be moved between the Northern and Southern Hemispheres.
Published Date: Feb 18, 2012

DAL 1.0, 1.1: HyperCard 2.0 Incompatibility

I found a bug with HyperCard 2.0 and DAL (formerly called CL/1). Evidently, the cl1 putval XCMD does not actually return data to HyperCard 2.0. The cl1 getlist XCMD does, however. I am running DAL 1.0, because we have a VMS 4.7 system and cannot upgrade for a variety of reasons.

This article has been archived and is no longer updated by Apple.

The DAL Support group told us that there were known incompatibilities between DAL version 1.0 or 1.1 with HyperCard 2.0. Because you cannot upgrade to a later VMS release to run DAL 1.2, we suggest you not use HyperCard 2.0 with DAL 1.0.

Published Date: Feb 18, 2012

A/UX and Raw Sockets (8/94)

I want to use raw sockets in A/UX so that I can set up a TCP/IP address server. I want to use the raw sockets to check dynamically on the availability of a TCP/IP address and load an available address into a particular platform.

This article has been archived and is no longer updated by Apple.
This sounds like a developer programming issue. The "A/UX Network Application Programming" documentation is a good reference for writing sockets which include Stream, Datagram, and Raw sockets. It also includes some sample C code. Section 11 of 4.3BSD "Networking Implementation Notes" describes details on what raw sockets are, what their control block structure is, and how the input and output raw sockets are processed. These notes regarding how raw socket addresses are handled might be of interest:

A raw socket interface is datagram oriented. That is, each send or
receive on the socket requires a destination address. This address may
be supplied by the user or stored in the control block and automatically
installed in the outgoing packet by the output routine. Since it is not
possible to determine whether an address is present or not in the
control block, two flags, RAW_LADDR and RAW_FADDR, indicate if a local
and foreign address are present. Routing is expected to be performed by
the underlying protocol if necessary.

You should also examine the rules of raw socket input and output processing and see if the rules fit their TCP/IP applications.

The "A/UX Network Applications Programming" document and "A/UX Development Sources" Version 2.0 on CD-ROM are available from APDA. If you need immediate assistance on developing their socket codes, we suggest that, as a developer, you contact MacDTS (Macintosh Developer Technical Support).

Article Change History:
29 Aug 1994 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

MacDFT: Apple 12-Inch RGB Monitor Issue

Is MacDFT 1.1.1 compatible with the new Apple 12-inch color monitor?

If I open a dialog like Display or Keyboard, I don't get the whole box in the picture. If I then open and close it repeatedly, the whole text moves upwards, so after a few tries I don't see any text at all.

If I check Resize Fonts, nothing changes. How is that supposed to work? I thought that if I checked that, MacDFT would change the font size, if you changed the window size.
This article has been archived and is no longer updated by Apple.
We found there are some display problems when using MacDFT with an Apple 12-inch RGB monitor, for example the menu items Display and Keyboard aren't fully displayed on the screen. However, we didn't find limitations so severe as to prevent you from using this combination. We reported this problem to Engineering.

When you check the Resize Fonts option, the text on the screen will not change point size as you shrink or enlarge the window. Instead your options are:

Resize font: unselected
If you use this default setting, the window changes to accommodate the rows and columns. The font size remains the same size chosen from the Font size menu. This choice lets you display the full column width associated with each model type, except for Model 5, where you must use the horizontal scroll bar to see all 132 columns.

Resize font: selected
If you select this option, MacDFT changes the font size to fit the terminal model you have selected. If you choose this option, you can see all your columns and rows. In some cases, the window may not be able to display all the rows and columns, and you must use the scroll bars to display some data. The window size also changes to accommodate the extra rows and columns.

Both of these options are described and illustrated in the "MacDFT User's Guide."
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TA45156_System_Software_Availability_of_Localized_Versions_(TIL06689).pdf

System Software: Availability of Localized Versions

This article discusses availability of localized versions of the Mac OS and other related software.
This article has been archived and is no longer updated by Apple.
Localized versions of System Software are available in the country the software is localized for, and in most cases, from the Apple Software Updates Web site at http://www.apple.com/swupdates/ .
Published Date: Feb 18, 2012

Apple IIGS: How To Pick Up Video Blanking Signals

This article has been archived and is no longer updated by Apple.

There is no way to physically pick up the video blanking signal since it is now buried inside the VGC chip. However, through software, there are two ways to pick up this signal.

1. Arm the Vertical Interrupts as one would do with an Apple IIc.
2. Read the Vertical Blanking location at $C019 as one would do with an Apple IIe.

Research the appropriate manual for how to do these operations. If a routine is written to handle video timing for the Apple IIe by picking up video blanking signals from an IO chip (UE5), the routine can be converted for the IIGS environment with these two techniques.

Published Date: Feb 18, 2012

SMB: AFE Window Shows Only 8 Entries

Since updating our SMB file server with 0S/2 LAN Server software v1.2 we've had a problem with Apple's SMB File Transfer (v1.0). With SMB File Transfer software we can log onto the server, display and transfer files; however, only the first eight entries (files or folders) for a particular directory are displayed.

This article has been archived and is no longer updated by Apple.
What you have described is a known limitation of using SMB File Transfer with 0S/2 LAN Server versions 1.2 or later. Alternatives include using third party products on the Macintosh such as MacLAN Connect from Miramar to access the 0S/2 LAN Server. Otherwise, at this time you will be required to limit directories to no more than 8 items.

For more information on MacLAN Connect, go to the Tech Info Library and search under "Miramar".

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ImageWriter Emulator: Requires EOF Character

We are having difficulty printing to a LaserWriter using an Apple IIGS and the ImageWriter emulator.

The school system for which I work is using DB Master Professional from Stone Edge Technologies and is trying to print out reports to an Apple LaserWriter using the ImageWriter Emulator. My original problem was that I could get one copy to print out, but when I tried printing again, all I would get was blank paper.

I think the problem may be is with the EOF character. Does the LaserWriter require and EOF character? If so, does the ImageWriter Emulator supply the EOF character, or is that the responsibility of the software package?

This article has been archived and is no longer updated by Apple.
The LaserWriter requires an EOF character (in this case Form Feed, ASCII 12). The ImageWriter Emulator does not supply this character; it must be supplied by the application doing the printing. Stone Edge should be able to help you configure the software to do this.

Published Date: Feb 18, 2012

MacPAD: Changing Default Parameters

I need to change the MacPAD parameter 3: "Data Forwarding Character" to "after each character" but the software doesn't offer a menu for this. I'm assuming the defaults are stored somewhere in the resources of MacPAD. I need to know where and how these PAD parameters are stored in the resources, so I can change the default parameters.
This article has been archived and is no longer updated by Apple.
Because of the way the parameters like "Send data on every alpha-numeric character" are stored in MacPAD, they cannot be modified easily with ResEdit. Furthermore, as soon as a connection is established, the other side might use X.29 to modify the parameter anyway.

Macintosh Communications ToolBox applications, like MacTerminal 3.0, can save Settings or MacPAD parameters when you choose "Save Changes". Looking at the "Comm Toolbox Reference" manual, config and oldConfig point to the MacPAD private data block, which is called automatically when you create a connection record (CMNew automatically makes two calls to CMDefault to fill in confg and oldConfig). Your program needs to store the contents of config to save the state of the connection tool.

The above assumes you are using MacPAD at all. Perhaps the program writes directly to the X.25 Interface Library? If so, your program then must assume more responsibility in setting up and tearing down the call. Lastly, the CCITT X.28 allows for only certain PAD profiles and to impose other profiles that may violate the specification.

Published Date: Feb 18, 2012

MacX: Repainting Rooted and Rootless Windows

Does our Apple X11 server (MacX) store the window image locally, so the window can be repainted locally if it is clipped, or does the host have to send down the image to repaint the screen?

This article has been archived and is no longer updated by Apple.
There are three possible scenarios involved in this question, depending on the window types you have specified.

If you have rootless windows (in other words, each X-client application is running in a separate Macintosh window), then each window's image is stored locally in an offscreen bitmap. This prevents the necessity of having the client application redraw the information.

The next two scenarios involve rooted windows, which are two different issues.

The first issue is what happens to the entire rooted window when it is forced to update itself. In this case, the currently-displayed rooted window's image is stored in an offscreen bitmap, and the updates are done locally and not by the client applications. This is consistent with the method used by the rootless windows as mentioned above and is necessary, because X client applications are typically not prepared to deal with changes to the root window itself.

The second issue is involved with multiple X-client windows within the single Macintosh root window. In the situation where you have overlapping X windows within the rooted window, and you are switching between the windows, the client applications are responsible for updating the clipped regions just as they should be.

Perhaps the best way to think of this is that the images contained within Macintosh-style windows are stored locally.

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Applesoft: VTAB notes

VTAB statements move the cursor to a specific vertical position ignoring the current text window.

This article has been archived and is no longer updated by Apple.

A VTAB to a line above the text window starts writing as if the window were the whole screen until it scrolls into the window where it stays. This prevents the information above the window from scrolling. A VTAB below the window causes writing only on the line where the cursor is located, allowing normal scrolling within the window from carriage returns.

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LaserWriter: PostScript Command For DTR Protocol

This article has been archived and is no longer updated by Apple.

To interface a LaserWriter with an IBM compatible, WordPerfect 4.2, which now claims support for the LaserWriter, furnishes a segment of PostSript code with the file name INITWRT.PS. This file, according to their instructions, is to be sent to the printer via the serial port to change the EEROM so that the LaserWriter will thereafter support a hardware protocol, specifically DTR.

Leaving out the comments and password checking, the essential PostScript code that is sent to the LaserWriter is

25 9600 7 SETSCCBATCH

The channel and baud numbers are default, but the LaserWriter Technical manual mentions only integers 0 through 3 for the parity position and mentions nothing about 7.

The code would have no effect on the AppleTalk Network. This code makes changes strictly in the LaserWriter and then only where specified by the code (batch or interactive). This code does not affect the "SPECIAL" mode. SCCBATCH is only for the "9600" or "1200" switch positions in Diablo emulation mode for using PostScript with the printer. The "SPECIAL" mode is controlled by SCCINTERACTIVE, and the line

25 9600 7 SETSCCINTERACTIVE.

could control the Diablo 630 mode functions under 9600 and DTR protocol.

The only problem is that unless the user has a LaserWriter Plus or a LaserWriter with 2.0 (or later) ROMs in it, this "7" command is useless. Since the LaserWriter only supports Xon/Xoff flow control, any command sent to set up DTR handshaking will not function, and there may actually be some strange actions from the printer if it is attempted. If they don't have 2.0 or later ROMs in their LaserWriter, do not use this code.

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Macintosh Classic: Boot ROM Option Is Not a Supported Feature

I'm testing some features of the Macintosh Classic; in particular, the Boot ROM option (Command-Option-X-O). It's really fantastic, but we (outside the U.S.) have a problem with the International Resources such as keyboard resources. When booting from ROM, you are automatically in QWERTY mode. It's "normal," but what can be done for people who are using AZERTY or something other than a QWERTY keyboard?

This article has been archived and is no longer updated by Apple.
The Boot ROM option isn't a supported feature in either domestic or international versions of the Macintosh Classic. The code was part of an experiment in future directions and wasn't taken out before the ROMs were finalized.

Because the software in use was not fully tested with the Macintosh Classic, we don't recommend its use in any way.

Published Date: Feb 18, 2012

Macintosh RS-422-to-RS-232-C Adapter

I am trying to attach some Macintosh computers to a AT&T ISN network. The ISN requires an RJ-45 connector. We are having two problems.

1) According to the article "Macintosh Mini-8-to-RJ-45 Connection", "To do this, you need some kind of adapter." Is there a way to build a RS-422-RJ-45 cable without an RS-232 adapter in the middle?

2) Is there a consistent difference between computers in the Macintosh II family and Macintosh SE computers in terms of distance tolerance for RS-422? We get a Macintosh SE to work in situations where a Macintosh IIci will not. My thought was similar to that in another article on serial port cable length specifications. That is, we were a little over the distance spec and the Macintosh SE seems to be able to handle that. Word on the Internet is that people have to make different cables for the Macintosh II than for the Macintosh SE in these situations.

This article has been archived and is no longer updated by Apple.

Because the built-in Macintosh serial ports are based on RS-422, which uses differential signals, a simple rule should be followed to assure compatibility with RS-232-C devices. Ground the RD+ line and leave the TD+ line disconnected. This converts the port to RS-423, which is compatible with almost all RS-232-C equipment.

The adapter spoken of in the article you referenced merely adapts the different connector types: RJ-45 to DB-25. The grounding of RD+ was done by the Mini-8 to DB-25 adapter. The following diagram shows the proper cable configuration for connecting a Macintosh serial port to an RS-232 device:

```
 Macintosh Mini-8 Port                          25 Pin RS-232 DTE Device
 Signal Name    Signal  Pin                     Pin* Signal  Signal Name
 -------------  ------  ---                     ---  ------  -------------
 Handshake Out  HSKo    1  ---- if needed --->   6   DSR     Data Set Ready
 Handshake In   HSKi    2  <--- if needed ----  20   DTR     Data Term Ready
 Transmit -     TD-     3  ------------------>   3   RD      Receive
 Receive -      RD-     5  <------------------   2   TD      Transmit
 Transmit +     TD+     6  Not connected
 Signal Ground  SG      4  -----|-------------   7   SG      Signal Ground
 Receive +      RD+     8  -----|
```

*Note that the pin assignments shown may be wrong if the RS-232 device is wired as DCE instead of DTE. Since we don't know how the RJ-45 connectors are wired, we can't provide pin assignments for them. However, the signal assignments will be the same, so you can translate pin numbers from the signal names.

Although both Macintosh ports usually work with RS-232-C equipment without the considerations mentioned above, their maximum cable lengths and resistance to noise and interference are reduced. The approximate 50-foot length limitation may be reduced drastically and reliability can be impaired.

We have noticed that the Macintosh SE and earlier models are slightly more tolerant of cable design. While the Macintosh II family serial ports are capable of the 50-foot maximum cable length RS-232-C specification, this requires the cable to be designed as shown above. If RD+ is not grounded, the maximum length will be reduced. The Internet community discussions you

mention are probably based on a partial understanding of these factors.

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TA45170_System_Localized_for_KanjiTalk_and_ChineseTalk_(TIL06704).pdf

System 6.0.7: Localized for KanjiTalk and ChineseTalk

When will KanjiTalk and ChineseTalk for the Macintosh Classic, LC, and IIsi be available?

This article has been archived and is no longer updated by Apple.
System Software 6.0.7 localized for Chinese-Simplified and KanjiTalk have been released. Chinese-Traditional was released for 6.0.6 software and will not be localized in 6.0.7 (note that many countries used 6.0.6 software with patches to work with the new models until 6.0.7 was localized).

You may wish to check on the availability of these localized versions of System Software with your local distribution center.

Published Date: Feb 18, 2012

A/UX: MacX and Native X Performance (9/94)

I need to optimize an A/UX system for running X Window System applications in the following environments:

1) Running Native X Window System under A/UX on a Macintosh IIfx,
running with 16MB or 32MB of physical RAM.

2) Running MacX in the Finder under A/UX on Macintosh IIfx,
running with 16MB or 32MB of physical RAM.

The applications are X based, using pull-down menus extensively. Of the two, running under MacX is going to be weighed most heavily. I will be using the MacX 1.2 that comes with A/UX.

Does running the same application in a rooted color window versus rootless color window affect performance one way or the other?

I've used the following method to optimize A/UX for Native X Window System under 8MB of memory:

For systems with 8MB, bring A/UX up as single-user, then run these commands:

```
# kconfig -n /unix
NBUF=2500
NINODE=600
NFILE=400
<Control-D>
# sync
# sync
# sync
# reboot
```

When doing this though, MacX performance under A/UX on the same machine crawls slower than before.

This article has been archived and is no longer updated by Apple.
Performance should not be affected when selecting a rootless color window or a rooted color window when running the same X client application.

The above kernel parameters, especially NBUF=2500, seems to be too high for an A/UX 8MB system. The "NBUF=2500" itself takes up 5MB (2500 x 2K) of existing memory. When you add the other kernel parameters, there is not much available physical memory left for applications. This will cause more paging activity and, in turn, degrade the performance.

If you have 16MB or 32MB of physical memory on a Macintosh IIfx running A/UX 3.0, the same kernel parameters configuration should be feasible to run either X11 Window System or MacX under A/UX.

The system performance will really depend on how many X client applications and other applications, including Macintosh applications and UNIX processes, are running at the same time in A/UX and the underlying network environment in which A/UX resides. The following kernel parameters should be adjusted accordingly to fit your running environment:

NBUF If NBUF=0, it allocates about 10% of free memory for disk block I/O buffers.

NFILE is the size for system file-table pool (600 seems fair enough).
NINODE is the size for system inode-table pool (400 seems fair enough).

NPROC is the maximum number of processes allowed in the system.
MAXUP is the maximum number of processes per user allowed in the system.
NMBUFS is the maximum number of buffers allocated for networking.

Each NMBUFS buffer requires 256 bytes. The more network daemons running, the more mbufs are needed for memory allocation.
Since both MacX and X11 must be run at least in an A/UX B-Net kernel, the NMBUFS must be set fair enough for the network buffering. By default, 500 mbufs are allocated. For an A/UX with NFS and/or YP A/UX kernel, the NMBUFS needs to be increased significantly, say 1000 or 1500.

The "netstat -m" can be used to display the number of mbufs currently in use.

Also, the "pstat -m" command can be used to display information about the current memory allocations, which include the number of I/O buffers (NBUF) allocated, the number of inodes (NINDOE), and the file (NFILE) currently active.

Article Change History:
19 Sep 1994 - Reviewed for technical accuracy.
31 Aug 1992 - Reviewed for technical accuracy.

Support Information Services
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A/UX 2.0: "fcnvt" May Create Bad MacBinary Header (8/94)

The 'fcnvt' tool supplied with A/UX 2.0 sometimes creates a MacBinary file with a bad header. Attempts to download this file to a program that receives MacBinaries (like Microphone) fails, in that it does not recognize the file as a MacBinary file. This seems to occur usually when converting a BinHex file (like one downloaded off of USENET) to MacBinary with the following command:

fcnvt -i hex -m filename

This article has been archived and is no longer updated by Apple.

Look at the MacBinary file that is created, and you'll notice that byte $4A is non-zero, which is incorrect, according to the MacBinary Standard. Also, byte $49, which should contain some of the Finder flags, usually seems to contain incorrect information. Setting byte $4A to zero seems to fix the problem--the file will then successfully download. Note that when creating a MacBinary from an AppleSingle file, these two bytes seem to be okay and the file downloads okay.

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EtherPort Series Cards Now Supported by Dayna

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Where can I get an upgraded driver for A/UX 2.0 for my EtherPort Series card?

This article has been archived and is no longer updated by Apple.
Dayna Communications has licensed some of the Ethernet technology from Novell/Kinetics/Excelan. Specifically, the EtherPort Series of cards are now supported by Dayna. If you already have the card and want to upgrade to A/UX 2.0, Dayna supplies the driver.

Published Date: Feb 18, 2012

Macintosh II: Video Overview (3 of 3) (2/95)

This is the last part of a three-part article describing how the Macintosh II produces video.

This article has been archived and is no longer updated by Apple.

Color Burst

A reference signal by which color signal values can be determined. The phase of a color signal in relation to the color burst signal indicates hue. This is located on the trailing edge of the horizontal video signal and is known as a back porch.

Chrominance

The 3.58MHz subcarrier that contains the signal for color value of each pixel:

Red signal: 90 degrees out of phase
Green signal: 0 degrees out of phase
Blue signal: 180 degrees out of phase

The red, green, and blue signals (RGB) can vary in hue depending on their phase with the sync signal. A variation in signal magnitude increases or decreases the intensity of the color.

Macintosh II Video Modes Revisited
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* RGB RS343 compatible is an RGB video signal with separate TTL sync. It is timed by a 30.24 MHz oscillator. 1 volt signal. 75 ohm terminated. An analog standard level sync is available on green.

* RGB RS170 interlaced is an RGB video signal with sync. It is timed by a 12.2727 MHz oscillator. Its horizontal signals are alternately spaced in relation to the vertical blanking period. The electron beam moves down from the left corner to the right and from the bottom right corner to the top, to begin again in the center or the corner of the screen. In this way, there are twice the of number rows than are being displayed in each frame. Each row follows a slightly slanted path. One begins at the top left corner and slants downward, while the other begins from the top and center. These interlaced lines provide a greater number of images to the eye, to compensate for a slow refresh time.

In the RS170 mode, the sync signal has been combined with the green signal. A television or similar monitor could take advantage of this signal in black and white only.

Picture Quality

Bandwidth is the signal width. It describes how much information is being delivered. The higher the bandwidth, the more video information that can be delivered and displayed by a monitor.

Pixel size is the size of the phosphor dots on the screen. It determines the precision in which the video information can be duplicated.

Dot pitch is pixel size.

Scan rate is the time period in which the electron gun moves across one line of the screen or repeats one entire screen. These values are known as the horizontal and vertical sync periods, respectively.

Grill pitch is the width of the lines in the color mask used to block the color electron beams. It is usually measured at the phosphor positions, and is synonymous with dot pitch.

Pin cushion is a display effect of warping or curved display screens.

Convergence is beam position accuracy. Color systems require exact accuracy of beams, both for position and speed, to properly produce the desired colors from their phosphors.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy, revised formatting.

Support Information Services
Published Date: Feb 18, 2012

Applesoft BASIC: Moving a Listing to a Macintosh and Back

I would like to use a Macintosh word processor to edit Applesoft BASIC files from the Apple II environment. Is there a translator to take "tokenized" Applesoft BASIC files and have them appear on the Macintosh? The tokens (PRINT, DISPLAY...) don't seem to get translated when files are moved to the Macintosh. The original version of Passport (Apple File Exchange) had that capability.

This article has been archived and is no longer updated by Apple.

We don't know of an AFE Translator for Applesoft BASIC files to Macintosh text files. You can get around this limitation by "printing" the Applesoft program files to a disk file before the AFE conversion. After editing on the Macintosh, transfer the files back to the Apple II. Then, EXEC each file to make it an Applesoft file. To do this, add the following code to the existing Applesoft program:

```
1 D$ = CHR$(4)
2 PRINT D$; "OPEN PGM.LIST"
3 PRINT D$; "LIST"
4 GOTO 32766

add the existing Applesoft program here

32766 PRINT D$; "CLOSE PGM.LIST"
```

The entire Applesoft program will be saved in a text filed called "PGM.LIST" and can be converted to a Macintosh format for editing.

After editing is complete, transfer the file back to Apple II text format using the file name "EDITED.FILE". Use the EXEC command to turn the text listing into an Applesoft program in memory.

```
] EXEC EDITED.FILE
```

Be sure to SAVE the program to disk or the EXEC step will have to be repeated each time the user wants to run the program.

Published Date: Feb 18, 2012

Macros: Alternatives to MacroMaker

Are there other Macintosh programs, besides MacroMaker, for creating macros?

This article has been archived and is no longer updated by Apple.
Affinity's Tempo II and CE Software's QuicKeys 2 both offer extensive macro capabilities. Some people use them in combination.
For contact information, search the Technical Info library under "Affinity Microsystems" and "CE Software."

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MacTCP: Using DDP/IP Gateway to Get Dynamic IP Address

In MacTCP, you can choose to set the addresses dynamically. If you do this, when does the server let go of that address? My problem is that every node that logs on never lets go of an address -- so in a short time, all addresses are taken although only a few people are logged on.
This article has been archived and is no longer updated by Apple.
With MacTCP set to do dynamic addressing, the user fills in the Network portion of the IP address. A Macintosh computer configured in this way dynamically assigns itself an IP node address based on this network address, and tests to see if this address is in use. If the address is not being used, MacTCP uses it, and does not release it until the computer is shut down.

MacTCP also supports server-based addressing through either Ethernet (bootp), or AppleTalk (DDP/IP). An unsuspecting user might configure both dynamic addressing, and bootp or DDP/IP addressing with the result that the Macintosh computers will assign themselves node IDs in the network range entered in MacTCP, but never consult the bootp or DDP/IP server.

The correct setting in MacTCP for server-based addressing is server, not dynamic. Server addressing through AppleTalk is either EtherTalk, LocalTalk, or Apple Remote Access; while dynamic addressing means independent arbitration.
Published Date: Feb 18, 2012

AppleTalk: Worldwide Network Issues

I have three questions involving AppleTalk on a worldwide network at a top investment bank:

1) Are file accesses across the net controlled by AppleShare, or is something else controlling the file access?

2) When the packet-switched network re-routes lines, we can experience delays of 5 minutes or more. The connections re-route, but usually we seem to lose our network file connection. What happens to an AppleShare request when its response is delayed for that long? We saw (using a datascope on the line) that if the request for servers timed out, the response was ignored. Does a similar situation take place in the case of a read?

3) Does the modification to the GNRL resource affect only the initial call? If the server becomes available quickly, does that shorten the time-out that AppleShare will use for all server access while the server is mounted?

This article has been archived and is no longer updated by Apple.
1) AppleShare (AFP calls) controls all access to the remote files, including the handling any time-out values associated with the function of accessing a file. By " controlled", we assume you mean any function that pertains to successfully opening, reading, or writing to a file stored on an AFP server. There are many AppleTalk protocol functions associated with AFP transactions that are not directly considered a controlling aspect of manipulating a remote file. These functions do not control access to the individual files so much as they control access to the media being using to transport the AFP calls.

If you are using standard file system calls and if the file you're trying to access is located on an AFP server, all local file system calls such as PBOpen, PBRead, FSRead, etc. are filtered out and transformed into equivalent AFP calls.

2) The 5-minute delay is going to present a real problem to AppleShare, or to be more precise to the ASP protocol. The session timer for an AppleShare file server connection is set to 2 minutes. Once this timer expires, the session will terminate, and you will lose your server connection. The retry count for the read request is set to infinite, so a read request never really times out.

The session timer is restarted each time a tickle packet is received by either the workstation or the server. Tickle packets are sent out every 60 seconds by both the server and the workstation as part of the ASP protocol, to allow a way of detecting that the other end of the connection has gone down. There is no easy way to reset this timer value.

3) If you modify the GNRL resource in the AppleShare chooser document, it will affect every NBP lookup that is done from the Chooser. The Chooser uses these values to determine the NBP lookup interval and retry values for the current NBP transaction. The default of 0705 tells the chooser to send 5 NBP lookup requests at an interval of 7/8 second. This process is repeated in an infinite loop until the user closes the Chooser.

Chooser Event Flow Example:

User opens chooser and selects the AppleShare CDEV
GNRL resource -4096 loaded = (5002)
NBP look up mechanism started

NBP Loop:
Get NBP ID for this transaction
(Note: All NBP request and replies for this loop will use
this ID)

Send first look up (NBP ID = "New")
Collect and display responses from the NBP look up ID "New"
Wait 10.6 seconds

Send second look up (NBP ID still = "New")
Collect and display responses from the NBP look up ID "New"
Wait 10.6 seconds

Discard all buffers and data associated with NBP ID "New"
(Note: If a response is received for NBP lookup ID = "New"
after this point the reply data would be discarded and the
device would not be added to the list in the Chooser.)
Do some other misc. cleanup (approximate time, 1 second)

goto NBP Loop
End NBP Loop:

With the retry timer set to such a large value, the multiple retry count is really not necessary. On the other hand, it doesn't hurt anything either, and it effectively increases the time you'll wait for NBP replies to over 20 seconds for the current transaction. The idea behind the retry count is to send several lookup requests in quick succession (default is less than 1 second) in case there are devices which cannot respond, because they are busy or because the previous packet never reached them.

The reason that increasing the interval timer helps in the case of remote servers is directly tied to the way the NBP mechanism works. The chooser maintains only 1 NBP lookup request at a time, tracking all replies to that request by way of the NBP ID mechanism. Replies that are received that do not match the current request ID are discarded. The request ID is maintained only for the current NBP request; the interval and retry counters for this request can be tuned via the GNRL resource. In other words, if you set the retry counter to 10 and the interval timer to 50, the NBP ID would be maintained for 10 requests at an interval of 10.6 seconds. The GNRL resource is documented in "Inside Macintosh, Volume 4," page 216.

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System Software 6.0.7 Works With Mobius Accelerators

Does System Software 6.0.7 work with the Mobius accelerators?

This article has been archived and is no longer updated by Apple.
According to the Technical Support people at Mobius, yes, System Software 6.0.7 does work properly with their Mobius accelerators. For contact information, search the Technical Info library under "Mobius Technologies, Inc."

Published Date: Feb 18, 2012

Font Substitution Disabled with "Fractional Widths" On

My PostScript printer won't print using Font Substitution when printing from a Macintosh Plus. "Fractional Widths" are set to on, thus preventing Font Substitution from occurring. I need a way to turn off Fractional Widths without using some program like Microsoft Word. Our office uses MacWrite versions 4.5 and 5.0. We want to compose documents in Geneva and print with a PostScript font (Helvetica). Is there some INIT or small program that turns off Fractional Widths to allow Font Substitution? Alternatively, is there a good, readable, public-domain, bit-mapped Font that will substitute for the bit-mapped Helvetica? With it, can I create documents in this font and print them in Helvetica with Fractional Widths on?
This article has been archived and is no longer updated by Apple.
You raise a couple of issues we'll attempt to address below.

You mention a problem that your print job won't "print" when you use Font Substitution. During our experimentation, we encountered an intermittent bug with MacWrite. Text imported to it via the Clipboard (copy and paste) didn't always print, regardless of whether font substitution is on or off.

The print job would appear to download to the printer OK, but the job would flush without printing (blank paper comes out of the printer). This is a problem Claris is aware of, and they recommend saving the document to a text format from whatever application you are using, then opening the file from within MacWrite.

You state that when Fractional Widths is enabled, font substitution will not occur. This is a correct response. Font substitution is disabled in all cases where fractional pixel widths are enabled. The default for Fractional Widths is disabled. It is the domain of the application to enable it if desired.

We don't recall ever seeing a utility that will toggle SetFractEnable on and off, but such a program doesn't make a lot of sense to us, as each program needs to call SetFractEnable in the Macintosh ROM. One application's setting will have no effect on another program's setting.

We don't think substituting a bitmapped LaserWriter font will help here. Aside from the printing problem you report, one possible workaround is to select Helvetica as a screen font, so no font substitution will be required at all when printing. To this end, Claris made Helvetica the default font in MacWrite II. MacWrite has no provision for turning off fractional widths. However, MacWrite II does have this ability. Upgrading to MacWrite II may be another option.

Another alternative is to change the document's font to Helvetica prior to printing, perhaps using a program like QuicKeys to streamline the operation if desired.

Published Date: Feb 18, 2012

AppleShare: Product to Limit Concurrent Launches

I have a question about shared applications on an AppleShare server. I want the ability to restrict the number of concurrent launches of an application to the number licensed from the application's vendor. We know that AppleShare doesn't do this now, and the Macintosh OS doesn't necessarily support this function either.

OS/2 LAN Manager has this capability, and people are using this function to save money and reduce support costs by having only one copy of the application to update for all of its DOS users on the network.

Do you know of any third-party utilities that will restrict the number of concurrent launches to an application on a server? Granted, application vendors don't normally license their software this way. However, I could still purchase x number of copies of an application and then impose the limit of x concurrent launches of the application and still save money on the support costs and the reduce the total number of copies that would be needed.

This article has been archived and is no longer updated by Apple.
You are correct that AppleShare doesn't now limit the concurrent number of times an application is launched.

AppleShare Product Management brought to our attention a product described in the following article (by Eric J. Adams) from the March 13, 1990, issue of MacWEEK:

"Hanover, N.H.--A Dartmouth College math professor has developed a network-based software-management program that solves several problems associated with distribution and piracy prevention.

"The program, called KeyServer, is now in use at Dartmouth, and its developer, Dr. Denis Devlin, hopes to begin commercial marketing later this year.

"KeyServer's installation program lets administrators modify popular applications, based on the provisions of their site license, so they will run only after receiving a "launch enable" message over the network. To launch copies of modified programs from a local hard disk, each user must have a "network pass," which is installed as a Startup document (INIT) in the user's system folder.

"If the maximum number of users allowed by the site license is using the program simultaneously, KeyServer will not give access to a prospective user. Instead, it passes a message that "All licensed copies are currently in use." When the program is freed, KeyServer returns a pop-up message to the prospective user, indicating that a launch is possible.

"KeyServer also allows network administrators to monitor current software access and generates a usage log, which can be used to negotiate or renegotiate site licenses with vendors, Devlin said. Several large vendors have expressed interest in the program, he added.

"It allows us to make a wide variety of software available without having to put a lot of money down for a site license on a bet that the program will be used," said Larry Levine, director of user services for the more than 5,000 Macintoshes on-line at Dartmouth. "We can freely distribute copies of programs without giving away control of their use."

"KeyServer differs from other Macintosh software management programs

because "Only the command to launch comes over the network," Devlin said. "The programs reside on the user's hard disk, cutting down on network traffic tremendously."

"KeyServer also allows the administrator to turn access to a program on or off for any length of time or to shut off access to old versions of software. The program does not require a dedicated server.

"Devlin is currently beta testing KeyServer at industry sites and negotiating licensing agreements with vendors. Through his company, Sassafras, Devlin hopes to have shrink-wrapped versions ready by summer. Though pricing has not been set, Devlin said it will be tied to the number of nodes per network."

Published Date: Feb 18, 2012

DAL 1.2: Working with VAX Rdb/VMS Run-Time Version

Will DAL (Data Access Language) 1.2 work with a run-time version of VAX Rdb/VMS? Or does it require the full development version?

This article has been archived and is no longer updated by Apple.

Data Access Language 1.2 should work with either version of VAX Rdb/VMS, whether run-time or full-development version. The full-development version of VAX Rdb/VMS lets you design and maintain Rdb databases while the run-time version lets end-users use (query, update) Rdb databases only.

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Pascal: Pascal Turnkey

This article has been archived and is no longer updated by Apple.
Create a Pascal Turnkey system by transferring the desired program code to the boot diskette and changing its name to System.Startup. When no file by that name is present on the boot volume, the system defaults to the command line.

To execute the System.Startup code from the command line, type X (for execute), and then

SYSTEM.STARTUP.

The final period prevents the operating system from appending the .CODE suffix to the file name before trying to execute it.
Published Date: Feb 18, 2012

Data Access Language: Union Command Not Supported

I have found a problem with the DAL "Union" command. A query returns a syntax error, requesting that I enclose the "Union" keyword in semicolons. When I do this, I get another error that the procedure "Union" is not defined. Any suggestions?

This article has been archived and is no longer updated by Apple.
As of release 1.3.5 of the DAL servers the SQL "Union" statement is supported for all DBMSes which allow it.

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TA45188_AUX_Commando_Problem_(TIL06731).pdf

A/UX 2.0: Commando Problem

I am running A/UX 2.0 on a Macintosh IIcx. If I invoke Commando using Command-K on a period, the command shell crashes and disappears.

This article has been archived and is no longer updated by Apple.

This problem has been resolved in A/UX 3.0 and later.

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A/UX: Problem Printing to ImageWriter from Mac OS (9/94)

I am running A/UX on a Macintosh IIcx. If I switch from A/UX to the Macintosh OS and try to print from a Macintosh application to the ImageWriter (connected via the printer port) the system won't print.

This article has been archived and is no longer updated by Apple.
If the system prints in A/UX but not in Macintosh OS, make sure that the direct, serial-printer driver for the ImageWriter is installed and configured properly.

If the printer does not print in A/UX either, we know of a problem when the printer is directly connected to the PRINTER port under either mac32 or mac24 environment (print from a Macintosh application). However, there is no problem on the direct connect MODEM port.

Article Change History:
08 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

AppleShare PC: How to Print Color

Is it possible to print to a color printer through AppleShare PC? I am running a PS/2 with AppleShare PC 2.01, Windows 3.0, and Paintbrush from Windows connected to an NEC Colormate printer. If I configure the Paintbrush from Windows to print black and white, I can get a printout, but it doesn't work in color mode.

This article has been archived and is no longer updated by Apple.
As you know, the two types of printing that AppleShare PC supports are PostScript and Epson LQ2500 emulation. The PostScript mode assumes your application knows how to communicate correctly using PostScript and just passes the data to the printer without modification. This is called pass-through mode.

Epson LQ2500 emulation works a bit differently, in that AppleShare PC must translate the plain text and Epson printer control codes into text and codes for the printer being used; PostScript LaserWriters and ImageWriters are supported.

In the case of LaserWriter Epson emulation, an Epson emulation dictionary is downloaded at the start of each job. Once this is done, the print data is sent to the emulation dictionary for interpretation and printing. Because ImageWriters have essentially no processing abilities, they require AppleShare PC to do all the translation for them. Unfortunately, no color emulation features are provided in either mode.

The only way we can think of to get color printing from AppleShare PC would be to use a color PostScript printer with software that supported it. Since AppleShare PC just passes the PostScript print data to the printer, it will let any PostScript data, color commands included, be sent.

Published Date: Feb 18, 2012

VAX/VMS: How to Set Up Dial-Up Port for DAL

What is the configuration on MicroVAX 3100 for setting up remote login through a modem?

I need dial into the VAX at my office from a customer site to demo Data Access Language. I have tried to set up terminal TTA2 as remote terminal without success.

This article has been archived and is no longer updated by Apple.
The procedure to set up a dial-up port is the same on VAX/VMS operating system, independent of what processor you have. The difference is the name of the terminal port you are going to use. For the process to work, the terminal port must support modem control.

On the MicroVAX 3100, terminal port TTA2 supports modem control. The following command should work:

$ SET TERMINAL/PERMANENT/DEVICE=VT100/MODEM/HANGUP/SPEED=2400 TTA2:

You may substitute the device name and the speed to whatever values you are using.

Also, make sure that the cable to the modem has the correct pins wired to support modem signals. One such modem cable is the Digital BC22E-xx where xx is the cable length in feet. It is a round, 16-wire, fully shielded, EIA-232-C/CCITT V.28, male-to-female molded connectors cable for connection of asynchronous modems.

If after trying this solution, it still does not work, you might want to have Digital Field Service check to see if your terminal port is bad.

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IBM 8209/AppleTalk: Support Alert Information

IBM has a relatively new product, model 8209, that is a media access control (MAC) sub-layer bridge. Most likely encountered in a Token-Ring to Token-Ring bridging configuration, it also can be configured for Token Ring to Ethernet. Do you have any details?

This article has been archived and is no longer updated by Apple.
We recently had the opportunity of observing/troubleshooting such an environment involving an 8209, an IBM mainframe on Token Ring supporting TCP/IP, Macintoshes running both Phase 1 and Phase 2 AppleTalk on Ethernet, Macintoshes on Token Ring, and a variety of TCP/IP hosts on Ethernet. This leads to several interesting discoveries.

IBM 8209 and AppleTalk

Ideally, with the 8209 providing Token-Ring-to-Ethernet bridging services, Macintoshes on both transports would see the bridged network as a single logical network. Unfortunately, for a number of reasons, this is not true.

The first problem stems from the 8209's generosity in forwarding all datalink (MAC) broadcasts and multicasts. If you are running ANY Phase 1 EtherTalk, adding an 8209 into the net automatically generates Phase 1 TokenTalk. This is useless traffic, because the TokenTalk drivers expect Phase 2 protocols. As far as we can tell, it is not dangerous traffic--it is safely ignored by all nodes. But it does take up bandwidth, and if the Phase 1 Ethernet is large and has many routers, there can be significant broadcast traffic forwarded onto the Token Ring.

The answer here would be to filter Phase 1 EtherTalk at the 8209.

Token Ring and Ethernet do not agree on the order of bits. So, the 8209 flips the bits of the (MAC) datalink-level addresses when it forwards the packets. Normally, this affects only the destination and source addresses in the packet header. However, address resolution protocols like TCP/IP ARP and AppleTalk's AARP also carry MAC-level addresses as a part of their data portion of the packet.

The 8209 is specially programmed to look for TCP's ARP and to go down inside the data, flipping the bits of the embedded MAC address. Later, when a Token Ring host wants to talk with an Ethernet node, it uses the flipped version of the MAC address, which, when encountered by the 8209, is flipped back and thus delivered correctly.

The 8209 is NOT specially programmed to assist AARP. Thus, the AARP address is stored in the Token Ring AppleTalk node in its "unflipped" form. Then, should it be used later to address a packet, the 8209 will flip the bits when forwarding back to Ethernet. Now, the packet is incorrectly addressed, and cannot be delivered.

The long and short of this is that when using an IBM 8209 to bridge Token Ring and Ethernet, AppleTalk nodes on the ring and Ethernet cannot communicate, because they can never AARP correctly.

Curiously, if the Token Ring is used only as a backbone, and a Macintosh on Ethernet wants to talk to a Macintosh on another Ethernet, with both Ethernets attached by 8209s, this connection will work. In fact, as long as you go through an even number (2,4,6,8...) of 8209 bridges, connection is possible. When there is an odd number, connection will fail. Note that this makes some extremely bizarre network configurations possible, like a system of alternating Token Rings and Ethernets connected by 8209s, where:

* All the Ethernets would have AppleTalk connectivity.

* All the Token Rings would have AppleTalk connectivity.

* The rings and Enets would have AppleTalk connectivity between them.

You may remember that under AppleTalk Phase 2, Apple uses multicast addressing for all protocol "overhead" packets, like RTMPs, NBPs, and ZIPs. You may also recall that Apple has a range of 254 addresses used in Ethernet and 19 (different) addresses in Token Ring available for multicasts.

The fact that we use different ranges of addresses (in addition to the bit flipping described above) ensures that AppleTalk nodes cannot interoperate across an 8209 bridging Ethernet and Token Ring. Just look at the boot process.

A node begins by AARP'ing for a protocol address (multicast). This AARP is forwarded by the 8209, but because the bits are flipped, a response to the AARP probe would be lost on the return trip. So, the node assumes that its protocol address is unique, and then proceeds to check for a router by multicasting (protocol broadcasting) a ZIP GetNetInfo request. If there is an AppleTalk router present on my cable (whether we are on Ethernet or Token Ring), we are okay. The router hears my request, provides the needed information about the cable, and I re-AARP if necessary.

However, if the router is on the other side of the 8209, the multicast is forwarded. Even if the bit-flipping wasn't a problem (say, if IBM were to change the 8209 software to support AARP), it will still not make connection with the router, because a TokenTalk router expects multicast addresses in a different range than a EtherTalk node can send, and vice versa.

The only answer is to use an AppleTalk router, which manages protocol and zone multicast addresses for each data link appropriately.

In short, AppleTalk and 8209s don't mix. Don't use bridging strategies between AppleTalk Token Ring and Ethernet networks.

There are additional problems with 8209 and AppleTalk described in a separate article "IBM 8209/MacTCP: Support Alert Information."

Published Date: Feb 18, 2012

TA45193_Pascal_External_references_(TIL00674).pdf

Pascal: External references

This article has been archived and is no longer updated by Apple.
Apple Pascal may only "externally" link assembly routines. However, Pascal procedures compiled seperately can be placed into a library unit and accessed with the USES command.

Assembly code may also be placed into library units, provided it's called from the Pascal level. To do so: assemble the code file(s) and create a Pascal unit which refers to each .PROC and .FUNC of the code as EXTERNAL. To create an intrinsic unit containing assembly code, link the external references to the compiled P-code unit structure, then install this completed unit in the System.library file on your boot disk.

Since the regular units which reference assembly code are not linked prior to installing the library file, install the unlinked Pascal units in the System.library or in your own library file to keep these assembly code file(s) on hand. Link the assembly routines into the final code file when you link the host program with this regular unit.
Published Date: Feb 18, 2012

Macintosh IIci, IIsi, LC, and LC II: Video Pinouts

Article Change History

02/03/93 - CORRECTED
* The IIci and IIsi do support the Apple Portrait Display with built-in video.
02/03/93 - UPDATED
* Added information from article titled "Macintosh IIsi, IIci, LC: Monitor Compatibility"
09/15/92 - REVISED
* To clarify what monitors the IIci & IIsi video port supports.

What are the differences between the Macintosh IIci on-board video pinouts and signals versus the Macintosh IIsi, Macintosh LC, and Macintosh LC II?
What pin can I "sense" to see a 13-inch RGB monitor connected when there is none connected (that is, testing a projector connected but with no monitor attached)?

This article has been archived and is no longer updated by Apple.

Pinouts

The Macintosh IIci, Macintosh IIsi, Macintosh LC, and Macintosh LC II have the same pinouts for their built-in video ports:

Pin	Function
1	Red Video GND
2	Red Video
3	CSynch
4	Mon. ID 1
5	Green Video
6	Green Video GND
7	Mon. ID 2
8	N.C.
9	Blue Video
10	Mon. ID 3
11	CSynch and VSynch GND
12	VSynch
13	Blue Video GND
14	HSynch GND
15	HSynch
Shell	Shield GND

Sense Codes

Sense Pins 10 7 4	Display	Hor x Vert Pixels	Band- width (MHz)	Refresh (Hz)	Vert Horiz Scan (KHz)
0 0 1	Apple Portrait Display	640 x 870	57.2832	75	68.9
0 1 1	Apple Two-Page Mono Monitor	1152 x 870	100	75	68.7
0 0 0	Macintosh 21" Color Display	1152 x 870	100	75	68.7
1 1 0	12" Apple Monochrome Monitor	640 x 480	30.24	66.7	35.0
1 1 0	13" AppleColor RGB Monitor	640 x 480	30.24	66.7	35.0
0 1 0	12" AppleColor RGB Monitor	512 x 384	15.6672	60.15	24.48
1 0 0	Interlaced display	-	12.2727	-	15.7

0 - Grounded 1 - Not Connected

Extended Sense Codes

Hor x Vert Band- Vert Horiz
Sense Pins Pixels width Refresh Scan
4-10 7 Display (MHz) (Hz) (KHz)
--- --- --- --- --- ---
0 1 Macintosh 16" Color Display 832 x 624 57.63 75 49.7

0 - Tied Together 1 - Not Connected

Configurations

Macintosh Macintosh Macintosh
LC/LC II IIsi IIci

12" RGB Display X X X
12" Monochrome X X X
High-Resolution RGB X X X
Portrait Display - X X
Two-Page Display - * *
16" Color Display - * *
21" Color Display - * *

(X indicates compatibility, * indicates the need for a NuBus interface)

In the case of the Macintosh IIsi, you need to install a NuBus Adapter Card first.

VGA Compatibility

To connect a VGA monitor to the Macintosh LC or LC II video port, a cable with the following configuration is required. Third-party cable vendors should have these cables available for purchase.

Macintosh LC/LC II
DB-15 VGA Connector
--- ---

2 --- Red Video --- 1
1 --- Red Ground --- 6
9 --- Blue Video --- 3
13 --- Blue Ground --- 8
5 --- Green Video --- 2
6 --- Green Ground --- 7
15 --- Hsync --- 13
12 --- Vsync --- 14
14 --- Sync Ground --- 10
10 ---|
7 ---|Connect 7 and 10 so the sense pin ID will equal VGA

A few issues to remember when connecting VGA monitors to the Macintosh LC or LC II:

* VGA monitors may have variances when purchased from different VGA monitor vendors. It is suggested that a particular monitor be tested for

compatibility with the Macintosh LC or LC II before making a purchase decision.

* VGA monitors from different vendors have different image quality specifications. There may be significant differences between the Apple logo monitors and the VGA monitors. A side-by-side review of the monitors should be done before deciding which monitor to buy.

* When a VGA monitor is connected as described above, the resolution is 640 x 480. The bit-depth supported depends on the amount of VRAM installed. If the Macintosh LC 256K VRAM SIMM is installed, 4-bit color (16 colors) is supported. With the Macintosh LC 512K VRAM SIMM installed, 8-bit color (256 colors) is supported.

Published Date: Feb 18, 2012

AppleTalk Phase 2: Upgrade Utility

What is the AppleTalk Phase 2 Upgrade Utility? What does it do?

This article has been archived and is no longer updated by Apple.
The AppleTalk Phase 2 Upgrade Utility makes it possible for AppleTalk Phase 1 routers to operate concurrently in an Internet with the AppleTalk Internet Router. The AppleTalk Phase 2 Upgrade Utility is an INIT that is installed in the System Folder of the Macintosh running the AppleTalk Internet Router software.

Why the AppleTalk Phase 2 Upgrade Utility Is Necessary

The AppleTalk Internet Router sends out AppleTalk Phase 2-style Routing Table Maintenance Protocol (RTMP), Name Binding Protocol (NBP), and Zone Information Protocol (ZIP) packets. AppleTalk Phase 1 routers cannot interpret the data within these packets.

With the AppleTalk Phase 2 Upgrade Utility installed, any RTMP, NBP, or ZIP packet about to be sent out over a cable with an AppleTalk Phase 1 router on it, will be sent as an AppleTalk Phase 2-style packet and will be converted by the AppleTalk Phase 2 Upgrade Utility and sent out as an AppleTalk Phase 1-style packet as well.

Note: Only RTMP, NBP, and ZIP packets are converted to AppleTalk Phase 1-style packets. No other packets types need to be converted.

The AppleTalk Phase 2 Upgrade Utility also makes it possible for the AppleTalk Internet Router to receive AppleTalk Phase 1-style RTMP, NBP, and ZIP packets. When the AppleTalk Phase 2 Upgrade Utility INIT is installed, it throws a switch in the AppleTalk Internet Router that lets the router accept and process AppleTalk Phase-1-style RTMP, NBP, and ZIP packets. The AppleTalk Phase 2 Upgrade Utility does not convert these packets. The AppleTalk Internet Router has code built into it that lets it interpret these packets properly.

What the AppleTalk Phase 2 Upgrade Utility Does Not Do

It does not convert all outgoing AppleTalk Phase 2 packets to AppleTalk Phase 1 packets. This is not necessary--only RTMP, NBP, and ZIP packets need to be converted.

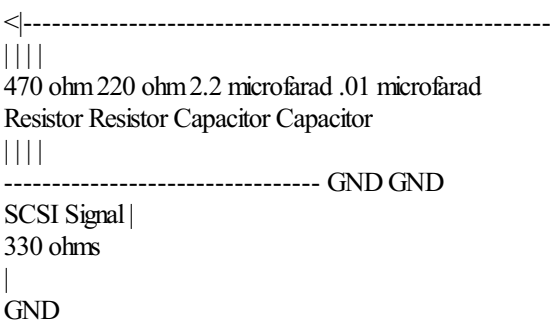
The AppleTalk Phase 2 Upgrade Utility does not work with any third-party router; it works only with the AppleTalk Internet Router.

Published Date: Feb 18, 2012

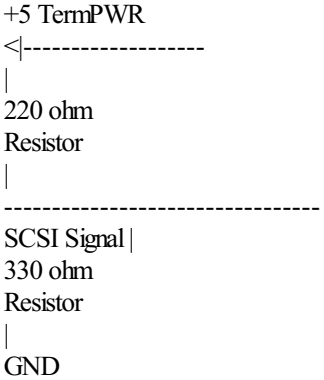
SCSI Terminator: Black Terminator Schematic

I need specifications on the black terminator 590-0705. I want to know which pin is connected and at what Ohm rate.
This article has been archived and is no longer updated by Apple.
Here is the Black Terminator (590-0705-A) Schematic:

REQ and ACK lines only:



All other lines:



Note: The 2.2 and .01 microfarad capacitors are applied to the TermPWR line at one place only.

Published Date: Feb 18, 2012

System 4.0/Finder 5.4: Alarm Setting Won‘t Stay On (9/95)

Every time I turn off my Mac Plus I lose the alarm clock setting. I am running System 4.0. Why does this happen?

This article has been archived and is no longer updated by Apple.
In a Macintosh Plus with System 4.0 and Finder 5.4, a set alarm clock functions properly as long as system power stays on. If the system is powered down and back up again, a quick check of the alarm clock reveals that the switch to the alarm clock is turned off.

This does not occur under the previous system software, System 3.2 and Finder 5.3. You will need to upgrade to a more current version of the system software or revert to the previous version to correct this problem.

Article Change History:
19 Sep 1995 - Reformatted to current standards.
29 Sep 1987 - Reviewed for technical accuracy.

Support Information Services
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A/UX 2.0: "Header File" Problem/Fix

I've encountered a compilation problem recently while porting a program (tcsh, from OSU) to the A/UX 2.0 environment. The problem seems to be that some of the system's header files aren't compiling properly. The sample code below demonstrates the problem I've experienced:

```
------------------------
/* test file, called tsts.c */

/* these are well-knowns that should work */
#include <sys/errno.h>
#include <stdio.h>

/* these don't work */
#include <sys/stat.h>
#include <sys/times.h>

main()
{

}
```

Now, take a look at what I did. On the first try, I used the command:

cc tsts.c

Here is the output:

```
"/usr/include/sys/stat.h", line 48: syntax error
"/usr/include/sys/stat.h", line 48: cannot recover from earlier errors:
goodbye!
```

On the second try, I used the command:

gcc tsts.c

Here is the output:

```
In file included from tsts.c:7:
/usr/include/sys/stat.h:48: parse error before `dev_t'
/usr/include/sys/stat.h:54: parse error before `dev_t'
/usr/include/sys/stat.h:64: parse error before `time_t'
In file included from tsts.c:8:
/usr/include/sys/times.h:29: parse error before `time_t'
```

Is there something amiss? I'm assuming the header files stat.h and times.h are identical to the header files available to you, so I've not copied them here.

This article has been archived and is no longer updated by Apple.

Put the following line before the #include <sys/stat.h> line. It should work, because some of the declarations in <sys/stat.h> were defined in <sys/types.h>.

```
#include <sys/types.h>
```

Published Date: Feb 18, 2012

Macintosh Portable: Dialing an Internal Modem

I am having problems using the Communications Toolbox, the Apple Modem Tool, and MacTerminal 3.0 on a Macintosh Portable. I am unable to establish connection to the Macintosh Portable's internal modem when I select "Open Connection" from the menu. However, when I leave the phone number field blank in the Apple Modem Tool's connection dialog box, I have no problems establishing a connection with the internal modem.

This article has been archived and is no longer updated by Apple.
We suspect that your problem is caused by an improper setting in the connection dialog box of the Apple Modem Tool. Be sure you've selected the Macintosh Portable Data Modem 2400 in the "Modem:" popup menu at the bottom of the "Connection Settings" dialog box. When we chose a different modem type under this popup menu, we duplicated the problem you describe.

Published Date: Feb 18, 2012

BAD 1.1 INIT Is Shareware

Logging onto AppleLink (with "reseller privileges") I notice the INIT BAD 1.1 is located under the User Groups icon (path: Product Questions and Answers/ Macintosh/ System Software). I have done a fairly detailed analysis of this INIT and I believe it could be useful to some of my customers.

Can I freely distribute this INIT to my resellers? Can my resellers freely distribute this to their end-users? I assume the answer is "Yes." Otherwise, I would not expect it under the User Group icon.

This article has been archived and is no longer updated by Apple.
BAD 1.1 is not an Apple product. Rather, it is a shareware program by Giuseppe Carnevale from Italy. As such, it can be freely copied and distributed, but should not be distributed as an Apple-supported program. If you do distribute it, it must be made clear that the author expects payment for each station where it is actively used.

More information can be obtained from the program's documentation, or by opening the program's "About" window. This is done as follows:

1) With BAD active, select an already-formatted disk.

2) Select Erase Disk from the Finder's Special menu. Instead of the normal initialization dialog, you should be presented with BAD's own "The disk '<name>' is already initialized." dialog.

3) Click the BAD disk icon at the left of the dialog window and the author's address will appear.

Published Date: Feb 18, 2012

TA45201_LocalTalk_IBM_PCtoVAX_Connectivity_(TIL06757).pdf

LocalTalk: IBM PC-to-VAX Connectivity

How does an IBM PC with an Apple LocalTalk PC card and a Shiva FastPath access a VAX for terminal emulation?

This article has been archived and is no longer updated by Apple.

InterCon Systems Corp. offers the "TCP/Connect" package that provides this capability. There are versions for both Macintosh computers and PCs. For contact information, search the Technical Info library under "InterCon Systems Group."

Published Date: Feb 18, 2012

Macintosh: Printing to DEC ScriptPrinter LN03R

Do you know of a way to print from a Macintosh to a LN03R? I have a driver that supports modem communication, but I need something that supports a direct serial connection.

This article has been archived and is no longer updated by Apple.
To our knowledge, there is no driver that lets a Macintosh print directly to the Digital ScriptPrinter LN03R. One alternative is to print to a disk file from the application and then send the file to the printer using a terminal emulation program. With the correct cable, you can communicate to the printer using a terminal emulation program like MacTerminal over the serial port. Needless to say, this is not very convenient.

Another alternative is to use the printer on the network:

* DEC LanWORKS for Macintosh offers this capability. The service is called VAXshare Print Server, and it supports Digital's LPS20, LPS40, ScriptPrinter LN03R, and Apple's LaserWriter, LaserWriter Plus, LaserWriter IINT, and LaserWriter IINTX.

* With Alisa Digital Printer Support System (ADP), an option for AlisaTalk for VAX/VMS, Macintosh users can print to Digital PostScript devices like the LN03R ScriptPrinter and the PrintServer 40. The Digital PostScript device looks like an Apple LaserWriter to the Macintosh user.

ADP makes use of VMS system queuing and printing. Features include forms and paper type control, optional job flag and trailer pages for job identification, paper tray selection, and support for the Adobe system typeface pack. Once VMS receiver process handles all Macintosh users, a new process for each job is not necessary. The software uses standard Digital Print symbionts and automatically loads the Laser Prep dictionary at the front of each Macintosh job that is submitted.

* PacerPrint from Pacer Software, Inc., offers similar features. For more information on Alisa Digital Printer support system or PacerPrint, search the Technical Info Library using keyword "Alisa" or "PACER."

Published Date: Feb 18, 2012

Novell Token Ring Network: Access from Macintosh

Can I access Novell Token Ring network and its server using the existing Apple Token Ring card and also Netware for Macintosh?

This article has been archived and is no longer updated by Apple.
The Novell TokenTalk support is orderable and was delivered in September 1990. This is a new version of VAP (Value-Added Process) that supports AFP (Apple Filing Protocol) 2.0 and TokenTalk.

All Netware operating systems provide an internal router that lets a Netware server connect to four different networks. No additional software is required. Note that the routing service can also be moved out of the server and into a non-dedicated workstation.

Macintosh, DOS, and OS/2 workstations can share data and resources. Macintosh users should see information stored on the network server as icons. Other workstations on the network (PCs running DOS, OS/2, or Windows/386) should see the folders and file icons from the Macintosh listed as directories and subdirectories in their workstation formats.

DOS, OS/2, and Macintosh users can share Apple LaserWriters and other Apple printers. Using an E-mail package that supports Netware Message Handling Service (MHS), the back-end store-and-forward messaging server, you can send E-mail messages, text, data, and binary files between different LANs and between wide-area networks.

For contact information, search the Technical Info library under "Novell" and the Enhancement Products Division of the Netware Products Division.

Published Date: Feb 18, 2012

Hard Disk 20: No Multiple System Folders

This article has been archived and is no longer updated by Apple.

The "Macintosh Update Hard Disk 20" documentation which accompainies all HD20's states:

Disregard any references to multiple system files on the Hard Disk 20 in your owner's manual. Apple does not recommend that you have multiple system files on the Hard Disk 20.

Instead, you could configure and "startup from" other volumes containing the applications, system files and fonts you want.

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EtherTalk NB and EtherLink NB: Revision Numbers

I understand that AppleTalk Phase 2 and the Macintosh IIci require Rev. J or Rev. K of the EtherTalk NB Card, while the Macintosh IIfx requires the EtherTalk NB Card Rev. L (Rev. L is not merely an upgrade to a Rev. J or Rev. K). If this is the case, why are brand new 3Com EtherLink NB Cards (with 1990 labels on their diskettes) Rev. B?

This article has been archived and is no longer updated by Apple.
3Com uses a different assembly numbering scheme for the Ethernet cards that they sell under their own label, as the 3Com EtherLink NB Card, than it does for the Ethernet cards Apple buys from 3Com and sells under its own (Apple) label as the Apple EtherTalk NB Card. The chart below shows how the 3Com EtherLink NB Cards relate to the Apple EtherTalk NB Cards:

Apple EtherTalk NB Card Assembly Number	3Com EtherLink NB Card Assembly Number
2680-06 Rev. J	4042-02 Rev. 09
2680-07 Rev. K	4042-03 Rev. 0A
2680-08 Rev. L	4042-04 Rev. 0A
2680-08 Rev. M	4042-04 Rev. 0B

Note: The Rev. M EtherTalk NB Card has no functional modifications or differences from the Rev. L EtherTalk NB Card. The revision from "L" to "M" was made because of a process change in manufacturing and not because of any enhancements to the card. Here is a compatibility list of Macintosh systems and Apple EtherTalk NB Cards:

Macintosh II or IIx	Macintosh IIcx	Macintosh IIfx, IIsi, IIci
Rev J, K, L or M	Rev K, L or M	Rev L or M

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LaserWriter IINTX and Hard Disk "Space Available"

I have a question concerning hard-drive formatting when an Apple hard drive is attached to a LaserWriter IINTX.

It seems that you never get the same "space available" amount when formatting two same-sized hard drives. This is true even if you reformat the same hard drive more than once. The second time you format the drive, you may get more, or even less, space available. The third time you format it, you may get an entirely different number, sometimes more, sometimes less.

This article has been archived and is no longer updated by Apple.
We tried to duplicate the problem you described on a LaserWriter IINTX with the old 1.0 ROMs and a LaserWriter IINTX with the new 3.0 ROMs. For the LaserWriter with the 1.0 ROMs, we used the "LaserWriter Font Utility 1.0" program. For the LaserWriter with the 3.0 ROMs we used the "LaserWriter Font Utility 2.0" program.

In both cases, the LaserWriter IINTX printers reported that the hard disk had the same amount of total space and the same amount of space available. Could it be that the hard disk may have some problem with it? Try a different hard disk. Also, try a different LaserWriter.

We wrote the following PostScript program that returns information on the total space and the total free space of the hard disk connected to a LaserWriter IINTX:

```
serverdict begin 0 exitserver
/Times-Roman findfont
15 scalefont
setfont
72 700 moveto
/str 20 string def
/str1 20 string def
(Hard Disk Usage; total space in K: ) show
statusdict begin diskstatus str cvs show
72 670 moveto
(Hard Disk Usage; total free space in K: ) show
str1 cvs show
showpage
```

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Macintosh IIsi, Macintosh LC: Power Limits & Thermal Shutdown

What can you tell me about the Macintosh LC and the Macintosh IIsi concerning their power supplies and power ratings for their slots? At what temperature will the thermal shutdown circuits shut down the power supply?

This article has been archived and is no longer updated by Apple.
The power limit for the NuBus slot in the Macintosh IIsi is 15 watts (the same for any Macintosh II NuBus slot). The power limit for the Direct slot in the Macintosh LC is 4 watts.

Both the Macintosh LC and the Macintosh IIsi have a thermal shutdown circuit which will shut down the power supply in the event of possible overheating from excess power draw. The maximum operating temperature is approximately 105 degrees Farenheit.

The Macintosh LC will cycle off-and-on until the temperature reaches a safe operating level (It will make a motorboating sound). At that point, it will resume operation.

In the event of overheating, the Macintosh IIsi acts as if you had chosen Shut Down and will let you power up it up again only when the temperature drops to a safe level. Pressing the keyboard Power On key has no effect in this condition. If the Macintosh IIsi power switch is locked on, it will behave like the Macintosh LC.

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A/UX 2.0: Fitting It on a 40MB Disk

Can a usable A/UX 2.0 be squeezed onto a 40MB disk? Is there a suggested configuration or list of directories to remove to "shoehorn" it into that size? What is the minimum, suggested swap space?

This article has been archived and is no longer updated by Apple.

The following is a list of "du" (disk usage) from the A/UX 2.0 Root system, which tells the size of each directory in 512-byte blocks.

```
        /*UNIX*       2900
        /bin          5122
        /dev            38
        /etc         12874
        /shlib         458
        /usr/bin      8926
        /usr/adm        28
        /usr/catman   6218
        /usr/dict      410
        /usr/etc      1928
        /usr/games    1400
        /usr/include  2882
        /usr/lib     12394
        /usr/spool     448
        /usr/ucb      3296
        /lib          4464
        /mac/bin      4594
        /mac/lib      7344
        /mac/src       504
        /mac/sys      6238
        -------------------
        Total       82,466 blocks
```

If A/UX 2.0 is purely used for NFS purposes only, it might be possible to squeeze the size and fit it on a 40MB disk. However, it might take some time to go through each of the files and/or directories and determine which to keep or to remove.

In general, a lot of files and/or directories like /usr/catman, /usr/games, /usr/dict, /mac/src, may be removed.

The default Swap size in A/UX 2.0 is about 18MB. 14MB was the default swap size used in A/UX 1.1.1 and before. This increase is mainly for A/UX 2.0 MultiFinder activities. If you do not have many Macintosh applications and/or specifically A/UX applications like C language compilations running on the system, it may be reduced to below 10MB. Furthermore, if you have plenty of physical RAM, 16MB or 32MB for example, you may reduce more swap space.

Again, this is still the "It depends..." type of question. We can't give an exact number on the size of Swap area and also, which files/directories should be kept or removed. You probably need to play the "try and error" game to knock the system below 40MB.

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Macintosh IIsi: EtherPort Compatibility Issues

Are there any known compatibility problems with the Kinetics/Excelan/Novell EtherPort II cards and the Macintosh IIsi?

Has this card has been tested, and, if so, could you provide the hardware and software versions, and the results of your test? If not, have any other issues surfaced?

This article has been archived and is no longer updated by Apple.
This is what we learned from Novell: Any software incompatibilities would reveal problems between the driver and the operating system. The card itself would not be the cause of a software conflict.

If the driver installer disk has an old System folder, boot from the System Tools disk, then put in the EtherPort Installer disk and run the Installer as you would normally. You'll have to do some disk swapping, but it should work. Past the OS question, there should be no other software problems.

Because the Macintosh IIsi is rather new, we have not been able to verify that there are NO incompatibilities. When Shiva Corporation bought the EtherPort line of Macintosh-to-Ethernet interface boards from Novell, Inc. (in December 1990), they made a commitment to support the EtherPort and driver with all of the appropriate Macintosh computers. So, in the future, they might be able to provide more detailed information on the compatibility issues concerning the newer Macintoshes.

My guess is that Shiva is making a very safe statement saying that because the EtherPort II has not been thoroughly tested with the Macintosh IIsi or the Macintosh LC, they cannot (and neither can we) say the card will work with those computers. So, at this point customers just have to try the combination to see if it works. Probably they are also saying that if some problem is found, they will release new hardware and/or software to provide solutions.

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Pascal: Keypress function

This article has been archived and is no longer updated by Apple.
Keypress is a commonly used function residing in the Applestuff unit. If it's the only routine needed from this unit, it is more efficient to refer to the routine alone without loading the entire unit.

The following listing of the function Keypress can be assembled for linking to your host program as an "external" function. Follow the instructions that accompany the examples shown on pp. 136-182 of the Pascal Operating System Reference Manual.

```
.FUNC Keypress,0 ;0 words of parameters passed
;************************************************
;*
;* Function Keypress: boolean; external
;*
;************************************************
;
RETURN .EQU 0 ;Storage for return address
CONCKVEC.EQU 0BF0A ;Fixed address in BIOS
RPTR .EQU 0BF18 ;Fixed buffer pointer
WPTR .EQU 0BF19 ;Fixed buffer pointer
Version .EQU 0BF21 ;System version number
Keypress.EQU 0C000 ;Keyboard hardware
CONCK .EQU 0FF5C ;Way to get CONCK in old system

PLA
STA RETURN
PLA
STA RETURN+1
PLA
PLA
PLA
PLA ;Pop 4 bytes stack bias for function
LDA #0
PHA ;Return MSB zero
LDA Keyboard
BMI True
LDA Version
BNE $1 ;Jump if not original Pascal version
JSR CONCK
JMP $2
$1 JSR CONCKVEC ;Check console
$2 LDA RPTR
CMP WPTR ;Char in buffer?
BEQ Empty
TRUE LDA #1 ;Yes, return Keypress=True
BNE KPDONE ;Always taken
EMPTY LDA #0 ;No, return Keypress=False
KPDONE PHA ;Push LSB result
LDA RETURN+1
PHA ;Restore return address
LDA RETURN
PHA
RTS
.END
```

The sample program below illustrates the use of Keypress as an externally linked routine. Follow the instructions given on pp. 136-182 of the Pascal Operating System Reference Manual for assembling and linking external code.

```
Program Presstest;
```

```
Var I: integer;

Function Keypress: boolean; external;

Begin
I:=0;
Repeat
Writeln (I);
I:=I+1;
Until Keypress
End.
```

Published Date: Feb 18, 2012

TA45213_MacTCP_RFC_Conformance_(TIL06770).pdf

MacTCP: RFC Conformance

I'd like to know what RFCs and MIL-STDs MacTCP follows.

This article has been archived and is no longer updated by Apple.
MacTCP is a complete implementation of the TCP/IP protocol suite and is fully compliant with the appropriate MIL-STDs (1777 and 1778) and RFCs (768, 791, 792, 793, 826, 894, 950, 1034, and 1035) and comprises TCP, UDP, IP, ICMP, DNR and for broadcast networks, ARP. The product will operate with gateways that comply with RFC 1009.

Published Date: Feb 18, 2012

Internet Router: How to Save Zone Name Changes

I tried to change the name of one our LocalTalk segments. After the change was made, I saved the changes in the Internet router. Then, I re-loaded the router, but the router would not accept the change of name. It kept on referring to the old name of the zone. There were no other routers loaded at the time. The router let me change all the other zone names including EtherTalk and TokenTalk zones. This is a total Phase 2 network.

This article has been archived and is no longer updated by Apple.
There is no reason for the router to exhibit the symptoms you described. When you change a non-extended networks zone name you must follow these steps:

1) Set the current status to off.

2) Click the Zone name box for the network you want to change.

3) Select the zone name from the zone names list, there should be only one for non-extended networks.

4) Click the Delete button to remove the zone name from the list.

5) Type the new zone name into text box and click on the Add button.

6) Save the changes and restart the Macintosh.

It's easy to open the dialog box to change the zone name. Select the old name, change it in the text box and click Done without ever deleting the old zone name from the list. This causes the zone name for the network to not be updated, and the old zone name would be used the next time the router is loaded.

The only way this could fail is if there is another router that still has the old zone name or a different zone name configured for this network. The newly-configured router would then fail with a conflicting zone name message the next time it loads. It would not fall back to the old zone name, but would fail and ask you to reconfigure and restart.

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HyperCard 2.0: Print Report Procedure

I have switched over to HyperCard 2.0. In earlier versions, I used the "column format" in which you could drag the dashed separation lines to print out a report. How do I do this in HyperCard 2.0?

This article has been archived and is no longer updated by Apple.
The Print Report functions of HyperCard 2.0 has many more features than previous version. Unfortunately, laying out a report the first time requires more work than before. One of the main differences that may be confusing you is that you must specify the items to print by using menu items that come up when you select Print Report. These items are no longer in the Print Report's dialog box as in previous versions.

Creating a report template is described in the "HyperCard Reference" manual in the Chapter on Printing (presently chapter 7, page 380).

In brief:

1) Choose Print Report.

2) Choose New Report from the Reports menu; name your report.

3) In the Print Report dialog box, set up the layout for your report. Resize cells, add a header if desired, and set your options.

4) Choose Report Items from the Edit menu.

5) Choose new Item from the Item menu; while the item is selected, resize and reposition if desired.

6) While the item is selected (step 5), choose Item Info from the Items menu (or double-click it).

7) Specify the contents of the item, and its characteristics like font and size, alignment, and so on.

8) Click OK.

9) Repeat steps 5 through 8 if desired.

10) When you've added all of the items you want, click OK to return to the Print Report dialog box.

11) Click Print.

Many more options are available than what is covered here. However, this should be a reasonable primer on the Print Report function. HyperCard 2.0 lets you create and save up to 16 reports per stack, and is much more capable and versatile that earlier versions.

Published Date: Feb 18, 2012

Macintosh LC: RAM Configurations and Limits

What is the maximum amount of memory possible in the Macintosh LC? Is 10MB an absolute limit? Will a future Macintosh LC be able to use 34MB with the addition of two 16MB SIMMs?

This article has been archived and is no longer updated by Apple.
There is a limit of 10MB of RAM on the Macintosh LC when running under System 7. It will not be possible to use 16M SIMMs to achieve 34MB. This is because the memory map for the Macintosh LC reserves only 10MB of address space for RAM, regardless of if it is in 24-bit mode or 32-bit mode. The memory map is as follows:

Function	24-bit mode	32-bit mode
RAM	$00 0000-$9F FFFF	$0000 0000-$009F FFFF
ROM	$A0 0000-$DF FFFF	$40A0 0000-$40DF FFFF
Expansion space	$E0 0000-$EF FFFF	$FE00 0000-$FEFF FFFF
I/O space	$F0 0000-$FF FFFF	$50F0 0000-$50FF FFFF
VRAM	$FC 0000-$FF FFFF	$50FC 0000-$50FF FFFF

It is also not possible to use 256K or 512K SIMMs. The possible RAM configurations, using 1MB, 2MB, and 4MB SIMMs, for the Macintosh LC are:

2MB -- soldered on the motherboard
4MB -- add two 1Mbit SIMMs in each of the SIMM connectors
6MB -- add two 2Mbit SIMMs in each of the SIMM connectors
10MB -- add two 4Mbit SIMMs in each of the SIMM connectors

The Macintosh LC requires 100ns or faster SIMMs.

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Apple Scanner: 8-Pin Port Is Non-Functional

I need information regarding the 8-Pin port that is next to SCSI port on the Apple Scanner. What is it for? (The icon indicates LocalTalk.) How can developers find out more about implementing it?

This article has been archived and is no longer updated by Apple.

The port was originally intended to allow the scanner to be connected to the network. This capability was eventually dropped, so the port is essentially connected to nothing. There is no way for developers to use the port.

Published Date: Feb 18, 2012

3270 Async Terminal Emulation and File Transfer Needed

I am looking for a package to duplicate the capabilities of IBM's FT Term. It runs on PCs and includes 3270 terminal emulation running over async lines with support for 5 DFT sessions and file transfer on a single call. Does any package for the Macintosh duplicate this functionality?

This article has been archived and is no longer updated by Apple.
The PC/HOST File Transfer and Terminal Emulator Program (FTTERM) provides 3270, DEC VT100, DEC VT220 and 3101 terminal emulators, along with 3270 and ASCII file transfer capabilities. In addition, FTTERM Version 2.1 expands its connectivity options to let an IBM Personal Computer or Personal System/2 operate on an IBM Token-Ring Network or a Broadband IBM PC Network local area network (LAN).

When operating on the LAN, it uses the Enhanced Bios Interface Programs and communicates through the IBM Local Area Network Asynchronous Connection Server Program (LANACS), to connect to ASCII Hosts, dial Information Providers, and obtain the use of Protocol Converters to allow access to IBM hosts. File transfer is supported to ASCII hosts or IBM Hosts. FTTERM Version 2.1 also supports an asynchronous connection for IBM Professional Office System (PROFS) (TM) Applications Support Feature (PASF) Version 2.2.2 (non-Token-Ring LAN configurations) and GDDM-PCLK 1.1 through the FTHLLAPI (FTTERM High Level Language Application Program Interface) facility.

The actual session management is controlled at the 3174 and not by FTTERM.DFT emulators like Personal Communications/3270 control sessions within the PC. In previous microcode levels, an ASCII display connected to the Async Emulation Adapter (AEA) was able to have only two sessions, although Coax-type CUT terminals were allowed up to 5 sessions. Microcode level B2 has extended that support to ASCII displays and the AEA.

We have not found a similar application with these functions on the Macintosh. Simware offers a multi-session 3270 terminal emulators and file transfer over asynchronous lines, if used in conjunction with their host software Sim3278 VM or VTAM. RELAY provides only file transfer over async lines to a mainframe running RELAY Communications' RELAY/VM or RELAY/TSO. MacBLAST software for IBM mainframe also transfers text or binary files via async ports or protocol converters. DCA (formerly Avatar) MacMainFrame DX provides only single-session terminal emulation and file transfer over asynchronous lines.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
26 July 1993 - Company title changed from Avatar to DCA (Digital Communication Associates).
Published Date: Feb 18, 2012

Pascal: SCAN function

This article has been archived and is no longer updated by Apple.
The Pascal SCAN function scans a range of memory, searching for a specified target. This function takes the form:

SCAN (Limit, PEXPR, Source)

where Limit is the number of bytes scanned, PEXPR defines the target and Source is the variable. The Pascal Language Manual on pp. 51-52 describe this function in greater detail.

Use SCAN on any variable except file types. When scanning string S, for example, specify Source as S[1] to avoid having SCAN look at the length parameter stored in S[0], which usually yields an erroneous value.
Published Date: Feb 18, 2012

TA45224_Apple_II_SCSI_Card_ROM_Upgrade__(TIL06781).pdf

Apple II SCSI Card: ROM Upgrade (2/97)

This article describes how to obtain the Apple II SCSI Card ROM upgrade.

This article has been archived and is no longer updated by Apple.

There is a repair extension that covers your on this. Contact your dealer about getting the cards upgraded. Here is the information the dealer will need:

SCSI INTERFACE CARD IIE & IIGS ROM UPGRADE--OLC123
(Announced March 88)

Users who upgrade to Apple IIGS Operating System Version 4.0 or greater must use the latest revisions of both the SCSI Interface Card and the ProFile Interface Card. You can determine the latest version of these interface cards by checking the part number of their ROM. As of March 88, ROM part number 341-0437, Revision A, is the latest version of the SCSI Interface Card. All SCSI and ProFile Interface Cards now shipped by Apple are the latest revisions.

Apple has revised the ROM on the Apple II SCSI Interface Card to make the card compatible with the Apple-CD SC and the Apple IIGS Operating System. When other products requiring the new ROM are introduced, you will be notified by a Service mailing. The ROM on the card can be identified by the new part number, 341-0437. All Service Stock and Finished Goods inventory has been upgraded to the new ROM.

Article Change History:
28 Feb 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Some Macintosh Applications Ignore Inserted Diskettes

With Persuasion or PowerPoint (or both of them) open, when I insert a new unformatted diskette, there is no dialog box asking to initialize the diskette. Even after I quit from the application(s), the system does not acknowledge that a diskette has been inserted. One has to eject the diskette and re-insert it before the initialize dialog box pops up. This anomaly occurs even under System Software 6.0.7. It does not help to clear the System of INITs or to work under Finder instead of MultiFinder. What could be the reason for it?
This article has been archived and is no longer updated by Apple.
This is not really an anomaly. We will try to explain why:

When a disk is inserted into a disk drive, a disk-inserted event is generated by the Event Manager. It is the responsibility of the application (the active application if MultiFinder is running) to respond to this event. Applications don't have to respond to all possible events. Some applications, like Persuasion and PowerPoint, completely ignore disk-inserted events.

The exception to this is when the SFPutFile or SFGetFile dialog is active for saving or retrieving files. Disk-inserted events are automatically handled when these dialogs are active. The only time this is a problem is when the disk inserted is a disk that must be formatted to be recognized by the system.

All it would take to support disk-inserted events (for initializing) in most applications is code, in the application's event loop, that looked something like this:

```
diskEvt:
IF HiWrd(myEvent.message) <> noErr THEN
BEGIN
SetPt(aPoint, $70, $50);
theError := DIBadMount(aPoint, myEvent.message);
END;
```

Published Date: Feb 18, 2012

A/UX 2.0: Eschatology and dp

Here is my configuration:
* A/UX 2.0
* Macintosh IIcx
* 80MB hard drive
* Macintosh OS 6.0.5

Doing an installation on a SuperMac drive with

XP100
XP150
A/UX 2.0

sets up the partition sizes using the 4.1 manager for SuperMac (the size for each partition is stated in the manual). I do the initial installation which is the stand-alone shell, A/UX Startup.

While in the shell, I run the UNIX DP software. I use DP to designate the partitions as Root, User, Swap, and Eschatology. I quit DP and then follow the manual for installation. When the program gets to the Eschatology partition, I get a message that it will skip the Eschatology partition, because it cannot be found.

Doesn't the DP program assign the proper slice number for the Eschatology partition?

This article has been archived and is no longer updated by Apple.

```
The following are the standard A/UX file-system, partition names and slice numbers assigned when installing
A/UX 2.0:

     "A/UX Root"     slice 0
     "Swap"          slice 1
     "Eschatology 1"
     "Unreserved 1"  slice 3

There is no fixed slice number assigned to "Eschatology 1", but it was pnamed when copying essential files
into that partition during installation process. "Usr" will be assigned with slice 2, if it was customized as
a separate partition from the A/UX Root partition.

The problem is most likely the use of the name and the type of the "Eschatology" partition when you use "dp"
to customize the third-party hard drive.  The following is the printout for "Eschatology 1" partition from
"dp". Pay attention to the name ("Eschatology 1") and type ("EFS").

     DPM Index: 6
     Name: "Eschatology 1", Type: "Apple_UNIX_SVR2"
     Physical: 6144 @ 146126, Logical: 6144 @ 0
     Status:
            valid      alloc      in_use  not boot
            read       write
     No slice specified
     Eschatology File System (2)  (critical)
     Cluster:    0    Type:  EFS        Inode: 1
     Made: [634871576]  Mon Feb 12 17:12:42 1990
     Mount: [649605218] Thu Aug  2 06:53:24 1990
     Umount: [649605254] Thu Aug  2:06:54:00 1990
     No AltBlk map


Article Change History:
29 Aug 1994 - Reviewed.

Support Information Services
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Memory Configurations: Other Desktop Macintosh

What are the memory configurations for desktop Macintosh computers?
This article has been archived and is no longer updated by Apple.
The tables in this article show the memory configurations for desktop Macintosh computers. For information about upgrading the memory in another Macintosh computer, refer to the following TIL articles:

- **Memory Configurations: Power Macintosh**
- **Memory Configurations: Servers**
- **Memory Configurations: Portables & PowerBook**

Note: The following computers are not 32-bit clean. They require the 32-bit System Enabler for System 7.1 or the MODE32 Version 7.5 for System 7.5.x in order to run in 32-bit mode and take advantage of more than 8 MB of physical RAM: Macintosh SE/30, II, IIx, and IIcx.

Note: Memory interleaving is supported in the Macintosh Quadra 800 and 650 computers when SIMMs are installed in pairs.

Macintosh RAM Configurations: Compact Macintosh Models

Computer	Soldered RAM (MB)	No. of SIMM/ DIMM Slots	Supported SIMM/ DIMM Sizes (MB)	DRAM Configs (MB)	RAM Speed (ns)	RAM Type	Max. RAM (MB)	Install in Groups of
128	128K	0	N/A	128K	N/A	N/A	N/A	
512K/512KE	512K	0	N/A	512K	N/A	N/A	N/A	2
Plus	0	4	256K, 1	1, 2.5, 4	150	30-pin SIMM	4	2
SE	0	4	256K, 1	1, 2, 2.5, 4	150	30-pin SIMM	4	2
SE/30	0	8	256K, 1, 4	1, 2, 4, 5, 8, 16,17,20,32	120	30-pin SIMM	32	4
Classic	1	2	256K, 1	1, 2, 2.5, 4	150	30-pin SIMM	4	2
Classic II, Performa 200	2	2	1,2,4	2, 4, 6, 10	100	30-pin SIMM	10	2
Color Classic	4	2	1,2,4	4, 6, 8, 10	100	30-pin SIMM	10	2

Macintosh RAM Configurations: Macintosh II Models

Computer	Soldered RAM (MB)	No. of SIMM/ DIMM Slots	Supported SIMM/ DIMM Sizes (MB)	DRAM Configs (MB)	RAM Speed (ns)	RAM Type	Max. RAM (MB)	Install in Groups of
II	0	8	256K,1,4,16	1, 2, 4, 5, 8, 16, 17, 20, 32, 64, 65, 68, 80,128	120	30-pin SIMM	128	4
IIx	0	8	256K,1,4,16	1, 2, 4, 5, 8,16,17,20,32, 64, 65, 68,80,128	120	30-pin SIMM	128	4
IIcx	0	8	256K,1,4,16	1, 2, 4, 5, 8, 16, 17, 20, 32, 64, 65, 68,80,128	120	30-pin SIMM	128	4
IIci	0	8	256K,512K,1,2,4,16	1,2,3,4,5,6,8, 9, 10, 12, 16, 17, 18, 20, 24, 32 to 128	80	30-pin SIMM	128	4
IIfx	0	8	1,4,16	4,8,16, 20, 32 to 128	80	64-pin SIMM	128	4

IIsi	1	4	256K,512K,1,2,4	1, 2, 3, 5, 9, 17	100	30-pin SIMM	17	4
IIvi,IIvx, Performa 600	4	4	256K,1,2,4,16	4, 5, 8, 12, 20, 68	80	30-pin SIMM	68	4

Macintosh RAM Configurations: LC & Performa Models

Computer	Soldered RAM (MB)	No. of SIMM/ DIMM Slots	Supported SIMM/ DIMM Sizes (MB)	DRAM Configs (MB)	RAM Speed (ns)	RAM Type	Max. RAM (MB)	Install in Groups of
LC	2	2	1,2,4	2, 4, 6, 10	100	30-pin SIMM	10	2
LC II	2	2	1,2,4	2, 4, 6, 10	100	30-pin SIMM	10	2
Performa 400, 405, 410, 430	4	2	1,2,4	4, 6, 8, 10	100	30-pin SIMM	10	2
LC III, Performa 450,460, 466,467	4	1	1,2,4,8,16,32	4, 5, 6, 8, 12, 20, 36	80	72-pin SIMM	36	1
LC 475, Quadra 605, Performa 475, 476	4	1	1,2,4,8,16,32	4, 5, 6, 8, 12, 20, 36	80	72-pin SIMM	36	1
LC 520	4	1	1,2,4,8,16,32	4, 5, 6, 8, 12, 20, 36	80	72-pin SIMM	36	1
LC 550, Performa 550, 560	4	1	1,2,4,8,16,32	4, 5, 6, 8, 12, 20, 36	80	72-pin SIMM	36	1
LC 575, Performa 575, 577, 578	4	1	1,2,4,8,16,32	4, 5, 6, 8, 12, 20, 36	80	72-pin SIMM	36	1
LC 580, Performa 580, 631	4	2	Inside slot: 1, 4, 16 Outside slot: 1,2,4,8,16,32	6, 7, 9, 10, 12, 13, 21, 22, 24, 28, 36, 37, 40, 46, 52	80	72-pin SIMM	52	1
LC 630, Quadra 630, Performa 630, 635, 636, 637, 638	4	1	1,2,4,8,16	4, 8, 20, 36	80	72-pin SIMM	36	1
LC 630 DOS Compatible, Performa 640 DOS	4	2+ (1 on DOS card)	1,2,4,8,16,32	4, 5, 6, 8, 12, 20, 36, 52	80	72-pin SIMM	52	1

Macintosh RAM Configurations: Macintosh Quadra & Centris Models

Computer	Soldered RAM (MB)	No. of SIMM/ DIMM Slots	Supported SIMM/ DIMM Sizes (MB)	DRAM Configs (MB)	RAM Speed (ns)	RAM Type	Max. RAM (MB)	Install in Groups of
Centris 610	4	2	4,8,16,32	4, 8, 12, 20, 28, 36, 40, 44, 52, 68	80	72-pin SIMM	68	1,2
Quadra 610	4	2	4,8,16,32, non-	4, 8, 12, 20, 28, 36, 40, 44, 52, 68	80	72-pin SIMM	68	1,2

Centris 650	4 or 8	4	4,8,16,32	4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 100, 104, 108, 116, 132	80	72-pin SIMM	132	1,2
Quadra 650	8	4	4,8,16,32	8, 12, 16, 20, 24, 28, 32, 36, 40, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 108, 112, 120, 136-169	80	72-pin SIMM	169	1,2
Centris/Quadra 660AV	8	2	4,8,16,32	4, 8, 12, 20, 36, 68	70	72-pin SIMM	68	1,2
Quadra 700	4	4	1,4	4, 8, 20	80	30-pin SIMM	20	4
Quadra 900	0	16	1,4	4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 48, 52, 64	80	30-pin SIMM	64	4
Quadra 950	0	16	1,4	4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 48, 52, 64	80	30-pin SIMM	64	4
Quadra 800	8	4	4,8,16,32	8, 12, 16, 20, 24, 28, 32, 36, 40, 42, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 104, 108, 112, 120, 136	60	72-pin SIMM	136	1,2
Quadra 840AV	0	4	4,8,16,32	4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100, 104, 108, 112, 116, 120, 124, 128	60	72-pin SIMM	128	1,2

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Graphtec MP3100: Connection to Macintosh

I am trying to connect a Graphtec MP3100 plotter to a Macintosh, but I don't have the right cable. Do you know what this cable should look like (from the 8-pin serial port on the Macintosh to the DB-25 port on the plotter)?

This article has been archived and is no longer updated by Apple.
The Graphtec plotter can be connected to a Macintosh 8-pin serial port using M0199; the Macintosh-to-ImageWriter cable (pn 590-0553).

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Macintosh LC: VRAM Upgrade Procedure

How do you complete the VRAM Upgrade Installation for the Macintosh LC? The documentation in the Upgrade Kit says that the technician should consult the Macintosh Technical Procedures for information on how to complete the upgrade installation, yet there isn't anything in the Tech Procedures to cover this installation.

This article has been archived and is no longer updated by Apple.
Before you begin, familiarize yourself with the Take Apart section of Technical Procedures--especially those sections pertaining to safety and Electrostatic Discharge prevention.

When upgrading the Video RAM (VRAM) of the Macintosh LC, it is important to refer to the note on page 1.2 of the Technical Procedures for the Macintosh Family (Volume Two, Macintosh LC tab), which states that the 512K VRAM SIMM replaces rather than augments the 256K VRAM SIMM on the logic board.

For identification of which SIMM is the VRAM SIMM, you are encouraged to refer to the illustration in the same binder on page 1.4 or the illustrated parts list on page IPL.2, item number 21. The VRAM SIMM is located on the logic board immediately next to the system RAM SIMM connectors. The VRAM differs from system RAM by using a physically larger SIMM connector and more and denser signal leads.

The RAM exchange would be identical to the Macintosh Display Card Upgrade procedure (refer to page 2.10 of the Macintosh Family Cards tab in the Macintosh Family Technical Procedures, Volume Four), except that only one VRAM SIMM is required.

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StyleWriter: Using it with the Macintosh Portable

The Apple StyleWriter and the Macintosh Portable appear to have similar power adapters. Can they be interchanged?

This article has been archived and is no longer updated by Apple.
Extreme care should be taken when using a StyleWriter with the Macintosh Portable.

The Apple StyleWriter and the Macintosh Portable have physically identical power adaptor connectors. However, they are NOT electically identical. If you connect a StyleWriter power adaptor (while unplugged from a wall outlet) to the Macintosh Portable, the 3.15 amp fuse inside the StyleWriter power adaptor blows.

The problem is that the Portable power adaptor is center positive, 7.5V, and the StyleWriter unit is center negative, 9.5V.

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Pascal: TRUNC and ROUND functions

This article has been archived and is no longer updated by Apple.
The TRUNC and ROUND functions are available in Apple Pascal. The ROUND function is of the form I:=ROUND(R), where I is an integer and R is a real number.

TRUNC takes the form I:=TRUNC(R), where I is an integer and R is a real number, and I:=TRUNC(L), where L is a long integer. In all cases, integer values must be in the range -32767 to +32767; otherwise, a value range error is returned.

Although the compiler may accept other forms of these functions, these are the only legitimate forms according to UCSD definitions.
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TA45233_Japanese_Macintosh_Products_Support_in_the_US_(TIL06791).pdf

Japanese Macintosh Products: Support in the U.S.

Article Change History

09/22/92 - REVISED
* To include reseller referal phone number.
09/22/92 - UPDATED
* To include information on the Kanji TrueType product.

On April 23, 1991, Apple USA announced a program to sell and support Japanese-language Macintosh System Software in the United States. This is an extension of a program currently being piloted in Hawaii. To find a reseller for this product, call 1-800-882-8856.

This article has been archived and is no longer updated by Apple.
These Japanese products will be available only through a limited number of Apple-authorized dealers and VARS (Value Added Resellers). These resellers are required to have a Japanese-speaking System Engineer who has attended a special class for Japanese product support and who provides support before and after the sale. Inquires concerning these Japanese products should be directed only to these authorized dealerships.

The following products are being offered:

* The KanjiTalk Upgrade kit, which includes
- the KanjiTalk operating system version 6.0.7, and
- HyperCard-J version 2.0J ("lite" HyperCard localized in Japanese).

* Kanji TrueType - A Japanese font extension that allows high quality, low cost printing solution. It includes two complete fonts.

* HyperCard 2.0J, which includes Japanese manuals.

* The extended Kana character-based keyboard.

Price pages for these products will be available only to specially authorized resellers.

Service

Only Kanji-authorized resllers will be allowed to service Apple's Japanese systems.

Support

A special support program will handle the Japanese products. Customers will be supported by specially trained bilingual dealer System Engineers. These dealer SEs will escalate their questions to a third party vendor, in essence filling in the role of the Apple field Systems Engineer.

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Japanese Macintosh System Software: Overview

Article Change History:

09/29/92 - REVIEWED
* For technical accuracy.

Could you please give me an overview of Japanese system software that is now available in the United States?

This article has been archived and is no longer updated by Apple.
The text resources and special features of Japanese Macintosh system software have been translated to fit the Japanese dates, sorting system, and so on. Otherwise, the Japanese system software works like Roman-alphabet system software, and troubleshooting is very similar.

On the other hand, Japanese system software must deal with a total of over 6800 characters in four different character sets. An INIT called KanjiTalk manages this large set; it takes keystrokes and converts them into Japanese. Along with this INIT, a variety of input modules, dictionaries, and fonts files are necessary to support KanjiTalk.

Japanese Macintosh 6.0 system software can be used on any Macintosh system with 2MB of RAM (a hard disk is strongly recommended). However, no special hardware is necessary. Although there is a localized version of the keyboard, KanjiTalk can accept input from a U.S. keyboard. In fact, the only difference between the U.S. keyboard and the Kana keyboard is the addition of the Kana characters silk-screened on the key caps.

Macintosh hardware products were originally made specifically for the Japanese market, with Kanji fonts in ROM. These products have been discontinued.

U.S. applications that abide by the Script Manager interface (TeachText, for example) generally work with Japanese Macintosh system software, but there is no guarantee of full functionality. It takes two bytes (not just one) to represent a Kanji character, and applications that don't take this into account typically don't work without some problems.

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Applesoft: Obtaining Base-10 Logs

Applesoft's LOG (X) returns the natural logarithm of X.
This article has been archived and is no longer updated by Apple.
The logarithm base ten of a number can be calculated by:

Logarithm base 10 = LOG (X) / LOG (10)
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ImageWriter: Cleaning Guide Rails Solves Registration Problem

This article has been archived and is no longer updated by Apple.

As ImageWriters and wide-carriage ImageWriters become older, the lubricants used on the carriage rails tend to dry up and prevent the carriage assembly from moving freely during printing. This can lead to unacceptable horizontal print registration: columns of characters don't line up properly from one line to the next, and appear to be shifted anywhere from one dot to half a character.

When this happens, thoroughly clean both guide rails with a degreasing solution and lint free cloth, then lubricate them. Clean the rail all the way around, not just the surface area visible from the top.

Published Date: Feb 18, 2012

System 7: How to Revert to System 6 after Installing System 7

How do I revert to System 6 after installing System 7?

This article has been archived and is no longer updated by Apple.
Before upgrading to System 7, back up your hard disk using any of backup and restore products available for the Macintosh. At a minimum, back up your System folder.

Please do not try to install System 6 over System 7. Instead, follow these steps:

1) To remove System 7 from your hard disk, boot from a System 6 "System Tools" floppy disk and drag the System 7 "System Folder" from your hard disk into the Trash can.

2) Restore your System 6 "System Folder" from a backup, or install from the System 6 "System Tools" floppy disk.

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System 7: Sharing LaserWriters with System 6 Computers

Can users running System 7 and users running System 6 share the same LaserWriter? Does the 6.0 LaserWriter driver work with System 7?
This article has been archived and is no longer updated by Apple.
The System 7 printer drivers operate on Macintosh computers running System 6 and on Macintosh computers running System 7. When all computers printing to the same printer use System 7 printer drivers, they can compatibly share a printer.

You should upgrade System 6 Macintosh computers that are on a network with System 7 Macintosh computers to System 7 printer software. This will allow LaserWriter compatibility between both systems.

Early versions of the LaserWriter Drivers for System 7 were tested with all System 6 versions. Later LaserWriter Driver versions were only tested with System 6.0.8, and is the only System 6.x version now officially supported by Apple.

To install the LaserWriter 7 driver on a System 6 machine, follow the set of steps appropriate to your computer:

From floppy disks, follow these steps:

1) Insert the System 7 "Printing" disk (800K and 1.4MB). You do not need to boot from this disk. Place it in the drive of the currently running Macintosh you wish to update. This installation occurs "live" on your current system.

2) Double click the "Printer Update" icon.

3) Double click "Install". The System 7 printing software is now being installed on your system

4) Choose Quit. Your system has been updated to the System 7 printing software and is immediately ready to print in a System 7 environment.

Over a network, follow these steps:

1) Ask your network administrator where the "Printer Update" installer is located on your network and open that folder.

2) Locate and double click on the "Printer Update" icon.

3) Double Click "Install". The System 7 printing software is now being installed on your system.

4) Choose Quit. Your system has been updated to the System 7 printing software and is immediately ready to print in a System 7 environment.

After installation, open the Chooser and select the appropriate printer. If a dialog box appears asking if you want to initialize the printer, click "Yes". Make sure that all users on the network using this printer are running either System 7 or have updated their printing software to System 7.

Alternatively, you can simply drag the System 6 LaserWriter driver and the Laser Prep file to the trash. Then drag the System 7 LaserWriter driver to the System Folder.

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System 7: Diagnosing System Bombs

I've installed System 7 and it bombs. What should I do?

This article has been archived and is no longer updated by Apple.
If your system bombs, proceed as follows:

1) Restart your Macintosh while holding down the Shift key, and release it when the desktop appears. This action causes most of your system extensions (INITs) and control panels not to load when the system boots. (Note: In System 7, INITs are referred to as "system extensions.") After you have removed your INITs and control panels, take each one, one-by-one, and drag it to the System Folder and restart. If the system bombs again, you will be able to tell which INIT, control panel, or combination of them is causing the crash.

2) Open your System folder and remove all of your extensions and control panels by placing them in a separate folder outside the System Folder. Examine the system extensions and verify that you are using the current version. If necessary, contact the product developer to determine which is the current version.

If your Macintosh computer still does not start up, continue to step 3.

3) Restart from one of the System 7 floppies. In the System 7 disk suite, the bootable floppy is the "Disk Tools" disk (both 800K and 1.4M).

4) Move any fonts, desk accessories, extensions, control panels, and preference files that you want to keep from the System Folder to another folder on your hard disk. Drag the remainder of the System Folder to the trash and empty the trash.

5) Do a "clean" install of the software by following the installation guidelines in your "Macintosh User's Guide."

If your Macintosh computer still does not start up, contact your dealer.

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System 7: Virtual Memory and Third-party Accelerators

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

Can customers use the Virtual Memory feature of System 7, if they have third-party accelerators for the Macintosh Plus, SE, or Classic?

This article has been archived and is no longer updated by Apple.
No. The virtual memory feature of System 7 is available only on the Macintosh II family of computers that are equipped with a 68030 microprocessor or equivalent. System 7 Virtual Memory was written for the Macintosh II family (and more specifically, for the Macintosh II ROMs). Please contact the developer of your accelerator for additional information.

Published Date: Feb 18, 2012

System 7: Compatibility of Third-Party Hard Disks

Are third-party hard disks compatible with System 7?
This article has been archived and is no longer updated by Apple.
Yes. Virtually all of the third-party hard disks tested by Apple are compatible with System 7.

However, you may run into issues if your hard disk driver software (also called formatting software) is out of date. Most hard disk vendors revised their formatting software for System 7. Alternatively, you may try a third-party driver utility like Silverlining or Drive 7. Apple's utility, HD SC Setup, works only with Apple hard disks. Version 7.0 of HD SC Setup comes with System 7.

If you have a question about a specific third-party hard disk or driver version, contact the vendor.

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Pascal: Converting strings to numeric variables (1 of 2)

This article has been archived and is no longer updated by Apple.
Apple Pascal doesn't allow you to edit integer or real variable inputs. If the wrong data is entered by mistake, the program will be stuck with that data; worse yet, the system may crash.

The STRINGSTUF intrinsic unit is designed to avoid this problem. All data is entered in the form of strings, then converted to the appropriate data format by the unit. This allows you to edit the input data while it is still in string form. STRINGSTUF is located on the no-longer distributed Apple Graphics software package for the Apple II. If you're unable to locate a copy of this software, refer to the article that contains the STRINGSTUF code and instructions on its use: Apple Orchard, Vol. 1, #3, p. 59. The article is by Jo and Frank Kellner.

The STRINGSTUF unit and accompanying demo program are designed to run in versions of Pascal released later than version 1.0. Long integers are not supported in STRINGSTUF.

Locate STRINGSTUF in any unused segment number between 17 and 31. Install the unit in SYSTEM.LIBRARY, following the instructions in the Pascal Operating System Reference Manual on pp. 186-193.

```
(*$S+*)
(*$LPprinter:*) (* Get a compile listing..optional *)

Unit STRINGSTUF; intrinsic code 26;

Interface

Type String255=String[255];

Function STRFP (Var STR:String255;
Var FP:real): boolean;
Function Strint (Var STR:String255;
Var INT:integer): boolean;

Implementation

Function STRFP; (* String to Real *)

CONST MaxReal=1.70E37; (* Max/10 *)
MinReal=1.2E-37; (* Min/10 *)

VAR DEC,DEX,EDP,INX,LEN: integer;
DP,EX,IM,MN,MX,SN: boolean;
CH: CHAR;
Numeric,Exponent,Modifier: Set Of CHAR;

Procedure Terminate;
Var I: integer;
Begin
If MX Then DEX:=-DEX;
EDP:=EDP+DEX-DEC;
If EDP<0
Then For I:=1 To -EDP DO
If FP>=MinReal Then FP:=FP/10.0
Else FP:=0 (* Underflow => 0 *)
Else For I:=1 To EDP Do
If FP<=MaxReal Then FP:=FP*10.0
Else exit (STRFP); (* Overflow *)
If MN Then FP:=-FP;
STRFP:=True;
```

```
exit (STRFP) (* Successful conversion *)
End;

Procedure Search;
Begin
While INX<=LEN Do
IF STR[INX] in Numeric
Then Begin
(*$R-*)
While (INX>1) and
(STR[INX-1] in Exponent+Modifier)
(*$R+*)
Do INX:=INX-1;
Exit(Search) (* Found start of number *)
End
Else INX:=INX+1;
Exit (STRFP) (* Non-numeric string *)
End;
```

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TA45243_System_Compatibility_of_Suitcase_(TIL06810).pdf

System 7: Compatibility of Suitcase

Can I use Suitcase II with System 7?

This article has been archived and is no longer updated by Apple.
You will need at least version 1.2.11 of Suitcase II for use with System 7.
You should contact Fifth Generation Systems, Inc. for more information.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
1 September 1992 - Updated, to include version information.

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TA45244_System_Compatible_Version_of_the_Apple_CDROM_INIT_(TIL06811).pdf

System 7: Compatible Version of the Apple CD-ROM INIT

Article Change History

09/01/92 - UPDATED
* To describe version scheme more fully.

What is the System 7-compatible version of the Apple CD-ROM INIT?

This article has been archived and is no longer updated by Apple.
Use version 3.0.2 (or later) of the Apple CD-ROM system extension (or INIT) when using System 7.

Note that the CD-ROM Software version as a whole may be a different version number than the CD-ROM extension by itself. For example, CD-ROM Software v3.2 comes with Apple CD-ROM system extension 3.1.

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System 7: A Multitasking Operating System

Article Change History

08/25/92 - REVIEWED
* For technical accuracy.

Is System 7 a multitasking operating system?

This article has been archived and is no longer updated by Apple.
Yes. Multitasking (previously known as MultiFinder) has been integrated into the system, so that System 7 is a multitasking operating system. With multitasking, people can work with several programs at the same time and even do some operations concurrently, like working while printing or copying files or recalculating a spreadsheet. With several programs running and available, people get more effective use from the computer.

In System 7, background printing and background copying of files are standard features. Consult your software developer for details on other multitasking capabilities.

At a more technical level, multitasking is the ability to do a number of tasks concurrently. System 7 uses a cooperative multitasking implementation to run several applications concurrently while doing tasks in the background.

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System 7: When an Application from System 6 Won‘t Open

Why can't I open a document under System 7 that I opened under System 6?

This article has been archived and is no longer updated by Apple.
Because applications share available memory, your application may not have enough memory to open your document. You can easily increase the amount of memory that your application uses with System 7, so that you can open and work with any of your existing documents.

Here is a procedure to increase application memory:

1) Quit the application.

2) Find and select the application.

3) Choose Get Info from the File menu in the Finder.

4) At the bottom of the Info box is a field labeled "Application Memory Size." The number in this box is the amount of memory (like 1024K) used by the application when you run it.

5) To increase the memory for this application, change the number in the Application Memory Size field. For example, if you are running a Macintosh computer with 4MB of RAM, you might increase the number to as much as about 3000K. Consult your application's manual for specific recommendations.

Of course, you can always add more RAM memory to the computer.

Published Date: Feb 18, 2012

System 7: "Not Enough Memory..." Message

When it's difficult to open applications or print, these tips will help you use Macintosh memory more efficiently. For more information about managing memory, see the "Macintosh User's Guide".
This article has been archived and is no longer updated by Apple.
To use System 7, your Macintosh needs at least 2MB of memory (4MB is recommended). If you customarily work with several programs at a time, you may wish to install more memory.

Use the Available Memory
If you get a message asking if you'd like to open a program using the available memory, click OK, and the program will open. This message appears when the available memory is greater than the minimum memory required to open the program, but less than the recommended amount. In rare cases, you may be unable to use some features of the program.

Quit Some Open Programs
When you open an application and see the "not enough memory" message, you should quit one or more open programs. Open the Application menu (right end of the menu bar) to see which programs are open. This message appears when the available memory is less than the minimum required to open the program.

Change a Program's Memory Size
You can often avoid memory problems by reducing or sometimes increasing a program's current memory size. In rare cases, reducing a program's memory size degrades performance.
Sometimes the "not enough memory" error is telling you that your system may have enough RAM available, but the application's "preferred memory size" is set too low. Check About This Macintosh in the Apple menu for the largest free block size to ensure that you have enough free space; increase the Preferred Size (Step 4 in the following table) to a larger amount (you may need to experiment).

Follow these steps to change a program's memory size:

1. Quit the program.
2. In the Finder, select the program's icon.
3. Choose Get Info from the File menu. The program's Info window appears.
4. Reset the memory size in the Preferred Size field.
5. Close the Info window
6. Try again to open the program.

Turn Off Background Printing
When background printing is on, you can print while using the computer for other work. If you don't need background printing, you can reduce the amount of memory required to print by turning it off.

Follow these steps to turn off background printing:

1. Choose the Chooser from the Apple menu.
2. In the Chooser window, select a LaserWriter icon.
3. Click the Background Printing: Off button.

Quit Some Programs Before Printing
When you print, you'll sometimes see the Application menu begin to blink. When this happens, follow these steps to quit a program and make more memory available for printing:

1. Choose Finder from the Application menu. You'll see an alert box.
2. Click OK to close the alert box.
3. From the Application menu, choose the program you want to close. The program becomes active.
4. Choose Quit from the File menu.
5. After quitting one or more programs, try printing again.

Set the Disk Cache to the Smallest Size
The disk cache is a portion of the computer's memory set aside to limit how often the computer must read from a disk. This speeds up the computer's performance. By reducing the size of the disk cache, you can make more memory available for application programs. Follow these steps to adjust the disk cache:

1. Choose Control Panels from the Apple menu.
2. Open the Memory control panel (double-click the Memory icon).
3. In the Memory control panel, click the down arrow repeatedly until the disk cache is the smallest possible size.
4. Choose Restart from the Special menu to restart the Macintosh.

Drag Optional Extensions Out of the Appropriate Folders
Extensions (also known as INITs) compete with application programs for memory. (System extension icons are often displayed in the bottom-left

portion of the screen when the computer starts up.) There are three types of extensions:

* Control Panels
* System Extensions
* Chooser Extensions

These extensions may be located in any of these folders:
* Control Panels folder
* System Folder
* Extensions folder

You can conserve memory by removing system extensions that you don't need. For instance, if your Macintosh is not connected to a host database, you can remove the DAL (Data Access Language) system extension. Likewise, if your Macintosh is not connected to a network, you can remove the AppleShare system extension. Follow these steps to remove system extensions:

1. Open the System Folder.
2. Open the appropriate folders
3. Drag the system extension icon out of the System Folder to another location on your hard disk.
4. Restart the computer.

Turn Off File Sharing
When file sharing is turned on, you can share information on your computer's hard disk with other users on a network. If you don't currently use file sharing, you can conserve memory by turning it off or removing it from the Extensions folder. Follow these steps to turn off file sharing:

1. Choose Control Panels from the Apple menu.
2. Open the Sharing Setup control panel (double-click the Sharing Setup icon).
3. Click Stop in the File Sharing section of the Sharing Setup control panel. A message appears asking how many minutes the computer should wait until file sharing is turned off.
4. Type a number and click OK.

Restart the Computer
If you have opened and closed a number of programs, your Macintosh memory can become fragmented so that you can't open a large program. When this happens, quit all the open programs, and restart the computer and then open the program.

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TA45248_System_Extensions_Folder_(TIL06815).pdf

System 7: Extensions Folder

What is the role of the Extensions folder?

This article has been archived and is no longer updated by Apple.
The Extensions folder inside the System 7.x System Folder contains "system extensions" (previously known as "INITs"), and miscellaneous software additions to your Macintosh computer, such as printer drivers and network drivers.

The Extensions folder is the first place that the System looks when loading system extensions at startup.

System 7.x implements a new capability for automatic installation for system resources. When you drag a system extension (INIT), control panel, font, or a desk accessory onto the icon of the System folder, the system automatically determines where the resource should go and places it there. If you drag a system extension (INIT) onto the icon of the System Folder, it gets placed in the Extensions folder.

Article Change History:
13 Sep 1995 - Updated format, reviewed for technical accuracy.
09 Sep 1992 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Mac OS: Preferences Folder

What is the role of the Preferences folder?

This article has been archived and is no longer updated by Apple.

The Preferences Folder is a folder inside the System Folder. It provides a standard place for applications to store their special files, such as dictionaries, preference files, option files, settings files, resume files, and so forth. Application preferences can be reset to default values by throwing away its preference file; a new file will be created the next time the application is opened.

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System 7: Sharing a Hard Disk with a System 6 Macintosh

Can I move a hard disk between a Macintosh computer running System 6 and a Macintosh computer running System 7?

This article has been archived and is no longer updated by Apple.

Yes. You can move hard drives between Macintosh computers running System 6 and System 7. When a hard disk is moved from System 6 to System 7, you will see a dialog box when you start stating that "This disk is being updated for new system software". This process does not affect any data on your disk. Rather, it means the system is creating a new System 7 Desktop file on the hard disk. Afterwards, you may use your hard disk as usual.

When a hard disk is moved from System 7 back to System 6, you will notice a few differences under System 6. First, you should rebuild the Desktop of the hard disk by holding down the Command and Option keys, while starting the Finder. If you don't do this, the first time you go back to System 6, some icons may not appear properly.

You may also notice two new folders which appear on your hard disk under System 6 which were not present under System 7. The first of these is the Desktop folder which will contain any items which you placed on the desktop under System 7. The second folder you will see under System 6 is the Trash folder. This folder will contain any items which were dragged to the Trash (but not emptied) under System 7.

Moving a disk between System 6 and System 7 is safe and will not damage any data.

Note: Locked media created under System 7 cannot be mounted under System 6 until they are unlocked.

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System 7: Compatibility of System 6 Desk Accessories

Article Change History

09/01/92 - REVIEWED
* For technical accuracy; edited.

Will my System 6 desk accessories work under System 7?

This article has been archived and is no longer updated by Apple.
Yes. Most all desk accessories (DAs) written for System 6 run under System 7. To use a System 6 desk accessory, you must first take it out of its "suitcase". Follow these steps:

1) Locate the desk accessory. It should appear in a file that has a suitcase icon. (Unless it was already part of the System 6 System file - in which case it would be in the System 7 System file.)

2) Open the suitcase icon by selecting it and choosing Open from the File menu, or by double-clicking on the suitcase. The suitcase will open into a window and show the desk accessory inside.

3) Drag the desk accessory out of the window and onto your hard drive. You can put the desk accessory anywhere on your hard drive. If you want to access the desk accessory from the Apple Menu, put the desk accessory in the Apple Menu Items folder.

Some desk accessories, like spell checkers and art effects, will need special installation procedures to work properly with System 7 (they may need to be installed in the System file, though Apple does not endorse or recommend this method). Check with the software developer for additional details on using these DAs with System 7.

Published Date: Feb 18, 2012

System 7: Desk Accessories and the Apple Menu Items Folder

Article Change History

09/14/92 - REVIEWED
* For technical accuracy.

Do Desk Accessories have to be in the Apple Menu Items folder?

This article has been archived and is no longer updated by Apple.
No. You may put and use your desk accessories anywhere on your hard disk (including the desktop or in the Apple Menu Items folder).

Putting a Desk Accessory into the Apple Menu

If you want to put a desk accessory into the Apple menu, drag the desk accessory onto the System Folder icon. Your desk accessory will automatically get placed in the Apple Menu Items folder.

Moving a Desk Accessory from The Apple Menu to the Desktop

If you want to remove a desk accessory from the Apple Menu and put it on the desktop instead, follow these steps:

1) Open your System folder.

2) Locate and open the Apple Menu Items folder.

3) Locate the desired desk accessory and drag it out of the Apple Menu Items folder and onto the desktop.

Using a Desk Accessory from System 6

You may find that older desk accessories appear in desk accessory suitcases. To use such a desk accessory, open the suitcase by double-clicking it. Then, drag the desk accessory out of the suitcase window. You can now use the desk accessory.

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Pascal: Converting strings to numeric variables (2 of 2)

This article has been archived and is no longer updated by Apple.

```
Begin (*STRFP*)
Numeric:=['0'..'9'];
Exponent:=['E','e'];
Modifier:=['+','-','.',','];
DP:=False; EX:=False; IM:=True;
MN:=False; MX:=False; SN:=False;
DEC:=0; DEX:=0; EDP:=0; INX:=1;
LEN:=Length(STR); FP:=0;
STRFP:=False;
Search; (* Find start of number *)
While INX<=LEN Do Begin
CH:=STR[INX];
If CH in Numeric+Exponent+Modifier
Then Begin
If CH in Numeric
Then If EX
Then Begin
If DEX<1000 Then (* Exponent *)
DEX:=DEX*10+ORD(CH)-ORD('0');
SN:=True
End

Else Begin
If FP<1.0E8
Then (* Mantissa *)
FP:=FP*10+ORD(CH)-ORD('0')
Else EDP:=EDP+1;
If DP Then
(* Digits to right of DP *)
DEC:=DEC+1; IM:=False;
SN:=True
End
Else Case CH of
'+': If SN Then
(* Duplicate '+' sign *)
Terminate
Else SN:=True
'-': If SN Then
(* Duplicate '-' sign *)
Terminate
Else Begin
If EX Then MX:=True
Else MN:=True;
SN:=True
End;
'.': If DP of EX Then
(* Duplicate '.' *)
Terminate
Else DP:=True;
'E','e': If EX Then Terminate
(* Duplicate 'E' *)
Else Begin
If IM Then
(* Implied mantissa *)
FP:=1.0;
EX:=True;
SN:=False
End;
End; (*Case*)
INX:=INX+1
End
```

```
Else Terminate (* End of number *)
END;
Terminate (* End of string *)
End;

Function Strint; (* String to Integer *)

Var FP: real;

Begin
Strint:=STRFP (STR,FP); (* First convert to real *)
If ABS(FP)<=MasInt
Then INT:=ROUND(FP) (* then round to integer *)
Else Begin
String:=False; (* Integer out of range *)
INT:=0
End
End;

Begin (* Unit Initialization *)
End.
```

This sample program illustrates the use of STRINGSTUF. Use the compiler $V- option to override the normal string length checking.

```
Program Stringtest;

Uses STRINGSTUF; (* tests STRINGSTUF library unit *)

Var Input,STR: string;
INT: integer;
FP: real;

Begin
Page (output);
Writeln ('STRINGSTUF String => Numeric Conversion:');
Repeat
Writeln;
Write ('String : ');
Readln (input);
(*$V-*)
If STRFP (input,FP) Then
Begin
Writelnn (' real: ',FP);
If Strint (input,INT)
Then Writeln ('integer: ',INT)
Else Writeln('integer: Out of range.')
End
Else Writeln('No numeric value in string.');
(*$V+*)
Until input=''
End.
```

Published Date: Feb 18, 2012

Apple Menu: Items Limit

Is there a limit to the number of items in the Apple menu?
This article has been archived and is no longer updated by Apple.
System 7.x and higher have a limit of 52 items that can be displayed in the Apple Menu Items folder.

The value of 52 was set for performance reasons. When more than 52 items are in the Apple Menu Items folder, available RAM for processing is limited (especially when the menu items have color icons), drastically slowing the display of menus. A decision was made to consider what "acceptable" performance was, and the value of 52 menu items was the threshold amount.

You can still place more than 52 items in the Apple Menu Items folder, but only the first 52 (alphabetically by name) are displayed. For more information on rearranging items in the Apple menu, see the following Tech Info Library article:

Article 8390: "**Mac OS: Changing Sequence of Apple Menu Items**"

Here are a couple of workarounds:

- Have folder aliases in the Apple Menu Items folder.
- Use the hierarchical menus in the System Software, or a third-party software that provides hierarchical menus. Hierarchical menus in System 7.5 and higher are controlled through the Apple Menu Options control panel.

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TA45255_System_INITs_or_System_Extensions_in_System__(TIL06821).pdf

System 7: INITs or System Extensions in System 7

Article Change History

09/25/92 - REVIEWED
* For technical accuracy.

How are INITs loaded in System 7?

This article has been archived and is no longer updated by Apple.
In System 7, INITs are referred to as "system extensions." The system looks for extensions in three places when loading them at boot time:

* First, it looks in the Extensions folder (located in the System Folder). This is the proper place to put your compatible INITs or system extensions.
* Second, it looks in the Control Panels folder (also inside the System Folder).
* Third, it loads any extensions it finds at the root level of the System Folder itself.

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System 7: How to Disable System Extensions

Can I disable system extensions (previously called INITs) under System 7?
This article has been archived and is no longer updated by Apple.
Yes. If your system crashes when you first turn it on, or if you are experiencing unexpected behavior with an application or in the Finder itself, you may have one or more system extensions (INITs) that are incompatible with System 7 or with each other.

If you suspect that problems you are experiencing with your system are due to extensions loaded in your System Folder, Extensions folder, or Control Panels folder, you can temporarily disable them by holding down the Shift key as you start your computer.

After you have started your Macintosh while holding down the Shift key, you can remove any extensions that may be causing problems. The next time you restart, all of your extensions will load as usual.

Holding down the Shift key when you start the computer turns off all extensions that may cause other things on your system not to work. You should do this only when you think a newly-added extension is the cause of your problems. Some system extensions are needed to do essential things like share files, access file servers, access CD-ROMs, and so on. However, you can continue to print even with the extensions disabled.

Published Date: Feb 18, 2012

System 7: INIT Does Not Work in the Extensions Folder

Article Change History

08/20/92 - REVISED
* To make more clear; edited.

What should I do if an INIT does not work in the Extensions folder?

This article has been archived and is no longer updated by Apple.
INITs (called "system extensions" in System 7) that do not work when loaded to the Extensions folder should be moved to the root level of the System folder. Some INITs written for System 6 expect to be at the same folder level as the System file.

To put an INIT into the root level of the System folder without having it automatically routed to the Extensions folder, open the System Folder and drag the INIT into the folder's open window, rather than onto the icon of the System Folder. Automatic routing only occurs when you drop something onto the icon of the System folder.

If the INIT still doesn't work at the root level of the System Folder, check with the source to make sure the INIT is compatible with System 7.

Published Date: Feb 18, 2012

System 7: No Aliases in System 6

Do aliases work in System 6?

This article has been archived and is no longer updated by Apple.
No. Aliases are not supported under System 6. You can see the Alias file under System 6, but not use it.

Published Date: Feb 18, 2012

Pascal: Intrinsic unit for Silentype procedures (1 of 3)

This article has been archived and is no longer updated by Apple.
Appendix D (pp. 53-59) of the Silentype reference manual indicates that all parameter procedures can be placed into an intrinsic library unit. This is a handy and valuable unit to have if you plan to use the Silentype printer in a Pascal program.

To extend the usefulness of the Silentype unit, two procedures have been added to this listing and another has been changed. These three procedures are discussed here; refer to the Silentype manual for a description of the remainder.

Procedure SetPage (Page: integer):

This procedure allows you to change from one high-resolution graphics screen to the other; however, only the first high-res page is used in the Pascal system.
Values: 1=first page; 2=second page.

Procedure ColdStart:

The ColdStart procedure resets the Silentype parameters to the default values as specified in the printer manual. This procedure is equivalent to turning off the power to the printer.
Values: none required.

Procedure WarmStart:

The Restore procedure as listed in the Silentype manual has been revised and renamed WarmStart. Included in the revision is the SetPage procedure. This procedure differs from ColdStart in that the parameters set by WarmStart are user-definable; that is, they reflect the particular setup that you find most appliable to your needs. For instance, you may set a darkness setting to 3 or 5, and so on.

Initialization Code:

The initialization code consists of a call to the ColdStart procedure. This call is executed when the unit is first brought into the system from the library to ensure that the printer is not retaining any settings from previous uses with either Pascal or BASIC. If you wish, you may change this code to WarmStart or another code of your choice; you may also leave the initialization section empty, though in that case you should still include the BEGIN and END.

Installing the Unit:

The Silentype unit comes ready for you to enter it, compile it and install it in your copy of SYSTEM.LIBRARY, though you may wish first to change the Intrinsic Code value or the contents of WarmStart to suit your individual needs. Refer to pp. 186-193 of the Apple Pascal Operating System Reference manual for the instructions for placing the compiled Silentype unit into your SYSTEM.LIBRARY.

```
(*$S+*)
Unit Silentype; Intrinsic Code 27;

Interface

Procedure ROMEnable;
Procedure SetByteValue (Loc,Value: integer);
Function ByteValue (LOC: integer): integer;
Procedure Send (CH: CHAR);
Procedure SetUniDirect;
Procedure SetBidirect;
```

```
Function UniDirect: boolean;
Procedure SetNegative;
Procedure SetPositive;
Function Negative: boolean;
Procedure SetPage (Page: integer);
Procedure SetDark (Darkness: integer);
Function Dark: integer;
Procedure SetForm (Length: integer);
Function Form: integer;
Procedure SetSpace (Length: integer);
Function Space: integer;
Function LeftMargin: integer;
Function RightMargin: integer;
Procedure SetLeftMargin (Position: integer);
Procedure SetRightMargin (Position: integer);
Procedure PrintBuffer;
Procedure ClearBuffer;
Procedure FormFeed;
Procedure PrintPic;
Procedure ColdStart;
Procedure WarmStart;
```

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TA45260_System_One_View_per_Shared_Folder_(TIL06832).pdf

System 7: One View per Shared Folder

Article Change History

09/03/92 - REVIEWED
* For technical accuracy.

Can different users have their own view of a shared folder?

This article has been archived and is no longer updated by Apple.
No. The view of shared folder is controlled by the owner of that folder.

Published Date: Feb 18, 2012

System 7: How to Find with Multiple Criteria

Article Change History

08/21/92 - UPDATED
* To add information about "cannot display all items" message.

How can I do a Find with multiple criteria?

This article has been archived and is no longer updated by Apple.
Do this through the "Find..." dialog in the Finder:

1) Click on the "More Options" button.

2) Select the first criterion you want to search and check "all at once".

3) Click the Find button.

4) After all the files meeting the first criterion are found and selected, choose "Find, More Options", enter the second criteria, and select "Search: the selected items".

5) Click the Find button.

Only those items that meet both criteria remain selected. You can repeat this procedure to narrow the search as much as you need.

If you get a message that not all items meeting the criteria could be displayed at once, the most likely reason is that some items are at the desktop level and could not be displayed in the window. Try moving those items from the desktop into the root level window of the volume. The other possible reason for the message is that you have run out of memory due to too large a search result. Try quitting any open applications to free up more memory.

Published Date: Feb 18, 2012

System 7: How to Install FKEY Resources

How do I install FKEY resources to be used with System 7?
This article has been archived and is no longer updated by Apple.
As in System 6, FKEYs must be installed using a "resource moving" utility like ResEdit (version 2.0 or later).

Installing System 7 over a previous system does not remove FKEYs that were already installed in your system.

Note: The screen-capture FKEY (invoked by pressing Command-Shift-3) has been much improved in System 7. When you press Command-Shift-3, the system takes a "snapshot" of your screen and creates a TeachText file of the image. The resulting file contains an accurate image of your screen, even displaying colors and the image from multiple attached monitors.

Warning: The instructions in this article refer to using ResEdit. Apple Computer, Inc., is not liable for any damage done to your software through the use of ResEdit to alter software.
Published Date: Feb 18, 2012

System 7: The Little Triangle Beside Each Folder

Article Change History

08/21/92 - UPDATED
* To include keyboard shortcut.

When I'm in View by Name, Size, or Date, I see a little triangle beside each folder. What does it do?

This article has been archived and is no longer updated by Apple.
When you are in a list view (View by Name, Size, Kind, Label, Date), notice that each folder has a small triangle just to its left. Clicking this triangle displays the contents of that folder in the same window.

With the icon of a folder selected, Command-right arrow will flip the triangle down and display the contents of the folder just like clicking on the triangle; Command-left arrow will flip the triangle back up and hide the contents of the folder.

If you want to view the contents of that folder in a separate window, double-click the folder icon, or select the icon and choose Open from the File menu.

Published Date: Feb 18, 2012

System 7: How to Rename File and Folder Icons

Article Change History

08/21/92 - UPDATED
* With additional tips on renaming.

How do I rename file and folder icons in System 7?

This article has been archived and is no longer updated by Apple.
In Finder 7.0, renaming icons is slightly different from System 6. To rename an icon you must click directly on the name of the icon and wait for the cursor to change to an I-beam. A box will appear around the name of the icon and you can then edit the name. The speed at which the box appears, making the file or folder name editable, is dependent on the double-click speed in the Mouse control panel.

But if you don't want to wait for the cursor to change to an I-beam, you can click once on the file or folder name and drag the cursor off the name. This will make the name immediately editable. Alternately, click anywhere on the icon and press Return to make the name immediately editable.

Published Date: Feb 18, 2012

System 7: How to Customize an Icon

Can I customize an icon in System 7?
This article has been archived and is no longer updated by Apple.
Yes. Here's how to customize an icon in System 7:

1. Select the graphic you want to use for an icon. An icon in the Get Info window of any document or folder is a possible source.

2. Copy the graphic to the Clipboard by choosing Copy from the Edit menu.

3. In the Finder, select the icon you want to change.

4. Choose Get Info from the File menu.

5. Ensure that the Locked box in the lower-left corner of the Get Info window is not checked. You cannot customize the icon of a locked file.

6. Click the icon at the upper left of the Get Info window to select it.

7. Choose Paste from the Edit menu.

8. Click the close box to close the Get Info window.

You can change an icon back by clicking the icon in the upper-left corner of the Get Info window and choosing Cut or Clear from the Edit menu, or by using the Undo command (Command + Z).

Notes
- If the selected graphic is bigger than the icon in the Get Info window, it automatically shrinks to fit.
- Some icons cannot be customized, including those for locked items, control panels, and other parts of the system software.

Published Date: Feb 18, 2012

System 7: How to Change Color of a Window or Dialog Box

Article Change History

08/24/92 - REVIEWED
* For accuracy.

Can I change the colors of windows and dialog boxes?

This article has been archived and is no longer updated by Apple.
Yes. The System 7 Color Control Panel lets you change both the color used for highlighting text and the color scheme used for windows, scroll bars, and dialog boxes.

To do this, open the Color Control Panel and click the "window color" pop-up menu. From this menu you can select various color schemes or black-and-white.

You may also choose from several color desktop patterns in the General Controls Control Panel.

Published Date: Feb 18, 2012

Pascal: Intrinsic unit for Silentype procedures (2 of 3)

This article has been archived and is no longer updated by Apple.
Implementation

```
Procedure ROMEnable;
CONST ROMSOff= -12289;
ROMOn= -16128;
Type Window= packed array [0..0] OF 0..255;
Var ADDR: integer;
P: ^Window;
Begin
ADDR:=ROMSOff;
MoveLeft(ADDR,P,2);
P^[0]:=0;
ADDR:=ROMOn;
MoveLeft(ADDR,P,2);
P^[0]:=0
End;

Procedure SetByteValue;
Type Window= packed array [0..0] OF 0..255;
Var ADDR: integer;
P: ^Window;
Begin
ROMEnable;
ADDR:=LOC;
MoveLeft(ADDR,P,2);
P^[0]:=Value
End;

Function ByteValue;
Type Window= packed array [0..0] OF 0..255;
Var ADDR: integer;
P: ^Window;
Begin
ROMEnable;
ADDR:=LOC;
MoveLeft(ADDR,P,2);
ByteValue:=P^[0]
End;

Procedure Send;
CONST PrintUnit= 6;
Begin
UnitWrite(PrintUnit,CH,1,0,12)
End;

Procedure SetUnitDirect;
CONST MaxByte= 255;
Direction= -12529;
Begin
SetByteValue(Direction,MaxByte)
End;

Procedure SetBiDirect;
CONST MinByte= 0;
Direction= -12529;
Begin
SetByteValue(Direction,MinByte)
End;

Function UniDirect;
CONST MaxByte= 255;
```

```
MinByte= 0;
Direction= -12529;
Begin
Case ByteValue(Direction) Of
MinByte: UniDirect:=False;
MaxByte: UniDirect:=True
End
End;

Procedure SetNegative;
CONST MinByte= 0;
Flip= -12524;
Begin
SetByteValue(Flip,Minbyte)
End;

Procedure SetPositive;
CONST MaxByte= 255;
Flip= -12524;
Begin
SetByteValue(Flip,MaxByte)
End;

Function Negative;
CONST MaxByte= 255;
MinByte= 0;
Flip= -12524;
Begin
Case ByteValue(Flip) Of
MinByte: Negative:=True;
MaxByte: Negative:=False
End
End;

Procedure SetPage;
CONST GraphPage =-12525;
Begin
If Page=2 Then Page:=64
Else Page:=32;
SetByteValue(GraphPage,Page)
End;

Procedure SetDark;
CONST INTEN= -12528;
Begin
If Darkness<0 Then Darkness:=0;
If Darknes>7 Then Darkness:=7;
SetByteValue(INTEN,Darkness)
End;

Function Dark;
CONST INTEN= -12528;
Begin
Dark:=ByteValue(INTEN)
End;

Procedrue SetForm;
CONST FormLength= -12531;
Begin
If Length<0 Then Length:=0;
If Length>255 Then Length:=255;
SetByteValue(Formlength,length)
End;
```

Published Date: Feb 18, 2012

TA45268_System_How_to_Use_Balloon_Help_(TIL06840).pdf

System 7: How to Use Balloon Help

Article Change History

08/24/92 - REVIEWED
* For accuracy.

How does Balloon Help work? Will I be able to do work when Help is turned on?

This article has been archived and is no longer updated by Apple.
When Balloon Help is on, balloons will appear which tell you about anything you point to on the screen. You don't need to click, just point. When help is turned on, every point, click, and drag works exactly as it normally does.

To turn Balloon Help ON chose "Show Balloon" in the Help menu.

To turn Balloon Help OFF chose "Hide Balloon" in the Help menu.

Published Date: Feb 18, 2012

System 7: What the Find Command Beep Means

Article Change History

08/24/92 - REVISED
* To give additional information.

Why do I only get a beep sound when I try to use the Find command?

This article has been archived and is no longer updated by Apple.
The beep sound means that Find could not find any more files with the search criteria you specified. When an icon is found, the Find command opens the window where that icon resides and selects it for you.

When the Find command fails to locate a single item that fits your search criteria, it displays the message "No matching items were found."

Published Date: Feb 18, 2012

System 7: What Happened to the "Set Startup" Menu Item

Article Change History

08/24/92 - REVISED
* To give more details.

What happened to the "Set Startup" menu item that was in System 6?

This article has been archived and is no longer updated by Apple.
"Set Startup" under System 6 lets you switch between the Finder and MultiFinder and set certain applications and desk accessories to open automatically when you turn on your Macintosh.

System 7 has added more flexibility to this feature. Using System 7, you can have applications, documents, control panels, desk accessories, or aliases open automatically when you start you Macintosh.

To do this, just put the items you want opened into the Startup Items folder inside the System folder. If you want an application to open at startup but you don't want to move it from its current location, just make an alias of it and put that into the Startup Items folder.

Published Date: Feb 18, 2012

System 7.x: PrintMonitor Documents Folder

What does the PrintMonitor Documents folder do?
This article has been archived and is no longer updated by Apple.
With System 7, you can print to a LaserWriter or a StyleWriter while you do other work with your Macintosh. For instance, you can print and continue working on a document at the same time. This is called "background printing."

When background printing is turned on for printers in the Chooser, files waiting to be printed are temporarily stored in the PrintMonitor Documents folder until the printer is ready to print them. This is all done in the background.

Direct-connect printers that use Grayshare, such as the Apple Color Printer, the StyleWriter II, the Personal LaserWriter 300, also use the PrintMonitor documents folder. The host computer handles the printer spooling, and temporarily stores files in the PrintMonitor Documents folder.

The ImageWriter does not support background printing.

Published Date: Feb 18, 2012

System 7: Views Control Panel

Article Change History

09/16/92 - REVISED
* To show additional display tip about putting icons in order.

What does the Views control panel do?

This article has been archived and is no longer updated by Apple.
The Views control panel in System 7 controls how the files and windows on your desktop are displayed.

You can change the font and font size the Finder uses to display icons, and how icons are arranged when you select Clean Up from the Special menu.

Another option is selecting how information is displayed in various list views (View by Name, Date, Kind, Size, Label). You can also change things like icon size, space available display, and what type of information should appear.

If you want to arrange your files in an icon view but in order of name, date, kind, size or label, first display the files by the view by which you want to sort (using the View menu. Then, change your view to one of the icon views, hold down the Option key, and choose Clean Up by... from the Special menu. Your last chosen view will be the parameter by which the icons are sorted.

Published Date: Feb 18, 2012

System 7: Why Trash Icon Expands When a Floppy Is Mounted

Article Change History

09/16/92 - REVIEWED
* For technical accuracy.

Why does the trash icon expand when I insert a disk?

This article has been archived and is no longer updated by Apple.
In System 7, items dragged to the Trash are not deleted until you select Empty Trash from the Special menu. If you drag items from a floppy to the Trash, those items will appear in the Trash whenever that disk is inserted, until you empty the Trash.

If you insert a disk that has some items in the Trash, the Trash icon will bulge when you insert the disk to let you know this disk has items in the Trash.

Published Date: Feb 18, 2012

System 7: The "Some items could not be opened" Message

Why do I get the message "Some items could not be opened" when I start my Macintosh?

This article has been archived and is no longer updated by Apple.
When a Macintosh starts, it looks inside the folder "Startup Items" inside the System folder and tries to open all of the icons it finds in that folder. This is useful when you have applications, documents, desk accessories, and control panels that you want to have opened automatically at startup.

If you see the message "Some items could not be opened" you have probably placed an icon that cannot be opened (like an INIT, system extension, printer driver, and so on) inside your Startup Items folder.

Published Date: Feb 18, 2012

System 7: "All items could not be displayed in this window"

Why do I get the message "All items could not be displayed in this window" when I do a "Find-All At Once?"

This article has been archived and is no longer updated by Apple.
This message is displayed when you find more items than the Finder can display at one time.

A partial list of the items meeting your "Find" criteria will be shown. To see the remaining items, select "Find Again" from the File menu.

Published Date: Feb 18, 2012

TA45276_System_Balloon_Help_for_Applications_(TIL06849).pdf

System 7: Balloon Help for Applications

Article Change History

08/24/92 - REVISED
* For clarity.

Can I get Balloon Help for my current application?

This article has been archived and is no longer updated by Apple.
To get Balloon Help for an application you were using under System 6, you need to obtain a version of the application that supports Balloon Help under System 7. Most new or updated applications that came out after May 1991 support Balloon Help.

Published Date: Feb 18, 2012

Pascal: Intrinsic unit for Silentype procedures (3 of 3)

This article has been archived and is no longer updated by Apple.

```
Function Form;
CONST Formlength= -12531;
Begin
Form:=ByteValue(Formlength)
End;

Procedure SetSpace;
CONST INCR= -12530;
Begin
If Length<1 Then Length:=1;
IF Length>252 Then Length:=252;
SetByteValue(INCR,Length)
End;

Function Space;
CONST INCR= -12530;
Begin
Space:=ByteValue(INCR)
End;

Function LeftMargin;
CONST LMAR= -12527;
Begin
LeftMargin:=ByteValue(LMAR)
End;

Function RightMargin;
CONST RMAR= -12526;
Begin
RightMargin:=ByteValue(RMAR)
End;

Procedure SetLeftMargin;
CONST LMAR= -12527;
Begin
If Position>=RightMargin Then
Position:=RightMargin-1;
If Position<0 Then Position:=0;
SetByteValue(LMAR,Position)
End;

Procedure SetRightMargin;
CONST RMAR= -12526;
Begin
If Position<=LeftMargin Then
Position:=LeftMargin+1;
If Position>83 Then Position:=83;
SetByteValue(RMAR,Position)
End;

Procedure PrintBuffer;
CONST CF= 6; (* ASCII for CONTROL-F *)
Begin
Send(CHR(CF))
End;

Procedure ClearBuffer;
CONST PrintUnit= 6;
Begin
UnitClear(PrintUnit)
End;
```

```
Procedure FormFeed;
CONST FF= 12; (* ASCII for form-feed *)
Begin
Send(CHR(FF))
End;

Procedure PrintPic;
CONST CQ= 17; (* ASCII for CONTROL-Q *)
Var BiDirect: boolean;
Begin
If UniDirect =True Then BiDirect:=False
Else BiDirect:=True;
If BiDirect Then SetUniDirect;
Send(CHR(CQ));
If BiDirect Then SetBiDirect
End;

Procedure ColdStart;
CONST MinByte= 0;
Default= -12506;
Begin
SetByteValue(Default,MinByte)
End;

Procedure WarmStart;
Begin
SetBiDirect;
SetPositive;
SetPage(1);
SetDark(5);
SetForm(40);
SetSpace(2);
SetLeftMargin(2);
SetRightMargin(81);
End;

Begin (* Initialization Section *)
ColdStart;
End.
```

Published Date: Feb 18, 2012

System 7: Sharing Setup Control Panel

Article Change History

09/04/92 - REVISED
* To add more information.

What is the role of Sharing Setup?

This article has been archived and is no longer updated by Apple.
The Sharing Setup control panel lets you set up file sharing and network communication for your Macintosh. With this, you identify yourself and give yourself a password for authentication when you remotely access your Macintosh. You also name your Macintosh computer, so it can be identified when other users want to connect to your shared resources.

How to Turn on File Sharing

Follow these steps:

1) Open your Control Panel folder.

2) Open Sharing Setup Control Panel.

3) Type in your name, your password, and your computer's name.

4) Click the start button for File sharing.

5) Click the start button for Program Linking if you will be using that feature.

More information is contained in the Macintosh User's Guide.

Published Date: Feb 18, 2012

System 7: Users and Groups Control Panel

Article Change History

09/04/92 - EDITED
* For clarity and technical accuracy.

What is the role of Users and Groups in System 7?

This article has been archived and is no longer updated by Apple.
The Users and Groups control panel lets you identify the names and passwords of users with whom you want to share specific folders or applications. With this, you can also set certain abilities regarding whether or not the user can connect to shared resources, or whether they change their connection password. User Setup also lets you create group icons and put multiple users into these groups.

How to Create a User

Follow these steps:

1) Open your Control Panels folder.

2) Open the Users & Groups control panel.

3) Select New User from the File menu.

4) Type the name of the new user and press the Return key.

More information is contained in the Macintosh User's Guide.

Published Date: Feb 18, 2012

System 7: File Sharing Monitor Control Panel

Article Change History

09/04/92 - EDITED
* For clarity and with more complete information.

What is the role of the "File Sharing Monitor" in System 7?

This article has been archived and is no longer updated by Apple.
The File Sharing Monitor Control Panel lets you monitor file sharing activity. It shows you the name of any connected users (actually the names you have allowed users to connect with) and the total time that the user has been connected in the current session.

This monitor also lets you disconnect any connected users. A thermometer-style meter indicates the amount of access by all connected users.

How to View File-Sharing Status

Follow these steps:

1) Open your Control Panels folder.

2) Open the File Sharing Monitor control panel.

How to Disconnect a File-Sharing User

Follow these steps:

1) Open the File Sharing Monitor control panel.

2) Click on (select) the user you want to disconnect from the Connected Users list.

3) Click Disconnect.

4) Type the number of minutes before the user is disconnected, and click OK.

Published Date: Feb 18, 2012

TA45281_System_File_Sharing_Performance_Compared_with_AppleShare_(TIL06854).pdf

System 7: File Sharing Performance Compared with AppleShare

Article Change History

09/04/92 - REVISED
* To clarify and provide additional information and numbers from other sources.

How does file sharing differ from the AppleShare File Server?

This article has been archived and is no longer updated by Apple.
AppleShare File Servers are designed to perform much better than Macintosh computers using file sharing when large numbers of users with heavy load requirements are involved. Service from a Macintosh with AppleShare File server software performs approximately 25 percent better than a Macintosh using file sharing for the same configuration.

File sharing lets an individual directly share and control sharing of folders of information with a small group of individuals. An AppleShare file server provides centralized control of sharing by an Administrator for a large group of individuals. File sharing is built around the Macintosh user with the focus and emphasis on personal control of sharing local folders. The distinguishing marks of centralized file service includes issues regarding administration for large workgroups, performance, and central access. System 7's file sharing is a form of distributed file sharing.

Performance and access needs will determine which approach provides the best service. File sharing is best suited for small workgroup focus, with optimal performance for low sharing load situations. Centralized file servers like AppleShare are designed for high traffic with large numbers of users and are designed for continuous operation with no interruptions.

Using file sharing, up to 10 folders per machine can be shared, each having an unlimited number of enclosed folders. Up to 10 guest users can be connected to a networked hard disk, with up to 50 guest users identified in the Users and Groups file. This contrasts with 120 concurrent users for AppleShare 3.0.

Published Date: Feb 18, 2012

System 7: Sharing Files with a System 6 Macintosh

Article Change History

09/04/92 - EDITED
* For clarity and technical accuracy.

If I am running System 7, can I share files, documents, or folders with a Macintosh running System 6?

This article has been archived and is no longer updated by Apple.
Yes. To set up your Macintosh computer to share files, documents, or folders, follow the instructions on setting up file sharing in the Macintosh User's Guide or search for other articles on the subject. You can share folders with any Macintosh (from the 512k enhanced and up), the Apple II, and any MS-DOS computer that uses AppleShare workstation software. Apple II and MS-DOS computers require special software and, in some cases, hardware.

Published Date: Feb 18, 2012

About File Sharing in System 7 Through Mac OS 9

Personal File Sharing in System 7 through Mac OS 9 allows you to share files between two or more computers. This document describes setup and limitations.
This article has been archived and is no longer updated by Apple.

What does File Sharing do?

Personal File Sharing allows you share your disks or folders and the files they contain with other people on a network. Personal File Sharing is available to Macintosh computers using System 7 through Mac OS 9 that are connected to an AppleTalk or TCP/IP network. With your permission, others can view and even edit documents on your hard disk from their computer. You can control access to your information through passwords and setting access privileges (none, read, write, or read-write).

10 connected user limit

One way that Personal File Sharing differs from AppleShare IP server products and Mac OS X Server is that only ten users can be connected to the sharing computer at a given time. For more information, see technical document 45052: "**Mac OS 8 and 9: Personal File Sharing User Limits**"

Mac OS X File Sharing

This document describes File Sharing as implemented in System 7, Mac OS 8, and Mac OS 9. For information on Mac OS X, stop here and go to technical document 106461: "**Mac OS X: File Sharing**"

Mac OS 8, Mac OS 9 File Sharing

For more information on how to set up File Sharing in Mac OS 8 and Mac OS 9, stop here and go to technical document 106657: "**Mac OS 8, Mac OS 9: File Sharing**"

System 7 File Sharing

Create a network

Your computers must be physically connected on an Ethernet or AirPort network. For information on connecting two Macintosh computers together to share files, refer to article 106658: "**Macintosh: How to Create a Small Ethernet Network**"

How to Turn on File Sharing

1. Choose Control Panels from the Apple menu and double-click the Sharing Setup control panel.
2. Make sure that you have identified your computer to the network. You have to give an Owner Name, an Owner Password, and a Macintosh Name.
3. Click the Start button. Its label changes to Cancel and the status line describes what is happening while file sharing is starting up. It may take a minute or so to complete. When the status line says file sharing is on and the button is labeled Stop, your computer is ready to share files. If you start file sharing when AppleTalk is not active, it will be automatically turned on for you.
4. Close the Sharing Setup control panel and the Control Panels folder.

How to Share a Folder
Follow these steps:

1. Select the folder.
2. Choose Sharing from the File menu.
3. Click Share This Item And Its Contents.
4. Close the Privileges Window.
5. When asked for confirmation, click Save.

How to Log on as Owner
As the owner or administrator of two Macintosh systems - a desktop and a portable model for example - file sharing can be even easier. An AppleTalk network can be as small as two Macintosh computers connected together with LocalTalk (or compatible) cabling. Once connected together, either Macintosh computer can turn on file sharing. There is no need to share folders, because the owner can access everything. From the other Macintosh, you can connect with the AppleShare workstation software as the owner. Follow these steps to connect remotely as the owner:

1. Open the Chooser.
2. Select AppleShare.
3. Select your Macintosh computer.

4. Type your name, as you typed it in Owner Name field in the Sharing Setup dialog on the Macintosh you are connecting to.
5. Type your password, as you typed it in Owner Password field in the Sharing Setup dialog on the Macintosh you are connecting to. You will see all the disk resources connected to the remote Macintosh as if you are looking directly at its desktop. Make an alias of the volume for even easier future access.

For additional information on File Sharing, please see the following articles:

- Article 11368: "**Personal Sharing: File Sharing Can't Be Enabled Message**"
- Article 60621: "**Mac OS 9: File Sharing Security**"
- Article 58371: "**Personal File Sharing: Volume Size Reporting Limitations**"
- Article 60543: "**Mac OS 9: File Sharing Owner Password Field Shows 8 Bullets**"

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Pascal II: Operand Formats (1 of 2)

When you need to send data (especially complex data formats, such as strings) to an assembly routine from a Pascal host program, it can be very useful to be familiar with the internal structure of Pascal variables. This 2 part article describes a few of the more commonly used variable types; for a complete description of the more complex variables, including records and arrays, see pp. 227-228 of the Apple Pascal Operating System Reference Manual.
This article has been archived and is no longer updated by Apple.
Machine language (assembly) routines are commonly used either when (a) speed is critical, or (b) when the code must access other assembly routines (such as PROMs or I/O drivers) that can't be reassembled as part of the program. Also, bit manipulations such as right-shift are much easier to do in assembly than in Pascal.

In the UCSD Pascal system, it's fairly easy to create short assembly programs which can be linked into a Pascal host program. In some cases, it may be sufficient to merely call the assembly routine; most routines require that data be passed to them, though. Data is passed to or from routines by means of a "parameter", a temporary variable created by Pascal specifically for that purpose. The term "Var parameter" implies that the address of the actual variable is passed to the routine as a parameter instead of its value.

Certain types of variables may be passed by value, but any variable may be passed by name by simply declaring it to be a Var parameter. Pascal does not allow parameters of variable length (with the exception of certain sets and long integers) to be passed on the CPU stack, since doing so could end up filling the stack to capacity and thereby crashing the operating system. These parameters, therefore, are automatically used as if defined as Var parameters. A good explanation of the various methods of passing parameters may be found in Peter Grogono's book, "Programming in Pascal".

Before delving into the details, let's define some terms and conventions which we'll use later on:

Bit = a binary digit (0 or 1). A bit is the smallest unit of information which can be stored in a computer.
Nybble = 4 bits (half a byte). A hexadecimal digit is one nybble (pronounced "nibble").
Byte = 8 bits (2 nybbles). This is the unit of storage which the 6502 processor uses.
Word = 2 bytes (16 bits). A word is the unit of information which Pascal uses.
LSB = least significant bit
MSB = most significant bit

```
decimal 65535 <--------memory---------> 0
hexadecimal $FFFF <--------memory---------> $0000 addresses
MSB LSB
```

This diagram of memory structure is useful for understanding the format of variables: although we're used to writing numbers from left to right, Pascal reads data from memory FROM RIGHT TO LEFT, starting at the least significant byte.

Integers:
Integers in UCSD Pascal are whole numbers between -32768 to +32767, inclusive. They are stored in one word (2 bytes). Negative integers are represented in "two's complement," which means that they appear to have positive values greater than 32767; the negative integer is arrived at by subtracting 2 ^ 16 (65536) from this positve value. Similarly, large positive integers are stored as a complementary negative numbers (cf. Integer BASIC). The sign bit (MSB) is 0 if positive, 1 if negative.

```
<----byte----> <---byte--->
15 14 . . . . . 8 7 . . . . . 0 <== 16 bits
Sign Integer Value
```

Example: the number 3 is represented in binary as:

MSB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 LSB

However, -3 is represented as:

MSB 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 LSB

which also reads as 65533 (or 65536-3)!

Integers may be passed by value or as Var parameters.

Reals:
Real numbers, in UCSD Pascal, are floating point numbers between +/-1.17550E-38 to +/-3.40282E+38, inclusive. Real numbers take up four bytes (2 words) of storage. Their binary representations are similar to the proposed IEEE standard for floating point numbers:

```
31 30 . . . . . 23 22 . . . . . 0 <== 32 bits
Sign Exponent Mantissa
```

"Mantissa" is the name given to the decimal portion of a number; by convention, it's expressed in scientific (exponential) notation. The "exponent" indicates the power to which the mantissa is raised. The exponent is represented in base 2 (2^n). The number 3 x 10^2, for instance, is defined as having a mantissa of 3, an exponent of 2, in base 10 (decimal).

The sign bit refers to the sign of the mantissa; it's 0 if positive, 1 if negative. The exponent is "offset" by 127; that is, a value of 127 in the exponent field corresponds to an exponent of 0. Similarly, if the value is 1, the exponent is -126, and if the field is 254, the exponent is +127. A value of 0 indicates that the real number is 0.

The mantissa of the real number is stored in normalized format in bits 0-22. "Normalizing" a number means adjusting it so that the highest bit is significant (that is, set to 1). The exponent indicates how many times (and in which direction) the value was shifted during normalization.

Notice that the MSB of the mantissa of any non-zero number that has been normalized is always a one. Zero can be treated as a special case: the exponent is simply set to zero. So, to gain additional precision, the mantissa has an implied "1" that is not stored, resulting in a functional 24-bit mantissa, even though only 23 bits are actually used. This gives slightly more than a 6-decimal-place (single precision) accuracy.

To make this clearer, let's look at some examples:

Real number = 1

MSB 0 01111111 00000000000000000000000 LSB
Exponent = 127 (2^0) Mantissa = 1 (the implied 1 isn't stored)

Real number = -9.9
MSB 1 10000010 00111100110011001100110 LSB
Exponent = 130 (2^3) Mantissa = 99000015

In the second example, the real number (in binary) appears as 1001.1110011...

During normalization, the decimal point is moved to the left 3 times (incrementing the exponent), and the most significant bit becomes implied. The sign bit is 1, indicating that the number is negative.

Real numbers may be passed by value, or else they may be defined as Var parameters and then passed by address.
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System 7: How to Disable File Sharing

Article Change History

09/04/92 - REVISED
* To provide additional information.

Can file sharing be disabled?

This article has been archived and is no longer updated by Apple.
Yes. File sharing can be disabled in two ways:

* By not enabling the sharing functionality with the Sharing Setup control panel (the button next to File Sharing should say "Start").

* By not installing the file sharing software. Either choose the Custom option in the system software Installer program, or simply drag the File Sharing extension out of the Extensions folder in the System Folder.

Here are the steps for turning off File sharing:

1) Open your Control Panel folder.

2) Open Sharing Setup Control Panel.

3) Click the "Stop" button for file sharing. The button name should change to "Start".

Published Date: Feb 18, 2012

System 7: File Sharing Maximum Shared Users & Folders

Article Change History

09/04/92 - REVISED
* With information for both folders and users.

How many people can connect to my Macintosh computer via file sharing?

How many folders can I share?

This article has been archived and is no longer updated by Apple.
Up to 10 users can be concurrently connected to folders that you are sharing. You can name as many as 100 users and groups of users combined, but for optimal performance, it is recommended that you name no more than 50.

Up to 10 folders per machine can be shared, each having an unlimited number of enclosed folders.

Published Date: Feb 18, 2012

TA45287_System_Sharing_Applications_(TIL06863).pdf

System 7: Sharing Applications

Article Change History

08/24/92 - REVIEWED
* For technical accuracy.

Can I share applications with System 7?

This article has been archived and is no longer updated by Apple.
Yes. You can share applications in two ways:

* by sharing the folder that contains the application, so that multiple users can access it; and

* by sharing the program directly for access by remote program linking.

If you share the program by sharing the folder that it is in, then you must be aware of two issues:

* Some applications are not multi-user or AppleShare-aware and so cannot be used by more than one person at a time.

* You must adhere to the software license agreement provided with the application. Most applications only allow one user per copy.

Published Date: Feb 18, 2012

TA45288_System_Sharing_Files_with_PCs_(TIL06864).pdf

System 7: Sharing Files with PCs

Article Change History

09/01/92 - UPDATED
* To include search information for Farallon.

Can I use File sharing with PCs?

This article has been archived and is no longer updated by Apple.
MS-DOS-based computers can access folders and files shared by Macintosh computers by using the AppleShare PC software available from Farallon Computing. This software provides the same capabilities that Macintosh computers have when connecting to shared folders with the AppleShare workstation software.

The Farallon product is PhoneNET Talk software, formerly AppleShare PC. With it, any MS-DOS or Windows personal computer can share networked printers, file servers that support AppleTalk Filing Protocol (AFP), and AppleTalk network applications over an AppleTalk network.

For more information, search for Farallon Computing.

Published Date: Feb 18, 2012

System 7: File Sharing and Multi-user Access to a Document

Article Change History

09/04/92 - REVIEWED
* For technical accuracy.

Does File sharing let several people access one document simultaneously?

This article has been archived and is no longer updated by Apple.
Support for multi-user access to a document depends on the application. All the major Macintosh database programs support multiple-user access to a shared data file and many other Macintosh programs are AppleShare-aware to the point that they also support multi-user access to a single document. Some applications, like Microsoft Word, let a user open a shared document as "read-only." This means that other users can also open the same document as read-only.

Published Date: Feb 18, 2012

TA45290_System_File_Sharing_and_TOPSNovellCom_Products_(TIL06866).pdf

System 7: File Sharing and TOPS/Novell/3Com Products

Article Change History

09/01/92 - UPDATED
* To provide contact information.

Does File sharing work with TOPS/Novell/3Com products?

This article has been archived and is no longer updated by Apple.
Yes. Users can connect to shared information through a variety of means. Using the AppleShare workstation software yields the most consistent results. File sharing, Novell, 3Com, and other vendors support the AppleShare workstation software. Other vendors that don't support the AppleShare workstation software can coexist with AppleShare solutions.

However, once shared, folders accessed with the AppleShare workstation software cannot be "re-shared" with Macintosh File sharing. Macintosh File sharing only lets you share locally connected folders.

For more information, contact the individual vendors of your network setup.

Published Date: Feb 18, 2012

System 7: File Sharing and Floppy Disks

Article Change History

09/04/92 - REVIEWED
* For technical accuracy.

Can I share a floppy disk through File sharing?

This article has been archived and is no longer updated by Apple.
No. File sharing only lets you share devices like hard disks and CD-ROMs.
If you want to share information on a floppy disk, follow these steps:

1) Copy the data onto a hard disk.

2) Set up the sharing parameters.

3) Share your information.

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Pascal II: Operand Formats (2 of 2)

When you need to send data (especially complex data formats, such as strings) to an assembly routine from a Pascal host program, it can be very useful to be familiar with the internal structure of Pascal variables. This 2 part article describes a few of the more commonly used variable types; for a complete description of the more complex variables, including records and arrays, see pp. 227-228 of the Apple Pascal Operating System Reference Manual.

This article has been archived and is no longer updated by Apple.

Characters:

Characters, by ASCII definition, are simply integers between 0 to 255, inclusive. Characters take up one word of storage. The ASCII value of the character is stored in the least significant byte. The most significant byte is not used by Pascal and should be ignored.

```
15 . . . . . 8 7 . . . . . 0 <== 16 bits
unused ASCII
```

Example: the character "A" has an ASCII value of 65 (hexadecimal 41). The binary representation is:

```
MSB x x x x x x x x 0 1 0 0 0 0 0 1 LSB
<---- not used----> 4 (hex) 1
```

Characters can be passed either as actual parameters (by value) or as Var parameters (by address).

Strings:

A string is a packed array of characters that can be from one to 256 bytes long. The first byte of a string always contains a number from 0 to 255; this number indicates the length of the string. One character is stored per byte, and the string ends on a word boundary--that is, if the last character in the string is the first byte of a new word, the other byte of the word is also reserved and not used by the string.

Each character of the string can be accessed in a packed array of characters; you cannot, however, access the length byte (the 0th element). Doing so causes the message "Value Range Error" to be displayed.

Example: The string "ABCD" has a length of 4. It looks like this:

```
S[4] S[3] S[2] S[1] S[0]
MSB 01000100 01000011 01000010 01000001 00000100 LSB
"D" "C" "B" "A" 4
```

Pascal always passes strings by address, since strings' lengths may vary.

Pointers:

Address pointers are unsigned integers that occupy 1 word of storage. Their format is identical to that of integers, except that their values may range from 0 to 65535. The value of a pointer, in this implementation of Pascal, is the memory address of the object being described.

Example: The address of AN0 (one of the annunciator ports) is hex C058 (49240 decimal). This address is stored as:

```
MSB 1 1 0 0 0 0 0 0 0 1 0 1 1 0 0 0 LSB
<--------> <--------> <--------> <-------->
C 0 5 8
```

Pointers, like integers, may be passed by value or by reference (as a Var parameter).

Long Integers:

Long integers are a special type of variable, first defined at UCSD as part of their extensions to the Pascal language. They are primarily used to handle calculations involving numbers which (a) cannot be represented accurately in floating point (real) format, and (b) are too large to store in integer format.

Long integers are stored in BCD (binary coded decimal)--one digit per nybble. One entire word is reserved for the sign of the long integer, and the variable must end on a word boundary. Four digits can be contained in one word, so the smallest definable long integer takes up two words of memory. The numbers are padded with leading zeroes when necessary to fill up the last word. The sign is 0 if positive and 255 if negative. (One byte is used for the sign.)

To illustrate the structure of long integers, let's take a specific example: the long integer -123456 takes 3 words: one for the sign, and two for the digits (since they are stored in multiples of 4). This long integer is stored in the following format:

```
<---- each digit is one nybble --->
MSB 6 5 4 3 2 1 0 0 0 0 F F LSB
<- word -> <- word -> < sign word >
```

A long integer should always be passed by address, since its length depends on its definition.

Booleans:
The Boolean (binary) variable can have two values: TRUE and FALSE. Booleans are most commonly used in determining yes/no conditions, such as equality or set inclusion. Boolean variables are stored in one word, though only the LSB (least significant bit) is used. TRUE is represented by a 1; FALSE is represented by a 0.

```
MSB 15 . . . . . 8 7 . . . . . 0 LSB
Boolean
```

UCSD Pascal does not allow direct printing of Boolean variables. For example:

```
Program PrintBoolean;
Var A: boolean;
Begin
A := FALSE;
Writeln (A); (* this is illegal *)
If A = FALSE Then Writeln ('FALSE') Else Writeln ('TRUE'); (* this is correct *)
End.
```

Booleans are most efficient in packed arrays, where each bit of the word is utilized. DrawBlock is probably the best-known example of this use. An excellent example of the use of boolean packed arrays is in the GrafDemo program on the Apple Pacal diskette APPLE3.

Boolean variables may be passed by value or by address.

Other Types:
In addition to all the above standard types, Pascal allows the programmer to define a wide variety of non-standard variable types. Probably the most popular example of this is the SET.

A set is an arbitrary collection of elements with each element assigned an ordinal position (that is, represented by a number). Each element of the set is represented by a name; you may choose any word for this name, except for (a) words reserved by Pascal, and (b) other variable definitions already in use. Each name is then associated with one bit in the data definition, beginning with bit 0. The set is stored in memory as a series of bits identified by the ordinal position of the element in the type definition. A set must end on a word boundary: for example, 17 elements would take up 2 words, even though only one bit of the second word is actually used.

Example:
Type Colors = (Red,Green,Blue,Yellow,Black,White);
ColorSet = Set of Colors;

is a set of colors. Red occupies position 0, and white has position 5.

```
<----------one word----------->
MSB 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 LSB
W B Y B G R
h l e l r e
i a l u e d
t c l e e
e k o n
w
```

Sets may be passed either by address or by value, with certain restrictions. See p. 203 of the Pascal reference manual for details.

In general, complex record types consist of one or more standard types, each stored as described above. For the last word on Pascal data types, read Niklaus Wirth's Report in "User Manual and Report" by Jensen and Wirth.

References:

--Apple Pascal Reference Manual, by Apple Computer Inc. 1979.
--Apple Pascal Language Reference Manual, by Apple Computer, 1980.

TA45292_Pascal_II_Operand_Formats_of_.pdf

--Apple Pascal Operating System Reference Manual, by Apple Computer, 1980.
--Programming in Pascal, by Peter Grogono, Addison Wesley, 1978.
--User Manual and Report, by Kathleen Jensen and Niklaus Wirth,Springer-Verlag, 1974.
Published Date: Feb 18, 2012

System 7: Cannot Share Tape Backup Units

Article Change History

09/04/92 - REVIEWED
* For technical accuracy.

Can I share TapeBackup units with File sharing?

This article has been archived and is no longer updated by Apple.
No. File sharing only lets you share devices like hard disks and CD-ROMs.

Published Date: Feb 18, 2012

System 7: How to Change a File Sharing Password Remotely

Article Change History

09/04/92 - REVISED
* For clarity.

Can I change my file sharing password from a remote location?

This article has been archived and is no longer updated by Apple.
Yes. You can connect to one Macintosh from another Macintosh on the same AppleTalk network and change your password with the Set Password button, provided that file sharing is enabled on your Macintosh. You must be using AppleShare workstation software 2.0 or greater (included any System 6 versions) to access your System 7 Macintosh.

Follow these steps to change your password remotely:

1) Open the Chooser.

2) Select your Macintosh with the AppleShare workstation software.

3) Click the Set Password button.

4) Type your new password.

5) Press Tab and type the current password.

6) Click OK.

7) Type your new password to reconfirm your change.

6) Click OK.

Published Date: Feb 18, 2012

System 7: Heavy File Sharing Can Slow Macintosh

Article Change History

09/04/92 - REVIEWED
* For technical accuracy.

Will File sharing slow down my Macintosh when someone logs onto it?

This article has been archived and is no longer updated by Apple.
File sharing operates during the idle cycles on a user's machine. How often it uses those idle cycles or makes a higher-level request for more cycles depends on how heavy the requests are from the remote users connected to your Macintosh computer. During heavy access requests for files from remote users, the Macintosh manifests mouse jumping and varying degrees of slowness.

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System 7: File Sharing and Desktop Items

Article Change History

09/04/92 - REVIEWED
* For technical accuracy.

While accessing my system via file sharing, I don't see my desktop items. Where are they?

This article has been archived and is no longer updated by Apple.
The items can be found in a folder called "Desktop Folder". This folder appears in the root of the volume to which you are remotely connected.

Published Date: Feb 18, 2012

TA45297_System_Outline_Fonts_(TIL06879).pdf

System 7: Outline Fonts

Article Change History

09/16/92 - UPDATED
* With information about TrueType.

What are outline fonts?

This article has been archived and is no longer updated by Apple.
Outline fonts consist of mathematical descriptions of each character. Each character is defined by a series of lines and curves, and can be scaled to any size. Examples of outline fonts are PostScript and TrueType. You can find PostScript outline fonts in several of Apple's LaserWriter printers. Outline fonts give smooth, sharp text at any size when printed and (with TrueType) on the screen.

Published Date: Feb 18, 2012

System 7: Includes Bitmap Versions of TrueType Fonts

Do I need Bitmap versions of TrueType fonts?

This article has been archived and is no longer updated by Apple.
No. However, System 7 ships with the same component of bitmap fonts as System 6. This is to ensure that documents do not change line endings when moved from System 6 to System 7. This is the only reason that bitmap fonts are included.

Published Date: Feb 18, 2012

System 7: TrueType Fonts Available at System 7 Launch

How many TrueType fonts will be available when System 7 ships?

This article has been archived and is no longer updated by Apple.
Most of the major type vendors have the TrueType technology well in hand, and are mainly trying to coordinate their production ramp with the introduction of System 7. We expect that each major type vendor will offer a minimum of 100 typefaces when System 7 ships, with a few offering several hundred.

Published Date: Feb 18, 2012

TA45300_System_No_Need_for_FontDA_Mover_(TIL06893).pdf

System 7: No Need for Font/DA Mover

Article Change History

08/19/92 - REVIEWED
* For technical accuracy.

Will the Font/DA Mover work with System 7?

This article has been archived and is no longer updated by Apple.
Apple does not recommend that customers use the Font/DA Mover to install fonts or desk accessories in System 7. To install fonts or desk accessories in System 7, simply drag them onto the System Folder.

Published Date: Feb 18, 2012

TA45301_System_The_Edition_Manager_(TIL06894).pdf

System 7: The Edition Manager

Article Change History

09/16/92 - REVIEWED
* For technical accuracy.

What is the Edition Manager?

This article has been archived and is no longer updated by Apple.
The Edition Manager is a new feature in System 7 that provides the ability to automatically update documents. New Edit menu commands let users "Publish" data as "editions" to other documents, and "Subscribe" to editions that remain linked to the original source document. When the published data (the edition) is edited, the changes are copied automatically to all its subscribers, on the same machine or across the network.

Applications must be updated to take advantage of the Edition Manager. Contact each application's publisher for details.

Published Date: Feb 18, 2012

TA45302_System_Using_Publish_and_Subscribe_(TIL06895).pdf

System 7: Using Publish and Subscribe

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

How does Publish and Subscribe work?

This article has been archived and is no longer updated by Apple.
Publish and Subscribe work only with applications that have been revised to take advantage of this feature in System 7.

To use Publish and Subscribe, follow these steps:

1) Select some data you want to place in another application or document as a "live" copy.

2) From the Edit menu, select "Create Publisher". This brings up a dialog box asking you to name the Edition file that will connect the Publisher to the other documents subscribing to this data.

3) After you have created the Edition file, go to the document or application where you want to use this data and select "Subscribe To..." from the Edit menu.

This places a live copy of the data in your document. From this point on, whenever you modify the original publisher data, the Subscriber is automatically updated, too.

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System 7: Why Upgrade

Article Change History

09/16/92 - REVIEWED
* For technical accuracy.

Why should I upgrade to System 7?

This article has been archived and is no longer updated by Apple.
Apple recommends that all Macintosh users upgrade to System 7. Finder 7.0 offers powerful new capabilities and greater ease of use. Its features include:

* Fast access to your information. System 7 offers a fast file-find, so you can locate your files quickly and easily. You can also access your most frequently-used files, applications, and folders from the Apple Menu.

* More flexible ways to view files. For example, by selecting the Outline view, you can see several folders in one window simultaneously. Another facility called "aliases" helps you organize your hard disk the way you want.

* Virtual Memory with System 7. Without adding more RAM, you can have more memory to run more applications through virtual memory and 32-bit addressing. With virtual memory, the computer uses part of the hard disk to increase the amount of physical memory. For example, a 4MB Macintosh computer appears to have 8MB. With this additional memory, you can run more applications. 32-bit addressing makes it possible to access more than 8MB of memory in their system.

* Share files on your Macintosh with others. You can share your files with other people on the same network without dedicating a computer to act as a file server.

* The ability to access information regardless of where it's located.

* Multitasking. You can run several applications simultaneously for greater productivity. For example, you can work on a memo while printing a spreadsheet.

* Improved window handling.

* Improved text with TrueType fonts. You will see sharper-looking text on both your screen and your printer.

* A color interface for Macintoshes supporting color.

* A complete on-line Help system using System 7's new Balloon Help.

All of the things mentioned above work without you having to buy a new application. System 7 maintains and enhances your investment in your computer and your applications. In addition, software developers are working on many new and powerful applications that take full advantage of System 7 features.

See the "What's New in System 7" guide for more details.

Published Date: Feb 18, 2012

System 7: Runs on all 68000 Macintosh Computers

Does System 7 run on the Macintosh Plus, SE, Classic and Portable (the ones with a Motorola 68000 microprocessor)?
This article has been archived and is no longer updated by Apple.
Yes. System 7 runs on all of the aforementioned Macintosh computers that have at least 2MB of RAM, though 4MB of RAM is recommended.
With the exception of the expanded memory capabilities, System 7 runs in its entirety on Macintosh Plus, SE, Classic, and Portable.
Published Date: Feb 18, 2012

System 7: How to Install It

Article Change History

09/14/92 - REVISED
* To provide additional information.

How do I install System 7?

This article has been archived and is no longer updated by Apple.
System 7 ships with an application named "Installer" that installs System 7 onto your Macintosh computer. You can run Installer from a set of floppy disks or from a file server.

IMPORTANT: You cannot "drag-install" System 7. You must use the System 7 Installer to install system software.

Installing from Floppy Disks

To upgrade your Macintosh to System 7 using floppy disks, follow these steps:

1) Shut down your Macintosh computer.

2) Insert System 7's "Install 1" disk into your Macintosh computer.

3) Turn on your Macintosh computer and push in the "Install 1" disk.

4) After reading the "Welcome to the Installer" notice, click OK.

5) If you have more than one hard disk, use the "Switch Disk" button to select the hard disk of your choice.

6) Click the Easy Install button.

7) The Installer will instruct you to insert the remaining System 7 floppy disks.

Installing from a File Server

To upgrade your Macintosh computer to System 7 using an AppleShare File Server, follow these steps:

1) Connect to an AppleShare File Server containing System 7.

2) Double-click on the Installer application in the "Install 1" folder.

3) After reading the "Welcome to the Installer" notice, click OK.

4) If you have more than one hard disk, use the "Switch Disk" button to select the hard disk of your choice.

5) Click the Easy Install button.

By using the Easy Install button, the Installer will automatically update your Macintosh computer to System 7. Easy Install also checks to see what printer drivers and EtherTalk/TokenTalk drivers are present in your System folder. If it locates a printer driver and/or network driver that should be updated, it will do so automatically.

For more information about installing System 7, especially if you are

having a difficult time or are experiencing compatibility problems, search for "System 7" and "Clean Install".

Published Date: Feb 18, 2012

Applesoft: Cassette Tape Loading Errors

Due to Applesoft interaction with the Auto Start ROM, an ERROR message generated while loading a program from cassette hangs the system.
This article has been archived and is no longer updated by Apple.
There are two ways to regain control:

1) Turn the Apple off and back on
2) Rewind the cassette and then replay it into the Apple until the system enters the command mode.
Published Date: Feb 18, 2012

Pascal: Run-time errors

This article has been archived and is no longer updated by Apple.
Run-time errors generate an error message, as well as a set of numbers that refer to the instruction during which the error occurred. "S" stands for "Segment", "P" for "Procedure" and "I" for "Instruction Count". These can be correlated with the textfile by using the System List options, (*$L+*) or (*$L<filename>*), while compiling. Doing so produces an annotated listing of the text, with the S, P and I numbers included.

For example, here's a very simple program compiled with the listing option:

```
(1) (2) (3:4) (5)<--Text---------->
1 1 1:D 1 (*$LPrinter:*)
2 1 1:D 1 Program Example;
3 1 1:D 3
4 1 1:D 3 Var S:string;
5 1 1:D 44
6 1 1:0 0 Begin
7 1 1:1 0 Readln(S);
8 1 1:1 21 Writeln(S)
9 1 1:0 40 End.
```

Key:

(1) Line number of text

(2) Segment number (S#): When S# values do not appear in your listing, the error occurred in that segment of the operating system. S#0 is System.Pascal, while S#17-31 are usually SYSTEM.LIBRARY segments.

(3) Procedure number (P#) is the number within the segment designated by the S#.

(4) Nesting level (D=declaration)

(5) Instruction count (I#) is the number of instructions counted from the beginning of the procedure. It indicates the count at the beginning of each line; a value between two lines, then, means the error occurred in the middle of the line.

Warning: When using Apple Pascal Version 1.0, do not use $L+ as your listing option. Doing so will cause you to lose your code file, and possibly your operating system. Instead, specify a disk file on a volume other than the one that you wish to be the destination of your code file. Better yet, use (*$LPrinter:*) to put the listing directly onto your printer. The $L+ option works correctly in later versions.
Published Date: Feb 18, 2012

System 7: How to Upgrade over a Network

Article Change History

09/14/92 - REVIEWED
* For technical accuracy.

Can I upgrade my Macintosh computer to System 7 over a network?

This article has been archived and is no longer updated by Apple.
Yes. You can upgrade your Macintosh computer over an AppleTalk network. Your network administrator needs to have loaded the System 7 installation software onto a file server and made that software available to you. To upgrade your Macintosh computer to System 7, run the Installer from the server. It is not possible to upgrade all Macintosh computers remotely on a network from one central Macintosh computer.

Requirements

To upgrade your Macintosh computer over the network, you must have the AppleShare Workstation Client software installed on your machine. The Client software is a standard part of System 6.0.7. You can tell whether the Client software is installed on your machine by opening the Chooser and confirming that the AppleShare icon is available in the upper-left panel of the Chooser window. Check with your network administrator for additional details.

Procedure

Follow these steps:

1) Ask your network administrator the name of the file server and volume where the installation software is located.

2) Use the Chooser desk accessory to connect to the file server/volume in step 1.

3) On the server volume, locate the folder containing the Installer program.

4) Open the Installer program.

5) In the Installer program, choose your hard disk and click Install.

Published Date: Feb 18, 2012

System 7: No Concurrent Upgrades over a Network

Article Change History

09/14/92 - REVIEWED
* For technical accuracy.

Can I upgrade another Macintosh from my own machine over the network?

This article has been archived and is no longer updated by Apple.
No. While it is possible to install System 7 on a Macintosh computer over the network, it is not possible to force the installation of System 7 on all other Macintosh computers on the network. To upgrade multiple Macintosh computers concurrently, it is necessary to initiate the installation from each Macintosh computer.

Published Date: Feb 18, 2012

System 7: Publish & Subscribe Requires Upgraded Applications

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

Does Publish and Subscribe work with existing applications?

This article has been archived and is no longer updated by Apple.
No. Applications must be revised to take advantage of the publish and subscribe functionality provided by the Edition Manager in System 7.

You'll know that an application offers the publish and subscribe features when you find the items "Create Publisher" and "Subscribe To.... in the Edit menu.

Contact your vendor or your Apple Dealer to find out if your current application can be upgraded to a new version that uses the publish and subscribe capabilities.

Published Date: Feb 18, 2012

System 7: Publish and Subscribe vs. Copy and Paste

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

How is publish and subscribe different from Copy and Paste?

This article has been archived and is no longer updated by Apple.
Copy and Paste are useful when you want to move data between documents and applications and you want separate copies (versions) of the data in each place. Publish and subscribe maintains a connection, so that the "subscribers" always reflect the current data in the "publisher."

For example, if you want a fixed version of a document, like a "Report-Draft 3," then you could copy and paste into your document. However, if you want your document to always reflect the most recent version of "Report," then you would choose publish and subscribe.

Published Date: Feb 18, 2012

System 7: File Sharing vs. Publish and Subscribe on a Network

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

What's the difference between file sharing and publish and subscribe across a network?

This article has been archived and is no longer updated by Apple.
File sharing shares entire folders (and their contents) and hard disks between users on the network. Assuming you have been given permission, you can view and edit documents just as if they were stored on your local hard drive.

Publish and subscribe lets users share sections of documents between themselves by placing the connecting edition file on a file server.

Published Date: Feb 18, 2012

TA45313_System_How_to_Get_the_Original_Document_from_a_Subscriber_(TIL06905).pdf

System 7: How to Get the Original Document from a Subscriber

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

How can I find the original document from a subscriber?

This article has been archived and is no longer updated by Apple.
When you have subscribed to some information, you may want to get back to the original document to edit it.

To do this, select the subscriber from inside your document and then choose "Subscriber Options..." from the Edit menu. In the resulting dialog box, click "Open Publisher" and the document containing the original data (the publisher) will open.

Published Date: Feb 18, 2012

System 7: Publish and Subscribe on a Network

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

Can I use Publish and Subscribe over a network?

This article has been archived and is no longer updated by Apple.
Yes. When an edition is created, the publisher can save the edition file on a shared file server (including your own disk if it is shared using System 7 file sharing). Other users on the network can access the edition file on the file server and subscribe to it.

For instance, Pierre needs to create a presentation using some numbers in a spreadsheet that Marie has prepared on her system. Marie can publish the numbers from her spreadsheet and save the resulting edition file to a server that she and Pierre both share. Pierre can mount the file server and subscribe to the numbers edition file in his presentation program. Whenever Marie updates the numbers in the spreadsheet, the changes appear in Pierre's copy.

Published Date: Feb 18, 2012

TA45315_System_How_to_Identify_a_Publisher_or_Subscriber_(TIL06907).pdf

System 7: How to Identify a Publisher or Subscriber

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

How can I identify a publisher or subscriber within a document?

This article has been archived and is no longer updated by Apple.
When you click something in your application that has been published or subscribed to, a gray border appears.

This border is light gray for publishers and dark gray for subscribers. To find out more about a particular publisher or subscriber, choose Publisher Options or Subscriber Options from the Edit menu.

Published Date: Feb 18, 2012

TA45316_System_Moving_or_Deleting_an_Edition_File_(TIL06909).pdf

System 7: Moving or Deleting an Edition File

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

What happens when I move or delete an edition file?

This article has been archived and is no longer updated by Apple.
When you publish data for automatic updating by choosing "Create Publisher..." from the Edit menu, you also create an edition. An edition is a separate file that is updated when you change the original material. The edition file can be saved on a disk, in a folder, or on the desktop.

If you move or rename an edition file, the connection between the publisher and any subscribers remains intact.

If you delete the edition file, the connection between a publisher and its subscribers is broken.

Published Date: Feb 18, 2012

Pascal: Real number format

This article has been archived and is no longer updated by Apple.
Real numbers in UCSD Pascal are floating point numbers between +/-1.17550E-38 and +/-3.40282E+38, inclusive. Real numbers take up four bytes (2 words) of storage. Their binary representation is similar to the proposed IEEE standard for floating point numbers:

31 30 . . . . . 23 22 . . . . . 0 <== 32 bits
Sign Exponent Mantissa

"Mantissa" is the name given to the decimal portion of a number; by convention, it's expressed in scientific (exponential) notation. The "exponent" indicates the power to which the mantissa is raised; it's represented in base 2 (2^N). The number 3 x 10^2, for example, is defined as having a mantissa of 3 and an exponent of 2, in base 10 (decimal).

The sign bit refers to the sign of the mantissa; it's 0 if positive, 1 if negative. The exponent is "offset" by 127--that is, a value of 127 in the exponent field corresponds to an exponent of 0. Similarly, if the value is 1, the exponent is -126, and if the field is 254, the exponent is +127. A value of 0 indicates that the real number is 0.

The mantissa of the real number is stored in normalized format in bits 0-22. "Normalizing" a number means adjusting it so that the highest bit is significant (that is, set to 1). The exponent indicates how many times, and in which direction, the value was shifted during normalization.

Notice that the MSB of the mantissa of any non-zero number that has been normalized is always a one. Zero can be treated as a special case--the exponent is simply set to zero. For the sake of additional precision, then, the mantissa has an implied "1" that is not stored, resulting in a functional 24-bit mantissa, even though only 23 bits are actually used. This structure yields slightly more than a 6-decimal-place (single precision) accuracy.

Real numbers may be formatted for output by means of field-width designations. As described on pp. 36-37 of the Apple Pascal language Reference Manual, the output specification has the following form:

Real : FieldWidth : FractionLength

where FieldWidth is the minimum number of characters written, including the decimal point (default=1). FractionLength is the number of digits to be written after the decimal place (default=5). Thus, a field specification of R:8:3 indicates the real variable R, printed within a field size of 8, with 3 of those digits appearing to the right of the decimal. A FractionLength of zero is illegal.

If the field size necessary for displaying the variable accurately is greater than the formatting specification, the formatting is ignored. If the size is smaller than FieldWidth, the field is padded with blanks to the left of the variable; the variable is thereby right-justified.
Published Date: Feb 18, 2012

System 7: How to Get Manual Updates to my Subscriber

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

What if I temporarily want to stop receiving updates to my subscriber?

This article has been archived and is no longer updated by Apple.
The default behavior is to update subscribers automatically when there is a change to the publisher. However, you can choose to receive updates only on demand.

To change the subscribers options to manual updating, follow these steps:

1) Select the subscriber.

2) Choose Subscriber Options from the Edit menu.

3) Click the radio button Get Editions: Manually.

To receive a manual update, follow these steps:

1) Select the subscriber.

2) Choose Subscriber Options from the Edit menu.

3) Click the radio button Get Editions: Now.

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TA45319_System_InterApplication_Communication_(TIL06911).pdf

System 7: InterApplication Communication

Article Change History

09/16/92 - REVIEWED
* For technical accuracy.

What is InterApplication Communication (IAC)?

This article has been archived and is no longer updated by Apple. InterApplication Communication describes the way applications use new features of System 7--the Edition Manager and AppleEvents--to cooperate more closely and improve the users' work flow.

Applications that implement the Edition Manager provide the ability to automatically update documents. New Edit menu commands let users "Publish" data to other documents and "Subscribe" to data that remains linked to the original source document. When the published data is edited, the changes are copied automatically to all its subscribers on the same machine or across the network. For example, the user can subscribe to a spreadsheet table in a word processing document. When the spreadsheet changes, the word processing document gets the change automatically.

Apple events make possible even more complex interaction between applications. It provides an invisible messaging language that will let programs share data and commands. The user sees Apple event-aware applications as those that can request services from each other. For example, an accounting package can pass inventory data to a spreadsheet and retrieve a graph of that data for display in its own report.

Published Date: Feb 18, 2012

System 7: AppleEvents

Article Change History

09/16/92 - REVIEWED
* For technical accuracy.

What is AppleEvents? Is the implementation of AppleEvents the same for all applications?

This article has been archived and is no longer updated by Apple.
AppleEvents is the underlying messaging language that applications use for complex communication with other applications. For the user, Apple event-aware applications are applications that can use services of other applications, either on the same machine or across the network. These applications use Apple-event messages as intelligent hooks to share functionality with other applications. AppleEvent implementation is application-specific, in that different types of programs will implement different sets of AppleEvents (for example, databases will use different sets of AppleEvents than word processors). All implementations will support a set of core events, which are defined by Apple.

Here are several examples:

* An accounting package can pass inventory data to a spreadsheet and retrieve a graph of that data for display in its own report.

* Utility packages like spell checkers, thesauruses, or formula editors can work generically with Apple event-aware applications.

* An application can request that a more sophisticated program display a specialized graphics format like TIFF in the requesting application window.

Applications vary in terms of how they implement AppleEvents. Check with your specific software manual for details about how to use this feature with your chosen software.

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TA45321_System_Virtual_Memory_(TIL06913).pdf

System 7: Virtual Memory

Article Change History

08/19/92 - REVIEWED
* For technical accuracy; edited.

What is virtual memory?

This article has been archived and is no longer updated by Apple.
Virtual memory (VM) extends the user's available, physical random access memory by treating the hard disk - transparently to the user, with the exception of a slight loss of speed - as if it were additional RAM. With virtual memory you can run more applications at once and work with larger amounts of data than you can without virtual memory.

Published Date: Feb 18, 2012

System 7: Macintosh Computers That Can Use Virtual Memory

Which Macintosh computers can use virtual memory?
This article has been archived and is no longer updated by Apple.
Any Macintosh computer which uses the 68030,68040, or PowerPC microprocessor can use virtual memory. A Macintosh computer with the 68020 microprocessor is virtual memory capable with the addition of a 68851 PMMU coprocessor.

A current listing of Macintosh computers which support virtual memory follows:

Compact Macintosh:

Macintosh SE/30
Macintosh Classic II
Macintosh Color Classic

Macintosh Performa:

Performa 200
Performa 400
Performa 600
Performa 405
Performa 410
Performa 430
Performa 450
Performa 460
Performa 466
Performa 467
Performa 475
Performa 476
Performa 550
Performa 63X

Modular Macintosh:

Macintosh II *
Macintosh IIx
Macintosh IIcx
Macintosh IIci
Macintosh IIsi
Macintosh IIfx
Macintosh IIvi
Macintosh IIvx
Macintosh LC *
Macintosh LC II
Macintosh LC III
Macintosh LC 475
Macintosh LC 520
Macintosh LC 630
Macintosh Centris 610
Macintosh Centris 650
Macintosh Centris 660AV
Macintosh Quadra 605
Macintosh Quadra 610
Macintosh Quadra 630
Macintosh Quadra 650
Macintosh Quadra 660AV
Macintosh Quadra 700
Macintosh Quadra 840AV
Macintosh Quadra 900
Macintosh Quadra 950
Macintosh TV

Power Macintosh:

All Power Macintosh computers

PowerBook:

PowerBook 140
PowerBook 145
PowerBook 145B
PowerBook 160
PowerBook 165
PowerBook 165c
PowerBook 170
PowerBook 180
PowerBook 180c
PowerBook Duo 210
PowerBook Duo 230
PowerBook Duo 250
PowerBook Duo 270c
PowerBook Duo 280
PowerBook 520
PowerBook 520c
PowerBook 540
PowerBook 540c

* These computers need a 68851 PMMU coprocessor installed in order to be virtual memory capable.
Published Date: Feb 18, 2012

System 7: Maximum Virtual Memory

What is the maximum amount of virtual memory I can use under System 7?
This article has been archived and is no longer updated by Apple.
The maximum amount of virtual memory available depends on the Macintosh model. The Macintosh II, IIx, IIcx, IIci, IIsi, and IIfx models can address a maximum of 13MB of virtual memory. The maximum of 13MB assumes that the user has only a NuBus video card installed. Each additional NuBus card installed in your Macintosh will decrease your maximum amount of virtual memory by 1MB.

The Macintosh SE/30 can address a maximum of 13MB of virtual memory.

Additionally, the Macintosh IIci, IIsi, and IIfx models can operate in 32-bit addressing mode. When operated in 32-bit addressing mode, these Macintosh models can address a maximum of 1GB (one gigabyte, or 1,024MB) of virtual memory.

Note: the maximum amount of virtual memory available on your Macintosh computer is also limited by available space on your hard disk.
Published Date: Feb 18, 2012

System 7: How to Turn Virtual Memory On and Off

How can I turn virtual memory on and off?

This article has been archived and is no longer updated by Apple.
Virtual memory is controlled with the Memory Control Panel. Note: After turning virtual memory "ON", you need to restart your Macintosh computer to activate it.

Published Date: Feb 18, 2012

System 7: Disk Space Needed for Virtual Memory

How much disk space do I need to use Virtual Memory?

This article has been archived and is no longer updated by Apple.
While virtual memory (VM) is running, you may notice that a portion of your hard disk is allocated to VM. The amount of space used for virtual memory depends the amount of virtual memory you request.

For example:

Physical Memory available in Mac setting	Virtual Memory used by VM	Disk Space used by VM
4MB	8MB	8MB
8MB	13MB	13MB

Published Date: Feb 18, 2012

TA45326_System_Performance_Implications_of_Virtual_Memory_(TIL06918).pdf

System 7: Performance Implications of Virtual Memory

Will virtual memory affect the performance of my Macintosh computer?

This article has been archived and is no longer updated by Apple.
System performance is very dependent on applications. In most instances, you should not see a noticeable decrease in performance when using virtual memory.

Published Date: Feb 18, 2012

System 7: 32-Bit Addressing

1. What is 32-bit addressing?
2. How does it work?
3. Why do I get Type 1 errors?

This article has been archived and is no longer updated by Apple.

1. What is 32-bit addressing?

32-bit addressing means that you can install and access more than 8MB of physical RAM in your Macintosh. This means you can work with very large data files, very large applications, or many applications concurrently. 32-bit addressing is most attractive to Macintosh users working with large memory-intensive problems. While virtually anyone can benefit from the large amount of memory offered by 32-bit addressing, it will immediately benefit database users, color-graphic users, CAD/CAM users, and programmers. While 32-bit addressing may seem to benefit a small percentage of Macintosh users today, users can expect to soon see powerful "general purpose" tools benefit from 32-bit addressing.

More technically speaking, 32-bit addressing lets most recent Macintosh models access the entire 1GB memory range of the 68030 microprocessor. The basic software and hardware of the Macintosh already support the 32-bit addressing model, but any Macintosh using System 6 is limited to using only 8MB of memory because 32-bit addressing was not yet fully implemented.

In System 7, 32-bit addressing is fully implemented allowing most Macintosh computers access to greater than 8MB of memory. This expanded memory is important for high-end users working with many applications, complex graphics documents, large databases, and so on.

The term "addressing" refers to the number of binary digits (bits) that make up each memory address. Addressing directly determines the maximum amount of memory possibly available.

2. How does it work?

Binary numbers

To understand what happens with addressing, it is first necessary to understand what address bits are. The number system we're most accustomed to is the decimal system, otherwise known as the Base 10 system. In this system, all the numbers are relative to ten digits (0-9). When a number value exceeds the tenth digit, we add one to the value in the next column and and start over in the first column. Hence, when 1 is added to the number 09 we get 10. When we add 1 to 099, we get 100, so forth and so on.

Base 10 relies on there being exactly ten unique values per digit. Base 10 is not the only number system around. In the early days of computers, it was realized that it is much simpler to build data storage device such as a vacuum tube or a transistor with two possible value states(0 or 1) than it was to build one with 10 possible values(0 through 9). Therefore, someone came up with the idea of defining information in Base 2 format.

With the Base 2 number system, instead of counting your digits 0,1,2, ╔,9 and then adding a one to the next column, you simply count your digits 0,1 and then add a one to the next column. Hence, in the binary system the number zero in represented by a 0, the number one by a 1 and the number two by a 10, so forth and so on.

Here is a short table of some more examples:

Base 10 Base 2

0	0000
1	0001
2	0010
3	0011
4	0100
5	0101
6	0110
7	0111
8	1000

If you expand this table out, you will see, the maximum number of values you can represent with 4 binary digits(bits) is 16, with 16 bits, 65,536, with 24 bits, 16,777,216 and with 32 bits, 4,294,967,296. This is identical to being able to represent 10,000 (0-9999) values with four decimal digits and 100,000,000 (0-99,999,999)values with 8 decimal digits.

Macintosh address range

The original Macintoshes shipped with the 68000 microprocessor. While this CPU is capable of doing 32 bit operations, it has only 24 bit addressing capability. Which limits a 68000 based computer to 16,777,216 bytes of address range. When the Macintosh II came out with the 68020 which has full 32 bit addressing capabilities, the possible address range was increased to 4,294,967,296 bytes.

Now you're probably wondering why you can only access 8MB in 24 bit mode. The truth is you can access 16mb, but only 8mb is available for user data. The other 8 is used for hardware vectors, NuBus slots, SCSI buffers etc.

The Problem

Since the 68000 is a true 32 bit processor, it stores 32 bits of information for each memory address, but since the 68000 physically only has 24 address lines, only the first 24 bits actually count. This of course means that 8 bits are wasted.

This is where creative programmers come in. Back when the Macintosh only had a 128k of RAM, the Operating System had to go to some extreme lengths to ensure that application have enough memory to run. The Macintosh Memory manager allows blocks of memory to move, and/or be purged if the System is having trouble fulfilling a memory request. The original designers of the Macintosh OS decided to use the last three of the unused bits in a 32 bit memory address to indicate whether a block of memory can move, be purged or if the block contains a resource item.

When System 7 was introduced, the Memory manager portion of the Macintosh Operating system was modified extensively to support full 32 bit addressing. The Memory Manager no longer stores the movable, purgeable, or resource flags in the last three bits of the memory block's address, instead, the Memory Manager stores this information elsewhere. The exact location of these flags is not documented, since an application should not attempt to manipulate these flags directly.

Setting these three magic bits are at the discretion of the programmer. The Macintosh Operating System provides the programmer with the appropriate routines to set these bits. The problem is that to set these three bits, the Operating System routines have to call other routines who have to call still others etc. The net result is that using the Operating System routines to set these bits is quite inefficient when it comes to speed. Therefore, prior the introduction of System 7, some creative programmers with a need for speed, took it upon themselves to set these bits in the memory block's addresses directly thereby bypassing the overhead associated with calling the Operating System routines. Of course, the problem with

doing this is that System 7 no longer stores these three bits in the address of the block of memory. Another significant programming error involves the other 5 bits of the 32 bit address. Ordinarily, these bits should remain unused and therefore, insignificant. However, some programmers, having realized that 5 bits are wasted decided to use them for their own purposes, even though Apple Developer Technical Support began warning them against this practice a full three years prior to the introduction of System 7.

3. Why do I get Type 1 errors?

The fundamental problem with setting the upper 8 bits of the address directly is that with System 7 all 32 bits of information are used for addressing. Changing the value of any of the 8 bits changes the address of the block of memory. When an application or an init tries to access the block of memory that now has an invalid address, the usual result is a Type 1 error. This occurs because the first 24 bits of an address are used to access memory locations between 0 and 16mb. The upper eight bits are used to access memory locations between 16mb and 4,096mb. Since most Macintoshes have less than 16mb of RAM, chances are this incorrect memory location is pointing to an address that does not physically exist, and this will yield a Type 1 (Bus Error).

In the event that the memory location does physically exists, then the application or init will then operate on whatever information it finds at the incorrect location. Depending on what the application or init is attempting to do, various errors may result.

Article Change History

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17 December 1993 - Updated with techshare information from Austin reps
21 August 1993 - Revised - To include information from another article.

Published Date: Feb 18, 2012

Pascal II: Library units

"Modular programming" is defined as the separation of procedures and functions, or groups of them, from the main program. Source language modules, called "units", are incorporated into libraries for use with Pascal programs. Units may consist of procedures and functions, or a combination of them written in Pascal or assembly language.

Compiling routines seperately--a necessary part of modular programming--affords you a major advantage in the development of your program: it allows you to approach the task as a group of smaller tasks linked together in a logical manner. The host program must contain a USES statement in order to use routines from the unit.
This article has been archived and is no longer updated by Apple.
The two principal kinds of units are called "Regular" and "Intrinsic".

NOTE: You are not afforded the capability of having separate units in Apple Pascal.

Regular Units:
When a host program "uses" a regular unit, the Linker physically inserts the unit's code into the host's codefile. Once linked, the files don't need to be relinked until either the unit or the host program is modified and recompiled.

Regular units, since they become part of the host file, may have references to file names. A regular unit may use an intrinsic unit or another regular unit.

NOTE: Regular units in version 1.0 of the Apple Pascal system are unable to use intrinsic units.

Install your Regular units in SYSTEM.LIBRARY or in any other library file. Once installed in an alternate library, the Uses statement should include the compiler option $U <library name> before the unit name.

Intrinsic Units:
An intrinsic unit is pre-linked--that is, it contains sufficient information to allow the host program to use it without invoking the Linker. The code for an intrinsic unit remains in the SYSTEM.LIBRARY and is loaded into memory before the host program begins its actual execution. This keeps the size of the host program down; it also allows you to modify and recompile the unit and host program individually without relinking them.

Intrinsic units must be installed in SYSTEM.LIBRARY. Intrinsic units may use other intrinsic units; they may NOT, however, use a regular unit.

NOTE: Intrinsic units may not reference files, such as data files, in Pascal version 1.0.

Assembly Routines as part of Units:
Assembly language routines may be placed into library units. With intrinsic units, the unit is compiled, the machine language routines are assembled, and then the assembled code is linked to the unit prior to installation of the unit into SYSTEM.LIBRARY.

Regular units may also contain machine language routines; however, these routines are not linked to the unit before it's installed in the library. Instead, the host program, the unit and the assembly routines are linked together at the same time.

Additional Notes on the Construction of a Unit:
Any unit which does not contain at least one procedure in the Interface section cannot have an Implementation section. In such a case, however, do include the initialization section--that is, the BEGIN and END.

Procedures listed in the Interface section are "public" to the host program as well as to the unit. Procedures listed only in the Implementation section cannot be accessed by the calling program; such procedures are called "private." When procedures are not listed publicly, they cannot be called from the host; furthermore, the Implementation section is not allowed.

Any intrinsic unit containing a global variable, either public ones (defined in the Interface) or private ones (defined in the Implementation), must have a data segment. If there is no data segment, a system error will occur.

General Format of Units:
The following example is designed to illustrate the general structure of a unit. The line numbers at the left of the page are for reference: they are NOT part of the actual structure.

```
1: (*$S+*)

2: UNIT < name >; INTRINSIC CODE xx DATA yy; (* DATA yy is used only if a data segment is required. *)
```

```
3: INTERFACE

4: USES < name of unit to be used >;
CONST < definitions >;
YPE < definitions >;

5: VAR < definitions >;

6: PROCEDURE ONE (I:Integer);
PROCEDURE TWO (I:Integer); (* External procedure *)
FUNCTION THREE (I:Integer) : Integer;
FUNCTION FOUR (I:Integer) : Integer; (* External function *)

7: IMPLEMENTATION

8: CONST < definitions >;
TYPE < definitions >;

9: VAR < definitions >;

10: PROCEDURE ONE;
BEGIN
END;

PROCEDURE TWO; EXTERNAL;

FUNCTION THREE;
BEGIN
END;

FUNCTION FOUR; EXTERNAL;

11: BEGIN
(* initialization section *)
END.
```

DISCUSSION

1: The swapping option is required when compiling ANY unit, regardless of its size. Omitting this option is the most common cause of compiler failures when working with units. The option should be the first line of text, preceding the UNIT header and any other compiler option.

2: The word INTRINSIC is required if the unit is to be intrinsic. DATA is optional, used only if a data segment is necessary (see #5 below). Regular units use only the UNIT < name > portion of this line.

3: INTERFACE is required. It defines the start of this section, which must contain some entries. (A totally empty INTERFACE section is not allowed.) This section contains the information which is public to both the host program and the unit (and visible from the LIBMAP program).

4: These entries are optional. If used, they are public (see #3). If a nested unit is used, it MUST be declared at this point, and the host program must also declare it in its USES statement before declaring this unit. (See pages 75-81 in the Pascal Language Reference Manual.)

5: VARs are also optional. If VARs are used in an intrinsic unit, a DATA segment MUST be declared, since these are global variables.

6: These are the public statements of the unit's procedures and functions. All parameters MUST be declared in this section, and must not appear in the IMPLEMENTATION. EXTERNAL may not be specified at this point (see #10).

7: IMPLEMENTATION is required. This section contains the code-generating statements and any private types or variables to be declared. If an item is declared in this section only, it is local to the unit and cannot be accessed from the host program directly; it is also not visible to LIBMAP.

8: CONST and TYPE definitions are optional. If included at this point, they are private and will not be visible to the calling program.

9: VARs are optional, and are private if defined at this point. A DATA segment is required if global VARs are specified in the IMPLEMENTATION section of an intrinsic unit, even though they are private.

10: These are the actual code-generating procedures. Procedures and functions already declared in the INTERFACE section need not have parameters listed here, since that would be redundant. EXTERNAL references are specified at this time.

11: This is the initialization section. Code in this portion is optional, but the BEGIN and END statements must always be present. The final END statement must be followed by a "." to indicate the end of the text. Code placed in the initialization section will be executed immediately upon access to the unit (through the USES statement in the host program), and ignored thereafter. An example of this is Turtlegraphics, where the initialization code is responsible for allocating the high-res page so that variables will not be lost.
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System 7: How to Use 32-Bit Addressing (9/94)

How can I use 32-bit addressing and is it available on all Macintosh models?

This article has been archived and is no longer updated by Apple.
To take advantage of 32-bit addressing you must be running System 7.0 or higher. Many Macintosh models can enable 32-bit addressing in the Memory control panel.

Older Macintosh II models will need the 32-Bit System Enabler or MODE32 from Connectix to provide the capabilities of 32-bit addressing. Models that require this utility are the Macintosh II, IIx, IIcx, and SE/30. Other models, like the Plus, SE, and Classic can't use 32-bit addressing.

You would use 32-bit addressing if you have more than 8MB of physical RAM installed in your computer. Alternatively, you can use 32-bit addressing in conjunction with virtual memory to expand your memory to any arbitrary amount up to the available space on your hard disk. Remember, however, that Apple recommends the amount of virtual memory not exceed double the physical memory present in your Macintosh. Setting virtual memory higher causes significant performance degradation.

The Memory Control Panel lets you select between 24-bit operation and 32-bit (addressing) operation. Changes take effect when you restart. When you run in 32-bit mode, it's important that your applications be 32-bit-compatible. Most current releases of application software are compatible. Check with your software publishers for information about a specific product.

Follow these steps to run in 32-bit mode:

1) Open the Memory control panel.

2) Select 32-bit addressing.

3) Restart your computer to run in 32-bit mode.

Article Change History
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12 Sep 1994 - Reviewed for technical accuracy, revised formatting.
02 Mar 1993 - Revised to add 32-Bit System Enabler information.
21 Aug 1992 - Revised to include information on MODE32.

Support Information Services
Published Date: Feb 18, 2012

TA45330_System_Applications_and_bit_Addressing_(TIL06921).pdf

System 7: Applications and 32-bit Addressing

Article Change History

08/21/92 - REVIEWED
* For technical accuracy.

Will my applications work with 32-bit addressing?

This article has been archived and is no longer updated by Apple.
Most applications are 32-bit-compatible and should work when your Macintosh is running in 32-bit mode. In 24-bit (the default) mode, the computer can run both 32-bit compatible and non-32-bit compatible software.

Those high-end users who specify the 32-bit addressing capability (through the Memory Control Panel) should ensure that their software is 32-bit compatible. Most current releases of application software are 32-bit compatible, and those that aren't should have upgrades available before too long.

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TA45331_System_and_AppleShare_File_Server_v_.pdf

System 7: and AppleShare File Server (v 2.0.1)

Article Change History

09/15/92 - UPDATED
* For AppleShare 3.0.

Should I install System 7 on my AppleShare File Server (version 2.0.1)?

This article has been archived and is no longer updated by Apple.
No. Your AppleShare File Server (version 2.0.1) is ready to use as is with System 7 clients. If you want to install System 7 on your server, then upgrade to version 3.0 of AppleShare.

If your server is connected with EtherTalk, you may want to upgrade the EtherTalk driver for Phase 2.

Do not upgrade the System Software on your AppleShare File Server (version 2.0.1) to System 7 unless you are also upgrading to AppleShare 3.0.

Published Date: Feb 18, 2012

System 7: Hard Disks and AppleShare 2.0.1 File Server

Article Change History

09/15/92 - REVIEWED
* For technical accuracy.

Can I attach a hard disk initialized under System 7 to my AppleShare 2.0.1 file server?

This article has been archived and is no longer updated by Apple.
Yes. You can take a hard disk that you have been using under System 7 and attach it to a Macintosh running AppleShare 2.0.x file server software. However, you must first rebuild its desktop, as follows:

1) Attach the hard drive to a Macintosh running System 6.

2) Restart the Macintosh.

3) Hold down the Command and Option keys while you restart.

4) The system will ask if you want to rebuild the desktop. Click OK.

Once the system completes its work, your desktop is rebuilt, and you can attach the hard drive to the AppleShare server.

Technical note: You need to rebuild the desktop because System 7 puts a desktop database on hard drives and this desktop database is not recognized by AppleShare 2.0. Rebuilding the desktop under System 6 creates the older-style desktop file.

Published Date: Feb 18, 2012

System 7: Compatibility with Third-Party Routers and Gateways

Do third-party routers and gateways work with System 7?

This article has been archived and is no longer updated by Apple.
Yes. Most third-party routers and gateways don't actually run on a Macintosh computer, so the system software version is irrelevant. What is relevant is whether the router or gateway supports AppleTalk Phase 2. In this area, all major router and gateway vendors offer products that support phase 2.

A partial list of major vendors includes 3Com, Alisa Systems, Engage Communications, Cayman Systems, Information Presentation Technologies, Focus Enhancements, Inc., Pacer Software Inc., and Shiva Corporation.

Article Change History:
08 Aug 1994 - Removed Dove Computer from list of vendors.
25 Aug 1993 - Removed InfoSphere from list of vendors.
27 Jul 1993 - Company title updated from Focus Enhancements to Focus Enhancements, Inc.
02 Sep 1992 - Reviewed for technical accuracy.
22 Jun 1992 - Remove reference to Solano Products.

Support Information Services

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TA45334_System_Setting_Up_an_AppleShare_Print_Server_(TIL06927).pdf

System 7: Setting Up an AppleShare 2.0 Print Server

Article Change History

09/15/92 - REVISED
* For technical accuracy.

Should I install System 7 on my AppleShare Print Server?

This article has been archived and is no longer updated by Apple.
Not unless you have upgraded to AppleShare 3.0.

To use AppleShare PrintServer 2.0 with System 7 clients, you need to update only the LaserWriter drivers on the Print Server.

1) Quit the AppleShare PrintServer application and return to the Finder.

2) Insert System 7's "Printing" disk.

3) Drag two files from the "Printing" disk--LaserWriter and LaserPrep--into the System folder.

4) Double-click the AppleShare PrintServer application.

5) Optional: If your server also supports the AppleTalk ImageWriter II and/or the AppleTalk ImageWriter LQ, drag these drivers over too.

Your AppleShare PrintServer is now set up to work properly with all Macintosh computers using the 7.0 version of the LaserWriter drivers.

Note: Do not upgrade the system software on your 2.0.1 AppleShare PrintServer to System 7. If you want System 7 on the server, you will need to upgrade to AppleShare 3.0.

Published Date: Feb 18, 2012

TA45335_System_The_Data_Access_Manager_(TIL06928).pdf

System 7: The Data Access Manager

What is the Data Access Manager?
This article has been archived and is no longer updated by Apple.
The Data Access Manager is a Macintosh system interface. It gives Macintosh application developers the flexibility of using a single, unified API for accessing data from different data sources. These sources include local Macintosh databases, remote Macintosh database servers, and even other remote host database servers, like DEC VAXes and IBM mainframes.

The Data Access Language (DAL) client/server API is a database extension in System 7 which provides access to remote host database servers. Applications written to the Data Access Manager can transparently use DAL to access data from DAL servers on host computers across different networks. The Data Access Manager is included along with the DAL client software in System 7.0.

The Data Access Manager offers three benefits:

* Macintosh applications now have a standard way to access data, regardless of the location of the data or the storage mechanism.

* Transparent access to the DAL client/server protocol is a part of the Data Access Manager.

* The architecture of the Data Access Manager is tailored for future extensibility.

The Data Access Manager provides two levels of interface for applications, a high-level interface and a low-level interface. The high-level interface is a standard way for all desktop applications, like a graphical charting package, to access data.

A new command has been added to the File menu: "Open Query". The end-user can pull down the File menu, select "Open Query", and choose a query like "Monthly Sales" to launch a request for data. This request returns the sales information for the month into an application, like a charting package.

The Data Access Manager's query builder makes it easier for in-house developers to create data-access pathways to different data sources. Thus, it delivers the flexibility to use such queries to create custom reports and presentations. The low-level interface is intended for in-house or custom developers who use tools like HyperCard and 4th Dimension to build highly-customized data-access interfaces. This low-level interface permits developers of data-intensive commercial applications, like statistical packages, to build sophisticated query interfaces for their desktop applications.
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TA45336_System_Data_Access_Language_DAL_(TIL06929).pdf

System 7: Data Access Language (DAL)

What is Data Access Language (DAL)?
This article has been archived and is no longer updated by Apple.
Data Access Language, formerly called CL/1, is Apple's client/server protocol for remote data access and is based on ANSI standard SQL (Structured Query Language). DAL is optimized to provide decision-support applications with uniform access to data, regardless of the different brands of databases, the different host platforms, or the different types of networks.

DAL is intended for Macintosh applications that need ad-hoc access to data from multiple data sources. While performance-oriented applications, like transaction-processing applications, can use DAL, such applications, especially in a single database-vendor environment, could be better served by the many solutions available from third-party Macintosh database and tool vendors like Informix, The Ask Group, Inc./Ingres Products, Oracle, Sybase, and others.

DAL uniquely addresses the needs of customers with databases from multiple database vendors. The DAL client software is included as a part of System 7.0 and can be transparently accessed by applications written to the Data Access Manager API. These applications can access data from DAL servers running on host computers, across all DAL-supported networks. Therefore, with the Data Access Manager and the included DAL client software in System 7, applications can "speak" in an identical fashion to many different types of host databases.

Apple Computer Inc. is currently delivering DAL servers through APDA for the following environments:

* VAX/VMS (for DEC Rdb, Informix, Ingres, Oracle, and Sybase)
* MVS/TSO (for IBM DB2)
* VM/CMS (for IBM SQL/DS)

DEC also provides DAL as a part of the DEC PathWORKS product.

Apple is also working with software and hardware vendors to extend DAL client and server support to other industry platforms.
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TA45337_System_The_Macintosh_DAL_and_Database_Development_(TIL06930).pdf

System 7: The Macintosh, DAL, and Database Development

What's Apple's database story?

This article has been archived and is no longer updated by Apple.
The Macintosh has always been the platform for unique and innovative applications--and this extends to the database world. Products like 4th Dimension (ACI), Omnis 5 (Blyth), Foxbase+/Mac (Microsoft Corp.) and Double Helix (Odesta) provide Macintosh users with state-of-the-art data management and application-development capability. In addition, all the major cross-platform, corporate-database, and application-tool vendors have also endorsed the Macintosh and delivered both client and server products, including ORACLE for Macintosh, ORACLE Server for A/UX (Oracle), Informix SE for A/UX (Informix), and Ingres Server for A/UX (The Ask Group, Inc./ Ingres Products).

Apple intends to continue to provide all the elements needed to make the Macintosh a complete platform for stand-alone and client/server database applications. Toward this end, Apple has announced various products, targeted at making the Macintosh the ideal database client platform. The Data Access Manager and the Data Access Language (DAL) client software included with System 7.0 further reinforce this position

These two products mean that Macintosh application developers can write their applications once and use the same applications to transparently access data in local or remote locations. With this infrastructure in place, Apple is working closely with third parties to provide its customers and developers with the database tools needed to implement mission-critical applications. To complete the database story, Apple and third parties are working together to make the Macintosh an equally strong platform for server applications.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
23 July 1993 - Company title updated from Ingres to The Ask Group, Inc./Ingres Products
12 February 1993 - Updated, vendor information.
29 June 1992 - Reviewed, for accuracy.

Published Date: Feb 18, 2012

TA45338_System_Data_Access_Language_DAL_vs_Data_Access_Manager_(TIL06931).pdf

System 7: Data Access Language (DAL) vs. Data Access Manager

What is the difference between Data Access Language (DAL) and Data Access Manager?

This article has been archived and is no longer updated by Apple.
The Data Access Manager is a Macintosh System interface, while the Data Access Language is Apple's client/server API for ad-hoc remote data access. Applications written to the Database Access Manager API can transparently access data from remote host databases using DAL as the database extension. Both the Data Access Manager and the DAL client software are a part of System 7.0.

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System 7: 6.0 DAL Apps Compatible with 7.0 Data Access Manager

Are my current 6.0 Data Access Language applications compatible with the 7.0 Data Access Manager?

This article has been archived and is no longer updated by Apple.

Yes. Special care was taken to ensure that current System 6 DAL applications will work smoothly with the Data Access Manager in System 7.

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System 7: Benefits of the Data Access Manager

What can I do with Data Access Manager?

This article has been archived and is no longer updated by Apple.
With the new System 7 capabilities, you can benefit from the tight integration of data-access capabilities in all your Macintosh applications. You can pull data from your organizational databases directly into applications to work with as you desire, rather than the way it was delivered prior to System 7.

Article Change History:
18 Aug 1995 - Reformatted and reviewed for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

System 7: Using Locked Removable System 7 Media In System 6

Article Change History

09/02/92 - REVIEWED
* For technical accuracy; edited.

Will my locked, removable, System 7 volume mount under System 6?

This article has been archived and is no longer updated by Apple.
No. You must rebuild (or create) the desktop file on any cartridge not containing one from System 6 to bring it back into a System 6 environment. If this disk is locked or does not contain enough space for a resource desktop, System 6 won't mount the volume. You should unlock the volume to let a resource desktop be created.

A System 7 hard disk with not enough space could have the same problem and not mount under System 6.0. To work around this, remove some files under System 7 to let a resource desktop be created.

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System 7: How to Start System 7 from a Floppy

Article Change History

08/17/92 - REVIEWED
* For technical accuracy.

Can I start System 7 from a floppy disk?

This article has been archived and is no longer updated by Apple.
System 7 will not fit on an 800K floppy. However, you can use the Installer to make a bootable 1.4MB floppy.

To create a bootable 1.4MB System 7 floppy, use the Customize option of the Installer to install the Minimum System for your Macintosh. This creates a bootable version that is very limited and contains minimal functionality for the Macintosh. Apple recommends that you not use this disk as your main system, but only as an emergency disk.

Bootable disks are also provided in both the System 7 800K and 1.4M disk suite on the "Disk Tools" disk. The 800K format contains a 6.0.X bootable system and the 1.4MB format contains a 7.0.X bootable system.

Custom installation lets you select the exact combination of system files, drivers, and other resources you want. You can use this process for initial installation, for updating to a new version of System software, for installing a single, special resource, or for saving space on your startup disk by eliminating software that isn't essential.

When you click "Customize" you have a choice of standard or minimal system files for each model of the Macintosh. Insert and select the 1.44MB floppy where you want to install System 7, choose the option Minimal for your Macintosh, then click Install.

Published Date: Feb 18, 2012

System 7: Automatic Placement of Files in System Folder

Article Change History

08/24/92 - EDITED
* For clarity.

I dropped a file on my System folder; where did it go?

This article has been archived and is no longer updated by Apple.
When you drop a file onto the System Folder, the system automatically places the file in the right place in the System Folder. As a result, you shouldn't have to worry about where different things go in your System Folder. After the System places items in their appropriate locations, a dialog box will appear with a report of which folder(s) the items were dropped into.

You must put the file onto the icon for the System Folder for this automatic placement to work. If you drop the file into the open window of the System Folder, the system will not automatically place the file in the appropriate location.

* The system puts fonts into the System file.

* Control Panels go into the Control Panels folder.

* System extensions (formerly called INITs) go into the Extensions folder.

* Desk Accessories go into the Apple Menu Items folder.

If you want to put a system extension, control panel, font, or other item in another location within the System Folder, open the System Folder and drag the items directly where you want them to be.

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TA45344_System_New_Sound_Capabilities_(TIL06938).pdf

System 7: New Sound Capabilities

Article Change History

08/25/92 - UPDATED
* To include sound input capabilities.
07/25/91 - REVISED

What are the new sound capabilities in System 7?

This article has been archived and is no longer updated by Apple.
System 7 offers some exciting new sound capabilities that you will hear as software developers revise their applications for sound.

For the first time, a Macintosh with System 7 can play several sounds at once. For example, you could be playing a voice track and some other track at the same time. In addition, you can work on other things while the system plays a sound.

System 7 offers sound-input capabilities for the microphone included with recent Macintoshes. With sound-in, applications can start offering features like voice annotation of documents.

Finally, System 7 has built-in audio compression to save disk space, so you can have larger sounds than before.

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TA45345_System_The_Desktop_Button_Replaces_the_Drive_Button_(TIL06940).pdf

System 7: The Desktop Button Replaces the "Drive" Button

Article Change History

08/24/92 - REVIEWED
* For technical accuracy.

What happened to the "Drive" button in the Open and Save dialog boxes?

This article has been archived and is no longer updated by Apple.
The Drive button in the Open, Save, and Save As dialog boxes has been replaced by the "Desktop" button. When you click the Desktop button, you will see all of the hard disks, floppies, file servers, and folders that you have on your Macintosh desktop. To move to a specific disk, you can go directly to the disk you want, without having to move sequentially from one disk drive to the next.

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Pascal: STR Function

This article has been archived and is no longer updated by Apple.
The LONGINTEGER unit of the SYSTEM.LIBRARY is used whenever the program uses the STR function or contains Long Integers. Programs that use the STR function must have the LONGINTEGER unit available in either the system library or a program library.
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TA45347_Pascal_Error_NumbersRuntime_Pascal_(TIL00696).pdf

Pascal: Error Numbers--Runtime Pascal

This article has been archived and is no longer updated by Apple.
Apple has a special version of Pascal for applications programs that doesn't require a Language Card: it's called Runtime Pascal. Any errors that the programmer doesn't catch will stop the program with an error number equal to the error number from page 280 of the Apple Pascal Operating system Manual plus 100. For example, a 'file not found' error would cause error 110.
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TA45348_Pascal_WRITE_Statementthe_field_specifier_(TIL00697).pdf

Pascal: WRITE Statement--the field specifier

This article has been archived and is no longer updated by Apple.
The field specifier in the WRITE statement allows you to fix the number of decimal places of a real number that will be printed; a field specifier of 0, however, won't work:

WRITELN (REAL:5:0); doesn't work
WRITELN (REAL:5:1); does

See page 36 of the Apple Pascal Language Reference Manual for more information.
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Pascal: Interrupts

This article has been archived and is no longer updated by Apple.
Pascal 1.1 will work with interrupts. Usually, interrupts are disabled when Pascal boots and the IRQ vector at $FFFE,FFFF points to the system re-initialization routine. You can write an assembly language routine that will point the IRQ vector to your interrupt handler, and thereby enable interrupts. Refer to the Language Card manual for how to write to the IRQ vector.

The disk routines in Pascal 1.1 are protected from interrupts during their time-dependant code. However, Pascal 1.0 doesn't protect its disk routines; interrupts are therefore not recommended in that environment.
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MacX25: Specifications

This article has been archived and is no longer updated by Apple.

MacX25 supports the following:

* CCITT 1980 Compatible Mode
* CCITT 1984 Compatible Mode
* Packet Assembler/Disassembler (X.3, X.28, X.29)
* Operation as a DTE
* Operation as a DCE
* Virtual Circuits: 64 maximum
* Single link for each Apple Serial NB Card
* Multiple cards for each Macintosh II
* Operation at up to 19.2Kbps with RS-232C
* Operation at up to 64Kbps with V.35
* Multiple servers for each AppleTalk network system

MacX25 does not support the following:

* Permanent Virtual Circuits
* X.32 switched circuit operation

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Forms Creation Software: High-End Products

I want to create high-end forms. Claris' SmartForm is not powerful enough, nor does it have many of the features that a dedicated, high-end, forms processing and creation system has.

Are you aware of any high-end products for the Macintosh?

This article has been archived and is no longer updated by Apple.
Below are the names of three forms creation and management software publishers. Feature sets vary across the three. Each is strong in some areas and weak in others when compared to SmartForm from Claris. Apple is currently evaluating forms software for its own use. The project leader is very excited about features of packages not yet on the market. Great advances are expected in the next six months.

Here are the three packages and their publishers:

* Informed Designer from Informed Manager

* if/x: series from Softview

* True Forms from Adobe Systems, Inc.

For contact information, search the Technical Info library under the name of the publisher.

Published Date: Feb 18, 2012

TA45352_Kinkos_Products_Now_Available_from_Intellimation_(TIL06996).pdf

Kinko‘s Products Now Available from Intellimation

What became of the educational software products that were once distributed through Kinko's?

This article has been archived and is no longer updated by Apple.
The products formerly available through Apple Computer, Inc. and Kinko's are now available through Intellimation. For contact information, search the Technical Info library under "Intellimation."

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AppleShare PC 2.0: Using Expanded or Extended Memory

Is it possible to load AppleShare PC 2.0 into either extended or expanded memory?

This article has been archived and is no longer updated by Apple.
Yes, it is possible to load parts of AppleShare PC into extended memory (XMS) or expanded memory (EMS, EEMS, etc.) There is no real feature built into AppleShare PC to allow this, but a number of utilities exist that can manage memory and load programs and drivers into this alternate memory.

We have not done a great deal of testing with this, and, of course, third-party utilities that do this can't be treated as Apple-supported solutions. However, we have used one product (QEMM-386) to load a great deal of AppleShare PC 2.0.1 into extended memory on an IBM model 70 and it seems to work fine.

The process of determining what can and cannot be loaded into extended memory takes trial-and-error experimentation and can be rather complex. The variables involved include the processor capabilities of your computer, the capabilities of your memory-manager software, the number and type of programs to be loaded "high", and the type and amount of hardware that also needs use of this high memory range. This process is usually documented with the memory-manager software and differs enough between programs to be beyond the scope of this response. If you provide a very detailed description of specific PC installation, we may be able to provide more assistance.

For information on the QEMM-386 package, please contact the manufacturer, Quarterdeck Office Systems. For contact information, search the Technical Info library under "Quarterdeck".

Note: At the time we tested it, QEMM-386 v5.1 was the one third-party memory manager available that was a compatible substitute for the Windows 3.0 HIMEM.SYS memory manager. There are now several other utilities, some commercial, some user-supported, advertising this ability. We have not tried any of these and probably won't unless a specific case needs attention.

Published Date: Feb 18, 2012

DAL: DB2 Data Updates Concerns

We have developed the first phase of an enterprise-wide DSS system using DAL up to a DB/2 database. We need to query information and do real-time updates to the database.

From the query standpoint, everything works fine, but I have some concerns regarding updating the host database. Overall, we want to set up standards and procedures for updating DB/2 data from Macintoshes. Dynamic SQL gives us the capability to update the host, but MIS may not allow its use, due to backup, recovery, security, and other control issues. As alternatives to dynamic SQL, we could use batch mode on the host or COBOL to do the updates.

This is more of an organizational issue than a strict technical problem. Has anyone else faced the same issues, developed guidelines, and so on?
This article has been archived and is no longer updated by Apple.
The fact that DAL uses dynamic, not static, SQL is not really the issue. You need to establish security by user or user group regardless of the kind of SQL used to access the tables.

The problems and concerns with backup and recovery are a function of the DB2 design and would exist if you used static SQL and CICS to do transaction updates. If you want neat backup points (for possible recovery later), you will have to do your updates in batch programs with quiesce points before and after. We are not aware of any guidelines established to address this issue.
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Apple II+: Mini-Assembler (2 of 2)

The attached listing is a relocated version of the mini-assembler for the Apple II+ with instructions for the Apple II version. This version can be BRUN from the disk or BLOADed and start with CALL 2048 from Applesoft.

This article has been archived and is no longer updated by Apple.

```
0800:                   ORG $800
0800: 20 4B D6          JSR NEW       ;SCRATCH ANY BASIC PROGRAM
0803: A9 00             LDA #$00
0805: 8D 00 08          STA #$0800
0808: 4C 9D 08          JMP RESETZ    ;BRANCH MINI/ASSEM'S START
080B: E9 81     REL     SBC #$81      ;IS FMT COMPATIBLE
080D: 4A                LSR A         ;WITH RELATIVE MODE?
080E: DO 14             BNE ERR3      ;NO.
0810: A4 3F             LDY A2H
0812: A6 3E             LDX A2L       ;DOUBLE DECREMENT
0814: DO 01             BNE REL2
0816: 88                DEY
0817: CA        REL2    DEX
0818: 8A                TXA
0819: 18                CLC
081A: E5 3A             SBC PCL       ;FORM ADDRESS PC-2
081C: 85 3E             STA A2L
081E: 10 01             BPL REL3
0820: C8                INY
0821: 98        REL3    TYA
0822: E5 3B             SBC PCH
0824: D0 6B     ERR3    BNE ERR       ;TOO FAR TO BRANCH ERROR
0826:                   *
0826: A4 2F     FINDOP  LDY LENGTH
0828: B9 3D 00  FNDOP2  LDA A1H,Y     ;MOVE INST TO (PC)
082B: 91 3A             STA (PCL),Y
082D: 88                DEY
082E: 10 F8             BPL FNDOP2
0830: 20 1A FC          JSR CURSUP
0833: 20 1A FC          JSR CURSUP    ;RESTORE CURSOR
0836: 20 DO F8          JSR INSTDSP   ;TYPE FORMATTED LINE
0839: 20 53 F9          JSR PCADJ     ;UPDATE PC
083C: 84 3B             STY PCH
083E: 85 3A             STA PCL
0840: 4C A0 08          JMP NXTLINE   ;GET NEXT LINE
0843: 20 BE FF  FKMON3  JSR TOSVB     ;GO TO DELIM HANDLER
0846: A4 34             LDY YSAV      ;RESTORE Y-INDEX
0848: 20 A7 FF  FKMON   JSR GETNUM    ;READ PARAM
084B: 84 34             STY YSAV      ;SAVE Y-INDEX
084D: A0 17             LDY #$17      ;INIT DELIM INDEX
084F: 88        FKMON2  DEY           ;CHECK NEXT DELIM
0850: 30 4B             BMI RESETZ    ;ERR IF UNRECOGNIZED DELIM
0852: D9 CC FF          CMP CHRTBL,Y  ;COMPARE WITH DELIM TABLE
0855: D0 F8             BNE FKMON2    ;NO MATCH
0857: CO 15             CPY #$15      ;MATCH, IS IT CR?
0859: D0 E8             BNE FKMON3    ;NO HANDLE IT IN MONITOR
085B: A5 31             LDA MODE
085D: A0 00             LDY #$00
085F: C6 34             DEC YSAV
0861: 20 00 FE          JSR BL1       ;HANDLE CR OUTSIDE MONITOR
0864: 4C A0 08          JMP NXTLINE
0867:                   *
0867: A5 3D     TRYNEXT LDA A1H       ;GET TRIAL OPCODE
0869: 20 8E F8          JSR INSDS2    ;GET FMT + LENGTH FOR
086C: AA                TAX           ;OPCODE
086D: BD 00 FA          LDA MNEMR,X   ;GET LOWER MNEMONIC BYTE
0870: C5 42             CMP A4L       ;MATCH?
0872: D0 13             BNE NEXTOP    ;NO, TRY NEXT OPCODE
0874: BD CO F9          LDA MNEML, X  ;GET UPPER MNEMONIC BYTE
```

```
0877: C5 43             CMP A4H       ;MATCH ?
0879: DO OC             BNE NEXTOP    ;NO, TRY NEXT OPCODE
087B: A5 44             LDA FMT
087D: A4 2E             LDY FORMAT    ;GET TRIAL FORMAT
087F: CO 9D             CPY #$9D      ;IS TRIAL FORMAT RELATIVE?
0881: FO 88             BEQ REL       ;YES
0883: C5 2E             CMP FORMAT    ;SAME FORMAT?
0885: FO 9F             BEQ FINDOP    ;YES
0887: C6 3D     NEXTOP  DEC A1H       ;NO, TRY NEXT OPCODE
0889: DO DC             BNE TRYNEXT
088B: E6 44             INC FMT       ;NO MORE, TRY WITH LEN=2
088D: C6 35             DEC L         ;WAS L=2 ALREADY?
088F: FO D6             BEQ TRYNEXT   ;NO
0891:
0891: A4 34     ERR     LDY YSAV      ;YES, UNRECOGNIZED INST.
0893: 98        ERR2    TYA
0894: AA                TAX
0895: 20 4A F9          JSR PRBL2     ;PRINT ^ UNDER LAST READ
0898: A9 DE             LDA #$DE      ;CHAR TO INDICATE ERROR
089A: 20 ED FD          JSR COUT      ;POSITION
089D: 20 EA FF  RESETZ  JSR BELL
08AO: A9 A1     NXTLINE LDA #$A1      ; '!'
08A2: 85 33             STA PROMPT    ;INITIALIZE PROMPT
08A4: 20 67 FD          JSR GETLNZ    ;GET LINE
08A7: 20 C7 FF          JSR ZMODE     ;INIT SCREEN STUFF
08AA: AD 00 02          LDA IN       ;GET CHAR
08AD: C9 AO             CMP #$AO     ;ASCII SPACE?
08AF: FO 13             BEQ SPACE    ;YES
08B1: C8                INY
08B2: C9 A4             CMP #$A4     ;ASCII '$' IN COL 1?
08B4: FO 92             BEQ FKMON    ;YES,SIMULATE MONITOR
08B6: 88                DEY          ;NO, BACKUP A CHAR
08B7: 20 A7 FF          JSR GETNUM   ;GET A NUMBER
08BA: C9 93             CMP #$93     ;':' TERMINATOR?
08BC: DO D5     ERR4    BNE ERR2     ;NO, ERR
08BE: 8A                TXA
08BF: FO D2             BEQ ERR2     ;NO ADDR PRECEDING COLON
08C1: 20 78 FE          JSR A1PCLP   ;MOVE ADDR TO PCL, PCH
08C4: A9 03     SPACE   LDA #$03     ;COUNT OF CHAR IN MNEMONIC
08C6: 85 3D             STA A1H
08C8: 20 EF 09  NXTMN   JSR GETNSP   ;GET 1ST MNEMONIC CHARACTER
08CB: OA                ASL A
08CC: E9 BE             SBC #$BE     ;SUBTRACT OFFSET
08CE: C9 C2             CMP #$C2     ;LEGAL CHARACTER?
08DO: 90 C1             BCC ERR2     ;NO
08D2: OA                ASL A        ;COMPRESS-LEFT JUSTIFY
08D3: OA                ASL A
08D4: A2 04             LDX #$04
08D6: 0A        NXTM2   ASL A        ;DO 5 TRIPLE WORD SHIFTS
08D7: 26 42             ROL A4L
08D9: 26 43             ROL A4H
08DB: CA                DEX
08DC: 10 F8             BPL NXTM2
08DE: C6 3D             DEC A1H      ;DONE WITH 3 CHAR?
08EO: FO F4             BEQ NXTM2    ;YES BUT DO 1 MORE SHIFT
08E2: 10 E4             BPL NXTMN    ;NO
08E4:                   *
08E4: A2 05             LDX #$05     ;5-CHAR ADDRESSING MODE
0836: 20 3F 09  FORM2   JSR GETNSP   ;GET 1ST CHAR OF ADDRESS
08E9: 84 34             STY YSAV
08EB: DD B4 F9          CMP CHAR1,X  ;1ST CHAR MATCH PATTERN?
08EE: DO 13             BNE FORM3    ;NO
08FO: 20 3F 09          JSR GETNSP   ;YES, GET 2ND CHAR
08F3: DD BA F9          CMP CHAR2,X  ;MATCHES SECOND HALF?
08F6: FO ON             BEQ FORM5    ;YES
```

```
08F8: BD BA F9          LDA CHAR2,X  ;NO, IS 2ND HALF ZERO?
08FB: FO 07             BEQ FORM4    ;YES
08FD: C9 A4             CMP #$A4     ;NO 2ND HAL OPTIONAL?
08FF: FO 03             BEQ FORM4    ;YES
0901: A4 34             LDY YSAV
0903: 18        FORM3   CLC          ;CLEAR CARRY NO MATCH
0904: 88        FORM4   DEY          ;BACK UP ONE CHARACTER
0905: 26 44     FORM5   ROL FMT      ;FORM FORMAT BYTE
0907: EO 03             CPX #$03     ;TIME TO CHECK FOR ADDRESS
0909: DO OD             BNE FORM7    ;NO
090B: 20 A7 FF          JSR GETNUM   ;YES
090E: A5 3F             LDA A2H
0910: FO 01             BEQ FORM6    ;HIGH ORDER BYTE ZERO
0912: E8                INX          ;NO, INCR FOR 2-BYTE
0913: 86 35     FORM6   STX L        ;STORE LENGTH
0915: A2 03             LDX #$03     ;RELOAD FORMAT INDEX
0917: 88                DEY          ;BACKUP A CHARACTER
0918: 86 3D     FORM7   STX A1H      ;SAVE INDEX
091A: CA                DEX          ;DONE WITH FORMAT CHECK?
091B: 10 C9             BPL FORM2    ;NO
091D: A5 44             LDA FMT      ;YES PUT LENGTH
091F: OA                ASL A        ;IN LOW BITS
0920: OA                ASL A
0921: 05 35             ORA L
0923: C9 20             CMP #$20
0925: BO 06             BCS FORM8    ;ADD $ IF NONZERO LENGTH
0927: A6 35             LDX L        ;AND DON'T ALREADY HAVE IT
0929: FO 02             BEQ FORM8
092B: 09 80             ORA #$80
092D: 85 44     FORM8   STA FMT
092F: 84 34             STY YSAV
0931: B9 00 02          LDA IN,Y     ;GET NEXT NONBLANK
0934: C9 BB             CMP #$BB     ;';' START OF COMMENT
0936: FO 04             BEQ FORM9    ;YES
0938: C9 8D             CMP #$8D     ;A CARRIAGE RETURN ?
093A: DO 80             BNE ERR4     ;NO, ERR
093C: 4C 67 08  FORM9   JMP TRYNEXT
093F:                   *
093F: B9 OO 02  GETNSP  LDA IN,Y
0942: C8                INY
0943: C9 AO             CMP #$AO     ;GET NEXT NON BLANK CHAR
0945: FO F8             BEQ GETNSP
0947: 60                RTS
```

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Applesoft: Random numbers

All numbers produced by running Applesoft's random number generator follow the same sequence as the first RUN, since the Applesoft's random number seed is not reinitialized.

This seed number, stored in locations $C9 to $CD, is initialized when your system is first booted.
This article has been archived and is no longer updated by Apple.
The Applesoft random number generator is only a pseudo-random generator (as are most generators); thus, non-random patterns eventually occur. The frequency these patterns repeat varies from program to program, though proper re-seeding of the random number generator helps prevent small repeating sequences.

Here are two suggestions:

1. Use the monitor's random seed at locations 78 and 79 to initialize Applesoft's random number seed. Since the monitor's seed is constantly incrementing while waiting for a key to be pressed, you'll start on one of 65536 different sequences.

```
10 X = RND (-PEEK (78) - PEEK (79) * 256)
```

2. This random sequence can be lengthened by re-seeding the generator occasionally within the application program by adding the statement X = RND (-RND (1)).

No method completely eliminates patterns in the random numbers generated, but you can lengthen the sequences until they're difficult to detect.

Applesoft's algorithm is:

1. Multiply the random seed by 11879546.4.
2. Add the result to 3.92767778 E-08.
3. Swap the most and least significant bytes of the result.
4. Force the exponent into the 0..1 range.

The example below shows the effect of the algorithm on a number. The most and least significant two decimal digits are swapped instead of bytes in this example:

```
0.500000000
* 11879546.4
-----------
5929773.2
+ 0.0000000392767778
------------------------
5929773.2 (the rest is lost)
-- --- swap "bytes"
3229775.9

0.32297759 force value between 0 and 1
```

Published Date: Feb 20, 2012

WebObjects 4: Java FAQ

This article contains frequently asked questions (FAQ) regarding WebObjects 4's support for the Java programming language, with answers to those questions.
This article has been archived and is no longer updated by Apple.
Questions answered in this article:

1. What JDK version is used in WebObjects?
2. Can I use a different Java version?
3. Does Apple support Just-in-Time (JIT) compilation with WebObjects 4?
4. How do I debug Java code in ProjectBuilder?

Question 1: What JDK version is used in WebObjects?

Answer: WebObjects 4 uses Sun's 1.1.6 JDK. This is the only version officially supported by Apple. In addition, WebObjects 4 supports Sun's Swing interface library, version 1.0.3.

Question 2: Can I use a different Java version?

Answer: You may be able to run later versions of Java by simply pointing the JDK environment variable to the new version and modifying your JavaConfig.plist file; however, Apple will not provide support for any version of Java other than the one which shipped with WebObjects 4. Because WebObjects is designed to work with Sun's Java VM, Microsoft's Java VM will not work with WebObjects.

For an unsupported procedure that can be used to update the WebObjects JDK version, see **article 70064**.

Question 3: Does Apple support Just-in-Time (JIT) compilation with WebObjects 4?

Answer: JIT functionality is not available in this release of WebObjects. WebObjects applications spend much of their time running compiled framework code; the speed benefits of this approach are greater than would be seen with JIT-compiled Java code.

Question 4: How do I debug Java code in ProjectBuilder?

Answer: WebObjects 4's Project Builder includes a Java debugger based on Sun's jdb. For more information on debugging Java code, see the appropriate section of the WOInfoCenter.

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EOF 2.2 Patch 1 Overview

Some versions of this patch are now **obsolete**. This patch should **only** be installed on OPENSTEP for Mach and HP-UX systems running EOF 2.2 or WebObjects 3.5.1. For Solaris and Windows NT systems, install **EOF 2.2 Patch 2** instead.

The WebObjects Current Patch List, **TIL article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read these documents if you're not sure which patches you need on your system.
This article has been archived and is no longer updated by Apple.

About This Patch

This document contains release notes for EOF 2.2 patch 1, an update to Apple's Enterprise Objects Framework on all supported platforms. Customers who are interested in upgrading from EOF 2.1, the version of EOF included in OPENSTEP Enterprise 4.2 and packaged separately for the Mach operating system, should contact Apple Enterprise Support for more information, through an authorized Apple Support contact or by emailing **support@enterprise.apple.com**.

Installing EOF 2.2 Patch 1 on OPENSTEP 4.2 for Mach

1. Download the Mach version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/patches/

2.2/EOF2.2_Mach_Patch1.pkg.tar
```

2. Uncompress the Mach package file. Your web browser or FTP client may perform this step for you.

3. Log in as root. If you're not sure how to log in as root, see your system administrator.

4. Double-click on the EOF2.2_Mach_Patch1.pkg file. Make sure that no EOF-based applications are running before you perform this step.

5. Click the Install button in the Installer package window. An Install Package panel will open.

6. Click 'Install' in the Install Package panel and, when prompted for confirmation, **click OK** to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.

Installing EOF 2.2 Patch 1 on Windows NT 4.0

1. Download the Windows NT version of the patch fromApple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/

patches/2.2/EOF2.2_NT_Patch1.TAR.gz
```

Also **download** the installer script, "patcher.nt.sh" from:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/patcher.nt.sh
```

2. Log in as a user with Administrator privileges.

3. Open a Bourne shell. The Bourne shell should be available from your Start menu, under the WebObjects program group, or under your Apple root directory at Demos\\sh.exe.

4. Change to the directory containing the patch and the patch installer, "patcher.nt.sh".

5. Type the following at the shell prompt (make sure that there are no EOF applications running first):

```
patcher.nt.sh -install EOF2.2_NT_Patch1.TAR.gz
```

For more information on using the patcher.nt.sh program, type the following at the command prompt:

```
patcher.nt.sh -help
```

6. Reboot your Windows NT system

Installing EOF 2.2 Patch 1 on Solaris or HP-UX

1. Download the Solaris version or the HP-UX version of this patch from Apple's FTP servers at ftp.info.apple.com. The files are located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/

patches/2.2/EOF2.2_Solaris_Patch1.TAR.Z
```

and

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/

patches/2.2/EOF2.2_HPUX_Patch1.TAR.Z
```

Also download the installer script, "patcher.sh" from:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/patcher.sh
```

2. Log in as root. If you're not sure how to log in as root, see your system administrator.

3. Change to the directory containing the patch and the patch installer, "patcher.sh".

4. Type the following at the shell prompt (make sure that there are no EOF applications running first):

```
patcher.sh -install EOF2.2_Solaris_Patch1.TAR.Z
```

or

```
patcher.sh -install EOF2.2_HPUX_Patch1.TAR.Z
```

For more information on using the "patcher.sh" program, type the following at the command prompt:

```
patcher.sh -help
```

5. Reboot your Unix system

Issues Fixed

Corrected in EOF 2.2 Patch 1

Sybase Adaptor Issues

Incorrect Sybase smallint mapping
Apple reference # 2247522, 2241377

ISSUE:
On HP-UX and Solaris, data of type **smallint** would be mapped incorrectly when retrieved from a Sybase database. Instead of being mapped to **NSNumber/Short**, the data would be mapped to **NSNumber/Integer** and assigned the original value times 2 ^16.

RESOLUTION:
The Sybase adaptor now correctly maps smallint data to type NSNumber/Short.

All parameters required for Sybase stored procedures
Apple reference # 2203081

ISSUE:
If you did not supply all values when executing a Sybase stored procedure, the execution would fail with an exception like:

```
Feb 19 11:23:53 WOF_3_5_Sybase_Patch[1027] Caught exception:EOGeneralAdaptorException
Sybase: Server:unknown Procedure:NEXT_MOVIE_PRIMARY_KEY Line:0 Procedure NEXT_MOVIE_PRIMARY_KEY expects
parameter @A_MOVIE_ID, which was not supplied.
```

This happens even though A_MOVIE_ID is not required for the stored procedure.

RESOLUTION:
The Sybase adaptor no longer requires optional arguments to stored procedures.

Cannot fetch float-NSDecimalNumbers along with text columns
Apple reference # 2208497

ISSUE:
If you have an attribute with external type float, and internal type NSDecimalNumber, it will not fetch properly if a text column is also in the fetch. The attribute will be blank.

RESOLUTION:
The Sybase adaptor now correctly fetches these attributes.

Special characters crash Sybase adaptor
Apple reference # 2261262, 2260785

ISSUE:
The SybaseEOAdaptor would crash when saving Text or BLOB data containing characters which could not be encoded using the specified database encoding.

RESOLUTION:
The adaptor has been fixed to detect the encoding failure and raise an exception, so that a database encoding which is able to handle the issue characters may be specified in the connection dictionary.

Sybase can't fetch float and text data together
Apple reference # 2274601, 2259088

ISSUE:
The Sybase adaptor would not fetch data of types text and float together.

RESOLUTION:
The adaptor has been fixed. There is no longer a conflict between these data types.

Can't use smallints as arguments to Sybase stored procedures
Apple reference # 2274608, 2262888

ISSUE:
The Sybase adaptor did not allow the use of smallints as arguments to stored procedures.

RESOLUTION:
The Sybase adaptor now allows stored procedures with smallint arguments.

Can't use Sybase 11 stored procedures
Apple reference # 2274650, 2244533

ISSUE:
The Sybase adaptor was unable to interpret stored procedures created in Sybase 11.

RESOLUTION:
The adaptor has been fixed to work properly with stored procedures from both Sybase 10 and Sybase 11.

Incorrect time zone conversions
Apple reference # 2276907, 2276899

ISSUE:
When converting a time value to the server time zone, the Sybase adaptor would substitute the server's time zone without actually adjusting the time value for the zone difference.

RESOLUTION:
The Sybase adaptor now performs the conversion of the time value to the corresponding value in the server's time zone.

Oracle Adaptor Issues

Oracle adaptor state not preserved
Apple reference # 2252175

ISSUE:
If the Oracle adaptor encountered an error while closing the database channel, the adaptor state would not be set correctly. As a result, the database connection could not be reestablished on that channel once the database came back up.

RESOLUTION:
The Oracle adaptor now sets its internal state correctly before raising the error, allowing the connection to be re-established once the database is restored.

Optimistic locking fails on rows with trailing spaces
Apple reference # 2231704, 2177721

ISSUE:
EOOracleAdaptor would strip trailing spaces from VARCHAR2 data fetched from or committed to an Oracle database, causing optimistic locking to fail if a database row contained trailing spaces inserted by another tool.

RESOLUTION:
EOOracleAdaptor no longer strips trailing spaces from VARCHAR2 data.

Oracle adaptor generates incorrect SQL for left and right outer joins
Apple reference #2288089, 2165674

ISSUE:
The SQL generated by the Oracle adaptor for a left outer join was actually the syntax for a right outer join, and vice versa.

RESOLUTION:
The Oracle adaptor now generates the correct SQL for left and right outer joins.

Informix Adaptor Issues

Informix adaptor crashes on failed referential integrity check
Apple reference # 2274351, 2272207

ISSUE
If the Informix adaptor was unable to find matching source and destination entities of a referential integrity constraint, it would pass a nil pointer to the database. This would cause a crash in the Informix adaptor.

RESOLUTION
The Informix adaptor now tests for this condition and handles it appropriately.

ODBC Adaptor issues

ODBC Adaptor cannot execute stored procedures with output parameters
Apple reference # 2208503

ISSUE
The EOF 2.2 (WebObjects 3.5) version of ODBCEOAdaptor.framework introduced a bug which causes an error when using a stored procedure with an output parameter.

RESOLUTION
The ODBC adaptor now handles output parameters correctly.

ODBC adaptor leaks connections with Microsoft Access
Apple reference # 2209574

ISSUE:
The EOF 2.2 (WOF 3.5) and earlier versions of ODBCEOAdaptor.framework did not release ODBC connections when using Microsoft Access (or any JET based data source) in order to work around a bug in the Microsoft odbcjt32.dll library; this bug caused a crash when SQLFreeConnect was called. The SQLFreeConnect bug was discovered in version 3.40.2829 of the DLL. Newer versions of the DLL (beyond 3.50) no longer exhibit the crashing issue.

RESOLUTION:
The patched version of this framework now checks the version of the DLL more carefully and allows SQLFreeConnect to be called unless the DLL version is 3.4X. The adaptor no longer leaks the ODBC Connection when running with fixed versions of odbcjt32.dll.

Tools And Frameworks Issues

Development tools may attempt to load EOModel file twice for an application nested within an aggregate project
Apple reference # 2267783, 2176591

ISSUE:
When an application was nested in an aggregate project, the development tools would sometimes attempt to load an EOModel file twice due to an error in the path searching code.

RESOLUTION:
The search path has been corrected in this version. The development tools now handle subprojects of aggregates correctly.

Nil value in EOAttribute causes crash while saving EOModel
Apple reference # 2274226, 2220588

ISSUE:
A crash would sometimes occur during the save of an EOModel because a nil serverTimeZone attribute was being inserted into the EOModel.

RESOLUTION:
The EOAccess layer has been changed to test for and handle a nil value for this attribute.

EOWizard not localizable
Apple reference # 2231705, 2177282

ISSUE:
EOWizard was not localizable.

RESOLUTION:
Template files have been moved from the framework's Resources directory to the ../Resources/English.lproj directory, making it possible to localize these resources.

Exception while writing model to disk corrupts EOModel
Apple reference # 2274225, 2220893

ISSUE:
If an exception was raised while an EOModel was being written to disk, the original model would be lost and only the partially-written or corrupted model was left on the disk.

RESOLUTION:
A backup copy of the EOModel is made before the write begins. If an error occurs during the write, the backup EOModel will now be restored to the disk, and a copy of the partially written new EOModel will also be saved (as <model_name>.eomodeld#).

BusinessLogic framework fails to retain some global IDs
Apple reference # 2290236, 2290233

ISSUE:
Several classes in the BusinessLogic framework example failed to retain global IDs for some enterprise objects, resulting in messages being sent to

unexpectedly freed objects.

RESOLUTION:
The classes now retain global IDs appropriately.

EOAccess Issues

EOEntity methods raise exceptions
Apple reference # 2256685, 2251180

ISSUE:
Under some circumstances some methods of EOEntity, including setAttributes, setClassProperties, setRelationship, and removeRelationship, would not clear a private variable, potentially resulting in an application exception.

RESOLUTION:
These methods now handle their private instance variables correctly.

Prefetching can mysteriously fail
Apple reference # 2264033, 2223730

ISSUE:
Prefetching would sometimes fail for no apparent reason, due to inappropriate filtering of relationships inside the EOAccess layer.

RESOLUTION:
The incorrect filtering on prefetches has been removed from EOEntity.

Unnecessary firing of to-many faults
Apple reference # 2248080, 2227660

ISSUE:
If the PropagatePrimaryKey flag on an EOEntity was set to YES, saving changes to the EOEditingContext would fire array faults for all of that entity's to-many relationships. This was not necessary and could cause performance issues.

RESOLUTION:
The EOAccess layer has been changed so that it no longer fires unnecessary faults.

Multiple propagation primary keys create race condition
Apple reference # 2267964, 2260541

ISSUE:
Saving changes to two databases when both had a propagation primary key would not work in previous versions of EOF; a race condition would be created, and only one database would be able to generate primary keys.

RESOLUTION:
EODatabaseContext has been changed to correct this behavior. Both databases can now generate their primary keys correctly.

EODatabase never releases snapshots
Apple reference # 2231693, 2169671

ISSUE:
Snapshots associated with enterprise objects were never released.

RESOLUTION:
EOF now tracks an object's snapshots and releases them when all objects that refer to them are released.

Deallocating an EODatabase containing snapshots causes crash
Apple reference # 2272549, 2265751

ISSUE:

EODatabase released its snapshots too early during deallocation. As a result, deallocating an EODatabase would raise a fatal exception if any snapshots were present.

RESOLUTION:
The order in which instance variables are released by EODatabase has been corrected.

Logic error in EOAccess layer sometimes raises exception while generating primary keys
Apple reference # 2278561, 2182084

ISSUE:
Under certain circumstances, the EOAccess code that generated primary keys would send messages to inappropriate objects. This would cause a "NoSuchMethodError" exception to be thrown in Java, or one of several exceptions to be raised in Objective C.

RESOLUTION:
EOAccess now checks the class of the receiver before sending the message that was causing the issue.

Incorrect NSNumber formatting for zero values
Apple reference # 2264031, 2181645

ISSUE:
Zero values for number fields displayed by EOF would not always reflect appropriate formats for zero; some integer zero values would be represented as "0.00".

RESOLUTION:
EOEntity has been modified to check the default zero formatting for all number types.

Deleting objects with "toManyToOne" relationships sometimes fails.
Apple reference #2287021, 2278795

ISSUE:
In some circumstances, EOF would not correctly handle deletion of an object with a toManyToOne relationship, leaving rows in intermediate tables which should have been deleted.

RESOLUTION:
The EOAccess layer now does a more thorough analysis of an object's relationships when it is deleted, and data in intermediate tables is correctly removed.

Editing the owning relationship in a nested editing context more than once corrupts the database snapshots.
Apple reference #2287025, 2280979

ISSUE:
Due to an error in the processing of array faults by the databse context, editing the owning relationship in a nested editing context more than once would corrupt the database snapshot for the owning object, resulting in database corruption.

RESOLUTION:
The error in EODatabaseContext has been corrected.

Incorrect time zone conversion in EOAccess layer.
Apple reference #2287379

ISSUE:
When converting a time value to the server time zone, the EOAccess layer would substitute the server's time zone without actually adjusting the time value for the zone difference.

RESOLUTION:
EOAttribute now performs the conversion of the time value to the corresponding value in the server's time zone.

EOControl Issues

EOModeler can't create a model with EODeleteRuleNoAction
Apple reference # 2248443, 2202107

ISSUE:
In EOModeler's AdvancedRelationship inspector, if the Delete Rule was set to "No Action", the following warning would be posted next time the model was opened:

```
Invalid delete rule string:'EODeleteRunNoAction' on entity with name: '<entity_name>'
```

RESOLUTION:
It is now possible to create a model in EOModeler with EODeleteRuleNoAction.

Newly inserted objects not deleted correctly
Apple reference # 2253191, 2176466

ISSUE:
An object created and inserted into an editing context or relationship, then deleted before being saved to the database, would not be completely removed. This would raise an exception when the editing context was saved.

RESOLUTION:
Deletion of a newly-inserted object now completely removes the object from the editing context.

EOQualifier qualifierWithFormat methods conflict
Apple reference # 2275802, 2203613

ISSUE:
If a qualifier was created using **+[EOQualifier qualifierWithQualifierFormat: arguments:]** and, subsequently, another qualifier was created using **+[EOQualifier qualifierWithQualifierFormat:]**, a parse error would occur, even if the second qualifier was valid.

RESOLUTION:
The interference between these two methods has been removed and they now operate correctly.

Java garbage collecting fails with EOEditingContext
Apple reference # 2270489, 2264063, 2264251

ISSUE:
The editing context did not retain its registered objects. This would cause issues with Java garbage collection.

RESOLUTION:
EOEditingContext now allows users to specify whether editing contexts retain their objects or not with the new class methods **setInstancesRetainRegisteredObjects:flag:**, **getInstancesRetainRegisteredObjects**, and **reset**. For API details, please see EOEditingContext.h. By default, in applications which contain Java, the editing context will retain all registered objects.

EOControl raises exception while building qualifier
Apple reference # 2271206, 2213188

ISSUE:
The qualifier parsing code in the EOControl layer incorrectly sends **copyWithZone:** to custom enterprise objects under certain conditions, causing a "selector not implemented" exception to be raised in Objective C or a "CloneNotSupportedException" to be thrown in Java.

RESOLUTION:
EOControl no longer calls **copyWithZone:** on custom enterprise objects when building a qualifier.

Uppercase letters in search pattern don't case-insensitive match to lowercase string
Apple reference # 2275805, 2248977

ISSUE:
Case-insensitive matching in EOQualifier did not correctly match uppercase letters in the search pattern with lowercase letters in the receiving string.

RESOLUTION:
EOQualifier has been fixed. **[EOQualifier isCaseInsensitiveLike:]** now works correctly.

Can't subclass entities with fetch specifications
Apple reference # 2279849, 2278492

ISSUE:
Due to an error in EOKeyValue encoding, EOModeler was unable to create a subclass when a fetch specification was associated with the entity being subclassed.

RESOLUTION:
The encoding is now correct and entities with associated fetch specifications can be subclassed from within EOModeler.

EOFault's retain/release behavior confuses the Java bridge
Apple reference # 2297785, 2239504

ISSUE:
EOFault's special handling of retain and release could sometimes cause conflicts with the Java bridge.

RESOLUTION:
EOFault's retain and release behaviours have been modified to interoperate correctly with Java via the bridge.

EOInterface Issues

No EOActionCellAssociation for most controls
Apple reference # 2269874, 2243956

ISSUE:
EOActionCellAssociation would not work with controls other than NSTextField.

RESOLUTION:
This class has been changed to work with NSButtons and other controls, as well as NSTextFields.

selectObject: method return values don't match documentation
Apple reference # 2275804, 2205357

ISSUE:
The **[EODisplayGroup selectObject:]** method would only return 'NO' if it could not end editing or if the delegate refused the change. According to the class documentation, it should also return 'NO' if the EODisplayGroup's displayedObjects array does not contain a match with the method's object argument.

RESOLUTION:
As stated in the documentation, this method now also returns 'NO' when it cannot find a match for the argument object.

Memory leak in EODisplayGroup
Apple reference # 2256402, 2217263

ISSUE:
A private variable was not being released in EODisplayGroup, causing a memory leak.

RESOLUTION:
This variable is now released correctly.

EODisplayGroup instances leak
Apple reference #2286314

ISSUE:

Each EODisplayGroup instance leaked two EOObserverProxy objects.

RESOLUTION:
This leak in EODisplayGroup has been fixed.

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OPENSTEP 4.2 and Third Party Libraries

This article describes how to link an OPENSTEP Enterprise 4.2 application against a third-party C library; in this case, the Lightweight Directory Access Protocol (LDAP) library from Netscape.
This article has been archived and is no longer updated by Apple.
On Windows NT, shared libraries are stored as dynamically loaded libraries (.DLL) files. To link against a third-party DLL, you also need the associated .LIB file. The .LIB file contains the actual entry point relocations into the DLL. Compiling and linking requires only the header (.h) and .LIB files. At run time, install the .DLL in a directory that appears in your system's PATH environment variable.

The necessary third party files to link against the LDAP library can be downloaded from Netscape at http://devedge.netscape.com/one/directory/. For this example we downloaded dk11e32.exe, which is a self-extracting file. The LDAP files were installed in the following locations:

- nsldap32v11.lib in c:/OpenStep/Lib
- ldap.h in c:/OpenStep/include (as well as the other LDAP headers)
- nsldap32v11.dll in c:/Next/NextLibrary/Executables

To use LDAP, you will also need to set the following environment variables:

- PATH should include c:/NextLibrayr/Executables
- INCLUDE should include c:/OpenStep/include

In ProjectBuilder, add **nsldap32v11.lib** to the "Libraries" suitcase and import the ldap header in one of your project's existing header files. You will now be able to access the functions of the LDAP library.

Below is source code from a simple test app. This application will display its version number (110) in a text field when a button is pressed. Note that for this simple test case, no attempt was made to configure an LDAP Directory server.

```
//========= AppControl.h ========================================

#import <AppKit/Appkit.h>
#define LDAP_API(rt) rt          // <== this did the trick in the test app!
#import <ldap.h>

@interface AppControl : NSObject
{
   id pTextField01;                                  //<==== pointer to text field
}

- (void)clickedCallLDAP:(id)sender;  //<=== action method - called when
                                     //
button is clicked

@end

//================================================================

Notice that b efore importing the Netscape  ldap.h  file  in AppControl.h above,
the following define occurs:

   #define LDAP_API(rt) rt

Without this line LDAP_API will get set this way (in ldap.h):

   #define LDAP_API(rt) __declspec( dllexport ) rt
```

This definition will generate wrong linker symbols that will not be found in the library. The result is linker errors (error LNK2001: unresolved external symbol ....). Below is the implementation file.

```
//============ AppControl.m ======================================

#import "AppControl.h"

@implementation AppControl
```

```
- (void)clickedCallLDAP:(id)sender
{
 LDAPVersion ver;
 double SDKVersion;

 SDKVersion = ldap_version( &ver );              //<=== get version number

 printf("LDAP version = %7.3f\\n", SDKVersion);
 [pTextField01 setIntValue:SDKVersion];        //<=== display in text field
}

@end

//================================================================
```

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Macintosh IIsi and Display Card 824 GC: Compatibility Update

What recommendations can you make regarding 8*24 GC card and the Macintosh IIsi?

This article has been archived and is no longer updated by Apple.
The Macintosh Display Cards 4*8, 8*24, and 8*24 GC can be used in any NuBus-capable Macintosh. This includes the Macintosh II, Macintosh IIcx, Macintosh IIx, Macintosh IIfx, Macintosh IIci, Macintosh IIsi with NuBus adapter card, and the Macintosh Quadra computers.

There have never been any concerns regarding the Display Cards 4*8 and 8*24 and the Macintosh IIsi. These have been and continue to be recommended configurations.

The Display Card 8*24 GC takes slightly more power, due to the processor and on-board memory, than the NuBus power specification of 15 watts. Because Apple had not completed initial testing of the Macintosh IIsi and Display Card 8*24 GC combination in October 1990, we were not able to initially recommend the combination.

We have now completed initial tests and can now recommend the Macintosh IIsi and Macintosh Display Card 8*24 GC combination in normal operating environments, meeting Apple's high reliability requirements.

Apple is continuing testing for elevated temperature environments. We will publish results of these tests as they become available. Until then, we do not recommend the combination of Macintosh IIsi and Macintosh Display Card 8*24 GC in environments where the temperature is expected to regularly exceed 32 C or 90 F. But we can recommend the combination for normal environments.

With regard to third-party cards, we have found the vast majority to be completely compatible and to work reliably with the Macintosh IIsi. In those few instances where the power specification exceeds the NuBus specification, or if you have any questions or concerns about a specific product, contact the vendor. In Apple's case, we can now recommend all of our displays cards across the line of NuBus-capable Macintoshes.

Published Date: Feb 18, 2012

OPENSTEP 4.x Driver: Adaptec 78xx SCSI

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.

NOTE: Apple Enterprise Software has suspended on-going development of new drivers for the NeXTSTEP and OPENSTEP product lines. Where possible, we will be updating current drivers for minor product revisions. These drivers will be made available in the TIL.

For a complete list of supported drivers for the OPENSTEP operating system, see the **OPENSTEP Driver Compatibility Guide**.
This article has been archived and is no longer updated by Apple.
Availability Information

A **beta version** of this driver, version 4.01, is avaiable on Apple's FTP servers

Driver Name / Installer .pkg: Adapec78XXSCSI

Driver Type: SCSI

Driver Scope: Generic-Chipset

PC Bus / Interface Supported by Driver*: Integrated, PCI

General Overview notes:

The Adaptec 78XX Series driver is designed to support the AHA-2940 Dual Channel series of PCI SCSI adaptors.

Supported Products / Add-on Adapters:

Adaptec AHA-2940 UW Dual (PCI, Ultra/Wide SCSI, dual channel)

Special Features of Driver / Driver Notes:

This driver should also support (but has not been tested with) all of the adaptors listed for the Adaptec 2940 driver.

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)

Access Mode: Bus Master DMA

Attributes*: SCSI-2

Driver Version Notes

4.01 - Initial version

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Adaptec Inc.

691 South Milpitas Blvd.

Milpitas, CA 95035

USA

+1 (408) 945 8600 international phone number

+1 (800) 959 7274 USA toll-free (customer support) phone

+1 (408) 945 7727 bulletin board system

+1 (408) 957 7150 faxback system

+1 (408) 262 2533 fax

WWW: http://www.adaptec.com/

TA45361_OPENSTEP_x_Driver_Adaptec_xx_SCSI.pdf

Published Date: Feb 20, 2012

OPENSTEP 4.x Driver: Cirrus Logic GD546X Display

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.

NOTE: Apple Enterprise Software has suspended on-going development of new drivers for the NeXTSTEP and OPENSTEP product lines. Where possible, we will be updating current drivers for minor product revisions. These drivers will be made available in the TIL.

For a complete list of supported drivers for the OPENSTEP operating system, see the **OPENSTEP Driver Compatibility Guide**.
This article has been archived and is no longer updated by Apple.

Availability Information

A **BETA version** of this driver, version 4.00, is avaiable on Apple's FTP servers.

Driver Name / Installer .pkg: CirrusLogicGD546XDisplayDriver

Driver Type: Display

Driver Scope: Generic-Chipset

PC Bus / Interface Supported by Driver*: Integrated, PCI, AGP

General Overview notes:

The CirrusLogicGD546 Display driver is designed to support on-board implementations of the CLGD546X chip as well as add-on adaptors..

Supported Products / Systems (ie integrated into PC System):

HP Vectra 6/xxx Series 7

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)

Access Mode: Linear Framebuffer

Adapter Memory: 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:

640x480 (2MB+), 800x600 (2MB+), 1024x768 (4 MB+)

16 Bit Color Modes*:

1600x1200 (4 MB+), 1280x1024 (4 MB+), 1024x768 (2MB+), 1152x864 (2MB+), 800x600 (1MB+), 640x480 (1 MB+)

8 Bit Color / Greyscale Modes*:

1600x1200 (2 MB+), 1280x1024 (2 MB+), 1024x768 12MB+), 1152x864 (1MB+), 800x600 (1MB+), 640x480 (1 MB+)

Tested Monitors:

Nokia 445X

Driver Version Notes

4.00 - New driver

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Cirrus Logic, Inc.

3100 West Warren Avenue

Fremont, CA 94538

510-623-8300

fax: 510-252-6020

URL: www.cirrus.com

Published Date: Feb 18, 2012

WebObjects 4.0: Windows NT NSTimeZone Bug Workaround

The workaround described in this article has been included in WebObjects 4.0.1. Apple recommends that all WebObjects 4.0 users upgrade to WebObjects 4.0.1. This obsolete article is provided here as a convenience to our customers who have not yet upgraded.
This article has been archived and is no longer updated by Apple.
There are two known problems with the NSTimeZone object in the Windows NT release version of WebObjects 4.0. This document discusses how to recognize these problems and provides a workaround that corrects them. These problems do not affect the Solaris or HP-UX versions of WebObjects 4.0. The problem has also been corrected in WebObjects 4.0.1.

New NSGregorianDate with new NSTimeZone raises exception
Apple reference # 2296907

PROBLEM:
Using the NSGregorianDate constructor to generate a new date with a new NSTImeZone would generate an exception; for example, calling:

```
NSGregorianDate getADate = new NSGregorianDate(1999, 12, 25, 12, 15, 00, new NSTimeZone("EST", true));
```

would generate the error:

```
NSInvalidArgumentException: *** -[NSConcreteTimeZone _initWithJavaHandle:]:
```

timeZoneWithName returns nil value
Apple reference # 2293191

PROBLEM:
The NSTimeZone timeZoneWithName method would always return a nil value.

RESOLUTION:
Both of these problems can be resolved by replacing your system's WindowsName.table file, located in:

```
$NEXT_ROOT/Library/Frameworks/Foundation/Resources/TimeZoneInfo/WindowsName.table

Back up your old WindowsName.table file, then download the updated file:
```

WindowsName.table.zip

Unzip this file, make sure the filename is WindowsName.table, then replace the original file with the version you've just downloaded. Your do not need to restart Windows NT for this workaround to take effect.

Published Date: Feb 18, 2012

WebObjects 4.0 Install Documentation

This document explains where to find the WebObjects 4 installation documentation.
This article has been archived and is no longer updated by Apple.
Q: Where is the WebObjects 4 installation documentation? I can't find it in the WOInfoCenter!

A: The installation documentation is not included in the on-line documentation installed with WebObjects. Instead, it can be found on the top level of your WebObjects installation CD, in .pdf format.
Published Date: Feb 18, 2012

OPENSTEP 4.2 for Mach Patch 2 Overview

This patch is now obsolete. Please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.

About This Patch

This patch is obsolete; please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This patch contained a number of important bug fixes, including corrections for some Year 2000 problems, improved support for the Euro currency symbol and support for large hard drives on OPENSTEP systems. In addition, this patch included a new VESA video driver that provided support for a wide range of display hardware on OPENSTEP systems. For more information on these topics, please see the sections "New Features" and "Problems Fixed" below.

Installing OPENSTEP 4.2 for Mach Patch 2

1. **Download** the Mach version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/4.2Mach_Patch2.compressed
```

2. Uncompress the Mach package file. Your web browser or FTP client may perform this step for you.

3. Log in as root. If you're not sure how to log in as root, see your system administrator.

4. Double-click on the 4.2_Mach_Patch2.pkg file. Make sure that no OPENSTEP applications are running before you do this step.

5. Click the Install button in the Installer package window. An Install Package panel will open.

6. Click 'Install' in the Install Package panel and, when prompted for confirmation, **click OK** to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.

New Features

New in OPENSTEP 4.2 for Mach Patch 2

VBE VESA Driver

This patch installs a VBE video driver. This driver allows an OPENSTEP 4.2 system to use any display adapter which conforms to version 2.0 of the VESA BIOS extension standard. Use of the VBE driver requires updating the kernel and the booter. The updated kernel and booter are also compatible with all other video drivers, and both are included in this patch. For more information, see the VESA VBE OPENSTEP Driver Overview, **TIL article 70026**.

New Booter Features

The new booter included in this patch includes two new features:

1. If you are using the new VESA VBE driver, you can **specify a VBE video mode at boot time**. Specify **"VBE Check"=Yes** at the boot prompt to get a list of available VBE video modes. Then use **"VBE Mode"=xxx** to specify the mode number you want to use. The mode number is the three-digit number listed before each mode. For example, if one of the listed video modes was:

257=640x480x256

you would type **"VBE Mode"=257** at the booter prompt to boot with 640x480, 256-color VESA graphics.

2. The new booter allows you to **step through your boot drivers**, choosing which to load and which to skip. Specify **Query=Yes** at the boot prompt, and the booter will prompt before loading each boot driver.

Problems Fixed

Corrected in OPENSTEP 4.2 for Mach Patch 2

No Euro symbol support in OPENSTEP
Apple reference # 2265776

PROBLEM:
OPENSTEP 4.2 for Mach did not include Euro currency symbol support.

RESOLUTION:
Support was added for the Euro currency symbol. Typing a Euro currency symbol character will require a modified keyboard keymapping. The currency character is encoded as symbol 0xA0 in the keyboard symbol encoding. Use **/NextDeveloper/Demos/Keyboard.app** to bind the desired key to symbol 0xA0 in your keymapping and you will be able to type the Euro currency symbol.

No Euro glyph support in OPENSTEP rulebooks
Apple reference # 2265773

PROBLEM:
The AppKit rulebooks did not support the Euro currency character.

RESOLUTION:
The rulebooks have been updated to provide support for the Euro currency symbol, U+20AC. The encoding tables in Foundation have also been updated to support this character. You will still need to obtain and install fonts which include the Euro character in order to generate the character itself.

NSDateFormatter interprets year "00" as "Current Year"
Apple reference # 2278598

PROBLEM:
NSCalendarDate would interpret year "0" or "00" as "current year", rather than "2000", which was inconsistent with the interpretation of two-digit years in UNIX and not Year 2000 compliant.

RESOLUTION:
NSCalendarDate now interprets "0" or "00" year values as "2000"

Date formatter handles two digit year inappropriately
Apple reference # 2290369

PROBLEM:
NSCalendarDate would treat any two-digit year as a 20th century year.

RESOLUTION:
NSCalendarDate now treats two-digit year values less than 30 as 21st century years.

adjtime() does not affect system time
Apple reference # 2231714

PROBLEM:
The adjtime() system function, intended to allow the synchronization of the system clock, actually had no effect. This would cause problems with network time synchronization under OPENSTEP for Mach.

RESOLUTION:
The adjtime() function now correctly adjusts the system clock.

System panic while writing disk label
Apple reference # 2279630

PROBLEM:

Writing a disk label would cause a kernel panic in some circumstances.

RESOLUTION:
The system has been modified to eliminate these kernel panics.

Sound input gain preferences behaves oddly
Apple reference # 2272986

PROBLEM:
In the OPENSTEP for Mach sound preferences panel, requests to set the right input channel gain on the sound input device would be ignored. This would produce strange behavior in the sound preferences panel input gain sliders.

RESOLUTION:
The sound preferences panel sliders now behave as expected.

Restrictive nbuf limit in kernel
Apple reference # 2296405

PROBLEM:
The OPENSTEP Mach kernel was previously restricted to use at most 255 buffers.

RESOLUTION:
This restriction has been removed. You can specify nbuf=xxx at the boot prompt or in the **System.config/Instance0.table** file to use any number of buffers. If no value is specified, the default is still limited to 255. **NOTE:** If you choose too large a value, your system may panic at boot time; however, as long as your system will boot, you will experience no instability as a result of a large nbuf value.

Euro glyph doesn't display correctly
Apple reference # 2298782

PROBLEM:
The NSTextView's **-insertText:** method would not handle mutable attributed strings correctly under OPENSTEP for Mach and Windows NT. This would result in display problems for certain characters, including the Euro currency symbol.

RESOLUTION:
This method now handles attributed strings as well as ordinary strings correctly.

Can't install OPENSTEP on partitions beginning after 4GB
Apple reference # 2265513

PROBLEM:
The **disk** command was not able to initialize an OPENSTEP for Mach partition beginning at a large offset on the drive, and would not correctly partition a large fdisk slice on EIDE drives.

RESOLUTION:
The 'disk' command can now initialize partitions at any offset.

mfks fails with a write error
Apple reference # 2284310
PROBLEM:
While building a new OPENSTEP for Mach filesystem, the 'mkfs' command would fail with a write error for some combinations of disk geometry and filesystem options.

RESOLUTION:
The **mfks** command will now lay out these filesystems correctly.

fdisk disk cylinder limit
Apple reference # 2305698

PROBLEM:

With some BIOS versions, the 'fdisk' command was unable to process disks with more than 2^10 cylinders.

RESOLUTION:
The limit has been increased to 2^16 cylinders.

Corrected in OPENSTEP 4.2 for Mach Patch 1

Four Digit Year Entry with /bin/date
Apple reference # : 2179467

PROBLEM:
Certain dates could not be input using the Unix /bin/date command which shipped with OPENSTEP 4.2.

RESOLUTION:
The /bin/date command now correctly handles 2-, 3-, and 4-digit years for dates in the valid Unix range (1 Jan 1970 - 31 Dec 2037). This patch allows four-digit year entry through /bin/date. In addition, input dates are now checked for validity and out-of-range dates are rejected.

New RCS Package
Apple reference # : 2249097

PROBLEM:
The version of RCS which shipped with OPENSTEP 4.2 did not handle dates after 1999 correctly in some commands.

RESOLUTION:
This patch installs RCS version 5.7, a much more recent version which does not experience this date problem. Please see the RCS documentation for a complete list of new and updated features in this release.

Hardware Clock Setting
Apple reference # : 2253935, 2258123

PROBLEM:
Previously, setting a date after 1999 with /bin/date or with the OPENSTEP Preferences application would cause an illegal value to be stored in the hardware clock of Intel and NeXT-branded Motorola hardware systems. As a result, some systems would show an incorrect year after reboot.

RESOLUTION:
With this patch, the hardware clock is now set correctly for dates after 1999.

Date handling in ftpd
Apple reference # : 2251927

PROBLEM:
The ftp daemon's MDTM command did not handle dates after 1999 correctly.

RESOLUTION:
The ftp daemon has been updated to handle these dates correctly.

tmac Macro Date Handling
Apple reference # : 2256331

PROBLEM:
Previously, default dates generated by the tmac macros used for troff and nroff typesetting were not correct for years after 1999.

RESOLUTION:
The various man, me, and ms macros now generate default dates after 1999 correctly.

Date reporting in atq
Apple reference # : 2258151

PROBLEM:
In OPENSTEP 4.2, the atq command displayed the job date incorrectly for jobs created with the at command after 1999.

RESOLUTION:
The atq command has been modified to correctly represent jobs scheduled from 1970 through 2037.

Job scheduling and execution with at and atrun

Apple reference # : 2263271

PROBLEM:
Under certain circumstances, atrun did not correctly handle jobs scheduled with at after 1999.

RESOLUTION:
The at and atrun commands have been modified to correctly and consistently handle the scheduling and execution of jobs regardless of date.

Date display in /usr/ucb/mail
Apple reference # : 2259253

PROBLEM:
In OPENSTEP 4.2, the Date: header of email messages written by /usr/lib/sendmail used a two-digit year in the creation time. This problem affected email created and read with the /bin/mail and /usr/ucb/mail programs.

RESOLUTION:
sendmail has been modified to write four-digit years in the date header.

ntpd Error Messaging
Apple reference # : 2260775

PROBLEM:
Under OPENSTEP 4.2, the error message returned when an excessive offset was encountered did not report the year correctly for years after 1999.

RESOLUTION:
This error message now reports the year correctly.

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Published Date: Feb 20, 2012

Sybase Adaptor Primary Key Generation Bug Workaround

This patch is now **obsolete**. Please see the WebObjects Current Patch List, **TIL article 70037**, forinformation on the most current patches for WebObjects and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.
This workaround solves the following problem that would occur under WebObjects 4.0. The problem has been corrected in the WebObjects 4.0.1 release. Apple recommends that all users of WebObjects 4.0 upgrade to WebObjects 4.0.1. If you are not sure what version of WebObjects you are using, please see **TIL article 70055**.

Sybase adaptor may generate duplicate primary keys for multiple application instances
Apple reference # 2299035
PROBLEM:
The Sybase adaptor uses a stored procedure called "eo_pk_for_table" to generate primary key values. Because this stored procedure does not run in a transaction, if two application instances request a primary key simultaneously, they could be assigned the same primary key.

RESOLUTION:
To prevent duplicate primary keys from being generated, you'll need to replace the definition for the "eo_pk_for_table" stored procedure, created in your database by EOModeler, with one that includes a transaction. The original definition will look like this:

```
create procedure eo_pk_for_table @tname varchar(32) as
begin
   declare @max int
   update eo_sequence_table set counter = counter + 1
      where table_name = @tname
   select counter from eo_sequence_table where table_name = @tname
end
```

Replace it with the corrected version below:

```
create procedure eo_pk_for_table @tname varchar(32) as
begin
 begin transaction
 update eo_sequence_table set counter = counter + 1 where table_name
= @tname
 select counter from eo_sequence_table where table_name = @tname
 commit
end
```

The exact commands you'll use to make the change will depend on the database access tool you're using. Assuming you're using isql at the command line, your session should look something like this:

```
1> drop procedure eo_pk_for_table
2> go
1> create procedure eo_pk_for_table @tname varchar(32) as
begin
 begin transaction
 update eo_sequence_table set counter = counter + 1 where table_name
= @tname
 select counter from eo_sequence_table where table_name = @tname
 commit
end
2> 3> 4> 5> 6> 7> 8> 9> go
```

Published Date: Feb 20, 2012

Framework Headers And NT Compile Time

This document describes a problem WebObjects developers may encounter while developing applications using custom frameworks. This problem occurs on Windows NT for WebObjects 3.1, 3.5.1, 4.0, and 4.5.
This article has been archived and is no longer updated by Apple.
When building custom frameworks, many OPENSTEP and WebObjects developers working on the OPENSTEP for Mach platform use framework headers, combined with pre-compiled headers, to speed up the development cycle. A framework header is a header that include definitions for all classes in a framework. Together, these two elements can result in quicker compiles and eliminate the need to use separate #import or #include statements for each class your project uses.

Under Windows NT, pre-compiled headers are not an option. However, using unstripped framework headers for custom frameworks causes an increase in DLL size for each #import statement. This can increase compile time, slow down the debugger, and slow your development cycle substantially. Each header file which imports a framework will increase the size of the DLL. Therefore, unless you are using a framework with stripped headers, such as Apple's Foundation and WebObjects frameworks, always use a separate #import or @class statement to include only those files needed by a specific header. For example, instead of

```
#import <MyFramework/MyFramework.h> //import every header in the framework
```

use the faster:

```
#import <MyFramework/SomeClass.h> //a class need by this object
#import <MyFramework/OtherClass.h> //another class needed by this object
```

Published Date: Feb 20, 2012

OPENSTEP 4.x Driver: VESA VBE Display

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.

NOTE: Apple Enterprise Software has suspended on-going development of new drivers for the NeXTSTEP and OPENSTEP product lines. Where possible, we will be updating current drivers for minor product revisions. These drivers will be made available in the TIL.

For a complete list of supported drivers for the OPENSTEP operating system, see the **OPENSTEP Driver Compatibility Guide**.
This article has been archived and is no longer updated by Apple.

Availability Information

This driver is included with and requires **OPENSTEP for Mach Patch 3**.

No updated versions of this driver are available

Driver Name / Installer .pkg: VBE20

Driver Type: Display

Driver Scope: Generic

Supported Components: N/A

General Overview notes:

The VBE Video Driver allows an OPENSTEP 4.2 system to use any VESA VBE 2.0 display adapter. Because of booter and kernel updates, use of the VBE driver requires installation of OPENSTEP for Mach Patch 2.

After this patch is installed, you can test your video card for compatibility with this driver by using the updated booter. At your system boot prompt, specify "VBE Check"=Yes. You will recieve either a list of supported VBE modes, or a message indicating that you cannot use the VBE driver. You can also create a boot floppy on patched system and use it to test for VESA compatibility before installing OPENSTEP on the system.

Display Driver Details

Display Modes:

The list of supported display modes will vary depending on the video hardware manufacturer's VESA VBE implementation.

Troubleshooting

Note: The boot graphics may hide error messages. If boot graphics are turned on and you are experiencing problems, reboot the system and specify "Boot Graphics"=No at the boot prompt. This may allow you to see additional error messages.

Problem: The system prints the following error, then boots using VGA:
VESA not available.
Diagnosis: This message indicates that the video card does not support VESA VBE 2.0. You will not be able to use the VBE driver with this card.

Problem: The system boots in VGA mode, and the VBE driver prints the following:
Skipping framebuffer initialization (card not in VBE mode).
Diagnosis: This message indicates that the booter did not leave the video card in a VBE mode. This message will only occur if you are booting from an alternate boot device, such as a floppy disk.
Suggestion: Specify Query=Yes at the boot prompt to verify that your boot device is using the updated booter. (The old booter will ignore this option, while the new booter will prompt before loading each driver.) Additionally, specify "Boot Graphics"=No to prevent the boot graphics from hiding booter error messages.

Problem: I've installed the VBE display driver, but there are no display modes listed in Configure.app.
Diagnosis: The list of display modes will be empty if the system has not been rebooted since OPENSTEP Patch 2 was installed, or if your video card does not provide the required VESA support.
Suggestion: Specify Query=Yes at the boot prompt to verify that your video card supports VESA.

Problem: The booter loads the drivers, the screen clears, and the system restarts.
Diagnosis: You may be trying to use a video mode which is incompatible with OpenStep. Known incompatible modes are detected and filtered out, but the VBE specification allows manufacturers to define their own video modes. It is possible that a mode for your particular card was not recognized as incompatible.
Suggestion: The "VBE Check"=Yes boot option will give you a list of supported video modes. Try using the "VBE Mode"=xxx boot option to boot with a different mode. (Remember to run Configure.app to permanently update the system's configuration.) If this fails you may not be able to

use the VBE driver with this display card. Specify Query=Yes at the boot prompt and do not load the VBE display driver. The system will fall back to using VGA and you should be able to boot and restore the system to a usable configuration.

Problem: The modes list in Configure.app all show a 0Hz refresh.
Diagnosis: Under VBE 2.0 the refresh rate is determined by the video card manufacturer, and there is no VBE interface to allow the software to determine what value is being used. This is why the 0Hz value appears in Configure.app. This is not a problem. (Some manufacturers supply utilities for configuring VESA mode characteristics like refresh rate and interlace.)

Driver Version Notes

4.00 - First version; released in OPENSTEP 4.2 Patch 2.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Published Date: Feb 20, 2012

OPENSTEP Driver Compatibility Guide

This document describes in general terms the types of PC-compatible hardware supported by OPENSTEP for Mach Release 4.x for Intel Processors. This document also provides lists of specific drivers available for OPENSTEP. For more detail on a driver, click on the driver name.

NOTE: Apple Enterprise Software has suspended on-going development of new drivers for the NeXTSTEP and OPENSTEP product lines. Where possible, we will be updating current drivers for minor product revisions. These drivers will be made available in the TIL.

If you have specific requirements for drivers for hardware not currently supported, contact your AES sales representative for a quote for custom development work.

This article has been archived and is no longer updated by Apple.

OVERVIEW

This guide is divided into six sections:

General System Requirements

Display Options

Networking Options

SCSI Options

Sound Options

System Options

GENERAL SYSTEM REQUIREMENTS

CPU
486 or Pentium family-based PC compatible computer. OPENSTEP for Mach requires a floating-point coprocessor. For information on OPENSTEP support for non-Intel CPUs, see **TIL article 72566**.

EXPANSION BUS

ISA, EISA, VL-Bus or PCI expansion bus.

AVAILABLE HARD DISK SPACE

OPENSTEP for Mach supports multiple partitioned hard disks, allowing the user to install and boot several operating systems from the same local hard disk. Larger local disks are recommended for stand-alone systems or for systems with a local non-OPENSTEP for Mach partition.

- **User Environment**:120 MB partition minimum, 200 MB recommended for stand-alone systems.
- **User + Developer Environments**: 330 MB partition minimum, 400 MB recommended.

RAM REQUIREMENTS

RAM requirements vary depending upon your selection of graphics adapter and imaging model.

- 32-bit color: 24 MB RAM Minimum, 32 MB RAM Recommended
- 16-bit color: 16 MB RAM Minimum, 24 MB RAM Recommended
- 8-bit color/grayscale: 12 MB RAM Minimum, 16 MB RAM Recommended
- 2-bit grayscale: 8 MB RAM Minimum, 12 MB RAM Recommended

GRAPHICS ADAPTERS

See the "Display Options" section in this guide for details on graphics support.

DISK INTERFACES

IDE and several SCSI hard disk interfaces are supported. See later sections of this guide for details.

POINTING DEVICES

See the "System Options" and "Other Options" sectiosn in this guide for details on pointing device support.

PRINTERS

Any PostScript printer connected via a serial port, parallel port or network including the NeXT Color Printer (connected via a SCSI port). Apple Computer recommends color PostScript printers with PostScript Level II for proper color support.

NETWORKING

Several Ethernet and Token Ring networking adapters are supported. A networking adapter is optional. See below for details.

SOUND
OPENSTEP for Mach can support certain PC sound cards for both playback and recording. A sound card is optional. See below for details.

DISPLAY OPTIONS

VESA VBE

- Any VESA VBE 2.0 display adaptor

ATI Generic

- ATI Graphics Ultra Pro (EISA, ATI 68875 RAMDAC)
- ATI Graphics Ultra Pro (EISA, TI 34075 RAMDAC)
- ATI Graphics Ultra Pro (VL-Bus, ATI 68875 RAMDAC)
- Intel GX/Pro (Custom LB, onboard ATI, TI 34075 RAMDAC)
- Data General Dasher DE2 (Custom LB, TI 34075 RAMDAC)
- AST Premmia 4D (Custom LB, onboard ATI, BT 481 RAMDAC)
- Gateway V Series (VL-Bus, ATI 68875 RAMDAC)

ATI Mach32

- ATI Graphics Ultra Pro - EISA (with 2MB VRAM)
- ATI Graphics Ultra Pro - PCI (with 2MB VRAM)
- ATI Graphics Ultra Pro - VL-Bus (with 2MB VRAM)
- ATI Graphics Ultra Pro XLR - VL-Bus (with 2MB DRAM) - not tested, but should work
- ATI Graphics Ultra Pro XLR - PCI (with 2MB DRAM) - not tested, but should work
- Intel GX/Pro (Custom LocalBus, onboard ATI, TI 34075 RAMDAC)
- Data General Dasher DE2 (Custom LocalBus, TI 34075 RAMDAC)
- AST Premmia 4D (Custom LocalBus, onboard ATI, BT 481 RAMDAC)
- Gateway V Series (VESA LocalBus, ATI 68875 RAMDAC)

ATI Mach64

- ATI Graphics Ultra Pro Turbo (PCI, with 2MB VRAM)
- ATI Graphics Ultra Pro Turbo (PCI, with 2MB DRAM)
- ATI Graphics Ultra Pro Turbo (PCI, with 4MB VRAM)
- ATI Graphics Ultra Pro Turbo (PCI, with 4MB DRAM)
- ATI Graphics Ultra Pro Turbo (VL-Bus, with 4MB VRAM)
- ATI Graphics Ultra Pro Turbo (VL-Bus, with 4MB DRAM)
- AT&T Globalyst 600

ATI Rage

- ATI All-In-Wonder
- ATI 3D Pro Turbo
- ATI 3D Pro Turbo PC2TV
- ATI 3D Xpression+
- ATI 3D Xpression+ PC2TV
- ATI XPERT @ Work
- ATI XPERT @ Play

Canon object.station41 Display

- Overview is NeXTanswer #2214; Driver available on NEXTSTEP CDROM
- Canon object.station 41

Chips & Technologies Wingine

- Epson Wingine
- LGI Wingine

Chips & Technologies Wingine 64300

- NEC Powermate 466D

Cirrus Logic GD542X Family

Cirrus Logic GD546X Family

- HP Vectra 6/xxx Series 7

Cirrus Logic GD5434

- Diamond SpeedStar 64 (PCI)
- Orchid Kelvin 64 (with GD5434)
- Elonex WS4100
- Intel Premier (with integrated GD5434)
- HP Vectra XM Series3 (not tested but reported to work)

Compaq QVision

- QVision 1024/E EISA (QV30E, QV32E)
- QVision 1280/E EISA (QV32E)
- QVision 1280/P PCI (QV35P, QV64P)
- Compaq Deskpro XE560
- Compaq Deskpro XE466
- Compaq Deskpro 5100

Dell DGX (JAWS)

- Dell 450DE/2 DGX

Diamond Stealth

- Diamond Stealth 64 DRAM PCI-Bus Display Adapter
- Diamond Stealth 64 DRAM VL-Bus Display Adapter
- Diamond Stealth 64 Video PCI-Bus Display Adapter
- Diamond Stealth 64 Video VL-Bus Display Adapter
- Diamond Stealth 64 VRAM PCI-Bus Display Adapter
- Diamond Stealth SE PCI-Bus Display Adapter
- Diamond Stealth SE VL-Bus Display Adapter
- Diamond Stealth 64 DRAM T PCI-Bus Display Adapter
- Diamond Stealth 64 DRAM T VL-Bus Display Adapter
- Diamond Stealth 64 Video VRAM VL-Bus Display Adapter
- Diamond Stealth 64 Video 3200 VL-Bus Display Adapter
- Diamond Stealth 64 Video 2121XL DRAM PCI-Bus Display Adapter
- Diamond Stealth 64 Video 3000 VRAM PCI-Bus Display Adapter
- Diamond Stealth 3D 2000 PCI-Bus Display Adapter
- Diamond Stealth 3D 3000 PCI-Bus Display Adapter

Diamond Stealth64

- Diamond Stealth 64 (PCI, 4MB VRAM)
- Diamond Stealth 64 (PCI, 2MB VRAM)
- Diamond Stealth 64 (VL-Bus, 4MB VRAM)
- Diamond Stealth 64 (VL-Bus, 2MB VRAM)

HP Vectra XP

- HP Vectra XP (4MB VRAM)
- HP Vectra XP (2MB VRAM)

HP Vectra XU Display

- HP Vectra/XU S3/864 on-board video

IBM ThinkPad 755CX Display

- IBM ThinkPad 755CX

IBM ThinkPad 760CD Display

- IBM ThinkPad 760CD

IBM ThinkPad 760ED Display

- IBM ThinkPad 760E
- IBM ThinkPad 760ED
- IBM ThinkPad 560

Matrox MGA Millennium

- Matrox MGA Millennium
- Matrox MGA Millennium II
- Matrox MGA Millennium II AGP
- Matrox Mystique
- Matrox Mystique 220
- Matrox Mystique 220 AGP

Number Nine GXE Family

- #9GXE-VL Level 10 (VL-Bus, 1MB VRAM) - not tested, but should work
- #9GXE-VL Level 11 (VL-Bus, 2MB VRAM)
- #9GXE-VL Level 12 (VL-Bus, 2MB VRAM) - not tested, but should work
- #9GXE-VL Level 14 (VL-Bus, 4MB VRAM) - not tested, but should work
- #9GXE-VL Level 16 (VL-Bus, 4MB VRAM) - not tested, but should work
- #9GXE-PCI Level 10 (PCI, 1MB VRAM) - not tested, but should work
- #9GXE-PCI Level 12 (PCI, 2MB VRAM)

Number Nine GXE64 Pro

- Number 9 GXE 64 Pro (PCI, 4MB VRAM)
- Number 9 GXE 64 Pro (PCI, 2MB VRAM)
- Number 9 GXE 64 Pro-1600 (PCI, 4MB VRAM, 200Mhz RAMDAC) - not tested, but should work
- Number 9 GXE 64 Pro (VL-Bus, 4MB VRAM)
- Number 9 GXE 64 Pro (VL-Bus, 2MB VRAM)
- Number 9 GXE 64 Pro-1600 (VL-Bus, 4MB VRAM, 200Mhz RAMDAC) - not tested, but should work

Number Nine Imagine128

- Number9 Imagine 128 (PCI) (NB128-V2-P)

Number Nine Imagine128 Series 2

- Number9 Imagine 128 Series 2 (4MB) (90-228120-000)
- Number9 Imagine 128 Series 2 (8MB) (90-228130)
- Number9 Revolution 3D (4MB)
- Number9 Revolution 3D (8MB)

Number Nine Motion331

- Number Nine 9FX Motion 331 1MB PCI (NB9-FX1-331-1P)
- Number Nine 9FX Motion 331 2MB PCI (NB9-FX1-331-2P)

Number Nine Motion771

- Number Nine 9FX Motion 771 2MB PCI (NB9FX2-771-2P)
- Number Nine 9FX Motion 771 4MB PCI (NB9FX2-771-4P)
- Number Nine 9FX Motion 771 2MB VL-Bus (NB9FX2-771-2VL)
- Number Nine 9FX Motion 771 4MB VL-Bus (NB9FX2-771-4VL)

S3 805 / 928

- IBM PS/ValuePoint
- Hewlett-Packard Vectra XM
- DECpc 466d2 MTE

S3 Generic

S3 ViRGE Display Driver

- Number Nine 9FX Reality 332 PCI Display Adapter (90-332010-000, 91-332010-000, 91-332013-000)
- Diamond Stealth 3D 2000 PCI Display Adapter

STB Pegasus

- STB Pegasus (VL-Bus, 4MB VRAM)
- STB Pegasus (VL-Bus, 2MB VRAM)

Trident Generic

- This driver will **not** support the built-in display on IBM Thinkpad 760CD.

Tseng Labs ET4000

Tseng Labs ET4000W32

VGA

Weitek Power 9000

- Diamond Viper (PCI)
- Diamond Viper (VL-Bus)
- Genoa VideoBlitz 9200-VL (VL-Bus) - not tested, but should work

Weitek Power 9100

- Diamond Viper Pro (PCI, 2MB VRAM)
- Diamond Viper Pro (PCI, 4MB VRAM)

Western Digital WD90C24

- NEC Versa E Series
- NEC Versa V Series
- Compaq LTE Elite

NETWORKING OPTIONS

3COM EtherLink III

- 3Com EtherLink III 3C509 ISA (BNC, AUI)
- 3Com EtherLink III 3C509B ISA (BNC, AUI)
- 3Com EtherLink III 3C509-TP ISA (RJ-45, AUI)
- 3Com EtherLink III 3C509B-TP ISA (RJ-45, AUI)
- 3Com EtherLink III 3C509-COMBO ISA (BNC, AUI, RJ-45)
- 3Com EtherLink III 3C509B-COMBO ISA (BNC, AUI, RJ-45)
- 3Com EtherLink III 3C509-TPO ISA (RJ-45)
- 3Com EtherLink III 3C509B-TPO ISA (RJ-45)
- 3Com EtherLink III 3C579 EISA (BNC, AUI)
- 3Com EtherLink III 3C579-TP EISA (AUI, RJ-45)
- 3Com EtherLink III 3C589C-COMBO (BNC, RJ-45)
- 3Com EtherLink III 3C589C-TP (RJ-45)

3COM EtherLink XL

- 3Com EtherLink XL 3C900-TPO PCI (RJ-45)
- 3Com EtherLink XL 3C900-Combo PCI (BNC, AUI, RJ-45)
- 3Com EtherLink XL 3C905-TX PCI (10Base-T, 100Base-TX)
- 3Com EtherLink XL 3C905B-TX PCI (10Base-T, 100Base-TX)

AMD PCnet32

- X/Lan Add-On Adapter (based on Am79C970)
- Canon object.station 41
- Compaq Deskpro XL (On-board)
- HP Vectra XU (On-Board)

Cogent EM960 PCI

- Cogent EM960C (PCI, Combo)

- Cogent EM960TP (PCI, TP Only)
- Cogent EM964TP (PCI, TP Only, 4 ports - 1st port only supported)

Cogent EMaster EISA

- EM932 (EISA, BNC/AUI)
- EM932TP (EISA, UTP/AUI)
- EM935XL (EISA, BNC/UTP/AUI)

DEC21X4XNetwork

- Adaptec-Cogent ANA-6911A/TX
- Cogent EM110-TX Fast Ethernet 10/100 Adapter
- Cogent EM960 PCI
- DEC DE500 (21143 based) PCI 10/100
- DEC DE500 Fast EtherWORKS PCI 10/100
- DANPEX PCI Ethernet (EN-9400P3)
- SMC 9332 Fast Ethernet 10/100 Adapter
- SMC PCI EtherPower (SMC 8432)
- DEC Celebris GL On-Board LAN Adapter (21142/21143, 10 Mb/s module)
- DEC Celebris GL On-Board LAN Adapter (21142/21143, 10/100 Mb/s module)

DECchip21040 Network

- Cogent EM960 PCI
- SMC PCI EtherPower (SMC 8432)
- Digital EtherWORKS Turbo PCI (DE435)
- Linksys EtherPCI LAN Card
- DANPEX PCI Ethernet (EN-9400P3)
- JCIS Condor (JC1260)
- Kingston EtheRx PCI Ethernet (KNE40T & KNE40BT)
- DEC Celebris GL & GLST

DECchip21140 Network

- Cogent EM100 Fast Ethernet Adapter
- Cogent EM110 Fast Ethernet 10/100 Adapter
- SMC 9332 Fast Ethernet 10/100 Adapter
- DEC DE500 Fast EtherWORKS PCI 10/100
- Cogent EM110-T4 Fast Ethernet 10/100/BNC Adapter

HP Vectra XM, XP Integrated

- HP Vectra XM
- HP Vectra XP
- Elonex WS4100 - Not tested, should work

IBM Token Ring

- IBM 25F7367 (ISA, 16/4 Mbps, 8-bit, 64K)
- IBM 25F9858 (ISA, 4Mbps, 8-bit, 16K)
- IBM 67X0438 (ISA, 4Mbps, 8-bit, 16K)
- IBM 60G3994A? (ISA, 16/4 Mbps, 16-bit, 64K)
- IBM 92G7668 (Auto, ISA, 16/4 Mbps, 16-bit, 64K)
- IBM 41H8450 (Auto, ISA, 16/4 Mbps, 16-bit, 64K)
- Token Ring option for Compaq DeskPro and Prolinea series

Intel 82556 Network

- Intel EtherExpress PRO/100 EISA LAN Adapter (EILA8265)
- Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8465)

Intel 82557 Network

- Intel EtherExpress PRO/100+ PCI LAN Adapter (10Base-T, 100Base-TX)
- Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8465BX) (10Base-T, 100Base-TX)
- Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8475B) (10Base-T, 100Base-T4)
- Intel EtherExpress PRO/10+ PCI LAN Adapter (PILA8500) (BNC, AUI, RJ-45)

- Intel EtherExpress PRO/10+ PCI LAN Adapter (PILA8520) (RJ-45)

Intel 82595 Chipset

- Cogent EM595 TP (PCMCIA, UTP)
- Cogent EM595 C (PCMCIA, UTP/BNC) - Not testeed, but should work
- Cogent EM525 (ISA, BNC/AUI) - Not tested, but should work
- Cogent EM525 TP (ISA, UTP) - Not tested, but should work
- Cogent EM525 C (ISA, BNC/UTP/AUI)
- Intel EtherExpress PRO/10 ISA (BNC/UTP/AUI)
- Intel EtherExpress PRO/10 ISA Plug and Play (BNC/UTP/AUI)
- Intel EtherExpress PRO/10+ ISA Plug and Play (BNC/UTP/AUI)

Intel 82596 Network

- Intel EtherExpress PRO/10 PCI (PILA8400) (BNC, UTP, AUI)
- Intel EtherExpress PRO/10 PCI (PILA8420) (UTP)
- Intel EtherExpress Flash32 EISA (EILA8225) (BNC, UTP, AUI)
- Cogent eMaster EM935 EISA XL (BNC, UTP, AUI)
- Cogent eMaster EM932 EISA (UTP, AUI)
- Cogent eMaster EM932 EISA (BNC, UTP, AUI)
- Cogent eMaster EM945 EISA FDE (BNC, UTP, AUI)

Intel EtherExpress16

- EtherExpress16 (ISA, BNC/AUI)
- EtherExpress16TP (ISA, UTP/AUI)
- EtherExpress16C (ISA, BNC/UTP/AUI)

Intel TokenExpress

- STP (ISA)

SMC EtherEZ/Elite16 Ultra

- SMC EtherCard Elilte Ultra16 (ISA)
- SMC EtherCard Elilte Ultra16T (ISA)
- SMC EtherCard Elilte Ultra16C (ISA)
- SMC EtherEZ (8416BTA)
- SMC EtherEZ (8416B)
- SMC EtherEZ (8416T)
- SMC EtherEZ (8416BT)
- SMC EtherEZ (8416BA)
- SMC EtherEZ (8416TA)

SMC EtherElite 16

- SMC EtherCard Plus Elite16 Ethernet Adapter

Xircom Netwave

- Xircom CreditCard Netwave Adapter (CNW(AM))

Xircom Performance Series

- Xircom PS-CE2-10BT (PCMCIA, UTP)
- Xircom PS-CE2-10BC (PCMCIA, UTP/BNC)

SCSI OPTIONS

AMD PC SCSI

- Toshiba CD-ROM XM-3401T
- Peripheral Solutions 8mm Exabyte DAT Drive -- 8500
- Syquest 88MB SQ5110 D3G 810
- IOMEGA Bernoulli 230 BETA230 1.1408/2
- Pinnacle Micro Tahoe 230MB MO J6CTahoe-130A
- Quantum 504MB LPS5255S 311012 Hard Drive
- Quantum LPS540S 590H01 Hard Drive

- Next SCSI Color Printer
- HSD Scan-X Color Scanner (UMAX engine)
- COMPAQPC DPES-31080
- Compaq Deskpro XL
- HP Vectra XU

Adaptec 154x family and compatible

- Adaptec 154xB (ISA)
- Adaptec 154xC (ISA)
- Adaptec 154xCF (ISA)
- Adaptec 1542CP (ISA Plug and Play)
- Adaptec 174x (EISA) in standard 154x mode only

Adaptec 274x and 284x family

- Adaptec 2740 (EISA) - not tested but should work
- Adaptec 2740T (EISA)
- Adaptec 2840 (VLB)

Adaptec 2940 family & 7870 integrated

- Adaptec AHA-2930B (PCI)
- Adaptec AHA-2940 (PCI)
- Adaptec AHA-2940W (PCI, Wide SCSI)
- Adaptec AHA-2940U (PCI, Ultra SCSI)
- Adaptec AHA-2940UW (PCI, Ultra/Wide SCSI)
- Adaptec AHA-2910B (PCI) - Not tested but should work.
- DEC EISA/PCI Server system w/ 7870 on motherboard
- DEC Celebris GLST w/ 7850 on riserboard
- HP Kayak on-board 7860 & 7880 based SCSI adapters.

Adaptec 6x60 chipset (add-on & integrated)

- Adaptec AVA-1505A (ISA)
- Adaptec AVA-1515A (ISA)
- Adaptec AHA-1520A (ISA)
- Adaptec AHA-1530P (ISA) - Not tested but might work.
- Adaptec Slim SCSI (PC/MCIA)
- Intel GX/Pro

Adaptec 78xx

- Adaptec AHA-2940 UW Dual (PCI, Ultra/Wide SCSI, dual channel)

Bus Logic FlashPoint

- BusLogic KT-930 PCI SCSI Host Adapter
- BusLogic KT-932 PCI Dual Chanel SCSI Host Adapter
- BusLogic BT-950 PCI Wide SCSI Host Adapter

BusLogic family

- BusLogic 546C ISA SCSI Host Adapter
- BusLogic 747C EISA SCSI Host Adapter
- BusLogic 445C VL-Bus SCSI Host Adapter
- BusLogic 946C PCI SCSI Host Adapter (rev C and D only)
- BusLogic 948 PCI SCSI Host Adapter (not tested, reported to work)
- BusLogic 958 PCI Wide SCSI Host Adapter (not tested, reported to work)
- Canon object.station 41

DPT 2000 family

- DPT 2021/9x SmartCache III (ISA) - not tested, but should work
- DPT 2022/9x SmartCache III (EISA)
- DPT 2122/9x SmartCache III (EISA)
- DPT 2122/9xW SmartCache III (EISA, Wide) - not tested, but should work

- DPT 2122/9xDW SmartCache III (EISA, Differential, Wide) - not tested, but should work
- DPT 2024 SmartCache III (PCI) - In future update
- DPT 2124 SmartCache III (PCI) - In future update
- NEC Express II P60 (On-Board)

DPT SCSI family

- PM2021/90 ISA SCSI adapter
- PM2021/95 ISA SCSI adapter
- PM2022/90 EISA SCSI adapter
- PM2022/95 EISA SCSI adapter
- PM2024 PCI SCSI adapter
- PM2041W * ISA Wide SCSI adapter
- PM2042W * EISA Wide SCSI adapter
- PM2044W * PCI Wide SCSI adapter
- PM2122/90 EISA SCSI adapter
- PM2122/95 EISA SCSI adapter
- PM2124 PCI SCSI adapter
- PM2124W PCI WIDE SCSI adapter
- PM2142W * EISA Wide SCSI adapter
- PM3021 ISA SCSI RAID controller (Not tested, should work)
- PM3222 EISA SCSI RAID controller
- PM3224 PCI SCSI RAID controller
- PM3224W PCI WIDE SCSI RAID controller
- DPT-TWR n/a 6-bay SCSI Tower
- DPT-TWR/W n/a 6-bay WIDE SCSI Tower (Not tested, should work)
- NEC Express II P60 (On-Board)

* These products have not been tested but are believed to work with this driver

SymbiosLogic53C8xxSCSIDriver

- DEC Celebris XL/590

SOUND OPTIONS

Beep

Canon object.station41 Sound

- Canon object.station 41

Compaq Business Audio

- Compaq Deskpro / M
- Compaq Deskpro / I

ESS 1x88 Audio Driver

- NewCom High Fidelity 16i E5X1853
- Compaq Prolinea
- NEC Versa 4000
- DEC Celebris GL & GL/ST

IntelGXProAudio

- Intel GX/Professional

Media Vision Jazz 16

- Media Vision Deluxe Sound Card
- Media Vision Pro Sonic Sound Card

Microsoft Sound System

- Microsoft Sound System (ISA)

Pro Audio Spectrum 16

Sound Blaster 16

- Sound Blaster 16 Basic (ISA)
- Sound Blaster 16 Value (ISA)
- Sound Blaster 16 AWE (ISA)
- Sound Blaster 16 SCSI-II (ISA)
- Sound Blaster 16 Value PnP (ISA)
- Sound Blaster AWE 32 (ISA)
- Sound Blaster AWE 64 Value (ISA)
- Sound Blaster AWE 64 Gold (ISA)

Sound Blaster 8

- Sound Blaster Basic ISA)
- Sound Blaster Pro (ISA)
- Sound Blaster Delux (ISA)
- Sound Blaster Value (ISA)

Yamaha OPL Audio

- Yamaha OPL3-SA3 (YMF715) based PNP audio adapters
- Yamaha OPL3-SA (YMF701B) based on-board audio adapters

SYSTEM OPTIONS

BusMouse

- Logitech MouseMan Bus
- Logitech MouseMan Cordless

EIDE

The following ATAPI CD-ROM drives are supported:

- Chinon CD-ROM CDS-525 (2X), firmware rev. W09
- Matsushita CD-ROM CR-571 (2X), firmware rev. 1.0e -- Panasonic
- Mitsumi CD-ROM 1B (4X), firmware rev. B02 -- model FX400
- Sony CD-ROM CDU55E (2X), firmware rev. 1.0u
- Sony CD-ROM CDU76E-S (4X), firmware rev. 1.0c
- Toshiba CD-ROM XM-5302TA (4X), firmware rev. 0305
- Philips CM207, firmware rev 1.10 (??) -- reported to work
- SONY CD-ROM CDU76E-Q, firmware rev 1.0c (4X)
- SONY CD-ROM CDU55D, firmware rev 1.0v (2X)
- SONY CD-ROM CDU77E, firmware rev 1.0e (4X)
- TORiSAN CD-ROM CDR-S1, firmware rev 1.70 (4X) -- SANYO
- Chinon CD-ROM CDS-545, firmware rev ERc A1.0 (4X)
- GoldStar CD-ROM GCD-R540, firmware rev 1.17 (4X)
- GoldStar CD-ROM GCD-540C, firmware rev 1.01 (4X)
- SANYO CRD-254P, firmware rev 1.02 (4X)
- MATSHITA CD-ROM CR-574, firmware rev 1.06 (4X) -- Panasonic
- Pioneer CD-ROM DR-UA124X, firmware rev 1.02 (4X) -- force detection
- MITSUMI CD-ROM !B, firmware rev K02 (4X) -- DRM FX400B
- TEAC CD-55E, firmware rev ?? (4X) -- Thinkpad 760CD
- ATAPI CD-ROM SPEED-6X, firmware rev 6.2D (6X) -- ACER 665A
- VERTOS 600ESD CD-ROM X6-IDE, firmware rev 1.20 (6X)
- TEAC CD-56E, firmware rev 1.0D (6X)
- MATSHITA UJDCD4700, firmware rev 1.11 (??)
- TEAC CD-58E, firmware rev 1.1B (8X)
- Toshiba CD-ROM XM-5602B, firmware rev 1426 (8X)
- Sony CD-ROM CDU311, firmware rev 3.0i (8X)
- EPSON CMD-2240 SPEED-6X, firmware rev R100 -- reported to work
- Hitachi CDR-7730, firmware 1.1a (4X)
- TEAC CD-524E, firmware 4.0D (24X)

Other ATAPI 1.2 compliant CD-ROM drives should work with OPENSTEP even if they are not in the supported list.

EISABus

Floppy

IDE

ISA Serial Port

Intel 82365 and compatible PCMCIA chipset

- SwapBox Classic MMCD-D - Not tested by SQA, might work.
- NEC Versa E Series
- NEC Versa V Series
- NEC Versa 4000
- Compaq LTE Elite
- IBM Thinkpad 755CX
- IBM Thinkpad 760CD
- Adaptec CardPark

Intel 824X0 PCI Chipset

PCI Bus

PCMCIABus

PS/2-Style Mouse

- Rose Electronics ServeView Keyboard/Mouse/Display multiplexer

PS2Keyboard

ParallelPort

Port Server

- EIA-232 (Serial)

SCSITape

Serial Pointing Device

- Alps Glidepoint
- LogiTech FirstMouse
- LogiTech MouseMan
- LogiTech MouseMan Cordless
- LogiTech TrackMan
- Kensington Expert Mouse v2.0
- Kensington Expert Mouse v4.0
- Microsoft Serial Mouse
- Mouse Systems PC Mouse III

SerialMouse

SerialPorts

OTHER OPTIONS

FTG ISA Light Pen

- PXL-395 Light Pen Interface (ISA)
- FT-356 1-Button Light Pen
- FT-357 2-Button Light Pen

FTG Light Pen

- PXL-780 Light Pen Interface (Serial)
- FT-356 1-Button Light Pen
- FT-357 2-Button Light Pen

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OPENSTEP 4.2 for Mach Developer Patch 2 Overview

This patch is now obsolete. Please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.
This patch is obsolete; please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework.

Installing OPENSTEP 4.2 for Mach Developer Patch 2

1. Download the Mach version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/4.2Mach_Dev_Patch2.compressed
```

2. Uncompress the Mach package file. Your web browser or FTP client may perform this step for you.

3. Log in as root. If you're not sure how to log in as root, see your system administrator.

4. Double-click on the 4.2_Mach_Developer_Patch2.pkg file. Make sure that no OPENSTEP applications are running before you do this step.

5. Click the Install button in the Installer package window. An Install Package panel will open.

6. Click 'Install' in the Install Package panel and, when prompted for confirmation, **click OK** to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.

NOTE: Some versions of OmniWeb for OPENSTEP Mach add a .Z extension to downloaded files, causing uncompression errors. To correct this problem, find the downloaded file in the file system and remove the .Z extension before uncompressing it.

Problems Fixed

Corrected in OPENSTEP 4.2 for Mach Patch 2

IB palette has poor default date formatter
Apple reference # 2296018

PROBLEM:
By default, NSDateFormatters dragged in from the Interface Builder palette had a two-digit year format. The default should be a four-digit year format to encourage sound coding practices.

RESOLUTION:
The default has been changed to a four-digit year format.

Published Date: Feb 20, 2012

OPENSTEP 4.2 for Mach: Updated ProfileLibraries

This document contains installation and download information for the most recent versions of Apple's ProfileLibraries for OPENSTEP 4.2.

The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read this document if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.

About The Libraries

Apple's ProfileLibraries and the **gprof** profiling tool allow developers to run certain performance tests on their OPENSTEP applications. The gprof tool depends on special versions of the AppKit and Foundation libraries, and it is important that these libraries match the non-profiler libraries used for development and deployment. For this reason, Apple has prepared updated ProfileLibraries which include all Foundation and AppKit changes included in **OPENSTEP 4.2 for Mach Patch 3**. If you have this patch installed, installing these libraries will allow you to take advantage of these framework changes while using gprof. Non-developers and develoepers not using gprof for performance testing do not need to download this package.

Installing the updated ProfileLibraries

1. Download the Mach version of the libraries from Apple's FTP site at ftp.info.apple.com. The file is located at:

`ftp://ftp.info.apple.com//Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/patches/4.2Mach_PLib_Patch2.compressed`

2. Uncompress the Mach package file. Your web browser or FTP client may perform this step for you.

3. Log in as root. If you're not sure how to log in as root, see your system administrator.

4. Double-click on the 4.2_Mach_ProfileLibs_Patch2.pkg file. Make sure that no OPENSTEP applications are running before you do this step.

5. Click the Install button in the Installer package window. An Install Package panel will open.

6. Click 'Install' in the Install Package panel and, when prompted for confirmation, **click OK** to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.

NOTE: Some versions of OmniWeb for OPENSTEP Mach add a .Z extension to downloaded files, causing uncompression errors. To correct this problem, find the downloaded file in the file system and remove the .Z extension before uncompressing it.

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OPENSTEP 4.2 Enterprise Patch 2 for Windows NT Overview

This patch is now obsolete. Please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.

About This Patch

This patch is obsolete; please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This patch contained a number of important bug fixes, including corrections for some Year 2000 problems and improved support for the Euro currency symbol.

Installing OPENSTEP 4.2 Enterprise Patch 2 on Windows NT 4.0

1. Download the Windows NT version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/4.2NT_Patch2.TAR.gz
```

Also **download** the installer script, "patcher.nt.sh" from:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/patcher.nt.sh
```

2. Log in as a user with Administrator privileges.

3. Open a Bourne shell. The Bourne shell should be available from your Start menu, under the WebObjects program group, or under your Apple root directory at Demos\\sh.exe.

4. Change to the directory containing the patch and the patch installer, "patcher.nt.sh".

5. Type the following at the shell prompt (make sure that there are no EOF applications running first):

```
patcher.nt.sh -install 4.2NT_Patch2.TAR.gz
```

For more information on using the patcher.nt.sh program, type the following at the command prompt:

```
patcher.nt.sh -help
```

6. Reboot your Windows NT system

Problems Fixed

Corrected in OPENSTEP 4.2 Enterprise Patch 2 for Windows NT

No Euro glyph support in OPENSTEP rulebooks
Apple reference # 2265773

PROBLEM:
The AppKit rulebooks did not support the Euro currency character.

RESOLUTION:
The AppKit rulebooks have been updated to provide support for the Euro currency symbol, U+20AC. The encoding tables in Foundation have also been updated to support this character. You will still need to obtain and install fonts which include the Euro character in order to generate the character itself.

NSDateFormatter interprets year "00" as "Current Year"
Apple reference # 2278598

PROBLEM:
NSCalendarDate would interpret year "0" or "00" as "current year", rather than "2000", which was inconsistent with the interpretation of two-digit years in UNIX and not Year 2000 compliant.

RESOLUTION:

NSCalendarDate now interprets "0" or "00" year values as "2000"

Date formatter handles two digit year inappropriately
Apple reference # 2290369

PROBLEM:
NSCalendarDate would treat any two-digit year as a 20th century year.

RESOLUTION:
NSCalendarDate now treats two-digit year values less than 30 as 21st century years.

Euro glyph doesn't display correctly
Apple reference # 2298782

PROBLEM:
The NSTextView's **-insertText:** method would not handle mutable attributed strings correctly under OPENSTEP for Mach and Windows NT. This would result in display problems for certain characters, including the Euro currency symbol.

RESOLUTION:
This method now handles attributed strings as well as ordinary strings correctly.

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OPENSTEP 4.2 Enterprise Developer Patch 2 for Windows NT Overview

This patch is now obsolete. Please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.
This patch is obsolete; please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework.

Installing OPENSTEP 4.2 Enterprise Developer Patch 2 on Windows NT 4.0

1. Download the Windows NT version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/4.2NT_Developer_Patch2.TAR.gz
```

Also **download** the installer script, "patcher.nt.sh" from:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/patcher.nt.sh
```

2. Log in as a user with Administrator privileges.

3. Open a Bourne shell. The Bourne shell should be available from your Start menu, under the WebObjects program group, or under your Apple root directory at Demos\\sh.exe.

4. Change to the directory containing the patch and the patch installer, "patcher.nt.sh".

5. Type the following at the shell prompt (make sure that there are no EOF applications running first):

```
patcher.nt.sh -install 4.2NT_Developer_Patch2.TAR.gz
```

For more information on using the patcher.nt.sh program, type the following at the command prompt:

```
patcher.nt.sh -help
```

6. Reboot your Windows NT system

Problems Fixed

Corrected in OPENSTEP 4.2 Enterprise Patch 2 for Windows NT

IB palette has poor default date formatter
Apple reference # 2296018

PROBLEM:
The default format for NSDateFormatters dragged in from the Interface Builder palette had a two-digit year format. The default should be a four-digit year format to encourage sound coding practices.

RESOLUTION:
The default has been changed to a four-digit year format.

Published Date: Feb 20, 2012

OPENSTEP 4.2 Enterprise Patch 2 for Solaris and HP-UX Overview

This patch is now obsolete. Please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.

About This Patch

This patch is obsolete; please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This patch contained a number of important bug fixes, including corrections for some Year 2000 problems. `See the "Problems Fixed" section below for details.`

Installing OPENSTEP 4.2 Enterprise Patch 2 on Solaris or HP-UX

1. Download **the Solaris version** or **the HP-UX version** of this patch from Apple's FTP servers at ftp.info.apple.com. The files are located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/4.2Solaris_Patch2.TAR.Z
```

and

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/4.2HPUX_Patch2.TAR.Z
```

Also **download** the installer script, "patcher.sh" from:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/patcher.sh
```

2. Log in as root. If you're not sure how to log in as root, see your system administrator.

3. Change to the directory containing the patch and the patch installer, "patcher.sh".

4. Type the following at the shell prompt (make sure that there are no EOF applications running first):

```
patcher.sh -install 4.2Solaris_Patch1.TAR.Z
```

or

```
patcher.sh -install 4.2HPUX_Patch1.TAR.Z
```

For more information on using the "patcher.sh" program, type the following at the command prompt:

```
patcher.sh -help
```

5. Reboot your Unix system

Problems Fixed

Corrected in OPENSTEP 4.2 Enterprise Patch 2 for Solaris and HP-UX

NSDateFormatter interprets year "00" as "Current Year"
Apple reference # 2278598

PROBLEM:
NSCalendarDate would interpret year "0" or "00" as "current year", rather than "2000", which was inconsistent with the interpretation of two-digit years in UNIX and not Year 2000 compliant.

RESOLUTION:
NSCalendarDate now interprets "0" or "00" year values as "2000"

Date formatter handles two digit year inappropriately

Apple reference # 2290369

PROBLEM:
NSCalendarDate would treat any two-digit year as a 20th century year.

RESOLUTION:
NSCalendarDate now treats two-digit year values less than 30 as 21st century years.

Published Date: Feb 20, 2012

OPENSTEP Current Patch List

This document discusses the current patches available for Apple's OPENSTEP operating system and for Enterprise Objects Framework. Follow the links in this article for detailed information on each patch.

This article has been archived and is no longer updated by Apple.

OPENSTEP 4.2 for Mach

All OPENSTEP 4.2 for Mach users should install the following patch:

- **OPENSTEP 4.2 Patch 4**--This patch set includes fixes that address the Year 2000 compliance issue (century rollover). All users of OPENSTEP 4.2 should install this patch set. OPENSTEP 4.2 Patch 4 supercedes all previous OPENSTEP general system patches. If you have already installed an OPENSTEP patch on your system, you can install Patch 4 over your existing installation. You do not need to install any other OPENSTEP patches before installing this one.

There are several additional patches you may wish to install, depending on your needs:

- **Updated ProfileLibraries for OPENSTEP 4.2 for Mach**--This patch should only be installed by developers who use the **gprof** utility for performance testing.
- **Sybase DBKit Adaptor Patch**--This patch should be installed **only** if you need to use DBKit-based legacy applications to access a Sybase database under OPENSTEP 4.2 for Mach

OPENSTEP Enterprise 4.2 for Windows NT

All OPENSTEP 4.2 for Windows NT users should install the following patch:

- **OPENSTEP 4.2 Patch 4**--This patch set includes fixes that address the Year 2000 compliance issue (century rollover). All users of OPENSTEP 4.2 should install this patch set. OPENSTEP 4.2 Patch 4 supercedes all previous OPENSTEP general system patches. If you have already installed an OPENSTEP patch on your system, you can install Patch 4 over your existing installation. You do not need to install any other OPENSTEP patches before installing this one.

OPENSTEP Enterprise 4.2 for Solaris and HP-UX

All OPENSTEP 4.2 for Solaris and HP-UX users should install the following patch:

- **OPENSTEP 4.2 Patch 4**--This patch set includes fixes that address the Year 2000 compliance issue (century rollover). All users of OPENSTEP 4.2 should install this patch set. OPENSTEP 4.2 Patch 4 supercedes all previous OPENSTEP general system patches. If you have already installed an OPENSTEP patch on your system, you can install Patch 4 over your existing installation. You do not need to install any other OPENSTEP patches before installing this one.

OPENSTEP 4.0 and 4.1 for Mach

There are two patches available to users of OPENSTEP 4.1 for Mach:

- **NeXTSTEP and OPENSTEP Time Zone Patch**--This patch corrects an issue with European daylight savings time under OPENSTEP 4.0 and 4.1
- **Sybase DBKit Adaptor Patch**--This patch hould be installed **only** if you need to use DBKit-based legacy applications to access a Sybase database under OPENSTEP 4.0 or OPENSTEP 4.1 for Mach

OPENSTEP Enterprise 4.0 and 4.1 for Windows NT, Solaris, and HP-UX

There are no patches currently available for OPENSTEP Enterprise 4.0 or 4.1.

Enterprise Objects Framework 2.1

There are no patches currently available for users of EOF 2.1, but you should read the following article if you use the examples provided with EOF.

- **Correcting Century Issues in the EOF Examples**--Apple is not aware of any century issues with Enterprise Objects Framework version 2.1 which would affect development or deployment of EOF applications. However, two scripts which install exaple data on Oracle for the Enterprise Objects Examples use a two-digit year format, which is not consistent with Apple's date-handling practice. This article provides instructions on how to change the EOF examples to avoid this issue.

Enterprise Objects Framework 2.0

There are several patches available for current users of EOF 2.0:

- EOF 2.0 Adaptor patches for the **ODBC**, **Oracle**, and **Informix** adaptors
- A **workaround** for a issue with multiple BLOBs under EOF 2.0
- **Sybase client libraries** for EOF 2.0

Enterprise Objects Framework 1.2

There are no patches currently available for users of EOF 1.2, but you should read the following article if you use the examples provided with EOF.

- **Correcting Century Issues in the EOF Examples**--Apple is not aware of any century issues with Enterprise Objects Framework version 1.2 which would affect development or deployment of EOF applications. However, two scripts which install exaple data on Oracle for the Enterprise Objects Examples use a two-digit year format, which is not consistent with Apple's date-handling practice. This article provides instructions on how to change the EOF examples to avoid this issue.

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Linking Windows NT DLL‘s into OPENSTEP 4.1 applications

This document explains how to link a DLL into a compiled OPENSTEP Enterprise 4.1 application on Windows NT. The procedure also applies to WebObjects version 3.0 on Windows NT.
This article has been archived and is no longer updated by Apple.
In most versions of OPENSTEP and WebObjects, linking a .dll into your project is simply a case of dragging and dropping the library's .lib file into the Libraries folder of your Project Builder project, then using the Inspector to add your library's header files to the project's search order.

However, there was a bug in the version of ProjectBuilder that shipped with OPENSTEP 4.1 and WebObjects 3.0. If you are using either of these versions, do not add the library with the ProjectBuilder browser. Instead, add the library name to the makefile directly, in the OTHER_LIBS keyword. Then put a copy of the .lib file in your application directory under the obj-i386-nextpdo-winnt3.5-opt directory. You will also need to add this value to the OTHER_LDFLAGS keyword:

```
OTHER_LDFLAGS = $(LIBRARY_PATHS)
```

These problems have been fixed in OPENSTEP 4.2 and WebObjects 3.1.

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NeXTSTEP Current Patch List

This document discusses the current patches available for Apple's NeXTSTEP operating system and for NeXTSTEP versions of the Enterprise Objects Framework. Follow the links in this article for detailed information on each patch.

This article has been archived and is no longer updated by Apple.

NeXTSTEP 3.3

All NeXTSTEP 3.3 users should install the following patch:

- **NEXTSTEP 3.3 Patch 3**--This patch contains general fixes for the NeXTSTEP operating system, including date handling issues related to the year 2000.

There are several additional patches you may wish to install, depending on your needs:

- **NeXTSTEP and OPENSTEP Time Zone Patch**--This patch corrects an issue with European daylight saving time under NeXTSTEP 3.3
- **NeXTSTEP NT Printer Patch**--This patch corrects an issue with printing to Windows NT 3.1 printers from NeXTSTEP.

NeXTSTEP versions previous to 3.3

There are several patches now available for users of NeXTSTEP versions previous to NeXTSTEP 3.3:

- **NeXTSTEP NT Printer Patch**--This patch corrects an issue with printing to Windows NT 3.1 printers from NeXTSTEP.
- **NeXTSTEP 3.2 HP-PA Precompiled Header Patch**--This patch fixes an incompatibility issue with the PA-RISC versions of NeXTSTEP 3.2.
- **NeXTSTEP 3.1/3.2 Sendmail Patch**--This patch fixes some security issues with the **sendmail** utility.
- **NeXTSTEP 3.2 DOS Filesystem Patch**--This patch corrects some filesystem interoperablity issues.
- **NeXTSTEP 3.2 libg++ Patch**--This patch installs the libg++ library on NeXTSTEP 3.2 systems.
- **NeXTSTEP 3.2 /etc/restore Patch**--This patch installs /etc/restore Update 1.
- **NeXTSTEP 3.2 DBKit Oracle Adaptor Patch**--This patch should be installed only by DBKit users.
- **NeXTSTEP 3.2 libMallocDebug Patch**--This patch should be installed by NeXTSTEP developers who use the debugging features of **malloc**.

Enterprise Objects Framework 1.1

There are no patches currently available for users of EOF 1.1, but you should read the following article if you use the examples provided with EOF.

- **Correcting Century Issues in the EOF Examples**--Apple is not aware of any century issues with Enterprise Objects Framework version 1.1 which would affect development or deployment of EOF applications. However, two scripts which install exaple data on Oracle for the Enterprise Objects Examples use a two-digit year format, which is not consistent with Apple's current date-handling practice. This article provides instructions on how to change the EOF examples to avoid this issue.

Enterprise Objects Framework 1.0

There are no patches currently available for users of EOF 1.0.

Published Date: Feb 20, 2012

NeXTSTEP Driver Compatibility Guide

This document describes in general terms the types of PC-compatible hardware supported by NeXTSTEP Release 3.3. This document also provides lists of specific drivers available for NeXTSTEP. For more detail on a driver, click on the driver name.

NOTE: Apple Enterprise Software has suspended on-going development of new drivers for the NeXTSTEP and OPENSTEP product lines. Where possible, we will be updating current drivers for minor product revisions. These drivers will be made available in the TIL.

If you have specific requirements for drivers for hardware not currently supported, contact your AES sales representative for a quote for custom development work.

This article has been archived and is no longer updated by Apple.

OVERVIEW

This guide is divided into six sections:

General System Requirements

Display Options

Networking Options

SCSI Options

Sound Options

System Options

GENERAL SYSTEM REQUIREMENTS

CPU

486, Pentium, or Pentium, Pro based PC compatible computer. NeXTSTEP requires a floating-point coprocessor. Systems using processors without a built-in floating-point coprocessor require an add-on floating-point coprocessor, or upgrade to a 486, Pentium or Pentium Pro with built-in floating-point support.

EXPANSION BUS

ISA, EISA, VL-Bus or PCI expansion bus.

AVAILABLE HARD DISK SPACE

NEXTSTEP supports multiple partitioned hard disks, allowing the user to install and boot several operating systems from the same local hard disk. Larger local disks are recommended for stand-alone systems or for systems with a local non-NEXTSTEP partition.

User Environment:120 MB partition minimum, 200 MB recommended for stand-alone systems.

User + Developer: Environments: 330 MB partition minimum, 400 MB recommended.

RAM REQUIREMENTS

RAM requirements vary depending upon your selection of graphics adapter and imaging model.

32-bit color: 24 MB RAM Minimum, 32 MB RAM Recommended

16-bit color: 16 MB RAM Minimum, 24 MB RAM Recommended

8-bit color/grayscale: 12 MB RAM Minimum, 16 MB RAM Recommended

2-bit grayscale: 8 MB RAM Minimum, 12 MB RAM Recommended

GRAPHICS ADAPTERS

See the "Display Options" section in this guide for details on graphics support.

DISK INTERFACES

IDE and several SCSI hard disk interfaces are supported.

POINTING DEVICES

Microsoft(tm) and Logitech(tm) compatible PS/2(tm) and serial mice. Logitech bus mouse.

PRINTERS

Any PostScript printer connected via a serial port, parallel port or network including the NeXT Color Printer (connected via a SCSI port). Apple Computer recommends color PostScript printers with PostScript Level II for proper color support.

NETWORKING

Several Ethernet and Token Ring networking adapters are supported. A networking adapter is optional.

SOUND

NEXTSTEP can support certain PC sound cards for both playback and recording. A sound card is optional.

DISPLAY OPTIONS

ATI

- ATI Graphics Ultra Pro (EISA, ATI 68875 RAMDAC)
- ATI Graphics Ultra Pro (EISA, TI 34075 RAMDAC)
- ATI Graphics Ultra Pro (VL-Bus, ATI 68875 RAMDAC)
- Intel GX/Pro (Custom LB, onboard ATI, TI 34075 RAMDAC)
- Data General Dasher DE2 (Custom LB, TI 34075 RAMDAC)
- AST Premmia 4D (Custom LB, onboard ATI, BT 481 RAMDAC)
- Gateway V Series (VL-Bus, ATI 68875 RAMDAC)

ATI Mach32

- ATI Graphics Ultra Pro - EISA (with 2MB VRAM)
- ATI Graphics Ultra Pro - PCI (with 2MB VRAM)
- ATI Graphics Ultra Pro - VL-Bus (with 2MB VRAM)
- ATI Graphics Ultra Pro XLR - VL-Bus (with 2MB DRAM) - not tested, but should work
- ATI Graphics Ultra Pro XLR - PCI (with 2MB DRAM) - not tested, but should work
- Intel GX/Pro (Custom LocalBus, onboard ATI, TI 34075 RAMDAC)
- Data General Dasher DE2 (Custom LocalBus, TI 34075 RAMDAC)
- AST Premmia 4D (Custom LocalBus, onboard ATI, BT 481 RAMDAC)
- Gateway V Series (VESA LocalBus, ATI 68875 RAMDAC)

ATI Mach64

- ATI Graphics Ultra Pro Turbo (PCI, with 2MB VRAM)
- ATI Graphics Ultra Pro Turbo (PCI, with 2MB DRAM)
- ATI Graphics Ultra Pro Turbo (PCI, with 4MB VRAM)
- ATI Graphics Ultra Pro Turbo (PCI, with 4MB DRAM)
- ATI Graphics Ultra Pro Turbo (VL-Bus, with 4MB VRAM)
- ATI Graphics Ultra Pro Turbo (VL-Bus, with 4MB DRAM)
- AT&T Globalyst 600

ATI Rage

- ATI All-In-Wonder
- ATI 3D Pro Turbo
- ATI 3D Pro Turbo PC2TV
- ATI 3D Xpression+
- ATI 3D Xpression+ PC2TV
- ATI XPERT @ Work
- ATI XPERT @ Play

Canon object.station41 Display

- Canon object.station 41

Chips & Technologies Wingine

- Epson Wingine
- LGI Wingine

Chips & Technologies Wingine 64300

- NEC Powermate 466D

Cirrus Logic GD542X Family

Cirrus Logic GD5434

- Diamond SpeedStar 64 (PCI)
- Orchid Kelvin 64 (with GD5434)
- Elonex WS4100
- Intel Premier (with integrated GD5434)
- HP Vectra XM Series3 (not tested but reported to work)

Compaq QVision

- QVision 1024/E EISA (QV30E, QV32E)
- QVision 1280/E EISA (QV32E)
- QVision 1280/P PCI (QV35P, QV64P)
- Compaq Deskpro XE560
- Compaq Deskpro XE466
- Compaq Deskpro 5100

Dell DGX (JAWS)

- Dell 450DE/2 DGX

Diamond Stealth

- Diamond Stealth 64 DRAM PCI-Bus Display Adapter
- Diamond Stealth 64 DRAM VL-Bus Display Adapter
- Diamond Stealth 64 Video PCI-Bus Display Adapter
- Diamond Stealth 64 Video VL-Bus Display Adapter
- Diamond Stealth 64 VRAM PCI-Bus Display Adapter
- Diamond Stealth SE PCI-Bus Display Adapter
- Diamond Stealth SE VL-Bus Display Adapter
- Diamond Stealth 64 DRAM T PCI-Bus Display Adapter
- Diamond Stealth 64 DRAM T VL-Bus Display Adapter
- Diamond Stealth 64 Video VRAM VL-Bus Display Adapter
- Diamond Stealth 64 Video 3200 VL-Bus Display Adapter
- Diamond Stealth 64 Video 2121XL DRAM PCI-Bus Display Adapter
- Diamond Stealth 64 Video 3000 VRAM PCI-Bus Display Adapter
- Diamond Stealth 3D 2000 PCI-Bus Display Adapter
- Diamond Stealth 3D 3000 PCI-Bus Display Adapter

Diamond Stealth64

- Diamond Stealth 64 (PCI, 4MB VRAM)
- Diamond Stealth 64 (PCI, 2MB VRAM)
- Diamond Stealth 64 (VL-Bus, 4MB VRAM)
- Diamond Stealth 64 (VL-Bus, 2MB VRAM)

HP Vectra XP

- HP Vectra XP (4MB VRAM)
- HP Vectra XP (2MB VRAM)

HP Vectra XU Display

- HP Vectra/XU S3/864 on-board video

IBM ThinkPad 755CX Display

- IBM ThinkPad 755CX

IBM ThinkPad 760CD Display

- IBM ThinkPad 760CD

IBM ThinkPad 760ED Display

- IBM ThinkPad 760E
- IBM ThinkPad 760ED
- IBM ThinkPad 560

Matrox MGA Millennium

- Matrox MGA Millennium
- Matrox MGA Millennium II
- Matrox MGA Millennium II AGP
- Matrox Mystique
- Matrox Mystique 220
- Matrox Mystique 220 AGP

Number Nine GXE Family

- #9GXE-VL Level 10 (VL-Bus, 1MB VRAM) - not tested, but should work
- #9GXE-VL Level 11 (VL-Bus, 2MB VRAM)
- #9GXE-VL Level 12 (VL-Bus, 2MB VRAM) - not tested, but should work
- #9GXE-VL Level 14 (VL-Bus, 4MB VRAM) - not tested, but should work
- #9GXE-VL Level 16 (VL-Bus, 4MB VRAM) - not tested, but should work
- #9GXE-PCI Level 10 (PCI, 1MB VRAM) - not tested, but should work
- #9GXE-PCI Level 12 (PCI, 2MB VRAM)

Number Nine GXE64 Pro

- Number 9 GXE 64 Pro (PCI, 4MB VRAM)
- Number 9 GXE 64 Pro (PCI, 2MB VRAM)
- Number 9 GXE 64 Pro-1600 (PCI, 4MB VRAM, 200Mhz RAMDAC) - not tested, but should work
- Number 9 GXE 64 Pro (VL-Bus, 4MB VRAM)
- Number 9 GXE 64 Pro (VL-Bus, 2MB VRAM)
- Number 9 GXE 64 Pro-1600 (VL-Bus, 4MB VRAM, 200Mhz RAMDAC) - not tested, but should work

Number Nine Imagine128

- Number9 Imagine 128 (PCI) (NB128-V2-P)

Number Nine Imagine128 Series 2

- Number9 Imagine 128 Series 2 (4MB) (90-228120-000)
- Number9 Imagine 128 Series 2 (8MB) (90-228130)
- Number9 Revolution 3D (4MB)
- Number9 Revolution 3D (8MB)

Number Nine Motion331

- Number Nine 9FX Motion 331 1MB PCI (NB9-FX1-331-1P)
- Number Nine 9FX Motion 331 2MB PCI (NB9-FX1-331-2P)

Number Nine Motion771

- Number Nine 9FX Motion 771 2MB PCI (NB9FX2-771-2P)
- Number Nine 9FX Motion 771 4MB PCI (NB9FX2-771-4P)
- Number Nine 9FX Motion 771 2MB VL-Bus (NB9FX2-771-2VL)
- Number Nine 9FX Motion 771 4MB VL-Bus (NB9FX2-771-4VL)

S3 805 / 928

- IBM PS/ValuePoint
- Hewlett-Packard Vectra XM
- DECpc 466d2 MTE

S3 Generic

S3 ViRGE Display Driver

- Number Nine 9FX Reality 332 PCI Display Adapter (90-332010-000, 91-332010-000, 91-332013-000)
- Diamond Stealth 3D 2000 PCI Display Adapter

STB Pegasus

- STB Pegasus (VL-Bus, 4MB VRAM)
- STB Pegasus (VL-Bus, 2MB VRAM)

Trident Generic

- This driver will not support the built-in display on IBM Thinkpad 760CD.

Tseng Labs ET4000

Tseng Labs ET4000W32

VGA

Weitek Power 9000

- Diamond Viper (PCI)
- Diamond Viper (VL-Bus)
- Genoa VideoBlitz 9200-VL (VL-Bus) - not tested, but should work

Weitek Power 9100

- Diamond Viper Pro (PCI, 2MB VRAM)
- Diamond Viper Pro (PCI, 4MB VRAM)

Western Digital WD90C24

- NEC Versa E Series
- NEC Versa V Series
- Compaq LTE Elite

NETWORKING OPTIONS

3COM EtherLink III

- 3Com EtherLink III 3C509 ISA (BNC, AUI)
- 3Com EtherLink III 3C509B ISA (BNC, AUI)
- 3Com EtherLink III 3C509-TP ISA (RJ-45, AUI)
- 3Com EtherLink III 3C509B-TP ISA (RJ-45, AUI)
- 3Com EtherLink III 3C509-COMBO ISA (BNC, AUI, RJ-45)
- 3Com EtherLink III 3C509B-COMBO ISA (BNC, AUI, RJ-45)
- 3Com EtherLink III 3C509-TPO ISA (RJ-45)
- 3Com EtherLink III 3C509B-TPO ISA (RJ-45)
- 3Com EtherLink III 3C579 EISA (BNC, AUI)
- 3Com EtherLink III 3C579-TP EISA (AUI, RJ-45)
- 3Com EtherLink III 3C589C-COMBO (BNC, RJ-45)
- 3Com EtherLink III 3C589C-TP (RJ-45)

3COM EtherLink XL

- 3Com EtherLink XL 3C900-TPO PCI (RJ-45)
- 3Com EtherLink XL 3C900-Combo PCI (BNC, AUI, RJ-45)
- 3Com EtherLink XL 3C905-TX PCI (10Base-T, 100Base-TX)
- 3Com EtherLink XL 3C905B-TX PCI (10Base-T, 100Base-TX)

AMD PCnet32

- X/Lan Add-On Adapter (based on Am79C970).
- Canon object.station 41
- Compaq Deskpro XL (On-board)
- HP Vectra XU (On-Board)

Cogent EM960 PCI

- Cogent EM960C (PCI, Combo)
- Cogent EM960TP (PCI, TP Only)
- Cogent EM964TP (PCI, TP Only, 4 ports - 1st port only supported)

Cogent EMaster EISA

- EM932 (EISA, BNC/AUI)
- EM932TP (EISA, UTP/AUI)
- EM935XL (EISA, BNC/UTP/AUI)

DEC21142Network

- DEC Celebris 61xx On-Board LAN Adapter

DEC21X4XNetwork

- Adaptec-Cogent ANA-6911A/TX
- Cogent EM110-TX Fast Ethernet 10/100 Adapter
- Cogent EM960 PCI
- DEC DE500 (21143 based) PCI 10/100
- DEC DE500 Fast EtherWORKS PCI 10/100
- DANPEX PCI Ethernet (EN-9400P3)
- SMC 9332 Fast Ethernet 10/100 Adapter
- SMC PCI EtherPower (SMC 8432)
- DEC Celebris GL On-Board LAN Adapter (21142/21143, 10 Mb/s module)
- DEC Celebris GL On-Board LAN Adapter (21142/21143, 10/100 Mb/s module)

DECchip21040 Network

- Cogent EM960 PCI
- SMC PCI EtherPower (SMC 8432)
- Digital EtherWORKS Turbo PCI (DE435)
- Linksys EtherPCI LAN Card
- DANPEX PCI Ethernet (EN-9400P3)
- JCIS Condor (JC1260)
- Kingston EtheRx PCI Ethernet (KNE40T & KNE40BT)
- DEC Celebris GL & GLST

DECchip21140 Network

- Cogent EM100 Fast Ethernet Adapter
- Cogent EM110 Fast Ethernet 10/100 Adapter
- Cogent EM110-T4 Fast Ethernet 10/100/BNC Adapter
- DEC DE500 Fast EtherWORKS PCI 10/100
- SMC 9332 Fast Ethernet 10/100 Adapter
- SMC EtherPower 10/100 B Fast Ethernet Network Adapter (9332BDT)

HP Vectra XM, XP Integrated

- HP Vectra XM
- HP Vectra XP
- Elonex WS4100 - Not tested, should work

IBM Token Ring

- IBM 25F7367 (ISA, 16/4 Mbps, 8-bit, 64K)
- IBM 25F9858 (ISA, 4Mbps, 8-bit, 16K)
- IBM 67X0438 (ISA, 4Mbps, 8-bit, 16K)
- IBM 60G3994A? (ISA, 16/4 Mbps, 16-bit, 64K)
- IBM 92G7668 (Auto, ISA, 16/4 Mbps, 16-bit, 64K)
- IBM 41H8450 (Auto, ISA, 16/4 Mbps, 16-bit, 64K)
- Token Ring option for Compaq DeskPro and Prolinea series

Intel 82556 Network

- Intel EtherExpress PRO/100 EISA LAN Adapter (EILA8265)
- Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8465)

Intel 82557 Network

- Intel EtherExpress PRO/100+ PCI LAN Adapter (10Base-T, 100Base-TX)
- Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8465B) (10Base-T, 100Base-TX)

- Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8475B) (10Base-T, 100Base-T4)
- Intel EtherExpress PRO/10+ PCI LAN Adapter (PILA8500) (BNC, AUI, RJ-45)
- Intel EtherExpress PRO/10+ PCI LAN Adapter (PILA8520) (RJ-45)

Intel 82595 Chipset

- Cogent EM595 TP PCMCIA (RJ-45)
- Cogent EM595 C PCMCIA (RJ-45/BNC)
- Intel EtherExpress PRO/10 ISA LAN Adapter (BNC/RJ-45/AUI)
- Intel EtherExpress PRO/10+ ISA LAN Adapter (BNC/RJ-45/AUI) (PCLA8200B)
- Intel EtherExpress PRO/10+ ISA LAN Adapter (BNC/RJ-45) (PCLA8210B)
- Intel EtherExpress PRO/10+ ISA LAN Adapter (RJ-45) (PCLA8220B)
- Intel EtherExpress PRO/10+ ISA LAN Adapter (BNC/RJ-45/AUI) (PCLA8205B)
- Intel EtherExpress PRO/10+ ISA LAN Adapter (BNC/RJ-45) (PCLA8215B)
- Intel EtherExpress PRO/10+ ISA LAN Adapter (RJ-45) (PCLA8225B)

Intel 82596 Network

- Intel EtherExpress PRO/10 PCI (PILA8400) (BNC, UTP, AUI)
- Intel EtherExpress PRO/10 PCI (PILA8420) (UTP)
- Intel EtherExpress Flash32 EISA (EILA8225) (BNC, UTP, AUI)
- Cogent eMaster EM935 EISA XL (BNC, UTP, AUI)
- Cogent eMaster EM932 EISA (UTP, AUI)
- Cogent eMaster EM932 EISA (BNC, UTP, AUI)
- Cogent eMaster EM945 EISA FDE (BNC, UTP, AUI)

Intel EtherExpress16

- EtherExpress16 (ISA, BNC/AUI)
- EtherExpress16TP (ISA, UTP/AUI)
- EtherExpress16C (ISA, BNC/UTP/AUI)

Intel TokenExpress

- STP (ISA)

SMC EtherEZ/Elite16 Ultra

- SMC EtherCard Elilte Ultra16 (ISA)
- SMC EtherCard Elilte Ultra16T (ISA)
- SMC EtherCard Elilte Ultra16C (ISA)
- SMC EtherEZ (8416BTA)
- SMC EtherEZ (8416B)
- SMC EtherEZ (8416T)
- SMC EtherEZ (8416BT)
- SMC EtherEZ (8416BA)
- SMC EtherEZ (8416TA)

SMC EtherElite 16

- SMC EtherCard Plus Elite16 Ethernet Adapter

Xircom Netwave

- Xircom CreditCard Netwave Adapter (CNW(AM))

Xircom Performance Series

- Xircom PS-CE2-10BT (PCMCIA, UTP)
- Xircom PS-CE2-10BC (PCMCIA, UTP/BNC)

OTHER OPTIONS

FTG ISA Light Pen

- PXL-395 Light Pen Interface (ISA)
- FT-356 1-Button Light Pen
- FT-357 2-Button Light Pen

FTG Light Pen

- PXL-780 Light Pen Interface (Serial)
- FT-356 1-Button Light Pen
- FT-357 2-Button Light Pen

SCSI OPTIONS

AMD PC SCSI

- Toshiba CD-ROM XM-3401T
- Peripheral Solutions 8mm Exabyte DAT Drive -- 8500
- Syquest 88MB SQ5110 D3G 810
- IOMEGA Bernoulli 230 BETA230 1.1408/2
- Pinnacle Micro Tahoe 230MB MO J6CTahoe-130A
- Quantum 504MB LPS5255S 311012 Hard Drive
- Quantum LPS540S 590H01 Hard Drive
- Next SCSI Color Printer
- HSD Scan-X Color Scanner (UMAX engine)
- COMPAQPC DPES-31080
- Compaq Deskpro XL
- HP Vectra XU

Adaptec 154x family and compatible

- Adaptec 154xB (ISA)
- Adaptec 154xC (ISA)
- Adaptec 154xCF (ISA)
- Adaptec 174x (EISA) in standard 154x mode only

Adaptec 274x and 284x family

- Adaptec 2740 (EISA) - not tested but should work
- Adaptec 2740T (EISA)
- Adaptec 2840 (VLB)

Adaptec 2940 family & 7870 integrated

- Adaptec AHA-2930B (PCI)
- Adaptec AHA-2940 (PCI)
- Adaptec AHA-2940W (PCI, Wide SCSI)
- Adaptec AHA-2940U (PCI, Ultra SCSI)
- Adaptec AHA-2940UW (PCI, Ultra/Wide SCSI)
- Adaptec AHA-2910B (PCI) - Not tested but should work.
- DEC EISA/PCI Server system w/ 7870 on motherboard
- DEC Celebris GLST w/ 7850 on riserboard
- HP Kayak on-board 7860 & 7880 based SCSI adapters.

Adaptec 6x60 chipset (add-on & integrated)

- Adaptec AVA-1505A (ISA)
- Adaptec AVA-1515A (ISA)
- Adaptec AHA-1520A (ISA)
- Adaptec AHA-1530P (ISA) - Not tested but might work.
- Adaptec Slim SCSI (PC/MCIA)
- Intel GX/Pro

Bus Logic FlashPoint

- BusLogic KT-930 PCI SCSI Host Adapter
- BusLogic KT-932 PCI Dual Chanel SCSI Host Adapter
- BusLogic BT-950 PCI Wide SCSI Host Adapter

BusLogic family

- BusLogic 546C ISA SCSI Host Adapter
- BusLogic 747C EISA SCSI Host Adapter
- BusLogic 445C VL-Bus SCSI Host Adapter

- BusLogic 946C PCI SCSI Host Adapter (rev C and D only)
- BusLogic 948 PCI SCSI Host Adapter (not tested, reported to work)
- BusLogic 958 PCI Wide SCSI Host Adapter (not tested, reported to work)
- Canon object.station 41

DPT 2000 family

- DPT 2021/9x SmartCache III (ISA) - not tested, but should work
- DPT 2022/9x SmartCache III (EISA)
- DPT 2122/9x SmartCache III (EISA)
- DPT 2122/9xW SmartCache III (EISA, Wide) - not tested, but should work
- DPT 2122/9xDW SmartCache III (EISA, Differential, Wide) - not tested, but should work
- DPT 2024 SmartCache III (PCI) - In future update
- DPT 2124 SmartCache III (PCI) - In future update
- NEC Express II P60 (On-Board)

DPT SCSI family

- PM2021/90 ISA SCSI adapter
- PM2021/95 ISA SCSI adapter
- PM2022/90 EISA SCSI adapter
- PM2022/95 EISA SCSI adapter
- PM2024 PCI SCSI adapter
- PM2041W ISA Wide SCSI adapter (not tested)
- PM2042W EISA Wide SCSI adapter (not tested)
- PM2044W PCI Wide SCSI adapter (not tested)
- PM2122/90 EISA SCSI adapter
- PM2122/95 EISA SCSI adapter
- PM2124 PCI SCSI adapter
- PM2124W PCI WIDE SCSI adapter
- PM2142W EISA Wide SCSI adapter (not tested)
- PM3021 ISA SCSI RAID controller (Not tested, should work)
- PM3222 EISA SCSI RAID controller
- PM3224 PCI SCSI RAID controller
- DPT-TWR n/a 6-bay SCSI Tower
- DPT-TWR/W n/a 6-bay WIDE SCSI Tower (Not tested, should work)
- NEC Express II P60 (On-Board)

SymbiosLogic53C8xxSCSIDriver

- DEC Celebris XL/590

SOUND OPTIONS

Beep

Canon object.station41 Sound

- Canon object.station 41

Compaq Business Audio

- Compaq Deskpro / M
- Compaq Deskpro / I

ESS 1x88 Audio Driver

- NewCom High Fidelity 16i E5X1853
- Compaq Prolinea
- NEC Versa 4000
- DEC Celebris GL & GL/ST

IntelGXProAudio

- Intel GX/Professional

Media Vision Jazz 16

- Media Vision Deluxe Sound Card

- Media Vision Pro Sonic Sound Card

Microsoft Sound System

- Microsoft Sound System (ISA)

Pro Audio Spectrum 16

Sound Blaster 16

- Sound Blaster 16 Basic (ISA)
- Sound Blaster 16 Value (ISA)
- Sound Blaster 16 AWE (ISA)
- Sound Blaster 16 SCSI-II (ISA)
- Sound Blaster 16 Value PnP (ISA)
- Sound Blaster AWE 64 Value (ISA)
- Sound Blaster AWE 64 Gold (ISA)

Sound Blaster 8

- Sound Blaster Basic ISA)
- Sound Blaster Pro (ISA)
- Sound Blaster Delux (ISA)
- Sound Blaster Value (ISA)

Yamaha OPL Audio

- Yamaha OPL3-SA3 (YMF715) based PNP audio adapters
- Yamaha OPL3-SA (YMF701B) based on-board audio adapters

SYSTEM OPTIONS

BusMouse

- Logitech MouseMan Bus
- Logitech MouseMan Cordless

EIDE

The following ATAPI CD-ROM drives are supported:

- Chinon CD-ROM CDS-525 (2X), firmware rev. W09
- Matsushita CD-ROM CR-571 (2X), firmware rev. 1.0e -- Panasonic
- Mitsumi CD-ROM 1B (4X), firmware rev. B02 -- model FX400
- Sony CD-ROM CDU55E (2X), firmware rev. 1.0u
- Sony CD-ROM CDU76E-S (4X), firmware rev. 1.0c
- Toshiba CD-ROM XM-5302TA (4X), firmware rev. 0305
- Philips CM207, firmware rev 1.10 (??) -- reported to work
- SONY CD-ROM CDU76E-Q, firmware rev 1.0c (4X)
- SONY CD-ROM CDU55D, firmware rev 1.0v (2X)
- SONY CD-ROM CDU77E, firmware rev 1.0e (4X)
- TORiSAN CD-ROM CDR-S1, firmware rev 1.70 (4X) -- SANYO
- Chinon CD-ROM CDS-545, firmware rev ERc A1.0 (4X)
- GoldStar CD-ROM GCD-R540, firmware rev 1.17 (4X)
- GoldStar CD-ROM GCD-540C, firmware rev 1.01 (4X)
- SANYO CRD-254P, firmware rev 1.02 (4X)
- MATSHITA CD-ROM CR-574, firmware rev 1.06 (4X) -- Panasonic
- Pioneer CD-ROM DR-UA124X, firmware rev 1.02 (4X) -- force detection
- MITSUMI CD-ROM !B, firmware rev K02 (4X) -- DRM FX400B
- TEAC CD-55E, firmware rev ?? (4X) -- Thinkpad 760CD
- ATAPI CD-ROM SPEED-6X, firmware rev 6.2D (6X) -- ACER 665A
- VERTOS 600ESD CD-ROM X6-IDE, firmware rev 1.20 (6X)
- TEAC CD-56E, firmware rev 1.0D (6X)
- MATSHITA UJDCD4700, firmware rev 1.11 (??)
- TEAC CD-58E, firmware rev 1.1B (8X)
- Toshiba CD-ROM XM-5602B, firmware rev 1426 (8X)
- Sony CD-ROM CDU311, firmware rev 3.0i (8X)
- EPSON CMD-2240 SPEED-6X, firmware rev R100 -- reported to work

- Hitachi CDR-7730, firmware 1.1a (4X)
- TEAC CD-524E, firmware 4.0D (24X)

EISABus

Floppy

IDE

ISA Serial Port

Intel 82365 and compatible PCMCIA chipset

- SwapBox Classic MMCD-D - Not tested, might work.
- NEC Versa E Series
- NEC Versa V Series
- NEC Versa 4000
- Compaq LTE Elite
- IBM Thinkpad 755CX
- Adaptec CardPark

Intel 824X0 PCI Chipset

PCI Bus

PCMCIABus

PS/2-Style Mouse

- Rose Electronics ServeView Keyboard/Mouse/Display multiplexer

PS2Keyboard

ParallelPort

Port Server

SCSITape

Serial Pointing Device

- Alps Glidepoint
- LogiTech FirstMouse
- LogiTech MouseMan
- LogiTech MouseMan Cordless
- LogiTech TrackMan
- Kensington Expert Mouse v2.0
- Kensington Expert Mouse v4.0
- Microsoft Serial Mouse
- Mouse Systems PC Mouse III

SerialMouse

SerialPorts

Published Date: Feb 20, 2012

Communications ToolBox: 3270 Tools Information

Are there any plans for a 3270 connection tool for the Communications Toolbox?

This article has been archived and is no longer updated by Apple.
Advanced Software Concepts has acs3270, a terminal tool to allow access to IBM computers using TCP/IP. It will also support AS/400 connections. They are planning to support DEC SNA/Gateways within the near future. Educational institutions get a special discount. Site licensing is available upon request. Special feature for those very large accounts: a special installer that lets the system administrator freeze some or all settings.

For contact information, search the Technical Info library under "Advanced Software Concepts."

Published Date: Feb 18, 2012

WebObjects 4: Public and Private WebObjects.conf Files

This article discusses the interaction between the public and private WebObjects.conf files in WebObjects 4.0.
This article has been archived and is no longer updated by Apple.

About the WebObjects.conf Files

WebObjects.conf is a file that tells your WebObjects adaptor where to find application instances. A standard WebObjects deployment contains two WebObjects.conf files.

- The **public** WebObjects.conf file is located in the **Configuration** directory inside your Apple library directory, usually **/opt/Apple/Library**, **$NEXT_ROOT/Library**, or **System/Library**. This file is created by the user and by Monitor.app. It is read by the adaptor, but not by Monitor.app. Monitor.app creates the file by using information from the Monitor.conf file.
- The **private** WebObjects.conf file is located in your web server's **/tmp** directory on Unix, or **\\temp** directory on Windows NT. This file is updated by WebObjects applications and read by the WebObjects adaptor. It is not directly accessed by Monitor.app.

The Public WebObjects.conf file

The public WebObjects.conf file is created by the user, either manually with a text editor or through Monitor. It contains a one-line entry for every instance of every application that is running. For example, if you had three instances of HelloWorld running, the file would look something like this:

```
HelloWorld:1@lothrup 2001
HelloWorld:2@lothrup 2002
HelloWorld:3@lothrup 2003
```

The format for each entry is:

```
Application_Name:Instance_Number@Application_Server_Name Port_Number
```

The instance numbers are unique to each application. Monitor will write an entry to this file **only** after it has successfully started an instance.

The Private WebObjects.conf File

The private WebObjects.conf file is created by a WebObjects application. The private file looks a lot like the public file:

```
Monitor:-1@localhost 5000
HelloWorld:-1@localhost 5601
GinIntTest:-1@localhost 51747
```

However, even if you have multiple instances of a given application on different port numbers, you will only see one entry per application in the private WebObjects.conf file. Instead of adding a second entry, the WOApplication will overwrite a previous instance's entry. This is to facilitate rapid deployment and testing.

The WebObjects.conf Files In a Deployment

When and how often the WebObjects.conf file is read depends on your adaptor configuration. Because it does not store state, the CGI adaptor checks the file once per transaction. Other adaptors can be configured at compile time. Two variables are set in the **config.h** file that is part of the adaptor source distribution:

```
#define READ_CONF_ONCE 0
#define CONF_STAT_INTERVAL 10
```

If **READ_CONF_ONCE** is set to a value greater than zero, the WebObjects.conf files are read once at startup and then never consulted again. The **CONF_STAT_INTERVAL** value determines how often, in seconds, the public WebObjects.conf file is **stat()**'ed. If the time stamp of this file has changed, the file is reloaded.

If the adaptor receives a request for an application that is not in the public conf file, it will then drop down to look at the private conf file. If the adaptor can't find the application in either place, then it will pop out a "Application can not be found" error.

TA45382_WebObjects_Public_and_Private_WebObjectsconf_Files.pdf

Published Date: Feb 18, 2012

OPENSTEP 4.2 Mach: The Euro Currency Symbol

This article explains how to use the Euro currency symbol with the OPENSTEP for Mach operating system, version 4.2.
This article has been archived and is no longer updated by Apple.

OPENSTEP and the Euro

Because Apple's OPENSTEP 4.2 for Mach operating system was released before the Euro symbol was created, the built-in fonts and key mappings do not take the Euro into account. Many third-party fonts are available which include the Euro character. These fonts fall into two categories:

- Fonts which **map every keystroke to the Euro character**
- Fonts which **include the Euro character as part of a standard character set**

Using a Font with Only the Euro Character

A set of fonts which map every character to the Euro symbol is available free from Adobe. Because every character in this font will draw a Euro glyph, no special keyboard mapping or other configuration is required. To install:

- Download the fonts from http://www.adobe.com/type/eurofont.html
- Use a third-party utility to convert the font to OPENSTEP format
- Follow the standard procedure to install the new font on your OPENSTEP system

After you've converted and installed the fonts, simply type any character and change it to the appropriate Euro font. Bear in mind that the Euro character will not display on systems or print on printers which do not have the appropriate Euro font installed.

Using a Font Which Includes The Euro Character

Many standard PostScript fonts are available which include the Euro glyph in their standard character set. To use one of these fonts under OPENSTEP:

If you haven't already, install OPENSTEP 4.2 for Mach Patch 2 on your system

- Convert the font to OPENSTEP format if necessary
- Follow the standard procedure to install the new font on your OPENSTEP system
- Choose a key you wish to represent the Euro character
- Use /NextDeveloper/Demos/Keyboard.app to bind the desired key to symbol 0xA0 in your keymapping
- Save your new key mapping to ~/Library/Keyboards or /LocalLibrary/Keyboards

Applications not based on the OPENSTEP AppKit, such as Mail, Edit, and Workspace, won't be able to display the Euro character. However, you will now be able to use the Euro character in all AppKit-based applications. You can also create strings containing the Euro character programmatically, using NSString's initWithCharacters: method. The Euro currency symbol has a Unicode value of 0x20ac.
Published Date: Feb 20, 2012

WebObjects Year 2000 Technical Tips

This article discusses ways developers can avoid causing Year 2000 problems in their code, including some issues relating specifically to Apple's OPENSTEP and WebObjects frameworks and API's. This article does **not** discuss the Year 2000 compliance status of any Apple product; for Y2K compliance information, see the Apple Year 2000 main page at http://www.apple.com/about/year2000 .

The following are tips for programmers; we hope they will help you avoid some common problems in your code, and identify problems in your legacy code for remediation.
This article has been archived and is no longer updated by Apple.

Working with Dates in WebObjects

A detailed overview of date handling in WebObjects is now available for **download in PDF format**.

Use Consistent Date Handling

Consistency in date hanlding makes maintaining and fixing date-handling code easier. Apple recommends that you always use the Foundation date and time API's when you need to write date-handling code for OPENSTEP or WebObjects.

Don't Divide By an NSTimeInterval Value

Dates are represented in the Foundation framework with **NSDate** and **NSCalendarDate** objects and **NSTimeInterval** values. An **NSTimeInterval** object is essentially a C-language double (**NSTimeInterval** can represent intervals of approximately 10,000 years with sub-millisecond accuracy). **NSDate** and **NSCalendarDate** store the date that they represent with an **NSTimeInterval** which represents the time delta in seconds from the Foundation reference date (00:00:00 Greenwich Mean Time January 1, 2000). Since the internal time representation will transition across zero at the reference date, there will be a brief instant (on the order of microseconds in length) during which an **NSDate** object created to represent the current time will have an **NSTimeInterval** of zero. An **NSTimeInterval** of zero has no special significance to **NSDate** or **NSCalendarDate**, but applications that use the **NSTimeInterval** of a date object in division should protect against division by zero. This is unlikely to occur in real-world applications.

Avoid Two-Digit Date Formats

Always use four-digit years when formatting dates for input or output; a four-digit year is the **only** unambiguous way to refer to any date. The Foundation framework's date formatting objects may interpret two-digit year values in unexpected ways, and using the two-digit "%y" format allows no way for a user to present a date unambiguously and may cause additional problems; for example, typing "2004" into a two-digit year formatted field result in a value of "20" being used and "04" being truncated. Instead, use the four-digit "%Y" year format.

Published Date: Feb 18, 2012

OPENSTEP 4.2 for Mach Patch 3

This patch is now obsolete. Please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.

About This Patch

This patch is obsolete; please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This patch was an updated version of OPENSTEP 4.2 Patch 2. This patch included all of the bug fixes and features from that patch, including corrections for some Year 2000 issues, improved support for the Euro currency symbol, support for large hard drives on OPENSTEP systems, and a VESA VBE driver. In addition, this patch corrected some issues with file permissions on OPENSTEP for Mach systems. For more information on these topics, please see the appropriate section of this document.

Installing OPENSTEP 4.2 for Mach Patch 3

1. **Download** the Mach version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/

patches/4.2Mach_Patch3.pkg.tar
```

2. Uncompress the Mach package file. Your web browser or FTP client may perform this step for you.

3. Log in as root. If you're not sure how to log in as root, see your system administrator.

4. Double-click on the 4.2_Mach_Patch3.pkg file. Make sure that no OPENSTEP applications are running before you do this step.

5. Click the Install button in the Installer package window. An Install Package panel will open.

6. Click 'Install' in the Install Package panel and, when prompted for confirmation, **click OK** to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.

New Features

New in OPENSTEP 4.2 for Mach Patch 2

VBE VESA Driver

This patch installs a VBE video driver. This driver allows an OPENSTEP 4.2 system to use any display adapter which conforms to version 2.0 of the VESA BIOS extension standard. Use of the VBE driver requires updating the kernel and the booter. The updated kernel and booter are also compatible with all other video drivers, and both are included in this patch. For more information, see the VESA VBE OPENSTEP Driver Overview, **TIL article 70026**.

New Booter Features

The new booter included in this patch includes two new features:

1. If you are using the new VESA VBE driver, you can **specify a VBE video mode at boot time**. Specify **"VBE Check"=Yes** at the boot prompt to get a list of available VBE video modes. Then use **"VBE Mode"=xxx** to specify the mode number you want to use. The mode number is the three-digit number listed before each mode. For example, if one of the listed video modes was:

257=640x480x256

you would type **"VBE Mode"=257** at the booter prompt to boot with 640x480, 256-color VESA graphics.

2. The new booter allows you to **step through your boot drivers**, choosing which to load and which to skip. Specify **Query=Yes** at the boot prompt, and the booter will prompt before loading each boot driver.

Issues Fixed

Corrected in OPENSTEP 4.2 for Mach Patch 3

Permissions issues in system files
Apple reference # 2318668

ISSUE:
Certain system files included in OPENSTEP 4.2 Patch 2 had incorrect permissions settings. This caused issues with sendmail and some other system resources.

RESOLUTION:
These permissions have been corrected in this patch.

Corrected in OPENSTEP 4.2 for Mach Patch 2

No Euro symbol support in OPENSTEP
Apple reference # 2265776

ISSUE:
OPENSTEP 4.2 for Mach did not include Euro currency symbol support.

RESOLUTION:
Support was added for the Euro currency symbol. Typing a Euro currency symbol character will require a modified keyboard keymapping. The currency character is encoded as symbol 0xA0 in the keyboard symbol encoding. Use **/NextDeveloper/Demos/Keyboard.app** to bind the desired key to symbol 0xA0 in your keymapping and you will be able to type the Euro currency symbol.

No Euro glyph support in OPENSTEP rulebooks
Apple reference # 2265773

ISSUE:
The AppKit rulebooks did not support the Euro currency character.

RESOLUTION:
The rulebooks have been updated to provide support for the Euro currency symbol, U+20AC. The encoding tables in Foundation have also been updated to support this character. You will still need to obtain and install fonts which include the Euro character in order to generate the character itself.

NSDateFormatter interprets year "00" as "Current Year"
Apple reference # 2278598

ISSUE:
NSCalendarDate would interpret year "0" or "00" as "current year", rather than "2000", which was inconsistent with the interpretation of two-digit years in UNIX and not Year 2000 compliant.

RESOLUTION:
NSCalendarDate now interprets "0" or "00" year values as "2000"

Date formatter handles two digit year inappropriately
Apple reference # 2290369

ISSUE:
NSCalendarDate would treat any two-digit year as a 20th century year.

RESOLUTION:
NSCalendarDate now treats two-digit year values less than 30 as 21st century years.

adjtime() does not affect system time
Apple reference # 2231714

ISSUE:
The adjtime() system function, intended to allow the synchronization of the system clock, actually had no effect. This would cause issues with network time synchronization under OPENSTEP for Mach.

RESOLUTION:
The adjtime() function now correctly adjusts the system clock.

System panic while writing disk label
Apple reference # 2279630

ISSUE:
Writing a disk label would cause a kernel panic in some circumstances.

RESOLUTION:
The system has been modified to eliminate these kernel panics.

Sound input gain preferences behaves oddly
Apple reference # 2272986

ISSUE:
In the OPENSTEP for Mach sound preferences panel, requests to set the right input channel gain on the sound input device would be ignored. This would produce strange behavior in the sound preferences panel input gain sliders.

RESOLUTION:
The sound preferences panel sliders now behave as expected.

Restrictive nbuf limit in kernel
Apple reference # 2296405

ISSUE:
The OPENSTEP Mach kernel was previously restricted to use at most 255 buffers.

RESOLUTION:
This restriction has been removed. You can specify nbuf=xxx at the boot prompt or in the **System.config/Instance0.table** file to use any number of buffers. If no value is specified, the default is still limited to 255. **NOTE:** If you choose too large a value, your system may panic at boot time; however, as long as your system will boot, you will experience no instability as a result of a large nbuf value.

Euro glyph doesn't display correctly
Apple reference # 2298782

ISSUE:
The NSTextView's **-insertText:** method would not handle mutable attributed strings correctly under OPENSTEP for Mach and Windows NT. This would result in display issues for certain characters, including the Euro currency symbol.

RESOLUTION:
This method now handles attributed strings as well as ordinary strings correctly.

Can't install OPENSTEP on partitions beginning after 4GB
Apple reference # 2265513

ISSUE:
The **disk** command was not able to initialize an OPENSTEP for Mach partition beginning at a large offset on the drive, and would not correctly partition a large fdisk slice on EIDE drives.

RESOLUTION:
The 'disk' command can now initialize partitions at any offset.

mfks fails with a write error

Apple reference # 2284310
ISSUE:
While building a new OPENSTEP for Mach filesystem, the 'mkfs' command would fail with a write error for some combinations of disk geometry and filesystem options.

RESOLUTION:
The **mfks** command will now lay out these filesystems correctly.

fdisk disk cylinder limit
Apple reference # 2305698

ISSUE:
With some BIOS versions, the 'fdisk' command was unable to process disks with more than 2^10 cylinders.

RESOLUTION:
The limit has been increased to 2^16 cylinders.

Corrected in OPENSTEP 4.2 for Mach Patch 1

Four Digit Year Entry with /bin/date
Apple reference # : 2179467

ISSUE:
Certain dates could not be input using the Unix /bin/date command which shipped with OPENSTEP 4.2.

RESOLUTION:
The /bin/date command now correctly handles 2-, 3-, and 4-digit years for dates in the valid Unix range (1 Jan 1970 - 31 Dec 2037). This patch allows four-digit year entry through /bin/date. In addition, input dates are now checked for validity and out-of-range dates are rejected.

New RCS Package
Apple reference # : 2249097

ISSUE:
The version of RCS which shipped with OPENSTEP 4.2 did not handle dates after 1999 correctly in some commands.

RESOLUTION:
This patch installs RCS version 5.7, a much more recent version which does not experience this date issue. Please see the RCS documentation for a complete list of new and updated features in this release.

Hardware Clock Setting
Apple reference # : 2253935, 2258123

ISSUE:
Previously, setting a date after 1999 with /bin/date or with the OPENSTEP Preferences application would cause an illegal value to be stored in the hardware clock of Intel and NeXT-branded Motorola hardware systems. As a result, some systems would show an incorrect year after reboot.

RESOLUTION:
With this patch, the hardware clock is now set correctly for dates after 1999.

Date handling in ftpd
Apple reference # : 2251927

ISSUE:
The ftp daemon's MDTM command did not handle dates after 1999 correctly.

RESOLUTION:
The ftp daemon has been updated to handle these dates correctly.

tmac Macro Date Handling
Apple reference # : 2256331

ISSUE:
Previously, default dates generated by the tmac macros used for troff and nroff typesetting were not correct for years after 1999.

RESOLUTION:
The various man, me, and ms macros now generate default dates after 1999 correctly.

Date reporting in atq
Apple reference # : 2258151

ISSUE:
In OPENSTEP 4.2, the atq command displayed the job date incorrectly for jobs created with the at command after 1999.

RESOLUTION:
The atq command has been modified to correctly represent jobs scheduled from 1970 through 2037.

Job scheduling and execution with at and atrun
Apple reference # : 2263271

ISSUE:
Under certain circumstances, atrun did not correctly handle jobs scheduled with at after 1999.

RESOLUTION:
The at and atrun commands have been modified to correctly and consistently handle the scheduling and execution of jobs regardless of date.

Date display in /usr/ucb/mail
Apple reference # : 2259253

ISSUE:
In OPENSTEP 4.2, the Date: header of email messages written by /usr/lib/sendmail used a two-digit year in the creation time. This issue affected email created and read with the /bin/mail and /usr/ucb/mail programs.

RESOLUTION:
sendmail has been modified to write four-digit years in the date header.

ntpd Error Messaging
Apple reference # : 2260775

ISSUE:
Under OPENSTEP 4.2, the error message returned when an excessive offset was encountered did not report the year correctly for years after 1999.

RESOLUTION:
This error message now reports the year correctly.

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Published Date: Feb 20, 2012

PostScript: Display PostScript Options

Is there any third-party hardware that uses Display PostScript to draw the image on a Macintosh screen?

If there is no hardware, do you know of a software PostScript interpreter to preview PostScript files on a Macintosh screen?
This article has been archived and is no longer updated by Apple.
Display PostScript (licensed by Adobe) lets a PostScript procedure render graphics on a bit-map screen (in the same manner that a LaserWriter with its built-in PostScript lets a PostScript procedure render graphics on a sheet of paper).

Apple displays its graphics via QuickDraw instead of PostScript. Apple has no plans to display graphics based on PostScript language routines for many reasons. Providing this capability would likely require a rewrite of the Macintosh operating system.

If you are running A/UX, a PostScript user interface called NeWS may be used. A NeWS application is a collection of PostScript procedures that are sent to a NeWS server (perhaps remotely via a network connection). The server interprets the PostScript procedures and renders graphics in a window on the display's bit-map screen.

Macintosh print drivers let you view PostScript commands for editing purposes. If running System 6, press and hold the Command and "F" keys after selecting OK from the print dialog box. You'll see the message "Creating PostScript File." The file is named PostScript0, PostScript1, and so on - a standard text file that can be opened by most word processing and text editing programs. System 7 print drivers give you the option to change the print-job destination from the printer to disk. Merely check the appropriate destination in the print dialog.

It is possible to display an EPS (Encapsulated PostScript) file with many Macintosh applications, including Adobe Illustrator.

To display full PostScript files under the Macintosh OS, use an application like LaserTalk from Emerald City Software or PostShow from Lincoln & Co.

Search on company names for more information about third party products.
Published Date: Feb 20, 2012

WebObjects 4: Adding Third-Party Classes to a WebObjects Project

This article discusses adding Java classes to a WebObjects application when the source code is not available.
This article has been archived and is no longer updated by Apple.
Q: I have some Java classes that I want to use in my WebObjects application, but I do not have the source code. How do I get WebObjects to recognize my Java classes?

A: Follow these steps:

1. Look in Project Builder for a Subprojects suitcase. If it is not there, use the Project-->New Subproject... menu item to create a new supbroject of type WebObjectsSubproject, named CommonJava. If there is a Subprojects suitcase and CommonJava is not listed in its browser, double-click the suitcase, choose the CommonJava.subproj directory, and add it to your project.

2. Highlight Subprojects --> CommonJava.subproj --> Resources, and drag your .jar, .zip, or .class file(s) into the Resources suitcase.

3. In your CommonJava.subproj Makefile.preamble, make sure you have the line:

```
JAVA_IS_SERVER_SIDE = YES
```

4. Edit Makefile.preamble at the top level of your project, and set OTHER_CLASSPATH.

- If you have a .jar file:
  `OTHER_CLASSPATH = $(shell pwd)/CommonJava.subproj/MyClasses.jar`
- If you have a .zip file:
  `OTHER_CLASSPATH = $(shell pwd)/CommonJava.subproj/MyClasses.zip`
- If you have a .class file:
  `OTHER_CLASSPATH = $(shell pwd)/CommonJava.subproj`

5. Back at the top level of your project, edit Supporting Files --> CustomInfo.plist, which should look something like this:

```
{
// ** Add your class paths here in the form of an array as follows:
NSJavaUserPath = (C:/MyStuff/MyApp.woa/Resources/MyClasses.jar);
}
```

This must be an absolute path; relative paths will not work.

6. For Solaris users only, set your LD_LIBRARY_PATH as follows:

```
setenv LD_LIBRARY_PATH $NEXT_ROOT/Library/JDK/lib; $NEXT_ROOT/Library/JDK/lib/sparc/native_threads
```

7. You're done; save the project and re-compile your application.

You need to set OTHER_CLASSPATH in Makefile.preamble to satisfy the Java compiler. However, you also need NSJavaUserPath to satisfy the Java runtime, because the third-party classes aren't statically linked into your app. You can set your CLASSPATH environment variable instead of setting NSJavaUserPath, but NSJavaUserPath is usually more convenient for deployment purposes.

Published Date: Feb 18, 2012

EOF 2.2 User Patch 2 Overview

This document contains release notes for EOF 2.2 User Patch 2, an update to Apple's Enterprise Objects Framework on Windows NT and Solaris. This patch incorporates all EOF bug fixes released in EOF 2.2 Patch 1, the WebObjects 3.5.1 Database Adaptor Patches and the WebObjects Java Patch 2. This patch should **only** be applied to systems with EOF 2.2 installed. This patch only addresses user-level issues. EOF 2.2 developers should also see **article 70057** for more information on EOF 2.2 Developer Patch 2.

The WebObjects Current Patch List, **article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. The OPENSTEP Current Patch List, **article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read these documents if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.

Installing EOF 2.2 User Patch 2 on Windows NT 4.0

1. **Download** the Windows NT version of the patch from Apple's FTP site at ftp.info.apple.com. Also **download** the installer script, "patcher.nt.sh".

2. Log in as a user with Administrator privileges.

3. Open a Bourne shell. The Bourne shell should be available from your Start menu, under the WebObjects program group, or under your Apple root directory at
`NextLibrary\Executables\sh.exe`.

4. Change to the directory containing the patch and the patch installer, "patcher.nt.sh".

5. Type the following at the shell prompt (make sure that there are no EOF applications running first):
```
./patcher.nt.sh -install EOF22_NT_User_Patch2.TAR.gz
```

For more information on using the patcher.nt.sh program, type the following at the command prompt:
```
./patcher.nt.sh -help
```

6. Restart your Windows NT computer.

Installing EOF 2.2 User Patch 2 on Solaris

1. **Download** the Solaris version or of this patch from Apple's FTP servers at ftp.info.apple.com. Also **download** the installer script, "patcher.sh".

2. Log in as root. If you're not sure how to log in as root, see your system administrator.

3. Change to the directory containing the patch and the patch installer, "patcher.sh".

4. Type the following at the shell prompt (make sure that there are no EOF applications running first):
```
./patcher.sh -install EOF22_Solaris_User_Patch2.TAR.Z
```

For more information on using the "patcher.sh" program, type the following at the command prompt:
```
./patcher.sh -help
```

5. Restart your Solaris computer.

Issues Fixed

Corrected in EOF 2.2 User Patch 2

EOF applications crash accessing SQL Server 7

Apple reference # 2315234

ISSUE: EOModeler and other EOF-based applications crashed when trying to connect to Microsoft SQL Server 7.0.

RESOLUTION: The EOF ODBC adaptor has been updated, enabling EOF applications to connect to SQL Server 7 without error.

Java project recompilation

Apple reference # 2315243

ISSUE: In order to take advantage of a bug fix in an upcoming WebObjects patch, some EOF Java projects needed to be recompiled.

RESOLUTION: The relevant projects have been recompiled in this patch.

ODBC adaptor generates spurious login error message

Apple reference # 2315563

ISSUE: While defining a new model or switching a model's adaptor to ODBC, the first attempt to connect to the database failed and a misleading "invalid login" error message was displayed. However, if the user continued with the login, entering the correct user name and password, the login succeeded. Subsequent attempts to log in with the same model did not produce this false error message.

RESOLUTION: The connection information associated with the initial login panel is now properly constructed.

ODBC adaptor prepends owner to table name

Apple reference # 2319114

ISSUE: When reverse engineering a Microsoft SQL Server database with ODBC, the table names all had the form OWNER.NAME instead of just NAME.

RESOLUTION: The table names no longer have the owner prefixed to the name.

Editing context should not decrement snapshot retain count when forgetting a fault

Apple reference # 2326799

ISSUE: When an editing context was released, the snapshot retain count was decremented for all of its registered objects, both "real" objects and faults. Since the snapshot retain count is only incremented when "real" objects are registered, this caused the snapshot retain count to be too low for faulted objects. An exception might be raised later because the snapshot had been released prematurely.

RESOLUTION: EOEditingContext now decrements the snapshot retain count only for complete objects, not for faults.

Snapshot refcount not incremented correctly with Entity Caching turned on.

Apple reference #2327400

ISSUE: With entity caching enabled, the snapshot retain count was not correctly incremented when an entity was cached. Since the retain count was too low, a crash could result when attempting to access a cached entity whose snapshot had been released too soon.

RESOLUTION: The EOAccess framework now increments the snapshot retain count for each object in an entity when the entity is cached and decrements the snapshot retain count for each object when the cache is invalidated.

Corrected in EOF 2.2 Patch 1

OracleEOAdaptor generates incorrect SQL for left and right outer joins

Apple reference # 2165674, 2288089

ISSUE: The SQL generated by the Oracle adaptor for a left outer join was actually the syntax for a right outer join, and vice versa.

RESOLUTION: The Oracle adaptor now generates the correct SQL for left and right outer joins.

EODatabase never releases snapshots

Apple reference # 2169671, 2231693

ISSUE: Snapshots associated with enterprise objects were never released.

RESOLUTION: EOF now tracks references to an object and releases the object's snapshot when there are no more references to it

Newly inserted objects not deleted correctly

Apple reference # 2176466, 2253191

ISSUE: An object created and inserted into an editing context or relationship, then deleted before being saved to the database, was not completely removed from the editing context. This caused an exception to be raised the next time the editing context was saved.

RESOLUTION: Deletion of a newly-inserted object now completely removes the object from the editing context.

Optimistic locking fails on rows with trailing spaces

Apple reference # 2177721, 2231704

ISSUE: OracleEOAdaptor stripped trailing spaces from VARCHAR2 data fetched from or committed to an Oracle database. If VARCHAR2 data containing trailing spaces had been inserted by another tool, optimistic locking failed for any affected row and the row could not be updated.

RESOLUTION: OracleEOAdaptor no longer strips trailing spaces from VARCHAR2 data.

Incorrect NSNumber formatting for zero values

Apple reference # 2181645, 2264031

ISSUE: Zero values for number fields displayed by EOF did not always have appropriate formats for their types. For example, some integer zero values were represented as "0.00".

RESOLUTION: EOEntity has been modified to format zero values appropriately for all number types.

Logic error in EOAccess layer sometimes raises exception while generating primary keys

Apple reference # 2182084, 2278561

ISSUE: Under certain circumstances, the EOAccess code that generates primary keys sent a message to inappropriate objects causing a "NoSuchMethodError" exception to be thrown in Java or one of several exceptions to be raised in Objective C.

RESOLUTION: EOAccess now checks the class of the receiver before sending the message that was causing the issue.

EOModeler can't create a model with EODeleteRuleNoAction

Apple reference # 2202107, 2248443

ISSUE: In EOModeler's AdvancedRelationship inspector, if the Delete Rule was set to "No Action", the following warning was posted the next time the model was opened:

```
Invalid delete rule string:'EODeleteRunNoAction' on entity with name: '<entity_name>'
```

This issue could also affect applications which create their own models.

RESOLUTION: This issue was caused by a simple typographical error which has been corrected. It is now possible to create models with EODeleteRuleNoAction.

EOQualifier qualifierWithFormat methods conflict

Apple reference # 2203613, 2275802

ISSUE: If a qualifier was created using `+[EOQualifier qualifierWithQualifierFormat: arguments:]` and, subsequently, another qualifier was created using `+[EOQualifier qualifierWithQualifierFormat:]`, a parse error occurred, even if the second qualifier was valid.

RESOLUTION: The interference between these two methods has been removed and they now operate correctly.

selectObject: method return values don't match documentation

Apple reference # 2205357, 2275804

ISSUE: The `[EODisplayGroup selectObject:]` method would only returned 'NO' if it could not end editing or if the delegate refused the change. According to the class documentation, it should also return 'NO' if the EODisplayGroup's displayedObjects array does not contain a match with the method's object argument.

RESOLUTION: As stated in the documentation, this method now also returns 'NO' when it cannot find a match for the argument object.

Sybase can't fetch float and text data together

Apple reference # 2208497, 2259088, 2274601

ISSUE: The Sybase adaptor could not fetch data of types text and float together.

RESOLUTION: The adaptor has been fixed so that there is no longer a conflict between these data types.

EOControl layer raises exception while building qualifier

Apple reference # 2213188, 2271206

ISSUE: The qualifier parsing code in the EOControl layer incorrectly sends copyWithZone: to custom enterprise objects under certain conditions, causing a "selector not implemented" exception to be raised in Objective C or a "CloneNotSupportedException" to be thrown in Java.

RESOLUTION: copyWithZone: is no longer called on custom enterprise objects when building a qualifier.

Nil value in EOAttribute causes crash while saving EOModel

Apple reference # 2220588, 2274226

ISSUE: In certain circumstances, a crash occurred during the save of an eomodel because a nil serverTimeZone attribute was being inserted into the eomodel.

RESOLUTION: The EOAccess layer has been changed to test for and handle a nil value for this attribute.

Exception while writing an eomodel to disk corrupts the model

Apple reference # 2220893, 2274225

ISSUE: If an exception was raised while an eomodel was being written to disk, the original model was lost and only the partially-written or corrupted model was left on the disk.

RESOLUTION: A backup copy of the eomodel is now made before the write begins. If an error occurs during the write the partially-written file is saved as `<model_name>.eomodeld#` and the original eomodel is restored from the backup.

Prefetching can mysteriously fail

Apple reference # 2223730, 2264033

ISSUE: Prefetching would sometimes failed for no apparent reason, due to inappropriate filtering of relationships inside the EOAccess layer.

RESOLUTION: The incorrect filtering on prefetches has been removed from EOEntity.

Unnecessary firing of to-many faults

Apple reference # 2227660, 2248080

ISSUE: If the PropagatePrimaryKey flag on an EOEntity was set to YES, saving changes to the EOEditingContext caused array faults for all of that entity's to-many relationships to be fired. This was not necessary and could cause performance issues.

RESOLUTION: The EOAccess layer has been changed so that it no longer fires unnecessary faults.

EOFault retain/release behavior conflicts with Java bridge

Apple reference # 2239504, 2297785

ISSUE: EOFault's special handling of retain and release sometimes caused conflicts with the Java bridge.

RESOLUTION: The retain and release behaviours of EOFault have been modified to interoperate correctly with Java via the bridge.

Incorrect Sybase smallint mapping

Apple reference # 2241377, 2247522

ISSUE: On HP-UX and Solaris, data with the Sybase type smallint was mapped to NSNumber/Integer and assigned the original value times 2 ^16 when retrieved from a Sybase database.

RESOLUTION: The Sybase adaptor now correctly maps smallint data to type NSNumber/Short and does not modify the value.

No EOActionCellAssociation for most controls

Apple reference # 2243956, 2269874

ISSUE: EOActionCellAssociation did not work with controls other than NSTextField in EOF 2.2 and WebObjects 3.5.1.

RESOLUTION: This class has been changed to work with NSButtons and other controls, as well as NSTextFields.

Can't use Sybase 11 stored procedures

Apple reference # 2244533, 2274650

ISSUE: The Sybase adaptor was unable to interpret stored procedures created in Sybase 11.

RESOLUTION: The adaptor has been fixed to work properly with stored procedures from both Sybase 10 and Sybase 11.

Case-insensitive matching sometimes fails

Apple reference # 2248977, 2275805

ISSUE: Case-insensitive matching in EOQualifier did not correctly match uppercase letters in the search pattern with lowercase letters in the receiving string.

RESOLUTION: EOQualifier has been fixed. [EOQualifier isCaseInsensitiveLike:] now works correctly.

EOEntity methods raise exceptions

Apple reference # 2251180, 2256685

ISSUE: Under some circumstances some methods of EOEntity, including setAttributes, setClassProperties, setRelationship, and removeRelationship, did not clear a private variable, potentially resulting in an application exception.

RESOLUTION: These methods now handle their private instance variables correctly.

Oracle adaptor state not reset when closing the database channel fails

Apple reference # 2252175

ISSUE: If the Oracle adaptor encountered an error while closing the database channel, the adaptor state was not reset correctly. As a result, the database connection could not be re-established on that channel once the database came back up.

RESOLUTION: The Oracle adaptor now sets its internal state correctly before raising the error, allowing the connection to be re-established once the database is restored.

Multiple propagation primary keys create race condition

Apple reference # 2260541, 2267964

ISSUE: Saving changes to two databases when both had a propagation primary key would not work in previous versions of EOF. A race condition occurred and only one database was able to generate primary keys.

RESOLUTION: EODatabaseContext has been changed to correct this behavior. Both databases can now generate their primary keys correctly.

Special characters crash Sybase adaptor

Apple reference # 2260785, 2261262

ISSUE: The SybaseEOAdaptor crashed when saving Text or BLOB data containing characters which could not be successfully encoded using the specified database encoding.

RESOLUTION: The adaptor has been fixed to detect the encoding failure and raise an exception, so that a database encoding which is able to handle the issue characters may be specified in the connection dictionary.

Can't use smallints as arguments to Sybase stored procedures

Apple reference # 2262888, 2274608

ISSUE: The Sybase adaptor did not allow the use of smallints as arguments to stored procedures.

RESOLUTION: The Sybase adaptor now allows stored procedures with smallint arguments.

Java garbage collecting fails with EOEditingContext

Apple reference # 2264063, 2264251, 2270489

ISSUE: EOEditingContext did not retain its registered objects. This could cause issues with Java garbage collection.

RESOLUTION: EOEditingContext now allows users to specify whether editing contexts retain their objects or not with the new class methods setInstancesRetainRegisteredObjects:flag:, getInstancesRetainRegisteredObjects, and reset. For API details, please see EOEditingContext.h. By default, in applications which contain Java, the editing context does retain all registered objects.

Deallocating an EODatabase containing snapshots causes crash

Apple reference # 2265751, 2272549

ISSUE: EODatabase released its snapshots too early during deallocation, causing a fatal exception to be raised if any snapshots were present.

RESOLUTION: The order in which instance variables are released by EODatabase has been corrected.

Memory leak in EODisplayGroup

Apple reference # 2217263, 2256402

ISSUE: A private variable was not being released in EODisplayGroup, causing a memory leak.

RESOLUTION: This variable is now released correctly.

Informix adaptor crashes on failed referential integrity check

Apple reference # 2272207, 2274351

ISSUE: If the InformixEOAdaptor was unable to find matching source and destination entities of a referential integrity constraint, it passed a nil pointer to the database, causing a crash.

RESOLUTION: The InformixEOAdaptor now detects this condition and handles it appropriately.

Incorrect time zone conversions in the SybaseEOAdaptor

Apple reference # 2276899, 2276907

ISSUE: When converting a time value to the server time zone, the SybaseEOAdaptor only substituted the server's time zone without actually adjusting the time value for the zone difference.

RESOLUTION: SybaseEOAdaptor now performs the conversion of the time value to the corresponding value in the server's time zone.

Can't subclass entities with fetch specifications

Apple reference # 2278492, 2279849

ISSUE: Due to an error in EOKeyValue encoding, EOModeler was unable to create a subclass when a fetch specification was associated with the entity being subclassed.

RESOLUTION: The encoding is now correct and entities with associated fetch specifications can be subclassed from within EOModeler.

Deleting objects with "toManyToOne" relationships sometimes fails.

Apple reference # 2278795, 2287021

ISSUE: In some circumstances, EOF did not correctly handle deletion of an object with a toManyToOne relationship, leaving rows in intermediate tables which should have been deleted.

RESOLUTION: The EOAccess layer now does a more thorough analysis of an object's relationships when it is deleted, and data in intermediate tables is correctly removed.

BusinessLogic framework fails to retain some global IDs

Apple reference # 2290233, 2290236

ISSUE: Several classes in the BusinessLogic framework example failed to retain global IDs for some enterprise objects, resulting in messages being sent to unexpectedly freed objects.

RESOLUTION: The classes now retain global IDs appropriately.

Editing the owning relationship in a nested editing context more than once corrupts the database snapshots.

Apple reference # 2280979, 2287025

ISSUE: Due to an error in the processing of array faults by the database context, editing the owning relationship in a nested editing context more than once corrupted the database snapshot for the owning object, resulting in database corruption.

RESOLUTION: The error in EODatabaseContext has been corrected.

EODisplayGroup instances leak

Apple reference #2286314

ISSUE: Each EODisplayGroup instance leaked two EOObserverProxy objects.

RESOLUTION: This leak in EODisplayGroup has been fixed.

Incorrect time zone conversion in EOAccess layer.

Apple reference #2287379

ISSUE: When converting a time value to the server time zone, the EOAccess layer substituted the server's time zone without actually adjusting the time value for the zone difference.

RESOLUTION: EOAttribute now performs the conversion of the time value to the corresponding value in the server's time zone.

Corrected in EOF 2.2 Sybase Adaptor Patch

All parameters required for Sybase stored procedures

Apple reference # 2203081

ISSUE: If you did not supply all values when executing a Sybase stored procedure, the execution would fail with an exception like:

```
Feb 19 11:23:53 WOF_3_5_Sybase_Patch[1027] Caught exception:EOGeneralAdaptorException

Sybase: Server:unknown Procedure:NEXT_MOVIE_PRIMARY_KEY Line:0 Procedure NEXT_MOVIE_PRIMARY_KEY expects
parameter @A_MOVIE_ID, which was not supplied.
```

This happens even though `A_MOVIE_ID` is not required for the stored procedure.

RESOLUTION: The Sybase adaptor no longer requires optional arguments to stored procedures.

Corrected in EOF 2.2 ODBC Adaptor Patch

ODBC Adaptor cannot execute stored procedures with output parameters

Apple reference # 2208503

ISSUE: The EOF 2.2 (WebObjects 3.5) version of ODBCEOAdaptor.framework introduced a bug which causes an error when using a stored procedure with an output parameter.

RESOLUTION: The ODBC adaptor now handles output parameters correctly.

ODBC adaptor leaks connections with Microsoft Access

Apple reference # 2209574

ISSUE: The EOF 2.2 (WOF 3.5) and earlier versions of ODBCEOAdaptor.framework did not release ODBC connections when using Microsoft Access (or any JET based data source) in order to work around a bug in the Microsoft odbcjt32.dll library; this bug caused a crash when SQLFreeConnect was called. The SQLFreeConnect bug was discovered in version 3.40.2829 of the DLL. Newer versions of the DLL (beyond 3.50) no longer exhibit the crashing issue.

RESOLUTION: The patched version of this framework now checks the version of the DLL more carefully and allows SQLFreeConnect to be called unless the DLL version is 3.4X. The adaptor no longer leaks the ODBC Connection when running with fixed versions of odbcjt32.dll.

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Published Date: Feb 20, 2012

EOF 2.2 Developer Patch 2 Overview

This document contains release notes and download information for EOF 2.2 Developer Patch 2, an update to Apple's Enterprise Objects Framework database access package for users of Windows NT and Solaris. This patch only addresses development issues; you should also download and install EOF 2.2 User Patch 2, which will update the user components of EOF 2.2. See **TIL article 70056** for more information.

The WebObjects Current Patch List, **TIL article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read these documents if you're not sure which patches you need on your system.

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Installing EOF 2.2 Developer Patch 2 on Windows NT 4.0

1. Download the Windows NT version of the patch from Apple's FTP site at ftp.info.apple.com. Also **download** the installer script, "patcher.nt.sh".

2. Log in as a user with Administrator privileges.

3. Open a Bourne shell. The Bourne shell should be available from your Start menu, under the WebObjects program group, or under your Apple root directory at NextLibrary\\Executables\\sh.exe.

4. Change to the directory containing the patch and the patch installer, "patcher.nt.sh".

5. Type the following at the shell prompt (make sure that there are no EOF applications running first):

```
./patcher.nt.sh -install EOF22_NT_Dev_Patch2.TAR.gz
```

For more information on using the patcher.nt.sh program, type the following at the command prompt:

```
./patcher.nt.sh -help
```

6. Reboot your Windows NT system

Installing EOF 2.2 Developer Patch 2 on Solaris

1. Download the Solaris version of this patch from Apple's FTP servers at ftp.info.apple.com. Also **download** the installer script, "patcher.sh".

2. Log in as root. If you're not sure how to log in as root, see your system administrator.

3. Change to the directory containing the patch and the patch installer, "patcher.sh".

4. Type the following at the shell prompt (make sure that there are no EOF applications running first):

```
./patcher.sh -install EOF22_Solaris_Patch2.TAR.Z
```

For more information on using the "patcher.sh" program, type the following at the command prompt:

```
./patcher.sh -help
```

5. Reboot your Solaris system

Problems Fixed

Corrected in EOF 2.2 Developer Patch 2

EnterpriseObjects examples Rentals data contains an invalid date value
Apple reference # 2323510

PROBLEM:
The data with which the Rentals database is populated in the EnterpriseObjects examples contained an invalid credit card expiration year, 2597. With SQL Server 7.0, Microsoft's ODBC Driver failed when trying to convert this date value to the smalldatetime type, causing the examples' install_database script to fail and the Rentals data to be incompletely installed.

RESOLUTION:
The problem date has been changed to a value within SQL Server 7.0's valid year range (1900-2079).

Corrected in EOF 2.2 Patch 1

Development tools may attempt to load an eomodel file twice for an application nested within an aggregate project
Apple reference # 2267783, 2176591

PROBLEM:
When an application was nested in an aggregate project, the development tools attempted, due to an error in the path searching code, to load an EOModel file twice .

RESOLUTION:
The logic used to locate model files now works correctly in the case of aggregate projects. Model files are loaded only once.

EOWizard not localizable
Apple reference # 2231705, 2177282

PROBLEM:
Certain resources needed for localization in EOWizard were not located in the correct place.

RESOLUTION:
Template files required for localizing the wizard have been moved from the framework's Resources directory to the ../Resources/English.lproj directory, making it possible to localize these resources.

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OPENSTEP and NeXTSTEP SPARC Hardware Compatibility Guide

This document describes in general terms the types of Sun Sparc hardware supported by NeXTSTEP Release 3.3 and OPENSTEP for Mach release 4.x.

NOTE: Apple Enterprise Software has suspended on-going development of new drivers and hardware support for the NeXTSTEP and OPENSTEP product lines. If you have specific requirements for drivers for hardware not currently supported, contact your AES sales representative for a quote for custom development work.

GENERAL SYSTEM REQUIREMENTS

CPU

- Sun microSPARC II, SuperSPARC II, and SuperSPARC single processor workstations (see http://www.sun.com/) models
- SPARCstation 4: 85
- SPARCstation 5: 85 & 110
- SPARCstation 10: 50, 60, & 90
- SPARCstation 20: 50, 51, 61, & 71

AVAILABLE HARD DISK SPACE

- User Environment:150 MB minimum, 250 MB recommended for stand-alone systems.
- User + Developer: Environments: 330 MB minimum, 400 MB recommended.

RAM REQUIREMENTS

RAM requirements vary depending upon the user's selection of graphics adapter. NEXTSTEP Release 3.3 supports a maximum of 256MB of memory.

- 24-bit color: 16 MB RAM Mininum, 32 MB RAM Recommended
- 8-bit grayscale/color: 16 MB RAM Minimum, 24 MB RAM Recommended

GRAPHICS ADAPTERS

8-bit color and grayscale at 1152x900 or 24-bit color at 1152x900 with appropriate video system. Release 3.3 supports multiple monitors with graphics cards for expanded desktop space.

MASS STORAGE

Floppy disk drive, SCSI hard disk drives, CD-ROM drives, 1/4 inch tape drives, Exabyte tape drives, and DAT tape drives are supported.

KEYBOARD & POINTING DEVICES

Sun keyboard and Sun optical or mechanical mouse.

PRINTERS

PostScript printers connected via a serial or parallel port. Color PostScript Level II printers are recommended for proper color support.

NETWORKING

Thick, thin, and twisted pair ethernet on board interfaces are supported. Ethernet transceivers may be necessary for installation at particular sites.

SOUND

16-bit audio at 22 and 44 khz is supported.

INSTALLATION

A Sun SCSI CDROM, or a supported network adapter and properly configured network installation host are required for installation of NEXTSTEP.

Supported Configurations

SPARCstation 4

- Graphics: 8 bit grayscale & color @ 1152x900
- Sound: On-board 16 bit sound @ 48kHz with Mic. plug-in
- Networking: On-board ethernet (TP and AUI)
- Bus: 1 SBus

SPARCstation 5

- Graphics: 8 bit grayscale & color @ 1152x900 with GX, Turbo GX, & Turbo GX+; 24 bit color @ 1152x900 with S24 on AFX bus
- Sound: On-board 16 bit sound @ 48kHz with Mic. plug-in
- Networking: On-board ethernet (TP)
- Bus: 3 SBus & 1 AFX Connector for Video card

SPARCstation 10

- Graphics: 8 bit grayscale & color @ 1152x900 with Turbo GX and Turbo GX+; 24 bit color @ 1152x900 with SX
- Sound: On-board 16 bit sound @ 48kHz with Mic. plug-in and sound box
- Networking: On-board ethernet (TP)
- Bus: 4 SBus

SPARCstation 20

- Graphics: 8 bit grayscale & color @ 1152x900 with Turbo GX and Turbo GX+; 24 bit color @ 1152x900 with SX
- Sound: On-board 16 bit sound @ 48kHz with Mic. plug-in
- Networking: On-board ethernet (TP)
- Bus: 4 Sbus

This article has been archived and is no longer updated by Apple.
Published Date: Feb 20, 2012

WebObjects 4: Password Protecting the WOStatsPage

The WOStats page gives a WebObjects application administrator useful information about their application and its real-world usage. This document explains how to use password protection to keep external requests from accessing your site's statistics page.
This article has been archived and is no longer updated by Apple.

Overview

By default, the password protection functions of WOStats are disabled. To enable them, you will need to change some of the files in the WOStatsPage project. The exact steps will depend on your operating system. After the function is enabled, it is easy to set a password in your application.

Enabling Password Protection on MacOS X Server

To enable password protection on MacOS X Server, first open the file

```
System/Library/Frameworks/WOExtensions.framwork/Resources/WOStatsPage.wo
```

in the WOBuilder application. If you do not have the development tools installed on this system, you will have to edit the files by hand; follow the instructions for Solaris and HP-UX systems, below.

- After the file is open, switch to the "Text Mode" view. This will display the HTML file in the upper window, and the application .wod file in the lower window.
- In the upper (HTML) window, line 10 is an HTML comment opening code, "<!--". Remove this line and the matching end comment line after the password object.
- In the lower window, find the ALLOWED: WOConditional statement. The next line will read:

```
condition=YES;
```

Replace this statement with:

```
condition=session.allowedToViewStatistics;
```

- In the same window, find the "REFUSED: WOConditional" statement. The next line will read:

```
condition=YES;
```

Replace this statement with:

```
condition=session.allowedToViewStatistics;
```

Password protection is now enabled. Follow the instructions below to set a password for your application.

Enabling Password Protection on Solaris or HP-UX

To enable password protection on a Solaris or HP-UX system, first open this directory under your Apple root directory (usually /Apple or /opt/Apple):

```
Library/Frameworks/WOExtensions.framwork/Resources/WOStatsPage.wo
```

This directory will contains two files, WOStatsPage.html and WOStatsPage.wod. Using a text editor, make the following three changes:

- Line 10 of the WOStatsPage.html file is an HTML comment opening code, "<!--". Remove this line and the matching end comment line after the password object.
- In the WOStatsPage.wod file, find the "ALLOWED: WOConditional" The next line will read:

```
condition=YES;
```

Replace this statement with:

```
condition=session.allowedToViewStatistics;
```

- Also in the WOStatsPage.wod file, find the "REFUSED: WOConditional" statement. The next line will read:

```
condition=YES;
```

Replace this statement with:

```
condition=session.allowedToViewStatistics;
```

Password protection is now enabled. Follow the instructions below to set a password for your application.

Enabling Password Protection on Windows NT 4.0

To enable password protection on Windows NT, first open this directory under your Apple root directory (usually C:\\Apple):

```
Library/Frameworks/WOExtensions.framwork/Resources/WOStatsPage.wo/
```

This directory will contains two files, WOStatsPage.html and WOStatsPage.wod. Using a text editor or WOBuilder, make the following three changes:

- Line 10 of the WOStatsPage.html file is an HTML comment opening code, "<!--". Remove this line and the matching end comment line after the password object.
- In the WOStatsPage.wod file, find the "ALLOWED: WOConditional" statement. Uncomment the next line and comment out the line that reads:

```
condition=YES;
```

The statement should now read:

```
ALLOWED: WOConditional {
condition=session.allowedToViewStatistics;
//condition=YES;
}
```

- Also in the WOStatsPage.wod file, find the "REFUSED: WOConditional" statement. Uncomment the next line and comment out the line that reads:

```
condition=YES;
```

The statement should now read:

```
REFUSED: WOConditional {
condition=session.allowedToViewStatistics;
//condition=YES;
nagate="1";
}
```

Password protection is now enabled. Follow the instructions below to set a password for your application.

Using Password Protection

Once password protection is enabled, set the password in your Application.wos file's **init** method. The syntax is:

```
[[self statisticsStore] setPassword: @"MyPassword"];
```

Published Date: Feb 18, 2012

WebObjects 4.0.1: DirectToWeb Assistant Error Workaround

The workaround described in this article has been included in WebObjects 4.0.1 Patch 2 and subsequent patches. Please see the WebObjects Current Patch List, article **70037**, for information on the most current patches for WebObjects and Enterprise Objects Framework. This obsolete article is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.
Note: Any reference to Mac OS X Server in this article pertains to version 1.2, which was released prior to May 2001.

Q: I am using DirectToWeb on Mac OS X Server with WebObjects 4.0.1. When I try to use the Assistant to generate a page, the following exception message will appear:

```
[DTWTemplate writeAndAddToProjectComponentNamed:]: selector not recognized
```

A: This is a known bug with DirectToWeb, Apple reference number 2315706. To avoid this bug, you will need to download and install an updated version of one of the Mac OS X Server library files. To install the updated library:

1. **Download** the Mac OS X Server version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/webobjects/

patches/4.0.1/libDTWGeneration.A.dylib.tar
```

2. Uncompress the file. The filename should be **libDTWGeneration.A.dylib**

3. Use **su** to log in as the root user

4. Change to the **/usr/lib/java** directory

5. Back up the current **libDTWGeneration.A.dylib** file

6. Replace the current **libDTWGeneration.A.dylib** file with the file you just downloaded

You can now use the Assistant to generate new web pages.

Published Date: Feb 18, 2012

HyperCard: Dial Sounds Different with System 6.0.5

I have a new Macintosh LC, and a HyperCard note stack I've used for the past six months, which includes phone dialing routines. The dialer, which I've used by holding my handset to the speaker of a Macintosh IIx, no longer works. Tones are generated, but regardless of the distance between the Macintosh speaker and phone mouthpiece, they don't trigger the phone system. I've done some audio comparison tests, and it sounds as if the LC's tone generator is inaccurate, perhaps as much as a quarter-tone high.

This article has been archived and is no longer updated by Apple.
As a result of changes in the Macintosh OS, support for DTMF tones is no longer available. HyperCard 2.0 uses digitized sounds with the Dial command. HyperCard 1.2.x will have difficulty producing the exact tones required to trigger the telephone system. Upgrading to HyperCard 2.0 should solve the problem.

You may want to consider the following:

* Try dialing with pauses between the tones. Commas in the string cause a one-second delay.

* A direct connection to the Macintosh results in higher fidelity and may trigger the phone system. The Macintosh sound circuitry is capable of producing much higher-quality sound than the speaker can pass. HyperDialer connects directly to the sound port and eliminates both our speaker and the telephone microphone.

Published Date: Feb 18, 2012

WebObjects 4: Solaris "Can‘t find Xa.o" error message

Q: When I try to compile my WebObjects 4 application on a Solaris 2.6 system, I get the error message:

```
Link error, can't find Xa.o
```

My app compiles and links without this problem on other platforms. What's wrong?

This article has been archived and is no longer updated by Apple.
A: Some Solaris 2.6 distributions did not include the operating system package

```
System SUNWarc Archive Libraries
```

which is required by the WebObjects linker. The archive libraries are included in your Sun distribution and can be added to your system with the "pkgadd" command.

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WebObjects 4: Cross-Model Relationships And the Java Client

In WebObjects 4, there is a known bug with the EOF Wizard, Apple reference # 2178911. This document describes how to work around this bug and generate the missing Java client subproject.
This article has been archived and is no longer updated by Apple.
Note: Any reference in this article to Mac OS X Server pertains to version 1.2, which was released prior to May 2001.

The Problem

There is a known problem in WebObjects 4 concerning the Wizard panel. When creating a WebObjects application with the Wizard, if you:

- Select "Java Client" as your application type
- Choose an EOModel file that contains cross-model relationships to another EOModel file

instead of giving the user the option of selecting a template, such as EOF Application Skeleton, Single Table, or Master-Detail, the Wizard will silently go straight to Project Builder. None of the ClientJava.subproj files will be generated.

The Workaround

To work around this bug and create a Java Client project that contains models with cross-model relationships, or models that reside in frameworks:

- Start Project Builder and create a new WebObjects Application with the New... menu command.
- Choose "None" for Available Assistance and "Java" as the Primary Language in the WebObjects Application Wizard.
- Remove the ClientSideJava.subproj that is automatically created when you create your project. Use the Delete command from Windows NT Explorer (if working on NT) or the Delete command in the File Viewer (if working with Mac OS X Server). You will not be able to delete this subproject from within Project.
- Create a new subproject named ClientSideJava of type EOJavaClient subproject with ProjectBuilder "New SubProject..." command.
- Go to the Interfaces class folder inside the ClientSideJava.subproject, and use Project Builder's File -> New in Project command to generate a new Interface file.
  Please note that by convention, the interface file name in the ClientSideJava subproject is the same as the application name. For example, for an application named MyApp, your interface file should be named MyApp.nib.
- Put the eomodel file you want to use into the Project Builder Resources folder.
- The WebObjects Java Client Interface Wizard will come up. You can now specify the EOModeler file to be used.
  The wizard will create an English.lproj directory and the .nib file skeleton that you want.

Note: Please remember to add EOJavaClient.framework under the Frameworks directory of Project Builder; otherwise, your compilation will fail.

Published Date: Feb 18, 2012

WebObjects 4: Control-Dragging in Windows NT Project Builder

Q: On other platforms, I can control-drag files to sort them in the Project Builder file browser. This doesn't seem to work on Windows NT versions of Project Builder. How can I enable this feature on Windows NT?
This article has been archived and is no longer updated by Apple.
A: To enable control-dragging on Windows NT, type the following at a Bourne shell:

```
defaults write NSGlobalDomain NSModifierFlagMapping "{LeftControl=Command;RightControl=Control;LeftAlt=Alt;RightAlt=Alt}"
```

This allows you to use the the right control key (or any key you set to "Control") to control-drag files in Project Builder on Windows NT. You can also set this mapping in the Project Builder domain if you only want it to apply to Project Builder. Using NSGlobalDomain will apply it to all of the current user's applications.

For more information on customizing WebObjects' text system, see the TextDefaultsAndBindings documentation in the Programming Topics section of WOInfoCenter.

Published Date: Feb 18, 2012

WebObjects 4: Using the NSGregorianDateFormatter

This document discusses how to create and use an NSGregorianDateFormatter under WebObjects 4.
This article has been archived and is no longer updated by Apple.
Q: I'm trying to use a NSGregorianDateFormatter to format dates. I'm following the procedure suggested in the documentation, but I get an error message when I try to use the date formatter. What am I doing wrong?

A: Make sure you're applying the NSGregorianDateFormatter to the date, and not to the enclosing object. The correct way to use an NSGregorianDateFormatter is:

```
// construct a date, then turn it into a string with toString()
String aDateString;
aDateString = (new NSGregorianDate()).toString();
NSGregorianDate aDate;

// use whatever formatting that you want...
NSGregorianDateFormatter aDateFormat = new NSGregorianDateFormatter("%m/%d/%Y", false);

// format your date
aDate = (NSGregorianDate)aDateFormat.objectValueForString(aDateString);
```

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WebObjects 4: Oracle Adaptor for Mac OS X Server

The Oracle adaptor described in this article has been included in WebObjects 4.0.1 Patch 2 and subsequent patches. Please see the WebObjects Current Patch List, article **70037**, for information on the most current patches for WebObjects and Enterprise Objects Framework. Apple recommends that WebObjects 4.0.1 users install the current patch rather than downloading the Oracle adaptor directly. This obsolete article is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.
Note: Any reference in this article to Mac OS X Server pertains to version 1.2, which was released prior to May 2001.

About This Patch

This is an update to WebObjects 4.0.1 for Mac OS X Server. The Oracle Adaptor allows WebObjects applications on Mac OS X Server to access Oracle database servers on the network. This package contains no changes for WebObjects on other platforms.

Installing the Oracle Adaptor for Mac OS X Server

1. Download the adaptor from Apple's FTP site at ftp.info.apple.com.

2. Uncompress the Mac OS X Server package file. Your web browser or FTP client may perform this step for you.

3. Log in as root. If you're not sure how to log in as root, see your system administrator.

4. Double-click on the OracleEOAdaptorUpdate.pkg file. Make sure that no other applications are running before you do this step.

5. Click the Install button in the Installer package window. An Install Package panel will open.

6. Click 'Install' in the Install Package panel and, when prompted for confirmation, **click OK** to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.

7. Find the WOInfoIndexer executable in the Workspace Manager and double-click on it. This runs an indexing script so that Oracle Adaptor documentation will be available through WOInfoCenter.

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WebObjects 3.5.1: Using Solaris Frameworks

Under Solaris, frameworks are a simple wrapper around standard shared libraries. Apple uses the Solaris dlopen(3x) call to load in frameworks. This document explains in more detail how to work with frameworks under Solaris. This article assumes that you are using WebObjects 3.5.1. This article has been archived and is no longer updated by Apple.

How Solaris Shared Libraries Work

Shared libraries are given a name during link time (see ld and the -h flag). This name can either be a path (a string with a '/') or a simple name (a string without a '/'). If the library is linked with a path then that path is the only place that the library will be searched for, no run time flags can be given to make Solaris look elsewhere. If the library is linked with a simple name then several directories are searched, starting with any directory named in the LD_LIBRARY_PATH env variable, any directory specified with the -R flag when linking the WOF app and then /usr/lib.

Default Framework Behavior in WOF 3.5.1

The default behavior in WOF 3.5.1 is to link frameworks with a hardcoded path name of:

```
/XXX.framework/Versions/YYY/XXX
```

where **XXX** is the framework name and **YYY** is the framework version. Since the framework was linked with a fully defined path name the only place that it can be installed is in the root directory.

How to Modify the Default Behavior

The shared library's name can be changed with the INSTALL_NAME_DIRECTIVE of Makefile.postamble. The format of this directive is as follows

```
INSTALL_NAME_DIRECTIVE = -install_name XXXX
```

where XXXX is the name that gets added to the -h flag. During development of your app you should set the INSTALL_NAME_DIRECTIVE to a blank string. This will cause the framework to get link in with a path that is hardcoded to whatever place the framework will be after it is linked in. This makes it easy to test out your executables without having to worry about where your frameworks should go after building.

If you know exactly where you want to install your frameworks and are not worried about moving them in the future just set the INSTALL_NAME_DIRECTIVE to a hardcoded path name. For example if you want to install version A of the DATA framework in the /opt /Frameworks directory set the directive as follows

```
INSTALL_NAME_DIRECTIVE = -install_name /opt/Frameworks/DATA.framework/Versions/A/DATA
```

If you want total freedom over where to install your frameworks you can set the INSTALL_NAME_DIRECTIVE to be a simple name. For example with the DATA framework set the directive as follows

```
INSTALL_NAME_DIRECTIVE = -install_name DATA
```

Before you run your WOF app you need to define the LD_LIBRARY_PATH env variable to the location of the framework

```
setenv LD_LIBRARY_PATH /opt/Frameworks/DATA.framework/Versions/A/
```

or you can add the following to the Makefile.preamble of your main WOF app

```
OTHER_LDFLAGS = -R /opt/Frameworks/DATA.framework/Versions/A
```

Another solution would be to provide the INSTALL_NAME_DIRECTIVE a relative path to your frameworks. For example if you are going to install the DATA framework in the same directory as the main WOF app you can set the INSTALL_NAME_DIRECTIVE as follows

```
INSTALL_NAME_DIRECTIVE = -install_name DATA.framework/Versions/A/DATA
```

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MacDFT Group 1: Timer and Performance Over Token Ring

What happens when you change the Group 1 timer values on the Token Ring card? People here are complaining about the speed of MacDFT compared to the PS/2's that they had connected on the network. Would changing the values have any effect on the response time of MacDFT over Token Ring?

This article has been archived and is no longer updated by Apple.

We don't recommend changing the Response and Acknowledge timers, unless you really know what you are doing. You can experiment with the Inactivity Timer, if you often get timeouts from the hosts. While selecting the MacDFT Config CDEV, pressing Command-T brings up the Group 1 Timers window with three timers. Only experiment with the Inactivity Timer, which is the bottom value. We don't expect changing these values would increase the performance of MacDFT.

The performance differences between the machines is not due to the block or even packet size (if both systems are on Token Ring), but is most likely due to MacDFT's intrinsic program speed. However, if the PS/2 is a LU and is "directly" connected to the controller, and, if the Macintosh is a PU having to go through a gateway, there can be substantial performance differences. Or if the PS/2 is on Token Ring, and the Macintosh is on coax, the PS/2 will be faster. But again, if everything else is equal, the Macintosh will still be slower.

In file transfer for example, under TSO when you transfer a file you allocate space in blocks, tracks, or cylinders by specifying BLKS, TRKS, or CYLS. Under CMS this is done automatically, depending on the file type you select, and can't be changed by the client. And even under TSO when you allocate the space, this doesn't influence perceptibly the throughput performance.

Data is sent one buffer-full at a time, and the buffer size is set to be the screen size. So, if your terminal is configured to have a 80*24 screen, during file transfer approximately 1920 bytes will be transferred at a time.

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WebObjects 4: NSLog and Slow NT Application Response Time

The workaround described in this article has been included in WebObjects 4.0.1 Patch 2 and subsequent patches. Please see the WebObjects Current Patch List, TIL article **70037**, for information on the most current patches for WebObjects and Enterprise Objects Framework. This obsolete article is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.
Q: I've upgraded my Windows NT installation from WebObjects 4.0 to WebObjects 4.0.1, and some of my applications are much slower than they were on 4.0. How can I fix this problem?

A: There is a known problem with NSLog in WebObjects 4.0.1. In some cases, NSLog statements can take as much as thirty seconds to execute. To see if you are encountering this problem, try adding this code (or its Java equivalent) to your application's main function:

```
int index;
for (index=0; index<100;index++)
 NSLog(@"HELLO");
```

If this slows your application down significantly, you are most likely encountering this bug. Apple is actively working on a patch for this problem; more information will be posted here when the patch is available. Until the patch is ready, a workaround is to manually replace NSLog() with an equivalent function that does not experience these delays. For example, incorporate the following code into main:

```
extern void _NSSetLogCStringFunction(void(*)(const char *, unsigned, BOOL));

static void _GarbageFreeLogCString(const char *message, unsigned length,
BOOL withSyslogBanner) {
   fprintf(stderr, "%s\\n", message);
}

int main (int argc, const char *argv[]) {
   NSAutoreleasePool *pool = [[NSAutoreleasePool alloc] init];
   int exitCode;

   setbuf(stderr, NULL);
   _NSSetLogCStringFunction(_GarbageFreeLogCString);
   exitCode = WOApplicationMain(@"Application", argc, argv);
   [pool release];
   return exitCode;
}
```

Be aware that this code references private APIs; this is an **unsupported** workaround and users should use these instructions at their own risk. Apple will not guarantee or provide support for this procedure. In addition, this function does not contain any Windows I/O code and will not give any output if run from a DOS shell.

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WebObjects: HP-UX Bug May Cause WebObjects Problems

A bug in an HP library may cause a variety of errors in applications running on HP-UX machines with PA2.0 CPUs. It can affect HP-UX applications built with or without WebObjects. A fix for this problem is available from HP. This document explains:

1. General information about the bug

2. How can I tell if a particular HP-UX machine has the bug?

3. How can I tell if a particular application may be affected by the bug?

4. How can I patch the bug?

5. How can I work around the bug?

6. Technical details

Along with this document, you should download the file **Register.tar**. This archive contains source for a small application that tests for the bug's presence and example files useful for working around the bug. This document assumes that you are using WebObjects 4. However, other WebObjects versions are susceptible to the bug and should be patched using the HP patch mentioned below.

This article has been archived and is no longer updated by Apple.

1. GENERAL INFORMATION ABOUT THE BUG

This bug happens only on Hewlett Packard PA2.0 CPUs. For these CPUs, HP's library **/usr/lib/libdce.sl** has a bug in which a particular function corrupts a floating-point register. The function is pthread_yield(), part of the 'pthreads' package. Keep in mind that even if your code does not directly call this function, both Apple's frameworks and third-party libraries (such as Sybase's client library) may call it and trigger the bug. HP concurs that this is a bug in their library, and have assigned it bug number JAGAB25393. A patch from HP is available; please see section 4, below, for details.

It's difficult to predict the possible effects of the bug, so please read the sections below that describe how to test your system. Problems observed so far include:

- applications suddenly slow to a crawl, and sometimes recover
- calculations produce incorrect results

Keep in mind that this bug could cause a variety of other symptoms, including sporadic ones.

2. HOW CAN I TELL IF A PARTICULAR HP-UX MACHINE HAS THE BUG?

To see if your system (your HP CPU plus libraries) has the bug, run a test application:

1. Download and unpack the **Register.tar** file from Apple's ftp site

2. Open a shell window

3. Type: `cd Register`

4. Type: `make`

   You can ignore the warnings from the compiler and linker

5. Type: `./Register`

   - If your system does **not** have the bug, the output from step 5 will be:
     10
     10
   - If your system **does** have the bug, the output will look like:
     10
     <some number other than 10>

We recommend that you use this test app instead of looking at the CPU model (because if you receive a new library in the future, having a PA2.0 CPU will no longer cause problems).

3. HOW CAN I TELL IF A PARTICULAR APPLICATION MAY BE AFFECTED BY THE BUG?

If the above test shows that your system does have the bug, you should assume that all your applications are affected, and apply the patch or

workaround described below to all applications. This will simplify your work, because it can be difficult to determine which applications are affected. The bug affects only applications that use HP's 'pthreads' package. This includes (at least) applications using 'cthreads' or Foundation's NSThread class, since both of those use 'pthreads'. Keep in mind that even though an application's code may not use threads directly, it may include libraries (such as Sybase's client library) that use threads. To see if your application uses threads, debug it under gdb, breakpoint in "pthread_create", and run the application.

If you **do** hit a breakpoint in "pthread_create", your application uses threads and risks encountering the bug. If you **don't** hit a breakpoint while running your application through typical operations, your application may not be at risk.

Example:

```
shell> gdb myApplication
GDB is free software and you are welcome to distribute copies of it
under certain conditions; type "show copying" to see the conditions.
There is absolutely no warranty for GDB; type "show warranty" for details.
GDB 4.15.3 (hppa1.1-hp-hpux10.10),
Copyright 1996 Free Software Foundation, Inc...
(gdb) break pthread_create
Breakpoint 1 at 0x5a58
(gdb) run
Starting program: /tmp_mnt/Net/custom/homes/ranch/morton/pthread
Breakpoint 1 at 0x7aa431f8
```

The following output reveals that your application uses threads, which tells you that it may encounter the bug.

```
Breakpoint 1, 0x7aa431f8 in pthread_create ()
(gdb) quit
The program is running. Quit anyway (and kill it)? (y or n) yes
```

4. HOW CAN I PATCH THE BUG?

HP has provided a patch for this problem. Apple recommends that all WebObjects users apply this patch. To get more information on the patch, point your Web browser to:

http://us-support.external.hp.com

If you don't have an account, click on the "New Users Register Now!" to start the registration process. Once you've logged in, click the "Individual Patches" link, then the "Retrieve a Specific Patch" link. The patch number for this patch is PHHS_16429. This will show a page that allows downloading the patch and also gives details as to which modules are affected. Complete installation instructions on the patch are available from the HP Web site.

The patch is about 28 MB. As with any patch, you should back up your system beforehand, and test everything afterwards.

After you install the patch, you do not need to reboot or rebuild applications affected by the register-trashing bug--your applications should begin to work immediately. (The patch also fixes some other things that **do** require a reboot, though.)

Apple recommends that all users install this HP patch. However, you should note this warning from HP's installation instructions:

IMPORTANT NOTE

> Oracle 7.3.3 and above will need to be relinked. This patch contains changes to the libcma library.
> Applications such as Oracle that use this library and are built static will need to be relinked.
> For information and help for the rebuild please contact your Oracle support personnel.

Because some users may not be able to install the patch, Apple also provides an alternate workaround for this bug in Section 5, below.

5. HOW CAN I WORK AROUND THE BUG?

Apple recommends that you install HP's patch, as described in section 4. However, if you are unable for some reason to install the patch, you can work around the bug by:

- Installing an alternate library which HP ships, but does not install by default.
- Changing either your application's makefiles or WebObjects' makefiles to link with this library

You do **not** need to change how you build frameworks or libraries. The only thing that matters is how you link when you build executable files (applications and tools).

Because the workaround involves linking with a static library instead of a dynamic library, there are two downsides to implementing the workaround in every application:

- Your applications will use more memory. This is especially important if you run multiple copies of your application--each instance will use more memory. When linked with the static library, an executable grows by about 3 MB on disk, so the memory used while running will probably grow by a similar amount.
- Your applications will not automatically incorporate changes that may appear in the shared library when you patch or upgrade HP-UX.

Despite these potential problems, we recommend that, when in doubt, you should add the workaround to all apps. Of course, using the HP patch is preferable to either.

The alternate library in question is:

```
/opt/dce/lib/libdce.a
```

You will need to use HP's installer software, /usr/sbin/swinstall, to install the software. Details of the installation will depend on your system and configuration.

Once the library is installed, you can modify selected applications to link with it by:

1. If the source directory does not have a Makefile.preamble file, create a Makefile.preamble containing this one line:

```
LOCAL_LDFLAGS += -L/opt/dce/lib -ldce
```

If you already have a Makefile.preamble, add the line above to the end of it (unless the file already has a line defining LOCAL_LDFLAGS, in which case you should add the options "-L/opt/dce/lib -ldce" to the end of that line).

2. "Make clean" your application (since the above change will not be enough to cause "make" to rebuild) and then "make".

Or you can modify two system-wide make files that WebObjects uses to build WO applications and tools. This saves you time, and makes sure no project slips through the cracks, but it may have downsides to this approach, as discussed above. To modify the two system-wide make files:

1. Log in as or su to root and cd to the **Register** directory

2. Type the following commands to create the local makefiles (if they don't already exist) and patch the makefiles:

```
mkdir -p /opt/Apple/Local/Developer/Makefiles/pb_makefiles
touch /opt/Apple/Local/Developer/Makefiles/pb_makefiles/tool.make.preamble
cp /opt/Apple/Developer/Makefiles/pb_makefiles/wo-preamble.make wo-preamble.make.bkp
cp /opt/Apple/Local/Developer/Makefiles/pb_makefiles/tool.make.preamble tool.make.preamble.bkp
cat preamble-additions >> /opt/Apple/Developer/Makefiles/pb_makefiles/wo-preamble.make
cat preamble-additions >> /opt/Apple/Local/Developer/Makefiles/pb_makefiles/tool.make.preamble
```

3. "Make clean" any application you need to rebuild (since the above change will not be enough to cause "make" to rebuild) and then "make".

Try rebuilding the Register application to make sure you've installed and linked to the new library correctly. After making the application, use the "chatr" command to examine the application's attributes:

```
chatr Register
```

If you see a line in the output that looks like:

dynamic /usr/lib/libdce.1

then the application is still using the old library. If this line does not appear, the application is using the new library. Since the new library is statically linked, no entry will appear for it.

6. TECHNICAL DETAILS

The bug is that, on PA2.0 CPUs, floating point register 12 ($fr12) is not preserved across calls to pthread_yield(). This violates the HPPA calling conventions. Many system calls use pthread_yield(), so they may also fail to preserve the register. This bug exists in the current release of the library /usr/lib/libdce.sl. The non-shared ("archive") version of this library (optionally installed in /opt/dcelib/libdce.a) does not have the bug. We have no reason to believe that the sharing itself causes the bug.

The bug typically affects compiled code which is optimized, since optimizations causes floating-point registers to store local variables or intermediate values. Because many compiler allocate registers in ascending order, the bug will often have no effect on a method or function that declares fewer than five local floating-point values.

In summary, the bug occurs when:

- Your application runs on HP-UX 10.xx system.
- Your machine has a PA2.0 CPU.

- Your application uses HP's 'pthreads' package.
- You have five (?) or more floating-point variables in a function/method.
- You ask the compiler to optimize (that is, variables go in registers).
- You make certain system calls at a time when variables are meaningful.

This bug can trash floating-point registers at various points in your code, Apple's frameworks, and third-party libraries. One affect it has on the Foundation framework is especially problematic: At the time that NSRunLoop fires an NSTimer, $fr12 contains the current real time. If the code invoked by a timer makes any of several system calls, NSRunLoop sees an incorrect time. It may conclude that other NSTImers are "way behind", and begin firing them madly to catch up. This can cause applications to perform very slowly, sometimes recovering later.
Published Date: Feb 18, 2012

NeXTSTEP 3.3 Patch 2 Overview

This patch is now obsolete. Please see the NeXTSTEP Current Patch List, TIL article **70038**, for information on the most current patches for NeXTSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.

This article has been archived and is no longer updated by Apple.
NeXTSTEP 3.3 Patch 2 supercedes NeXTSTEP 3.3 Patch 1, released in 1995. If you have already installed Patch 1 on your system, you can install Patch 2 over your existing installation. If you have not installed Patch 1, you do not need to. See **TIL article 72066** for details on NeXTSTEP 3.3 Patch 1.

NeXTSTEP 3.3 Patch 2 also supercedes the Foundation User Patch. Again, Patch 2 can be installed on a system with this patch previously installed. If you have not installed the Foundation User Patch, you do not need to. See **TIL article 72116** for details on the Foundation User Patch.

NeXTSTEP 3.3 Patch 2 comes in several packages, depending on the User platform version. For Intel and NeXT-branded Motorola hardware platforms, download the file **NS33CISCUserPatch2.tar**. For Solaris and HP-UX platforms, download the file **NS33RISCUserPatch2.tar**.

In addition, there is a NeXTSTEP 3.3 Patch 2 Developer package, **NS33DeveloperPatch2.tar**. This is a multi-architecture installer package, and should be installed on systems that have NeXTSTEP 3.3 Developer installed.

Important: If you are installing the Developer patch, please read section 6 of the release notes carefully. There are some manual steps you must take to prevent some Year 2000 issues.

If you use Enterprise Objects Framework on your system, it should be installed before you install NeXTSTEP 3.3 Patch 2. Patch 2 includes fixes in system components that were originally installed by either EOF or the Foundation User Patch.

The NeXTSTEP and EOF software packages should be installed in the following order:

- NeXTSTEP 3.3 User
- NeXTSTEP 3.3 Developer (optional)
- EOF 1.1 User (optional)
- EOF 1.1 Developer (optional)
- NeXTSTEP 3.3 Patch 2 User package
- NeXTSTEP 3.3 Patch 2 Developer package (optional)

After download, you may need to decompress the file with the command (example):

```
tar xf NS33CISCUserPatch2.tar
```

This will unpack the single "tar" file used for download into the .pkg format compound document used by the NeXTSTEP installer. Your Web browser or FTP client may perform this step for you.

To install NeXTSTEP 3.3 Patch 2, perform the following steps:

1. Log in as root on your NeXTSTEP system. If you're not sure how to log in as root, see your system administrator.
2. Double-click the **NS33CISCUserPatch2.pkg** (or **NS33RISCUserPatch2.pkg**) file icon.
3. Click the Install button in the Installer package window. An Install Package panel will open.
4. Click Install in the Install Package panel and, when prompted for confirmation, click OK to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.
5. If you do not need to install the Developer patch, skip to step 8 to complete the installation. To install NeXTSTEP 3.3 Developer Patch 2, double-click the **NS33DeveloperPatch2.pkg** file icon.
6. Click the Install button in the Installer package window. An Install Package panel will open.
7. Click Install in the Install Package panel and, when prompted for confirmation, click OK to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.
8. When the installation completes, the system must be rebooted. Log out and use the reboot button on the login panel.

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Published Date: Feb 20, 2012

EOF 1.x: Correcting Century Issues in the EOF Examples

Apple is not aware of any century problems with Enterprise Objects Framework versions 1.1 or 1.2 which would affect development or deployment of EOF applications. However, two scripts which install example data on Oracle for the Enterprise Objects Examples use a two-digit year format, which is not consistent with Apple's recommended date-handling practice. This article provides instructions on how to convert these example scripts to the preferred four-digit year format.

EOF uses many components of the underlying OPENSTEP or NeXTSTEP system. In order to ensure that EOF is year 2000 compliant, you must install the appropriate OPENSTEP, OPENSTEP Enterprise, NeXTSTEP, or PDO patch on your system, following the install order given in the patch overview document.

EOF 1.0 has not been tested for year 2000 problems; current EOF 1.0 users will be provided with an upgrade to EOF 1.1 at no charge. For more information, please see Apple Enterprise Software's Year 2000 page at http://www.apple.com/enterprise/y2k/. For year 2000 information on EOF 2.X, please see **TIL article 70085**.

For more information on Apple's Year 2000 program and the Year 2000 status of Apple software products, please visit the Year 2000 Information Page at http://www.apple.com/about/year2000/

This article has been archived and is no longer updated by Apple.
Two scripts which populate database tables for the People example use two-digit years in their date values. Customers can edit these scripts to use the four-digit year format which Oracle provides. The two problem scripts are "installPEOPLE.sqloracle6" and "installPEOPLE.sqloracle7" in /NextDeveloper/Examples/EnterpriseObjects/PeopleDBScripts.

In "installPEOPLE.sqloracle6", for all he insert statements into the EMPLOYEE table, change the two-digit year data to use a four-digit year. For example:

```
insert into EMPLOYEE values ( 101, 101, 'Winston', 'James', '415-323-7265', '6269 Washington Ave.',
'Woodside', 'CA', '94160', 1, ' 14-JAN-89', 101, 5700.00 );
```

should be changed to:

```
insert into EMPLOYEE values ( 101, 101, 'Winston', 'James', '415-323-7265', '6269 Washington Ave.',
'Woodside', 'CA', '94160', 1, ' 14-JAN-1989', 101, 5700.00 );
```

In "installPEOPLE.sqloracle7", for all the insert statements into the EMPLOYEE table, change the two-digit year data to use a four-digit year and change the date format to a four-digit year specifier. For example:

```
insert into EMPLOYEE values ( 101, 101, 'Winston', 'James', '415-323-7265', '6269 Washington Ave.',
'Woodside', 'CA', '94160', 1, TO_DATE(' 14-JAN-89', ' DD-MON-YY'),101, 5700.00 );
```

should be changed to:

```
insert into EMPLOYEE values ( 101, 101, 'Winston', 'James', '415-323-7265', '6269 Washington Ave.',
'Woodside', 'CA', '94160', 1, TO_DATE(' 14-JAN-1989', ' DD-MON-YYYY'),101, 5700.00 );
```

The scripts may be modified using any text editor, or by the use of 'sed', as demonstrated below. You must have the proper permissions to edit these files.

```
mv installPEOPLE.sqloracle6 installPEOPLE.sqloracle6.bak
sed 's/[0-9][0-9]\\-[A-Z][A-Z][A-Z]\\-/&19/g' installPEOPLE.sqloracle6 > installPEOPLE.sqloracle6

mv installPEOPLE.sqloracle7 installPEOPLE.sqloracle7.bak
sed 's/[0-9][0-9]\\-[A-Z][A-Z][A-Z]\\-/&19/g' installPEOPLE.sqloracle7.bak | sed 's/YY/YYYY/g' foo >
installPEOPLE.sqloracle7
```

Published Date: Feb 20, 2012

EOF 2.x: Correcting Century Issues in the EOF Examples

Apple is not aware of any century problems with Enterprise Objects Framework versions 2.1 or 2.2 which would affect development or deployment of EOF applications. However, two scripts which install example data on Oracle for the Enterprise Objects Examples use a two-digit year format, which is not consistent with Apple's recommended date-handling practice. This article provides instructions on how to convert these example scripts to the preferred four-digit year format.

EOF uses many components of the underlying OPENSTEP or NeXTSTEP system. In order to ensure that EOF is year 2000 compliant, you must install the appropriate OPENSTEP, OPENSTEP Enterprise, NeXTSTEP, or PDO patch on your system, following the install order given in the patch overview document.

EOF 2.0 has not been tested for year 2000 problems; current EOF 2.0 users will be provided with an upgrade to EOF 2.1 at no charge. For more information, please see Apple Enterprise Software's Year 2000 page at http://www.apple.com/enterprise/y2k/ For year 2000 information on EOF 1.X, please see **TIL article 70084**.

For more information on Apple's year 2000 program and the year 2000 status of Apple software products, please visit the Year 2000 Information Page at http://www.apple.com/about/year2000/

This article has been archived and is no longer updated by Apple.
The ModelerBundler example in the Enterprise Objects Examples on OpenStep 4.2 and OpenStep Enterprise 4.2 uses a two-digit year format for dates. The string is only used for display, not editing, so there is no problem with the function of the example. However, this is not prefered usage for Year 2000 compliant applications. The Apple reference number for this bug is 2341388.

Customers can edit the source for this example and rebuild it if a four-digit year format is desired. In $NEXT_ROOT/NextDeveloper/Examples/EnterpriseObjects/ModelerBundle/CustomeColumns.m, change the date format on line 67 from %y to %Y:

```
67c67
< formatter = [[NSDateFormatter alloc]
initWithDateFormat:@"%m/%d/%y: %H:%M" allowNaturalLanguage:NO];
---
> formatter = [[NSDateFormatter alloc]
initWithDateFormat:@"%m/%d/%Y: %H:%M" allowNaturalLanguage:NO];
```

Rebuild the example according to the instructions in the EnterpriseObjects directory.

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WebObjects 4: Database Save Problem with Custom Data Types in Java

Custom Value Coding allows developers to create their own custom data types. These data types can then be assigned as an attribute's data type in an Enterprise Object (EO) and stored in the database like any other supported data type. General information about creating custom data types can be found in the EOF Developer's Guide, pp. 111-113. This article describes a problem that developers may encounter when using custom data types in Java.

This article has been archived and is no longer updated by Apple.

Currently, a straightforward application of custom data types as described in the Developer's Guide will have a problem when implemented in Java. Specifically, saving an Enterprise Object with a custom data type attribute to the database will result in a java,lang,CloneNotSupportedException. The solution is to implement your own clone() method in the custom data type's class. As with the java.lang.Object.clone() your method must return a new instance of the class. Any manipulation or selection of the custom data object can also be accomplished in the clone() method.

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Internet Router and Novell Token Ring VAP Problem

I have been having issues with what looks like the Novell Token Ring VAP and the Apple Internet Router. The following is a description of the issue, the observations of the packet traffic by an engineer from Novell, and myself, with a shot at a conclusion. I know that the description of the packet traffic is meaningless without the actual trace data in front of you, but sending the trace data was impractical due to size (5MB). If you are interested in looking at the collected data, I can get it for you.

If there are known issues with the Internet Router that manifest themselves by the following description, I need to know as soon as possible.

Observations: The Router Issue

Our company is seeing a issue where our 286 server drops connections. Our printers fade in and out of the Chooser. Our mail servers appear and disappear. Our network is nearly unusable. In the office we visited, there is a main token ring with four routers. Two of those routers connect the main ring to smaller rings that contain users. One of those routers connects to a LocalTalk segment. The other router routes to an Ethernet that passes back to the company's enterprise-wide net, and contains some large servers.

In general, we are worried about users on the two smaller rings and the LocalTalk segment talking to servers on the main ring. There are no "users" on the main ring, just routers and servers. The two servers involved are called "who" and "who2". All of the routers involved are Apple Internet Routers, running on some fast II-class Macintoshes.

To look at this issue we attached two LANalyzers to the network, one (LA1) on one of the smaller rings, and one (LA2) on the main ring. On the smaller ring, we caught all traffic in and out of the router. On the main ring we caught all broadcast traffic, all traffic in and out of the "who" server, and all traffic in and out of that router. We told engineers to halt the LANalyzers whenever they had a report of a dropped connection, and we would look at the issue in the morning.

The next morning they had very few reports of the network failing. They had two traces for us. One was a failure on the subring we were watching. Two were failures from the LocalTalk segment, whose router we were not specifically watching. In the case of the failure on the subring, we were watching, the traffic on the main ring was so high that we couldn't get enough information about the history before the crash.

We did see that the server (who2) had sent an ASP close connection request to the workstation, and that the workstation had received it. The server issues a close connection usually only when there aren't enough ASP tickle packets to convince the server that the connection is still up. But we could not look far enough back in time to see the cause of this close.

We looked at one of the LocalTalk failure traces, expecting to find little of interest, because we weren't specifically targeting that router. However, the LANalyzer on the main ring told an interesting story. What follows is my interpretation of the trace, showing the important points. There is probably other information to be gleaned from the trace.

Packet #186 the first traffic between WHO and the LocalTalk connected router about the ASP connection in question (called 17103_air) was a tickle packet. Instead of sending the tickle directly over the Ethernet, the packet was sent to a different router (let's call it MYSTERY) on the ring, one that we couldn't identify. Time 7:43:31.

Packet #36517103_air starts sending AARP request broadcasts, looking for the WHO node. It sends one every 200 millisec, and about 3 millisec later the WHO server responds. It seems that the AARP responses are well formed, but 17103_air continues to rebroadcast. This continues for approximately 15 seconds, and during that time no traffic between 17103_air and WHO takes place. We see some, but not much, traffic between 17103_air and the other router we were monitoring. Time 7:43:42.

Packet #64017103_air stops sending AARP requests to WHO, and starts sending packets. Several retries of an ASP Request are sent, all within a second, and the server responds back to 17103_air correctly in each case. The connection will continue correctly for a while, with 17103_air sending directly to WHO and vice versa. Time 7:43:57

Packet #95317103_air sends and ASP Req packet to WHO, and WHO sends the response to a new and different Token Ring address (MYSTERY2). We don't see this node forward the packet, but 17103_air sends the ASP release directly to WHO, so the connection is still up, and the packet did get to the end Macintosh. The connection continues, with WHO sending most of its packets on this connection (destined eventually for 17103_air) to MYSTERY2.

Packet #1161 WHO sends its tickle packet to MYSTERY2 instead of 17103_air.

Packet #1387 WHO sends an ASP Response to MYSTERY (remember him?).

Packet #1843 17103_air starts sending AARP request packets, looking for node WHO. Like in the sequence starting in packet 356, AARP requests are sent every 200 microsec, and WHO responds correctly to each and every request. 17103_air continues to request. We see no further packets from 17103_air to WHO. WHO continues to send tickle packets destined for the end workstation, but sends them to all kinds of routers (MYSTERY, MYSTERY2). Time 7:45:20.

Packet #4516 WHO sends a close connection packet to the workstation through 17102_air (the router we were watching in the first place). 17103_air is still AARPing. Time 7:47:09.

Packet #5043 17103_air stops AARPing. It does not send any further packets to WHO. The connection is dead. Time 7:47:26.

Questions and Issues

The first and most interesting question is why does the Apple Internet Router continue to AARP over and over again? Another question is, why did it stop AARPing in the first case, in so little time as to let the connection stay alive? Looking at the trace we see another router, 17102_air, AARP over and over again for the server WHO2.

This is obviously not an isolated issue, and it is the cause of the destruction of the connections. Possibly, it also backs up the router queues, and thus prevents NBP lookups, accounting for our NBP issues. The router statistics are showing a large number of "overflows" whatever that is.

The second question is why the 286 VAPs start sending to other routers besides the correct router (MYSTERY, MYSTERY2). Secondly, the VAPs do not seem to redirect back to the correct router after getting a packet from it. However, although "Inside AppleTalk" suggests the caching of routers and building up of a RTMP table via the RTMP stub, nothing particularly bad will happen except loss of bandwidth and overburdening of routers.

In conclusion, the company's issue is a sporadic loss of routing through our Apple Internet Routers, caused by an illegal activity of the AIRs (not accepting AARP responses correctly). The cause of this failure remains unknown.
This article has been archived and is no longer updated by Apple.
The central issue is that printers, file servers, and mail servers drop in and out of the Chooser. This brings up a couple of questions. How many of each type of device do you have in each zone? Could you do an Inter*Poll of the affected zones for each type of device in question and send us the information? Here is some information and a possible answer:

This is how the Chooser really works in a nutshell:

The Chooser sends out a Name Binding Protocol (NBP) packet looking for all devices of type XXXXXX (for example, type LaserWriter). It sets up a buffer of 512 bytes for the responses. The responses look like:

```
device name length      1 byte
device name           variable bytes    e.g. MyLaser-Hands off
type name length       1 byte
type name             variable bytes    e.g. LaserWriter
zone field length      1 byte
zone name field       variable bytes    probably *
```

The Chooser gets such a packet back for each device, i.e., each LaserWriter. When the 512-byte buffer is full of these packets, it stops looking for device names to display. This means that some LaserWriters might not be displayed immediately. If you leave the Chooser window open, however, the Chooser continues to send out NBP lookups every 1.47 seconds. Different LaserWriters could respond more quickly each time. In this case, you may see the Chooser show and hide various devices.

This means that the number of devices the Chooser can show really depends on how long the type name (like "LaserWriter") is and how long the device names are.

The number 18 is an average number, based on device names being about 13- or 14 characters long and the device name being about 10 or 11 characters long.

In System 7.0, the buffer size for the Chooser is increased to 1024. This means, on an average, about 36 devices will be able to be displayed.

There is a way to affect the manner in which the lookup is done, which could help in some environments, especially in wide-area-network environments where slow data links may be used. If you modify the GNRL resource in the Chooser document (AppleShare, for example), it will affect every NBP lookup that is done from the Chooser for that type of device.

The Chooser uses these values to determine the NBP lookup interval and retry values for the current NBP transaction. The default of 0705 tells the Chooser to send five NBP lookup requests at an interval of 7/8ths of a second. This process is repeated in an infinite loop, until the user closes the Chooser.

Chooser Event Flow Example:

User opens Chooser and selects the AppleShare CDEV
GNRL resource -4096 loaded value = (5002)
NBP lookup mechanism started

NBP Loop:
Get NBP ID for this transaction
(Note: All NBP request and replies for this loop will use this ID)

Send first lookup (NBP ID = "New")
Collect and display responses from the NBP lookup ID "New"
Wait 10.6 seconds

Send second lookup (NBP ID still = "New")
Collect and display responses from the NBP lookup ID "New"
Wait 10.6 seconds

Discard all buffers and data associated with NBP ID "New"
(Note: If a response is received for NBP lookup ID =
"New" after this point the reply data would be discarded
and the device would not be added to the list in the Chooser)
Do some other misc. cleanup (approx. time 1 sec)

goto NBP Loop

End NBP Loop:

With the retry timer set to such a large value the multiple retry count is really not necessary. On the other hand, it doesn't hurt either, and it effectively increases the time we'll wait for NBP replies to over 20 seconds for the current transaction. The idea behind the retry count is to send several lookup requests out in quick succession (default < 1 sec.), in case there are devices which were unable to respond because they were busy or because the previous packet never reached them.

The reason that increasing the interval timer helps in the case of remote servers is directly tied to the way the NBP mechanism works. The Chooser maintains only 1 NBP lookup request at a time, tracking all replies to that request by way of the NBP ID mechanism. Replies that are received that do not match the current request ID are discarded.

The request ID is maintained only for the current NBP request, the interval and retry counters for this request can be tuned via the GNRL resource. In other words, if you set the retry counter to 10 and the interval timer to 50 the NBP ID would be maintained for 10 requests at an interval of 10.6 seconds. The GNRL resource is documented in "Inside Macintosh, Vol. 4", page 216.

AARP Issue

The symptoms you describe with the Apple Internet router AARPing for the same node over and over is probably attributed to the router being overloaded and not able to accept the response AARPs. You mention that the router is getting a fair amount of overflow errors, this would lead me to believe that the routers are indeed overloaded.

What ports on the routers are getting the overflow errors and how many are reported over the course of a day, a week? Overflow errors are caused by the router being too busy to process all incoming packets on an interface. The network interface chip set can detect that a packet was available but that the processor was too busy to get the packet from the interface before the next packet arrived. There may be some other issues related to your environment, but this is a good starting point.

Novell VAPs Sending to Random Routers

AppleTalk Phase 2 does provide an enhancement that lets your node cache network to router pairs for use when determining where to route a packet destined for a remote network. When the AppleTalk protocol DDP receives a packet from a remote network, it strips off the data-link source address of the packet. This is the address of the last router on the route from the original network. This router should generally be the optimal router in
terms of hop count back to the original network. You can then use that router for any future transactions to that network.

Now that I've explained all of that, you're saying, "Okay, that sounds right, but the Novell server is not doing what it's supposed to." The real story is that this enhancement is an optional, implementation-specific addition that is not required by the AppleTalk protocol. In this case, it would be normal for the Novell server to act the way that you described, if they did not implement the "Best Router" enhancement.

Conclusions

We first need to get a handle on the environment that you have, including numbers of devices per network and per zone. We need to take a close look at the statistics from the Apple Internet routers, average load on the various network segments as measured by the Internet Router, as measured by a network monitor/analyzer.

A close look at traffic patterns could also be helpful in determining where to best segment the network if it becomes necessary. It may be that the

traffic on the main ring is so heavy that the Macintosh routers can't keep up. We don't really have any statistical, benchmark, or historic information that would tell us when the use of an AIR on a token ring is not going to offer the best performance. At this point, we just need to collect all the information and then take it one step at a time.

The LANalyzer traces wouldn't do us any good, because we have a Network General Sniffer. If we really need to see some trace data, we'll do some tests using a Sniffer on your end, or the LANalyzer data could be saved to an ASCII file and shipped to us on a tape. I don't think we need to worry about the trace data yet.

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OPENSTEP 4.2 Patch 4 Overview

This document contains an overview and download information for Apple's Patch 4 for OPENSTEP 4.2 for Mach and OPENSTEP Enterprise 4.2. This patch set includes fixes that address the Year 2000 compliance issue (century rollover). Apple recommends that all users of OPENSTEP 4.2 install this patch set. Detailed release notes, including specific problems fixed with Apple bug tracking numbers, are included in the download package. Please read these release notes for important information on what is and is not covered by this patch.

Users of OPENSTEP versions prior to release 4.2 should register for and install an upgrade from Apple to OPENSTEP 4.2 before installing this patch. For more information, please see Apple Enterprise Software's Year 2000 page at http://www.apple.com/enterprise/y2k/.

OPENSTEP 4.2 Patch 4 supercedes all previous OPENSTEP general system patches. If you have already installed an OPENSTEP patch on your system, you can install Patch 4 over your existing installation. If you have not installed any previous patches, you do not need to.

For additional Year 2000 tips for OPENSTEP developers, see **document 70125**.

The OPENSTEP Current Patch List, **document 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read this document if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.
OPENSTEP 4.2 Patch 4 Release Notes:

- Download **OS42Patch4ReleaseNotes.pdf**.

OPENSTEP 4.2 User Patch 4 comes in four packages:

- For OPENSTEP for Mach installations, download **OS42MachUserPatch4.tar**.
- For Windows NT installations, download **OS42_NT_User_Patch4.exe**.
- For Solaris installations, download **OS42_Solaris_Patch4.tar.Z**.
- For HP-UX installations, download **OS42_HPUX_Patch4.tar.Z**.

OPENSTEP 4.2 Developer Patch 4 comes in two packages:

- For OPENSTEP for Mach installations, download **OS42MachDevPatch4.tar**.
- For Windows NT installations, download **OS42_NT_Dev_Patch4.exe**.

Download and install these packages if you use the OPENSTEP development tools on your system. IMPORTANT: If you are installing the Developer patch, please read section 6 of the release notes carefully. There are some manual steps you must take to prevent some Year 2000 issues.

If you use Enterprise Objects Framework on your system, it should be installed before you install OPENSTEP 4.2 Patch 4. Patch 4 includes fixes in system components that were originally installed by EOF. The OPENSTEP and EOF software packages should be installed in the following order:

- OPENSTEP 4.2 User
- OPENSTEP 4.2 Developer (optional)
- EOF User (optional)
- EOF Developer (optional)
- OPENSTEP 4.2 Patch 4 User package
- OPENSTEP 4.2 Patch 4 Developer package (optional)

Installation instructions - OPENSTEP for Mach

To install OPENSTEP 4.2 for Mach Patch 4 on an OPENSTEP for Mach system, perform the following steps:

1. If you downloaded OPENSTEP 4.2 for Mach Patch 4 from the internet, you may need to decompress the file with the command (example):

tar xf OS42MachUserPatch4.tar

This will unpack the single 'tar' file used for download into the .pkg format compound document used by the OPENSTEP for Mach installer. Your web browser or FTP client may perform this step for you.

2. Log in as root on your OPENSTEP system. If you're not sure how to log in as root, see your system administrator.

3. Double-click on the OS42MachUserPatch4.pkg file.

4. Click the Install button in the Installer package window. An Install Package panel will open.

5. Make sure that there are no other OPENSTEP or EOF applications running.

6. Click 'Install' in the Install Package panel and, when prompted for confirmation, click OK to proceed. The Installer window displays information about the progress of the installation, which may take several minutes. If you do not need to install the Developer patch, skip to step 10 to complete the installation.

7. To install OPENSTEP 4.2 Developer Patch 4, double-click on the OS42MachDevPatch4.pkg file.

8. Click the Install button in the Installer package window. An Install Package panel will open.

9. Click 'Install' in the Install Package panel and, when prompted for confirmation, click OK to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.

10. When the installation completes, the system must be rebooted. Log out and use the reboot button on the login panel.

Installation instructions - OPENSTEP Enterprise for Windows NT

To install OPENSTEP 4.2 Patch 4 on a Windows NT 4 system, perform the following steps:

1. If you downloaded OPENSTEP 4.2 Patch 4 from the internet, run the OS42_NT_User_Patch4.exe file to uncompress the patch installer, OS42UserPatch4Intstaller.exe and the release notes.

2. Read the release note distributed with this patch.

3. Log in as a user with Administrator privileges.

4. Make sure that there are no OPENSTEP or EOF applications running.

5. Double-click on the OS42UserPatch4Intstaller.exe file to start the install process.

6. A screen will appear with some information about this patch. After you have read it, click "Next" to continue.

7. The license agreement for this patch will appear. To agree to the license and continue the installation, click "Yes".

8. The patch will now be installed on your system and you will be asked if you want to reboot. If you have OPENSTEP Enterprise 4.2 Developer installed on your system, select "No, I will restart my computer later" and repeat steps one through seven using the Developer patch installer, OS42NTDevPatch4Installer.exe. Otherwise, proceed to step nine.

9. Select "Yes, I want to restart my computer now" to reboot your Windows NT system. The WinZip self-extractor will automatically quit and remove the temporary installation in about 20 seconds.

Installation instructions - OPENSTEP Enterprise for Solaris and HP-UX

To install OPENSTEP 4.2 Patch 4 on a Solaris or HP-UX system, perform the following steps:

1. Download the compressed tar file for your platform by clicking the appropriate link above.

2. Also **download** the installer script, "patcher.sh".

3. Log in as root. If you're not sure how to log in as root, see your system administrator.

4. Make sure that there are no OPENSTEP or EOF applications running.

5. Change to the directory containing the patch and the patch installer, "patcher.sh".

6. At a shell prompt, type:

patcher.sh -install OS42_Solaris_Patch4.tar.Z

or

patcher.sh -install OS42_HPUX_Patch4.tar.Z

For more information on using the "patcher.sh" program, type the following at the command prompt:

patcher.sh -help

7. Reboot your Unix system

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WebObjects 4: Using Oracle 8i (Oracle 8.1.5) with WebObjects

This article discusses the symptoms and solutions for two problems some WebObjects 4 developers may encounter with Oracle 8.1.5, also known as Oracle 8i.
This article has been archived and is no longer updated by Apple.
Question 1: I'm using WebObjects 4 to connect to an Oracle 8.1.5 or Oracle 8i database on Windows NT. Although SQL*Plus has no problems, EOModeler can't see the database and my application can't connect at runtime; it appears that I am using an invalid SID.

Answer: A registry entry required by EOF is not created during the Oracle 8.1.5 installation procedure. In the Windows NT registry, make sure that under:

\\HKEY_LOCAL_MACHINE\\SOFTWARE\\ORACLE

the key

ORACLE_HOME

exists and has the string value of:

C:\\Oracle\\Ora81

replacing "C:\\Oracle\\Ora81" with the correct path to your Oracle install directory.

Question 2: I'm using WebObjects 4 to connect to an Oracle 8.1.5 or Oracle 8i database on Solaris. My WebObjects applications won't compile or don't seem to be able to access the database.

Answer: When compiling a WebObjects application using Oracle 8.1.5 or Oracle 8i database for Solaris, you must add the following entry to OTHER_LIBS in your Makefile.preamble::

-L$(ORACLE_HOME)/lib -lclntsh -lcommon8 -lcore8 -lnls8

Also, keep this line COMMENTED in your Makefile.preamble:

#include $(MAKEFILEDIR)/pdo-eoadaptor-linking.make

Your application should now compile and run correctly against Oracle 8.1.5.

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WebObjects: Incorrect Time Values for GMT under Windows NT 4.0 SP4

Some changes in the way Windows NT handles time zones were made between Windows NT 4 Service Pack 3 and Service Pack 4. As a result, some Foundation time and date methods will display the wrong time when the time zone is set to GMT on a Service Pack 4 system. To correct the problem, you will need to make some changes to the WindowsName.table file on these systems. This document contains instructions on making the necessary changes.
This article has been archived and is no longer updated by Apple.

Modifying the WindowsName.table file under WebObjects 4

The WindowsName.table file is found in your WebObjects Frameworks directory, under:

```
Foundation.framework/Resources/TimeZoneInfo/WindowsName.table
```

This file is a serialized plist, so you will need to deserialize it before editing. To preserve the Unicode file format, only use TextEdit to modify this file.

1. In a Bourne shell, change to the directory containing the WindowsName.table file and enter the following commands:

```
cp WindowsName.table WindowsName.table.orig
pl -input WindowsName.table > MyWorkFile
rm WindowsName.table
```

2. Next, use TextEdit to change the following lines in **MyWorkFile**:

- Change **"GMT Normalzeit" = Africa/Casablanca;** to **"GMT Normalzeit" = Europe/London;**
- Change **"GMT Standard Time" = Africa/Casablanca;** to **"GMT Standard Time" = Europe/London;**
- Change **"GMT \\U6a19\\U6e96\\U6642" = Africa/Casablanca;** to **"GMT \\U6a19\\U6e96\\U6642" = Europe/London;**

3. Finally, use the following commands to reserialize the file:

```
pl -output WindowsName.table < MyWorkFile
rm MyWorkFile
```

Modifying the WindowsName.table file under OPENSTEP Enterprise 4.2

The steps needed to modify the file are the same as for WebObjects, except that you do not need to serialize or reserialize the file. Using TextEdit, make the changes to the WindowsName.table file listed under Step 2 for WebObjects, above. Apple recommends that you make these changes on a copy of the file rather than the original file; however, you do not need to use the 'pl' command to deserialize and reserialize the copy first. To preserve the Unicode file format, only use TextEdit to modify this file.

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WebObjects 4: Application Timeout Reveals Server for Virtual Domain Systems

Q: I'm using WebObjects 4 on a system using virtual domains; a server named "ecom3.apple.com" might handle requests directed to "store.webobjects.com". However, when I schedule one of my application instances to start refusing new requests and a session is redirected to another server, for the rest of the session the actual server name (for example, "ecom3.apple.com") appears in the URL instead of my virtual domain name. How can I stop this from happening?
This article has been archived and is no longer updated by Apple.
A: This problem occurs because WebObjects applications use HTTP 301 messages to redirect sessions when they are set to refuse new requests. The web browser then detects the actual hostname of the new server based on the partial URL returned by WebObjects.

You can work around this problem by having WebObjects return a full URL in this instance instead of a partial one. This requires overriding a private method in WOApplication. The method is **-_newLocationForRequest:**, and the new version should return the URL that the redirect will use. Your code might look like this:

```
- (NSString*)_newLocationForRequest:(WORequest*)aRequest {
 NSString* aNewURL = [NSString stringWithFormat:@"http://store.webobjects.com/%@/%@", [aRequest
adaptorPrefix], [aRequest applicationName]];
 return aNewURL;
}
```

IMPORTANT: Please note that the **_newLocationForRequest:** method is private, and its use is not supported by Apple. This method is subject to change or removal in future WebObjects releases. Use this method at your own risk.

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WebObjects 3.1 Patch 1 Overview

This document contains an overview and download information for Apple's Patch 1 for WebObjects 3.1. This patch set includes fixes that address the Year 2000 compliance issue (century rollover). Apple recommends that all users of WebObjects 3.1 install this patch set. Detailed release notes, including specific problems fixed with Apple bug tracking numbers, are included in the download package. Please read these release notes for important information on what is and is not covered by this patch.

Users of WebObjects versions prior to release 3.1 should register for and install an upgrade from Apple to WebObjects 3.1 before installing this patch. For more information, please see Apple Enterprise Software's Year 2000 page at http://www.apple.com/enterprise/y2k/.

For additional Year 2000 tips for WebObjects developers, see **TIL article 70048**.

The WebObjects Current Patch List, **TIL article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. Please read this document if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.

Introduction

This document describes Apple's Patch 1 for WebObjects 3.1. This patch set includes fixes that address the Year 2000 compliance issue (century rollover). Apple recommends that all users of WebObjects 3.1 install this patch set. These Release Notes also document the issues found in Enterprise Objects Framework (EOF).

How To Use

This patch consists of patch binaries for **Solaris**, **Windows NT**, and **HP-UX** platforms. The **release notes** included with the patch contain descriptions of additional steps required for full compliance on developer installations for all platforms. A separate **patch installation script** is also required for Solaris and HP-UX users.

This patch affects the development and deployment versions of WebObjects 3.1 on Windows NT, Solaris, and HP-UX. No WebObjects patch is required for users of WebObjects 3.1 on OPENSTEP 4.2 for Mach; however, you must have OPENSTEP 4.2 for Mach Patch 4 or later installed on your OPENSTEP system. WebObjects users on OPENSTEP for Mach should also read sections 3 and 4 of the **patch release notes**; these sections describe some manual steps you should take to avoid some Year 2000-related problems.

Apple has tested WebObjects 3.1 with Patch 1 installed and has determined based on the results that the software meets Apple's standard of Year 2000 compliance. For Apple, Year 2000 compliance means that the software does not produce errors processing date data in connection with the year change from December 31, 1999 to January 1, 2000, when using accurate date data in accordance with its documentation, provided all other products used with it properly exchange date data with the Enterprise Software product.. This includes the use of the database adaptors included with EOF, when used through EOF. It has been determined that the direct use of client library API, custom SQL statements, or other use of the database adaptors or software other than through the EOF APIs may produce results that do not meet Apple's standard of Year 2000 compliance.

What Is Not Covered

Third Party Software Applications

WebObjects 3.1 is designed to support certain third-party products, including but not limited to databases, web servers and HTML editors. Apple has not tested the Year 2000 status of these products and will not guarantee or provide support for them.

Operating System Software

WebObjects 3.1 can be used under OPENSTEP for Mach, Windows NT, Solaris, and HP-UX. Because WebObjects depends on the underlying operating system for some time and date information, Apple cannot guarantee the operation of WebObjects after December 31, 1999 unless the underlying operating system is free of Year 2000 problems. Please contact your operating system vendor regarding the Year 2000 status of your system. WebObjects installations running on OPENSTEP 4.2 for Mach systems must have OPENSTEP 4.2 for Mach Patch 4 or a later patch version installed on their system for Year 2000 compliance.

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Pascal: Turtlegraphics -- Circles

This article has been archived and is no longer updated by Apple.
The program below is supposed to draw a circle, but it doesn't--it draws an octogon. The drawing routines can calculate exactly where the end of the line will be, but with a move of only one dot, the result is limited to one of the eight adjacent dots. For example, if we move a distance of one dot at an angle of five degrees, then the co-ordinates of the destination are X + 0.09, Y + 0.99, which are rounded to X + 0, Y + 1.

Calculated Angle Actual Angle
0 - 22.5 0
22.5 - 67.5 45
67.5 - 112.5 90
112.5 - 157.5 135
157.5 - 202.5 180
202.5 - 247.5 225
247.5 - 292.5 270
292.5 - 337.5 315
337.5 - 382.5 0

The next table gives the calculated and actual X and Y coordinates for an angle of 5 degrees and varying move distances.

X-Coordinate Y-Coordinate
Move Calc Act Calc Act
1 0.09 0 0.99 1
2 0.17 0 1.99 2
3 0.26 0 2.98 3
4 0.35 0 3.98 4
5 0.43 0 4.98 5
6 0.52 1 5.97 6

The next diagram simulates the High-Res graphics display. Clearly, you must move at least 6 units for 5 degrees to show any effect.

M o v e
1 2 3 4 5 6

*
* *
* * *
* * * *
* * * * *
* * * * * *
* * * * * *

As you can see, the computer can't display a 5 degree change unless the move is at least 6 units.

```
PROGRAM CIRCLE;

USES Turtlegraphics;

VAR I : INTEGER;

BEGIN
INITTURTLE;
PENCOLOR (WHITE);
FOR I := 1 TO 8 DO BEGIN
MOVE (1);
TURN (1);
END;
READLN;
```

END.

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WebObjects: Crash in _doprnt() on Solaris 2.x

A bug in Solaris 2.x can cause WebObjects applications to crash under certain circumstances. This could affect any version of Portable Distributed Objects (PDO) or WebObjects 4.5.1 or earlier on Solaris. This document describes the problem and provides a patch WebObjects customers can use to avoid it on Solaris 2.5, 2.6, or 7.
This article has been archived and is no longer updated by Apple.

Problem description

A Sun/Solaris bug in the function _doprnt() can cause a WebObjects application to crash if it passes a NULL string argument to printf() or NSLog(), or if any Apple framework is passing a NULL string argument to printf(). This is caused by a bug in the implementation of the _doprnt() function in the Solaris C library and does not occur on other platforms (MacOS X Server, Windows NT, and HP-UX). The Solaris _doprnt() function does not check whether the argument is NULL and causes a segmentation fault when receiving a NULL string. This bug has been assigned Apple bug number 2388853.

If a crash was caused by this bug, the backtrace will normally look something like this:

```
Program received signal SIGSEGV, Segmentation fault.
0xee624614 in strlen ()
(gdb) bt
#0  0xee624614 in strlen ()
#1  0xee65a4ac in _doprnt ()
#2  0xee663514 in _fprintf ()
#3  0xef4fc33c in global constructors keyed to WOStaticURLUtilities.m ()
#4  0xef4fb080 in global constructors keyed to
WOStaticURLUtilities.m ()
#5 0xef4f80d0 in global constructors keyed to
 _OBJC_METACLASS_WOResponseContentDataFault ()
#6  0xef4ffc78 in global constructors keyed to
_OBJC_METACLASS_WOSessionStore ()
```

Testing for the bug

To determine if your Solaris machine has the bug, you can run the following simple test program:

```
/* This is test.c */
#include <stdio.h>
main()
{
       printf("%s", NULL);
}
```

After compiling the test program, run and see if it crashes with a SIGSEGV. Run it again under gdb, and check if the backtrace looks similar to the one described above. So far, we have seen this bug on Solaris 2.5, 2.6, 7, and Solaris 8.

The patch

If you are using PDO or WebObjects 2.x to 4.x on Solaris 2.5, 2.6, or 7, you can download the patch from Apple's FTP site. The patch is built as a .o file for the SPARC-Solaris platform. It provides a new implementation of _doprnt(), which is robust against NULLs. This patch does not work on Solaris 8.

FTP:

ftp://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/webobjects/patches/4.0.1/prntpatch.o

HTTP:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/webobjects/patches/4.0.1/prntpatch.o

To test the patch, recompile your test program and link it with the patch as follows:

```
gcc -o fixedtest test.c prntpatch.o
```

Rerun the test described above to confirm that the problem has been solved.

Using the patch in your project

Copy the patch file prntpatch.o into your project folder, and edit Makefile.preamble to include the patch at link time with the line:

```
OTHER_OFILES=prntpatch.o
```

As a safety measure, you may need to repeat this step for any custom-written frameworks that you are linking your application against.

Note: It is not necessary to include the patch file in the subprojects, if any, of your WebObjects application.

Disclaimers: There is no guarantee that this patch truly fixes the root of your problem. Even if the crash does not recur, you should still investigate whether your code is calling into a C string function with a NULL argument. Otherwise, your application may still generate exceptions even though this particular crashing problem is resolved.

This patch does not work on Solaris 8. (Although Apple has not qualified WebObjects 4.x on Solaris 8, most of WebObjects 4.x appears to work on Solaris 8; this patch is an exception.)

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WebObjects 4: WOAssociationTiming Framework Example

The `WOAssociationTiming Framework` Example allows users to perform timing for the different phases of the request/response loop, such as in `takeValuesFromRequest:` or `invokeActionForRequest:`. This can aid WebObject users in performance tuning their applications. For more information on the applications of this example and performance tuning in general, see Knowledge Base Document 70102 "**WebObjects 4: Performance Tips**".
This article has been archived and is no longer updated by Apple.

Where to Find the Example

Download the WOAssociationTiming Framework from Apple's software update servers.

Building the Example

To add the timing framework to your web application, use Project Builder to add the framework to your PB.project, then add the following line in your _main.m file:

```
[WXSession poseAsClass:[WOSession class]];
```

Using the Example

To view the Timing Control page, access it via a URL such as:

`http://myhost:aPort/cgi-bin/WebObjects/MyApp.woa/wa/timingControl`

Please see the README file distributed with this framework for more information.

DISCLAIMER

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IIGS: "Visit Monitor" 03 Same as Released Version

Is there a difference between the Apple IIGS (ROM 03) I own, and other Apple IIGS systems with ROM version 03? My 03 is one of the first few hundred that were accidentally assembled with "Memory Peeker" and "Visit Monitor" stuck in the Classic Desk Accessories menu.

Anyway, I've documented a list of things that seem to be wrong with my ROM 03 Apple IIGS. Could you try out the things on the list with your ROM 03 (one without "Memory Peeker" and "Visit Monitor" in the CDA menu), and let me know if any of those things happen on your Apple IIGS.

The System Monitor

After entering Monitor with a "CALL-151" command or accessing it through "Visit Monitor/CDA", the system will freeze after entering the "LIST" command. Pressing any key after this causes a continuous scroll of inverse text, while the Error bell rings non-stop. Strangely enough, pressing certain keys will display different graphic modes while this is happening, replacing the scrolling text, but with the error bell still ringing, and no way to stop it.

Applesoft BASIC

When trying to run any program written in Applesoft BASIC that launches GS-specific programs (i.e., doing calls to Apple IIGS ROMs or hardware), the program will not run and gives this error message:

?SYNTAX ERROR IN 65182

All programs give the same error message. After this error message occurs from trying to load an Applesoft BASIC program, the GS/OS operating system won't run. Trying to load any disk that uses GS/OS to boot up will crash after the "Welcome to the Apple IIGS" message appears and gives the following error message:

Error Loading Apple IIGS.OS File. Error=$002E

After this you must turn the computer off for 30 seconds or more before you can load GS/OS without getting the same error message.

MDIdeas Card

When plugged into my ROM 03 Apple IIGS, the Stereo/Digitizer card from MDIdeas, does not function properly. Any sound that's recorded with the card is played back with an echo, and is noisy and scratchy (incompatible with either card or software). The card and software are not at fault, because they work perfectly on my other Apple IIGS, which is a ROM 01.

Software

Many software applications will not run on my Apple IIGS with the 03 ROMs, while they apparently run on other 03 ROM-d systems. (This includes public-domain and commercial software titles.)

RAM Disk

With 2.125MB in my Apple IIGS, there's a maximum RAM disk size of 1,920K. The system will not auto-format a RAM disk larger than 1,888K in size.

Selecting 1,920K from Control Panel won't auto-format.

* Each time you reset the computer to auto-format a RAM disk, the system freezes for 5 or more seconds.

* When a RAM disk is created, the system will erase the entire RAM disk after using Open-Apple Reset command a couple of times. (It seems to change the setting in the Control Panel to "Resize after reset: YES", thereby changing the setting by itself.)

Disk Access Slows Down

When loading up some GS-specific programs that use ProDOS 8 or ProDOS 16 as a launcher, the computer seems to have trouble loading ProDOS, and then trouble loading the main program system file. The program will take two to three times longer to start up than it will on a ROM 01-GS or other ROM 03-GS systems. It slows down so much that it appears the disk is damaged or corrupted. Some examples of programs that have this problem are "Diversi-Tune" and "Tunnel of Armageddon".

This article has been archived and is no longer updated by Apple.
Most of these problems can be avoided. The ROMs (early and late) are identical. Some systems went out configured improperly. Anyway, I'll take them one at a time.

System Monitor

"LIST" is not a Monitor command. To list the contents of memory locations, you only need to type "l" or "L". When the monitor sees "LIST" it scrolls 20 lines of location contents and then sets the display to inverse. The monitor queues commands typed as a string; the second command in the string is "i"; the command for inverse. "S" and "T" are not Monitor commands and seem to confuse the system. Typing "l", a carriage return, "i" and a carriage return works fine. You should read the "Apple IIGS Firmware Reference" for a complete description of the Monitor and its commands.

Applesoft BASIC

Without an exact description of the steps required to create the problem described, we can only speculate as to the cause of the problem.

It sounds as if you are trying to run a ProDOS-16 application from ProDOS-8. Whatever the case, some memory locations are being stomped on, seriously scrambling memory, because the system thinks a disk has been switched. If this continues to be a problem, let us know exactly what you are doing to cause this crash, and we'll dig into it.

MDIdeas Card

The MDIdeas card was developed for the original Apple IIGS. The company is now out of business and has therefore not upgraded the product to work with the new ROMs. The card (or perhaps the accompanying software) is not compatible with the new version of the ROMs. Applied Engineering offers a comparable product that is compatible with the new ROMs.

Software

We will need concrete examples of the differences when software is run on two different systems, because the ROMs are identical. The problems exhibited here may be a result of a drive problem (discussed in the "slows down" section below).

RAM Disk

It sounds as if you are using the Classic Control Panel to modify the RAM disk. The Classic Control Panel is not aware of the memory requirements of GS/OS and will let the user set unreasonable RAM disk sizes. GS/OS will re-assign the value as it "takes" memory back at boot time. Using the Graphic Control Panel will eliminate this problem. This is not a bug, because the Classic Control Panel is necessary when using the system with ProDOS-8.

As a side note, pressing Open-Apple-Reset is not a very elegant way to re-start the system. We highly recommend the use of menu-bar selections over this method. Use Open-Apple-Reset only as a last-ditch effort.

Disk Access Slows Down

The slowdown your customer is experiencing could be a result of copy-protected software. If other Apple IIGS systems with the same ROMs (03) load the software more quickly, swap in a disk drive from one of the other systems. It's possible that the drive is in need of cleaning, and has troubles reading copy-protected disks.

Again, the ROMs you received are the same as the ROMs shipped in later systems.

Published Date: Feb 18, 2012

WebObjects 4: Creating a Java Tool Project

A tool is typically a GUI-less application, run from the command line, that is focused on one or just a few tasks. There are a few tricks to creating a Java tool project in Project Builder; this document helps you through the process.
This article has been archived and is no longer updated by Apple.
First, create your project as a WebObjects Application project type. This insures that all the required Java support is built into the project. The only frameworks that are required are the Foundation.framework and the JavaVM.framework. The only source that is required is the myWOApp_main.m file and two Java classes. Remove all other frameworks and classes not required for your project.

Then set up the myWOApp_main.m file to initialize the Java virtual machine and instantiate a Java class. Here is the standard implementation:

```
#import <JavaVM/NSJavaVirtualMachine.h>
int main(int argc, const char *argv[])
{
   NSAutoreleasePool * pool = [[NSAutoreleasePool alloc] init];
   Class JavaToolClass;
   id javaToolObject;
    // required for Solaris only to notify cthreads layer the main thread is being created
#if defined(__svr4__)
    unsigned long java_reserved[16];
    void cthread_set_java_vm_stack_base(void *);
    cthread_set_java_vm_stack_base(java_reserved);
#endif
   [NSBundle mainBundle];  //this initializes the JVM
   JavaToolClass = NSClassFromString(@"Tool");
   javaToolObject = [[JavaToolClass alloc] init];
   NSLog (@"Java Tool Object = %@",javaToolObject);
   [pool release];
   exit(0);       // insure the process exit status is 0
   return 0;      // ...and make main fit the ANSI spec.
}
```

The Java class Tool.java has been created. In this approach, Tool.java consists only of a constructor that instantiates another Java class, ToolImplementer.java here, which does the real work of this tool. After a ToolImplementer object is instantiated, execute one of its methods to start the tool working:

```
import java.lang.*;
public class Tool extends Object {
  public Tool() {
       super();
       System.out.println("Creating a Tool instance");
       ToolImplementer toolImplementer = new ToolImplementer();
       toolImplementer.executeSomething();
       System.out.println("toolImplementer.executeSomething() is executed");
       System.exit(0);
   }
}
```

Next, create the working class. The method "executeSomething" can of course be anything you want to begin accomplishing your tool's purpose:

```
import java.lang.*;
public class ToolImplementer extends Object {
   public ToolImplementer() {
       super();
       System.out.println("Creating a ToolImplementer instance");
   }
   public void executeSomething() {
       System.out.println("This is a ToolImplementer instance method");
   }
}
```

Finally, create any other Java classes that you need for your tool. And that's all there is to it!

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WebObjects 4: Preventing Zombie Processes on Solaris

Q: My WebObjects 4 application is running on a Solaris server; my database is running on a separate system. If the database shuts down, zombie processes are created on the WebObjects server machine. How can I prevent this?
This article has been archived and is no longer updated by Apple.
A: Add this line to the sqlnet.ora file on the Oracle client system:

BEQUEATH_DETACH=yes

The oracle executable will now catch the child signal from the SQLNet connection, preventing the creation of zombie processes. This value is set when the Oracle server is installed, which is why this problem does not occur if the WebObjects application and the Oracle database are installed on the same system.

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WebObjects 4: Using Jikes With WebObjects on Windows NT

Jikes is an open source Java compiler developed by IBM for quick, compatible Java code compilation. This article describes how to replace the default Java compiler with Jikes in WebObjects 4 on Windows NT. This is an unsupported procedure to be used at your own risk. Apple Computer provides no support or warranty for this process.

For more information or to obtain Jikes, please visit IBM's Jikes web page at:

http://www10.software.ibm.com/developerworks/opensource/jikes/project/

This article has been archived and is no longer updated by Apple.

The Easy Way

There are two ways to use Jikes with WebObjects and Project Builder. The first and simplest way is to replace the default Java compiler. Simply:

- Rename the existing compiler binary, javac.exe, and move it to a directory not in your system's classpath
- Rename the Jikes compiler to javac.exe, and move it to a directory in your system's classpath

This should allow you to compile using Jikes. However, since the Jikes error stream is different than the stream ProjectBuilder expects from Sun's javac, the build panel will not display errors and link to source files correctly.

The Hard Way

A better way to integrate Jikes into your environment is to integrate Jikes into Project Builder as an alternate compiler. To do this, you'll need to:

- Download the **jikesSpec.plist** and **jikes.bat** files from Apple's FTP servers
- Make sure jikes.exe and jikes.bat are in your system path
- Edit the Executables statement in jikesSpec.plist, replacing "e:/usr/local/bin/jikes.bat" with the path to your jikes.bat file
- Copy the jikesSpec.plist file into $NEXT_ROOT/Developer/Makefiles/Resources/jikesSpec.plist
- Restart ProjectBuilder

Project Builder should now display "IBM Jikes" as an option in the Project Build Attributes inspector's "compiler" popup. With this method, errors will be more likely to be properly highlighted in the build panel. The jikes.bat file simply runs the jikes compiler with the +E flag, which causes error messages to come out on a single line, allowing ProjectBuilder to pick out the filename and line number correctly in most cases. The jikesSpec.plist file is similar to the javaSpec.plist file, with additions for the different warning and error formats. This file only allows the use of Jikes on Windows NT. For more information on customizing Spec.plist files, see the documentation under $NEXT_ROOT/Developer/Makefiles/Resources/compilers.readme

Disclaimer

Whichever way you use to integrate Jikes, remember that Apple has not tested and will not guarantee or provide support for it; follow these instructions at your own risk.

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WebObjects 4: Changing the default page in a WebObjects application

This article describes how to change the default page of a WebObjects application from the page defined by Main.wo to the page or WOComponent of your choice.
This article has been archived and is no longer updated by Apple.

Introduction

By default, a WebObjects app opens to a page named "Main". Any reference to "Main" in a hyperlink, action method, or dynamic element directs users to this page named "Main". Sometimes WebObjects developers wish to change this "default" page to a different WOComponent.

You can change this default page by overriding a method in your WOApplication subclass. In Objective C, the method is:

```
- (WOComponent*)pageWithName:(NSString*)aName inContext:(WOContext *)aContext
```

In Java, the method is:

```
public WOComponent pageWithName(java.lang.String pageName, com.apple.yellow.webobjects.WOContext context).
```

The source code examples below demonstrate how to implement the change. Please note that if you override pageWithName:inContext: in this way, all references to "Main" in your application will now be references to "DiffDefPage". Users are no longer able to access the Main.wo component.

Example: Objective C

```
In Objective-C, add the following code to your Application.m file:

- (WOComponent *)pageWithName:(NSString *)pageName inContext:(WOContext *)context
{
// redirect any requests for the Main to DiffDefPage
if (!pageName || [pageName isEqualToString:@"Main"])
{
return [super pageWithName:@"DiffDefPage" inContext:context];
}
return [super pageWithName:pageName inContext:context];
}
```

Example: Java

In Java, add the following code to your Application.java file:

```
public WOComponent pageWithName(String pageName, WOContext context)
{
// redirect any requests for the Main to DiffDefPage
if ((pageName == null) || (pageName.equals("Main")))
{
return super.pageWithName("DiffDefPage", context);
}
return super.pageWithName(pageName, context);
}
```

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Macintosh LC and Macintosh LC II: 16-Bit Color

John Sculley said something at MacWorld about the support of "thousands" of colors with 16-bit color on the Macintosh LC. Is that true?

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Yes, it is true. This was announced at the introduction of Macintosh LC.
The product is called the Macintosh LC 512K VRAM SIMM (M0517LL/A) and was made available in February 1991.

The standard Macintosh LC and the new Macintosh LC II support these video configurations:

- Macintosh 12-Inch Monochrome Display: 2, 4, or 16 shades of gray

- Macintosh 12-Inch RGB Display: 2, 4, 16, or 256 colors

- AppleColor High-Resolution RGB Monitor (13-inch): 2, 4, or 16 colors

With the Macintosh LC 512K VRAM SIMM (M0517LL/A) installed, the Macintosh LC and Macintosh LC II support these video configurations:

- Macintosh 12-Inch Monochrome Display: 2, 4, 16, or 256 shades of gray

- Macintosh 12-Inch RGB Display: 2, 4, 16, 256, or 32,000 colors

- AppleColor High-Resolution RGB Monitor (13-inch): 2, 4, 16, or 256 colors

Note

The Macintosh LC and LC II do not support full 16-bit color, which allows over 65,000 colors.

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NeXTSTEP 3.3 Patch 3 Overview

This document contains an overview and download information for Apple's Patch 3 for NeXTSTEP Release 3.3 and EOF 1.1. Apple recommends that all users of NeXTSTEP 3.3 install this patch set. Users of NeXTSTEP versions prior to release 3.3 should register for and install an upgrade from Apple to NeXTSTEP 3.3 before installing this patch. For more information, please see the **Software Registration web page**.

NeXTSTEP 3.3 Patch 3 supercedes NeXTSTEP 3.3 Patch 2, released in July of 1999. If you have already installed Patch 1 or 2 on your system, you can install this patch over your existing installation. If you have not installed Patch 1 or 2, you do not need to.

This patch does not address EOF 1.1. EOF 1.1 users should see **document 70084** for an explanation of some manual steps they can take to avoid some Year 2000 issues.

The NeXTSTEP Current Patch List, **document70038**, contains information on all available patches and workarounds for all versions of NeXTSTEP, including EOF patches. Please read this document if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.
NeXTSTEP 3.3 Patch 3 comes in several packages, depending on the user platform version. For Intel and NeXT-branded Motorola hardware platforms, download the file **NS33CISCUserPatch3.tar**. For Solaris and HP-UX platforms, download the file **NS33RISCUserPatch3.tar**.

In addition, there is a NeXTSTEP 3.3 Patch 2 Developer package, **NS33DeveloperPatch2.tar**. This is a multi-architecture installer package, and should be installed on systems that have NeXTSTEP 3.3 Developer installed. IMPORTANT: If you are installing the Developer patch, please **read document 70084** to learn how to manually correct some issues with the developer components of EOF 1.1.

If you use Enterprise Objects Framework on your system, it should be installed before you install NeXTSTEP 3.3 Patch 3. Patch 3 includes fixes in system components that were originally installed by either EOF or the Foundation User Patch. The NeXTSTEP and EOF software packages should be installed in the following order:

- NeXTSTEP 3.3 User
- NeXTSTEP 3.3 Developer (optional)
- EOF 1.1 User (optional)
- EOF 1.1 Developer (optional)
- NeXTSTEP 3.3 Patch 3 User package
- NeXTSTEP 3.3 Patch 2 Developer package (optional)

After download, you may need to decompress the file with the command (example):

```
tar xf NS33CISCUserPatch3.tar
```

This will unpack the single 'tar' file used for download into the .pkg format compound document used by the NeXTSTEP installer. Your web browser or FTP client may perform this step for you.

To install NeXTSTEP 3.3 Patch 3, perform the following steps:

1. Log in as root on your NeXTSTEP system. If you're not sure how to log in as root, see your system administrator.
2. Double-click on the **NS33CISCUserPatch3.pkg** (or **NS33RISCUserPatch3.pkg**) file.
3. Click the Install button in the Installer package window. An Install Package panel will open.
4. Click 'Install' in the Install Package panel and, when prompted for confirmation, click OK to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.
5. If you do not need to install the Developer patch, skip to step 8 to complete the installation. To install NeXTSTEP 3.3 Developer Patch 2, double-click on the **NS33DeveloperPatch2.pkg** file.
6. Click the Install button in the Installer package window. An Install Package panel will open.
7. Click 'Install' in the Install Package panel and, when prompted for confirmation, click OK to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.
8. When the installation completes, the system must be rebooted. Log out and use the reboot button on the login panel.

Issues Addressed

Corrected in NeXTSTEP 3.3 Patch 3

'gnutar' hangs on recursive links.
Apple reference # 2365132

ISSUE:
The version of 'gnutar' shipped with NeXTSTEP 3.3 Patch 2 CISC and RISC is based on GNU tar-1.12 and expects a later version of lstat than that found on NeXTSTEP. Some symbol names changed in the newer version of lstat. If these newer symbol names are not found, 'stat' is used instead of 'lstat' and 'gnutar' hangs on recursive links.

RESOLUTION:
'gnutar' has been modified to work correctly with both older and newer versions of lstat.

'at' schedules jobs incorrectly when no date is specified
Apple reference # 2358294

ISSUE:
The 'at' command in NeXTSTEP 3.3 Patch 2 for CISC and RISC scheduled jobs incorrectly when no date was specified.

RESOLUTION:

The version of 'at included in this patch schedules these jobs correctly.

Missing hard link to /usr/ucb/w
Apple reference # 2351777

ISSUE:
/usr/ucb/uptime, normally a hard link to /usr/ucb/w, was no longer linked after NeXTSTEP 3.3 patch 2 was installed.

RESOLUTION:
This patch restores this missing link.

Missing hard link to /bin/sh
Apple reference # 2351777

ISSUE:
/bin/jsh, normally a hard link to /bin/sh, was no longer linked after NeXTSTEP 3.3 patch 2 was installed.

RESOLUTION:
This patch restores this missing link.

Corrected in NeXTSTEP 3.3 Developer Patch 2

Indexing Kit example used two-digit date field
Apple Reference #2332090, 2331940

ISSUE:
The example application for the Indexing Kit used a two-digit year date entry field, which caused columns to be incorrectly sorted by date.

RESOLUTION:
The example application now uses a four-digit year for data entry and for sorting.

DBKit date formatter example used two-digit year format
Apple Reference #2337035, 2337355

ISSUE:
The date formatter example for DBKit only accepted dates of the form MM/DD/YY.

RESOLUTION:
The example now accepts dates of the form MM/DD/YYYY.

Corrected in NeXTSTEP 3.3 Patch 2

'at' command executed jobs queued after 31 Dec. 1999 before scheduled run date
Apple Reference #2324143, 2325511

ISSUE:

The name of the spool file which the 'at' command created for storing a job encoded the job's run date using a two-digit year date format. This caused 'atrun' to execute jobs queued for dates after 31 Dec. 1999 before they should be run.

RESOLUTION:
'at' now creates spool filenames that use four-digit years.

'atq' command formatted dates incorrectly
Apple Reference #2324153, 2325512

ISSUE:
The 'atq' command used the strings '19%2d' or '19%d' for formatting the last run date for the 'at' queue and the date at which the individual entries should be run.

RESOLUTION:
This command now formats the date with the correct century. To handle legacy filenames, two-digit dates less than '69' and three-digit dates are interpreted as being in the 21st century.

Leap year calculation in 'at' command didn't include 400-year rule
Apple Reference #2324154, 2325513

ISSUE:
The leap year calculation in the 'at' command failed to take into account the 400-year rule, resulting in incorrect behavior after leap day in the year 2000.

RESOLUTION:
This calculation has been corrected.

'atq' leap year calculation didn't include 400-year rule
Apple Reference #2324158, 2325514

ISSUE:
The leap year calculation in the 'atq' command failed to take into account the 400-year rule, resulting in incorrect behavior after leap day in the year 2000.

RESOLUTION:
This calculation is corrected.

'atrun' command assumed two-digit year for spooled jobs
Apple Reference #2324160, 2325515

ISSUE:
The 'atrun' command assumed that spooled jobs were named with a two-digit year format.

RESOLUTION:
'atrun' now handles job filenames with two-, three-, and four-digit years correctly.

RCS did not work correctly after 1999
Apple Reference #2327725, 2328459

ISSUE:
The RCS version shipped with NeXTSTEP 3.3 did not work correctly after 1999.

RESOLUTION:
This patch upgrades to RCS version 5.7, which handles dates past 1999. Refer to the RCS documentation for information on additional changes, features and bug fixes in this version of RCS.

'/bin/date' command didn't allow dates later than 1999 to be set
Apple reference #2328124, 2327723

ISSUE:
The '/bin/date' command didn't allow the system date to be set to any year past 1999. A secondary problem resulting from this error was that users of the Preferences application were unable to set a date later than 1999.

RESOLUTION:
The 'date' command now correctly handles two-, three-, and four-digit years for dates in the valid UNIX range (1 Jan 1970 00:00:00 - 31 Dec 2037 23:59:59). Two-digit years from 70-99 are interpreted as 1970-1999; two-digit years from 00-37 are interpreted as 2000-2037. Three-

digit years from 070-099 are interpreted as 1970-1999; three-digit years from 100-137 are interpreted as 2000-2037.

'gnutar' command didn't accept dates later than 1999
Apple Reference #2328449, 2327724

ISSUE:
The 'gnutar' command has an option to only write files newer than a given date, but version 1.11.2, the version shipped with NeXTSTEP 3.3, didn't accept dates past the end of 1999, even using four-digit years.

RESOLUTION:
'gnutar' has been updated to version 1.12, which accepts dates after 1999.

'zsh' command could have displayed incorrect date in command prompt after 1999
Apple Reference #2331360, 2332042

ISSUE:
The 'zsh' command could be configured to display the date in the command prompt. This date display did not function correctly after 1999.

RESOLUTION:
This problem is corrected.

NSCalendarDate's two-digit year format returned three-digit years after 1999
Apple Reference #2331365, 2331975

ISSUE:
NSCalendarDate's +descriptionWithCalendarFormat: method's two-digit year format (%y) returned three-digit years after 1999. For example, '2000' was displayed as '100,' rather than '00'.

RESOLUTION:
This method now returns an appropriate two-digit year when the %y format is employed. Users are strongly cautioned that two-digit year values are inherently ambiguous and can result in serious software errors.

'enscript' command displays incorrect year in file timestamp after 1999
Apple Reference #2331367, 2331658

ISSUE:
The 'enscript' command has an option that printed a file's timestamp as a page header. This header displayed an incorrect year after 1999.

RESOLUTION:
This problem is corrected.

'nroff' and 'troff' macros displayed two-digit dates that were incorrect after 1999
Apple Reference #2331436, 2331978

ISSUE:
The macros used by 'nroff' and 'troff' automatically generated certain date values which displayed two-digit years, and which were incorrect after 1999.

RESOLUTION:
These macros now display correct four-digit years both before and after 2000 for automatically generated dates.

NSCalendarDate calendar format methods interpreted all two-digit dates as 20th century
Apple Reference #2331983, 2332180

ISSUE:
NSCalendarDate's -dateWithString:calendarFormat: and -initWithString: calendarFormat: methods interpreted all two-digit dates as being in the 20th century; i.e., "00" was interpreted as "1900".

RESOLUTION:
These methods now follow the Microsoft Exceltm convention used in later versions of Foundation, where two-digit dates less than 30 are interpreted as 21st century dates (2000-2029) and two-digit dates 30 and greater are interpreted as 20th century dates (1930-1999). Users are strongly cautioned that two-digit year values are inherently ambiguous and can result in serious software errors.

Motorola DSP assembler output incorrect page header in 2000
Apple Reference #2331999, 2332113

ISSUE:
The Motorola 56K DSP assembler output an incorrect page header in year 2000.

RESOLUTION:
This problem is corrected.

Motorola DSP librarian output incorrect library file dates after 1999
Apple Reference #2332012, 2332136

ISSUE:
The Motorola 56K DSP librarian output incorrect dates in library file listings after 1999.

RESOLUTION:
This problem is corrected.

Motorola 56K DSP Linker output incorrect page header
Apple Reference #2333271, 2333840

ISSUE:
The Motorola 56K DSP Linker output an incorrect page header in year 2000.

RESOLUTION:
This problem is corrected.

'/usr/ucb/w' displayed year values later than 1999 incorrectly as three-digit values
Apple Reference #2334633, 2333834

ISSUE:
The '/usr/ucb/w' command displayed the year value in date stamps after 1999 as three digits, i.e., the year 2000 displayed as '100' rather than '00'. Although the use of a two-digit year format is not preferred practice, changing the date format to use four-digit years could cause errors in programs that call the 'w' command.

RESOLUTION:
'/usr/ucb/w' now outputs two-digit years after 1999. It is the responsibility of the calling program to resolve the ambiguity of the two-digit year values in w's output.

Generated date for text pasted into new mail message incorrect for dates after 1999
Apple Reference #2334672, 2333902

ISSUE:
When creating a new message in a mailbox by pasting text into the mailbox, the generated date for the message was not correct for dates after 1999.

RESOLUTION:
This problem is corrected.

FTP daemon sent wrong file modification time for files created or modified after 1999
Apple Reference #2336094, 2336098

ISSUE:
The FTP daemon's 'MDTM' command sent the wrong modification time in reply to files created/modified past 1999. For example, the year 2000 was formatted as 19100.

RESOLUTION:
A correcting factor allows the 'MDTM' command to correctly format dates after 1999.

Fax software date stamps used two-digit year format
Apple Reference #2337034, 2337450

ISSUE:
The date stamps written by the fax software used a two-digit year format, and the aging code which detected and removed old fax log files failed when the year changed from '99' to '00'.

RESOLUTION:
To avoid causing problems with any software that might parse the fax log date stamps, the two-digit year format is still used, but the aging algorithm is modified to behave correctly both before and after the year 2000.

Verbose file listing from the 'tp' command printed incorrect two-digit dates after 1999
Apple Reference #2337845, 2338047

ISSUE:
The verbose file listing from the 'tp' command printed two-digit dates that were incorrect after 1999.

RESOLUTION:
The 'tp' command is now modified to output a correct four-digit date both before and after 1999.

Active.mbox had two-digit year in the Date header
Apple Reference #2339224, 2338436

ISSUE:
The welcome email message from Steve Jobs had a two-digit year in the header.

RESOLUTION:
This message now displays a four-digit year.

'Mail.app' read receipt date parsing could have failed for two-digit years less than 70
Apple Reference #2339301, 2338432

ISSUE:
The 'Mail.app' date parsing for read receipts could have failed for two-digit years less than 70.

RESOLUTION:
The 'Mail.app' date parsing is now modified to accept two-digit years less than 70 and treat them as within the 21st century. Two-digit years from 70-99 are interpreted as within the 20th century. This problem is very similar to Apple reference 2344011/2338435, also corrected in this patch. Additionally, three-digit years are interpreted as an offset from the year 1900, so year '100' is taken to be 2000.

Invalid date arguments could crash Sybase 4.6
Apple Reference #2340499, 2339379

ISSUE:
In the Sybase 4.6 version that shipped with NeXTSTEP 3.3, lack of error-checking code could cause an array underflow when certain invalid date values are passed. This error causes Sybase's Year 2000 compliance test suite to crash.

RESOLUTION:
More complete error checking now detects the problem date values and raises an appropriate Sybase exception.

'Mail.app' read receipt date parsing could have failed for two-digit years less than 70
Apple reference #2344011, 2338435

ISSUE:
The 'Mail.app' date parsing for read receipts could fail for two-digit years less than 70.

RESOLUTION:
'Mail.app' has been modified to accept two digit years less than 70 and treat them as 21st century years. Two-digit years from 70-99 are interpreted as 20th century. Additionally, three-digit years are interpreted as an offset from the year 1900, so year '100' is taken to be 2000. Note, however, that the date value being parsed is in the form of a literal string taken from the received mail's header (which is displayed with the message) and there is no way to modify this string to display the year as a four-digit value. If mail is received with a date in year '100', the value '100' is displayed as the year, but internally the year is evaluated as 2000.

'sendmail' date header used two-digit year format
Apple reference #2345707, 2345799

ISSUE:
The 'Date:' header line of mail messages created with the '/usr/ucb/mail' command showed the date and time of creation using a two-digit year format.

RESOLUTION:
The 'mail' command now writes a four-digit year in the 'Date:' header.

'/usr/bin/refer' command assumed all references had dates in 20th century
Apple reference #2345894, 2345940

ISSUE:
The 'nroff' and 'troff' preprocessor, '/usr/bin/refer,' discarded references with dates whose century was not '19' in certain circumstances.

RESOLUTION:
The 'refer' command now recognizes bibliographic references in any century.

'at' command sometimes scheduled jobs incorrectly after Feb 29 in leap years
Apple reference 2346578, 2346551

ISSUE:
The calculation in the 'at' command used to determine the day of the year that a job should execute didn't properly account for the additional day in leap years when the user entered the job in the year prior to a leap year. For example, if a user scheduled a job for March 2, 2000 in June of 1999, with the syntax 'at 8am Mar 2,' the 'at' command incorrectly scheduled the job for March 1, 2000.

RESOLUTION:
The day-of-year calculation used by 'at' for scheduling jobs in the next year is corrected to account properly for leap years

Year wasn't set correctly after 1999 in i386 and m68k real-time clock chips
Apple reference #2253936

ISSUE:
The year value wasn't stored correctly after 1999 in the RTC chip on i386 and m68k hardware. One symptom of this error was that users of the Preferences application were unable to set a date later than 1999. This issue only affected the CISC version of NeXTSTEP 3.3.

RESOLUTION:
This problem has been corrected.

NeXT-based 68HC68T1 clock chip doesn't store the century
Apple Reference #2339331

ISSUE:
The 68HC68T1 clock chip in NeXT computers didn't store the century of the year. This issue only affected the CISC version of NeXTSTEP 3.3.

RESOLUTION:
Since the clock chip uses the "every fourth year is a leap year" calculation, this won't cause any problems until 2100.

Hewlett-Packard real-time clock used a two-digit year
Apple Reference #2333833

ISSUE:
The Hewlett Packard real time clock used a two-digit year, and the code that set the real time clock date behaved improperly after 2000. This issue only affected the RISC version of NeXTSTEP 3.3.

RESOLUTION:
Two-digit years less than 70 are now interpreted as 21st century, while years greater than or equal to 70 are interpreted as 20th century.

Corrected in NeXTSTEP 3.3 Patch 1

HCRX & HCRX24 cards are not supported
Apple Reference #45838, 54418, 54461, 54462
The new Hyperdrive graphics cards (HCRX and HCRX24) are now supported. Note that although the HCRX card is only 8 bits deep, it can be run in "color-recovery" mode as a 24-bit device. If you are running the HCRX card as the console boot device in 8-bit color mode, turn off boot graphics in your configuration to obtain the proper color map.

MIDI driver doesn't load
Apple Reference #50481

This has been fixed.

HP getty panic
Apple Reference #52993
When an HP computer running NEXTSTEP Release 3.3 boots with the serial driver configured, a getty turned on for a serial port, and the modem connected and turned on, the system panics. This has been fixed.

HPPA 8-bit color problems
Apple Reference #54419
On HPPA machines, choosing 8-bit color leads to color glitches. 8-bit color modes had issues with bad color map entries. This has been fixed. Note, however, that a related bug (#54420) has not been fixed. This bug arises when you change the brightness on multi-headed HP 715'sPit causes color map glitches on 8-bit displays. The issue seems to occur only after power cycling and booting with boot graphics. Booting verbosely should avoid the issue.

gdb and floats
Apple Reference #24436
gdb does not interpret floating point numbers correctly when specified as message arguments. This has been fixed.

Miscellaneous gdb panics
Apple Reference #50727, 54401
gdb occasionally hangs or panics when used with certain applications. This has been fixed.

gdb's *step: command behaves like *next
Apple Reference #52634
*step: now steps into methods, instead of stepping over them.

Stack frames in gdb's browser are reversed.
Apple Reference #54968
Between NEXTSTEP Release 3.2 and Release 3.3 the top-to-bottom order in which stack frames are listed in the Edit/Browser tool were inadvertently reversed, so that the outermost function appeared at the bottom instead of the top. This was not done in an internally consistent way, so that if you clicked on the third stack frame from the bottom, for instance, Edit took you to the third one from the top. This has been fixed so that it works the way it did in NEXTSTEP 3.2.

Cached kmsgs not properly initialized
Apple Reference #51192
When using a cached kmsg, the ikm_delta field was not being initialized. This is especially important in the exception handing code when sending the exception message. Cached kmsgs are now properly initialized.

ipc hash leak
Apple Reference #54071
Certain procedures can cause the kernel to hang due to an ipc hash leak. This has been fixed.

Incorrect results from exp()
Apple Reference #54173, 54399
libc's exp() gives incorrect results on Intel-based computers. This has been fixed.

Memory leak in _openDefaults
Apple Reference #54226
_openDefaults can leak 1024 bytes per invocation. This has been fixed.

Control words and longjmp
Apple Reference #54674
longjmp did not preserve the FPU control word across fninit. This has been fixed.

Packet size negotiation logic is flawed
Apple Reference #54180
NetWare performs packet size negotiation during the server discovery process. This negotiation process is flawed. For example, suppose that the client station first sent its favorite packet size (1024 bytes for Ethernet, for example) to the server on the other side of a LAN switch. The server would then send back its favorite packet size (say, 4096 for FDDI) which the client simply accepted as the negotiated block sizePdespite the fact that this size is illegal for Ethernet. This issue arose because neither the server nor the client are aware of the existence of the LAN switch that is bridging the FDDI and Ethernet LANs. The patch causes the workstation to ignore negotiated packet sizes larger than what its immediate medium can support. This should be sufficient until such time as NeXT implements "burst mode" transfers.

Network socket `bind' fails to detect *address in use
Apple Reference #54216
A bug was introduced during the porting of Stanford's IP Multicast code that allowed multiple local clients to bind to the same IP address (that is, the code failed to detect that the address was in use). This patch corrects that error.

Various netinfo bugs

Apple Reference #36740, 39778, 49580, 49585, 49607, 49899, 50175, 51088, 51809, 51944, 53423
A number of bugs were fixed in netinfo. The following are some of the more notable bugs that were fixed:

- 39778: If you have a second account with a uid of 0, netinfo authentication can fail. If a netinfo domain had multiple users with the same UID, authentication for that UID would be unreliable.
- 49607: lookupd should number domains starting at 1. Minor change. When lookupd received a SIGUSR2 to log it's current connections, it numbered domains started at 0 rather than 1.
- 49899: Permission denied even when _writers is *. Directories with _writers * were only writable by root.
- 50175: nidomain must byte-swap master's address. This bug caused nidomain -c to fail to create clones on Intel-based computers. The master's IP address was byte-swapped, resulting in an incorrect and unusable database.
- 51088: Memory smasher in netinfod. This bug would cause random netinfo crashes. It was the result of ni_writeprop() freeing some memory twice.
- 51809: netinfod[PID]: tag test: can't get masters /machines/ip_address/I^AT*s^ directory. The netinfo clone start-up configuration checking routine had a couple of syslog messages that were missing an argument. If a clone was mis-configured, it would print a garbled error message.
- 51944: file name is freed, then used. A very rare bug that only occurred if a file system error occurred while the server was shutting down, and it got an error while writing the checksum file.
- 53423 netinfod shouldn't call ni_error() - localization calls getpwuid(). A rare bug that could cause netinfo to hang before printing an error message if it detected an internal error.

NetInfoManager won't create clones on Intel-based computers
Apple Reference #54242
This bug prevented NetInfoManager from creating clone netinfo servers on Intel-based computers. The bug affected clone creation using both the *Servers: panel and the *Manage Hierarchy: panel. Clones created using NetInfoManager would have the master's Internet address reversed, and as a result database initialization and updates would fail. This has been fixed.

SimpleNetworkStarter messes up mail server configurations
Apple Reference #54245
This bug caused SimpleNetworkStarter to install its mail-server package every time it ran. The result was that the last computer that was configured using SimpleNetworkStarter would really be the mail server. Confusing information would be left behind on other computers, and mail would not be correctly configured. This has been fixed.

netinfo's clone self-check has RPC issues
Apple Reference #54920
This bug caused sporadic start-up issues on clone netinfo servers. The bug was caused by errors in the clone configuration self-check routines that ran at start-up time. These self checks have been disabled in this update.

localized Colors... menu item in Terminal
Apple Reference #49523
There was no Colors.. menu item in localized versions of Terminal. This has been fixed: the Colors command is now present in the localized versions of Terminal.

Various cosmetic fixes for localized text
Apple Reference #49525, 49559, 50876, 51668, 52463
Various cosmetic fixes were made to text localization:

- Raising the color panel from any application while you are working in a language other than English produces a *parse error: message in the console window (and the panel contains English text).
- The window title that is displayed while loading Preferences is in English, even when you are working in a language other than English.
- When working in French, Configure's Inspector.nib shows some English text.
- When working in French, some configuration text fields aren't wide enough to contain entire sentences.
- The Spanish version of Loginwindow's preferences panel was poorly formatted.
- Several of the localized Preferences, Configure, and SimpleNetworkStarter files were fixed to provide cleaner UI.

UserManager localization bugs
Apple Reference #50792, 50794, 51190, 54229, 54279
UserManager had a number of bugs in the various localized versions:

- The User Info confirmation panel does not display the path of the login shell when you are working in French.
- The Program Hooks pop-up menu has no valid labels in the Group Default Configuration panel when you are working in French.
- Some fields in the Create Bulk panel aren't properly localized.

- Clicking on the User Account login name format pop-up list after creating multiple users in a domain and then reading an input file containing user names causes UserManager to crash.
- This issue still exists when running UserManager in Swedish on Intel or NeXT architectures. As a workaround, run UserManager in another language.
- The Group menu doesn't work when working in German.

This patch release also fixes some connections in the nib files for the localized versions of UserManager so that now creating bulk accounts, creating groups, and inspecting group defaults all work properly in the localized versions.

Cannot choose a language other than English when you create a new user account
Apple Reference #51223
New template files were added so that system administrators will be able to create new user accounts with certain localization defaults already set. If you are a system administrator and would like to use User Manager to create new user accounts with defaults localized for French, German, Italian, Spanish, or Swedish, you need to select all of the languages when you install the patch. This will ensure that all of the default files are available for your use in usr/template/languages. Note that this will also install other updated language files that are included on the patch. If you use Preferences to select another language that has not been previously installed from the original release software, these updated files would appear in that language while the rest of the UI files in a particular application would appear in the next language you have selected in Preferences which has been installed.

A related bug still exists, however: if you install NEXTSTEP Release 3.3 using one of the European languages and then create an English user account with UserManager, when the new user logs in Workspace will use the language that you chose during installation, instead of English. The user can work around the issue by simply choosing the proper language in Preferences and then logging out and logging back in again. Note that new user accounts are only affected in this way if English is chosen when creating the user account.

Shift-hyphen does not produce an underscore in UK keyboard mapping
Apple Reference #54171
The *alt: and *shift: keys were reversed in the UK keyboard mapping file. This has been fixed.

Fixed Pitch Font issues in non-English languages
Apple Reference #54228
Selecting Fixed Pitch Font in Font Preferences while working in a language other than English caused Preferences to crash. This has been fixed.

VM allocation in WindowServer
Apple Reference #54132
The WindowServer should use vm_allocate instead of malloc for backing storePcurrently, it almost never gives VM back to the operating system. This has been fixed.

Crash while displaying images
Apple Reference #54134, 54138
Certain images, displayed in certain graphics modes, can crash the WindowServer. This has been fixed.

12-bit window flushing delays
Apple Reference #54137
Flushing 12-bit windows on 24-bit displays takes longer than it should. This has been fixed.

cu and tip incorrectly set the UID
Apple Reference #51555, 51785
cu and tip incorrectly set the UID. This has been fixed.

SoftPC filename length
Apple Reference #51590
Use of DOS filenames greater than 31 characters in length causes issues in SoftPC. This has been fixed.

pbs and appkitServer launched with incorrect group permissions
Apple Reference #52531
pbs and appkitServer now launch with the correct group permissions.

CERT Advisory: sendmail vulnerabilities.
Apple Reference #52842, 56026
The sendmail security vulnerabilities described in CERT Advisory CA-95:05 have been fixed. Contact CERT for more details.

Services don't register in ProjectBuilder
Apple Reference #54217
None of the Services items were active in the version of ProjectBuilder supplied with NEXTSTEP Release 3.3. For instance, third-party source code control apps such as DevMan didn't function as advertised. This has been fixed.

Floppy operations don't work as intended
Apple Reference #54220
The floppy operations in workspace were broken. For instance, a floppy was not represented by the proper DOS, MAC, or NeXT floppy icon; instead, a folder icon was displayed. Or, after mounting a floppy (with Check for Disks), the disk was mounted but the Disk menu contained Check for Disks and Eject onlyPit was missing Initialize. These bugs have been fixed.

Internal error in rld
Apple Reference #54260
rld would sometimes get the internal error: *lookup_symbol() failed. This has been fixed.

Multiple devices in Add panel
Apple Reference #54428
Configure treats the last byte of the EISA id as a *don't care: byte. This fixes a issue where Configure would show multiple instances of some devices in the *Add Devices: panel.

Failure to read multiple backups on HPPA machines
Apple Reference #55452
Reading of multiple files/backups failed. Creation of multiple backups on the same tape was not a Issue, but only the first backup could be read on a HP platform.

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Published Date: Feb 20, 2012

OPENSTEP Year 2000 Technical Tips

This article discusses ways developers can avoid causing Year 2000 problems in their code, including some issues relating specifically to Apple's OPENSTEP and WebObjects frameworks and API's. This article does **not** discuss the Year 2000 compliance status of any Apple product; for Y2K compliance information, see the Apple Year 2000 main page at http://www.apple.com/about/year2000 .

The following are tips for programmers; we hope they will help you avoid some common problems in your code, and identify problems in your legacy code for remediation.
This article has been archived and is no longer updated by Apple.

Working with Dates in WebObjects

A detailed overview of date handling in WebObjects is now available for **download in PDF format**.

Use Consistent Date Handling

Consistency in date hanlding makes maintaining and fixing date-handling code easier. Apple recommends that you always use the Foundation date and time API's when you need to write date-handling code for OPENSTEP or WebObjects.

Don't Divide By an NSTimeInterval Value

Dates are represented in the Foundation framework with **NSDate** and **NSCalendarDate** objects and **NSTimeInterval** values. An **NSTimeInterval** object is essentially a C-language double (**NSTimeInterval** can represent intervals of approximately 10,000 years with sub-millisecond accuracy). **NSDate** and **NSCalendarDate** store the date that they represent with an **NSTimeInterval** which represents the time delta in seconds from the Foundation reference date (00:00:00 Greenwich Mean Time January 1, 2000). Since the internal time representation will transition across zero at the reference date, there will be a brief instant (on the order of microseconds in length) during which an **NSDate** object created to represent the current time will have an **NSTimeInterval** of zero. An **NSTimeInterval** of zero has no special significance to **NSDate** or **NSCalendarDate**, but applications that use the **NSTimeInterval** of a date object in division should protect against division by zero. This is unlikely to occur in real-world applications.

Avoid Two-Digit Date Formats

Always use four-digit years when formatting dates for input or output; a four-digit year is the **only** unambiguous way to refer to any date. The Foundation framework's date formatting objects may interpret two-digit year values in unexpected ways, and using the two-digit "%y" format allows no way for a user to present a date unambiguously and may cause additional problems; for example, typing "2004" into a two-digit year formatted field result in a value of "20" being used and "04" being truncated. Instead, use the four-digit "%Y" year format.

Published Date: Feb 20, 2012

OPENSTEP: OPENSTEP and Windows 2000

Q: When Windows 2000 is released, will OPENSTEP 4.2 (or an earlier version of OPENSTEP) run on it?
This article has been archived and is no longer updated by Apple.
A: OPENSTEP Enterprise was developed and tested using Windows NT 4.0. It was not developed for, nor tested on, Windows 2000. Apple does not warrant that any Apple/NeXT products released for Windows NT 4.0 (or earlier), such as OPENSTEP 4.2, will work on Windows 2000. Apple does not intend to do comprehensive regression testing of these products on Windows 2000, and does not intend to provide updates and/or patches to make such products compatible with Windows 2000.
Published Date: Feb 20, 2012

OPENSTEP 4.2: Quantrix Problems on Patched OPENSTEP Systems

Q: I've installed OPENSTEP 4.2 Patch 4 or later on my system, and Quantrix will no longer run. How can I continue to use Quantrix under patched versions of OPENSTEP?
This article has been archived and is no longer updated by Apple.
A: Quantrix, a product of Lighthouse Design, Ltd., expects certain specific behavior from the 'gnutar' command. Because of Year 2000 issues with 'gnutar,' OPENSTEP 4.2 Patch 4 and later and NeXTSTEP 3.3 Patch 2 and later replace the version of 'gnutar' that shipped with the operating system with a Year 2000-compliant version. Quantrix cannot use this version of gnutar. As a result, Quantrix cannot create new models. If your preferences are set to create a new model at launch time, Quantrix will hang when starting up.

Users can work around this problem by editing one of the Quantrix configuration files. Using an 8-bit capable text editor such as Edit.app or emacs, edit the file:

```
Quantrix.app/English.lproj/Localizable.strings
```

You should see an entry in this file which looks like:

```
/* path to gnutar executable - DO NOT CHANGE */
"/usr/bin/gnutar";
```

Change this line to read:

```
"/usr/bin/gnutar" = "/bin/false";
```

Quantrix will now run without using any version of 'gnutar'. Apple has not tested and does not provide any warranty for this procedure. Be sure that you use an editor that understands and preserves 8-bit characters; if you use a 7-bit text editor such as vi, Quantrix will not understand the new file.

Published Date: Feb 20, 2012

NeXTSTEP 3.3: Quantrix Does Not Run On Patched NeXTSTEP Systems

Q: I've installed NeXTSTEP 3.3 Patch 2 or later on my system, and Quantrix will no longer run. How can I continue to use Quantrix under patched versions of NeXTSTEP?
This article has been archived and is no longer updated by Apple.
A: Quantrix, a product of Lighthouse Design, Ltd., expects certain specific behavior from the 'gnutar' command. Because of Year 2000 issues with 'gnutar,' OPENSTEP 4.2 Patch 4 and later and NeXTSTEP 3.3 Patch 2 and later replace the version of 'gnutar' that shipped with the operating system with a Year 2000-compliant version. Quantrix cannot use this version of gnutar. As a result, Quantrix cannot create new models. If your preferences are set to create a new model at launch time, Quantrix will hang when starting up.

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Published Date: Feb 20, 2012

WebObjects 4: Preventing Line Breaks In WOSendMail

This article describes why linebreaks appear in electronic mail generated by the WOMailDelivery class and sent by WOSendMail, and how to reduce the occurrence of line breaks that can hurt the overall appearance of your plain text e-mails.
This article has been archived and is no longer updated by Apple.
WebObjects 4 provides a class for generating and sending e-mail called WOMailDelivery. Behind the scenes WOMailDelivery invokes a tool called WOSendMail. To generate a plain text e-mail, you can add the WOExtensions framework to your project and add code like the following...

```
String theMailString =WOMailDelivery.sharedInstance().composePlainTextEmail(from, to, cc, subject, message, false);
```

where message represents the body of the e-mail. The message might be pre-defined, or it might be something a user enters into a WOTextfield on one of the pages of your WebObjects application. See the WOMailDelivery class description for information about the remaining parameters.

Your app would send the message with the following code:

```
WOMailDelivery.sharedInstance().sendMail( theMailString );
```

The resulting e-mail might wrap the lines of text at a seemingly arbitrary pre-chosen length. This can result in ugly line-wrapping for some e-mail clients. Some customers would prefer to eliminate this pre-chosen line length, so that their e-mail clients will wrap the lines based on window size.

According to the SMTP specification, the limit for line length should be 998 characters (leaving 2 characters for carriage return and linefeed). (See http://freesoft.org/CIE/RFC/821/24.htm for more information). WOSendMail defaults to a line length of 76 characters. To change this default, simply add an entry to WOSendMail's defaults database. WOSendMail includes a "LineLength" user default. When the LineLength default is set to a positive integral value, the line wrapping occurs as directed by the user default. Type the following at a shell prompt:

```
defaults write WOSendMail LineLength 998
```

If you have problems, make sure the 'defaults' command is on your path. The executable should be located in $NEXT_ROOT/Library/Executables.

Note: Setting this user default will not prevent line-breaks for e-mails whose line lengths exceed 998 characters. E-mail messages with non-standard line lengths will display differently on different e-mail clients.

Published Date: Feb 18, 2012

OPENSTEP: gnutar changes in Apple patches

Several Apple Enterprise and NeXT products included the GNU 1.11.2 version of tar, which for certain operations did not handle dates after 1999 properly. A newer version of tar based on the GNU tar-1.12 source has been provided in Apple patches for many affected products on Mach, Solaris, and HP-UX platforms. This newer version of tar, while correcting all known Year 2000 issues, may have unwanted side effects for some users. In an effort to minimize these side effects, Apple made some modifications to the standard version of GNU tar-1.12.

This document describes the changes Apple made to the GNU tar-1.12 source. In addition, it discusses potential problems Apple users may encounter using GNU tar-1.12 on older systems, and provides workarounds for them.

This article has been archived and is no longer updated by Apple.

Which products and patches are affected?

The Apple Enterprise Software product patches which include an updated version of gnutar include:

- NeXTSTEP 3.3 Patch 2 and subsequent NeXTSTEP 3.3 patches
- OPENSTEP 4.2 Patch 4 and subsequent OPENSTEP 4.2 patches
- WebObjects 3.1 Patch 1 and subsequent WebObjects 3.1 patches
- WebObjects 3.5.1 Patch 4 and subsequent WebObjects 3.5.1 patches
- WebObjects 4.0.1 Patch 1 and subsequent WebObjects 4.0.1 patches

For complete information on the current patches available for Apple Enterprise Software products, please see the NeXTSTEP Current Patch List, the OPENSTEP Current Patch List, and the WebObjects Current Patch List

Apple modifications to tar

GNU tar-1.12 expects a more recent version of the system header file 'stat.h' than the one shipped with OPENSTEP and NeXTSTEP. Some of the symbols defined in stat.h have changed, including the symbolic link symbol, formerly _S_IFLNK, now S_ISLNK. A test in the file tar-1.12/src/system.h in the GNU source distribution (lines 144-148) defines 'lstat' to be 'stat' if the newer symbolic link symbol is not found, with the result that symbolic links are not processed properly:

```
#include <sys/stat.h>

#ifndef S_ISLNK
# define lstat stat
#endif
```

Since there is code later in the same file which correctly handles the older symbols, Apple modified the code above as follows:

```
#include <sys/stat.h>

#ifndef S_ISLNK
/* # define lstat stat */
#endif
```

This was the only modification made to the GNU tar 1.12 source files for Apple's patches.

Problems which may be encountered due to changes between GNU tar-1.11.2 and GNU tar-1.12

When processing input being read from a pipe, the older version of tar read only the contents of the .tar file and then exited. But tar-1.12 continues to read from the pipe (discarding the data) until the pipe is closed, even after the .tar file ends.

Because of this change, some third-party OPENSTEP and NeXTSTEP applications may not be fully compatible with the gnutar. This is known to affect Quantrix.app and Concurrence.app. Information on a Quantrix-specific workaround is available as **TIL article 70128**.

For other applications, you may need to copy the original gnutar from your installation media and reinstall it on your system. You may need to edit the application binary or an application-specific configuration file to force the application to use this version of gnutar.

Building GNU tar-1.12 on NeXTSTEP or OPENSTEP

In order to build GNU tar-1.12 on NeXTSTEP or OPENSTEP, you must modify one of the files which is automatically generated by the 'configure' script included in the GNU tar-1.12 distribution. To make the modification:

1. Run 'configure'

2. Using a text editor, make the following change in the config.h file:

Change:

/*#undef HAVE_UNION_WAIT */

To:

#define HAVE_UNION_WAIT 1

3. Run 'make' to compile the package.

Consult the INSTALL documentation included in the GNU tar-1.12 distribution for additional information on building the package.

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3. Run 'make' to compile the package.

Consult the INSTALL documentation included in the GNU tar-1.12 distribution for additional information on building the package.

Published Date: Feb 20, 2012

A/UX newfs and Sony Optical Disk Drive

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I have a private Sony SMO-C501-OO (Magneto-Optical disk). I did a newfs and mounted it under A/UX. I've formatted it under SilverLining 5.25 with a Slice 3 partition (287MB) under Macintosh OS. But when I created the newfs on it under A/UX, the options were quite confusing. After several unsuccessful attempts, I chose to recognize it as a 160SC disk, and then the miracle occurs! The newfs command was working perfectly! So my question is:

Is this normal? Does the newfs command recognize the hardware specification of the disk and bypass the /etc/disktab or newfs options, whatever your choice is?

This article has been archived and is no longer updated by Apple.
The problem that you were getting with a smaller size of file system or something confusing about the newfs options was possibly due to the wrong type of disk drive you've chosen when creating the file system via "newfs". We don't know what option(s) of "newfs" syntax you specified. We are not sure if you have the right size of file system (with 287MB) after you chose 160SC disk type.

You should choose a drive type which is closer to your drive specification, or you could create a new entry with the drive physical characteristics (number of sectors/track, number of tracks/cylinder, and the number of cylinders/disk) in /etc/disktab for the particular disk drive. "newfs" reads the information from /dev/disktab for a particular drive type and invokes the /etc/fs/ufs/mkfs program to make a file system for a partition.

Published Date: Feb 18, 2012

WebObjects 3.5.1: Additional gdb Troubleshooting

This article discusses a workaround for a known problem with gdb under WebObjects 3.5.1 on Windows NT.
This article has been archived and is no longer updated by Apple.
The WebObjects 3.5.1 release notes describe the following problem which may occur on Windows NT installations of WebObjects 3.5.1:

gdb breaks on unknown signal

Apple Reference #: 78366

Issue:

gdb breaks at the end of every request-response loop cycle, claiming that it has caught an unknown signal in closesocket.

Workaround:

Use the continue command to continue execution when gdb breaks. To prevent this from happening in the first place, do one of the following :

- *Before running your application in gdb, enter the command set signal-exception 4.*
- *Create a gdb.ini file containing the set signal-exception command and save it in each of your .woa projects. You also can put it in your home directory to affect all projects that you work on.*

In some cases, the solution described may not fully resolve the problem. In these cases, try the following additional step:

Under the Windows NT registry path:

HKEY_LOCAL_MACHINE\\SOFTWARE\\ORACLE

rename the key

OTRACE73

to (for example)

OTRACE73.RENAMED

This is an unsupported procedure and may create unknown side effects with the Oracle database. If problems occur, rename the key to its original name.

Published Date: Feb 18, 2012

WebObjects 4.5: Java FAQ

This article contains frequently asked questions (FAQ) regarding Java in WebObjects 4.5, with answers to those questions.
This article has been archived and is no longer updated by Apple.

Questions answered in this article:

1. What JDK version is used in WebObjects 4.5?
2. Does Apple support Just-in-Time (JIT) compilation with WebObjects 4.5?

Question 1: What JDK version is used in WebObjects 4.5?

Answer: WebObjects 4.5 uses Sun's 1.1.8 JDK on Windows NT and Solaris, and Sun's 1.1.7 JDK on HP-UX. This is the only version officially supported by Apple. In addition, WebObjects 4.5 supports Sun's Swing interface library, version 1.1.1.

Question 2: Does Apple support Just-in-Time (JIT) compilation with WebObjects 4.5?

Answer: JIT functionality is not available in this release of WebObjects. WebObjects applications spend much of their time running compiled framework code; the speed benefits of this approach are greater than would be seen with JIT-compiled Java code.

Published Date: Feb 18, 2012

WebObjects 4.5: Password Protecting the WOStats Page

The WOStats page gives a WebObjects application administrator useful information about their application and its real-world usage. This document explains how to use password protection to keep external requests from accessing your site's statistics page.
This article has been archived and is no longer updated by Apple.

Overview

If WebObjects 4.5 Update 2 or WebObjects Update 3 is installed, the WOStatsPage is protected by default. This document is only relevant if one of the WebObjects updates is not installed.

Related Articles:

- Article 75087 - **WebObjects 4.5 Update 2 Overview**
- Article 75091 - **WebObjects 4.5 Update 3 Overview**

By default, the password protection functions of WOStats are disabled. To enable them, you will need to change some of the files in the WOStatsPage project. The exact steps will depend on your operating system. After the function is enabled, it is easy to set a password in your application.

Enabling Password Protection on MacOS X Server

To enable password protection on MacOS X Server, first open the file

```
System/Library/Frameworks/WOExtensions.framwork/Resources/WOStatsPage.wo
```

in the WOBuilder application. If you do not have the development tools installed on this system, you will have to edit the files by hand; follow the instructions for Solaris and HP-UX systems, below.

- After the file is open, switch to the "Text Mode" view. This will display the HTML file in the upper window, and the application .wod file in the lower window.
- In the upper (HTML) window, line 10 is an HTML comment opening code, "<!--". Remove this line and the matching end comment line after the password object.
- In the lower window, find the ALLOWED: WOConditional statement. The next line will read:

```
condition=YES;
```

Replace this statement with:

```
condition=session.allowedToViewStatistics;
```

- In the same window, find the "REFUSED: WOConditional" statement. The next line will read:

```
condition=YES;
```

Replace this statement with:

```
condition=session.allowedToViewStatistics;
```

Password protection is now enabled. Follow the instructions below to set a password for your application.

Enabling Password Protection on Solaris or HP-UX

To enable password protection on a Solaris or HP-UX system, first open this directory under your Apple root directory (usually /Apple or /opt/Apple):

```
Library/Frameworks/WOExtensions.framwork/Resources/WOStatsPage.wo
```

This directory will contains two files, WOStatsPage.html and WOStatsPage.wod. Using a text editor, make the following three changes:

- Line 10 of the WOStatsPage.html file is an HTML comment opening code, "<!--". Remove this line and the matching end comment line after the password object.
- In the WOStatsPage.wod file, find the "ALLOWED: WOConditional" The next line will read:

```
condition=YES;
```

Replace this statement with:

```
condition=session.allowedToViewStatistics;
```

- Also in the WOStatsPage.wod file, find the "REFUSED: WOConditional" statement. The next line will read:

```
condition=YES;
```

Replace this statement with:

```
condition=session.allowedToViewStatistics;
```

Password protection is now enabled. Follow the instructions below to set a password for your application.

Enabling Password Protection on Windows NT 4.0

To enable password protection on Windows NT, first open this directory under your Apple root directory (usually C:\\Apple):

```
Library/Frameworks/WOExtensions.framwork/Resources/WOStatsPage.wo/
```

This directory will contains two files, WOStatsPage.html and WOStatsPage.wod. Using a text editor or WOBuilder, make the following three changes:

- Line 10 of the WOStatsPage.html file is an HTML comment opening code, "<!--". Remove this line and the matching end comment line after the password object.
- In the WOStatsPage.wod file, find the "ALLOWED: WOConditional" statement. Uncomment the next line and comment out the line that reads:

```
condition=YES;
```

The statement should now read:

```
ALLOWED: WOConditional {
condition=session.allowedToViewStatistics;
//condition=YES;
}
```

- Also in the WOStatsPage.wod file, find the "REFUSED: WOConditional" statement. Uncomment the next line and comment out the line that reads:

```
condition=YES;
```

The statement should now read:

```
REFUSED: WOConditional {
condition=session.allowedToViewStatistics;
//condition=YES;
nagate="1";
}
```

Password protection is now enabled. Follow the instructions below to set a password for your application.

Using Password Protection

Once password protection is enabled, set the password in your Application.wos file's **init** method. The syntax is:

```
[[self statisticsStore] setPassword: @"MyPassword"];
```

Published Date: Feb 18, 2012

WebObjects 4.5: Solaris "Can‘t find Xa.o" error message

Q: When I try to compile my WebObjects 4.5 application on a Solaris 2.6 system, I get the error message:

```
Link error, can't find Xa.o
```

My app compiles and links without this issue on other platforms. What's wrong?

This article has been archived and is no longer updated by Apple.
A: Some Solaris 2.6 distributions did not include the operating system package

```
System SUNWarc Archive Libraries
```

which is required by the WebObjects linker. The archive libraries are included in your Sun distribution and can be added to your system with the "pkgadd" command.

Published Date: Feb 18, 2012

WebObjects 4.5: Preventing Zombie Processes on Solaris

Q: My WebObjects 4.5 application is running on a Solaris server; my database is running on a separate system. If the database shuts down, zombie processes are created on the WebObjects server machine. How can I prevent this?
This article has been archived and is no longer updated by Apple.
A: Add this line to the sqlnet.ora file on the Oracle client system:

BEQUEATH_DETACH=yes

The oracle executable will now catch the child signal from the SQLNet connection, preventing the creation of zombie processes. This value is set when the Oracle server is installed, which is why this issue does not occur if the WebObjects application and the Oracle database are installed on the same system.

Published Date: Feb 18, 2012

WebObjects 4.5: Control-Dragging in Windows NT Project Builder

Q: On other platforms, I can control-drag files to sort them in the Project Builder file browser. This doesn't seem to work on Windows NT versions of Project Builder. How can I enable this feature on Windows NT?
This article has been archived and is no longer updated by Apple.
A: To enable control-dragging on Windows NT, type the following at a Bourne shell:

```
defaults write NSGlobalDomain NSModifierFlagMapping "{LeftControl=Command;RightControl=Control;LeftAlt=Alt;RightAlt=Alt}"
```

This allows you to use the the right control key (or any key you set to "Control") to control-drag files in Project Builder on Windows NT. You can also set this mapping in the Project Builder domain if you only want it to apply to Project Builder. Using NSGlobalDomain will apply it to all of the current user's applications.

For more information on customizing WebObjects' text system, see the TextDefaultsAndBindings documentation in the Programming Topics section of WOInfoCenter.

Published Date: Feb 18, 2012

WebObjects 4.5: Sybase Client Libraries Available From Sybase

This article discusses how to obtain the Sybase Client Libraries for WebObjects 4.5.
This article has been archived and is no longer updated by Apple.
Beginning with WebObjects 4.5, Apple Computer, Inc. no longer distributes the Sybase OpenClient Libraries for Windows NT on the WebObjects CD. WebObjects customers must now contact Sybase directly to purchase the appropriate client libraries for development and deployment platforms. You should contact Sybase or see their website for the latest information. See technical document 75396, "**Sybase, Inc. Contact Information**".

This article supercedes the documentation distributed on the WebObjects 4.5 CD. The client library version referenced in the EOF release notes is compatible with both WebObjects 4.5 and WebObjects 4.0.1 installations.

Published Date: Feb 18, 2012

Datapoint Terminal Emulator for Macintosh

My work group uses a number of Datapoint terminals. I am looking for a communications package that can emulate Datapoint terminals.

This article has been archived and is no longer updated by Apple.
The Custom Systems Group at Datapoint sells Mac8220--Macintosh software that emulates Datapoint terminals. We called Datapoint and found that the software was available through their marketing organization. Contact your Datapoint representative for details.

Published Date: Feb 18, 2012

WebObjects 4: Errors Creating the WebObjects.conf File

Q: When deploying a WebObjects 4 application on Windows NT or Windows 2000, I get an error message saying that the WebObjects.conf file could not be created.
This article has been archived and is no longer updated by Apple.
A: This message occurs if WebObjects can't write to the directory where it expects to write its temporary files. To fix this, open the Windows Registry Editor, REGEDIT.EXE. In the registry, find the directory HKEY_LOCAL_MACHINE\\SOFTWARE\\NeXT\\WebObjects\\Configuration.

There should be five entries in this directory: Default, CGI_BIN, DOCUMENT_ROOT, NEXT_ROOT, and TEMP. Make sure that the TEMP directory is set to a directory where WebObjects has write privileges. The entry should be formatted like:

TEMP "c:/inetpub/conf/"

Be sure to use forward slashes for the pathname, not backslashes.

Published Date: Feb 18, 2012

TA45446_WebObjects_Slow_Netscape_Performance_on_Windows_.pdf

WebObjects 4.5: Slow Netscape Performance on Windows 2000

This article describes a known WebObjects issue with Netscape browsers on Windows 2000.
This article has been archived and is no longer updated by Apple.
When a Direct to Web application running on Windows 2000 is accessed using the Netscape browser (v4.72) running on the same machine, it takes a long time for pages to be returned. The Netscape browser appears to consume all available CPU time while loading the response to a form submitted with method=POST. The long delay returning pages is due to the application being starved for CPU time rather than being an issue in WebObjects. Possible workarounds are to run the Netscape browser on a different machine, or to use a different browser.
Published Date: Feb 18, 2012

DAL 1.2: How to Get Listener Module for VMS 5.4

I am planning to upgrade our VAXCluster to VMS 5.4 and need a copy of the DAL listener module that supports the 5.4 password hashing algorithm. Does the DAL package that ships with PATHWORKS for Macintosh from DEC support 5.4? Or do I need a new listener? How do get a copy of the module?
This article has been archived and is no longer updated by Apple.
Note: Earlier versions of DAL were referred to as CL/1.

There is a compatibility problem with the new VMS 5.4 release and the CL/1 1.0 and 1.1 VAX/VMS servers. Due to changes in VMS password authentification in VMS 5.4, AppleTalk connections fail when made to the earlier versions of VAX/VMS Server (CL/1 Servers 1.0 and 1.1) running on a VMS 5.4 system. This is a problem with AppleTalk connections only; asynchronous connections do work. There is no workaround for the 1.0 and 1.1 versions.

DAL 1.2 is compatible with VAX/VMS 5.1 through 5.3. Compatibility with VAX/VMS 5.4 is shown below.

VMS 5.4 Compatibility

Async AppleTalk
----- ---------

CL/1 1.0,1.1 Yes No

APDA DAL 1.2 Yes No *

* If you have recently installed VAX/VMS 5.4 or are planning on upgrading to 5.4, please contact the Technical Answerline, so that we may send you a new DAL Listener module that is compatible with VAX/VMS 5.4. As of release 1.3 of DAL, VMS 5.4 is supported as part of the standard product.

When customers purchase Data Access Language, they have a card that they can send in for support on Technical Answerline for 90 days. After that, they can purchase a one-year Technical Answerline support. They can purchase this Technical Answerline contract from a dealer. Customers on a support contract may call the Technical Answerline to request for the DAL Listener module that works with VAX/VMS 5.4.
Published Date: Feb 20, 2012

PATHWORKS: How to Create a System 6.0.7 Installer Disk

How can one create a PATHWORKS for Macintosh Installer Disk with System Software 6.0.7?

This article has been archived and is no longer updated by Apple.
The PATHWORKS for Macintosh Installer Disk is just like a normal System Software 6.0.7 startup disk with AppleShare Workstation software, so you can access to a VAXshare file server. All the PATHWORKS for Macintosh software is located on the VAXshare file server. The PATHWORKS Installer Disk works when your Macintosh is connected to the Digital network through LocalTalk and a router, or through an Apple EtherTalk NB card. EtherTalk software must be installed on this Installer Disk for this use.

Published Date: Feb 18, 2012

Pascal II: Disable Slot 3 Terminal Initialization

This program modifies the file SYSTEM.APPLE on the boot diskette so that Pascal won't initialize an 80-column card in slot 3, thereby allowing graphics programs to be run without interference from the 80-column card.

This article has been archived and is no longer updated by Apple.

```
PROGRAM PATCH_40_COL;

TYPE BYTE = 0..255;

VAR F : FILE;
BUFFER : PACKED ARRAY [0..511] OF BYTE;
BLOCK, BLOCK_XFER : INTEGER;

BEGIN
WRITELN (CHR (12));
WRITELN ('Put disk with "SYSTEM.APPLE" in drive 1');
WRITELN;
WRITELN ('Press RETURN when ready');
READLN;
RESET (F, '#4:SYSTEM.APPLE');
BLOCK_XFER := BLOCKREAD (F, BUFFER, 1, 3);

BUFFER[327] := 76; (* PATCH #1 *)
BUFFER[328] := 245;
BUFFER[329] := 254;

BUFFER[384] := 24; (* PATCH #2 *)
BUFFER[385] := 144;
BUFFER[386] := 12;

BLOCK_XFER := BLOCKWRITE (F, BUFFER, 1, 3);
BLOCK_XFER := BLOCKREAD (F, BUFFER, 1, 4);

BUFFER[201] := 24; (* PATCH #3 *)
BUFFER[202] := 144;
BUFFER[203] := 12;

BUFFER[345] := 24; (* PATCH #4 *)
BUFFER[346] := 144;
BUFFER[347] := 14;

BLOCK_XFER := BLOCKWRITE (F, BUFFER, 1, 4);
CLOSE (F, LOCK);
WRITELN ('Done')
END.
```

Published Date: Feb 20, 2012

TA45451_Simwares_SIMMac_No_Support_for_Token_Ring_(TIL07021).pdf

Simware‘s SIMMac: No Support for Token Ring

Can you use SIMMac (from Simware) over Token Ring for 3270 host connection (IBM host), as one uses MacDFT over Token Ring?

This article has been archived and is no longer updated by Apple.
SIMMac from Simware only provides synchronous and asynchronous connections via protocol converters, coaxial boards, or its own protocol conversion software. SIMMac does not support token ring or LU 6.2 connections.

For contact information, search the Technical Info library under "Simware, Inc."

Published Date: Feb 18, 2012

Heap-Setting Utilities

Whatever became of CE Software's HeapFixer program?

This article has been archived and is no longer updated by Apple.
CE Software no longer supports HeapFixer as a free program. However, Bill Steinberg, author of the Switch-A-Roo FKEY, Pyro!, the SystemErrors DA, and so forth, has written a free program called Bootman. With Bootman, you can set the heap, the number of events, and the number of windows, and shows graphically how the heap is being used. It's available via bulletin boards, user groups, CompuServe, and so on.

Published Date: Feb 18, 2012

A/UX 2.0: Double-Click Behavior and Locked Files

Sometimes A/UX fails to respond promptly to mouse clicks (presumably because the preemptive time slicer has preempted the task running my Macintosh window and has given the CPU to someone else).

So, for example, when I'm trying to edit a file name by clicking the name under the icon, I often find myself launching the software instead, because the Macintosh "double-click detector" thinks I double-clicked, when in fact I only clicked twice in the text field of the icon. In other words, the definition of "double-click" seems to be variable under A/UX.

This article has been archived and is no longer updated by Apple.

Although A/UX handles jobs based on a preemptive, time-slice basis, we can't reproduce the mouse double-clicking behavior that you described. In any case, here is the scenario of the mouse motion:

If the file is UNLOCKED and the mouse is pointed and single-clicked on the name of that file under the icon, the mouse symbol SHOULD change from arrow pointer to I-beam which lets you change the name of the file (the name is then highlighted). Then, when the mouse is double-clicked on the name, the word in the name is selected and allowed to change that word. When the mouse pointer leaves the name area, it becomes an arrow point.

If the file is LOCKED and the mouse is pointed and a single-clicked on the name of that file under the icon, the mouse symbol remains an arrow pointer which means the name of file can't be changed, because it was LOCKED. In this case, if the mouse is double-clicked on the name of the locked file, it will launch the program.

Check if the file to be renamed is LOCKED or UNLOCKED.

Published Date: Feb 20, 2012

MacX 1.1: Visual Types Supported

Which visual types does MacX support--static gray, pseudo color, direct color? I have observed a response of static gray to a visual type query when using an RGB monitor Would the individual display (B/W rooted, rootless and Color rooted, rootless) return a different visual type when queried? How does it handle different monitors on the same system and the client application running across those different monitors?

This article has been archived and is no longer updated by Apple.

MacX, like all X11r4-based servers, supports all visual types on the 8-bit screens that make sense. This means that, given the right colormap, MacX can support or "fake" PseudoColor, DirectColor, Gray scale, StaticGray, StaticColor, and TrueColor. You can use xdpyinfo to see all of these visuals.

Published Date: Feb 20, 2012

TA45455_MacX_ArcDrawing_Algorithms_(TIL07026).pdf

MacX: Arc-Drawing Algorithms

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

In terms of drawing algorithms, MacX has apparently optimized arc-drawing algorithms, but wide-line drawing seems to be extremely slow. I noticed this while working with mwm.

This article has been archived and is no longer updated by Apple.
You are correct. Much better arc drawing code is present in MacX than is present in many X11 servers. On machines that have a floating point unit (all Mac II-class machines, Macintosh SE, and Macintosh IIsi with FPU installed), MacX uses this hardware to achieve good arc-drawing performance. Without an FPU, MacX uses SANE to do its floating point, but it is still pretty fast. Thick lines are slow. Actually, pretty much the same arc-drawing code appears in MacX 1.0 as in MacX 1.1.

Published Date: Feb 20, 2012

NCSA Telnet 2.3: Questions and Diagnosis

I have a two problems regarding Telnet. I have been using Telnet rev 2.2 and recently upgraded to Telnet 2.3, which is now using MacTCP 1.01. I am using a LocalTalk connection to a Kinetics FastPath IV rev J. I have not yet upgraded these units for Phase 2 AppleTalk yet. Every time I try to transfer a file using FTP from my Sun system to the Macintosh, it hangs my machine.

The other new error happens when I am doing a Telnet session--I get NCSA Telnet error #1, program unexpectedly quit. It is independent of CPU (I am using system 6.0.5 on all systems). The problem showed up when I upgraded to Telnet 2.3. Have you heard of any problems like this one?

This article has been archived and is no longer updated by Apple.

We haven't heard any problem like this. There are two versions of NCSA Telnet 2.3, one is Telnet without MacTCP, the other is Telnet with MacTCP. Here are some things to check:

* Make sure you're using the right version of NCSA Telnet 2.3. In this case, you must use NCSA Telnet 2.3 with MacTCP.

* Was MacTCP driver installed and configured properly?

* Was Kinetics FastPath software installed and configured properly?

* Try running "MacTCP Spy" from the Macintosh OS to see if MacTCP is up and running.

* From the Sun machine, try to use "ping", a generic UNIX network utility, to send an ICMP packet to the Macintosh machine to make sure they are talking to each other.

* Try to increase the NCSA Telnet 2.3 with MacTCP application memory size. This is done via Get Info.

Published Date: Feb 20, 2012

Software that Compares Files after Copying (2/91)

When you do a regular copy on a Macintosh (drag a folder or file to another volume), does the Finder do any compare or verify in that command?

Is there any program that can compare two different files to see if they are totally equal? I need a program that verifies that a copy of a file is an image of the original.

This article has been archived and is no longer updated by Apple.
After a copy, the Finder does minimal checking to see if any errors were logged during the copy or verify. It doesn't do a checksum, or any byte-for-byte comparisons of the file.

As for file comparisons, the Hard Disk Jockey disk utility from FWB lets the user copy and verify (among other things) files on disk.

The Macintosh Programmer's Workshop (MPW), available from APDA, comes with two utilities for comparing files:

* Compare compares the lines of two text files and writes their differences to standard output. Options are provided to compare a specific column range in each file, to ignore blanks, and to ignore case.

* ResEqual compares the resources in two files and writes differences in type, identifier, size, or contents to standard output.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Published Date: Feb 20, 2012

LaserWriter IINTX: Hard Disks Can Be Cloned under A/UX (11/94)

I have attached to a LaserWriter IINTX a hard drive that is apparently bad. Because there is another unit which is still in good condition, is there a way to transfer the contents of the good hard disk to the other?

This article has been archived and is no longer updated by Apple.
We don't have a utility specifically designed to copy or back up font info stored on LaserWriter hard disks, but you can clone the disk under A/UX.

* Connect two drives of the same size to an A/UX system.

* Set the SCSI address of the source drive to 5 and the target drive to 6.

* Boot A/UX and login as root.

* At the command line, type:

dd if=/dev/dsk/c5d0s31 of=/dev/dsk/c6d0s31 (do not type the #)

The process will take about 1 minute per megabyte of disk space. When it is complete, type:

sync;sync;sync

Log out and shut down the system. Re-connect the disk to the LaserWriter, power-up and print.

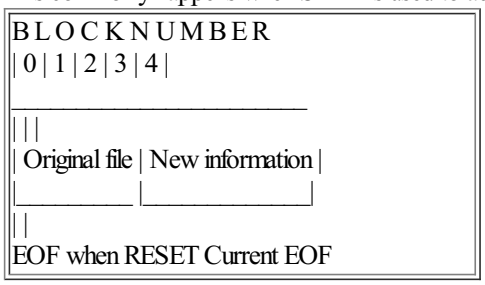
Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

Pascal II: SEEK

This information applies to Pascal 1.1.
This article has been archived and is no longer updated by Apple.
When you SEEK to a record that has been added to the file since the last RESET, often it either takes a very long time to find the record or else Pascal stops with a SYSTEM FAILURE.

This commonly happens when SEEK is used to access a new record from a file extended with PUTs. Further operations on the file may trash it.



In this example, a SEEK to a record in the last half of block 2, block 3 or block 4 will cause problems.

If you must extend a file and then SEEK to one of the new records, RESET the file before doing the SEEK.
Published Date: Feb 20, 2012

DAL Server for A/UX: Availability

Is there a version of DAL Server available for A/UX?
This article has been archived and is no longer updated by Apple.
NOTE: As of December 1993, Independence Technologies, Inc. (ITI) took ownership of the DAL technology. Contact ITI for current product information.

Data Access Language (DAL) 1.3 will work with A/UX 2.0 or 2.0.1. Connections can be made via asynch or TCP/IP but not AppleTalk because A/UX 2.0 and A/UX 2.0.1 don't support ADSP. DAL 1.3.6 supports A/UX 3.0 and ADSP is supported to A/UX as of that release.

Oracle, The Ask Group, Inc./Ingres Products, and Sybase have announced a server that runs on an A/UX 2.0 platform.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.
Published Date: Feb 20, 2012

LaserWriter: Deleting Pages from RAM

After the LaserWriter prints a document, does an image of the document remain in the LaserWriter's RAM? If so, when does it get removed?
This article has been archived and is no longer updated by Apple.
After the LaserWriter gets the image of the page in memory, the PostScript command "showpage" is called to print the page. The "showpage" command looks up the value in "#copies" to determine how many copies to print and then prints that number of pages. Once the printing is completed, the "showpage" command does the equivalent of the "erasepage" and "initgraphics" PostScript commands.

The "erasepage" command erases the entire image in the LaserWriter memory by painting it with gray level 1, which is normally white. The "initgraphics" command resets many of the graphics states to their default values.

For more information on "showpage", "erasepage", and "initgraphics", see pages 238, 161, and 184, respectively, of the "PostScript Language Reference Manual."
Published Date: Feb 20, 2012

Multiplan: Doesn‘t Run on the Macintosh Classic

I bought a Macintosh Classic to replace a Macintosh Plus. I am using System Software 6.0.7 and Multiplan version 2.4. Multiplan bombs on the Macintosh Classic. You can start the program, but when you try to enter anything in a cell, it gives an error message saying there is an address error, and you have to restart the Macintosh. Could the problem might be that Multiplan just won't work under System Software 6.0.7?
This article has been archived and is no longer updated by Apple.
The latest version of Multiplan is Multiplan 1.1, and it doesn't work on the Macintosh Classic. Multiplan 1.1 has not been sold in the U.S. since 1986.

Microsoft Technical Support told us that the latest version of System Software that Multiplan 1.1 was tested with is System Software 2.0 which used System 4.1 and Finder 5.5. Microsoft no longer supports Multiplan and suggests upgrading to Excel.

Published Date: Feb 18, 2012

ROLMphone 244PC Phone Controller

Are you folks aware of a Macintosh product that controls a ROLM 244-PC phone? I am looking for something with the same feature set as IBM's "Personal Telephone Manager"

This article has been archived and is no longer updated by Apple.

There is a Macintosh ROLM 244-PC phone "control" application:

The ROLMphone 244PC is a smart, voice and data-communications telephone that links personal computers to the ROLM 9751 CBX and ROLM CBX II family of voice/data controllers. It combines a digital ROLM telephone with data communications features that support the "AT" intelligent modem command set. The ROLMphone 244PC also includes a documented programming interface (API) that lets programmers design specific, telephone-enhanced applications in areas like outbound dialing, inbound answering, telephone management, and integrated voice/data applications. The documented ROLMphone 244PC API lets a user write customized applications.

You may wish to contact ROLM's direct sales and support team for a copy of the API documentation and write your own control program.

Published Date: Feb 18, 2012

Document Time-Monitor Software Needed

I have a newspaper running four Macintosh IIcx computers on a AppleShare Macintosh SE/30 server and printing to a Birmy Imagesetter with its own spooler. The production manager needs to track the documents off each workstation, documenting how long was spent on each document and its deadtime (the amount of time the document was open but no keyboard or mouse action took place). We've looked at Macintosh-In-Use, but it only totals up all the deadtime from that workstation, and doesn't seem to be able to apply it to the individual document.

This article has been archived and is no longer updated by Apple.
We don't know of a product that will do the above. One developer we mentioned to you may design and ship a product this year somewhat along these lines, but has not yet started on it or determined its feature set.

If anyone else knows of a document time monitor, please send in whatever details you have to TECH.COMM.

Published Date: Feb 18, 2012

A/UX 2.0: CmdShell vi Repeat Key Problem on Macintosh IIfx

I've noticed another bug in A/UX 2.0, but only on Macintosh IIfx. To see it, do these steps:

1) Open a CommandShell Window, and in this window open a big text file (/FILE for instance) with the vi editor.

2) Type some text and all seems to be okay. But sometimes, you will notice that if you use a key with auto-repeat mode, the auto-repeat mode will stop without any reason (for example, while holding down an arrow key).

If you want the auto-repeat function to start again, you must hit the release the key and press it again, or you must move the mouse outside a window (in this last case, you are not obliged to release the key).

This article has been archived and is no longer updated by Apple.

We have verified the symptom of the repeat key performed in vi under CommandShell with a Macintosh IIfx running A/UX 2.0. This strange behavior on the repeating key will be sent to A/UX engineering for further investigation.

For your information, here are two scenarios. In A/UX 2.0, both the mouse pointer and the current keyboard cursor are coexistent. However, in A/UX 2.0.1b2, the mouse disappears from the desktop as soon as the keyboard is activated.

Published Date: Feb 20, 2012

A/UX and Apple CD-ROM: Commando "mount" Minor Bug (8/94)

I am trying to mount a CD ROM under A/UX, using Commando to build the command. When you select "Read Only" mounting options for the "mount" command, it returns

mount -r -o rw

If you click the appropriate option, does the -r override the rw option?

This article has been archived and is no longer updated by Apple.
The Commando returns "mount -o rw" after choosing "Mount specified filesystem" because the default option for "mount" is read/write. The Commando produces "mount -r -o rw" after choosing "Read Only".

Because "-r" is identical to "-o ro", the "Read Only" operation SHOULD override the previous default (rw) option. However, The "-o rw" can be changed to "-o ro" by selecting "Read Only" from the "Other options" button.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 20, 2012

A/UX AppleTalk Network Configuration (8/93)

I have a problem with my A/UX 2.0 network configuration. My network is okay when working with MACpartion, but when I start up A/UX, all the zones disappear. My configuration is:

Macintosh IIci with 8MB
External LA CIE 80MB Hard Disk
Apples NB Ethernet board

This article has been archived and is no longer updated by Apple.
Based on the fact that the zones disappear, we suggest you consider the following diagnostic questions:

* Is AppleShare server and/or PrintServer and/or Apple Internet Router on the AppleTalk network based on AppleTalk Phase 2? A/UX 2.0 does not support AppleTalk Phase 1.

* Is "appletalk" configured within A/UX 2.0 kernel? Use "module_dump /unix" to verify it.

* Is "appletalk" currently running? Use "appletalk -s" to see the status. Use "appletalk -d" to bring AppleTalk network DOWN, and use "appletalk -u" to bring the AppleTalk network UP.

* Make sure the interface is properly selected; this is specified in the /etc/appletalkrc file.

* Refer to Chapter 6 of "Administering AppleTalk" in A/UX Network System Administration for more detailed information.

The message "appletalk: No such file or directory" from the "appletalk -u" command output is a strong indication that the /dev/appletalk directory and/or its sub-directories and files are probably missing or corrupted. Normally, the /dev/appletalk directory should include as follows:

```
total 4
drwxr-xr-x 2 bin bin 512 Dec 7 10:07 ddp
drwxr-xr-x 4 bin bin 512 Dec 6 18:01 lap

appletalk/ddp:
total 0
crw-rw-rw- 1 bin bin 12, 16 Jan 15 16:15 socket

appletalk/lap:
total 4
drwxr-xr-x 2 bin bin 512 Dec 7 10:07 ethertalk0
drwxr-xr-x 2 bin bin 512 Dec 7 10:07 localtalk0

appletalk/lap/ethertalk0:
total 0
crw-rw-rw- 1 bin bin 15, 0 Dec 7 10:07 control

appletalk/lap/localtalk0:
total 0
crw-rw-rw- 1 bin bin 17, 0 Dec 7 10:07 control
```

If the /dev/appletalk directory is causing the problem, do these steps:

1) Run a file system check on the Root file system: fsck /dev/dsk/c?d0s0

2) De-install the appletalk module from the kernel: newconfig noappletalk

3) Re-install the appletalk into the kernel: newconfig appletalk

After re-installing appletalk, the appletalk modules, the /dev/appletalk directory and its sub-directories and files will be correctly re-created.

Article Change History:
17 Aug 1993 - Reviewed for technical accuracy.
Published Date: Feb 20, 2012

Apple Tape Backup 40SC Description, Compatibility (Discontinued)

This article describes the Apple Tape Backup 40SC.

This article has been archived and is no longer updated by Apple.
The Tape Backup 40SC is a block-type device: data is written to, and read from, the tape cartridge in blocks. The controller module provides all data handling functions for SCSI bus transfers and tape cartridge Read/Write module controls, Read-Write head positioning, end sense, and analog-to- digital, digital-to-analog (ADC/DAC) signal conversion for the tape cartridge. The drive and Read-Write modules perform their functions under the direction of the controller module.

Writing to the tape unit begins with the user's command to back up a storage device such as a hard disk. Backup utility software loaded into the Macintosh receives this command and begins transferring data from the storage device to a range of Macintosh main memory. The software then passes control and the address in main memory of the data being transferred (buffer address) to the Macintosh SCSI firmware.

Using standard SCSI commands, the SCSI firmware gives the controller module the logical address to write the incoming block to the tape unit. The controller module translates the logical address to a physical address on the tape, and sends the Read-Write and drive modules commands to position the Read-Write head and activate the tape transport. The incoming data blocks are buffered in the controller module during this translation, but then are passed to the Read-Write module for writing through the control module interface. The Read-Write module then performs the actual write operation according to the commands sent to it by the controller module. The controller module uses the standard SCSI protocol to tell whether the write was successful.

Reading from the tape backup unit begins when the user issues a command to recover a backup file. The backup utility software receives this command and sets up a range of Macintosh main memory (a buffer) to receive the incoming file. The software then passes control (and the buffer address in main memory) to the Macintosh SCSI firmware.

To read from the tape unit, the Macintosh SCSI firmware sends the controller module the logical address of the target block, using the standard SCSI commands. The controller module translates the logical address to a physical address on the tape cartridge and sends the Read-Write and drive modules the commands to position the Read-Write head and activate the tape transport. The outgoing data blocks are passed to the controller module through the control module interface. They are buffered in the controller module and then passed to the SCSI controller for output onto the SCSI bus. The controller module acknowledges correct (or faulty) execution of the read operation to the Macintosh software through the standard SCSI protocol.

The SCSI firmware in the Macintosh receives the data sent by the controller module and writes it to the previously allocated buffer. The controller module, however, acknowledges correct operation as soon as it has passed the data blocks on to the SCSI bus, regardless of the success or failure of the SCSI firmware's side of the exchange.

IMPORTANT COMPATIBILITY NOTES:
* The Tape Backup 40sc is compatible with type DC 2000 tape cartridges.
* The bundled software included with the Tape Backup 40SC is Tape Backup 40SC 2.0.1, which is INCOMPATIBLE with System 7 and later.
* Apple recommends using third-party backup software with the Tape Backup 40SC. Some products that work with the Tape Backup 40SC are Retrospect and Retrospect Remote from Dantz Development Corp., and FastBack Plus from Fifth Generation Systems.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
3 May 1994 - Revised article, added information regarding the type of backup tapes which can be used.
27 September 1993 - Revised article, adding current compatibility information.
23 September 1987 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

TA45470_Plotter_Sharing_on_AppleTalk_Network_(TIL07041).pdf

Plotter: Sharing on AppleTalk Network

Do you know how to share an HP Plotter between Macintoshes and PCs on an AppleTalk network?
This article has been archived and is no longer updated by Apple.
We found a Macintosh-only solution from Palomar Software. PLOTTERgeist is a Chooser-selected driver for plotters connected to a network via Shiva's NetSerial product. You could work around the no-PC limitation by connecting the plotter to an A/B switchbox connected to the NetSerial on one port and a peripheral-sharing switchbox (Black Box has them) on the other.

For contact information, search the Technical Info library under "Black Box."
Published Date: Feb 20, 2012

AppleShare PC: NDIS Compliant? (11/94)

Is AppleShare PC NDIS compliant? I would like to run AppleTalk and TCP/IP protocols through the LocalTalk PC Card at the same time.

This article has been archived and is no longer updated by Apple.
The Microsoft/3Com specification known as the Network Driver Interface Standard (NDIS) specifies software requirements and its interface to hardware and protocol stacks for PC network drivers. It is, therefore, very similar in purpose to our Open Data-Link Interface specification (ODI) which we co-developed with Novell.

However, each of these specifications detail similar requirements in very different ways. An application written to one standard cannot work with drivers based on the other. The two specifications are essentially competitors in the PC-network, driver-architecture world.

Because of this, a protocol stack based on one standard cannot coexist on a network card with a protocol stack for the other standard. This is the unfortunate side effect of two competing standards. A user must use one or the other set of software at one time. Switching between them generally requires rebooting the computer.

Because AppleShare PC 2.0.x is based on the ODI specification, software based on NDIS cannot use a network interface card while AppleShare PC is using it. This prevents an NDIS based Telnet application from concurrently using the same network card as AppleShare PC.

We don't know of any ODI compliant TCP/IP software that can coexist with AppleShare PC, but we'll submit this to product management as an enhancement request. We'll also submit it to Farallon product management, because they're now taking over the AppleShare PC product.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 20, 2012

TA45472_HyperCard_FTP_and_Telnet_(TIL07043).pdf

HyperCard, FTP, and Telnet

Do you know of any XCMDs or XFCNs that use MacTCP or other TCP/IP drivers which let HyperCard do a Telnet or FTP session?

This article has been archived and is no longer updated by Apple.
The HyperCard MacTCP Toolkit version 1.0 is available from APDA and provides the functionality that you want. Here is the description from the APDAlog:

This toolkit contains XCMDs and source code for using HyperCard with MacTCP. Included is a sample stack for reading "netnews" and a documentation stack. MacTCP is software that allows developers to create Macintosh applications for networking environments that use TCP/IP protocols, a widely used standard for networking heterogeneous systems.

We haven't heard of a stack that supports the Telnet protocol.

There is an FTP client stack, called HyperFTP, written by Douglas Hornig of Cornell University. The latest version is available for anonymous FTP download at elroy.cit.cornell.edu (128.253.232.14).

Published Date: Feb 18, 2012

A/UX: Printing to Serial LaserWriter Plus (8/94)

I have a Macintosh IIfx with 8MB of RAM and a 160MB hard drive running A/UX. I want to attach the Macintosh IIfx to a LaserWriter Plus and print to it serially using the printer port on the back of the Macintosh.

I've set the speed of the LaserWriter Plus to 9600bps, set up the print queue, enabled all relevant print daemons, and I've used the setport command to establish the speed of the printer port.

I've used a direct RS/232 cable (Hayes Modem Cable), 2 LocalTalk connectors, and 2 PhoneNET connectors, and I get the same results: the printer flashes its Ready lights, but never prints anything.

I made it work using AppleTalk. I've tried using the Enscript utility to establish direct communication with the print and am successful, but when I try to establish communication with the PostScript interpreter, I get garbage. Is this an A/UX issue or is it related to the serial ports of the Macintosh IIfx--or both?

This article has been archived and is no longer updated by Apple.
We have never used a direct RS-232 cable (Hayes Modem Cable), 2 LocalTalk connector, and 2 PhoneNET connectors to connect a LaserWriter Plus to a Macintosh. For a direct connection of a Macintosh to a LaserWriter Plus, We recommend you use a Mini-DIN-8 Male to DB-9 Male cable (cable number 590-0551, Apple finished goods number M0196). Furthermore, to make sure the connection is working, you can use the "cu" command to verify it.

We are not quite sure what you mean by "established communication with the PostScript interpreter". To print a PostScript format file directly, the %! symbols must be the first two characters on the first line of the file so that the rest of the file will be treated as the PostScript format by the PostScript printer.

Article Change History:
25 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 20, 2012

DAL: Response Time Via Modem

Do you know what is the response time for a simple DAL query to the host through a 2400-baud modem? Do you know what is the response time for a simple DAL query to the host through AppleTalk tunneling?
This article has been archived and is no longer updated by Apple.
It is difficult to provide any hard number because the response time varies so much depending on the environment. There are a number factors that can affect response time:

* Network traffic

* Host CPU model and its current user load: lack of system resources like memory, disk space, and CPU power. Too many users trying to update or read the same records at the same time can cause locking problems.

* Condition of communications line

* Macintosh model

* Database brand

* Database design: Bad design can make finding or updating certain records take a long time.

* Operating system set up

* Programs

Additionally, a DAL query, though simple, can result in one or many records to be selected. Depending on the machine's host load, a 2400-baud connection will work. For DECnet tunneling, we recommend a line speed of 56K or faster to achieve reliability and good performance.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 20, 2012

MacX: How to Use It in a DECnet Environment (1/95)

Regarding the use of MacX in a DECnet environment:

1) A DECnet driver is needed for the CommToolBox.

2) This driver does a translation from TCP/IP to ADSP.

3) The driver is available only from DEC, as part of PATHWORKS.

This article has been archived and is no longer updated by Apple.
1) You need a DECnet/Mac driver in the System Folder, and a DECnet Tool in the Communications Folder. There is also a DECnet Control CDEV, that shows DECnet traffic statistics, and allows turning Network State on or off.

2) The DECnet driver does not translate TCP/IP to ADSP. It uses DECnet protocol to communicate with the VAX host. Another tool, the AppleTalk-DECnet Connection Tool establishes a connection to a DECwindows application through the AppleTalk/DECnet Transport Gateway. This one uses ADSP connections.

3) The DECnet Connection Tool and driver are included with the PATHWORKS for Macintosh package. Alisa also stated that their TSSnet software supports MacX connection over DECnet. For contact information, search the Technical Info library under "Alisa."

Article Change History:
30 Jan 1995 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

Accelerator Boards: Using Virtual Memory

Can I get virtual memory with 68000 machines and 68020 machines without a PMMU by adding a 68030 accelerator board? If so, are there any repercussions I should know about?

This article has been archived and is no longer updated by Apple.

Yes, one way to get virtual memory with 68000 machines and 68020 machines without a PMMU is to add a 68030 accelerator board. Warning: adding a 68030 accelerator board to your 68000- or 68020-based system does not guarantee that one of the third-party virtual-memory products will support the upgrade you have added.

If virtual memory support is your goal, verify with the board manufacturer that their product works with your virtual-memory products. Likewise, check with the virtual-memory product's manufacturer to verify that their product works with your 68030 accelerator board.

Published Date: Feb 18, 2012

Apple IIc Plus: No 40-Column Mode in Access II

I am using an Apple IIc Plus and Apple Access II. The Volume Slide Control on the keyboard for the Apple IIc Plus replaces the 40- or 80-column mode switch found on the original Apple IIc.

Typing PR#3 for 80-column mode and PR#0 for 40-column mode works when in ProDOS, but when using Apple Access how can I switch between 40- and 80-column mode?

Aren't both 40- and 80-column modes supported in Apple Access II?
This article has been archived and is no longer updated by Apple.
Apple Access II does not support 40-column mode on the Apple IIc Plus. The software detects that the 80-column mode is available and wants to switch the system into that mode. There is no workaround.
Published Date: Feb 20, 2012

Apple Scanner: Upgrade for 256 Shades of Gray

Article Change History

1/15/93 - UPDATED
* Abaton now Everex Systems.

Does anyone in France sell a product that upgrades the Apple Scanner to support 256 levels of gray?

This article has been archived and is no longer updated by Apple.
Everex Systems has a product called the "Apple Scan Upgrade" that upgrades the Apple Scanner to support 256 levels of gray. The Abaton Scan DA also comes with the product. For more information, contact Seeder, Abaton's distributor in France

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 20, 2012

TA45479_Pascal_II_INCLUDE_Directive_(TIL00705).pdf

Pascal II: INCLUDE Directive

This article has been archived and is no longer updated by Apple.

The PASCAL compiler "Include" directive (*$I<filename>*) causes the named file to be inserted into the compilation at that point. Similarly, the assembler directive ".INCLUDE <filename>" is used to insert files during assembly.

Published Date: Feb 20, 2012

EtherPeek 1.3: Compatible Ethernet Cards

What third-party products does Apple recommend for connecting a Macintosh IIcx with EtherPeek?

This article has been archived and is no longer updated by Apple.
Apple does not make recommendations regarding third-party products. The AG Group, authors of EtherPeek, say the following Ethernet cards work with EtherPeek 1.3 as of early 1991:

Apple EtherTalk NB

3Com EtherLink NB

Asante MacCon Ethernet (SE/30 and II)

Cabletron E5010/20/40/10-X/20-X/40-X
E6010/20/30/40/10-X/20-X/30-X/40-X

Cayman GatorCard E/II

Compatible Systems Ether2
Ether+ (SCSI Ethernet)

Dayna Communication DaynaPort SE/30 and II

Farallon PhoneNET IIN

Focus Enhancement, Inc. EtherLan II
EtherLan SC

National Semiconductor EtherNODE-16NB

Network Resources Mac 1000-16
Mac 1000TP/16
Mac 1000-64
Mac 1000-TP/64
Mac 2000E-TP

Novell EtherPort SE/30
EtherPort IIN
Kinetics/Excelan EXOS 109 (EtherPort IIi)

Racal Interlan NIA310 Ethernet Card

To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
27 July 1993 - Company title updated from Focus Enhancements to Focus Enhancements, Inc.
19 June 1992 - Company name Nuvotech changed to Focus.
Published Date: Feb 20, 2012

TA45481_Macintosh_Line_Dropout_Immunity__(TIL07051).pdf

Macintosh: Line Dropout Immunity (7/94)

How long can a Macintosh system be without power? Our Macintosh IIfx is going to be used on a ship in rough conditions. We plan to use a battery, which sometimes switches power.

This article has been archived and is no longer updated by Apple.
Generally, the line dropout immunity for most Macintosh computers is 20 ms, including the AC adaptor for the Macintosh PowerBooks. The Macintosh Plus has a dropout immunity of 16 ms.

This information is available in the "Guide to Macintosh Family Hardware", ISBN 0-201-52405-8.

Note: We do not have the line dropout immunity for the Macintosh Quadra computers at this time.

Article Change History:
18 Jul 1994 - Reviewed for technical accuracy.
31 Mar 1994 - Updated formatting.
09 Jul 1992 - Reviewed for technical accuracy
Published Date: Feb 20, 2012

MacX Manual: Availability of Copies

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

We are considering the purchase of a site license for MacX, and we have a question about getting copies of the manual for our users. Is the manual for MacX available in electronic form? We would prefer to print copies on our LaserWriter instead of trying to duplicate the fuzzy hard copy that we have.

This article has been archived and is no longer updated by Apple.
As of February 1991, you can buy the MacX manual. This will be the only way to obtain the manual separately from the software. To respond further to your question:

* The manuals are not available in electronic form.

* They may not be legally copied.

Published Date: Feb 20, 2012

AppleTalk Plotter: How to Make It Chooser-Selectable

I want to connect an HP Plotter 7550A to an AppleTalk Network and be able to select the plotter from the Chooser.

This article has been archived and is no longer updated by Apple.

There is a plotter driver called "PLOTTERgeist" from Palomar Software that supports many plotters, including the HP 7550A. This Chooser-level driver works in conjunction with the Shiva Net Serial to put the plotter on an AppleTalk network.

Published Date: Feb 20, 2012

Apple IIe/IIGS: Connecting to IBM Host via 3708

I would like to access an IBM host via an Apple IIe or Apple IIGS for services like PROFS. There is a 3708 in some way attached to the host, and I can log in with an emulator through this device. I'm having a problem with keyboard mapping (particularly the PF keys).

This article has been archived and is no longer updated by Apple.
The 3708 is a protocol converter that converts, among other things, a terminal's ASCII character set to the host's EBCDIC character set. You don't mention what terminal emulator is being used on the Apple IIGS, but we suspect it is a VT52, VT100, or similar type of emulator.

Regardless, you'll need to verify that the terminal emulator type you are using is among those supported by the 3708. Check the "IBM 3708 Planning Manual" for the list of non-IBM ASCII display terminals it supports.

Even though terminal packages may not specifically state that they support IBM host communications and PF keys, many emulators can send the specific escape or command key sequences that are recognized and remapped by the controller into PF keys. For instance, Apple Access II's key sequence Esc-1 is remapped by many protocol converters to a PF1, an Esc-$ to PF16, and so on.

When using a general-purpose terminal emulator, like a VT100 emulator, you need to identify which ASCII key sequences map to PF keys, after you satisfy the general connection requirements like handshaking issues. Check the 3708 documentation for the ASCII to EBCDIC mapping. To determine if an emulator will send the specific ASCII key sequences, check the emulator's manual or contact the manufacturer. You too could use a datascope analyzer to determine what the appropriate character combinations are.

In terms of general information, the 3708 Network Conversion Unit is a ten-port, compact, desktop, protocol converter. It enables asynchronous ASCII terminals or personal computers with asynchronous ASCII communications capability to connect to and be compatible with one or multiple SNA host and non-SNA host systems. The user of an asynchronous ASCII terminal can access host applications that support 3270 displays and printers, Network Terminal Option devices, and applications that support the actual terminal type.

Published Date: Feb 18, 2012

A/UX 2.0: Missing /dev File

After installing a brand new copy of A/UX 2.0, I've discovered that I'm missing a needed device file: /dev/dsk/c0d0s3.

I've used HDSetup to partition my internal HD160 SC drive (SCSI 0), and selected partitioning that would allow a 40MB Macintosh partition, Standard A/UX partitions, and the rest as "Unreserved 1" Slice 3. Without this device, I can't set up that final partition on my disk unless I repartition.

Is it possible to modify an existing device file to create this missing one? How would I do this?

This article has been archived and is no longer updated by Apple.

```
The missing device file /dev/dsk/c0d0s3, for example, can be created by the
"mknod" command:

   mknod /dev/dsk/c0d0s3 b 24 3
   chmod 600 /dev/dsk/c0d0s3
   chown bin /dev/dsk/c0d0s3
   chgrp bin /dev/dsk/c0d0s3

Note that 24 is the major device number, 3 is the minor device number for
/dev/dsk/c0d0s3, and b indicates a block device type.  Of course, you have
to be "root" to do it.

The "pname" command seems to do the same thing.  It will automatically
create the file in the /dev/dsk directory, if c0d0s3 doesn't exist. In your
case, for example, pname -c0 -s3 "Unreserved 1".
```

Published Date: Feb 20, 2012

A/UX 2.0: Input during Login Session

If I have something in my login file, like a question about setting the variable term with the A/UX login, I can answer but I can't see what I am typing. Is there a way to have a window with the question in it?

This article has been archived and is no longer updated by Apple.

Since A/UX Finder 32-bit environment was selected as a default Login Session, and the Login process (not part of CommandShell process) was handled via the /mac/bin/mac32 process, all output messages (from .profile or .login or .cshrc or .kshrc file) are disabled by the mac32 environment. We know of this symptom.

There are, however, two ways that let you view and answer the question asked in the shell script: the "Console Emulator" Session and "Initial command" dialog box.

Console Emulator Session

Use "Console Emulator" session. This lets regular UNIX input or output (usually specified in the .profile or .login or .cshrc or .kshrc file) be viewed on the Console display.

1) Select "Console Emulator" as the Session Type.

2) Login into Console Emulator mode. All the questions asked in the .profile or .login or .kshrc file will be displayed.

3) Issue the "mac32;screenrestore" or "mac24;screenrestore" command to go to Macintosh 32-bit or 24-bit environment.

Or you may insert the "mac32; screenrestore" or "mac24;screenrestore" command at the end of your .profile or .login or .kshrc file to automatically go to MultiFinder environment.

4) Select "Logout" from MultiFinder environment to get back to the "Console Emulator" mode.

5) Issue the "exit" command from the "Console Emulator" mode to get back to the Login Dialog session.

The Initial Command

Use the "Initial command" dialog box from the "Active Window Settings" menu:

1) Within a CommandShell window, select the "Active Window Settings" item from the "Preferences" menu.

2) Put in any command you want to execute at log-in time into this window. For example:

sh /.cmdshrc

where /.cmdshrc is the shell script file to be executed as soon as you log into this window.

3) Click OK.

4) Select the "Save Preferences" item from the "File" menu to save the settings. The .cmdshellprefs file will be created in the user's home directory.

TA45487_AUX_Input_during_Login_Session_(TIL07058).pdf

Published Date: Feb 20, 2012

TA45489_Pascal_II_Compilerswapping_(TIL00706).pdf

Pascal II: Compiler-swapping

The PASCAL compiler swapping option (*$S+*) should be used if the compile fails and trashes the system.
This article has been archived and is no longer updated by Apple.
This option should be the first line of the text, preceding the program statement. Swapping MUST be used in compiling units. Please see page 91 of the Apple Pascal reference manual for further information.
Published Date: Feb 20, 2012

Aristotle Menu Setup Problem: Check Access Privileges

We are having problems with menu access using Aristotle. The server is a Macintosh SE/30 4/80, running the latest System software (GS/OS 5.0.2) and the proper Apple II Setup.

The menu setup that we are using lets two of the teachers have set their own menus up so that they can go into student menu Administration with a menu choice of their own. One teacher doesn't see that choice; he can only see his two classes. The other can't see one class, but sees administration.

What could be wrong in the setup?
This article has been archived and is no longer updated by Apple.
The typical issue that causes this type of problem relates to folder access privileges.

The first teacher's access privileges are probably not set for access to the Menu Management program's folder, while the set for access to his two classes' folders. The second teacher's privileges seem to be set for access to the Menu Management's folder, while the class folder's access is probably not permitted. This has been the only way we have been able to duplicate the situation you describe.
Published Date: Feb 20, 2012

Mac ‘N Touch Touch-screen Monitor Works with HyperCard

I am looking for a touch screen monitor that can be used with HyperCard.

This article has been archived and is no longer updated by Apple.
MicroTouch, Inc. makes a low-cost touch screen monitor called Mac 'N Touch that works with nearly all Macintosh systems. It is based on the Magnavox 9CM080, which is capable of displaying up to 256 colors from a palette of more than 16 million with a resolution of 640 by 480. The monitor has a 14-inch display with a 0.25mm dot pitch. MicroTouch verified that their product does work with HyperCard.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
5 June 1992 - Reviewed for technical accuracy.
22 July 1993 - Correcting company title.

Published Date: Feb 18, 2012

HyperCard 2.0: Sound Changes

I have developed a "Vocal Communicator" stack that takes advantage of MacinTalk (Apple, Jan. 1 1983) and several XCMDs and XFCNs from HyperMacinTalk v1.0 (Copyright 1987, by Dennis C. DeMars). This stack worked perfectly on my Macintosh SE/30 under System 6.0.5 and HyperCard 1.2.5. With it, a mute person can answer questions and build sentences to be spoken aloud by the Macintosh. After I upgraded to HyperCard 2.0, all it would do was beep, or remain tied up and silent for the length of time that should have been spent "talking."

Is there something about HyperCard 2.0 that makes it incompatible with existing XCMDs or XFCNs?

This article has been archived and is no longer updated by Apple.

HyperCard 2.0 has changed the way XCMDs and HyperCard interact when using the sound capabilities of the Macintosh. Specific callback procedures have been added that XCMDs (and XFCNs) can use to signal HyperCard when they want control of the Macintosh's sound channels. It is likely that XCMDs using sound will need to be modified to work properly with HyperCard 2.0.

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TA45495_Macintosh_IIfx_Combining_Parity_and_NonParity_RAM_(TIL07066).pdf

Macintosh IIfx: Combining Parity and Non-Parity RAM

Are there any compatibility issues with combining parity and non-parity RAM in a non-parity Macintosh IIfx?

This article has been archived and is no longer updated by Apple.

Combining parity and non-parity RAM in a non-parity Macintosh IIfx should not be a problem as long all the SIMMs in each SIMM bank are the same speed. We have seen some problems using SIMMs from different vendors in the same SIMM bank, even though they have the same speed. This is probably due to speed differences between the SIMMs.

Published Date: Feb 18, 2012

Mitsubishi 37-inch Monitor: How to Use it with Macintosh SE/30

Article Change History

02/09/93 - UPDATED
* Micron Technology acquired by Xceed Technologies.

I would like to be able to display the image from a Macintosh SE/30 to a "Mitsubishi 37-inch monitor.?Can this be done?

This article has been archived and is no longer updated by Apple.
For a Macintosh SE/30 to connect to this monitor, you need a video card and a video cable.

There are several color video cards that fit the Macintosh SE/30's processor direct slot. One of these cards will need to be installed. Among the cards available are RasterOps' ColorBoard 108+/SE30 & ColorBoard 264, Xceed Technologies' Xceed SE/306-48 & Xceed SE/3010-78 and Spark's Color Video Card.

Mitsubishi markets a cable that will connect between the card output connector and the monitor input connector. The cable is available from Mitsubishi's authorized retail outlets. For the name of an authorized dealer, contact one of Mitsubishi's distributors.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 20, 2012

Apple File Exchange: No Lotus WK1 to Excel Translators

This article has been archived and is no longer updated by Apple.

Apple has no Apple File Exchange translator that converts from a Lotus WK1 format to a format that Excel can read. Excel sometimes reads Lotus WK1 files as long as they don't use any of the new version 2.0 features. Lotus 1-2-3, version 2.1, saves files in the Lotus WKS format, which Excel translates on its own.

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TA45498_Inside_Basic_Magazine_(TIL07070).pdf

Inside Basic Magazine

Do you know of any magazines that emphasize BASIC?

This article has been archived and is no longer updated by Apple.
Ross Lambert of Ariel has made subscriptions to his new magazine, "Inside Basic," available at a yearly rate of $36.95.

The journal contains articles about programming in BASIC on the Macintosh, whether in QuickBASIC, Zbasic, HyperBASIC, or TrueBasic.

With a Visa or Mastercard, you may LINK your subscription in (address: ARIEL), or call Ross at (509) 923-2249.

Published Date: Feb 18, 2012

A/UX 2.0: No VT100 Graphics Characters Displayed

A/UX 2.0 CommandShell won't show graphics characters in VT100 mode. Instead, letters are displayed in place of the desired lines The font used was Monaco.

Can the graphics characters be displayed on the CommandShell window? Is there a font which must be installed to give the VT100 graphics characters?

This article has been archived and is no longer updated by Apple.

```
The current version of Console Emulator in A/UX 2.0 isn't a full VT100
emulator and doesn't support the graphics-characters mode.
```

Published Date: Feb 20, 2012

Macintosh Portable: Modem Switches Explained

Can you tell me what the switches on the Portable modem are used for?

This article has been archived and is no longer updated by Apple.
You localize the Macintosh Portable Modem through the use of an external line adapter (DAA) that plugs into the generic modem board (installed through the back panel).

There is a different DAA whose hardware complies with the different country regulations and which identifies itself to the main board, thereby enabling country-compliant pieces of firmware to control the modem ("automatic communication parameters configuration").

So, the purpose of the two switches is to provide four adjustable transmit levels. They are set in the same position at the factory for all countries. Transmitted levels comply with each country's regulation.

Published Date: Feb 18, 2012

Macintosh Portable: External Video Adapter Canceled (6/96)

Whatever happened to the promised Macintosh Portable video adapter?

This article has been archived and is no longer updated by Apple.

In September of 1989, when Apple introduced the Macintosh Portable, Apple announced they intended to ship a video adapter which would let users take advantage of external displays.

Since that time, a variety of developers have introduced products which provide the external video functionality customers require. For that reason, Apple decided not to offer a video adapter.

Customers in need of external video support have a wide range of products to choose from, including:

Sayett Technology's DataShow, an overhead viewplate that connects directly to the Portable's Video Out port

Aura System's ScuzzyGraph II, which enables customers to use the Macintosh Portable with a color monitor

Generation Systems' Portable Publisher, which lets Portable users take advantage of the Apple High Resolution Monochrome Monitor, Portrait Display, and Two-Page Display.

The above is a sample of the products and capabilities currently available to Macintosh Portable customers, and we anticipate other third-party video product announcements.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Published Date: Feb 20, 2012

A/UX 2.01: Lisp Bug Fixed

Is Macintosh Allegro Common Lisp 32-bit clean? I've had some problems running it under A/UX 2.0

This article has been archived and is no longer updated by Apple.

There is an A/UX kernel problem which MacLisp uncovered, and this has been corrected in 2.0.1 release of A/UX.

Published Date: Feb 20, 2012

System 7: Editing a Subscriber

Can I edit a subscriber?
This article has been archived and is no longer updated by Apple.
Not generally. A subscriber is a copy of data that was published by another document. The published material stays in the original document.

There are two ways to change the data you see in the subscriber. You can either edit the original data in the publisher, or break the connection between the publisher and the subscriber. Breaking the connection leaves an editable copy of the data in the subscribing document.

To edit the original data, follow these steps:

1) Select the subscriber.
2) Choose "Subscriber Options..." from the Edit menu.
3) Click the "Open Publisher" button

To break the connection, follow these steps:
1) Select the subscriber.
2) Choose "Subscriber Options..." from the Edit menu.
3) Click the "Cancel Subscriber" button.

Once you break the connection, the subscriber is no longer automatically updated when the publisher is changed.
Published Date: Feb 20, 2012

TA45504_Pascal_II_Highres_Character_Set_(TIL00708).pdf

Pascal II: High-res Character Set

SYSTEM.CHARSET is used by the WCHAR and WSTRING procedures in Turtlegraphics to write textual information on the High-Res Graphics screen.

This article has been archived and is no longer updated by Apple.

It's a file of 1024 bytes, arranged in a sequence of 128 X 8 bytes in order to represent the ASCII character set. Each character is drawn from bottom to top; e.g., byte 0 is the bottom line of dots in the character. Drawblock uses these characters, so they should be accessed and treated as any other drawblock unit.

Published Date: Feb 20, 2012

Network Troubleshooting: Symptoms & Causes

Troubleshooting a network can be much more difficult than troubleshooting a single piece of equipment. This is because many devices might be involved. Because of this, you should use a systematic approach to isolating and resolving the issue.
This article has been archived and is no longer updated by Apple.
Below is a list of possible symptom/cures to be referenced when troubleshooting network problems. The list is based on LocalTalk, Ethernet, Token Ring, and Star networks--but can be adapted to other topologies. If you are a service provider, additional information can be found in Apple Technical Procedures. In addition, there are other articles in the Tech Info Library that may assist you.

Missing Device Issues
Symptoms:
Can't access file server.
Can't access printer.
Can't access another zone on the network.
Can't access another network.

Possible causes:
Break in connector.
Broken or damaged pins on connector box.
Device turned off.
Cables severed or damaged.
Disconnected cable extenders.
Network interface card damaged, missing, or not installed properly.
System software versions not consistent across the network.
Incorrect printer or other device drivers.
Appropriate cdev and/or adev missing or not in System folder.

Token Ring:
MAU not connected.

Bad MAU port.
Ring In/Ring Out bad or not connected.

STAR:
Star Controller turned off, not plugged in or is malfunctioning.
Wires not punched down or punched down correctly.
Punchdown block not connected to Star Controller.

Ghosting Issues
Symptoms:
Network device appears and disappears in the Chooser.

Possible causes:
Loose connector.
Damaged or obstructed cable.
Improper termination.
Loose cable extenders.
Maximum cable length exceeded (check user manual).
Maximum number of nodes exceeded.
Electro-magnetic interference.
Network not designed properly.

Performance Degradation
Symptoms:
Slow printing
Slow file transfer
Network appears to be dead.

Possible causes:
Maximum number of nodes exceeded.
Excessive traffic.
System software versions not consistent across the network.
Virus.

File Folder Access
Symptoms:
Can't see files or folders.
Can't open files or folders.
Can't drop files or folders into drop folder.

Can't change file or folder name.
Can't move file or folder.

Possible causes:
Access privileges set incorrectly.
Files or folders locked.

Published Date: Feb 20, 2012

HyperCard: Converting Stacks Macintosh <^> Apple IIGS (5/91)

This article describes HyperMover 1.1, a software tool for converting stacks between Macintosh HyperCard and HyperCard IIGS.

This article has been archived and is no longer updated by Apple.
Because of the differences between the Macintosh and the Apple IIGS, stacks created on one computer do not run directly on the other. HyperMover makes it easier and faster to convert stacks between the Macintosh and the Apple IIGS. HyperMover will be available from user groups and on-line services.

HyperMover 1.1 includes two stacks: Macintosh HyperMover and HyperMover IIGS.

MACINTOSH HYPERMOVER

Macintosh HyperMover analyzes a Macintosh HyperCard stack, then creates a folder containing information that HyperMover IIGS can use to create an equivalent stack for use on the Apple IIGS.

* HyperMover works on all Macintosh models capable of running HyperCard. It requires HyperCard 1.2.5, or HyperCard 2.0v2 or later.

* HyperMover may require up to 2MB RAM to dismantle or rebuild stacks. If you are running HyperCard under MultiFinder, allocate at least 1600K to HyperCard. Large stacks with many objects or sounds may require more memory.

* Disk space: HyperMover needs 1.5 to 5 times the size of the original stack.

HYPERMOVER IIGS

HyperMover IIGS analyzes a HyperCard IIGS stack, then creates a folder containing information that Macintosh HyperMover can use to create an equivalent stack for use on the Macintosh.

HyperMover IIGS requires:

* HyperCard IIGS 1.0 or later.

* System Software 5.0.4. or later.

* IIGS ROM 01 and ROM 03.

* 1.5MB RAM for small stacks, 2MB for most stacks.

* Disk space: 1.5 to 5 times the size of the original stack. In general, Macintosh stacks rebuilt on the Apple IIGS will be slightly larger than the original stack, because HyperCard IIGS supports color paint, which takes up more disk space.

TRANSFERRING THE FILES

After dismantling a stack, you must transfer the files HyperMover creates. This can be done either with Apple File Exchange or an AppleTalk network.

If you use a network, both the Macintosh and the Apple IIGS must be physically connected and logged on to a common server. Simply drag the folder that HyperMover created on one computer to a location on the server that you can also access from the other computer.

If you use Apple File Exchange, you must format as many disks as needed to contain the converted files. After formatting the necessary number of disks, use Apple File Exchange to transfer the folder containing the converted files. The files can be transferred in two or more groups if the contents of the folder total more than 800K and are combined into one folder.

When converting from Macintosh to Apple IIGS, the text file with the same name as the dismantled stack may not be a legal ProDOS filename; if this is the case, simply rename the file to a legal filename. Do not rename any of the other files in the folder.

DIFFERENCES BETWEEN STACKS

Because the Apple IIGS and Macintosh differ significantly in hardware, some aspects of a converted stack will not be identical to the original. HyperMover will pre-scan the original stack and warn the user of features, such as XCMDs and XFCNs, that will not be converted.

Graphics

The most noticeable difference between the original and the rebuilt stack will be in the graphics. The Apple IIGS and the Macintosh have different screen sizes (320x200, 4-bits per pixel; and 512x342, 1-bit per pixel). Therefore, graphics moved between the two systems need to be modified to fit and display properly.

This is handled by HyperMover in several ways:

* Macintosh graphics to the Apple IIGS. HyperMover contains two algorithms for scaling graphics from Macintosh to Apple IIGS screen resolution. The first routine is best used for line-art. The second is preferable for heavily dithered graphics such as those created with HyperScan.

* Apple IIGS graphics to the Macintosh. Moving graphics this direction involves reducing the number of colors available per pixel from sixteen (Apple IIGS) to black-and-white (Macintosh). At the same time, however, the picture must be scaled up from 320x200 to 512x342. This results in more pixels being available to simulate the colors lost during dithering.

Screen Coordinates

Just as pictures must be scaled to fit the destination card size, buttons and fields must also be scaled so that they appear in the correct locations on the destination card. However, buttons and fields are objects and can be scaled with no distortion.

Scripts

Because of the differing screen sizes, scripts converted from one system to the other will require modification to function properly if they rely on specific screen coordinates.

Scripts that rely on features specific to one system, such as the color properties of HyperCard IIGS or specific commands in Macintosh HyperCard 2.0, will also need to be modified to work correctly.

Animation Sequences

Animation sequences that use system icons and refer to them by ID will need to be modified after the stack is converted.

Machine-Specific Properties

Properties specific to HyperCard IIGS, such as button families and sharedText on the Apple IIGS will not be preserved in stacks converted to HyperCard 1.2.5. Conversion of HyperCard IIGS to HyperCard 2.0 will retain those properties that are common to HyperCard 2.0 and HyperCard IIGS.

Similarly, varying card sizes in HyperCard 2.0 will not be preserved in stacks converted to HyperCard IIGS.

WHAT HYPERMOVER CAN AND CANNOT DO

HyperMover can:

* Create scaled representations of pictures.

* Convert Macintosh sounds to Apple IIGS sounds, and vice versa.

* Transfer all HyperCard objects--including backgrounds, cards, buttons, and fields, and their attributes.

* Convert and scale Macintosh icons and cursors to Apple IIGS icons and cursors.

HyperMover cannot:

* Convert external commands and functions (XCMDs and XFCNs).

* Fix scripts that depend on specific screen coordinates.

* Alter scripts that rely on features specific to one machine.

* Maintain the ordering of buttons in relation to fields.

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Non-Postscript Printers: Solution to Printing Large Characters

I'm having a problem writing large characters on a Personal LaserWriter SC. Printed characters larger than 18 point are being cut off near the bottom. For example, if an "f" is printed, most of the part below the crossbar is missing.

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter SC suffers from the same problem as the LaserWriter IISC and the ImageWriter LQ: when printing outline, bold and shadow text in 18 point or larger type sizes, some parts of the characters may be omitted and/or garbled. The problem usually occurs when 4X fonts are used. Installing more system RAM and/or allocating more memory to the application will have no effect on the problem.

In March of 1991, this problem is fixed by using TrueType-compatible printer drivers. Apple introduced the TrueType font scaling software which is bundled with both the StyleWriter and the Personal LaserWriter LS printers. The TrueType compatible drivers are available on a Macintosh Printing Tools disk which contains the drivers for the following printers:

Printer	Version
LaserWriter	6.1
ImageWriter	6.1
AppleTalk ImageWriter	6.1
Personal LaserWriter SC	6.1
Personal LaserWriter LS	1.0
ImageWriter LQ ImageWriter	6.1
ImageWriter LQ AppleTalk ImageWriter	6.1
StyleWriter	1.0

In May of 1991 another solution was made avaliable with the release of System 7. System 7 includes a new Printing disk and Tidbit disk which contain printer drivers for the following:

Printer	Version
LaserWriter	7.0
Personal LaserWriter SC	7.0
ImageWriter	7.0
AppleTalk ImageWriter	7.0
LQ ImageWriter	7.0
LQ AppleTalk ImageWriter	7.0

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Macintosh LC: Connecting to VGA Monitors

Does the Macintosh LC support VGA monitors? What are the pinouts for connecting a VGA monitor to a Macintosh LC?

This article has been archived and is no longer updated by Apple.
The Macintosh LC supports some VGA monitors. However, there are many different modes/types of VGA timing. The following specifications show the VGA timing characteristics supported by the Macintosh LC.

Dot clock = 25.175 MHz
Dot = 39.722 nsec
Full line = 31.778 usec
Line rate = 31.469 kHz
Full frame = 16.68 msec
Frame rate = 59.94 Hz

Here are the pinouts for connecting a VGA monitor to a Macintosh LC:

Macintosh LC VGA Connector
DB-15
---------- ----------

2 ---------- Red Video ---------- 1
1 ---------- Red Ground ---------- 6
9 ---------- Blue Video ---------- 3
13 ---------- Blue Ground ---------- 8
5 ---------- Green Video ---------- 2
6 ---------- Green Ground ---------- 7
15 ---------- Hsync ---------- 13
12 ---------- Vsync ---------- 14
14 ---------- Sync Ground ---------- 10
10 ----------|
7 ----------| Connect 7 and 10 so the sense pin ID will equal VGA

A few issues to keep in mind:

* VGA monitors may vary depending on the vendor. Check with the vendor about Macintosh LC compatibility before buying.

* Vendors have different image quality specifications. There may significant differences between Apple monitors and VGA monitors. Do a side-by-side comparison of a VGA monitor with an Apple monitor before buying.

* Third party cable vendors should have cables available for purchase soon.

* When a VGA monitor is connected as described in the pinout above, the resolution is 640 x 480. The bit-depth supported depends on the amount of VRAM installed. For example, if the Macintosh LC 256K VRAM SIMM is installed, 4-bit color (16 colors) is supported. If the Macintosh LC 512K VRAM SIMM is installed, 8-bit (256 colors) is supported.

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System 7: Hardware and Memory Requirements

What hardware do I need to run System 7?
This article has been archived and is no longer updated by Apple.
System 7.0 runs on all Macintosh computers with 2MB of RAM and a hard drive. If you have a Macintosh with a 68030 microprocessor (or a 68020 with a PMMU), you can also take advantage of virtual memory (VM).

On a 2MB Macintosh running System 7.0, you have enough RAM (750K to 1024K) to run one moderate-size application like a word processor or spreadsheet.

With a 2MB Macintosh SE running System 7:

* You always have access to the desktop
* You can use most of the features of System 7
* You have about the same amount of memory for applications as you did under System 6 with 1MB of RAM.

Further, a System 7 Macintosh is as fast as a System 6 Macintosh SE, and even faster in many important operations like copying files.

Note: Turning file sharing on reduces memory available for applications by about 200K. Using on-board video on a Macintosh IIsi and Macintosh IIci can consume over 300K of memory when the monitor is set to 8-bit color.

How you use your Macintosh computer affects how much memory you will need. This makes it difficult to make a memory recommendation for a particular user.

Taking advantage of other specific features of System 7 may require other hardware like a network, color monitor, and so on.
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TA45510_Pascal_II_Intrinsic_Units_Data_Segment_(TIL00709).pdf

Pascal II: Intrinsic Units -- Data Segment

Intrinsic units that use GLOBAL variables, either public (defined in interface) or private (defined in implementation), MUST have a data segment in addition to the code segment.

This article has been archived and is no longer updated by Apple.

Under some circumstances, the compiler may fail to give an error message if the data segment is omitted; in that event, the system will crash when the unit is used.

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System 7: Upgrade Kits and Other Sources

Must I buy a System 7 upgrade kit or can a dealer copy the disks for me?
This article has been archived and is no longer updated by Apple.
System 7 offers so many new features and capabilities that many users will want to have the System 7 User's Guides and the information offered in the System 7 Upgrade Kits. These kits include Macintosh System Software 7, reference manuals, and many extra features.

However, as in the past, some dealers may make new versions of System Software available to customers by duplicating the software onto the customer's disks.

System Software 7 is also available through users groups, electronic bulletin boards & individuals.
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System 7: AppleShare 1.1 Workstation Software Is Compatible

Can I log on to a System 7 Macintosh with file sharing on from a Macintosh with AppleShare 1.1 Workstation software?

This article has been archived and is no longer updated by Apple.

Yes. AppleShare 1.1 drivers (still required on the Macintosh 512Ke) can connect to a folder shared by a System 7 user running Macintosh File Sharing.

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System 7: File Sharing on a Large Network

How do I manage file sharing on a large network?
This article has been archived and is no longer updated by Apple.
File sharing is managed by each Macintosh user who has enabled it. Management involves all users naming their Macintosh computers with the Sharing Setup control panel, creating users and groups with which to share (if desired), and controlling access to the shared folders. The individual file sharing user performs these tasks.

It's a good idea for each network administrator to give each user guidelines regarding naming conventions and setting appropriate access privileges for sharing information.
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System 7: Decides Among Bitmap, TrueType, and ATM Fonts

This document provides information about how System 7.x decides which font to use when different types of the same font family are installed.
This article has been archived and is no longer updated by Apple.
For this discussion:

* Bitmap Times 24.
* TrueType Times (in any size).
* An Adobe Type Manager (ATM) Times (in any size).

Screen Fonts

When you choose a font and size, the system uses the following order to decide among the possibilities for displaying type on the screen:

1) The bitmap font.
2) The TrueType font.
3) An Adobe Type Manager (ATM) font if available.
4) A bitmap font of a different size, to be scaled to the specified size.

This sequence means that the document you created in bitmap Times 24 will show up in the same bitmap font on the screen to ensure against reformatting. The system looks for the bitmap font first, and if it isn't available, it scales the TrueType font to the proper size.

PostScript Printer Fonts

When you print your document, the preference order changes. For type on a PostScript printer (such as a LaserWriter Plus, LaserWriter IINT, IINTX, IIf, IIg, LaserWriter Pro, Personal LaserWriter NT, NTR, LaserWriter Select 310, and many third-party PostScript laser printers), the order is:

1) The printer's ROM
2) The printer's RAM
3) The printer's hard disk
4) Type 1 or Type 3 PostScript files in the System Folder (stored inside the Extensions folder in System 7.0 and inside the Fonts folder in System 7.1 or later)
5) TrueType
6) Bitmap

Detailed Information on How a PostScript Printer Determines Font Type

When a job is being processed and when a font is called for in the job, the font is selected using the arbitration schemed described above, and the bitmap is built and cached in the printer's VM (RAM).

If the same font is called again later in the job, then this font in RAM is used unless it was purged by the interpreter to free up room for some other activity, such as to make room to build another font called for in the job. When the job is completed, the VM is flushed. The next job then goes through the same font arbitration process described above, until the bitmap is built in the printers VM. As long as the font is resident in VM it is used during the course of that job.

Fonts downloaded by a utility or by some other means having the same name as a font in ROM will not be used. To download a font for print jobs to call and use, it must have a unique name. There are some third-party font applications which allow you to change the name of the font. Simply renaming the font in the Mac OS does NOT change the font name. All Apple PostScript printers and most third-party PostScript laser printers manage font arbitration similarly.

Non-PostScript Printer and Fax Fonts

For printing to a non-PostScript device (such as an ImageWriter, LaserWriter IISC, Personal LaserWriter SC or LS, LaserWriter Select 300, Personal LaserWriter 300, StyleWriter, StyleWriter II, the DeskWriter by Hewlett-Packard, fax modems, and so on) the order is:

1) TrueType
2) ATM (if available)
3) A bitmap font of a different size, scaled to the specified size

Adobe Type Manager (ATM) is a utility that generates bitmap fonts for any size and resolution from Type 1 PostScript fonts. Since TrueType fonts are not PostScript, Adobe Type Manager cannot manipulate them. ATM and TrueType can work side-by-side in your system. If you have some PostScript fonts to display and print using ATM, and you have different fonts in the TrueType format, you should have no problems.

However, keeping the same fonts installed in both ATM and TrueType formats is not recommended. Because of the order of precedence (TrueType over ATM on screen and on non-PostScript printers), if you have the same font installed in both formats, the system uses TrueType -- not ATM.

System 7 Installed Fonts

The System 7 Installer automatically installs TrueType versions of Times, Helvetica, Courier, Symbol, Monaco, Geneva, and Chicago. If you need to use an ATM version of these fonts, you must remove the TrueType version from the System file (in System 7.0 or earlier) or from within the Fonts folder in the System Folder (in System 7.1 or later).

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System 7: How to Prepare for It

What should I do to prepare for System 7?
This article has been archived and is no longer updated by Apple.
Apple recommends that you do the following things to prepare for System 7:

1) "Before You Install System 7" is in the Personal Upgrade Kit and the Group Upgrade kit. This stack describes features of System 7 and answers questions about upgrading.

Use the System 7 "Compatibility Checker" (a HyperCard stack), which scans your hard disk, checking the compatibility of your third-party applications, Control Panels (cdevs), and system extensions (INITs) against a database of compatibility information provided by the developers of the software. For the most up-to-date information, call the individual vendors of the software applications you use.

2) Upgrade to compatible versions of your application software.

3) Make sure you have enough RAM in your Macintosh (2MB is the absolute minimum; 4MB is strongly recommended) and that you have enough free space on your hard drive (at least 5MB).

4) If you use EtherTalk, upgrade your routers and EtherTalk drivers to Phase II.

For more information on the Compatibility Checker, search for "Compatibility Checker".
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Applesoft: VAL(A$) problems

Applesoft running in a non-disk drive system won't initialize its memory properly, resulting in the following program not giving the desired results.
This article has been archived and is no longer updated by Apple.

```
100 GET A$
110 PRINT A$, VAL(A$)
```

If you input "1" the answer will be "1, 1.1111111E16". A "HIMEM:" statement resets the pointer:

16K HIMEM: 16384
32K HIMEM: 32768
48K HIMEM: 49152
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LaserWriter: Loose Screws Cause Printing to Stop

This article has been archived and is no longer updated by Apple.

Near the microswitches inside the LaserWriter, there is a bracket held in place by two screws (but no lock washers). As old toner cartridges are removed and new ones installed, these screws and the bracket become loose. This causes the toner cartridge to 'disappear to the LaserWriter' as the drive train tightens to pull the paper through, causing the LaserWriter to stop printing.

When printing stops, the tension in the drive train slackens and the toner cartridge 're-appears'. This series of events results in what appears to be a paper jam. At first, this can happen about once a week. Then it begins to happen every day. Eventually, the bracket becomes so loose that the cartridge 'disappears' entirely.

To fix the problem, just adjust the bracket and tighten the screws.

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System 7: About Compatibility Checker

What is the Compatibility Checker?
This article has been archived and is no longer updated by Apple.
The System 7 Compatibility Checker is a HyperCard stack that scans your hard disk, or any other startup disk, checking the compatibility of third-party:

* Applications
* Startup documents (INITs), known in System 7 as system extensions
* Control Panel documents (cdevs)
* Chooser selectable devices (rdevs)

All compatibility information used by the Compatibility Checker came from the developers of the products. You should use the Compatibility Checker before upgrading to System 7; you can use it afterward as well. Before
using it, however, be sure to check the version and date of the Compatibility Checker itself. If it is out of date, the report it gives you will not contain accurate information about the third-party software on your disk. For instance, if you have just purchased a new version of a spreadsheet application, Compatibility Checker will be unaware of this
version and will report it as incompatible. For the most recent possible information, it is best to contact the vendors of your software directly.
Published Date: Feb 20, 2012

System 7: Upgrade Strategy for Groups

What is the recommended System 7 upgrade strategy for groups of Macintosh computers?
This article has been archived and is no longer updated by Apple.
Apple's recommended upgrade strategy for groups of Macintosh computers is contained in the System 7 Group Upgrade Guide. This guide is an integral part of the System 7 Group Upgrade Kit. The kit contains all the tools and
necessary information on how to plan, implement, and manage a group transition to System 7. This kit contains System 7 software and other software on disks and on a CD-ROM.

Network administrators and users who support a group of Macintosh computers should buy the System 7 Group Upgrade Kit (Order #M8221LL/A):

Manuals

System 7: Group Upgrade Guide
What's New in System 7
Macintosh Reference
Macintosh Networking Reference
HyperCard Basics 2.1

Disks

System 7 CD-ROM
System Software 7, eight 800K disks
Before You Install, one 800K disk
HyperCard 2.1, two 800K disks
Macintosh Networking Basics, one 800K disk
Macintosh CD Setup, one 800K disk
Published Date: Feb 20, 2012

System 7: How to Get Manuals

How can I get extra System 7 manuals?
This article has been archived and is no longer updated by Apple.
The System 7 manuals are for sale at your dealer in the System 7 User Documentation Pack ("5 pack"), Order #M8223LL/A:

- How to Install System 7
- What's New in System 7
- Macintosh Reference
- Macintosh Networking Reference

Published Date: Feb 20, 2012

System 7: Dimmed Label Menu

Why is the Label menu sometimes dimmed?

This article has been archived and is no longer updated by Apple.

The Label menu is available only when an icon has been selected in the Finder. If there are no windows open or icons selected on which the Label menu can have an effect, it will appear dimmed.

Published Date: Feb 20, 2012

System 7: Moving Documents from System 6 to System 7

Can I move documents from my System 6 Macintosh to a Macintosh running System 7? Will my documents change?
This article has been archived and is no longer updated by Apple.
You can move documents between a Macintosh running System 6 and a Macintosh running System 7 without any problems. In most cases, your documents will not change their appearance. For example, if your document uses Times font in size 12, your document won't change.

An exception occurs when you have TrueType fonts installed and you have documents using numerous odd type sizes. Line endings for such documents may change slightly when you open the document under System 7. Also, the document's formatting may be slightly different. You may need to readjust your document's formatting to have the format for lines and paragraphs appear exactly as before. This happens because the substituted TrueType fonts are more accurate and true to the printed output you'll get. But if you want the document to look exactly like it did under System 6, just remove the TrueType fonts from your System file. They are the ones with the triple "A" in the icon which display three different sizes when you double-click on them.
Published Date: Feb 20, 2012

Pascal: Reading DOS 3.3 Diskettes

This article has been archived and is no longer updated by Apple.

Both Pascal and DOS 3.3 use the same recording format on the diskettes. Pascal can read a DOS diskette with the UNITREAD procedure, but there is a hitch: Pascal uses 512 byte blocks, while DOS uses 256 byte sectors. The following table shows the correspondence between Pascal's block number and DOS's track and sector numbers. Columns 4 and 5 refer to bytes 0..255 of the block and columns 2 and 3 refer to bytes 256..511.

(1) BLOCK	(2) TRACK	(3) SECTOR	(4) TRACK	(5) SECTOR
6	1	0	1	E
7	1	D	1	C
8	1	B	1	A
9	1	9	1	8
10	1	7	1	6
11	1	5	1	4
12	1	3	1	2
13	1	1	1	F
14	2	0	2	E

The rest of the disk is arranged the same, except that the track number increases.

Published Date: Feb 20, 2012

System 7: How to Quit from an Application That Hangs

Under System 7, how do I force a hung application to quit?
This article has been archived and is no longer updated by Apple.
Built into System 7 is the ability to force an application to terminate. To do this, simultaneously press the Command, Option, and Escape keys. This feature should be used with extreme caution. You should definitely not rely on this as a usual way to quit an application.

It is particularly useful in the event that you have unsaved work in other applications when your current application hangs. By using this "force quit" feature, you can return to the Finder and save the work in your other applications. But because of possible corrupted memory after force quitting an application, you should restart your computer after using this feature.
Published Date: Feb 20, 2012

System 7: No Need to Restart after Installing a TrueType Font

Must I restart my computer after installing a TrueType font?
This article has been archived and is no longer updated by Apple.
No. Any TrueType font is available as soon as you install it in the System file.
Published Date: Feb 20, 2012

TrueType: How to Use with System 6 (8/94)

Can I use TrueType with System 6?

This article has been archived and is no longer updated by Apple.
The TrueType Disk Set (INIT plus fonts and drivers) is no longer available. However there are some additional sources for the TrueType Init needed for System 6. The TrueType init comes with the following printer software:

* LaserWriter Select 300 - TrueType Init is on Disk 2 Printer Software.
* Personal LaserWriter 300 - TrueType Init is compressed. Use Installer.
* Personal LaserWriter 320 - TrueType Init is compressed. Use Installer.
* StyleWriter - TrueType Init is on StyleWriter Installation Disk 1.
* StyleWriter II - TrueType Init is on Disk 2 Printer Software.

If you know someone who has the TrueType Disk set disks, you can also install them to get TrueType functionality with a System 6 machine.

Your Macintosh must have at least 1 MB of RAM and system software version 6.0.7 or later. Although the TrueType software works on System 6.0.5, Apple hasn't thoroughly tested it under 6.0.5. Therefore, we recommend you upgrade to System 6.0.7 or later. System 7.0 users don't need to install this software because the TrueType functionality is built into System 7.

The TrueType INIT goes into the root level of the System Folder. The fonts need to be installed using the Font/DA mover found on Disk 1 (version 4.1)

Full installation instructions can be found in the ReadMe file on Disk 1.

The TrueType Disk Set includes:

Disk 1 "TrueType Fonts & Software" (686K)

TrueType INIT
TrueType fonts (13 type styles)
Font/DA Mover v4.1
ReadMe file (installation instructions, plus printer ReadMe notes)
TeachText

Disk 2 "TrueType Printing Tools" (753K)

ImageWriter v6.1
AppleTalk ImageWriter v6.1
ImageWriter LQ v6.1
AppleTalk ImageWriter LQ v6.1
LaserWriter software (folder)
LaserWriter v6.1
Backgrounder
PrintMonitor
Personal LaserWriter SC v6.1
Utilities (folder)
LaserWriter Font Utility
Laser Prep
About Laser Prep (ReadMe file)

Article Change History:
22 Aug 1994 - Added listing of specific diskettes for TrueType Init.
27 Jul 1994 - Added additional sources for the TrueType Init.
20 May 1994 - Detailed where the items go on a System 6 system.
3 Nov 1993 - Stated that the disk set is no longer available.
Published Date: Feb 20, 2012

System 7: How to Use ATM instead of TrueType

Can I turn off TrueType when using System 7 and ATM (Adobe Type Manager)?
This article has been archived and is no longer updated by Apple.
TrueType is part of the Macintosh System Software. If you prefer to use ATM fonts, remove the TrueType fonts from the System file.
Published Date: Feb 20, 2012

System 7: Virtual Memory and Ejectable Media

Can I use virtual memory on ejectable media such as a Zip drive, Jaz drive, Syquest drive or a Bernoulli box? Can I use them at all with virtual memory?

This article has been archived and is no longer updated by Apple.

You can use removable media storage devices such as those mentioned above when virtual memory is turned on, but they cannot be the volume on which the virtual memory swap file is stored. The operating system will not let you select a removable media for the storage of your virtual memory swap file. (For this reason, removable media are grayed-out in the Memory control panel.)

If you use a removable hard disk and a normal hard disk, choose the normal hard disk for the Virtual Memory swap file. If the only hard disk attached to your Macintosh is a removable one, you cannot use System 7's Virtual Memory feature.

Published Date: Feb 20, 2012

System 7: Memory Needed for a Macintosh IIsi

How much memory do I need with System 7 and a Macintosh IIsi?

This article has been archived and is no longer updated by Apple.

If you want to run System 7 on a Macintosh IIsi and are using its built-in video capabilities, Apple recommends that you have more than 2MB of RAM. System 7 works with 2MB of RAM, but with limited space for running your application software.

Published Date: Feb 20, 2012

System 7: No Need for the 32-Bit QuickDraw INIT

Do I need the 32-bit QuickDraw INIT with System 7?

This article has been archived and is no longer updated by Apple.

No. 32-Bit QuickDraw has been integrated into System 7, and the INIT is no longer needed to get the benefits of 32-Bit QuickDraw. The System 7 Installer will delete the old 32-Bit QuickDraw INIT from your System Folder during installation.

Published Date: Feb 20, 2012

System 7: Preparing an Apple Hard Drive for Virtual Memory

Why do I get a message that says my hard drive needs to be updated when I try to turn on Virtual Memory (VM)?
This article has been archived and is no longer updated by Apple.
If you have not initialized your hard drive with a System 7 compatible version of the hard drive formatting software, you may need to do so before the system allows you to activate virtual memory.

If you have a third-party (non-Apple) hard drive, you may need to obtain from the manufacturer an updated version of the correct formatting software for that drive. If you have an Apple hard drive, you can update your hard drive software using the instructions below. The process does not affect the data on your hard drive, and it is very simple.

1) Locate the System 7 disk marked "Disk Tools".
2) Restart your computer with the "Disk Tools" floppy.
3) Launch the application HD SC Setup.
4) Click the "Update" button.
5) Click Quit.

If you are moving from System 6.0.x to ANY version of Sytem 7.x, you can follow these steps.

The following information is for Apple Internal & Support Providers Only
Published Date: Feb 20, 2012

Pascal: Error Messages

This article has been archived and is no longer updated by Apple.

--> "ERROR: WRITING OUT THE FILE. PRESS <SPACEBAR> TO CONTINUE."

This message can be generated in one of three ways:

1. File names are restricted to 10 characters, not including the volume name prefix or the .TEXT suffix; a name longer than that will generate the error immediately without accessing the disk drive.

2. The error will be generated if there is insufficient room on the root disk to save the new file. This condition is particularly prone to occur when Pascal is updating the workfile, since Pascal always saves the new copy of the file before removing the previous copy.

3. The directory is limited to 77 entries. If you try to save a 78th, the error will be generated, even if there is enough room on the disk for the file.

--> "NO ROOM ON VOLUME" or "CODE WRITE ERROR"

These messages may be displayed if there isn't enough room to write the file to the specified volume. This error can occur in the Filer, Compiler, Assembler, or Linker, and can usually be corrected either by using the Filer "Krunch" option (to consolidate unused blocks) or by removing unnecessary files.

--> More on "CODE WRITE ERROR"

During creation of a code file on the boot disk, the Assembler creates a temporary file called LINKER.INFO on the boot disk; this file stores linkage information that is later written into the final block of the code file. If the code file is directed to the boot disk during the assembly, the largest unused block of disk space is opened for the code file. If the disk has been Krunched recently, there may be no space available for opening LINKER.INFO, in which case the "CODE WRITE ERROR" message will be displayed. To rectify the problem, simply "Make" an 8-block file on the boot disk, and then Make a 1-block file. (The names of these files are unimportant). After that, R)emove the 8-block file, thereby separating the space into two distinct areas and creating a place for LINKER.INFO to live. NOTE: This error may also occur in the Compiler, since the Compiler also creates a LINKER.INFO (though only during very large compiles when the system needs to temporarily swap out information). The fix is the same.

If an error occurs when you use the include file option, "Make" a 4-block file on the volume where the compiler resides, and name it SYSTEM.SWAPDISK. Doing so makes it possible for the Compiler to swap out some information in order to read in the new directory in preparation for the include file.

The Pascal (version 1.0) compiler error #407 ("Too Many Libraries") can usually be avoided by changing the length of the text file being compiled. The problem is corrected in Pascal version 1.1.

Published Date: Feb 20, 2012

TA45533_System_Hypercard_Recommended_(TIL07123).pdf

System 7: Hypercard 2.1 Recommended

What version of Hypercard should I use with System 7?
This article has been archived and is no longer updated by Apple.
Claris recommends at least Hypercard 2.1 for use with System 7.0.
Published Date: Feb 20, 2012

NEXTSTEP 3.2 HP libg++ patch

This package contains the GNU G++ class library for use with the NeXT Objective-C++ compiler. Install it **only** on computers running NEXTSTEP 3.2 HP. This is libg++ 2.5.3.

This software is not supported by Apple Computer, Inc.
This article has been archived and is no longer updated by Apple.

GNU libg++ Patch

Download the patch package from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.2/libg++/libg++_3.2_HP.compressed

GNU libg++ Documentation (in RTF)

The accompanying file, libg++Documentation.pkg.compressed, contains the documentation for the GNU g++ class library, converted to RTF from the TeXinfo source for convenience of use with Digital Librarian. To save disk space it doesn't have an index, but it contains instructions on building one yourself.

After getting the package, simply double-click on it in Workspace Manager to open it with the Installer application. You must be logged in as root to install this package.

Contents

libg++Documentation.pkg.compressed is 134 kilobytes in size and contains one NEXTSTEP Installer package, which when installed/uncompressed occupies 264 kilobytes of disk space.

Download the documentation package from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.2/libg++/libg++_docs.pkg.compressed

Published Date: Feb 20, 2012

System 7: System 6 Fonts Still Used

What will happen to fonts in my old System file when I install System 7?
This article has been archived and is no longer updated by Apple.
You keep all of your existing fonts. While TrueType installs a number of TrueType fonts with System 7, TrueType fonts complement any bitmap fonts available on your Macintosh.

Remember these points:

* All of the fonts in your System 6 System file are retained in System 7.
* If you request a font size that is available as a bitmap, your Macintosh uses the bitmap.
* If you use a size for which you do not a have a bitmap, your Macintosh scales the appropriate TrueType outline.
* If you remove a bitmap from your System file, the Macintosh uses the TrueType font. Depending on the font and size you request, you will end up with either a bitmap font OR a TrueType font. Regardless of whether it's a bitmap or a TrueType font, your text will look great.

Published Date: Feb 20, 2012

System 7: Suitcase and Master Juggler

Under System 6, I've used Suitcase and Master Juggler, so my fonts don't take up space in my System file. Do I need these products with System 7?

This article has been archived and is no longer updated by Apple.

Before System 7, Macintosh System software limited the number of fonts you could have in the System file. With System 7, that limit is so much greater that you can, for all practical purposes, disregard it. You may still want to use programs like Suitcase and Master Juggler to organize sets of fonts that you don't need access to all the time. Keep in mind also that one TrueType file, which can produce all point sizes in that font, takes up much less space in your system than the files for the equivalent bitmap fonts.

Published Date: Feb 20, 2012

System 7: Italic, Bold, and Bold Italic in TrueType

Why are Italic, Bold, and Bold Italic listed as separate typefaces for TrueType (and Postscript fonts), but not for bitmap fonts?
This article has been archived and is no longer updated by Apple.
When you're using a bitmap font and you choose Italic or Bold from the Style menu, the italic or bold type you see on the screen is a manipulation of the plain bitmap typeface. The plain font itself is ?modified--slanted forward for italic or thickened ?for bold--to create the style you've chosen.

TrueType and PostScript fonts give you separate, specially-designed typefaces, not just manipulations of the plain typeface, for italic, bold, and bold-italic styles. These look even better than the modified bitmaps, and are truer to the original designs.
Published Date: Feb 20, 2012

System 7: A/UX 2.1 Not Compatible

Article Change History

09/02/92 - UPDATED
* To include information on A/UX 3.0.

Is A/UX software compatible with System 7?

This article has been archived and is no longer updated by Apple.
A/UX 3.0 is compatible with System 7.

A/UX version 2.1 is not compatible with System 7. The A/UX 2.1 startup application cannot be launched from a System 7 system. System 7 can't run in a Macintosh partition under A/UX 2.1.

Users who require A/UX functionality and who want to run System 7 should upgrade to version 3.0 of A/UX.

A/UX systems are network-compatible with System 7 systems. Users of the Macintosh partition under A/UX and still running System 6 should upgrade their LaserWriter drivers to version 7.0. This will make them printer-compatible with System 7 computers on the network.

Published Date: Feb 18, 2012

System 7: Upgrade Information for AppleCD SC

Is the Apple CD-ROM system extension compatible with System 7.0?

This article has been archived and is no longer updated by Apple.
Versions of the Apple CD-ROM system extension prior to 3.0 are incompatible with System 7. Version 3.0 is mostly compatible with System 7, but version 3.1 is recommended. Users should install the Apple CD-ROM software BEFORE installing System 7.

The upgrade to version 3.1 is free, and the files can be found in the Upgrade folder on the System 7 Information bulletin board (use BB Pathfinder to locate this bulletin board), as well as on the System 7 Group Upgrade Kit CD.

The AppleCD SC hardware is compatible with all Macintosh systems that have a SCSI interface.

Published Date: Feb 18, 2012

System 7: Upgrade Information for Apple Hard Disks

Is System 7 compatible with all Apple hard disks formatted with HD SC Setup?

This article has been archived and is no longer updated by Apple.
Some hard disks that have been formatted with older versions of HD SC Setup may require an updated driver in order to function with Virtual Memory. IT IS NOT NECESSARY TO REFORMAT THE DRIVE. If the Memory control panel indicates the drive needs updating, follow the instructions in the System 7 Personal Upgrade Kit to use HD SC Setup to update the driver.

All Apple internal and external hard disks are compatible with all Macintosh systems that have a SCSI interface.

The version of Apple HD SC Setup that ships with all hard disks is compatible with System 7, but version 2.0.4 is the recommended version.

The upgrade to version 2.0.4 is free, and the files can be found in the Upgrade folder on the System 7 Information bulletin board, as well as on the System 7 Group Upgrade Kit CD.

Published Date: Feb 18, 2012

System 7: Upgrades for Apple Product Compatibility

This document lists products on the April 1991 Suggested Retail Price List that require updating and are incompatible with Macintosh System Software version 7.0, or both.

This article has been archived and is no longer updated by Apple.

Apple Products Updated By System 7

The following Apple products require software updates for use with System 7. System 7 software includes the update software. Users should not use the installer disks that come with the product; use the equivalent System 7 software or Custom Install option instead.

M5540LL/A Macintosh Portable Backlight Screen Upgrade
M0268 Macintosh Portable Internal 40SC Hard Disk
M2620/A Apple Hard Disk 20SC
M2644/A Apple Hard Disk 40SC
M2688/A Apple Hard Disk 80SC
M2666 Apple Hard Disk 160SC
M0216/A Macintosh Internal 20SC Hard Disk
(SE, SE/30, II, IIx or IIfx only)
M0283 Macintosh Internal 40SC Hard Disk (IIcx or IIci only)
M0269 Macintosh Internal 40SC Hard Disk
(SE, SE/30, II, IIx or IIfx only
M0284 Macintosh Internal 80SC Hard Disk (IIcx or IIci only)
M0270 Macintosh Internal 80SC Hard Disk
(SE, SE/30, II, IIx or IIfx only
M0267 Macintosh Internal 160SC Hard Disk (II, IIx or IIfx only)
M0235 Macintosh SE-Bus Drive Card
M0234 Macintosh II PC Drive Card
M0410LL/A Macintosh II EtherTalk¿ NB Card
M0264 Apple Serial NB Card
M0237 Apple TokenTalk¿ NB Card
M0261/A Apple Coax/Twinax Card (requires MacDFT or 3rd party equiv.)
M0443LL/A Apple Ethernet LC Card
B0438LL/A StyleWriter Printer w/Acc. Kit & Ink Cartridge
C0090LL/A ImageWriter II Printer
A9B0314 ImageWriter II/LQ LocalTalk Option
M6009 LaserWriter IINT Controller Card
M6210 LaserWriter IINT w/Toner Cartridge and Letter Cassette
M6004/A LaserWriter IINTX Controller Card
M0445LL/A LaserWriter IINTX Upgrade Kit
M6215/A LaserWriter IINTX w/Toner Cartridge and Letter Cassette
M0191 LaserWriter Plus Kit
B0454LL/A Personal LaserWriter LS w/Toner Cartridge & Acc. Kit
M0097LL/A Personal LaserWriter NT Controller Card
B0325LL/A Personal LaserWriter NT w/Toner Cartridge & Letter Cassette
B0326LL/A Personal LaserWriter SC w/Toner Cartridge & Letter Cassette

Products Requiring Separate Upgrades

The following Apple products require software upgrades that are not included with System 7. See the System 7 Information icon on AppleLink for information on how to acquire the upgraded software.

Upgrades Available Now

M0697 Inter*Poll Network Administrator's Utility
M2700/B AppleCD SC

A9M0337 Apple Scanner

Upgrades Available June/July 1991

M6045 MacTCP
M0108LL/B MacX 1.1
M1043LL/A MacX 1.1 Update
M0695 MacDFT¿
B0324LL/B Apple Coax/Twinax Card w/MacDFT

Upgrades Available Later in 1991

M0122 Macintosh Display Card 8*24 GC*
M0516LL/A A/UX Incremental Update Kit
M0598LL/A A/UX 2.0.1 CD-ROM Product
M0616LL/A A/UX 2.0.1 Floppy Product
M0559LL/A A/UX Update Product - CD ROM

* Hardware is functional but software does not work in accelerated mode.

Incompatible Products

The following product is incompatible with System 7, but can be used with third-party backup software:

M2640/B Apple Tape Backup 40SC

The following systems should not be upgraded to System 7:

B0452LL/A Macintosh IIci A/UX Hard Disk 80 CPU (8MB)
B0452LL/A Macintosh IIci A/UX Hard Disk 80 CPU (8MB)
B0453LL/A Macintosh IIfx A/UX Hard Disk 160 CPU (4MB)
B0453LL/A Macintosh IIfx A/UX Hard Disk 160 CPU (4MB)
B0471LL/A Macintosh IIfx A/UX Hard Disk 160 CPU (8MB)
B0451LL/A Macintosh IIsi A/UX Hard Disk 80 CPU (5MB)

The following products should not be installed on a System 7-based system. Install System Software version 6.0.7 or 6.0.8 before installing these products on a server or router. They are network-compatible with System 7, and both System 6 and System 7 systems can use their services.

M0576 AppleShare Print Server
M0548/B AppleShare File Server 2.0
Published Date: Feb 18, 2012

Reducing Objective C Message Overhead

This article discusses ways to reduce Objective C performance overhead.

This article has been archived and is no longer updated by Apple.

Q: My Objective-C messages take too long compared with C function calls. What can I do?

A: We have chosen to pay a certain performance cost in exchange for the benefits of object-oriented programming. What is really important is to amortize the added overhead of a message send over the cost of running your program. The cost of writing and maintaining correct code is also a consideration.

There is a way to optimize tight loops in code. The **methodForSelector:** method returns a pointer to the actual C function used to implement a method. This can be used at the beginning of a tight loop to cache the call. For example:

```
IMP func;

func = [anObject methodForSelector:aSelector];
while (loopingTightly) {
   ...
   func(anObject, @selector(aSelector), args ...);
   ...
}
```

As long as does not change its value in the inner loop, this technique does not sacrifice any of the advantages of Objective-C (e.g., dynamic binding) and is just as efficient as normal C. Be careful when using this method with methods which pass C types as arguments or expect them as return values; because of the lack of a prototype, non-object variables may be handled incorrectly. See the NSObject class documentation for a full discussion of this problem and its workaround.

Published Date: Feb 20, 2012

System 7: Upgrade Information for Apple Scanner

Is the Apple Scanner software compatible with System 7.0?
This article has been archived and is no longer updated by Apple.
Version 1.0 of the AppleScan application and the Scanner system extension are mostly compatible with System 7. Version 1.0.2 of AppleScan and version 1.0.1 of Scanner are the recommended versions. Users should upgrade to these versions after installing System 7.

Upgrades to these versions are free, and the software is posted to Apple Software Updates on the Apple Support Web site.

The Apple Scanner is compatible with all Macintosh systems that have a SCSI interface.
Published Date: Feb 20, 2012

System 7: Upgrade Information for AppleShare File Server

Is the AppleShare File Server software compatible with System 7?

This article has been archived and is no longer updated by Apple.
No. The AppleShare File Server software version 2.0 is not compatible with System 7 and should not be installed on a System 7-based Macintosh system.

AppleShare is fully network-compatible with both System 6 and System 7. Both System 6 and System 7-based Macintosh users can access an AppleShare File Server running on a System 6-based machine.

AppleShare Server 3.0, which was announced on October 15, 1991, is fully compatible with System 7. For upgrade information, please locate the article titled "AppleShare Server 3.0: Upgrade Information".

Published Date: Feb 18, 2012

System 7: Upgrade Information for Inter■Poll

Article Change History

05/27/93 - REVIEWED

Is Inter*Poll compatible with System 7?

This article has been archived and is no longer updated by Apple.
Yes. Inter*Poll version 1.0 is mostly compatible with System 7, and version 1.0.1 is fully compatible. The update to Inter*Poll is free and the software is posted on AppleLink. Users should upgrade the Inter*Poll software after installing System 7. Inter*Poll will work with both System 7 and System 6 systems over the network.

Inter*Poll will work with both System 7 and System 6 systems over the network. The Responder functionality is now built into System 7, and installing System 7 removes the Responder extension from a System 6 system. If a System 6.0.x Mac is upgraded with System 7 printers drivers, the network administrator using Inter*poll (Apples network administrator software) will get a blank line for that system's LaserWriter driver version number. There is no problem viewing System 7 drivers on System 7.0 Macs. The Sys 6 responder can't read the System 7 driver resources.
Published Date: Feb 20, 2012

NeXTSTEP: Registering Applications With the Workspace

Disclaimer

This document pertains to the NeXTSTEP operating system (versions 3.2 and previous). Apple Computer no longer provides support for these products. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software.
This article has been archived and is no longer updated by Apple.

Q: How can I make the Workspace Tools Inspector recognize my application as one of the default tools for TIFF files? Currently, when selecting a TIFF file in Workspace, the default tools are Workspace, Icon, Scene, and Edit.

A: You must perform the following steps:

In Release 2:

· Use the Inspector Panel in InterfaceBuilder to modify the **Project Attributes** of your application.

· Select **Doc1.** Enter **tiff** as the Document Extension. If you want to specify an icon for your tiff document, you can specify one by using the SET button (see ../Developer_Environment/adding_app_and_file_icons.rtf for more details).

· Save your project, and recompile.

In Release 3:
· Launch ProjectBuilder and select the Attributes button.

· Select tiff from the System File Types list and the corresponding icon appears in the Document Icons and Extensions well. If you want to specify an icon for your tiff document, you can drag a tiff image of your icon into the well. Change the label below the icon to be the desired extension.

· Save your project, and recompile.

All Releases:
· To verify that you have completed the proper steps, you can view the file test.iconheader, assuming that your application's name is test. It should list one line for your application icon, and one line for your tiff document icon, if you have specified one.

Example:

```
F test test app
S tiff test tiff
```

· Make sure that your application resides in the Workspace default search path, which is

```
~/Apps:/LocalApps:/NextApps:/NextDeveloper/Apps:/NextAdmin:\\
/NextDeveloper/Demos
```

For example, you can add it to your Apps directory (~/Apps).

· In the Workspace, choose Update Viewers from the View menu (or type Command-u) to update the File Viewer. Open the Workspace Tools Inspector. When you inspect a TIFF file with the Tools inspector, you should see the test app as an additional default tool. You can specify your test app as the default tool now by selecting it and clicking OK.

Valid for 2.0, 3.0

QA694
Published Date: Feb 20, 2012

NeXTSTEP: Missing Buttons In Webster

Disclaimer

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This article has been archived and is no longer updated by Apple.

Q: Why don't the buttons in my Webster.app appear?

Q: In Release 1, when I invoke Webster through the Define command in the Request menu, Webster starts up, and my word is entered in the text field, and yet nothing displays in the definitions window. Furthermore, the buttons aren't there. Why?

Q: In Release 2 and later, when I invoke Webster through the Define command in the Services menu, Webster displays the Alert panel

"Ancillary material does not exist (~/Library/References/Dictionary//tiff)

and

"Dictionary files do not exist in ~/Library/References/Webster-Dictionary/."

And if I wait, the application displays a panel

"Error providing service Define in Webster".

Webster starts up, and my word is entered in the text field, and yet nothing shows up in the definitions window. Furthermore, the buttons aren't there. Why?

A: You probably have a directory called /LocalLibrary/References or ~/Library/References, without Webster-Dictionary or Webster-Thesaurus subdirectories. In Release 1, if this is the case, you can verify it by checking your console window in Workspace Manager. Look for error messages of the form

couldn't open '/LocalLibrary/References/Webster-Dictionary/source'
can't find Webster's Dictionary!

To correct the error, make two symbolic links in a Shell:

ln -s /NextLibrary/References/Webster-* /LocalLibrary/References

and restart Webster. (Substitute "~" for "/LocalLibrary" as appropriate.)

QA468

Valid for 1.0, 2.0, 3.0, 3.1
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NeXTSTEP PPD Files

Postscript Printer Definition files, or PPD files, contain information about the specific features supported by a printer. An application needs this information to make use of these features. For example, for an application to be able to select the upper or lower paper tray of a printer that has two trays, it needs a PPD file for that printer describing the two-tray capability and the commands necessary to select a tray.

A number of PPD files are provided with NEXTSTEP. The default NEXTSTEP installation includes the most common files. Additional files are available on the NEXTSTEP CD-ROM. If you have a printer for which NeXT does not supply a PPD file, you may be able to get the PPD file from Adobe Systems, Inc. or from the printer vendor. You can then install the file and use it with NEXTSTEP. NEXTSTEP can use PPD files in Macintosh and DOS formats (DOS format is easier to install).

If a printer does not appear in PrintManager, the PPD file for the printer has not been installed. There are three places to look for PPD files:

- First, install the additional PPD files from the NEXTSTEP CD-ROM. See "Installing PPD Files from CD-ROM" below.

- If your printer is still not listed, see if Adobe supplies a PPD file for your printer. See "Obtaining PPD Files from Adobe" below.

- If Adobe does not have the PPD file for your printer, check with the printer manufacturer. See "Obtaining PPD Files from Printer Manufacturers" below.

If you obtain a PPD file from Adobe or the printer manufacturer, you need to install it so that NEXTSTEP can recognize the file. See "Installing PPD Files Not from NeXT" below.

This article has been archived and is no longer updated by Apple.

Where PPD Files Go

NEXTSTEP Release 3

You can put PPD files in several different locations: **/NextLibrary/PrinterTypes**, **~/Library/PrinterTypes**, **/HostLibrary/PrinterTypes**, and **/LocalLibrary/Printertypes**. Which directory you should use depends on where you got the PPD file and who needs to access the printer.

If you need to modify the PPD information for a printer, put the modifications in separate files that "include" the standard PPD information using the ***Include** directive. The NEXTSTEP 3.2 Printing release note contains full details on how to name these custom files, as does NeXTanswer #1073, "New Options in Printing." However, please note that there is an error in both of these documents. The custom files should be placed in **.../PrinterTypes/CustomPrinters**, not **.../PrinterTypes/Custom** as the release note and NeXTanswer indicate.

Installing PPD Files from CD-ROM

NEXTSTEP Release 3

Every NEXTSTEP system and upgrade comes with a CD-ROM disk containing the entire user release. This makes it easy for users with the basic software configuration to copy files from the CD-ROM onto their system from **/NextLibrary/PrinterTypes/English.lproj**.

NEXTSTEP Releases 3.0 and 3.1

To install all PPD files in these releases, install the Documentation package, located in the **/NextCD/Packages** folder on the CD-ROM.

NEXTSTEP Releases 3.2 and 3.3

PPD files in Releases 3.2 and 3.3 are located in two packages: PrinterPPDs and ImagesetterPPDs. Both of these packages are located in the **/NextCD/Packages** folder on the CD-ROM.

Obtaining PPD Files from Printer Manufacturers

Your printer manufacturer should have a current set of PPD files for all of its PostScript printers. Most printer manufacturers have disks with PPD files ready to send out on request. Call your printer manufacturer to find out about distribution methods for PPD files. In the meantime, your printer manufacturer may be able to suggest a PPD file for a comparable printer that you can use.

If your printer manufacturer offers a choice between Macintosh and DOS formats, choose the DOS format. You can use DOS files under NEXTSTEP by changing just the file name. To use Macintosh files, you need to translate them first (i.e., substitute newline characters for the carriage returns that the Macintosh uses at the end of lines. You can use public domain utilities to perform this translation, or use the UNIX command **tr**).

Obtaining PPD Files from Adobe

Receiving PPD Files via FTP from Adobe Systems' FTP Server

If a PPD file is publicly available from Adobe Systems, you can get it through Adobe's FTP server.

For anonymous FTP access, use the following information:

hostname: ftp.adobe.com (130.248.1.8)
username: anonymous
password: any (use your e-mail address)

PPD files are located in **/pub/adobe/PPDfiles/DOS**. The directory also contains a text file, **FILENAME.MAP**, which lists the available PPD files and their corresponding file names. If your printer is not listed in **FILENAME.MAP** then Adobe Systems does not currently provide a PPD file for your printer; contact your printer manufacturer to obtain a PPD file.

Installing non-NeXT PPD Files

NEXTSTEP Release 3

If your printer manufacturer offers a choice between Macintosh and DOS format, choose the DOS format. You can use DOS files under NEXTSTEP by changing just the file name. To use Macintosh files, you need to translate them first (i.e., substitute newline characters for the carriage returns that the Macintosh uses at the end of lines. You can use public domain utilities to perform this translation, or use the UNIX command **tr**).

NEXTSTEP works only with PPD files that have proper names. PPD files sent out on DOS floppy disks are not usually named properly for NEXTSTEP. You can get the proper name by examining the PPD file itself.

1 Copy the DOS file onto a NEXTSTEP file system before you change its name.

2 In the header information of the PPD file, look for an entry something like this:

*ModelName: "AGFA AccuSet"

3 Make the name of your NEXTSTEP PPD file the same as the model name, replacing spaces with underscores (_) and slashes (/) with percent symbols (%). Then, append the extension **.ppd** to the file name. For example, the above model name would translate to the file name **AGFA_AccuSet.ppd**.

4 Copy the appropriately named file into one of the **...Library/PrinterTypes** folders, and you should be up and running with your new printer type. (You may have to quit and restart PrintManager to get it to recognize the new PPD files.)

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System 7: Upgrade for MacDFT & the Coax/Twinax Card

Are the Coax/Twinax card and MacDFT compatible with System 7?
This article has been archived and is no longer updated by Apple.
The Apple Coax/Twinax card is compatible with System 7, and the installer for System 7 updates the A/ROSE software needed to run that card. The Coax/Twinax card can be used with System 7 and compatible third-party products.

MacDFT is not compatible with System 7. Users who require MacDFT functionality should not upgrade to System 7 until the upgrade to MacDFT is available.
Published Date: Feb 20, 2012

System 7.x: Upgrade Information for MacTCP

Is MacTCP compatible with System 7 and higher?
This article has been archived and is no longer updated by Apple.
MacTCP is compatible with System 7. The specifics follow:

* For System 7.0 and System 7.0.1, use MacTCP version 1.1 or higher.

* For System 7.1 and System 7 Pro (7.1.1), use MacTCP version 1.1.1 or higher.

* For System 7.1.2 and System 7.5, use MacTCP version 2.0.4 or higher.

Note: As of this article, the current version of MacTCP is version 2.0.6.

The applications: "MacTCP 2.0.4 to 2.0.6 Patch" and "MacTCP Admin 2.0.6 Patch" are ResCompare resource patching applications. Applying the appropriate patch to a COPY OF YOUR ORIGINAL ("clean") MacTCP or MacTCP Admin control panel will upgrade your copy to version 2.0.6.

All licensed copies of MacTCP 2.0.4 can be upgraded. For users of earlier 2.x versions (2.0 and 2.0.2) must first be updated to version 2.0.4 before updating to version 2.0.6.

Published Date: Feb 20, 2012

System 7: Upgrade Information for MacTerminal

Is MacTerminal compatible with System 7?

This article has been archived and is no longer updated by Apple.
MacTerminal version 3.0 is compatible with System 7. Earlier versions of the MacTerminal application are not compatible with System 7.

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Pascal II: Compiler Options

The Pascal compiler swapping option (*$S+*) should be used if the compile fails due to lack of symbol table space. This option should be the first line of the text, preceding the program statement. Swapping MUST be used in compiling units. Please see page 68 of the Apple Pascal Language Reference Manual for more details.
This article has been archived and is no longer updated by Apple.
The Pascal compiler list option (*$L+*) should not be used with Pascal version 1.0, since this will result in the loss of the code file and possibly of the directory. Instead, direct the list to the printer (*$L Printer:*), the console (*$L Console:*), or to a named file ON ANOTHER VOLUME: for example, (*$L Mydisk:Myfile.text*). We recommend using the printer. NOTE: This problem has been corrected in Pascal 1.1, and will work as described in the Pascal reference manuals.

The (*$U-*) "lex level" compiler option will result in a non-executable codefile and so should not be used for compiling user programs. This option is intended for working on the system level; it requires files and information not available to the user.

Compiler options in Pascal version 1.0 must be in capitals. In version 1.1, capitals and lower case are interchangeable.
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System 7: Upgrade Information for Apple Tape Backup 40SC

Is the Apple Tape Backup 40SC software compatible with System 7?

This article has been archived and is no longer updated by Apple.
No. The Apple Tape Backup 40SC software and Tape Disk system extension are not compatible with System 7, and no update is planned. Apple recommends the use of third-party backup software for use with the Apple Tape Backup 40SC. (The Apple Tape Backup 40SC hardware is fully compatible with all Macintosh models running System 7.)

Take the following steps to recover system information from tapes generated with the Apple Tape Backup 40SC:

1) Use a System 6-based Macintosh to recover the files.

2) Use the File Sharing capability of System 7 to transfer the files to the System 7 system.

In the case of a complete hard disk recovery, follow these steps:

1) Install System 6 on the hard disk.

2) Use Tape Backup 40SC to recover the information.

3) Reinstall System 7.

Published Date: Feb 18, 2012

System 7: Compatibility with Macintosh Software Utilities

This article describes how System 7 works with some commonly-used Macintosh software.
This article has been archived and is no longer updated by Apple.
The following software is no longer needed because its functionality has been incorporated into System 7:

- 800K Eject INIT
- Font/DA Mover
- Memory Manager INIT
- TrueType INIT

The following software will not work with System 7 and no update is planned. Users of this software should purchase third-party equivalents.

- HD Backup
- MacroMaker

The following software is incompatible with System 7, but compatible versions are included with the System 7 Personal Upgrade Kit:

- Apple File Exchange (prior to 7.0)
- Disk First Aid (prior to 1.5)
- LaserWriter Font Utility (prior to 6.0; this program has been supplanted by LaserWriter Utility)
- TeachText (prior to 7.0)

The following software is incompatible with System 7. Compatible versions are supplied with the System 7 Group Upgrade Kit, and are also posted in the Upgrade folder on the System 7 Information bulletin board:

- QuickMount (prior to 1.0.7)
- Apple CD-ROM (prior to 3.0)
- The Namer (prior to 2.1; the functionality of this program has been supplanted by LaserWriter Utility)

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Data Type Storage Sizes for Mach

This article discusses the sizes of the fundamental C data types under the Mach operating system.
This article has been archived and is no longer updated by Apple.
Q: How many bytes of storage do the various fundamental data types require under OPENSTEP for Mach? What are the maximum and minimum values for the various arithmetic data types?

A:

TYPE	SIZE	MINIMUM	MAXIMUM
char	1 byte = 8 bits	-128	127
unsigned char	1 byte = 8 bits	0	255
short	2 bytes = 16 bits	-32768	32767
unsigned short	2 bytes = 16 bits	0	65535
int	4 bytes = 32 bits	-2147483648	2147483647
long	4 bytes = 32 bits	-2147483648	2147483647
unsigned int	4 bytes = 32 bits	0	4294967295
unsigned long	4 bytes = 32 bits	0	4294967295
float	4 bytes = 32 bits	1.17549435e-38f	3.40282347e+38f
double	8 bytes = 64 bits	2.225073858507201e-308	1.797693134862316e+308

- The **unsigned** and **signed** keywords don't change the size of the type they qualify.
- Pointers occupy 4 bytes.
- The **void** type occupies no space.

If you happen to forget any of the sizes, you can quickly remind yourself by running gdb and typing:

```
print sizeof(type)
```

The minimum and maximum values are defined as constants in **<limits.h>** and **<float.h>**.

The NeXTSTEP mach implementation used the same values.
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NeXTSTEP 3.0: Fatal Signal 11 Error

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This article has been archived and is no longer updated by Apple.

Q: I'm getting the following error message from the C++ compiler:

cc++: Internal compiler error. Program collect got fatal signal 11.

What's going on?

A: You have encountered a known bug in the C++ compiler. The bug has been fixed in Release 3.1. This is a bug in the program **collect** that relates to the use of alloca. Essentially, the program **collect** runs out of stack when "collecting" your application, causing it to crash.

There is a workaround. Just increase the stacksize in the shell. Use the **limit** command to increase your stacksize. Like this:

% limit stacksize 10000

In Release 1 this workaround always works. However, in Release 2 this workaround does not work when used with the **make** utility. **make** hardwires the stacksize rather than reading it from the users default. So, in Release 2 or later (unless you have 3.1 or later, in which this bug is fixed) you must link by hand, or write a little shell script to do it for you.

Valid for 2.0, 3.0 ONLY
Not Valid for 3.1

Published Date: Feb 20, 2012

System 7: Specifications

This article contains some specifications of Macintosh System 7.
This article has been archived and is no longer updated by Apple.

Built-in Fonts

Two types of fonts are supplied with System 7: TrueType and bitmapped.
TrueType fonts include:
* Times (plain, bold, italic, and bold italic)
* Helvetica (plain and bold)
* Symbol
* Courier (plain and bold)
* Chicago
* New York
* Monaco
* Geneva

Print Drivers

The following print drivers are included with System 7
* ImageWriter and AppleTalk ImageWriter
* LaserWriter
* Personal LaserWriter LS
* Personal LaserWriter SC
* ImageWriter LQ and AppleTalk ImageWriter LQ
* StyleWriter

Networking Capabilities

With System 7, the AppleTalk network system supports LocalTalk, Ethernet (EtherTalk), or Token Ring (TokenTalk). Over 16 million nodes per network are provided for with AppleTalk Phase II networking. Using Macintosh file sharing, up to 10 folders per machine can be shared, each having an unlimited number of enclosed folders. Up to 10 guest users can be connected to a networked hard disk, with up to 50 guest users identified in the Users and Groups file. User management is built into the software to allow entry of user names, passwords, group memberships, and access privileges for opening and modifying files.

Memory and Storage

With 24-bit addressing, up to 8MB of physical memory can be accessed and up to 14MB of memory can be accessed with virtual memory, depending on which model Macintosh is being used. With 32-bit addressing, 1 gigabyte of physical memory is accessible (without taking into account the hardware limitations) and up to 1 gigabyte of virtual memory is accessible.

A minimum of 2MB of RAM is required to run System Software Version 7.0. The amount of memory used by System 7 alone (without any additional third party software) is 1MB to 1.25MB, depending on configuration.

Approximately 2.5MB to 4MB of disk space is consumed by System 7, depending on configuration.

Compatibility

System 7 is compatible with most Macintosh System 6 applications. The processor is compatible with 68000, 68020, and 68030 microprocessors, 68851 Paged Memory Management Unit (PMMU), and 68881 and 68882 floating-point units (FPUs).

Disk Formats

The following disk formats are supported by System 7: 400K, 800K, 1.4MB Macintosh disks, 720K and 1.44MB read/write MS-DOS or OS/2.

Files and Volumes

Up to 31 characters with mixed case, spaces, and symbols are allowed with System 7's file naming conventions.

Maximum file and volume size is 2 gigabytes. The maximum number of files per volume is 65,536.

The maximum number of volumes open at once as well as the maximum number of tasks supported are limited only by the amount of available system memory.

Sound
Sound can be played from disk and input to disk. The maximum number of simultaneous sound channels is 4.
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HyperCard: How to Control Which Version Gets Launched

I have HyperCard 2.0 and HyperCard 1.2.5 on the same AppleShare server. When I double-click on a HyperCard stack, sometimes I want HyperCard 2.0 to launch, sometimes I want HyperCard 1.2.5 to launch.

How can I control which version of HyperCard is launched?
This article has been archived and is no longer updated by Apple.
On your personal computer, if two applications differ only in their version numbers, then the last copy installed is the one that gets launched. However, this rule doesn't apply to applications on an AppleShare volume.

A sure way to eliminate the version (or last-installed) confusion is to change the Creator of the applications you don't want to launch.

For example, use ResEdit to change the Creator of HyperCard from "WILD" to "FRED". When you double-click on a stack, the system looks for the application whose creator matches the creator of the document or stack. If you have another copy of HyperCard (say, 2.0v2) on a mounted device, it will be launched. Saving files from the changed application is unaffected (they still have "WILD" for their creator).

Change the creator of all non-current HyperCard applications to something other than "WILD" (try "DLIW"; it's probably not used by other applications). All stacks launched will come up in HyperCard 2.0v2. To open the stacks in other versions, launch the desired application and use "Open╔" in the file menu.
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NeXTSTEP Hard Drive Recovery Tips

Disclaimer

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This article has been archived and is no longer updated by Apple.

Procedure

Steps 1 and 2 depend on the type of computer running NEXTSTEP. After that it's the same for all NEXTSTEP machines.

If you have an Intel based Computer:

1. Put your installation floppy in the floppy drive, the installation CD-ROM in the CD-ROM drive and turn on your computer.

2. At the boot: prompt, type:

If your internal hard drive is IDE

fd()mach_kernel -s rootdev=sd0a

If your internal hard drive is SCSI

fd()mach_kernel -s rootdev=sd1a

3.2 will ask for installation language and boot drivers; answer the questions and don't fear, this will not re-install NEXTSTEP.

If you have a NeXT Computer:

1. Put your installation floppy in the floppy drive, the installation CD-ROM in the CD-ROM drive and turn on your computer.

2. When the machine displays "testing system" press

*Command-Command-tilde*_on_numeric_keypad

You should get the "NeXT ROM Monitor".

At the NeXT> prompt, type:

bfd -s

For all types of computers:

The system will start in "single user mode". When it is finished, you will see a # prompt.

2a. ***If you are running NS3.2 for Intel*****, load the floppy driver:**

/usr/etc/driverLoader D=Floppy

3. You need to mount your internal hard drive on the filesystem. Here's the command:

if you have an IDE disk

```
mount -n -o ro /dev/hd0a /disk
```

if you have a SCSI disk

```
mount -n -o ro /dev/sd0a /disk
```

Your entire hard drive is now /disk.

4. Put a blank floppy disk into the floppy drive and format it with this command:

```
/usr/etc/disk -i /dev/rfd0b
```

5. Mount the floppy disk on the filesystem, as the directory /floppy

```
mount -n /dev/fd0a /floppy
```

6. Change directories, for example:

```
cd /disk/pat/files
```

7. List the files in a directory:

```
ls
```

8. Copy a file onto the floppy disk:

```
cp logo.ps /floppy
```

9. The floppy will fill up eventually. When that happens, you need to unmount it. Here's how:

```
umount /floppy
```

10. Remove that floppy from the floppy drive and build another floppy, starting with step 4.

Tips:

If you have files with spaces or ampersands in the names, for example:

```
Dan Resume.ps
```

you must copy them this way:

```
cp "Dan Resume.ps" /floppy
```

If you get the error "*command not found*" you need to use the full path for commands:

```
mount: /usr/etc/mount
umount: /usr/etc/umount
ls: /bin/ls
cp: /bin/cp
```

If you get the error "*/private/etc/mtab00026: read only file system*" when umount'ing a floppy, you need to type

```
sync; sync; reboot
```

and start this procedure again, using another blank floppy. The data you wrote to the first floppy got copied. You do not need to copy it again.

You can check the sizes of files with the *-l* option to *ls*.

ls -l

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System 6.0.7: Installing Comm Toolbox

I want to install MacTerminal 3.0 on a Macintosh LC. Unfortunately, MacTerminal 3.0 has to have certain Comm Toolbox resources into the System file. This means I have to restart from the original Installer disk, which happens to be System 6.0.5, a System that doesn't work on Macintosh LC.

I've tried to upgrade the installer disk to System 6.0.7. When I start the Macintosh LC and try to execute the installer script, the computer asks for the "Communications 1" disk. All I can find is a disk called "Communications", not "Communications 1".

This article has been archived and is no longer updated by Apple.
The Communications Toolbox installation diskette that ships with MacTerminal is named "Communications". An essentially identical diskette shipped with the Macintosh Communications Toolbox package is named "Communications 1."

The Communications Toolbox 1.0 Installer Script on both diskettes (and the 6.0.7 Network Product Installer) asks you to insert the diskette "Communications 1", but you may use either diskette. Updating the CTB Installation diskette to version 6.0.7 has no effect on the resources and their locations called for by the installation script.

There isn't enough room on the CTB installation disk to conveniently update it to System 6.0.7 using the script "minimal software for any Macintosh". Many people choose to install minimal software for a specific Macintosh. An alternative is to not update the CTB installation diskette to System 6.0.7 but instead start the Macintosh with another diskette containing System Software 6.0.7. Then insert the CTB installation diskette and run the installer.

Another possibility is to get the 6.0.7 Network Products Installer off AppleLink. Use the BB Pathfinder and search on "Software and 6.0.7".

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Booting NeXTSTEP From an Alternate Hard Disk

When an Intel computer is powered on, it looks for a device to load software from. The process of finding this software and loading it is known as "booting."

The computer looks for a bootable disk in the floppy drive, the IDE drive, and any attached SCSI drives from lowest to highest SCSI ID, in that order. The computer starts up from the first bootable device it finds. (Note that it is generally possible to disable the IDE drive, in which case the computer will not try to boot from it, using the BIOS configuration of your machine. On some machines it may also be possible to make the BIOS check for fixed disks before looking for a floppy.)

In certain circumstances, you might want to install NEXTSTEP on a SCSI drive, while using the IDE drive for DOS or other operating systems. Or you might want to install NEXTSTEP on a SCSI disk that is not the lowest SCSI ID in the chain. Or perhaps you wish to install NEXTSTEP on the second of two IDE drives. In these cases, additional configuration of your computer needs to be done after installation in order to make it bootable.

This NeXTanswer explains how to configure your system so you can boot NEXTSTEP from a hard disk drive other than the first one encountered during the boot process. The basic procedure consists of creating a small (7 megabyte) NEXTSTEP partition on the primary hard disk drive and then creating some configuration files on this partition which tell NEXTSTEP where to find the necessary boot files. The procedure for booting to the non-primary hard disk drive from the NEXTSTEP boot floppy is also detailed.

This article has been archived and is no longer updated by Apple.

Warning

This is an unsupported configuration. NeXT Technical support will not provide any assistance in configuring your system this way.

Configuration Issues

During installation, it is necessary to have the IDE drive disabled if you wish to install to a SCSI drive. If you have multiple SCSI drives, you must install NEXTSTEP on the drive that is currently configured as device 0. (Note that SCSI device numbers are not the same as SCSI ID numbers. For futher information see NeXTanswer 1109_SCSI_Setup.) Once you have successfully installed NEXTSTEP, boot into NEXTSTEP.

If you are planning on leaving the SCSI drive that NEXTSTEP is installed on configured as device 0, there is no additional configuration that needs to be done; proceed to "Booting from Floppy" below. If however you wish to change the device number of the NEXTSTEP SCSI disk, you must make a change to the **fstab** file.

Open a shell, and create a backup copy of the **fstab** file.

localhost> **su**
localhost# **cp /etc/fstab /etc/fstab.orig**

Next, using your favorite editor edit the **fstab** entry such that it reads as follows:

```
#
# DO NOT DELETE THIS FILE, IT IS REQUIRED FOR BOOTING
#
# This file contains information used to mount local hard disks.
# Consult your Network and System Administration manual
# for information on adding local disks. Information on the format
# of entries in this file can also be found in the fstab man page.
#
/dev/sd***n***a / 4.3 rw,noquota,noauto 0 1
```

The only change you need to make is to change the ***n*** to the device number of your NEXTSTEP SCSI drive. Again, note that SCSI device numbers are not the same as SCSI ID numbers; see NeXTanswer 1109_SCSI_Setup, for further information.

For an IDE drive, the entry should be:

/dev/hd1a / 4.3 rw,noquota,noauto 0 1

Please note the "hd" in this entry. This is what distinguishes a SCSI drive from an IDE drive at the system device level.

Now shutdown your system and reconfigure your hardware so the NEXTSTEP SCSI disk will be assigned the device number you entered above. (If you made a mistake and are unable to configure your hardware properly, you will need to reinstall NEXTSTEP or find a way to boot from another device, so be very careful! If you do need to boot from another device, see NeXTanswer 1468_Upgrading_from_3.1_to_3.2_bug)

Booting from Floppy

One way to boot to NEXTSTEP when it is not installed on the primary hard drive is to first boot from floppy. To do this proceed as follows:

Insert the NEXTSTEP CD-ROM Installation disk in drive A and boot the system.

After some messages the machine will pause while displaying the boot: prompt. Having determined the device number of your SCSI drive (0 if it is the only drive), type the following where ***n*** is the device number:

boot: **sd(*n*)mach_kernel**

Note that there are no spaces in the above command.

Your system will boot from the SCSI hard drive.

A second IDE drive can be booted with the following command:

boot: **hd(1)mach_kernel**

Booting from Hard Disk Drive

While booting from floppy is effective, it is somewhat annoying. One solution is to create a small NEXTSTEP partition on the primary hard disk (i.e. the disk that gets booted from by default). Because of a bug in the **disk** command, this partition must be at least 7 megabytes in size. Creating such a partition and configuring it properly allows you to automatically boot into NEXTSTEP without having to enter the sd(n)mach_kernel command. To do so, follow these steps:

Boot NEXTSTEP following the instructions for booting from floppy, above.

Log in as root. (If necessary, set a password for the me account and log out first.)

Start up Terminal.app (located in **/NextApps**) and use the NEXTSTEP fdisk to create a NEXTSTEP partition on the primary hard disk. You must be root to do this.

For an IDE disk type:

localhost# **/usr/etc/fdisk /dev/rhd0h**

For a SCSI disk type:

localhost# **/usr/etc/fdisk /dev/rsd0h**

(For all further instructions, replace hd with sd if you are using a SCSI disk instead of an IDE disk.)

This command puts you in interactive mode; from there create a 7 megabyte NEXTSTEP partition. Save the changes to disk. (Note all of the normal caveats of using fdisk: old information stored on your hard disk drive will be erased, so make sure to back up your files before doing this!)

Use the disk utility to create a NEXTSTEP filesystem on that partition:

localhost# **/usr/etc/disk -i /dev/rhd0a**

This command also creates the necessary NEXTSTEP boot blocks on the drive. See the UNIX manual page for the **disk** command for more information.

Next mount the newly created NEXTSTEP partition:

localhost# **/usr/etc/mount /dev/hd0a /disk**

Copy the minimal system configuration information from the NEXTSTEP filesystem:

localhost# **cd /**
localhost# **tar cf - usr/Devices/System.config | (cd /disk ; tar xf -)**

Finally, edit the system config info file
/disk/usr/Devices/System.config/Instance0.table
replacing the line
"Kernel" = "mach_kernel";
with
"Kernel" = "**sd(*n*)**mach_kernel";

Once again, ***n*** is the device number of the SCSI drive with NEXTSTEP installed on it. If you have installed NEXTSTEP onto a second IDE drive, the entry should read:

"Kernel" = "**hd(1)**mach_kernel";

When you reboot your system, it should give you the "n for NEXTSTEP, d for DOS" prompt; typing n makes the machine boot from the SCSI drive with NEXTSTEP installed.

After you're up and running

After you get your system booted, you may want to make changes to your configuration, such as adding a video driver, or a network driver. Remember that your system always gets its configuration information off of the mini-partition when it boots, but any configuration changes you make with Configure.app reside on the complete NEXTSTEP partition. After making any changes with Configure.app, you must copy /usr/Devices/System.config back to the mini-partition, and make the same changes to it as shown above.

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LaserWriter IINTX: Benefits of Attached Hard Drive

What are the benefits of using an attached hard drive with a LaserWriter IINTX?

1) Is the purpose of a hard drive to:
A. increase printing speed through RAM caching?
B. centrally locate PostScript fonts?
C. to free up space on a local hard drive?
D. all the above?

2) Currently, TrueType fonts cannot be downloaded to a hard drive connected to a LaserWriter IINTX. Will this feature be used in the future and will you gain any benefit by loading TrueType fonts onto a hard drive connected to a LaserWriter IINTX?

This article has been archived and is no longer updated by Apple.
The purpose of a hard drive is primarily to centrally locate PostScript fonts and to free up space on a local hard drive, but can be all of the above.

A hard disk attached to a LaserWriter IINTX speeds printing only if the fonts required for a document are stored on it and thus do not need to be downloaded over a network. Other uses generally slow down printing unless the hard disk speed versus the network speed is appreciably different. For example, if font scan-conversion (idle-time or otherwise) stores its cache to the hard disk, printing is slowed because it takes time to retrieve the cache from disk. An extremely fast disk may overcome this problem, but we haven't performed any tests that clearly prove this.

Choice B, centrally locating PostScript fonts, is a valid use, and can speed up printing if those fonts are used in the document in question.

Choice C, freeing up local hard disk space, is also valid because every PostScript font located on the hard disk need not be located on the user's hard disk. Therefore the fonts can be removed from the user's hard disk, freeing up storage space. Of course, a backup of these fonts should be kept somewhere in case the LaserWriter IINTX's hard disk ever fails.

Another way to improve the printing speed of a LaserWriter IINTX, or any PostScript LaserWriter for that matter, is to download fonts using the LaserWriter Font Utility. If there is adequate RAM (or disk space) available, downloading the fonts can greatly increase print speed. And fonts downloaded to RAM are faster than those downloaded to disk, so optimum performance depends on what fonts are used most often and where they are stored.

The difference between using the Font Utility to download fonts versus allowing them to be automatically downloaded with your document is that those fonts downloaded with the utility will persist until the printer is reset or powered off. Those fonts that are downloaded automatically with a document only persist for that job. The next job requiring the same fonts would download them again. This increases network traffic and job overhead appreciably, and with a busy network, can slow printing significantly.

Similar issues are involved with TrueType fonts. With current LaserWriter models, the TrueType fonts and rasterizer are not available in ROM. Therefore, all TrueType fonts used in a document must be downloaded, along with the rasterizer. These fonts and their scan converted data will only be persistent for each job, so the effect will be nearly identical to that with PostScript fonts downloaded from a user's System Folder. The LaserWriter

Font Utility, version 7.0, is able to download TrueType fonts as well as PostScript fonts.

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Apple 300/1200 Baud Modem: No Eight-Bit Command

This article has been archived and is no longer updated by Apple.

The Apple 300/1200 baud modem supports data formats up to 8 bits. There is no command to change the data handling of the modem from 7 bits to 8 bits. When data is sent to the modem, as a series of level transitions, the modem simply converts those transitions to frequency shifts. It does not care what the data structure is, up to the specified limits, and will echo whatever is sent to it.

Published Date: Feb 18, 2012

LaserWriter and WordPerfect: Correcting Timeout Problem

I'm printing a WordPerfect document from a DOS machine using a LaserWriter IINT. After the first 40 pages have printed, the document no longer prints and junk comes out on the paper. No matter where I start, the printing never goes beyond 40 good pages.

This article has been archived and is no longer updated by Apple.
After limited testing, it appears that WordPerfect takes a long time to repaginate lengthy documents during printing. This creates a time lag that can exceed AppleShare PC's timeout for printer connections and causes the job to fail. Symptoms are seen as pauses between pages that wouldn't seem to warrant any additional computation. If one of these pauses is long enough, it causes AppleShare PC to terminate its connection with the LaserWriter.

Try increasing the timeout value used in AppleShare PC's DA program at connection time. If increasing the timeout value helps but does not solve the problem, leave the timeout value blank. This can delay other users from accessing the LaserWriter, but not too badly.

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Macintosh IIsi: Sound Driver Incompatibilities and CE QuickMail

I'm having problems using CE QuickMail's voicemail on a Macintosh IIsi. I can send voice messages only to other Macintosh IIsi computers. No other Macintosh computers can play my messages.

This article has been archived and is no longer updated by Apple.
The problem is that QuickMail requires a compatible sound driver on every Macintosh, but the drivers on your network may be different on each Macintosh. On a Macintosh IIsi or Macintosh LC, QuickMail uses the Apple Sound Manager in System 6.0.7. On other Macintosh models using Farallon's MacRecorder, QuickMail uses Farallon's sound driver. And while the Sound Manager understands the new AIFF format sounds, as well as the older 'snd' resource format sounds, older versions of Farallon's driver did not understand the AIFF format.

When a Macintosh IIsi records a sound (using the Sound Manager), the sound is stored internally in AIFF format. Other Macintosh IIsi users can play the sound because they're using the same sound manager. Macintosh computers using the MacRecorder and earlier versions of the Farallon sound driver can't play the message.

You can either install a Farallon sound driver on all your Macintosh IIsi systems or get an upgrade. Farallon has sold the MacRecorder hardware and software to MacroMedia (formerly MacroMind) and they're handling support for the product.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

NeXTSTEP 3.1/3.2 sendmail Patch

These instructions show you how to install the **sendmail** patch on NeXT and Intel-based computers running NEXTSTEP‰ Release 3.1 or Release 3.2. The patch is distributed in an Installer package file named **SendmailPatch.pkg**.
This article has been archived and is no longer updated by Apple.
Installing Update 1 of the Sendmail Patch for NEXTSTEP Release 3.1 & 3.2

Download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.2/SendmailPatch.compressed

Two versions of **sendmail** are provided with NEXTSTEP Release 3.1 and 3.2: **sendmail** (version 5.67) and **sendmail.old** (version 5.52). Late last year, the Computer Emergency Response Team (CERT) identified a handful of security problems with NeXT's versions of **sendmail**. These problems are described in CERT Advisories CA-93: 16 and CA-93: 16A. **SendmailPatch.pkg** contains copies of **sendmail** and **sendmail.old** that fix these security problems.

1. If you received the **SendmailPatch.pkg** file via NeXTmail‰ or another electronic source, place a copy of the file in a location where you can access it when you log in as **root**.
2. Log in as **root**.
Only the superuser, **root**, can install the package. If you're not sure how to log in as **root**, see your system administrator.
3. If you received the **SendmailPatch.pkg** file on a floppy disk, insert the disk in the floppy disk drive and choose Check for Disks from the Workspace Manager‰ application's Disk menu. When the disk icon appears in the File Viewer, double-click it to open it.
4. Double-click the **SendmailPatch.pkg** file.
5. Click the Install button in the Installer package window. When the panel asks you what kinds of computers you want to install the software for, select the kind of computer you're using and click Install. Then click Continue in the panel that warns you you're about to overwrite existing files.
6. When the installation is complete, choose Quit from the Installer menu.
7. Choose Log Out from the Workspace menu and then click the Restart button in the Login window.

Note: You must restart your computer after installing the package.
The next time you start up your computer, it will take advantage of the new versions of **sendmail**.

For more information about CERT advisories, contact CERT. Past advisories, information about FIRST representatives, and other information related to computer security are available by anonymous FTP from **info.cert.org**. You can also contact CERT at:

CERT Coordination Center
Software Engineering Institute
Carnegie Mellon University
Pittsburgh, PA 15213-3890
Internet E-mail: **cert@cert.org**
Telephone: (412) 268-7090 (24-hour hotline).
CERT personnel answer 8:30 a.m.-5:00 p.m. EST(GMT-5)/EDT(GMT-4), and are on call for emergencies during other hours.

For information about logging in and out, the Workspace Manager application, and the Installer application, see the NEXTSTEP *User's Guide*.
For more information about **sendmail**, see the *NEXTSTEP Network and System Administration* book.

ADDENDUM:

The **sendmail** patch NeXT recently made available does not update the entire **sendmail** subsystem. In the original system software release, the files **/usr/bin/mailq** and **/usr/bin/newaliases** are *hard links: to the same file (i-node) as **/usr/lib/sendmail**. The patch replaces only the file called **/usr/lib/sendmail**, and does not affect the other two links. This leaves a system with the patch installed still open to some of the vulnerabilities addressed by the patch.

(**/usr/bin/mailq** provides a summary of the messages in the message queue, and **/usr/bin/newaliases** regenerates the flat-file aliases database, which *is* referenced by **sendmail**.)

To close the vulnerabilities, follow the steps below.

1. Either log in as **root** and run the Terminal application, or, in a Terminal window, **su** to **root**.

2. Run the following commands (you type what's in **boldface**):
rhino-6# **cd /usr/bin**
rhino-7# **rm mailq newaliases**
rhino-8# **ln -s ../lib/sendmail mailq**
rhino-9# **ln -s ../lib/sendmail newaliases**

3. It is *not* necessary to reboot the computer, nor to restart the **sendmail** daemon.

The result of this procedure is to replace the old **mailq** and **newaliases** with relative symbolic links to the new **sendmail**.

This procedure should be performed on all NEXTSTEP computers on which the **sendmail** patch has been installed. Failure to complete the installation according to these instructions can result in your system remaining open to some of the vulnerabilities which the **sendmail** patch addresses.

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Macintosh Monitors: Visible Raster Area Specifications

What is the visible screen size of Macintosh monitors? How much of the page width can you see? For example, on the 13-inch RGB monitor you can see from 0 to 8.5 inches.

Please tell me the visible width of the:

* Macintosh 12-inch Monochrome
* Macintosh 12-inch RGB
* Apple Two-Page Monochrome

This article has been archived and is no longer updated by Apple.
For the monitors you mention, the visible raster sizes are:

* Apple 12-inch Monochrome 8 3/16 inches
* Apple 12-inch RGB 8 3/16 inches
* Apple Two-Page Display 14 7/8 inches

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NeXTSTEP 3.2: Partitioning Large Disks

Disclaimer

This document pertains to the NeXTSTEP operating system (versions 3.2 and previous). Apple Computer no longer provides support for these products. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software.
This article has been archived and is no longer updated by Apple.

Question

Why am I unable to partition and initialize my new big disk? It's a 2.7 gigabyte SEAGATE ST43400N. I get errors like "boot block extends beyond front porch."

Answer

There's a bug in the 3.2 and older versions of BuildDisk and /usr/etc/disk when initializing large disks. Basically, they miscalculate the parameters for the partition label on the disk, and use the wrong values for creating file systems on the disk. If you have a large disk (greater than 2 GB), you can partition and initialize the disk using the following procedure.

1 Do a low level format to make sure the drive is in the factory default state:

```
localhost# sdform /dev/rsd1a
device = /dev/rsd1a block size = 512 capacity = 2777 MBytes

***FORMATTING THIS DISK CAUSES ALL DISK DATA TO BE LOST***
This will take approximately 92 minutes.

Do you wish to proceed? (Y/anything) Y

Disk Format in progress...
***Format Complete***
```

2 Run /usr/etc/scsimodes to obtain the actual disk parameters:

```
localhost# scsimodes /dev/rsd1a
SCSI information for /dev/rsd1a
Drive type: SEAGATE ST43400N
512 bytes per sector
99 sectors per track
21 tracks per cylinder
2737 cylinder per volume (including spare cylinders)
9 spare sectors per cylinder
21 alternate tracks per volume
5688446 usable sectors on volume
```

3 Create an entry in /etc/disktab for the disk:

```
ST43400N|ST43400N-512|SEAGATE ST43400N-512:\\
:ty=fixed_rw_scsi:nc#2737:nt#21:ns#99:ss#512:rm#3600:\\
:fp#320:bp#0:ng#0:gs#0:ga#0:ao#0:\\
:os=sdmach:z0#64:z1#192:hn=localhost:ro=a:\\
:pa#0:sa#4194304:ba#8192:fa#1024:ca#32:da#4096:ra#10:oa=time:\\
:ia:ta=4.3BSD:\\
:pb#4194304:sb#1493822:bb#8192:fb#1024:cb#32:db#4096:rb#10:ob=time:\\
:ib:tb=4.3BSD:
```

The important things to note here are where to copy the data from the scsimodes output to the disktab entry. The items bolded above (cylinders per volume, tracks per cylinder, sectors per track, and bytes per sector) are copied from the scsimodes info. See the disktab(5) man page for details.

The size of the front porch (fp#) should be 320 for disks formatted with 512 byte sectors and 160 for disks formatted with 1024 byte sectors. The location (block numbers) of first level boot code (z0#, z1#) should be 64 and 192 for disks formatted with 512 byte sectors and 32 and 96 for disks formatted with 1024 byte sectors.

The last 4 lines of the disktab entry define the partitioning of the disk. All partitions must be less than or equal to 2*1024*1024*1024 bytes in size. The pa#0 field says partition a starts at block 0. The sa# field indicates that it contains 4,194,304 blocks (512 bytes each, 2Gb total). In the next set of fields, the starting point (pb#) and size (sb#) for the b partition are defined. Note that the starting point for the b partition is the same as the starting point of the a partition plus its size (0+4194304).

If more than two partitions are required, add a line of the form:

:pc#4194304:sc#1493822:bc#8192:fc#1024:cc#32:dc#4096:rc#10:oc=time:\\
:ic:tc=4.3BSD:

Make sure that the partition start and partition size fields all add up to the appropriate numbers. The sum of the sizes for all partitions (pa#, pb#, ...) and the front porch (fp#) should be less than or equal to the usable sectors on the volume.

4 Write the label (partition info) to the disk and initialize the file systems:

localhost# disk -t ST43400N -i /dev/rsd1a
disk name: ST43400N
disk type: fixed_rw_scsi
writing disk label
Writing /usr/standalone/boot
creating new filesystem on /dev/rsd1a
/usr/etc/newfs -n -v /dev/rsd1a
/etc/mkfs /dev/rsd1a 4194303 99 21 8192 1024 32 10 90 4096 t
Warning: 4096 bytes per inode impossible due
to cylinder group size, using 15620 bytes per inode
Reduce cylinder group size to reduce bytes per inode.
Warning: 748 sector(s) in last cylinder unallocated
/dev/rsd1a: 4194303 sectors in 1998 cylinders of 21 tracks, 99 sectors
2147.5Mb in 63 cyl groups (32 c/g, 34.41Mb/g, 2048 i/g)
super-block backups (for fsck -b#) at:
16, 33672, 67328, ...
creating new filesystem on /dev/rsd1b
...
initialization complete

5 Make an entry in /etc/fstab for the new disk like the one below. If you do not, the first partition will mount automatically, but the remaining partitions will not be visible. Refer to the mntent manpage for information on writhing fstab entries.

/dev/sd1a /partition1 4.3 rw,noquota 0 1
/dev/sd1b /partition2 4.3 rw,noquota 0 1
/dev/sd1c /partition3 4.3 rw,noquota 0 1

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NeXTSTEP 3.0: MAB Application Services Problems

Disclaimer

This document pertains to the NeXTSTEP operating system, which is no longer a supported product of Apple Computer. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software. Some questions in this Q&A document may not apply to version 3.3 or to any given specific version of NeXTSTEP.
This article has been archived and is no longer updated by Apple.

Q: Why don't the services from my MAB [Multiple Architecture Binary] applications show up on my Release 3.0 machine?

A: When the service description file is located in an app wrapper of a MAB application and placed in ~/Apps, the services do not get properly registered on a Release 3.0 machine. However, the services are correctly registered on a post-Release 3.0 machine. This is a MAB bug in Release 3.0.

The workaround is to place a file or directory with a ".service" extension in either ~/Library/Services or /LocalLibrary/Services. A file with a ".service" extension must be a valid service description file. A ".service" directory must contain a valid service description file named "services" (e.g., the service description file would be named something like ~/Library/Services/myOwn.service or /LocalLibrary/Services/ALocalOne.service/services). Note that the extension "**.service**" does not end in an "s", but the file named **services** does. Also, the Workspace Manager only registers the services in these directories when the user logs in, it doesn't automatically update the service cache during a working session.

For more information on installing services, refer to ../AppKit/installing_new_services.

QA895

Valid for 3.0

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NeXTSTEP DO Connection Problems

Disclaimer

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This article has been archived and is no longer updated by Apple.

Q: I have a client application which is connecting to a server on another machine. When I specify the hostname, the client successfully connects to the server. The problem occurs when I specify the "*" wild card as the hostname parameter to **connectToName: onHost:fromZone:**. In this instance the connection fails and nil is returned. What might cause this?

A: When you explicitly specify the hostname, the Distributed Object (DO) request is efficiently routed using the usual TCP/IP routing mechanism to make the connection. However, when you use a wild card search for the host, each machine on the subnet must be queried. For this reason the wild card search limits itself to the immediate subnet. In other words, the wild card search fails if the two machines are not on the same subnet; the two nmserver processes are unable to find each other.

Also see the documentation for **+connectToName:onHost:fromZone:**.

There are two possible strategies you can employ to avoid using the wild card when you don't know the hostname:

1) Hard code a machine name. Of course, it would be a friendly gesture to allow this machine name to be changed in the Preferences panel of the Client application.

2) Register the name with NetInfo. For example, you might want to create a new directory in the **locations** directory called **myAppNameServer**. The **myAppNameServer** directory would contain a property which lists the value of the hostname where the server is located.

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A/UX: How To Turn On IP Forwarding (8/94)

I just discovered that A/UX defaults IP forwarding to OFF. This means that an A/UX system with more than one interface no longer "knows" how to route IP traffic regardless of how in.routed is configured.

This article has been archived and is no longer updated by Apple.
To enable forwarding, run adb on the kernel. Log in and type the following command:

```
# adb -w -k /unix /dev/kmem

a.out file = /unix (COFF format)
core file = /dev/kmem
ready

ipforwarding?D

ipforwarding: 0

ipforwarding?W 1

ipforwarding: 0x0 = 0x1

$w
$q
#
```

This changes the "ipforwarding" constant in the kernel. Reboot, and when
the system comes back up, IP forwarding will be on.

For more details on IP forwarding refer to the A/UX Network System Administration manual section on "Configuring and Managing a TCP/IP Network".

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 20, 2012

NeXTSTEP 3.2 DBKit Oracle Adaptor Patch Overview

This is a MAB version of the Oracle Adaptor based on the Pre-Release 3.3 version of the Oracle Adaptor. It contains the following bug fix :

· The default Oracle date format in Release 3.2 does not return time. It hardcodes TO_CHAR(columnName, 'MM/DD/YYYY') when it extracts a date/time.
(Bug Ref#40437, Ref#38749)

This patch should only be applied to systems using DBKit with NeXTSTEP 3.2.
This article has been archived and is no longer updated by Apple.
Download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.2/3.2_OracleAdaptor.compressed

With this patched adaptor, you can use a dwrite to change the default date format which is currently specified as "MM/DD/YYYY".

In a terminal shell, specify the following dwrite:

localhost> dwrite MyApp OracleAdaptorDateFormat "DD Year Month HH:MI:SS"

Note: You can specify any valid SQL format string. You can have a different format string for each application. Note that the dwrite only applies to a single machine and to a particular application. You would have to specify the dwrite on each machine individually.

· If the dwrite solution is not generic enough, you can change your application code to include the following methods:

```
@interface DBDatabase (DateFormatStringExtensions)

- (const char *)dateFormat;
// This returns the current date format string used by the
// adaptor. It will never return NULL.

- (const char *)defaultDateFormat;
// By default this returns "MM/DD/YYYY". This default date
// format can be overridden by a dwrite:
// % dwrite <AppName> OracleAdaptorDateFormat "<format string>"
// This method never returns NULL.

- setDateFormat:(const char *)newDateFormat;
// This method is used to set the date format used by the
// adaptor. It will override the built-in and dwrite
// defaults. If newDateFormat is NULL, the default date
// format will be used. This method returns self.

@end
```

In your application code, you can set the format inside appDidInit: for instance, by sending to the DBDatabase instance variable the method setDateFormat. For example:

```
- appDidInit:sender
{
[[module database] setDelegate:self];

fprintf(stderr, "current date format %s\\n",
[[module database] dateFormat]);
[[module database] setDateFormat:"DDth Month/YYYY"];

return self;
}
```

Usage
Hardlink to this patched oracle adaptor by adding the following option to your Makefile.preamble
OTHER_OFILES = /MyDirectory/OracleAdaptor.adaptor/OracleAdaptor

Known Problems not fixed in this Oracle Adaptor Patch

Bug Reference **39247**

Identical names in joined tables generate ambiguous queries that fail.
The Oracle server will generate the following error message:
ORA-00918 Column Ambiguously defined.

Workaround: Use different names.

TA45573_NeXTSTEP_DBKit_Oracle_Adaptor_Patch_Overview.pdf

Bug Reference **41992**

Update of date fields alone will fail.
The Oracle server will generate the following error message:
Can't execute oracle cursor.
ORA-01008: not all variables bound

Workaround: Update a non-date field in addition to the date field.
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NeXTSTEP 3.2 /etc/restore patch

These instructions show you how to install update 1 of the **/etc/restore** patch on a NeXT or Intel-based computer running NEXTSTEP‰ Release 3.2. The patch is distributed in an Installer package file named **RestorePatch.pkg**.

This article has been archived and is no longer updated by Apple.

Installing Update 1 of the /etc/restore Patch for NEXTSTEP Release 3.2

Download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.2/RestorePatch.compressed

This patch fixes a problem with the Release 3.2 version of **/etc/restore** where set user and group id bits are not retained on restored files. A symptom of missing set user and group id bits after restoring a NEXTSTEP system disk is the inability to log in as a user other than **root**.

1. If you received the **RestorePatch.pkg** file via NeXTmail‰ or another electronic source, place a copy of the file in a location where you can access it when you log in as **root**.
2. Log in as **root**.
Only the superuser, **root**, can install the package. If you're not sure how to log in as **root**, see your system administrator.
3. If you received the **RestorePatch.pkg** file on a floppy disk, insert the disk in the floppy disk drive. (If you have an Intel-based computer, choose Check for Disks from the Workspace Manager‰ application's Disk menu.) When the disk icon appears in the File Viewer, double-click it to open it.
4. Double-click the **RestorePatch.pkg** file.
5. Click the Install button in the Installer package window. When the panel asks you what kinds of computers you want to install the software for, select the kind of computer you're using and click Install. Then click Continue in the panel that warns you you're about to overwrite existing files.
6. When the installation is complete, choose Quit from the Installer menu.
The new **/etc/restore** is now available to restore **/etc/dump** backups.

For information about logging in and out, the Workspace Manager application, and the Installer application, see the NEXTSTEP *User's Guide*. For information about **/etc/restore**, see *NEXTSTEP Network and System Administration* and the UNIX manual pages for **dump** and **restore**.

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Apple CD-ROM Explorer Disk: Using with Macintosh IIsi

I have a Macintosh IIsi with the 12-inch RGB display and an AppleCD SC. The problem is my CD-ROM Explorer disk included with my AppleCD SC was designed for a 13-inch RGB monitor. Also, the HyperCard stacks on the CD-ROM Explorer are incompatible with HyperCard 2.0, the version required when using 6.0.7 system software.

My questions are:

1) Is Apple going to revise the CD-ROM Explorer disk?

2) If yes, what is the upgrade policy and how do I get a copy?

This article has been archived and is no longer updated by Apple.
The CD-ROM Explorer HyperCard stacks are compatible with HyperCard 1.2.5 and HyperCard 2.0 under Macintosh System Software 6.0.7.

As of July 1992, the CD-ROM Explorer disk is no longer included with Apple CD-ROM drives.

Published Date: Feb 18, 2012

TA45576_AUX_Supports_File_Sharing_Services__(TIL07157).pdf

A/UX: Supports File Sharing Services (9/94)

Can A/UX 3.0 do AppleShare file and print services?

This article has been archived and is no longer updated by Apple.
A/UX 3.0 does support the use of System 7 File Sharing services. It's use and limitations are exactly the same as when running under the Macintosh OS.

A/UX 3.0 does not support AppleShare print services by itself. The AWS 95 running AppleShare Pro does support the AppleShare Print server.

Article Change History:
08 Sep 1994 - Updated for A/UX 3.0.

Support Information Services

Published Date: Feb 20, 2012

Apple Sound Chip: Macintosh IIfx Audio Output Level (4/95)

I am trying to match up line levels for my audio system and I need to know the audio output level of the Macintosh IIfx. This information is not in the Macintosh IIfx manual.

This article has been archived and is no longer updated by Apple.

The following information is from the "Guide to the Macintosh Family Hardware" available through Addison-Wesley dealers. This information applies to all models using the Apple Sound Chip.

"The external sound jack is at standard line level (approximately 1.5 volts peak-to-peak) and its source impedance is approximately 47 ohms. The jack is capable of driving a headphone load of 8 to 600 ohms, or the input to almost any audio amplifier or amplified speakers. It will not adequately drive a directly connected external speaker. The external sound jack is short-circuit protected."

Article Change History:
26 Apr 1995 - Revised format of article.

Support Information Services
Published Date: Feb 20, 2012

NeXTSTEP 3.2: DOS File System Patch

This update corrects a number of problems in the way NEXTSTEP Release 3.2 works with DOS file systems, most notably:
· You can now use DOS partitions larger than 32 megabytes, without risk of corrupting the files on that partition.
· The File Viewer now accurately reports the space available on DOS partitions larger than 32 megabytes.
· You can now use removable DOS hard disks (such as Syquest and Bernoulli disks).
· You can now work with some of the DOS partitions that NEXTSTEP Release 3.2 was unable to "mount."

Caution: Take care not to fill up all the space on a DOS partition, or NEXTSTEP will stop running. (The File Viewer reports the space available on a DOS partition when you select the partition or any file or folder in it.)

This article has been archived and is no longer updated by Apple.

Installing Update 1 of the DOS File System Patch for NEXTSTEP Release 3.2

These instructions show you how to install the DOS file system patch on NeXT and Intel-based computers running NEXTSTEP‰ Release 3.2. The patch is distributed in an Installer package file named **DOSFileSysPatch.pkg**.

Download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.2/DOSFileSysPatch.pkg.compressed

1. If you received the **DOSFileSysPatch.pkg** file via NeXTmail‰ or another electronic source, place a copy of the file in a location where you can access it when you log in as **root**.
2. Log in as **root**.
Only the superuser, **root**, can install the package. If you're not sure how to log in as **root**, see your system administrator.
3. If you received the **DOSFileSysPatch.pkg** file on a floppy disk, insert the disk in the floppy disk drive and choose Check for Disks from the Workspace Manager‰ application's Disk menu. When the disk icon appears in the File Viewer, double-click it to open it.
4. Double-click the **DOSFileSysPatch.pkg** file.
5. Click the Install button in the Installer package window. When the panel asks you what kinds of computers you want to install the software for, select your kind of computer and click Install. Then click Continue in the panel that warns you you're about to overwrite existing files.
6. When the installation is complete, choose Quit from the Installer menu.
7. Choose Log Out from the Workspace menu and then click the Restart button in the Login window.

Note: You must restart your computer after installing the package.
The next time you start up your computer, it will take advantage of the new DOS file system software.

For information about logging in and out, the Workspace Manager application, the Installer application, and working with DOS file systems, see the NEXTSTEP *User's Guide*.

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Print Shop 1.1: Fixes 1MB Apple IIGS Incompatibility

I'm using Broderbund's "Print Shop" on an Apple IIGS with 1MB built into the motherboard. When starting the program, I see a line of hex codes on the screen, then loading stops. The same disks work fine with the versions of Apple IIGS with 256K RAM on the motherboard and a 512K memory expansion card in the slot.

This article has been archived and is no longer updated by Apple.
Broderbund has released version 1.1 of their Print Shop software that is compatible with version 3.0 of the Apple IIGS ROMs. Customers should contact Broderbund's customer service group for upgrade information.

For more information, search on "Broderbund"

Published Date: Feb 18, 2012

HyperCard 2.0: How To Get Updates

There are several commercial stacks shipping that require HyperCard 2.0 v1, HyperCard 2.0 v2, and so on. I want to use these stacks but don't want to necessarily buy a full HyperCard bundle from Claris. Is there a way for me to get an update from Apple, or must I purchase HyperCard from Claris to get an update?

This article has been archived and is no longer updated by Apple.
HyperCard is a Claris product, and customers should contact them regarding software updates. Claris will send a disk containing HyperCard 2.0v2, HyperCard Fonts, and a small Home stack to any owner who requests it.

Customers who purchased the Software Update package for HyperCard or the Network Admin package will be shipped the same software Apple is including with its computers.

Claris says that the HyperCard 2.0 upgrade is the best way to go. The upgrade includes the new Script Language Guide, a guide to the new features, and the complete set of HyperCard disks.

Published Date: Feb 18, 2012

HyperCard 2.0: "Command-Option-S" Key Problem

In HyperCard 2.0, the Command-Option-S key combination brings up a dialog box requesting the location of the System folder, rather than the stack script as expected.

This article has been archived and is no longer updated by Apple.

Command-Option-S opens the script of the stack in use. This did not change in HyperCard 2.0. You might have a macro set up to do something different. In QuicKeys 2, Command-Option-S is set up as the start/stop sequence for macro recording. Make sure that nothing like this is in use and the problem should be eliminated.

Published Date: Feb 18, 2012

HyperCard 2.0: Version Numbers Explained (2/95)

How do I know if I have the latest released version of HyperCard 2.0? Is there a way to get that information other than using the "Get Info" command?

This article has been archived and is no longer updated by Apple.
The latest released version of HyperCard is 2.2. This is the version returned by the Get Info command. The "version" property of HyperCard returns version information on the HyperCard application and stacks. On pages 645 to 647 of, "HyperTalk 2.0: The Book", by Dan Winkler and Scot Kamins, is an excellent description of the property and the information it returns. However, Claris Corporation uses a different numbering scheme for release versions of its software.

Running HyperCard 2.2, type "put the long version". The string "02218000" appears in the message box.

* The first two digits (02) show major revision number.
* The next digit (2) is for minor revisions.
* The fourth digit (1) is for bug fix revisions.
* The next two digits (80) show the development stage. In this case, the 80 means it is released software.
* The final digits (00) are only applicable on unreleased software.

Translating all of this using the Apple scheme results in 2.2.1. Claris uses only the major and minor revision number in its releases. The bug fix revision number translates to a "v" number with 0 being equivalent to "v1", 1 to "v2", and so on.

Article Change History:
22 Feb 1995 - Added keyword; updated revision numbers.
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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NeXTSTEP 3.2 libMallocDebug Patch

The malloc debug library shipped with NEXTSTEP Release 3.2 inadvertently was compiled with a setting that nullifies the checking for damaged memory regions. This version of libMallocDebug has no changes, other than being compiled with the flag on, so it reinstates the checking. This library is a multi-architecture binary, both Intel and Motorola are supported. You can use lipo(1) to thin the library if desired. This software is not supported by Apple Computer.

This article has been archived and is no longer updated by Apple.

Download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.2/libMallocDebug.a

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HyperCard 2.0: When Double-Clicking Fails To Select

When editing HyperTalk scripts, I frequently notice the problem that double-clicking on a word fails to select it. The single click (place insert point) and triple click (select entire line) functions continue to work properly.

This article has been archived and is no longer updated by Apple.
This problem can be fixed by upgrading to HyperCard 2.0v2.

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NeXTSTEP 3.2: Large IDE Drive Problems

Disclaimer

This document pertains to the NeXTSTEP operating system (versions 3.2 and previous). Apple Computer no longer provides support for these products. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software.
This article has been archived and is no longer updated by Apple.

Overview

The NEXTSTEP 3.2 IDE driver uses your computer's BIOS to retrieve IDE drive geometry. Because of this, there is a problem that may occur when installing NEXTSTEP 3.2 on drives larger than 504Mb.

Problem

Your motherboard's BIOS may report translated IDE drive geometry that confuses the NEXTSTEP 3.2 IDE driver and causes a kernel panic. Most BIOSes will fake the actual geometry for disks that exceed the imposed limitations by performing a translation. As an example, if the disk is actually 2048 cylinders, 16 heads, and 63 sectors per track, the BIOS may translate this to 1024 cylinders, 32 heads, and 63 sectors per track.

The geometry limitation of 1024 cylinders, 16 heads, and 63 sectors per track stems from a combination of both the ATA specification and your BIOS's limits. The IDE limitations are set in the original ATA specification (see http://www.symbios.com/ftp/pub/standards/io/ata/ata-r4c.txt) . BIOS limits come from the INT 13 read/write calls that combine a 10 bit cylinder value with a 6 bit sector value into a 16 bit register. The following table demonstrates how each contributes to the limitation.

	BIOS	IDE	Limitation
Maximum Cylinders	1024	65536	1024
Maximum Heads	255	16	16
Maximum Sectors/Track	63	255	63
Maximum Capacity	7.84GB	127.5GB	504MB

If your drive exceeds this limit and the BIOS performs a translation, you may see messages similar to the following during the first phase of installation:

kernel panic
/private/tmp/mnta: bad dir in0 18435 at offset 0: mangled entry
mode = 077430, inum = 18437, fs = /private/tmp/mnta
panic: (cpu0) ialloc: dupalloc
panic: next mach 3.2: <date>; root(rcbuilder): mk-149.30.15.obj~ 2/rc_i386/release_I386
kernel panic exception (6,3,1)
waiting for remote debugger connection

Solution

Most drives have flexible configurations and permit of a range of cylinders, heads, and sectors from the system setup utility. You will have to modify these parameters so that they do not exceed the limits imposed by the BIOS and those outlined in the ATA specification. The resulting maximum capacity of the drive's geometry should not exceed any one of the following parameters:

1024 cylinders x 16 heads x 63 sectors/track x 512 bytes/sector
Yielding a maximum of 528 482 304 bytes (504Mb)

Other drives will have jumper switches which must be set to break the drive into two separate drives, effectively creating a primary and secondary disk from a single IDE drive.

If your large drive does not allow for this configuration, it may be unable to be used with NEXTSTEP. This case is rare, and you should contact the supplier or manufacturer of the drive for assistance.

Caution

In addition to the standard IDE driver, NEXTSTEP 3.3 includes a revised IDE driver that resolves the geometry problem. This updated driver asks the disk for its geometry instead of obtaining it from the BIOS. If you are currently using the NEXTSTEP 3.2 IDE driver and will be upgrading to NEXTSTEP 3.3 (or later), you may use the revised IDE driver but you will have to both reset the BIOS settings and reinitialize the drive (reinstall all operating systems). However, you may continue to use the standard IDE driver with no difference in operation.

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CD-ROM Drive: Pioneer Changer Holds Six CDs

Is there a Macintosh CD-ROM drive that can hold several CDs at once?

This article has been archived and is no longer updated by Apple.
Pioneer offers a SCSI drive that holds six CDs at once. The DRM-600 or the DRM-610 (220v) can mount six disks at a time on the Macintosh desktop.

For more information, search on "Pioneer Communications"

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LocalTalk PC Card: Where To Get Interface Specifications

I want to develop a server program on a PC. To do this, I suppose I'll need to get the hardware and software interface specifications for the LocalTalk PC card. Where can I get them?

This article has been archived and is no longer updated by Apple.
You may not need to get down to the hardware level. You may be better off basing your software on an existing model, such as the Open Data-Link Interface (ODI) specification. This way, you wouldn't have to adjust for each type of network card, but could work with a single model. Also, you'll save much development time by using ODI-compliant drivers already in use for many network cards. Your software could then coexist with other software that uses ODI protocol stacks--AppleShare PC, for example.

Since an ODI-based driver already exists for the LocalTalk PC Card, you could concentrate on developing your server software and basing it on the available AppleTalk protocol stack. If you want to implement a different protocol stack for the LocalTalk PC card, this also can be done within the framework of ODI, and it would still take advantage of the existing driver.

The best source of information on programming to the ODI specification is the Open Data-Link Interface Developer's Guide, available from APDA. Here is the introduction to Chapter 1:

"The Open Data-Link Interface is a new system jointly developed by Apple Computer, Inc., and Novell, Inc., that provides unmatched flexibility for both network developers and end users. The Open Data-Link Interface (ODI) includes the Multiple Link Interface (MLI) and the Multiple Protocol Interface (MPI). The MLI and MPI are the interfaces for network card drivers and protocol stacks to the Link Support Layer (LSL). The LSL provides packet transfer between these interfaces in a way that allows different protocol stacks to use link-level drivers interchangeably and simultaneously. The ODI puts an end to the need for one-driver to one-stack communication."

The entire publication includes the Developer's Guide, some sample driver notes, and a disk with code and test programs. It is available from APDA as part number M0355LL/A.

For more information, search on "APDA"

Published Date: Feb 18, 2012

NeXTSTEP for PA-RISC Hardware Q&A

Disclaimer

This document pertains to the NeXTSTEP operating system, which is no longer a supported product of Apple Computer. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software. Some questions in this Q&A document may not apply to version 3.3 or to any given specific version of NeXTSTEP.
This article has been archived and is no longer updated by Apple.

HP-UX and NEXTSTEP

Q: Can I install HP-UX and NEXTSTEP onto separate partitions of the same hard disk?

A: HP-UX and NEXTSTEP use incompatible partitioning schemes and cannot be installed on the same disk. The only way to set up a dual-boot machine is by using separate hard disks for HP-UX and NEXTSTEP.

Q: Okay, I've set up a dual-boot machine using one disk for NEXTSTEP and another for HP-UX. Whenever I log in under NEXTSTEP, I get a panel which says "This disk is damaged: initialize?" with options to initialize, repair, or ignore. The default option is "Initialize." What should I do?

A: Under NEXTSTEP 3.2, this happens because NEXTSTEP attempts to mount the HP-UX disk but does not know how to read its filesystem. You should click "Ignore." *Choosing either of the other options may result in irreparable data loss on the HP-UX disk.*

This has been fixed in NEXTSTEP 3.3, you are able to add an entry in /etc/fstab that will force NEXTSTEP to ignore the HP-UX disk automatically. The disk type for the HP-UX disk should be 'ignore'. See the mntent(5) UNIX manual page for more information.

CD-ROM Compatibility

Q: What CD-ROM drives can be used to install NEXTSTEP?

A: Due to restrictions in the HP ROMs, only certain HP and Toshiba CD-ROM drives can be used to install NEXTSTEP. The recommended CD-ROM drive is the HP A2655A. The HP A1999A can be used with 7x5 systems but is incompatible with 712 systems.

The HP A2655A uses the same mechanism as the Toshiba XM-3401TA, while the HP A1999A uses the same mechanism as the Toshiba XM-3301TA. These drives may be used instead of the equivalent HP drives, but NeXT recommends contacting HP to be sure your firmware revision is compatible.

Q: Can a wider range of CD-ROM drives be used to read CD-ROMs once NEXTSTEP has been installed?

A: Yes.

Hard Drive Compatibility

Q: I've encountered some suspicious problems such as errors during installation, SCSI timeouts, and a wait of several minutes to log in to the Workspace. What's going on?

A: NeXT has discovered SCSI incompatibilities with one specific hard drive model, the Quantum LPS1080S with firmware revision 111B. The following tables summarize our findings to date.

Compatible:
Vendor Model Capacity FW rev. Verification status
HP C2247 1.0GB 0BQ3 NeXT-tested
Micropolis 2112 1.0GB 4024 NeXT-tested
Seagate ST11200N 1.0GB 8104 NeXT-tested

Digital DSP3107L 1.0GB 441I HP-tested
Digital DSP3210 2.0GB 441G HP-tested *
Quantum LPS525S 0.5GB 9656 HP-tested
Seagate ST12400N 2.0GB 8712 HP-tested *
Seagate ST31200N 1.0GB 8714 HP-tested
Seagate ST12550N 2.0GB 0013 customer report *

Not Compatible:
Vendor Model Capacity FW rev. Verification status
Quantum LPS1080S 1001MB 111B HP-tested
Seagate ST3600N 0.5GB 9686 customer report
Seagate ST3600N 0.5GB 4686 customer report

* subject to limitations affecting hard drives of 2GB or greater<see below

NeXT has received conflicting information about the compatibility of the Seagate ST3600N. If you are encountering problems with the Quantum LPS1080S, please contact your HP Sales Representative for a replacement drive. In addition, if you have any additional information related to these tables, please contact NeXT Technical Support by the means listed in the Introduction.

Q: I couldn't install on my hard drive which is two gigabytes or larger. Why not?

A: There was a bug in NEXTSTEP Release3.2 in which the UNIX File System imposes a 2GB limit for disk partitions, the UNIX newfs command fails when attempting to create a filesystem on these drives. (Note that "two-gigabyte" drives are actually slightly larger than 2GB, so that they are susceptible to this problem.) Consequently these drives may be used by partitioning with the UNIX disk command, but they cannot be used as boot devices. See NeXTanswer 1533_initializing_and_partitioning_big_disks for more information.

This has been fixed in NEXTSTEP Release 3.3.

SCSI Device Numbering

Q: How are SCSI device numbers assigned on HP hardware?

A: Unlike NEXTSTEP on NeXT and Intel-based hardware, NEXTSTEP for PA-RISC assigns SCSI device numbers in order of *decreasing* SCSI ID numbers. In other words, NEXTSTEP scans down by SCSI ID, assigning device number 0 to the first device encountered, device number 1 to the second, etc.

For example, a typical HP SCSI setup consists of a hard disk at SCSI ID 6 and a CD-ROM drive at SCSI ID 2. In this example, the hard disk is assigned SCSI device number 0, while the CD-ROM drive is assigned device number 1. A second hard disk added at ID 1 would then be assigned device number 2.

Fast-Wide SCSI Support

Q: Is the fast-wide SCSI interface supported on the higher-end HPPA workstations?

A: No, fast-wide is not supported by NEXTSTEP. There are no announced plans to support it at this time.

Video Support

Q: What video cards can I use with my HP workstation and what modes will it work in?

A: The following are the HP PA-RISC workstations and video systems supported by NEXTSTEP 3.3:

HP 712(/60 or /80)
Built-in (Artist)
RGB:888/32 using HP's Color Recovery technology
RGB:256/8
BW:8

Add on card for two headed system
RGB:888/32 using HP's Color Recovery technology
RGB:256/8
BW:8

HP 715(/33, /50, or /75) and HP 725/50

Built-in (TimberC)
RGB:256/8
BW:8
CRX-24 graphics adaptor card
RGB:888/32
RGB:256/8
BW:8
CRX graphics adaptor card
RGB:256/8
BW:8

HP 715(/64, /80, or /100) and HP 725/100

Built-in (Artist)
RGB:888/32 using HP's Color Recovery technology
RGB:256/8
BW:8

NOTE: *The HCRX cards are not currently supported in NEXTSTEP 3.3. A driver is currently being written for the HCRX 8 and 24 bit graphic adaptors.*

HP 735 and HP 755

CRX-24 graphics adaptor card
RGB:888/32
RGB:256/8
BW:8
CRX graphics adaptor card
RGB:256/8
BW:8

NOTE: *the CRX card for the 735 and 755 is a different card than is used in 715's.*

Resolution and Refresh Rate

All the HP's support the following resolution and refresh rate in Configure.app:
1280x1024 72Hz
However, on the machines with the Artist graphics system, 712(/60 or /80) and 715(/64, /80, or /100), it is possible to choose different resolutions and refresh rates during the HP boot process. The following are supported by the hardware:
1280x1024 72Hz
1024x768 75Hz
1024x768 70Hz
1024x768 75Hz Flat Panel
1280x1024 60Hz
1024x768 60Hz
640x480 60Hz
1280x1024 75Hz
1024x768 75Hz
800x600 75Hz
640x480 75Hz
Of course, you would also need a monitor that supports one on these.

NOTE: *a video memory upgrade is required for for an HP model 712 to have a resolution of 1280x1024.*

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DAL 1.2: Bug in MacMainFrame 3.2 in CUT Mode

There is a known bug with MacMainFrame 3.2 (CUT only) and DAL 1.2.
This article has been archived and is no longer updated by Apple.
If your controller runs in DFT mode, use it. Otherwise, you'll need the latest Avatar release 3.3x. The 3.3x MacMainFrame product works fine under both CUT and DFT with DAL at release 1.2.
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NeXTSTEP 3.2 HP-PA Precompiled Header Patch

These instructions show you how to install the precompiled header patch on computers running NEXTSTEP‰ Developer Release 3.2 for PA-RISC computers. The patch is distributed in an Installer package file named **PrecompiledHeaderPatch.pkg**.

This article has been archived and is no longer updated by Apple.

Installing Update 1 of the Precompiled Header Patch for NEXTSTEP Developer Release 3.2 for PA-RISC Computers

Precompiled headers built with NEXTSTEP Developer Release 3.2 for PA-RISC computers are incompatible with NEXTSTEP Developer Release 3.2 for NeXT and Intel-based computers, and vice versa. The precompiled header patch contains updated versions of the HeaderViewer application, C preprocessor, and precompiled headers for NEXTSTEP Developer Release 3.2 for PA-RISC computers that allow you to exchange precompiled headers with NEXTSTEP Release 3.2 for NeXT and Intel-based computers.

Caution: Make sure you install the precompiled header patch *after* you install the **DeveloperTools.pkg** and **DeveloperLibs.pkg** packages from the *NEXTSTEP Developer* CD-ROM. Otherwise, you will replace the new, compatible software from the patch with the incompatible software from the CD-ROM.

Installing the Precompiled Header Patch

Download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.2/Precomp_Headers_HP.compressed

1. If you received the **PrecompiledHeaderPatch.pkg** file via NeXTmail‰ or another electronic source, place a copy of the file in a location where you can access it when you log in as **root**.
2. Log in as **root**. Only the superuser, **root**, can install the package. If you're not sure how to log in as **root**, see your system administrator.
3. If you received the **PrecompiledHeaderPatch.pkg** file on a floppy disk, insert the disk in the floppy disk drive. Choose Check for Disks from the Workspace Manager‰ application's Disk menu. When the disk icon appears in the File Viewer, double-click it to open it.
4. Double-click the **PrecompiledHeaderPatch.pkg** file.
5. Click the Install button in the Installer package window. When the panel asks you what kinds of computers you want to install the software for, select NeXT, Intel, and PA-RISC computers and click Install. Then click Continue in the panel that warns you you're about to overwrite existing files.
6. When the installation is complete, choose Quit from the Installer menu. The contents of the package are now installed on your computer.

For information about logging in and out, the Workspace Manager application, and the Installer application, see the *NEXTSTEP User's Guide*. For information about precompiled headers, see the NEXTSTEP Developer's Library.

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Pascal Reference Manual: Errata

The following are errata for Apple Pascal Language Reference Manual # A2L0027 030-0101-00.
This article has been archived and is no longer updated by Apple.
Page 22
There is no mention of the CHR (X) function.

Page 86
ORD will accept any ordinal type (integer, character, or user defined type) and return the ordinate of the argument.

NOTE: The most common use for ORD is to return the ASCII value of a character.

Page 148
The two-step boot cannot use APPLE1: for the first step, since RESET does a cold boot in Version 1.1. Use APPLE3: for the first part of the boot instead.
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DAL: Rdb Support and CPU Overhead Questions

1) Can I access multiple Rdb/VMS databases (not just tables within a database) simultaneously with DAL?

2) Approximately how much CPU power does DAL use?
This article has been archived and is no longer updated by Apple.

1) Multiple Databases

Let's go over the terminology used by Rdb/VMS as compared to parallel terminology often used in discussions of relational theory:

Rdb/VMS Term	Relational Technology Term
Relation	Table
Record	Row (Tuple)
Field	Column (Attribute)
System relations	Metadata

In Rdb/VMS, you can choose to store relations (tables) in a single file or in separate files. A database that stores relations in one file with file type RDB is a single-file database. You can also have a database in which all metadata and system information are stored in a root file (file type RDB) and the data are stored in one or more storage area files (default file type RDA). You can place each relation in a separate file, several relations in one file, or several relations in separate files. A database with a root file and one or more storage area is a multifile database.

As you can see, each database can store one or more relations (tables) in one or more files.

Data Access Language will open more than one database using the OPEN dbbrand DATABASE "databasename"statement or command. For example:

open rdb database "daldemo"

will open the "daldemo" database that contains one or more tables.

You can use another OPEN rdb DATABASE to open a new database. The newly opened database becomes the default database for the session. This means all subsequent unqualified table references refer to this database. You can, however, use the USE DATABASE dbalias to establish a previously-opened database as the current default database. Each Open Database statement requires a USE LOCATION statement if the Rdb databases are not all in the same location.

2) CPU Use

There are no rough figures on how much CPU power DAL uses because many factors affect the performance of the system. In theory, DAL overhead should be minimum compared to one imposed by the DBMS. If you monitor top CPU usage on the VAX, you will notice that percentage used by DAL server is quite low.

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HP Terminal Emulators: Printing on Host Printers

Is there a Macintosh terminal emulator that allows file transfer and printing from an HP3000? I've found some information about Session and Reflection 3 PLUS, but there's no mention of printing.

I've also read that Tymlabs, publishers of the Sessions series of terminal emulators, now supports Ethernet. Will using Ethernet allow better connectivity?

This article has been archived and is no longer updated by Apple.
To our knowledge, no terminal emulation package for HP computers has a specific feature to print directly to an HP3000's printers. You'll have to use the file transfer feature to transfer the text file to the HP3000 and print from there. Walker, Richer & Quinn Inc., the maker of Reflection 3 PLUS, says that you can automate this process using their scripting language. Tymlabs Corporation, the maker of Session, said that version 4.0, has scripts for printing on the host printer.

Ethernet's high transmission speed (10 megabits per second) is particularly useful when there is heavy use of a file server. Examples include multi-user database use, primary storage use for all applications, or for applications development with shared libraries on the file server.

For more information, search on "Walker, Richer & Quinn" or "Tymlabs"

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NeXTSTEP 3.3 Release Notes Addendum

Other Release Notes

If you have an Intel-based or NeXT computer, the *NetInstallHelper* and *RemoteUpgrade* topics in the on-line system administration release notes incorrectly describe how to prepare a site for network installation or upgrading, and how to upgrade multiple computers across the network.

This article has been archived and is no longer updated by Apple.

RemoteUpgrade
Question:

Where is the *RemoteUpgrade* utility the Release Notes on Remote Upgrades talks about for doing template upgrades? The Release Notes say to look in the root directory of the 3.3 CDROM.

Answer:

You will find the *RemoteUpgrade* utility in "/Upgrader.app/Default.upgrade". If you are using the file viewer, select Upgrader.app in the root directory with a single mouse click, then select "Open as Folder" from the Workspace menu to get a new viewer that has the Default.upgrade folder. Inside the Default.upgrade folder is the *RemoteUpgrade* utility.

NeXTTeX.pkg
Question:

Why doesn't TeX work under 3.3?

Answer:

If you select NeXTTeX.pkg to be installed during the initial installation process, it will not install properly. You must install it using /NextAdmin/Installer.app after your initial installation is complete.

You will find the NeXTTeX.pkg on your CDROM under the directory NeXTCD/Packages

See /NextLibrary/Documentation/NextAdmin/ApA_ManagerApps.rtfd for information about running Installer.app.

Printing UNIX ManPages
Question:

Why can't I print UNIX ManPages under NEXTSTEP 3.3 Intel?

Answer:

There is a bug in 3.3 with some of the files needed for printing manpages.
The files are **/usr/lib/transcript/troff.font/{Helvetica,Times}/font.ct**
Replacing these files with their 3.2 counterparts fixes the problem.

Published Date: Feb 20, 2012

Macintosh/VAX Integration: Queue & Bridge Questions

An office has VAX computer where 90% of the firm's 350 users have terminals and some Intel-based PCs. The VAX is the hub of the entire operation.

All printing is through the print Queue mechanism on the VAX. The VAX handles forty HP LaserJet clones with PCL as the communication mechanism from the queue to the printer. The printers are serially connected with terminal servers.

1) Is there a product that allows the Macintosh to access these print queues using PCL, or does this have to be done through PostScript?

2) Remote access to this system is through VitaLink bridges. Has any headway been made to incorporate AppleTalk into these bridges? All VAX resources are on one side of the bridge, so this would eliminate DECnet encapsulation.

This article has been archived and is no longer updated by Apple.
1) We are not aware of any product that will do what you are looking for. To do this, the product must supply a receiver process on the VAX, which will act like a LaserJet printer and register its name on the network for users to choose from. Once a PCL print job is sent from the Macintosh, the receiver reads the LaserJet PCL format file and stores it as a standard VAX/VMS text file to be sent to the print queueing system. A print symbiont will take standard VMS text files and convert them to PCL format before they can be forwarded to the LaserJets. The symbiont translator is normally driven by a set of Device Control Library (DEVLIB) modules. Theoretically, one can write a Device Control Library module to translate file to PCLs.

Macintosh to VAX integration product such as PATHWORKS for Macintosh and Alisa use this above approach to get PostScript files to the VAX queue and then print on the Apple LaserWriters on LocalTalk or Digital PostScript printers on the network. Of course, the printers have to support PostScript. One way to allow printing on PCL-based printers is to write a Device Control Library module mentioned above to translate from PostScript to PCL. This is not a trivial task.

In your situation, the easiest way, though not a seamless integration, is to send the text files to the printer device captured by the VMS print queue. These are the terminal server port names in your case. On VAX/VMS, once a terminal port or a terminal server port is captured by a queue, any file sent to the port directly will be queued. The file can be sent by NetCopy application over DECnet, specifying the destination node name followed by the terminal port name, such as YOURNODE::LTA12:, where LTA12 is the terminal server port connected to the LaserJet. You might want to check if the port protection is world write-able. Doing this way, there is no change required in their current PCL-based printer queues.

2) In theory, bridges will pass all protocols on the network unless you program them to filter a particular protocol. To our knowledge, the VitaLink bridge should pass AppleTalk protocol. You should check with Network Systems (formerly VitaLink) for the correct hardware and software version, and correct configuration to pass AppleTalk protocol.

Published Date: Feb 20, 2012

NeXTSTEP: Encoding Foundation Classes With Distributed Objects

Disclaimer

This document pertains to the NeXTSTEP operating system, which is no longer a supported product of Apple Computer. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software. Some questions in this Q&A document may not apply to version 3.3 or to any given specific version of NeXTSTEP.
This article has been archived and is no longer updated by Apple.

Question

How do I encode NSObject subclasses over-the-wire with Distributed Objects since NSObject does not implement the NXTransport protocol? I have an application that uses some Foundation objects with Distributed Objects. Do any Foundation classes implement the NXTransport protocol? If not, how can I encode Foundation objects over the wire?

Answer

Sending NSObjects "by reference" or "by proxy"

Sending NSObjects by reference was not supported in the foundation shipped with NEXTSTEP 3.3 and EOF 1.0. However, this is supported in the foundation included with EOF 1.1.

EOF 1.1 includes the NXAutoreleaseConnection class, that will ensure that autoreleased objects are correctly released in non-appkit servers. However, NXAutoreleaseConnection's **connectToName:onHost:** still returns a retained object. Thus, once the client is finished with the object returned by **connectToName:onHost:**, it must send **release** or **autorelease** to it.

Sending NSObjects "by value" or "by copy"

In order to send an object over-the-wire "by value" or "bycopy" you need to implement the NXTransport protocol. However, NSObject itself does not implement the NXTransport protocol, so no NSObject subclasses can implement it. As a result, NSObject subclasses cannot be encoded bycopy.

However by substituting an Object for the NSObject during the encoding process, it is possible to achieve the same result as encoding the NSObject bycopy. When encoding an object bycopy, the DO system does the following:

· Sends the object to be encoded an **encodeRemotelyFor:freeAfterEncoding:isBycopy:** message, and keeps the return value.
· Sends that return value the **encodeUsing:** message to encode it over the wire.
· In the receiver, an instance of the class that was encoded is created with alloc/init and it is sent a **decodeUsing:** message.
· The object returned by **decodeUsing:** is passed to the receiver of the DO message.

With categories on NSObject and it's subclasses, it is possible to return a placeholder object

from **encodeRemotelyFor:freeAfterEncoding:isBycopy:**, the placeholder object gets encoded over the wire, and then it can return the appropriate NSObject subclass from it's decodeUsing: implementation. If the placeholder object is an Object subclass, it can implement the NXTransport protocol with no problem.

The NSString, NSNumber and NSData classes in Foundation already implement the NXTransport protocol in this fashion so that they can be sent bycopy with no code changes. For example you can encode and decode these objects with the **encodeObject:** and **decodeObject:** methods as you would any other object. For the other Foundation classes, a category must be be added to provide this functionality.

Valid for: EOF 1.0, EOF 1.1, NEXTSTEP 3.2, NEXTSTEP 3.3

Published Date: Feb 20, 2012

MacTerminal 3.0: Block Cursor Disappears on Macintosh LC

I'm using MacTerminal 3.0 on a Macintosh LC with System 6.0.7. My block cursor disappears off the screen when logged onto the VAX using VT320 emulation. I have to go into the terminal settings dialog to get the cursor to show up again.

Are there any compatibility problems with MacTerminal and the Macintosh LC?

This article has been archived and is no longer updated by Apple.
We tried both the LAT Tool over Ethernet and the Serial Tool to the VAX, but were unable to duplicate the problem. We don't know which Connection Tool you're using, but here are a few suggestions:

1) Throw away the old system file and reinstall it.

2) Throw away the Communications folder, reinstall the CommToolBox and its Tools from a known good copy of the diskette.

3) Make sure that you don't have any other INITs/CDEVs in the system that may conflict.

4) We have heard that some network devices that provide serial look-alike drives are having problems with the CommToolBox. If you're using one of these drivers, remove it and try MacTerminal again.

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NeXTSTEP 3.3 Driver: MediaVision Jazz16

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/MedVisionJazz16.pkg.compressed

Driver Name / Installer .pkg: MVJazz16AudioDriver
Driver Type: Sound
Driver Scope: Product Family
Supported Components: Media Vision Jazz16
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This driver is intended to support several Jazz16 chipset based cards and motherboards implementations.

Supported Products / Add-on Adapters:
Media Vision Deluxe Sound Card
Media Vision Pro Sonic Sound Card

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker , CD-ROM Stereo Line-In
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

Mixer (part no. MVA508) in Media Vision Premium 3-D adapter is currently unsupported.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

MediaVision
3185 Laurelview Court
Fremont, CA 94538

+1 (800) 845-5870 USA toll-free (sales) phone
+1 (800) 638-2807 USA toll-free (technical support) phone
+1 (510) 770-8600 international phone
+1 (510) 770-0968 bulletin board system
+1 (510) 770-9592 fax
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: ATI Mach64

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.37, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/ATI_Mach64.pkg.compressed

Driver Name / Installer .pkg: ATIMach64DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: ATI 88800 (Mach64)
PC Bus / Interface Supported by Driver:** Integrated, PCI, VL-Bus

General Overview notes: This new graphics driver is designed to support a variety of graphics adapters using the ATI 88800 graphics controller. Adapters based on the 88800 GX/CX (also known as the Mach64) graphics controller chipset can support 1MB, 2MB or 4 MB of VRAM or DRAM. This driver supports a variety of configurations including high-resolution and high-color (32bit) modes and several RAMDAC, frame buffer and interface bus (PCI and VL-Bus only) configurations.

Due to the wide range of possible combinations, only a few specific adapters will be tested by NeXT. Although this driver may work with most 88800 GX/CX based adapters, NeXT will only support the specific adapters tested by NeXT.

Supported Products / Add-on Adapters:
ATI Graphics Ultra Pro Turbo (PCI, with 2MB VRAM)
ATI Graphics Ultra Pro Turbo (PCI, with 2MB DRAM)
ATI Graphics Ultra Pro Turbo (PCI, with 4MB VRAM)
ATI Graphics Ultra Pro Turbo (PCI, with 4MB DRAM)
ATI Graphics Ultra Pro Turbo (VL-Bus, with 4MB VRAM)
ATI Graphics Ultra Pro Turbo (VL-Bus, with 4MB DRAM)

Supported Products / Systems (ie integrated into PC System):
AT&T Globalyst 600

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB DRAM, 2MB VRAM, 4MB DRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (4MB+), 800x600 (4MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x896 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152x896 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 800x600 (1MB+)

Known Problems

The Mach64 driver makes use of the board's BIOS to switch modes. This requires the user to set up the display adapter as specified in the documentation supplied by ATI. This will usually require running a setup utility. Until this is done, not all supported display modes will be available.

Driver Version Notes

3.33 Added support for additional hardware
3.34 Added support for ATI 68860 Rev C and ST1703 RAMDACs.
3.36 Beta - Driver rewritten to call Adapter's BIOS to switch modes.
3.37 First Released version that uses the Adapter's BIOS - should be robust to RAMDAC changes.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

TA45599_NeXTSTEP_Driver_ATI_Mach.pdf

ATI Technology
2880 Zanker Road
Suite 203
San Jose, CA 95134

+1 (416) 882 2600 international phone
+1 (905) 764 9404 bulletin board system
+1 (416) 882 2600 faxback system
WWW: http://www.atitech.ca/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: S3 Generic

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/S3_Generic.pkg.compressed

An updated BETA version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/S3GenericDisplay.pkg.compressed

Driver Name / Installer .pkg: S3GenericDisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: S3 732 (Trio32), S3 764 (Trio64), S3 764 (Trio64V+), S3 801, S3 805, S3 864 (Vision), S3 868 (Vision), S3 911
PC Bus / Interface Supported by Driver:** Integrated, PCI, VL-Bus

General Overview notes: This driver will support a variety of video display devices based on S3 chipsets. It is primarily intended to support implementations based on the S3 Vision864, Vision868, ViRGE, though it should also support many adapters based on other S3 products such as the Vision964, Vision968, Trio32, Trio64, & ViRGE/VX chips.

This driver is a generic chipset driver and as such, is only intended to be used as a last resort. If a driver is available that specifically supports your display adapter, that driver should be used rather than this generic driver.

NeXT does not guarantee that this driver will work with any specific adapters or implementations, but expects that it will support many.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: .5MB DRAM, 1MB DRAM, 1MB VRAM, 2MB DRAM, 2MB VRAM, 4MB DRAM, 4MB VRAM, 8MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1280x1024 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.33) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.32 Added support for the Trio64V+ chipset
3.33 Added support for the ViRGE chipsets

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Weitek Power 9100

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/WeitekPower9100.pkg.compressed

Driver Name / Installer .pkg: WeitekP9100DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Brooktree Bt485 RAMDAC, IBM RGB525 RAMDAC, Weitek P9100
PC Bus / Interface Supported by Driver:** PCI, VL-Bus

General Overview notes: This driver supports display implementations base on the Weitek P9000, such as the Diamond Viper Pro.

Supported Products / Add-on Adapters:
Diamond Viper Pro (PCI, 2MB VRAM)
Diamond Viper Pro (PCI, 4MB VRAM)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x900 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152x900 (1MB+), 1280x1024 (2MB+), 1600x1200 (4MB+), 800x600 (1MB+)

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Diamond Computer Systems
1130 East Arquez Ave.
Sunnyvale, CA 94086
USA

+1 (408) 736 2000 international phone
+1 (408) 730 5750 fax
+1 (408) 730 1100 bbs 2400 baud
+1 (408) 524 9301 bbs 9600+ baud
WWW: http://www.diamondmm.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Imagine 128

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Num9_Imagine128.pkg.compressed

Driver Name / Installer .pkg: Number9Imagine128DisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: Number9 Imagine, TI TVP3026-175 RAMDAC, TI TVP3026-220 RAMDAC
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver includes support for multi-headed displays and supports 4MB and 8MB configurations.

Supported Products / Add-on Adapters:
Number9 Imagine 128 (PCI) (NB128-V2-P)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM, 8MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 1152x864 (4MB+), 1600x1200(8MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (4MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Some PCI machines will not start up if there is more than one Number Nine Imagine128 display adpter present. This is a BIOS limitation.

This driver does not support the Series 2 Imagine 128 display adapters.

Driver Version Notes

3.30 - Initial Version - released only as beta
3.31 - Fixed minor bug that caused RAMDAC speed to be mis-read

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Xircom Performance Series

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/XircomPerf.pkg.compressed
An updated BETA version of this driver, version 3.35, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/XircomIIps.pkg.compressed

Driver Name / Installer .pkg: XircomIIpsNetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Xircom Scipper/2
PC Bus / Interface Supported by Driver:** PCMCIA

General Overview notes: This driver supports the Xircom Performance Series PCMCIA Ethernet Adapters.

Supported Products / Add-on Adapters:
Xircom PS-CE2-10BT (PCMCIA, UTP)
Xircom PS-CE2-10BC (PCMCIA, UTP/BNC)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** PIO
Buffer Size*:
Supported Connectors:** BNC, UTP

Known Problems

Released version 3.32 requires Version 3.31 or later of the Intel 82365/PCIC driver and Version 3.31 of the PCMCIABus driver.

See NeXTanswers 1968_Intel_82365_and_compatible_PCMCIA_chipset.pkg.compressed and 1969_PCMCIABus.pkg.compressed

Driver Version Notes

3.31 Initial beta release
3.32 Released QA'd version
3.33 Re-released in order to be compatible with Version 3.34 of the PCMCIABus driver.
3.34 Added missing loopback.
3.35 Fixed problems with poor performance with recent revisions of the adapter.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: SMC EtherEZ/Elite16 Ultra

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/SMCUltra.pkg.compressed

Driver Name / Installer .pkg: SMCUltraNetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: SMC SMC83C790
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: The SMC EtherCard Elite16 Ultra is a 16-bit Ethernet Adapter
The SMC EtherEZ is a 16-bit Plug and Play Ethernet Adapter

Supported Products / Add-on Adapters:
SMC EtherCard Elilte Ultra16 (ISA)
SMC EtherCard Elilte Ultra16T (ISA)
SMC EtherCard Elilte Ultra16C (ISA)
SMC EtherEZ (8416BTA)
SMC EtherEZ (8416B)
SMC EtherEZ (8416T)
SMC EtherEZ (8416BT)
SMC EtherEZ (8416BA)
SMC EtherEZ (8416TA)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Memory Mapped
Buffer Size*: 16KB
Supported Connectors:** AUI, BNC, UTP

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Standard Microsystems (SMC)
6 Hughes
Irvine, CA 92718

+1 (800) NET LEAD USA toll-free (technical support) phone
+1 (714) 707 5607 international (technical support) phone
+1 (714) 707 2481 bulletin board service
+1 (714) 707 2491 fax
WWW: http://www.smc.com/
Published Date: Feb 20, 2012

AppleTalk Phase II: Issues with FDDI Are Resolved

Is there an issue with AppleTalk Phase 2 and FDDI?
This article has been archived and is no longer updated by Apple.
The IEEE 802.1h is the formal standard for AppleTalk and FDDI. Below are four third-party vendors which support this standard:

- UB Networks' current products supports the 802.1h standard. Users should contact them regarding their bridges and for upgraded information.
- 3Com Corporation's LANPlex bridge supports the 802.1h standard and AppleTalk. For more information see the following web page: **http://www.3com.com/cgi-bin/mfs/01/0files/products/dsheets/lpfamspc.html**
- Kalpana's EtherSwitch supports 802.1h.
- Grand Junction's FastSwitch supports 802.1h.

We believe there are other bridges that support 802.h as well.

Below Is Information Outlining Issue Before The IEEE 802.1h Was Set
---
First, some background:

AppleTalk Phase 2 packets crossing a transparent FDDI bridge are translated into Ethernet-style packets. If these packets translate incorrectly, the bridged Ethernet segments can't communicate with each other over EtherTalk Phase 2. This problem relates to the way vendors implement the OUI 0000 (organizational unique identifier) in the 802 SNAP header.

Some bridge vendors base their products on the IEEE 802.1 standard. However, there are questions about how the standard handles translating "all zeros" in the OUI field of an 802.2 SNAP header.

The problem has to do with the way Apple implements AARP in SNAP in AppleTalk Phase 2. The 802.1 specification says that all SNAP PDUs need a 40-bit protocol identifier. The first 24 bits are unique organizational identifiers assigned by the IEEE; the remaining 16 bits are administered by the assignee:

```
              UI              Assignee Administered
   0011 0101 0111 1011 0001 | 0010 0000 0000 0000 0001
   |  |
lsb msb

Apple's assigned identifier is    08   00   07
                                  1000 0000 0111
             network bit order    0001 0000 1110
                                  ||
IEEE 802.1 states that:           ||
                                  MX

             M = 0: (M=1 is reserved)
             X = 0: Globally Administered Protocol Identifier
             X = 1: Locally Administered Protocol Identifier
```

For all AppleTalk protocols, Apple uses the identifier 08007809B. But for AARP, Apple uses 00000080F3. This is really where the problem begins--in the use of OUI 00000.

Because Apple uses 0000 as a UI, there are conflicts with FDDI-Ethernet bridges that also use the same UI to recognize and translate Ethernet-style packets. The question is: who's right--Apple, the vendor, or both?

The all-zero OUI was not intended to be used for translating Ethernet frames to 802.2/SNAP. Its original intention was (and is) not completely clear; all that was agreed upon was:

1) The low-order 16 bits of the SNAP protocol discriminator indicated an Ethernet protocol type; and

2) The format of the data part of the SNAP packet was the same as the format of the data part of the Ethernet packet of this protocol type.

This "general agreement," was never written down--AppleTalk Phase 2 and TCP/IP just adopted it. Unfortunately, on an Ethernet/802.3 data link, AppleTalk Phase 2 runs on top of 802.3 (and 802.2) and TCP/IP runs on top of Ethernet. Thus, when TCP/IP Ethernet nodes communicate with TCP/IP 802.2 nodes (on token ring or FDDI, say) some type of packet translation must occur. But AppleTalk Phase 2 Ethernet nodes

communicating with AppleTalk Phase 2 802.2 nodes (on Ethernet, token ring or FDDI) MUST NOT have any translation done.

This is why it's not so simple to build a bridge that "transparently" allows both forms of communication. What's needed is a bridge with a small Ethernet protocol translation table. The smaller the table, the less translation that happens, and the better the bridge's performance. Any bridge between Ethernet and 802 media that does not translate OUI zero packets prevents TCP/IP nodes (and any others using the same OUI convention) from communicating between the two media. Any bridge between Ethernet and an 802 media that translates all OUI zero packets prevents AppleTalk nodes (and any others with an OUI of zero who don't expect translation) from communicating between the two media. In both cases, routers can, of course, be set up to communicate.

A similar problem happens if two bridges connect two Ethernet/802.3 data links across an 802 backbone (say FDDI). In this case, some type of translation/encapsulation of Ethernet (non-802.3) packets must happen so they can pass across the 802 backbone. There are many ways to do this, one of which is to translate all Ethernet packets to OUI zero packets, shipping them across the backbone, and then converting them back. This, however, does not work for any OUI zero packets that start out on the Ethernet/802.3 data link. Such packets will not be translated on the way into the backbone but will be incorrectly translated before being delivered on the destination Ethernet. Such packets should be forwarded entirely without translation.

In terms of actual product implementations, unfortunately DEC is already shipping an Ethernet-to-FDDI bridge (LanBridge 500) that translates all OUI zero packets, and thus does not work with AppleTalk Phase 2. DEC is aware of this issue. At the recent 802 meetings in Denver, it was clear that this type of translation is not part of the 802.1d (Mac Bridging) standard, but is something that many bridge manufacturers wish to include as a non-802-standard option with their products. Most have said they will have some type of translation (or non-translation) table to ensure it is possible to work with all known protocols.

Current Status:
At a recent IEEE 802.1 meeting, there was agreement about the translation of Ethernet-like packets from an FDDI backbone to an Ethernet segment. The creation of a new OUI for Ethernet (non 802.3) packets will be required. The Bridge translation decision from an FDDI backbone to Ethernet segment will be as follows:

If OUI = NEW, then translate back to Ethernet (e.g., Phase 1
EtherTalk) Otherwise if (OUI=0 and TYPE=80F3 or other defined types do
NOT translate), Do not translate (e.g., Phase 2 EtherTalk AARP)

Apple and DEC were major sponsors of this proposal, and DEC has agreed to make changes to their bridges. This means is that EtherTalk Phase 2 AppleTalk end nodes will work correctly (without modification to the end nodes), when transversing an Ethernet/FDDI bridge. Furthermore, EtherTalk phase 1 end nodes will also work using the new OUI translation scheme.

The IEEE 802.1 committee is currently formalizing the use of OUI in Ethernet to FDDI bridges that will define what to do if a bridge encounters SNAP headers with OUI=0.
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Intel 82596 Network

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Intel82596Net.pkg.compressed

Driver Name / Installer .pkg: Intel82596NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82596
PC Bus / Interface Supported by Driver:** EISA, PCI

General Overview notes: This driver supports adapters based on the Intel 82596 chipset.

Supported Products / Add-on Adapters:
Intel EtherExpress PRO/10 PCI (PILA8400) (BNC, UTP, AUI)
Intel EtherExpress PRO/10 PCI (PILA8420) (UTP)
Intel EtherExpress Flash32 EISA (EILA8225) (BNC, UTP, AUI)
Cogent eMaster EM935 EISA XL (BNC, UTP, AUI)
Cogent eMaster EM932 EISA (UTP, AUI)
Cogent eMaster EM932 EISA (BNC, UTP, AUI)
Cogent eMaster EM945 EISA FDE (BNC, UTP, AUI)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This driver obsoletes CogentEMaster

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: N/A
Supported Connectors:** AUI, BNC, UTP

Known Problems

More than one instance of the adapter is autodetected in Configure.app.
The full-duplex feature of the Cogent EM945 FDE adapter was not tested.

Driver Version Notes

3.31 - First release of this driver
3.33 - Added support for EE PRO/10 PCI

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: AMD PC SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.36, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/AMD_PC_SCSI.pkg.compressed

Driver Name / Installer .pkg: AMD53C974SCSIDriver
Driver Type: SCSI
Driver Scope: Generic-Chipset
Supported Components: AMD Am53C974, AMD Am79C974
PC Bus / Interface Supported by Driver:** Integrated, PCI

General Overview notes: This driver should support the AMD Am53C974 family of PCI SCSI controllers. The 79C974 is a combo chip with contains an Am79C970 ethernet core and an Am53C974 SCSI core

Supported Products / Add-on Adapters:
The AMDPCSCSI driver is known to work with the following SCSI devices:
Toshiba CD-ROM XM-3401T
Peripheral Solutions 8mm Exabyte DAT Drive -- 8500
Syquest 88MB SQ5110 D3G 810
IOMEGA Bernoulli 230 BETA230 1.1408/2
Pinnacle Micro Tahoe 230MB MO J6CTahoe-130A
Quantum 504MB LPS5255S 311012 Hard Drive
Quantum LPS540S 590H01 Hard Drive
Next SCSI Color Printer
HSD Scan-X Color Scanner (UMAX engine)
COMPAQPC DPES-31080

Supported Products / Systems (ie integrated into PC System):
Compaq Deskpro XL
HP Vectra XU

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI)
Access Mode:
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: SymbiosLogic 53C8xx SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/SYM53c8.pkg.compressed

Driver Name / Installer .pkg: SYM53c8
Driver Type: SCSI
Driver Scope: Generic-Chipset
Supported Components: NCR/SYM53c810, NCR/SYM53c815, NCR/SYM53c820, NCR/SYM53c825
PC Bus / Interface Supported by Driver:** Integrated, PCI

General Overview notes: This driver supports the NCR 53C8xx family of SCSI controllers.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
DEC Celebris XL/590

Special Features of Driver / Driver Notes:
Cmd queuing is disabled. Synchronous and wide data transfers are selectable through the Configure panel. Support for multiple adapters.

Suggest upgrading Symbios BIOS to version 3.07. Some systems have experienced a hang during initialization on previous BIOS versions.

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode:
Attributes:** SCSI-2
Cache Size Supported:**

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Chips & Technologies Wingine 64300

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/CT_Wingine_64300.pkg.compressed

Driver Name / Installer .pkg: Wingine64300DisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: C&T 64300 (Wingine)
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This driver supports the Wingine 64300 Display chipset on the NEC PowerMate 466D.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
NEC Powermate 466D

Special Features of Driver / Driver Notes:
The RAMDAC used in this system supports a Color Palette only in 8 bit modes. This results in the brightness slider in Preferences, as well as automatic screen dimming, only working if an 8 bit mode is selected.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**
640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1120x832 (1MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

SoftPC will generate an illegal instruction error when switching to full screen mode.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: 3Com EtherLink III

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/EtherLink3.pkg.compressed

Driver Name / Installer .pkg: EtherLink3
Driver Type: Networking
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** EISA, ISA

General Overview notes: This driver supports the 3COM EtherLink III Ethernet Adapter.

Supported Products / Add-on Adapters:
3Com EtherLink III 3C509 ISA (BNC, AUI)
3Com EtherLink III 3C509B ISA (BNC, AUI)
3Com EtherLink III 3C509-TP ISA (RJ-45, AUI)
3Com EtherLink III 3C509B-TP ISA (RJ-45, AUI)
3Com EtherLink III 3C509-COMBO ISA (BNC, AUI, RJ-45)
3Com EtherLink III 3C509B-COMBO ISA (BNC, AUI, RJ-45)
3Com EtherLink III 3C509-TPO ISA (RJ-45)
3Com EtherLink III 3C509B-TPO ISA (RJ-45)
3Com EtherLink III 3C579 EISA (BNC, AUI)
3Com EtherLink III 3C579-TP EISA (AUI, RJ-45)
3Com EtherLink III 3C589C-COMBO (BNC, RJ-45)
3Com EtherLink III 3C589C-TP (RJ-45)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
NeXTanswer#1482_3COM_Etherlink_III_Ethernet_Adapter.rtf does not apply to versions 3.31and later of this driver.

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Memory Mapped
Buffer Size*: 8KB
Supported Connectors:** AUI, BNC (10Base-2), RJ-45 (10Base-T)

Known Problems

Driver Version Notes

3.31 Significant performance improvements; added support for the 3C589 PC Card (PCMCIA) adapter
3.33 Added support for EtherLink III PnP boards in Plug and Play mode. Removed the connector selection logic from the driver: the driver now pays attention to the values configured via 3c5x9cfg.exe provided on the 3Com setup diskette.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

3Com Corporation
5400 Bayfront Plaza
PO Box 58145
Santa Clara, California
95052-8145 USA

US & Canada toll-free pre-sales, product information: +1 (800) NET-3COM
Fax back system: +1 (408) 727-7021
US 24 hour BBS (24/96 8/1/N): +1 (408) 980-8204

TA45611_NeXTSTEP_Driver_Com_EtherLink_III.pdf

France 24 hour BBS (24/96/14.4 8/1/N): +(33) (1) 69 86 69 54
UK 24 hour BBS (12-38.4k 8/1/N): +(44) (0) 628 897 086
WWW: http://www.3com.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Adaptec 154x Family And Compatible SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

NEXTSTEP for Intel Processors Release 3.3

SCSI Driver Overview

Driver: Adaptec 154x family and compatible
Driver Overview: NeXTanswer #1758
Last Update: April 23, 1997

Availability Information

An updated release version of this driver, version 3.35, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/Adaptec1542BSCSI.pkg.compressed

Driver Name / Installer .pkg: Adaptec1542B
Driver Type: SCSI
Driver Scope: Product Family
Supported Components: Adaptec AIC-6251, Adaptec AIC-7970
PC Bus / Interface Supported by Driver:** EISA, ISA

General Overview notes: The Adaptec154x compatible driver is designed to support a variety of SCSI adapters from Adaptec and several third parties.

Supported Products / Add-on Adapters:
Adaptec 154xB (ISA)
Adaptec 154xC (ISA)
Adaptec 154xCF (ISA)
Adaptec 174x (EISA) in standard 154x mode only

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
The onboard floppy controller, available on the 1542 cards, is not supported.

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2)
Access Mode: DMA
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

· For setup and installtion of the 154xB see
NeXTanswers document number 1107.

· For setup and installtion of the 154xC/CF see
NeXTanswers document number 1108.

· NEXTSTEP does not officially support the floppy controller integrated into the 1542B. Use the floppy controller integrated into your system's motherboard.

· When installing NEXTSTEP onto an IDE hard disk drive, the CD-ROM drive's SCSI ID number should be zero.

· Some users have reported problems during the installation process if the CD-ROM drive's SCSI ID number is set to zero. NEXTSTEP will freeze after displaying the message rootdev 608 when this problem is encountered. Setting the CD-ROM drive's SCSI ID to six has fixed the problem when nothing else seemed to work.

· Improper SCSI termination can cause strange, unreproducible errors. Be certain that the first and last devices on the SCSI bus (and only these two devices) are terminated.

· Avoid system configurations combining an Adaptec 154xB/C/CF and an ATI Ultra Pro EISA card. A hardware conflict exists which causes data corruption on SCSI hard disks.

· If your system includes an Adaptec 1542B and you do not have jumper six enabled it will hang. It will boot off the floppy and recognize the SCSI drives, but instead of starting the install process, it will hang with the messages:

fdisk: bogus bios info
some bios' can't handle non-sequential targets.

· The Adaptec 1542B does not support 2.88MB floppy drives attached as SCSI devices.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Adaptec Inc.
691 South Milpitas Blvd.
Milpitas, CA 95035
USA

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+1 (800) 959 7274 USA toll-free (customer support) phone
+1 (408) 945 7727 bulletin board system
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WWW: http://www.adaptec.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Adaptec 274x And 84x Family SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Adaptec2740SCSI.pkg.compressed

Driver Name / Installer .pkg: Adaptec2740
Driver Type: SCSI
Driver Scope: Product Family
Supported Components: Adaptec AIC-7770
PC Bus / Interface Supported by Driver:** EISA, VL-Bus

General Overview notes: The Adaptec 274x series driver is designed to support the 274x series of EISA SCSI adapters and the 284x series of VL-Bus SCSI adapters. The 2(7,8)42 versions include a floppy controller.

Supported Products / Add-on Adapters:
Adaptec 2740 (EISA) - not tested but should work
Adaptec 2740T (EISA)
Adaptec 2840 (VLB)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
The 274x is available in a 'T' version that includes two SCSI channels, both channels are supported by this driver.

The onboard floppy controller available on the 2(7,8)42 cards is not supported.

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode: DMA
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

The 284x driver uses port 4c00 by default. You must set the DIP switches on your 284x card to use this port. The correct settings are:
sw1:on
sw2:on
sw3:off
sw4:off

The 274x driver uses port 0x4c88 by default.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Adaptec Inc.
691 South Milpitas Blvd.
Milpitas, CA 95035
USA

+1 (408) 945 8600 international phone number
+1 (800) 959 7274 USA toll-free (customer support) phone
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+1 (408) 262 2533 fax
WWW: http://www.adaptec.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Adaptec 2940 Family And 7870 Integrated SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.37, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Adaptec2940SCSI.pkg.compressed
An updated BETA version of this driver, version 3.39, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/Adaptec2940SCSI.pkg.compressed

Driver Name / Installer .pkg: Adaptec2940SCSIDriver
Driver Type: SCSI
Driver Scope: Product Family
Supported Components: Adaptec AIC-7850, Adaptec AIC-7870, Adaptec AIC-7870D, Adaptec AIC-7880
PC Bus / Interface Supported by Driver:** Integrated, PCI

General Overview notes: The Adaptec 2940 series driver is designed to support the 2940 series of PCI SCSI adapters.

Supported Products / Add-on Adapters:
Adaptec AHA-2930B (PCI)
Adaptec AHA-2940 (PCI)
Adaptec AHA-2940W (PCI, Wide SCSI)
Adaptec AHA-2940U (PCI, Ultra SCSI)
Adaptec AHA-2940UW (PCI, Ultra/Wide SCSI)
Adaptec AHA-2910B (PCI) - Not tested but should work.

Supported Products / Systems (ie integrated into PC System):
DEC EISA/PCI Server system w/ 7870 on motherboard
DEC Celebris GLST w/ 7850 on riserboard
HP Kayak on-board 7860 & 7880 based SCSI adapters.

Special Features of Driver / Driver Notes:
This driver does not support the Adaptec AHA-2920 (PCI)

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode: Bus Master DMA
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

The Adaptec 2940 SCSI Host Adapter Driver supports Synchronous Data Transfer as well as Fast SCSI transfers. In order to enable Synchronous Data Transfer, this feature must be enabled in both the 2940's AutoSCSI program and in the NEXTSTEP Configure application, when configuring the Adaptec 2940 driver. In the AutoSCSI program, this feature is enabled in the SCSI Device Configuration menu, via the Initiate Sync Negotiation field. This can be enabled or disabled on a per-target basis. In the Configure application, the Synchronous button, if disabled, disables Synchronous Transfers for ALL targets. If enabled, the values selected in the AutoSCSI program are used to determine whether or not Synchronous Transfers occur on a per-target basis.

The Synchronous Transfer data rate is determined in the 2940's AutoSCSI program, via the Maximum Sync Transfer Rate field in the SCSI Device Configuration menu. Fast SCSI Transfers are enabled by selecting a value of 10 (i.e., 10 Megabytes/seconds) for this field. Note that if Synchronous Transfers are disabled, the Maximum Sync Transfer Rate field is meaningless. Also note that it is not recommended to select a value higher than 5 for a device which is in an external enclosure and connected to the 2940 via an external SCSI cable.

Driver Version Notes

3.33 Added support for Adaptec's AIC-7850 chipset
3.36 Added support for Adaptec's AIC-7870 revision D (needed to support the latest revisions of the AHA2940 & AHA2940W)
3.37 Integrated Adaptec's HIM v1.21 to support the AHA2940U & AHA2940UW Ultra SCSI host adapters
3.39 Fixed a bug which prevented adapters with BIOS rev. 1.32 from working on machines with Phoenix BIOS

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Adaptec Inc.
691 South Milpitas Blvd.
Milpitas, CA 95035
USA

+1 (408) 945 8600 international phone number
+1 (800) 959 7274 USA toll-free (customer support) phone
+1 (408) 945 7727 bulletin board system
+1 (408) 957 7150 faxback system

TA45614_NeXTSTEP_Driver_Adaptec_Family_And_Integrated_SCSI.pdf

+1 (408) 262 2533 fax
WWW: http://www.adaptec.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Adaptec 6x60 SCSI Chipset

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/AIC6X60SCSI.pkg.compressed

Driver Name / Installer .pkg: AIC6X60
Driver Type: SCSI
Driver Scope: Generic-Chipset
Supported Components: Adaptec AIC-6360
PC Bus / Interface Supported by Driver:** Integrated, ISA

General Overview notes: The Adaptec 6x60 Compatible SCSI driver is designed to support a variety of SCSI adapters which incorporate the Adaptec 6260 & 6360 SCSI controller chipsets.

Supported Products / Add-on Adapters:
Adaptec AVA-1505A (ISA)
Adaptec AVA-1515A (ISA)
Adaptec AHA-1520A (ISA)
Adaptec AHA-1530P (ISA) - Not tested but might work.
Adaptec Slim SCSI (PC/MCIA)

Supported Products / Systems (ie integrated into PC System):
Intel GX/Pro

Special Features of Driver / Driver Notes:
The onboard floppy controller, available on some cards, is not supported.

SCSI Driver Details

Supported Connectors: 25-pin DB25 (Mac SCSI), 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2)
Access Mode: PIO
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

Never tested with Compaq Portable 486/M,C and does not work.
Next SCSI color printer currently does not work with the Adaptec 6x60 driver.

Driver Version Notes

3.32 Adds support for Adaptec Slim SCSI (PC/MCIA) and SoundBlaster 16 integrated SCSI.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Adaptec Inc.
691 South Milpitas Blvd.
Milpitas, CA 95035
USA

+1 (408) 945 8600 international phone number
+1 (800) 959 7274 USA toll-free (customer support) phone
+1 (408) 945 7727 bulletin board system
+1 (408) 957 7150 faxback system
+1 (408) 262 2533 fax
WWW: http://www.adaptec.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: AMD PCnet32

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/AMDPCnet32.pkg.compressed

Driver Name / Installer .pkg: AMDPCnet32NetworkDriver
Driver Type: Networking
Driver Scope: Generic-Chipset
Supported Components: AMD Am79C965, AMD Am79C970, AMD Am79C974
PC Bus / Interface Supported by Driver:** Integrated, PCI, VL-Bus

General Overview notes: This driver is designed to support LAN adapters that use the AMDPCnet32 ethernet controller. The AMD PCnet32 Ethernet controller is used in both integrated designs (on-board system boards or accessory daughter cards) and add-on VL-Bus and PCI adapters. This NEXTSTEP driver is designed to support generic implementations of the AMD Am79C965 and Am79C970 chipset (ie designs that follow the example design as provided by AMD). The 79C974 is a combo chip with contains an Am79C970 ethernet core and an Am53C974 SCSI core

Supported Products / Add-on Adapters:
X/Lan Add-On Adapter (based on Am79C970)

Supported Products / Systems (ie integrated into PC System):
Canon object.station 41
Compaq Deskpro XL (On-board)
HP Vectra XU (On-Board)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: N/A
Supported Connectors:** AUI, UTP

Known Problems

The 3.30 version of the driver will sometimes exhibit extremely poor performance on some systems. Due to reliability issues, it is not recommended that you use the this driver with the HP Vectra XU machines.

IBM PCI Ethernet Adapter (based on Am79C970, IBM part #13H9237) is reported to work but has not been tested by SQA.

Driver Version Notes

3.33: Added support for an updated version of PCnet32 PCI hardware.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: ATI Generic

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: ATI
Driver Type: Display
Driver Scope: Product Family
Supported Components: AT&T ATT20C491 RAMDAC, ATI 68800 (Mach32), ATI 68830 RAMDAC, ATI 68875 RAMDAC, Brooktree Bt481 RAMDAC, Brooktree Bt485 RAMDAC
PC Bus / Interface Supported by Driver:** EISA, Integrated, VL-Bus

General Overview notes: This driver is obsolete and has been replaced by ATIMach32. See NeXTanswers #1817_ATI_Mach32_Driver_Overview.rtf

The ATI graphics driver is designed to support the ATI 68800 graphics controller (also known as Graphics Ultra Pro or Mach 32). Although ATI makes a broad range of graphics controllers, only the 68800 supports the linear frame buffer mode required by NEXTSTEP for 32-bit,16-bit color or 8-bit grayscale. This driver supports EISA, custom LocalBus and VESA LocalBus versions of 68800 graphics adapters. This driver also supports a variety of RAMDAC's used with these chips. Although ATI has set some standards for choice of RAMDAC, this driver should only be expected to work with the specific systems and adapters listed. Note: ATI is in the process of updating the 68800 from Rev 3 to Rev 6A. Although the Rev 6A chip is designed to be compatible with Rev 3 drivers, this driver update will be tested with Rev 3 and Rev 6A chips.

Supported Products / Add-on Adapters:
ATI Graphics Ultra Pro (EISA, ATI 68875 RAMDAC)
ATI Graphics Ultra Pro (EISA, TI 34075 RAMDAC)
ATI Graphics Ultra Pro (VL-Bus, ATI 68875 RAMDAC)

Supported Products / Systems (ie integrated into PC System):
Intel GX/Pro (Custom LB, onboard ATI, TI 34075 RAMDAC)
Data General Dasher DE2 (Custom LB, TI 34075 RAMDAC)
AST Premmia 4D (Custom LB, onboard ATI, BT 481 RAMDAC)
Gateway V Series (VL-Bus, ATI 68875 RAMDAC)

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**
1024x768 (2MB+), 1120x832 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1120x832 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

See Also:
1122_ATI_Ultra_Pro_Graphics_Adapter.rtfd

The ATI Ultra Pro driver reserves a large number of I/O ports to accomodate SoftPC in full-screen mode. Some of these ranges may conflict with other drivers. In particular, the range 0x52eee-0xfeef may be a problem. This conflict can be resolved simply by removing this reserved range from the driver configuration. Note, however, that this may prevent SoftPC from running correctly in full screen mode. The procedure to remove the port range is as follows:
- run Configure.app and select the display driver
- select the Expert options for the driver
- find the I/O Ports entry and double-click on the values to edit them
- scroll the field all the way to the right and delete the range 0x52ee-0xfeef. Make sure to hit return after editing, or the change won't be made.
- save the configuration and reboot

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

ATI Technology
2880 Zanker Road
Suite 203
San Jose, CA 95134

+1 (416) 882 2600 international phone
+1 (905) 764 9404 bulletin board system
+1 (416) 882 2600 faxback system
WWW: http://www.atitech.ca/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: System Beep

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: Beep
Driver Type: Sound
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:**

General Overview notes: Generic beep driver using internal speaker. The beep generates several different soudning beeps, but no high quality audio.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Sound Driver Details

Supported Connectors:
Access Mode:
Adapter Memory:
Attributes:

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: BusLogic Family SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/BusLogicSCSI.pkg.compressed

Driver Name / Installer .pkg: BusLogicSCSIDriver
Driver Type: SCSI
Driver Scope: Product Family
Supported Components: BusLogic BA90C30
PC Bus / Interface Supported by Driver:** EISA, ISA, PCI, VL-Bus

General Overview notes: The BusLogic SCSI driver is designed to support the 747C and 445C series SCSI adapters from BusLogic. This driver is specifically designed to support the 32bit extended modes supported by these adapters. In comparison to the Adaptec 154x compatible mode previously used to support the 747S and 445S adapters, these extended modes provide additional performance, and remove the double buffering required by the16MB address limitation. This driver may work with other versions of BusLogic SCSI adapters such as the 545C, 747S and 445S. Since these adapters are supported in Adaptec compatibility mode with the existing Adaptec 154x driver, this driver will only be tested and supported on the latest generation, higher performance 747C and 445C series adapters. Note: In general this driver was designed to work with any BusLogic bus master SCSI adapter.

Supported Products / Add-on Adapters:
BusLogic 546C ISA SCSI Host Adapter
BusLogic 747C EISA SCSI Host Adapter
BusLogic 445C VL-Bus SCSI Host Adapter
BusLogic 946C PCI SCSI Host Adapter (rev C and D only)
BusLogic 948 PCI SCSI Host Adapter (not tested, reported to work)
BusLogic 958 PCI Wide SCSI Host Adapter (not tested, reported to work)

Supported Products / Systems (ie integrated into PC System):
Canon object.station 41

Special Features of Driver / Driver Notes:
The onboard floppy controller, available on some cards, is not supported.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI)
Access Mode: DMA
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

BusLogic firmware revs. before 4.25J may not work with this driver. In particular, firmware version 4.21 had a bug, which caused the Read Capacity data to be read up incorrectly.

BusLogic 946C rev A and B do not work with our driver.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Bus Logic, Inc.
4151 Burton Drive
Santa Clara, CA 95054
USA

+1 (408) 492 9090 phone
+1 (408) 492 1984 bulletin board system
WWW: http://www.buslogic.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Bus Mouse

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: BusMouse
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:** ISA
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver support Logitech and compatible Bus Mice.

Supported Products / Add-on Adapters:
Logitech MouseMan Bus
Logitech MouseMan Cordless

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Known Problems

The Microsoft Bus mouse does not follow the Logitech protocol, and does not work with this driver.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Canon ObjectStation Sound

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: CanonObjectstationSoundSystem
Driver Type: Sound
Driver Scope: Specific Product
Supported Components: Analog Devices AD184
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: The Canon object.station 41 Sound System driver is designed to support the on-board audio system of the Canon object.station 41. The Canon system uses a chipset that is compatible with the Microsoft Sound System, and includes an integrated speaker and microphone. The driver is a derivative of the existing NeXT Microsoft Sound System driver with an additional initialization routine required by the specific chipset.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
Canon object.station 41

Special Features of Driver / Driver Notes:
The Driver Functionality Details are same as that for Microsoft Sound System.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Canon

USA toll-free phone sales and information: +1 (800) 349 6007
USA toll-free phone technical support: +1 (800) 830 1062
Canon FactsLine [fax-back service]: +1 (800) 526 4345
WWW: http://digifix.digifix.com/Developers/Canon_Computer_Systems.htmld/index.html
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Canon ObjectStation Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: CanonObjectstation41DisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Brooktree Bt485 RAMDAC, C&T 64200 (Wingine)
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This new graphics driver is designed to support the on-board Chips and Technologies Wingine graphics controller on the Canon object.station 41. The graphics subsystem of the object.station 41 was custom designed to operate with NEXTSTEP. The system uses a RAMDAC design modified to support NEXTSTEP's 4-4-4 internal 16bit color representation for improved graphics performance. This design includes 2MB VRAM and supports a variety of high resolution and high color (32bit) modes.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
Canon object.station 41

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1120x832 (2MB+), 1152x900 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1120x832 (1MB+), 1152x900 (1MB+), 1280x1024 (2MB+)

Known Problems

1024x768x72Hz 16-bit color mode is unstable on some Object.station computers.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Canon

TA45623_NeXTSTEP_Driver_Canon_ObjectStation_Display.pdf

USA toll-free phone sales and information: +1 (800) 349 6007
USA toll-free phone technical support: +1 (800) 830 1062
Canon FactsLine [fax-back service]: +1 (800) 526 4345
WWW: http://digifix.digifix.com/Developers/Canon_Computer_Systems.htmld/index.html
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Chips & Technologies Wingine

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: Wingine
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Brooktree Bt482 RAMDAC, C&T 64200 (Wingine), TI TLC34076 RAMDAC
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This driver supports Wingine 64200 based display implementations.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
Epson Wingine
LGI Wingine

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**
1024x768 (2MB+), 1120x832 (2MB+)

8 Bit Color / Greyscale Modes:**

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Cirrus Logic GD542X Family

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: CirrusLogicGD542X
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Cirrus Logic GD542x
PC Bus / Interface Supported by Driver:** Integrated, ISA

General Overview notes: Generic SVGA 2-bit greyscale only driver

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Segmented Framebuffer
Adapter Memory: .5MB DRAM, 1MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**

8 Bit Color / Greyscale Modes:**

Known Problems

SoftPC and Nextime do not work correctly.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: Cogent EM960 PCI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: CogentEM960NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: DEC DECchip21040
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver is now obsolete. An updated driver for the EM960 PCI has been made available as 1881_DECchip21040_Network_Driver.pkg.compressed. The readme is 1856_DECchip21040_Network_Driver_Driver_Overview.rtf.

Supported Products / Add-on Adapters:
Cogent EM960C (PCI, Combo)
Cogent EM960TP (PCI, TP Only)
Cogent EM964TP (PCI, TP Only, 4 ports - 1st port only supported)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: N/A
Supported Connectors:** AUI, BNC, UTP

Known Problems

NeXT SQA has not tested the Cogent EM964TP.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Cogent, Inc.
Phone: (800) 426-4368
Direct Sales contact is Barre Pearson (barre@cogentdata.com)

Distributor:
Micro Central
Phone: (800) 836-4276
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Cogent EMaster EISA

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: CogentEMaster
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82596
PC Bus / Interface Supported by Driver:** EISA

General Overview notes: This driver has been replaced by the Intel82596NetworkDriver.
See NeXTanswer#1750_Intel_82596_Network_Driver_Overview.rtf

Supported Products / Add-on Adapters:
EM932 (EISA, BNC/AUI)
EM932TP (EISA, UTP/AUI)
EM935XL (EISA, BNC/UTP/AUI)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** DMA
Buffer Size*:
Supported Connectors:** AUI, BNC, UTP

Known Problems

NeXT SQA has not tested the Cogent EM932TP.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Cogent, Inc.
Phone: (800) 426-4368
Direct Sales contact is Barre Pearson (barre@cogentdata.com)

Distributor:
Micro Central
Phone: (800) 836-4276
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Compaq Business Audio

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: CompaqBusinessAudio
Driver Type: Sound
Driver Scope: Specific Product
Supported Components: Analog Devices AD184
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This Driver supports audio in Compaq DeskPro/M (EISA) and Compaq DeskPro/i (ISA) only. Note that newer Compaq systems use the Microsoft Sound System implementations.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
Compaq Deskpro / M
Compaq Deskpro / I

Special Features of Driver / Driver Notes:

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Compaq Computers
20555 State Highway 249
Houston, TX 77070
USA

+1 (800) 345 1518 USA toll-free phone sales and information
+1 (800) 652 6672 USA toll-free phone technical support
+1 (800) 263 5868 Canada toll-free customer support phone
+1 (713) 370 0670 international phone
+1 (713) 378 1418 BBS
WWW: http://www.compaq.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Compaq QVision

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Compaq_QVision.pkg.compressed

Driver Name / Installer .pkg: QVision
Driver Type: Display
Driver Scope: Product Family
Supported Components: AT&T ATT20C505 RAMDAC, Brooktree Bt484 RAMDAC, Brooktree Bt485 RAMDAC, Brooktree Bt485A RAMDAC, Compaq QV30E00, Compaq QV32E02, Compaq QV35P04, Compaq QV64P10
PC Bus / Interface Supported by Driver:** EISA, Integrated, PCI

General Overview notes: This device driver supports the QVision family of display adapters and on-board implementations.

Supported Products / Add-on Adapters:
QVision 1024/E EISA (QV30E, QV32E)
QVision 1280/E EISA (QV32E)
QVision 1280/P PCI (QV35P, QV64P)

Supported Products / Systems (ie integrated into PC System):
Compaq Deskpro XE560
Compaq Deskpro XE466
Compaq Deskpro 5100

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1280x1024 (2MB+)

Known Problems

Driver Version Notes

3.31 Added support for latest QVision 1280P (QV64P)

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Compaq Computers
20555 State Highway 249
Houston, TX 77070
USA

+1 (800) 345 1518 USA toll-free phone sales and information
+1 (800) 652 6672 USA toll-free phone technical support
+1 (800) 263 5868 Canada toll-free customer support phone
+1 (713) 370 0670 international phone
+1 (713) 378 1418 BBS
WWW: http://www.compaq.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Dell DGX (JAWS)

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: JAWS
Driver Type: Display
Driver Scope: Specific Product
Supported Components: INMOS IMS-G332 RAMDAC
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This driver supports the integrated DELL JAWS display adapter, which is highly optomized for NEXTSTEP.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
Dell 450DE/2 DGX

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**
1120x832 (2MB+)

8 Bit Color / Greyscale Modes:**

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Dell Computer Corporation
11209 Metric Blvd.
Austin, Texas 78758
USA

+1 (800) 247 6821 USA toll-free phone
+1 (800) 950 1329 faxback system

+1 (512) 728 8528 bulletin board system
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011 866 2 391 2100 SE Asia phone
011 81 3 5420 5353 Japan phone
+1 (800) 727 8320 USA fax
WWW: http://www.dell.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Diamond Stealh64

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: DiamondStealth64DisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: S3 964 (Vision)
PC Bus / Interface Supported by Driver:** PCI, VL-Bus

General Overview notes: This graphics driver is designed to support the VL-Bus & PCI versions of the Stealth 64 Graphics adapters from Diamond Computer Corp. These cards are based on the S3-964 graphics controller chipsets and support 2MB or 4 MB of VRAM. This driver supports both configurations including a variety of high-resolution and high-color (32bit) modes. DRAM-based cards are not supported.

The current version of this driver, which is present on the NEXTSTEP 3.3 CD-ROM, is v3.30

Supported Products / Add-on Adapters:
Diamond Stealth 64 (PCI, 4MB VRAM)
Diamond Stealth 64 (PCI, 2MB VRAM)
Diamond Stealth 64 (VL-Bus, 4MB VRAM)
Diamond Stealth 64 (VL-Bus, 2MB VRAM)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This driver also works with the Spider Tarantula 64PCI display adapter

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 1152x864 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 800x600 (1MB+)

Known Problems

· Diamond has changed the PCI deviceID on their newer Stealth adapters. This will cause autodetection to fail, thus the NEXTSTEP driver will defualt to VGA display mode. Under NEXTSTEP 3.3, the workaround is to click Expert... while inspecting the driver in Configure.app, then modify the value of the Auto Detect setting to read 0x88d05333 0x88d15333 0x88f05333.

· Diamond has produced new versions of the Stealth64 which use different S3 video controllers. Version 3.31 (or later) of

the DiamondStealth driver is needed to support these cards.

· Diamond Stealth 64 Series 2001 does not use an S3 controller, it uses the ARK Logic which is not supported.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Diamond Multimedia Systems, Inc.
2880 Junction Ave.
San Jose, CA 95134-1922
USA

(800) 4-MULTIMEDIA (Sales Info)
(408) 325-7000 (Main Phone)
(408) 325-7070 (Main Fax)

(+44) 01753-501400 (UK)
(+49) 8151-2660 (German)
(+81) 03-5695-8401 (Japan)

WWW: http://www.diamondmm.com
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: DPT 2000 Family SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: DPT2000SCSIDriver
Driver Type: SCSI
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** EISA, Integrated, ISA, PCI

General Overview notes: This driver is obsolete and has ben replaced by the DPTSCSIDriver. See NeXTanswer #1830_DPT_SCSI_family_Driver_Overview

The DPT 2000 Series driver update is designed to support the 2000 series of SCSI adapters from DPT. This driver specifically supports the DPT 2012 EISA, 2021 ISA, 2022 EISA, 2122 EISA Adapters. This driver does not support the DPT 2011 ISA Adapter. This driver replaces the NEXTSTEP 3.2 DPT 2012-B EISA SCSI Adapter driver.

Supported Products / Add-on Adapters:
DPT 2021/9x SmartCache III (ISA) - not tested, but should work
DPT 2022/9x SmartCache III (EISA)
DPT 2122/9x SmartCache III (EISA)
DPT 2122/9xW SmartCache III (EISA, Wide) - not tested, but should work
DPT 2122/9xDW SmartCache III (EISA, Differential, Wide) - not tested, but should work
DPT 2024 SmartCache III (PCI) - In future update
DPT 2124 SmartCache III (PCI) - In future update

Supported Products / Systems (ie integrated into PC System):
NEC Express II P60 (On-Board)

Special Features of Driver / Driver Notes:

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode:
Attributes:** SCSI-2
Cache Size Supported:** 16MB, 4MB, 64MB

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Distributed Processing Technology
140 Candace Drive

Maitland, FL 32751
USA

+1 (407) 830 5522 phone
+1 (407) 831 6432 bulletin board system
+1 (407) 260 5366 fax
URL: http://www.dpt.com
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: EISA Bus

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/EISABus.pkg.compressed
An updated BETA version of this driver, version 3.36, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/EISABus.pkg.compressed

Driver Name / Installer .pkg: EISABus
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:**
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This is a required driver that provides basic bus support for all system buses on Intel platforms. Without this driver, NEXTSTEP will not boot

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
In order to better support various bus configurations, bus support was removed from the kernel and split into several bus drivers. All other bus drivers currently rely on the EISABus driver for basic services.

Known Problems

Driver Version Notes

3.31 Allows Plug and Play to be turned off. This is required for Compaq's IBM Token Ring AutoSense 16/4 board to work in their PnP-Bios equipped machines ie. the Compaq Deskpro 5100 and Prolinea 575.
3.32 Added "Force Cold Boot" switch to inspector panel. When this switch is turned on, the machine will be forced to go through a cold boot sequence every time it reboots
3.35 Significant improvements to Plug and Play support. /usr/Devices/PnPDump is provided as a useful debugging tool.
3.36 - Updated PnP ID matching routine in order to work with ESS1868 based sound cards.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Floppy Disk Drive

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: Floppy
Driver Type: System
Driver Scope: Generic-System
Supported Components: Intel i82077, Intel i8272A
PC Bus / Interface Supported by Driver:** Integrated, ISA
Supported Connectors:
Access Mode: DMA
Adapter Memory: N/A

General Overview notes: This is the Floppy driver for AT Compatible Floppy controllers and 3.5inch drives. This driver currently supports only a single controller and drive. Both 720k (DD) & 1440k (HD) floppies.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: HP Vectra XM, XP Integrated

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: HPVectra_XM_XP_LAN
Driver Type: Networking
Driver Scope: Specific Product
Supported Components: AMD Am79C960
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This driver is only for the HP XM and XP Vectra series of computers. The Am79C960 is the ISA-based Ethernet controller used for the onboard Ethernet hardware in the HP Vectra XM and XP series of computers.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
HP Vectra XM
HP Vectra XP
Elonex WS4100 - Not tested, should work

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** DMA
Buffer Size*: N/A
Supported Connectors:** BNC, UTP

Known Problems

This driver exhibits a problem where performance steadily degrades with use. This problem is currently under investigation by NeXT.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Hewlett Packard
3000 Hanover St.
Palo Alto, CA 94304
USA

+1 (800) 752-0900 USA toll-free phone
+1 (415) 857 1501 international phone
+1 (800) 333 1917 faxback system

TA45635_NeXTSTEP_Driver_HP_Vectra_XM_XP_Integrated.pdf

+1 (408) 553 3500 bulletin board system
+1 (415) 857 5518 fax
WWW: http://www.hp.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: HP Vectra XP Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: HPXPDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: S3 928P, TI TVP3020 RAMDAC
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This graphics driver is designed to support the on-board graphics controller of the Hewlett Packard Vectra XP series. The on-board graphics controller is based on the S3-928 chipset and can support 2MB or 4MB of VRAM.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
HP Vectra XP (4MB VRAM)
HP Vectra XP (2MB VRAM)

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x819 (2MB+), 1280x1024 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X819 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 800x600 (1MB+)

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Hewlett Packard
3000 Hanover St.

Palo Alto, CA 94304
USA

+1 (800) 752-0900 USA toll-free phone
+1 (415) 857 1501 international phone
+1 (800) 333 1917 faxback system
+1 (408) 553 3500 bulletin board system
+1 (415) 857 5518 fax
WWW: http://www.hp.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: IBM TokenRing

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/IBMTokenRing.pkg.compressed
An updated BETA version of this driver, version 3.39, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/IBMTokenRing.pkg.compressed

Driver Name / Installer .pkg: IBMTokenRing
Driver Type: Networking
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This is the new version of the IBM Token Ring driver which adds support for the AutoSense adapters.

Supported Products / Add-on Adapters:
IBM 25F7367 (ISA, 16/4 Mbps, 8-bit, 64K)
IBM 25F9858 (ISA, 4Mbps, 8-bit, 16K)
IBM 67X0438 (ISA, 4Mbps, 8-bit, 16K)
IBM 60G3994A? (ISA, 16/4 Mbps, 16-bit, 64K)
IBM 92G7668 (Auto, ISA, 16/4 Mbps, 16-bit, 64K)
IBM 41H8450 (Auto, ISA, 16/4 Mbps, 16-bit, 64K)

Supported Products / Systems (ie integrated into PC System):
Token Ring option for Compaq DeskPro and Prolinea series

Special Features of Driver / Driver Notes:
3COM TokenLink III 3C619B (Auto, ISA, 16/4 Mbps, 64k) (untested) is reported to work using the "IBM Auto 16/4 Token Ring ISA Adapter" personality.

Networking Driver Details

Network Type:** Token Ring
Speed*: 16 Mb/s, 4 Mb/s
Access Mode:** Memory Mapped
Buffer Size*: 64KB
Supported Connectors:** STP, UTP

Known Problems

Cannot netboot unless netinfo server is on the same ring. See also NeXTAnswer #2076_Network_Booting_for_Token_Ring_Across_Source_Routing_Bridges.rtf

Driver Version Notes

3.33 Support Auto 16/4 and add Fast Path Transmit
3.34 Survive being disconnected from the MAU, both at boot time and during operation. Fix problem with being the first node on the network.
3.36 Fix problems on a busy token ring. Symptoms include netboot flakiness/receive congestion errors. Performance improvements were also made.
3.37 Fix problem with using an MTU too large for 4Mbit rings. The driver now limits the MTU to 4472 when it automatically switches to 4Mbit/s. The MTU is also limited by the ring speed selection made on the driver's Configure panel.
3.39 Added Plug and Play driver personality to simplify adapter configuration. The adapter is now auto-detected under Configure.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

IBM Corporation
P.O. Box 12195
Research Triangle Park, NC 27709-9990
USA

+1 (800) 772 2227 USA toll-free phone - Sales and Technical Support
+1 (800) 426 3333 USA toll-free phone - Information
+1 (800) 426 3395 fax back system

TA45637_NeXTSTEP_Driver_IBM_TokenRing.pdf

+1 (800) 426 1774 USA toll-free phone - IBM International Marketing Desk
011 61 2 634 9111 IBM Australia & New Zealand
011 3314 905 7000 IBM France
011 44 256 56144 IBM United Kingdom
011 813 3586 1111 IBM Japan
+1 (919) 517 0001 bulletin board system
http://www.ibm.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: IDE

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: IDE
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:** Integrated, ISA
Supported Connectors: 40-pin Header (Internal IDE)
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This driveris obsolete and had been replaced by the EIDE driver. Se NeXTansewer#1839_EIDE_Driver_Overview.rtf

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
Always use the large disk option while installing NEXTSTEP.

Known Problems

In 3.3, support was added for >504MB IDE disks, but it requires a well behaved system BIOS.

Also supports PCI IDE adapters.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Intel 824X0 PCI Chipset Driver

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Intel824x0.pkg.compressed

Driver Name / Installer .pkg: Intel824X0.config
Driver Type: System
Driver Scope: Generic-Chipset
Supported Components: Intel i824x0
PC Bus / Interface Supported by Driver:** Integrated
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver fixes a flaw the the Intel 824X0 PCI chipsets. It only needs to be installed on PCI systems based on the Intel 82420 & 82430 chipsets.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

Write-posting was disabled in the original driver due to problems of potential data loss. The new driver will always report the PCI chip it finds. If it intends to disable write-posting, it will issue a second statement indicating that it is doing so, or that the BIOS has already done so. If no second statement is seen, then the driver believes the chip it detected is not flawed.

Driver Version Notes

3.31 Re-enable performance options for PCI that are disabled in v3.30, on those systems that can safely support them.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
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+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Intel 82595 Chipset

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Intel82595Net.pkg.compressed
An updated BETA version of this driver, version 3.35, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/Intel82595Net.pkg.compressed

Driver Name / Installer .pkg: Intel82595NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82595
PC Bus / Interface Supported by Driver:** ISA, PCMCIA

General Overview notes: This driver supports ethernet adapters based on the Intel82595 LAN chipset.

Supported Products / Add-on Adapters:
Cogent EM595 TP PCMCIA (RJ-45)
Cogent EM595 C PCMCIA (RJ-45/BNC)
Intel EtherExpress PRO/10 ISA LAN Adapter (BNC/RJ-45/AUI)
Intel EtherExpress PRO/10+ ISA LAN Adapter (BNC/RJ-45/AUI) (PCLA8200B)
Intel EtherExpress PRO/10+ ISA LAN Adapter (BNC/RJ-45) (PCLA8210B)
Intel EtherExpress PRO/10+ ISA LAN Adapter (RJ-45) (PCLA8220B)
Intel EtherExpress PRO/10+ ISA LAN Adapter (BNC/RJ-45/AUI) (PCLA8205B)
Intel EtherExpress PRO/10+ ISA LAN Adapter (BNC/RJ-45) (PCLA8215B)
Intel EtherExpress PRO/10+ ISA LAN Adapter (RJ-45) (PCLA8225B)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
The driver has not been tested with the following adapters, but should work:
Cogent EM525 ISA (BNC/AUI)
Cogent EM525 TP ISA (RJ-45)
Cogent EM525 C ISA (BNC/RJ-45/AUI)

Networking Driver Details

Network Type:** EtherNet, Full Duplex
Speed*: 10 Mb/s
Access Mode:** PIO
Buffer Size*: 64KB
Supported Connectors:** AUI, BNC, UTP

Known Problems

· This driver has not been tested with the Cogent 525 series, but should work.
· If you have stepping 3 of the EtherExpress Pro/10, version 3.31 of the driver will complain with en0: 82595 unsupported stepping (3), but will continue to work

Driver Version Notes

3.31 Added support for EE Pro/10 ISA
3.33 Initial support for EE Pro/10+ ISA
3.35 Added Plug and Play personalities for the PRO/10 and PRO/10+.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only

TA45640_NeXTSTEP_Driver_Intel_Chipset.pdf

+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Intel EtherExpress 16

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/EtherExpress16.pkg.compressed

Driver Name / Installer .pkg: EtherExpress16
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82586
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This driver supports the Intel Ether Express 16 adapter family.

Supported Products / Add-on Adapters:
EtherExpress16 (ISA, BNC/AUI)
EtherExpress16TP (ISA, UTP/AUI)
EtherExpress16C (ISA, BNC/UTP/AUI)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** PIO
Buffer Size*: 16KB
Supported Connectors:** AUI, BNC, UTP

Known Problems

Driver Version Notes

3.31 - Fixed a bug where the adapter/driver might cause a kernel panic under heavy network load.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Intel TokenExpress

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: TokenExpress
Driver Type: Networking
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This adapter is not recommended for use with NEXTSTEP. New token ring installations should use the IBM Auto 16/4 Token Ring Adapter. See NeXTAnswer #1788_IBM_Token_Ring_Driver_Overview.rtf.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** Token Ring
Speed*: 16 Mb/s, 4 Mb/s
Access Mode:**
Buffer Size*:
Supported Connectors:** STP

Known Problems

This driver has been removed from future versions of NEXTSTEP.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)

TA45642_NeXTSTEP_Driver_Intel_TokenExpress.pdf

WWW: http://www.intel.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Intel GXPro Audio

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: IntelGXProAudio
Driver Type: Sound
Driver Scope: Specific Product
Supported Components: Crystal Semiconducto
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This driver supports the on-board audio implementation on Intel GX/Professional systems.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
Intel GX/Professional

Special Features of Driver / Driver Notes:
Some old systems use DMA channels 5 and 6 instead of 3 and 6.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Microsoft Sound System

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: MicrosoftSoundSystem
Driver Type: Sound
Driver Scope: Product Family
Supported Components: Analog Devices AD184
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This driver supports the Microsoft Windows Sound System. The driver should also work with any card that is 100% compatible with Microsoft Sound System.

Supported Products / Add-on Adapters:
Microsoft Sound System (ISA)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
1. The AudioTrix card made by MediaTrix uses CS4231 chipset. This card will work with this driver in 3.2 and 3.3. However in 3.2 the input gain for AudioTrix card is too high and there are recording problems.
2. NCR and Adaptec make SCSI cards with Microsoft Sound System compatible hardware on them. This driver should work with them.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear, 8-bit Mu Law

Known Problems

· This adapter card requires one DMA channel, an IRQ level, and a port address. To change the DMA channel and/or IRQ level, run the Configure application and then restart the computer to make the changes take effect.

· Line input is not supported.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Microsoft
WWW: http://www.microsoft.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Number Nine GXE Family

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: Number9
Driver Type: Display
Driver Scope: Product Family
Supported Components: AT&T ATT20C505 RAMDAC, Brooktree Bt484 RAMDAC, Brooktree Bt485 RAMDAC, Brooktree Bt485A RAMDAC, S3 928, S3 928P, TI TVP3020 RAMDAC
PC Bus / Interface Supported by Driver:** PCI, VL-Bus

General Overview notes: This driver is obsolete, and has been replaced by the S3GenericDisplay Driver. See NeXTanswer #1737_S3_Generic_Driver_Overview.rtf

This new Number 9 GXE graphics driver is designed to support a variety of VL-Bus and PCI graphics adapters from Number 9. These cards use the S3-928 graphics controller and support 1MB,2MB or 4MB of video frame buffer. Some versions of these adapters also support an optional additional 1MB of off screen memory, not required by NEXTSTEP. This version of the driver only supports1MB, 2MB or 4MB of VRAM.

Supported Products / Add-on Adapters:
#9GXE-VL Level 10 (VL-Bus, 1MB VRAM) - not tested, but should work
#9GXE-VL Level 11 (VL-Bus, 2MB VRAM)
#9GXE-VL Level 12 (VL-Bus, 2MB VRAM) - not tested, but should work
#9GXE-VL Level 14 (VL-Bus, 4MB VRAM) - not tested, but should work
#9GXE-VL Level 16 (VL-Bus, 4MB VRAM) - not tested, but should work
#9GXE-PCI Level 10 (PCI, 1MB VRAM) - not tested, but should work
#9GXE-PCI Level 12 (PCI, 2MB VRAM)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152X819 (4MB+), 1280x1024 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X819 (1MB+), 1280x1024 (2MB+), 1600x1200 (4MB+), 800x600 (1MB+)

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Number Nine GXE64 Pro

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Num9GXE64Pro.pkg.compressed

Driver Name / Installer .pkg: Number9GXE64ProDisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: S3 964 (Vision), TI TVP3025 RAMDAC
PC Bus / Interface Supported by Driver:** PCI, VL-Bus

General Overview notes: This graphics driver is designed to support the PCI and VL-Bus versions of the GXE64Pro Graphics adapters from Number Nine Corp. These cards are based on the S3-964 Graphics controller chipset and support 2MB or 4 MB of VRAM. This driver supports both configurations including a variety of high-resolution and high-color (32bit) modes. The high performance RAMDAC on these adapters allows support of very high resolutions including 1600x1200 with 16-bit color.

Supported Products / Add-on Adapters:
Number 9 GXE 64 Pro (PCI, 4MB VRAM)
Number 9 GXE 64 Pro (PCI, 2MB VRAM)
Number 9 GXE 64 Pro-1600 (PCI, 4MB VRAM, 200Mhz RAMDAC) - not tested, but should work
Number 9 GXE 64 Pro (VL-Bus, 4MB VRAM)
Number 9 GXE 64 Pro (VL-Bus, 2MB VRAM)
Number 9 GXE 64 Pro-1600 (VL-Bus, 4MB VRAM, 200Mhz RAMDAC) - not tested, but should work

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 1152x864 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 800x600 (1MB+)

Known Problems

Our driver currently does not work with BIOS rev 1.03.08 and higher.

The DRAM (non-Pro) versions of this card are not supported by this driver. See the S3 Generic Driver, NeXTanswer #1737_S3_Generic_Driver_Overview.rtf

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Parallel Port

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: ParallelPort
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:** Integrated, ISA
Supported Connectors:
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This is a generic AT compatible parallel printer port driver

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: PCI Bus

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: PCIBus
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:**
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver provides PCI Bus Services to the NEXTSTEP Operating System, PCI Device Drivers, and to Configure. NEXTSTEP requires this driver if the system contains a PCI Bus (either as PCI Slots or as an embedded Bus)

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Known Problems

See Also:
1790_Intel_824X0_PCI_Chipset_Driver_Overview

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

Pascal: Difference between REPEAT..UNTIL and WHILE..DO

This article has been archived and is no longer updated by Apple.
Pascal supports two forms of conditional loop: REPEAT..UNTIL and WHILE..DO.
A loop of the form

REPEAT
UNTIL <condition>

will be executed at least once, even if the condition is satisfied before the first execution.

The loop consisting of

WHILE <condition> DO

will be executed ONLY if the condition is satisfied when the loop is entered.
For further information, see pages 22 and 23 of the Pascal User Manual and Report.
Published Date: Feb 20, 2012

TokenTalk: How To Find "Burned-In" Address

How can I find out what the "burned-in" address is for my TokenTalk Card?

This article has been archived and is no longer updated by Apple.
Although you can find out what the "burned-in" address is using the MacDFT Config CDEV, there are times when you don't have this handy.

When holding the card, port to the right and the chip set facing you, look for the ROM card (the card on the card). Now look for the serial number of the card. It is printed on a label two chips to the left of the ROM card on the second row from the top. It is proceeded with S/N.

Once you have found this decimal number, convert it to hex. Now add the result (in hex) to 5000E0000000. This will be your address.

For example:

If your card's serial number is: 1969 (with a bunch of leading zeros)

1969 base 10 = 7B1 hex

5000E0000000 + 7B1 = 5000E00007B1 <= your address.

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: Intel 82365 And Compatible PCMCIA Chipset

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Intel82365PC.pkg.compressed
An updated BETA version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/Intel82365PCIC.pkg.compressed

Driver Name / Installer .pkg: PCIC
Driver Type: System
Driver Scope: Generic-Chipset
Supported Components: Intel i82365
PC Bus / Interface Supported by Driver:** PCMCIA
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver supports the Intel 82365 chip set, which is used to provide PCMCIA socket support.

Supported Products / Add-on Adapters:
SwapBox Classic MMCD-D - Not test by SQA, might work.

Supported Products / Systems (ie integrated into PC System):
NEC Versa E Series
NEC Versa V Series
NEC Versa 4000
Compaq LTE Elite
IBM Thinkpad 755CX
Adaptec CardPark

Special Features of Driver / Driver Notes:
This driver is necessary when using the Intel 82365 PCMCIA chipset with PCMCIA devices. See also NeXTanswer 1801_PCMCIABus

Known Problems

Hot insertion and removal of PCMCIA devices is not supported.

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.32) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.31 Fixes a bug which could result in inconsistent adaptor initialization.
3.32 Adds support for PCIC compatible PCI-PCMCIA Bus Bridges

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: PCMCIA Bus

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/PCMCIABus.pkg.compressed
An updated BETA version of this driver, version 3.34, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/PCMCIABus.pkg.compressed

Driver Name / Installer .pkg: PCMCIABus
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:**
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver provides PCMCIA Bus Services to the NEXTSTEP Operating System, PCMCIA Device Drivers, and to Configure. NEXTSTEP requires this driver if the system contains a PCMCIA slot

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
See Also NeXTanswer 1800_Intel_82365_and_Compatible_PCMCIA_chipset

Known Problems

This driver does not support hot swapping of PCMCIA devices. In particular, attempting to hot swap the Adaptec SlimSCSI PCMCIA adapter can hang your machine.

Driver Version Notes

3.30 Shipped with NEXTSTEP 3.3
3.31 Fixed several bugs. Added support for cards needing shared memory.
3.33 Added Auto-Detect logic; improved boot messages.
3.34 Added support for level irqs required by EtherLink III adapter

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Pro Audio Spectrum 16

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: ProAudioSpectrum16
Driver Type: Sound
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: The driver support Pro Audio SPectrum 16 and Pro Audio Studio card. It should also work with Pro Audio Basic 16 card and Logitech Audio Man sound card but these two are offcially not supported.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
There are well known problems with this card when used in conjucntion with an Adaptec 1542B.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

MediaVision
3185 Laurelview Court
Fremont, CA 94538

+1 (800) 845-5870 USA toll-free (sales) phone
+1 (800) 638-2807 USA toll-free (technical support) phone
+1 (510) 770-8600 international phone
+1 (510) 770-0968 bulletin board system
+1 (510) 770-9592 fax
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: PS/2-Style Mouse

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/PS2Mouse.pkg.compressed

Driver Name / Installer .pkg: PS2Mouse
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:** Integrated
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver supports standard PS/2 Type Mice (also known as Keyboard or PIX Mice).

Supported Products / Add-on Adapters:
Rose Electronics ServeView Keyboard/Mouse/Display multiplexer

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Known Problems

The 3.3 mouse driver exhibits jerky mouse behavior when used with a Microsoft PS/2 mouse. Currently, the only workaround is to use a different type of PS/2 mouse.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: PS2 Keyboard

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: PS2Keyboard
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:** Integrated
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver supports standard AT Compatible keyboards. This is a required boot driver

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: S3 805/928 Video

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: S3
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: AT&T ATT20C491 RAMDAC, AT&T ATT20C505 RAMDAC, Brooktree Bt484 RAMDAC, Brooktree Bt485 RAMDAC, Brooktree Bt485A RAMDAC, S3 801, S3 805, S3 911
PC Bus / Interface Supported by Driver:** Integrated, VL-Bus

General Overview notes: This driver is obsolete and has been replaced by the S3GenericDisplay Driver. See NeXTanswer #1737_S3_Generic_Driver_Overview.rtf

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
IBM PS/ValuePoint
Hewlett-Packard Vectra XM
DECpc 466d2 MTE

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1280x1024 (4MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1280x1024 (2MB+)

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

TA45656_NeXTSTEP_Driver_S_Video.pdf

NeXTSTEP 3.3 Driver: SCSI Tape

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/SCSITape.pkg.compressed

Driver Name / Installer .pkg: SCSITape
Driver Type: System
Driver Scope: Generic
Supported Components:
PC Bus / Interface Supported by Driver:**
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This is a SCSI Tape peripheral driver. It supports most SCSI tape drives that use the generic SCSI command set for Tape Devices. A SCSI Host Adapter and associated NEXTSTEP driver are required in order to use this driver

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
For release NS 4.0, SCSITape is being moved from the Other category to the SCSI category.

Sun DAT drives cause other tape drives with higher SCSI ID's to not be registered. This is a hardware problem. The workaround is to place non-Sun tape drives at a lower SCSI ID than the Sun DAT drive.

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.31) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.31 Corrects a problem restoring data from tapes. This problem was encountered when using /dev/rst# device nodes, where # is a number. This problem only effects tape reads, so tapes written using this driver should be correct.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Serial Mouse

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: SerialMouse
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:** EIA-232 (Serial)
Supported Connectors:
Access Mode: Serial
Adapter Memory:

General Overview notes: This driver is obsolete and has been replaced by the SerialPointingDevice driver. Se NeXTanswer #1945_Serial_Pointing_Device_Driver_Overview.rtf

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: SMC EtherElite 16

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/SMC16.pkg.compressed

Driver Name / Installer .pkg: SMC16
Driver Type: Networking
Driver Scope: Product Family
Supported Components: SMC SMC83C690
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This driver supports the SMC EtherCard Plus Elite16 Ethernet Adapter

Supported Products / Add-on Adapters:
SMC EtherCard Plus Elite16 Ethernet Adapter

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Memory Mapped
Buffer Size*: 16KB
Supported Connectors:** AUI, BNC, UTP

Known Problems

Driver Version Notes

3.31 Performance improvements

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Standard Microsystems (SMC)
6 Hughes
Irvine, CA 92718

+1 (800) NET LEAD USA toll-free (technical support) phone
+1 (714) 707 5607 international (technical support) phone
+1 (714) 707 2481 bulletin board service
+1 (714) 707 2491 fax
WWW: http://www.smc.com/
Published Date: Feb 20, 2012

Apple Coax/Twinax Card: Rev B Fixes MacDFT & Video Problems

What does the "new" Apple Coax/Twinax card revision do? Who needs it?

This article has been archived and is no longer updated by Apple.
The new Apple Coax/Twinax card offers no new functionality, but it does resolve a somewhat rare incompatibility problem with the Macintosh Display Card 8*24 and Macintosh Display Card 8*24 GC. The only difference between this "new" card and the "old" one is that the inductor/ferrite bead replaces a jumper wire, and the masking on the board says that the board is revision "B."

You should consider upgrading to the new cards if you have the following problem:

MacDFT hangs on boot when the initial "splash screen" appears. MacDFT hangs before the Window Manager completes drawing the window frame, or shortly after the frame draw and the content region goes black. This problem happens often on systems with 8*24 style video and Coax/Twinax cards. It is also more likely to happen on a Macintosh IIci, Macintosh IIcx, or Macintosh IIfx than on a Macintosh II or Macintosh IIx.

But a similar problem has a different solution: Some NuBus conflicts happen with the Portrait or Workstation display cards and the Apple Coax/Twinax card. The error shows up when launching MacDFT. At launch, the Macintosh bombs and gives a bus error (if the system has MacsBug installed) or displays a system error of ID=28. Use A/ROSE v1.1.2 to fix this problem.

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: Sound Blaster 16

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/SoundBlaster16.pkg.compressed
An updated BETA version of this driver, version 3.34, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/SoundBlaster16.pkg.compressed

Driver Name / Installer .pkg: SoundBlaster16
Driver Type: Sound
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This driver support most SoundBlaster 16 and 100% compatible sound cards.

Supported Products / Add-on Adapters:
Sound Blaster 16 Basic (ISA)
Sound Blaster 16 Value (ISA)
Sound Blaster 16 AWE (ISA)
Sound Blaster 16 SCSI-II (ISA)
Sound Blaster 16 Value PnP (ISA)
Sound Blaster AWE 64 Value (ISA)
Sound Blaster AWE 64 Gold (ISA)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
Only simple playback and recording are supported. Wave table related hardware is unsupported.

The SCSI interface on the Sound Blaster 16 SCSI-II has been reported to work with our Adaptec 6x60 driver, though is not a supported configuration.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker , CD-ROM Stereo Line-In
Access Mode: DMA
Adapter Memory:
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

In order to configure resources (like IRQ, DMA, port addresses) correctly, make sure that the system BIOS knows about the resources used by this and other ISA adapters.

Use the PnP personality for SB16 PnP boards and enable support for Plug and Play in the EISABus driver (if you are using the driver from NextAnswers).

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.34) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.33: Added support for Plug and Play cards.
3.34: Updated the PnP personality tables. Improved reliability of sound playback and recording.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Sound Blaster 8

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: SoundBlaster8
Driver Type: Sound
Driver Scope: Product Family
Supported Components: Creative Labs
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This driver is intended to support all 8-bit Sound Blaster cards and compatible. Motherboards implementations should work as well.

Supported Products / Add-on Adapters:
Sound Blaster Basic ISA)
Sound Blaster Pro (ISA)
Sound Blaster Delux (ISA)
Sound Blaster Value (ISA)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
Limitations: Mixing is not supported and there is no sample rate conversion. This driver will not work with NEXTSTEP 3.2. Only the Sound Blaster Pro card has an on-board mixer and supports output volume control via software. For others there is typically a potentiometer in the adapter.

There are many kinds of Sound Blaster 8-bit cards and they have varying features.

Sound Driver Details

Supported Connectors: Mic In, Speaker Out
Access Mode:
Adapter Memory:
Attributes: 8-bit linear

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: STB Pegasus DisplayN

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Pegasus_Display.pkg.compressed

Driver Name / Installer .pkg: PegasusDisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: AT&T ATT20C505 RAMDAC, Brooktree Bt485A RAMDAC, S3 928
PC Bus / Interface Supported by Driver:** VL-Bus

General Overview notes: The STB Pegasus-VL graphics driver is designed to support the VL-Bus version of the Pegasus graphics adapter from STB. This card uses the S3-928 graphics controller and supports 1MB,2MB or 4MB of video frame buffer. This version of the driver only supports1MB, 2MB or 4MB of VRAM.

Supported Products / Add-on Adapters:
STB Pegasus (VL-Bus, 4MB VRAM)
STB Pegasus (VL-Bus, 2MB VRAM)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152X819 (4MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X819 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

Version 3.31 of this driver is named differently than version 3.30 which shipped on the NEXTSTEP3.3 CD-ROM. Installing the newer version will leave both drivers co-resident, so both versions will be visible in Configure.app. Remove any instances of the older version and replace them with instances of the newer driver.

Driver Version Notes

3.30 - Shipped with NS3.3 - based on interpreted IOVP code
3.31 - Total re-write in ObjC - 8 bit color modes added

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

STB Systems
1651 North Glennville, Suit 210
Richardson, TX 75081
(214) 234-8750
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Tseng Labs ET4000

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: TsengLabsET4000
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Tseng Labs ET4000AX
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: 2-bit greyscale only SVGA driver

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Segmented Framebuffer
Adapter Memory: .5MB DRAM, 1MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**

8 Bit Color / Greyscale Modes:**

Known Problems

Does not work correctly with SotfPC and NEXTIME.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: VGA Video

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: VGA
Driver Type: Display
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:** Integrated, ISA

General Overview notes: This is a generic VGA display driver. It only supports 640x480 pixels in 4 level gray scale. It is primarily used during installation and for laptops.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Segmented Framebuffer
Adapter Memory:

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**

8 Bit Color / Greyscale Modes:**

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Weitek Power 9000

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: WeitekP9000
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Weitek P9000
PC Bus / Interface Supported by Driver:** PCI, VL-Bus

General Overview notes: This driver supports display implementations base on the Weitek P9000, such as the Diamond Viper.

Supported Products / Add-on Adapters:
Diamond Viper (PCI)
Diamond Viper (VL-Bus)
Genoa VideoBlitz 9200-VL (VL-Bus) - not tested, but should work

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x900 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152x900 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

If you get Weitek P9000 unable to reserve framebuffer address 0x80000000 and it
boots up in standard VGA mode. Change the mapped memory address in the Configure.app to 0xA0000000.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Diamond Computer Systems
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Sunnyvale, CA 94086
USA

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+1 (408) 730 5750 fax
+1 (408) 730 1100 bbs 2400 baud
+1 (408) 524 9301 bbs 9600+ baud
WWW: http://www.diamondmm.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Western Digital WD90C24 Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/WD90C24Display.pkg.compressed

Driver Name / Installer .pkg: WD90C24DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Western Digital WD90C24
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This display driver supports several Laptop systems using this Western Digital chipset.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
NEC Versa E Series
NEC Versa V Series
Compaq LTE Elite

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 640X480 (1MB+)

Known Problems

This driver does not work correctly with the latest version of the BIOS for the NEC Versa V.
This driver does not work correctly with the latest version of the BIOS for the NEC Versa E. You must backrev to a BIOS version that does not support power management.

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.31) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: ATI Mach32

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/ATIMach32.pkg.compressed

Driver Name / Installer .pkg: ATIMach32DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: AT&T ATT20C491 RAMDAC, ATI 68800 (Mach32), ATI 68830 RAMDAC, ATI 68875 RAMDAC, Brooktree Bt481 RAMDAC, Brooktree Bt485 RAMDAC
PC Bus / Interface Supported by Driver:** EISA, Integrated, PCI, VL-Bus

General Overview notes: Generic Driver for the ATI Mach32 (Also known as 68800) Rev 3, Rev 6 and AX.

Supported Products / Add-on Adapters:
ATI Graphics Ultra Pro - EISA (with 2MB VRAM)
ATI Graphics Ultra Pro - PCI (with 2MB VRAM)
ATI Graphics Ultra Pro - VL-Bus (with 2MB VRAM)
ATI Graphics Ultra Pro XLR - VL-Bus (with 2MB DRAM) - not tested, but should work
ATI Graphics Ultra Pro XLR - PCI (with 2MB DRAM) - not tested, but should work

Supported Products / Systems (ie integrated into PC System):
Intel GX/Pro (Custom LocalBus, onboard ATI, TI 34075 RAMDAC)
Data General Dasher DE2 (Custom LocalBus, TI 34075 RAMDAC)
AST Premmia 4D (Custom LocalBus, onboard ATI, BT 481 RAMDAC)
Gateway V Series (VESA LocalBus, ATI 68875 RAMDAC)

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 1MB VRAM, 2MB DRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**
1024x768 (2MB+), 1120x832 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1120x832 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

NeXT SQA has experienced some display problems with the ATI Mach32 VL-Bus adapter on machines using the OPTi chip-set. One of the problems is the machine will hang in any of the 8-bit greyscale display modes. However, machines without this chip-set behave normally.

NeXT SQA has witnessed some video noise in 800x600 display modes for adapters with the 68003 Mach32 chip.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

ATI Technology
2880 Zanker Road
Suite 203
San Jose, CA 95134

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+1 (905) 764 9404 bulletin board system
+1 (416) 882 2600 faxback system
WWW: http://www.atitech.ca/

TA45668_NeXTSTEP_Driver_ATI_Mach.pdf

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Cirrus Logic GD5434

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/CL_GD5434.pkg.compressed

Driver Name / Installer .pkg: CirrusLogicGD5434DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Cirrus Logic GD5434
PC Bus / Interface Supported by Driver:** Integrated, PCI, VL-Bus

General Overview notes: This driver is intended to support on-board implementations of GD5434 as well as add-on adapters.

Supported Products / Add-on Adapters:
Diamond SpeedStar 64 (PCI)
Orchid Kelvin 64 (with GD5434)

Supported Products / Systems (ie integrated into PC System):
Elonex WS4100
Intel Premier (with integrated GD5434)
HP Vectra XM Series3 (not tested but reported to work)

Special Features of Driver / Driver Notes:
Because this chip has an integrated RAMDAC with only an 8 bit palette, Preferences's Brightness slider (and hardware gamma correction in general) doesn't work for any non-8 bit modes. Also the 32-bit colors look dark. There is no fix for these problems.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

Cirrus Logic GD5430 is not supported but is reported to work with this driver.

Driver Version Notes

3.31 Added support for PCI cards and 8 bit color

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: Tseng Labs ET4000W32

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: TsengET4000W32DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: AT&T ATT20C490 RAMDAC, AT&T ATT20C491 RAMDAC, AT&T ATT20C492 RAMDAC, Brooktree Bt484 RAMDAC, Brooktree Bt485 RAMDAC, Brooktree Bt485A RAMDAC, STG 170x, Tseng Labs ET4000W32
PC Bus / Interface Supported by Driver:** VL-Bus

General Overview notes: This driver supports implementations based on ET4000W32 chipset.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors:
Access Mode: Linear Framebuffer
Adapter Memory:

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**

8 Bit Color / Greyscale Modes:**

Known Problems

The current driver does not implement transfer tables, so the display appears dark, and the brightness slider in Preference doesn't work.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

TA45670_NeXTSTEP_Driver_Tseng_Labs_ETW.pdf

Published Date: Feb 20, 2012

A/UX 2.0.1: Fixes "ls -F" Bug

In A/UX 2.0, ls -F should display the current directory's content appending *, /, @, to denote executable, directory, and symbolic link.

I linked a directory to another symbolic link, but when I typed in ls -F, I see xxx/ rather than xxx@. Although when I typed in ls -l, I can see the symbolic linked directory is linked -> to another directory.

This article has been archived and is no longer updated by Apple.

This is a bug in A/UX 2.0 that has been fixed in A/UX 2.0.1.

Published Date: Feb 20, 2012

Debugging EOF 1.x under NeXTSTEP 3.2 and 3.3

This document discusses debugging for Apple's Enterprise Objects Framework, versions 1.0 and 1.1, under versions 3.2 and 3.3 of the NeXTSTEP operating system. The information contained in this document may not apply to any other version of EOF or to any other Apple product.
This article has been archived and is no longer updated by Apple.

Questions

Q: Occasionally my EOF 1.x for NeXTSTEP application exits and produces "Unknown error 100003 in NXReportError". This message is not very informative and makes debugging the application difficult. Is there a way to get more information than this?

Q: From gdb, how can I get information about private Foundation and EOF objects such as the concrete classes in a class cluster?

Q: I am trying to send messages to my adaptor from gdb while debugging my EOF application but gdb tells me that the adaptor objects do not respond to any selectors. What's the problem?

Q: How do I get a listing of the SQL code that is sent to the server?

Q: I am trying to compile my EOF application to run with MallocDebug and I get the following errors:

```
ld: multiple definitions of symbol __NXMallocCheck
/usr/lib/libMallocDebug.a definition of __NXMallocCheck in section
(__TEXT,__text)
/lib/libsys_s.a(malloc.o) definition of absolute __NXMallocCheck
(value 0x5002432)
ld: multiple definitions of symbol __NXDefaultMallocZone
/usr/lib/libMallocDebug.a definition of __NXDefaultMallocZone in
section (__TEXT,__text)
/lib/libsys_s.a(malloc.o) definition of absolute
__NXDefaultMallocZone (value 0x5002444)
```

What is happening?

Q: When my application raises an exception, I can't get a backtrace even if I am running it from within gdb. This makes debugging difficult. How can I get a backtrace when it raises?

Answers

Here are some useful EOF debugging tips to address these questions.

A: You can implement a top-level error handler that catches all unknown errors, and figure out what the error was and print a more useful message. Here is an example of some code that does this. First, call this someplace early in the app's execution such as **appDidInit:** or the **awakeFromNib** method for one of your top-level objects:

```
NXSetTopLevelErrorHandler(MyTopLevelErrorHandler);
```

"MyTopLevelErrorHandler" must be a function defined with this prototype:

```
void MyTopLevelErrorHandler(NXHandler *errorState);
```

Here is an example of an implementation that simply logs a message to the console with NSLog(). You can implement your own mechanism for presenting the error message, including raising an alert panel, logging a message with NSLog() or printf(), or any combination of these.

```
void MyTopLevelErrorHandler(NXHandler *errorState)
{
if (errorState->code >= NSExceptionBase &&
errorState->code <= NSLastException) {
NSException *exception = (id) errorState->data1;

NSLog(@"%@: %@\\n", [exception exceptionName], [exception exceptionReason]);
}
}
```

A: gdb's "print-object" command (abbreviated "po") sends a **description** message to an object and prints the results. Most Foundation and EOF objects implement **description** in a meaningful way and will give you information about their contents. You can implement **description** on your own custom objects to look at their contents from gdb. The syntax for the command is:

```
(gdb) po anObject
```

A: The NSBundle class has a class method called **stripAfterLoading:** that allows you to control whether or not symbols are stripped from bundles then they are loaded. Please see NeXTanswer 1720_Debugging_code_loaded_by_NSBundle for more information.

A: There are two ways to see the SQL code that is sent to the server. One way is to turn on debugging output in the adaptor. If you have an outlet to an EOController instance, you can do this with the following:

```
[[[(EODatabaseDataSource *)[controller dataSource] databaseChannel] adaptorChannel] setDebugEnabled:YES];
```

The typecast is necessary because the data source for an EOController does not have to be an EODatabaseDataSource instance; if you know that it is, you can typecast it in this manner to get rid of the compiler warning.

Another way to see the SQL code is to become the delegate for the EOAdaptorChannel and respond to the **adaptorChannel:willEvaluateExpression:** method. To become the delegate, you can do the following at awakeFromNib time (again assuming that you have an outlet to an EOController instance):

```
[[[(EODatabaseDataSource *)[mainController dataSource] databaseChannel] adaptorChannel] setDelegate:self];
```

Then that object can implement the EOAdaptorChannel's delegate method like this. In this example, the SQL code is logged with NSLog(). You can implement your own mechanism for displaying the SQL code including adding it to an on-screen Text objects, logging it with NSLog() or printf(), or any combination of these. Note that it is important to return EODelegateApproves from this method in order for the code to be sent to the server and work correctly.

```
- (EODelegateResponse)adaptorChannel:channel willEvaluateExpression:(NSMutableString *)anExpression
```

```
{
NSLog(@"%@\\n",anExpression);
return EODelegateApproves;
}
```

A: To resolve undefined symbols when using MallocDebug, you need to do the following:

1) remove the -all_load flag from OTHER_LDFLAGS in your Makefile.preamble.

```
OTHER_LDFLAGS =
```

2) hardlink your adaptor. For example, this will be the new entry in your Makefile.preamble if you use the Sybase adaptor:

```
# Additional relocatables to be linked in at this level
OTHER_OFILES = /NextLibrary/Adaptors/Sybase.dbadaptor/Sybase
```

3) link with MallocDebug:

```
# Additional libs to link apps against ('app' target)
OTHER_LIBS = -lMallocDebug
```

A: If you break on [NSException raise], you will be able to generate a backtrace, since this routine is called whenever an exception is raised. You can configure gdb so that it will always break on this routine by adding this line:

```
b [NSException raise]
```

to the .gdbinit file in your project directory. You can't add it to the .gdbinit in your home directory, since that is loaded before the symbols for Foundation are loaded -- you need to put it in your project directory.

Note that after you have broken on this method, it is often useful to print the reason for the exception. You can do this on Intel and Motorola platforms with the following command from gdb:

```
(gdb) po [*((id *)($fp + 8)) exceptionReason]
```

You can define a new command called "reason" to do this for you like this:

```
(gdb) define reason
po [*((id *)($fp + 8)) exceptionReason]
end
(gdb) document reason
Print the reason for an NSException.
When a program is inside of the method -[NSException raise], this
command prints out a textual reason for the exception.
end
```

You CAN add these commands to the .gdbinit file in your home directory so that they will always be available whenever you run gdb.

Published Date: Feb 20, 2012

TA45673_AUX_AppleTalk_Printing_Problem__(TIL07183).pdf

A/UX: AppleTalk Printing Problem (8/94)

When I try printing from A/UX to a LaserWriter IINTX connected to an AppleShare Print Server, I get a message that says that the Laser Prep version is not correct.

This article has been archived and is no longer updated by Apple.
The message you are getting is because the LaserWriter driver and its Laser Prep in the A/UX /mac/sys/System Folder are different from the one in the AppleShare Printer Server in the AppleTalk network. Use the same version of LaserWriter driver and Laser Prep files and/or PrintMonitor as the ones in the Printer Server.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: DPT Family SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/DPTSCSI.pkg.compressed

Driver Name / Installer .pkg: DPTSCSIDriver
Driver Type: SCSI
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** EISA, Integrated, ISA, PCI

General Overview notes: The DPT SCSI driver update is designed to support the 2000 and 3000 series of SCSI adapters from DPT. This driver does not support the DPT 2011 ISA Adapter. The DPT 32xx series SmartRAID SCSI adapters include RAID and Cache capability, and support from 1 to 3 SCSI channels. This driver replaces the NEXTSTEP 3.3 DPT 2000 Adapter driver.

Supported Products / Add-on Adapters:
Model# Bus Description
PM2021/90 ISA SCSI adapter
PM2021/95 ISA SCSI adapter
PM2022/90 EISA SCSI adapter
PM2022/95 EISA SCSI adapter
PM2024 PCI SCSI adapter
PM2041W * ISA Wide SCSI adapter
PM2042W * EISA Wide SCSI adapter
PM2044W * PCI Wide SCSI adapter
PM2122/90 EISA SCSI adapter
PM2122/95 EISA SCSI adapter
PM2124 PCI SCSI adapter
PM2124W PCI WIDE SCSI adapter
PM2142W * EISA Wide SCSI adapter

PM3021 ISA SCSI RAID controller (Not tested, should work)
PM3222 EISA SCSI RAID controller
PM3224 PCI SCSI RAID controller

DPT-TWR n/a 6-bay SCSI Tower
DPT-TWR/W n/a 6-bay WIDE SCSI Tower (Not tested, should work)

* These products have not yet been tested by NeXT's SQA Dept.

Supported Products / Systems (ie integrated into PC System):
NEC Express II P60 (On-Board)

Special Features of Driver / Driver Notes:
The onboard floppy controller, available on some cards, is not supported.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode:
Attributes:** SCSI-2
Cache Size Supported:** 16MB, 4MB, 64MB

Known Problems

The following products have been reported as working:

PM2044UW PCI Ultra Wide SCSI adapter
PM2144UW PCI Ultra Wide SCSI adapter

PM3224W PCI WIDE SCSI RAID controller
PM3332UW EISA Ultra WIDE SCSI RAID
controller

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Distributed Processing Technology
140 Candace Drive
Maitland, FL 32751
USA

+1 (407) 830 5522 phone
+1 (407) 831 6432 bulletin board system
+1 (407) 260 5366 fax
URL: http://www.dpt.com
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: EIDE

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/EIDE.pkg.compressed
An updated BETA version of this driver, version 3.37, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/EIDE.pkg.compressed

Driver Name / Installer .pkg: EIDE
Driver Type: System
Driver Scope: Generic-System
Supported Components: PC Tech RZ1000
PC Bus / Interface Supported by Driver:** Integrated, ISA, PCI
Supported Connectors: 40-pin Header (Internal IDE)
Access Mode: PIO
Adapter Memory:

General Overview notes: This drivers supports IDE disks and IDE ATAPI rev. 1.2 compliant CD-ROMs. It supports primary and secondary IDE controllers with up to 2 drives per controller. Please refer to 1933_EIDE_and_ATAPI_CDROM_Support_in_NEXTSTEP_3.3.rtf for more information on configuring your EIDE drives for NEXTSTEP.

This driver replaces the IDE driver distributed on the NEXTSTEP 3.3 CD.

Supported Products / Add-on Adapters:
The following ATAPI CD-ROM drives are supported:
Chinon CD-ROM CDS-525 (2X), firmware rev. W09
Matsushita CD-ROM CR-571 (2X), firmware rev. 1.0e -- Panasonic
Mitsumi CD-ROM 1B (4X), firmware rev. B02 -- model FX400
Sony CD-ROM CDU55E (2X), firmware rev. 1.0u
Sony CD-ROM CDU76E-S (4X), firmware rev. 1.0c
Toshiba CD-ROM XM-5302TA (4X), firmware rev. 0305

The beta driver adds support for the following ATAPI CD-ROM drives:
Philips CM207, firmware rev 1.10 (??) -- reported to work
SONY CD-ROM CDU76E-Q, firmware rev 1.0c (4X)
SONY CD-ROM CDU55D, firmware rev 1.0v (2X)
SONY CD-ROM CDU77E, firmware rev 1.0e (4X)
TORiSAN CD-ROM CDR-S1, firmware rev 1.70 (4X) -- SANYO
Chinon CD-ROM CDS-545, firmware rev ERc A1.0 (4X)
GoldStar CD-ROM GCD-R540, firmware rev 1.17 (4X)
GoldStar CD-ROM GCD-540C, firmware rev 1.01 (4X)
SANYO CRD-254P, firmware rev 1.02 (4X)
MATSHITA CD-ROM CR-574, firmware rev 1.06 (4X) -- Panasonic
Pioneer CD-ROM DR-UA124X, firmware rev 1.02 (4X) -- force detection
MITSUMI CD-ROM !B, firmware rev K02 (4X) -- DRM FX400B
TEAC CD-55E, firmware rev ?? (4X) -- Thinkpad 760CD
ATAPI CD-ROM SPEED-6X, firmware rev 6.2D (6X) -- ACER 665A
VERTOS 600ESD CD-ROM X6-IDE, firmware rev 1.20 (6X)
TEAC CD-56E, firmware rev 1.0D (6X)
MATSHITA UJDCD4700, firmware rev 1.11 (??)
TEAC CD-58E, firmware rev 1.1B (8X)
Toshiba CD-ROM XM-5602B, firmware rev 1426 (8X)
Sony CD-ROM CDU311, firmware rev 3.0i (8X)
EPSON CMD-2240 SPEED-6X, firmware rev R100 -- reported to work
Hitachi CDR-7730, firmware 1.1a (4X)
TEAC CD-524E, firmware 4.0D (24X)

Supported Products / Systems (ie integrated into PC System):
Other ATAPI 1.2 compliant CD-ROM drives should work with NEXTSTEP even if they are not in the supported list. If a CD-ROM drive does not work with NEXTSTEP (or even if it does) we would like to know about it. Please send an email message to nextanswers-request@next.com including the model number of the CD-ROM drive and also whether this drive is connected as a master or a slave.

Special Features of Driver / Driver Notes:
Also see the NextAnswer 1933_EIDE_and_ATAPI_CDROM_Support_in_NEXTSTEP_3.3

NeXT's EIDE driver is not affected by the RZ1000 hardware bug.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

These devices are not supported.
1. NEC CDR-260 (2X)
2. NEC CDR-273

To get the Pioneer DR-UA124X 1.02 CD-ROM to work you must force detection. You can do this by going in Expert mode and adding the key "Slave"="ATAPI" (or "Master" as the case may be) to the table.

Driver versions 3.33 and below can cause certain systems to hang under very heavy load.

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.34) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.33: This version adds support for several new ATAPI CD-ROM drives and fixes some bugs.
3.34: Fixed a bug which could cause machines to hang under very heavy load.
3.36: Added device overrides and modified the inspector. The new overrides are documented in the driver help.
3.37: Improved ATAPI support. Added support for Intel PIIX PCI IDE controllers. Added Bus Master support. Revised the driver Inspector.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

EOF 1.x and Oracle NOWAIT Locks

This document discusses a feature commonly requested by users of certain versions of Apple's Enterprise Objects Framework.
This article has been archived and is no longer updated by Apple.

Question

Q: EOF provides the ability to use pessimistic locks by sending EOUpdateWithPessimisticLocking to EODatabaseContext's setUpdateStrategy: method. However if client A has the pessimistic lock and client B tries to access the locked row(s), client B blocks until client A releases the lock.

Oracle 7 supports "NOWAIT" locks which allows client B in this scenario to return immediately after failing to get the lock, allowing it to present an error message or otherwise handle the situation. Is this supported in EOF?

Answer

A: Although this feature is not explicitly supported in the EOF 1.1 Oracle7 adaptor, it is very easy to add. The only difference between getting a pessimistic lock and a NOWAIT pessimistic lock is the NOWAIT keyword appended to the end of the SELECT clause that gets the lock. This functionality can be added in an EOAdaptorChannel delegate with the following code. (This object needs to be the delegate of both the EOAdaptorChannel and EOAdaptor; this can be set up in awakeFromNib).

```
#import <eoaccess/eoaccess.h>

@interface ExampleNOWAITDelegate
{
BOOL locking;
}

@end

@implementation ExampleNOWAITDelegate

- (EODelegateResponse)adaptorChannel:channel
willSelectAttributes:(NSMutableArray *)attributes
describedByQualifier:(EOQualifier *)qualifier
fetchOrder:(NSMutableArray *)fetchOrder
lock:(BOOL)flag
{
locking = flag;
return EODelegateApproves;
}

- (EODelegateResponse)adaptorChannel:channel
willEvaluateExpression:(NSMutableString *)expression
{
if (locking && [self useNOWAIT])
[expression appendString:@" NOWAIT"];

return EODelegateApproves;
}

- (BOOL)adaptor:(EOAdaptor *)adaptor
willReportError:(NSString *)error
```

```
{
/*
* error is the error message provided by the adaptor; if it begins
* with "ORA-00054:", the resources that we want to lock are busy.
* Here we just call NSLog(), but ultimately we should provide an
* alert panel for the user or otherwise handle this.
*/
if([error hasPrefix:@"ORA-00054:"]) {
NSLog(@"NOWAIT resources busy!\\n"); // Should act accordingly
return NO;
}

return YES;
}

- (void)adaptorChannel:channel
didEvaluateExpression:(NSString *)expression
{
locking = NO;
}
@end
```

Valid for: EOF 1.0, EOF 1.1, NEXTSTEP 3.2 Developer, NEXTSTEP 3.3 Developer

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: DECChip 21040 Network

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.36, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/DECChip21040.pkg.compressed
An updated BETA version of this driver, version 3.37, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/DECChip21040net.pkg.compressed

Driver Name / Installer .pkg: DECchip21040NetworkDriver
Driver Type: Networking
Driver Scope: Generic-Chipset
Supported Components: DEC DECchip21040, DEC DECchip21041
PC Bus / Interface Supported by Driver:** Integrated, PCI

General Overview notes: This networking driver supports most DECchip21040 & DECchip20141 based cards.

Supported Products / Add-on Adapters:
Cogent EM960 PCI
SMC PCI EtherPower (SMC 8432)
Digital EtherWORKS Turbo PCI (DE435)
Linksys EtherPCI LAN Card
DANPEX PCI Ethernet (EN-9400P3)
JCIS Condor (JC1260)
Kingston EtheRx PCI Ethernet (KNE40T & KNE40BT)

Supported Products / Systems (ie integrated into PC System):
DEC Celebris GL & GLST

Special Features of Driver / Driver Notes:
This driver replaces the Cogent EM960 PCI Ethernet Adapter driver.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: NA
Supported Connectors:** AUI, BNC, UTP

Known Problems

Driver Version Notes

3.32 - Added support for DECchip21041
3.36 - Added connector selection panel, fixed connector auto-detection
3.37 - Added remote kernel debug support

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Digital Equipment Corporation
146 Main St.
Maynard, MA 01754
USA

+1 (800) 332 4636 USA toll-free phone technical support
+1 (800) 722 9332 PC by DEC sales
+1 (508) 264 7111 international phone
+1 (800) 524 5694 fax
+1 (800) 388 3228 faxback
+1 (508) 496 8800 Bulletin Board System
WWW: http://www.dec.com/
Published Date: Feb 20, 2012

Disinfectant: Compatible with A/UX 2.0

Is Disinfectant compatible with A/UX?
This article has been archived and is no longer updated by Apple.
Disinfectant works with A/UX 2.0. Disinfectant is widely available. The program has a protection INIT and a scanning utility.

For information on downloading the latest version of Disinfectant refer to:
TIL aritcle 30487: "**Disinfectant: Macintosh Anit-Viral Utility**"

The Tech Info Library article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 20, 2012

System 6.0.5 & 6.0.7: Helvetica Narrow Fonts (11/94)

System 6.0.7 Installer has a FONT problem if I:

1) Install the FONTs from the LaserWriter IINT into the System.

2) Create a MacWrite document using Helvetica and N Helvetica Narrow.

3) Update the System software with Easy INSTALL. It doesn't matter if I'm updating from 6.0.5 to 6.0.5, 6.0.5 to 6.0.7 or 6.0.7 to 6.0.7.

4) Look at the FONTs in the MacWrite menu. I still have N Helvetica Narrow, but the text that should be N Helvetica Narrow is Geneva.

5) Look in the System file FONT list with ResEdit. The N Helvetica Narrow family still exists, but the individual FONTs normally listed under the family heading have disappeared.

This problem appears on a Macintosh IIsi, Macintosh SE or Macintosh Classic running System Software 6.0.5 or 6.0.7 (Swedish or U.S. versions).

This article has been archived and is no longer updated by Apple.
Reinstalling the Narrow FONTs fixes this problem. After reinstalling, all the other FONTs should be all right, too.

Article Change History:
14 Nov 1994 - Reviewed for technical accuracy, made information public.

Support Information Services
Published Date: Feb 20, 2012

TA45680_HP_P_LaserPrinter_Connecting_to_a_Macintosh_(TIL07188).pdf

HP 2P LaserPrinter: Connecting to a Macintosh

Is there any way to connect a Macintosh to an HP 2P LaserPrinter? I have unsuccessfully tried using the Orange Micro Grappler LX. The Grappler LX does work, however, with the HP LaserJet Plus.

This article has been archived and is no longer updated by Apple.

We contacted Orange Micro and found that the HP 2P and Macintosh computers using a 68020, 68030, or 68040 can connect with a Grappler LX. Macintoshes using a 68000 must use the Orange Micro Grappler LS.

Orange Micro also states that the HP printer must have a minimum of 1MB of RAM to function properly with their equipment.

Published Date: Feb 18, 2012

MacX: How To Specify Available Window Fonts

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

I want to use the Fonts selection feature in MacX to customize the font selection in DECterm windows.

How do I use this menu item?

This article has been archived and is no longer updated by Apple.
The "F" item in the MacX "Edit" menu, or Command-F, brings up the Font Director dialog box. Font Director lets you see a sample of the typeface without having to run font clients or type commands with long and cryptic font names. Font Director also lets you sort fonts in various ways, assign aliases to font names, and compile fonts from Bitmap Distribution Format (BDF) files.

To use this command, tell the DECterm client which font to use in the window. Specify a font in the remote command to invoke the X client (DECterm in your case). This is similar to the "-fn" option when you invoke "xterm" in UNIX.

The command to invoke DECterm is CREATE/TERMINAL. To specify which font to be used in the window, use the /WINDOW_ATTRIBUTES=(keyword [,...]) qualifier. The keyword is FONT for this case. Example:

```
create/terminal/window=(rows=24,columns=75,font=timR24)/
application_keypad/insert/line_editing/detached
```

The above command creates a DECterm window using X font alias timR24. Note that you can abbreviate the VMS qualifier so the command string doesn't exceed the 255 character limit.

Published Date: Feb 20, 2012

NeXTSTEP 3.x Foundation Version Dependencies

In preparation for the move to OpenStep, many of NeXT's software products are being based on the Foundation Kit. However, the Foundation Kit itself is still evolving as bug fixes and improvements are being made to it. This brings up the question of which Foundation shipped with which software, and dependencies of your own software on the various Foundation Kits available.

This article has been archived and is no longer updated by Apple.

What Shipped With What

The following is a short synopsis of which Foundation was shipped with EOF 1.0, EOF 1.1, and NEXTSTEP 3.3 and what this means to users and developers:

The 'short' story is:
·1.1 EOF applications are backward binary compatible with EOF V1.0 applications (i.e., any 1.0 EOF application will execute under EOF V1.1)
· The reverse is not true: EOF V1.1 applications will not work under EOf V1.0
· EOF V1.0 does *not* overwrite Foundation installed by NEXTSTEP 3.3 Intel and 68k
· NEXTSTEP 3.2 does not contain Foundation
· EOF V1.0 does install Foundation on all NEXTSTEP 3.2 platform
· EOF V1.1 overwrites Foundation installed by NEXTSTEP 3.3 Intel and 68k
· If customers have EOF V1.1 installed on their NEXTSTEP 3.3 system, they will not be able to develop applications with 3.3 Foundation
· 3.3 Foundation applications keep running after customers install EOF V1.1

These are the different versions of Foundation that have been shipped:
· Foundation A shipped with EOF V1.0
· Foundation A' (same source as A but different binary) shipped with 3.3 Intel and Motorola, 3.3RISC, and 3.3Developer
· Foundation B shipped with EOF V1.1, and will ship with PDO 3.0

Note that that the Foundation dependencies are in effect whether or not you use EOF or PDO. If you use Foundation anywhere in your code, you will need to worry about these dependencies.

Foundation Based Distributed Objects

If you are writing applications using Foundation-based DO, make sure that both the client and the server are using the same version of Foundation. Your applications will not work otherwise.

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: HP Vectra XU Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/HPXU_Display.pkg.compressed

Driver Name / Installer .pkg:
Driver Type: Display
Driver Scope: Specific Product
Supported Components: AT&T ATT21C498 RAMDAC, S3 864 (Vision), STG 170x
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This graphics driver is designed to support the on-board graphics controller of the Hewlett Packard Vectra XU series. The on-board graphics controller is based on the S3-864 chipset and supports 2MB of DRAM.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
HP Vectra/XU S3/864 on-board video

Special Features of Driver / Driver Notes:

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.30) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Hewlett Packard
3000 Hanover St.
Palo Alto, CA 94304
USA

+1 (800) 752-0900 USA toll-free phone
+1 (415) 857 1501 international phone
+1 (800) 333 1917 faxback system
+1 (408) 553 3500 bulletin board system
+1 (415) 857 5518 fax
WWW: http://www.hp.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 NetInfo Clone Bug

Disclaimer

This document pertains to the NeXTSTEP 3.3 operating system. NeXTSTEP 3.3 is no longer a supported Apple product. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software.
This article has been archived and is no longer updated by Apple.

Question

Why can **SimpleNetworkStarter** create a NetInfo clone on Intel hardware, but using **NetInfoManager** doesn't work in NEXTSTEP 3.3 for Intel?

Answer

When you use the "Manage Hierarchy" menu in **NetInfoManager** to make a clone, it actually invokes **nidomain -c**. When **nidomain -c** invokes **netinfod -c**, a byte ordering problem occurs: the byte order of the master's address is reversed.

For example, you clone the **/ts** domain on the local host **rhino**. The master of **/ts** is running on **sabre**, with a tag of **network**. Assuming you want to your clone domain to have the same tag as the master, uniform tagging, the **nidomain** command that gets invoked is:

```
nidomain -c network sabre/network
```

nidomain will translate **sabre** to the IP address **192.42.172.66**, and will invoke **netinfod** as:

```
/usr/etc/netinfod -c sabre 66.172.42.192 network network
```

The arguments after the **-c** are the master's host's name, the master's host's IP address, the master's tag, and the new clone's tag. The bug is the reversed byte ordering of the IP address after "sabre".

Solution

-Copying the Database

Login as root and launch **Terminal**. If you just tried using **NetInfoManager**'s Manage Hierarchy menu to create the clone, kill (**kill -TERM**) the **netinfod -c** process.

```
rhino] ps -aux | grep netinfod
root 3938 1.6 0.6 1.66M 200K p3 S 0:00 grep netinfod
root 219 0.0 1.3 1.64M 424K ? SW 0:12 /usr/etc/netinfod local
root 220 0.0 0.8 2.22M 264K ? SW 0:03 /usr/etc/netinfod -c sabre 66

rhino] kill -TERM 220
```

Now change directory to **/etc/netinfo**, remove **network.nidb** (or **network.mov**, or **network.tmp**) if it exists and run **netinfod -c** by hand, giving the IP address of the master's host in the correct order. The arguments after the **-c** are the master's host's name, the

master's host's IP address, the master's tag, and the new clone's tag.

```
rhino]/usr/etc/netinfod -c sabre 192.42.172.66 network network &
```

-Adding the Serves Property

Next, add a serves property of **./network** to the **/machines/rhino** entry of the NetInfo domain you are cloning.

```
rhino] niutil -appendprop -t saber/network /machines/rhino serves ./network
```

Do the following until you get **./network** on the **serves:** line in the output,

```
rhino] niutil -read -t localhost/network /machines/rhino
```

Once the database is updated, reboot the clone machine because the new **netinfod**, the one started by hand with **/usr/etc/netinfod -c**, isn't a child of **nibindd**.

Reminder: If you have a three level or greater NetInfo hierarchy, you may need to modify the child as well as the parent domains. See the **System Administration Guide**, **Chapter 10:** Configuring a Large Network, located online in **/NextLibrary/Documentation/NextAdmin**.

Published Date: Feb 20, 2012

IBM Token Ring Bridge: Filter Programs

I have a customer who needs to set up an IBM Source Routing Bridge to filter AppleTalk in order to allow us to run an Internet Router in parallel with it. IBM supplied them with some sample programs, but these sample programs only show how to filter ranges of Token Ring addresses. This would be fine if the only Token Ring cards running AppleTalk were Apple's cards, but this is not the case. Do you know of anyone that has written an AppleTalk protocol filter for this bridge that might share this code with my account? What types of filters are supported by the Token Ring Bridge program?

This article has been archived and is no longer updated by Apple.
We are not aware of anyone having an IBM Token Ring Bridge filter program for AppleTalk. The Token Ring Bridge program supports three types of filters:

1. Link Limiting Filter: to be used for remote bridge, such as two half bridges connected by a T1 line.
2. NetBIOS Filter: to accept or discard only NetBIOS protocol.
3. Address Filter: to accept or discard a range of Token Ring address.

According to the IBM Token Bridge Program 2.1 User's Guide, you can have up to 10 filters in the FILTER.BAT file. Thus, you can add one or more address filters in this file to filter out the token ring addresses of the other non-Apple token ring cards. Otherwise, you have the option to write your own AppleTalk filter using DOS Macro Assembler language.

Published Date: Feb 18, 2012

OPENSTEP Boot and Driver Disk Images

These floppy images have been created as a convenience for those who may have a damaged install floppy, or who need to get crucial drivers onto an OPENSTEP floppy but don't have a running OPENSTEP machine.

If you have a damaged installation floppy, the only way to create a new one, even under OPENSTEP, is to make a copy of another one. The instructions for creating floppies from images under OPENSTEP are in the next section.

If you have a machine configuration which requires for installation a certain driver (usually a SCSI adapter driver) which is not provided on the installation driver floppy, and you don't already have a running OPENSTEP system, you can create a driver floppy under another system. If you have DOS running on your PC, you can download the proper driver floppy image and create an OPENSTEP disk under DOS using the rawrite program, available at:

http://ftp.debian.org/debian/tools/rawrite2.zip

This document only discusses floppy images for the OPENSTEP operating system, versions 4.0 and later. If you need NeXTSTEP version 3.3 or earlier floppy images, see the following Tech Info Library article:

Article 72667: "**NeXTSTEP Boot And Driver Disk Images**"

This article has been archived and is no longer updated by Apple.

Creating OPENSTEP Floppies From Images Under OPENSTEP

1. Make sure you are logged in as root.

2. Download the floppy image and decompress it from the Workspace via the File->Uncompress menu item. Make sure you are logged in as root.

3. Insert a blank 1.44 megabyte 3.5" HD floppy disk into the floppy drive.

4. In the Workspace, choose the command Check For Disks from the Disk menu. Initialize the disk as an OPENSTEP filesystem. When the disk is done initializing, select Eject from the disk menu, but leave the floppy in the drive.

5. If you have placed the image in `/tmp`, type this command to copy the boot floppy image to the new disk.

```
# dd if=/tmp/Floppy_Image of=/dev/rfd0b
```

6. After a few minutes, the duplication will be complete. Type this command:

```
# disk -e /dev/rfd0b
```

7. Physically eject the disk from the drive. It is ready to use.

Creating OPENSTEP Floppies Under Windows NT

1. Download the rawrite 2 utility from:

http://ftp.debian.org/debian/tools/rawrite2.zip

2. Download the floppy image that you need to your DOS system. Remember that DOS will not support the original OPENSTEP filename.

3. Prepare a floppy by formatting it for DOS.

4. Run rawrite. It will ask you for the source file (the floppy image) and the destination drive.

5. When rawrite has completed, the floppy is ready to be used under OPENSTEP.

4.2 Install Floppy Image

Download the 4.2 Install Floppy Image from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/floppyimages/4.2_Install_Disk.floppyimage

This floppy image is an exact copy of the floppy that shipped with OPENSTEP 4.2.

4.2 Driver Floppy Image

Download the 4.2 Driver Floppy Image from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/floppyimages/4.2_Driver_Disk.floppyimage

This floppy image is an exact copy of the floppy that shipped with OPENSTEP 4.2.

4.2 Beta Drivers Floppy Image

Download the 4.2 Beta Drivers Floppy Image, disks 1 and 2, from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/floppyimages/4.2_Beta_Drivers_1.floppyimage

and

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/floppyimages/4.2_Beta_Drivers_2.floppyimage

Disk 1 contains these drivers:
2546_ATI_Rage_Driver_Overview.rtf
2205_Bus_Logic_FlashPoint_Driver_Overview.rtf
2265_EIDE_Driver_Overview.rtf
2322_Intel_EtherExpress16_Driver_Overview.rtf
2295_IBM_ThinkPad_760CD_Display_Driver_Overview.rtf
2364_PCMCIABus_Driver_Overview.rtf
2406_Sound_Blaster_16_Driver_Overview.rtf

Disk 2 contains these drivers:
2334_Matrox_MGA_Millennium_Driver_Overview.rtf
2349_Number_Nine_Imagine128_Driver_Overview.rtf
2582_Yamaha_OPL_Audio_Driver_Overview.rtf

4.0 Floppy Images

Download the 4.0 Install Floppy Image from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/floppyimages/4.0_Install_Disk.floppyimage

This floppy image is an exact copy of the floppy that shipped with OPENSTEP 4.0.

Download the 4.0 Drivers 1 Floppy Image from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/floppyimages/4.0_Drivers_1.floppyimage

This floppy image is an exact copy of the floppy that shipped with OPENSTEP 4.0.

Download the 4.0 Drivers 2 Floppy Image from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/floppyimages/4.0_Drivers_2.floppyimage

This floppy image is an exact copy of the floppy that shipped with OPENSTEP 4.0.

4.1 Additional Drivers Floppy Image

Download the 4.1 Additional Drivers Floppy from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/floppyimages/4.1_Addl_Drivers.floppyimage

It contains these drivers:
2175_Adaptec_154x_family_and_compatible_Driver_Overview.rtf
2205_Bus_Logic_FlashPoint_Driver_Overview.rtf
2265_EIDE_Driver_Overview.rtf

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: DECChip 21140 Network

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/DECChip21140.pkg.compressed
An updated BETA version of this driver, version 3.35, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/DECChip21140Net.pkg.compressed

Driver Name / Installer .pkg: DECchip21140NetworkDriver
Driver Type: Networking
Driver Scope: Specific Product
Supported Components: DEC DECchip21140
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver supports 10Mb/s and 100Mb/sec adapters based on DECchip21140.

Supported Products / Add-on Adapters:
Cogent EM100 Fast Ethernet Adapter
Cogent EM110 Fast Ethernet 10/100 Adapter
Cogent EM110-T4 Fast Ethernet 10/100/BNC Adapter
DEC DE500 Fast EtherWORKS PCI 10/100
SMC 9332 Fast Ethernet 10/100 Adapter
SMC EtherPower 10/100 B Fast Ethernet Network Adapter (9332BDT)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type:** 100 Base T4, 100 Base TX, EtherNet
Speed*: 10 Mb/s, 100 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: NA
Supported Connectors:** BNC, UTP

Known Problems

The latest Cogent EM110 adapters may require changing the Instance0.table to contain:
"Address Offset" = "20";
instead of
"Address Offset" = "0";

Driver Version Notes

3.32 - Added support for Cogent EM110-T4 adapters.
3.32 - Added remote kernel debug support.
3.35 - Added support for SMC EtherPower 10/100 B (9332BDT)

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

TA45689_Macintosh_Structured_Analysis_Design_Programs_SSADM_(TIL07193).pdf

Macintosh: Structured Analysis & Design Programs (SSADM)

There is a VAX program called Structured System Analysis Design Methodology (SSADM), a generic term as well as the product name for the VAX program. It designs systems to run warehouses, handle orders and delivery notes, and so on. The program checks that the designer doesn't use variables with the same name in different areas and automates many other parts of the design process.

Is there a similar program available for the Macintosh?

This article has been archived and is no longer updated by Apple.
There are several programs for the Macintosh designed to help in Structured Analysis and Design. For more information, search in the Redgate Buyer's Guide Library using the search term "Case and Tools" or "Design and Tools".

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EIDE/ATAPI Support in NeXTSTEP 3.3

This document discusses the various configuration options for the NeXTSTEP 3.3 EIDE driver, version 3.31.
This article has been archived and is no longer updated by Apple.

Overview

The EIDE driver version 3.31 for NeXTSTEP 3.3 supports ATA-1 and ATA-2 (X3T10 documents 791D and 984D respectively) conformant IDE hard disks and ATAPI compliant (SFF 8020 revision1.2) CD-ROMs.

The EIDE/ATAPI driver can be used in various modes (or personalities). These are the options available while installing NeXTSTEP or in Configure's Add Devices Panel.

1. EIDE and ATAPI Device
- full EIDE/ATAPI support
2. EIDE and ATAPI Device Controller for PC Tech RZ1000 PCI
- same as above but is optimized for RZ1000 PCI interface
3. Intel GX/Professional IDE Disk Controller
- only for Intel GX/Professional machines. Supports host-master DMA on these systems.
4. IDE Disk Controller
- provided for compatibility reasons

The EIDE/ATAPI drivers (1 and 2 in the list above) get the disk geometry from the drive itself. The IDE Disk drivers (3 and 4 in the list above) get the geometry from the BIOS instead. If you are installing NeXTSTEP you should always use the EIDE/ATAPI device drivers.

Features of the driver

+ Supports PIO mode 0 to mode 4 hard disks
+ Disks of size up to 8.4GB is supported by the driver
+ Primary and secondary controllers can be used
+ Supports up to two devices on each controller
+ Support for Logical Block Access (LBA) mode
+ Support for PCI IDE (32-bit data access, faster transfers)
+ Support for ATAPI CD-ROMs.

Configuring Hardware

The primary controller should be configured for port address 0x1f0-0x1f7 and irq 14. The secondary controller should use port address 0x170-0x177 and irq 15. You must enable primary and secondary (if applicable) controllers in your system BIOS.

IDE/EIDE Disks

ATA-1 and ATA-2 disks are supported by the driver. The driver uses the disk at maximum possible data rate. The IDE controller must support IOCHRDY (IO Channel Ready) line for a disk to be be used in Mode 3 or Mode 4. If your controller supports this line you should enable it in Configure. The driver uses the disks in multiple sector mode for better performance but you can disable this in Configure if desired. The EIDE/ATAPI drivers use LBA mode for disk access if the disk supports it.

ATAPI CD-ROM

ATAPI devices appear to the system as SCSI devices. Hence it is possible to install NeXTSTEP using an ATAPI CD-ROM and use it with other applications like CDPlayer.

If you are installing NeXTSTEP using an ATAPI CD-ROM you must connect the IDE hard disk and CD-ROM to the primary controller. The hard disk should be configured as master or as master with slave present (if this option is available). The ATAPI CD-ROM should be configured as slave. This is usually accomplished by changing a jumper on the device. After this you can proceed with NeXTSTEP installation in the usual way.

When prompted to select the SCSI adapter connected to your CD-ROM drive, select the Adaptec 154x SCSI driver to continue. When prompted for the type of disk controller the hard drive is connected to, select the EIDE and ATAPI driver. Once NeXTSTEP is installed you should remove the Adaptec154x driver with Configure.app. Requiring a SCSI driver to be loaded is a bug and will be fixed in a later version of NeXTSTEP.

Upgrading from an older IDE driver

The version of the IDE driver that shipped with NeXTSTEP 3.3 is version 3.30. The new EIDE driver is version 3.31.

1. If you are currently using the "IDE Disk Driver " you should upgrade to "IDE Disk Driver ".
2. If you are using the "IDE Disk Controller for large disks (> 504MB)" you should upgrade to EIDE/ATAPI driver.
3. If you are running with the special driver designed for Intel GX/Professional, you should use the new driver of the same name.

Bugs and Warnings

1. Disk drives and ATAPI CD-ROMs attached to the secondary controller are not available while installing NeXTSTEP due to system software limitations. However once NeXTSTEP is installed the secondary controller can be configured. You can do this by running Configure and adding the same driver again (set port address to 0x170-0x177 and irq to 15).

2. Due to a bug in Configure, primary and secondary ports must have the same personality of the driver. For example, you can not use IDE driver for the primary controller and EIDE driver for the secondary controller.

3. It is very important that the system BIOS recognize and be able to use all of the disk. Some BIOS's automatically do this when you power up the machine but for some you will have to do it yourself. Make sure that BIOS reports the actual disk size correctly (though the number of cylinders and heads may be different).

4. Some old BIOS's do not work with disks larger than 504 MB (1MB = 1 048 576 bytes). You can still use such disks with NeXTSTEP but not as a boot disk. A workaround is to connect this as a slave to a boot disk or on the secondary controller (if available). Or you can update your system BIOS.

5. You should attach ATAPI CD-ROMs to the secondary controller in your system (if available) for better performance.

6. ATAPI is an emerging standard and there are many incompatibilities in implementations. We recommend that you use ATAPI CD-ROMs as single master on a controller or as slave to an IDE disk. Many on-board PCI/VL-bus interfaces do not work very well with ATAPI CD-ROMs.

7. You should not switch between IDE drivers (3 and 4 in the list under heading Overview) and EIDE drivers. Since they get their drive geometries differently you may corrupt the data on your disk.

8. Different BIOS's implement LBA decoding differently. If you have DOS partition on an IDE disk and move it to a different system which also

supports LBA your disk might become unreadable or corrupt.

9. NeXTSTEP does not use BIOS for disk access except for booting. Therefore the BIOS must see the disk of the same size as the driver. In other words, if you are using a disk larger than 504 MB you must ensure that the BIOS recognizes all of the disk. You may need to enable "geometry translation" or its equivalent in the BIOS to do this.

10. Caching IDE controllers and add-on IDE controllers with BIOS on them are not supported.

11. Mode sense/select commands do not work for ATAPI devices.

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NeXTSTEP 3.3 Driver: Diamond Steath Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/DiamondStealth.pkg.compressed
An updated BETA version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/DiamondStealth.pkg.compressed

Driver Name / Installer .pkg: DiamondStealthDisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: S3 732 (Trio32), S3 764 (Trio64), S3 764 (Trio64V+), S3 801, S3 805, S3 864 (Vision), S3 868 (Vision), S3 911
PC Bus / Interface Supported by Driver:** PCI, VL-Bus

General Overview notes: This graphics driver is designed to support the VL-Bus & PCI versions of the Stealth 64 and Stealth 3D Graphics adapters from Diamond Computer Corp. These cards are based on the or S3-968, S3-868, S3-Trio, or ViRGE graphics controller chipsets and support 2MB or 4 MB of RAM.

This driver replaces the older Diamond Stealth64 driver.

Supported Products / Add-on Adapters:
Diamond Stealth 64 DRAM PCI-Bus Display Adapter
Diamond Stealth 64 DRAM VL-Bus Display Adapter
Diamond Stealth 64 Video PCI-Bus Display Adapter
Diamond Stealth 64 Video VL-Bus Display Adapter
Diamond Stealth 64 VRAM PCI-Bus Display Adapter
Diamond Stealth SE PCI-Bus Display Adapter
Diamond Stealth SE VL-Bus Display Adapter
Diamond Stealth 64 DRAM T PCI-Bus Display Adapter
Diamond Stealth 64 DRAM T VL-Bus Display Adapter
Diamond Stealth 64 Video VRAM VL-Bus Display Adapter
Diamond Stealth 64 Video 3200 VL-Bus Display Adapter
Diamond Stealth 64 Video 2121XL DRAM PCI-Bus Display Adapter
Diamond Stealth 64 Video 3000 VRAM PCI-Bus Display Adapter
Diamond Stealth 3D 2000 PCI-Bus Display Adapter
Diamond Stealth 3D 3000 PCI-Bus Display Adapter

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This driver does not support gamma correction in 16 and 24 bit modes. This results in a somewhat dim screen when using 16 bits per pixel. Also, in these modes the brightness slider in preferences is inoperative.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 1MB VRAM, 2MB DRAM, 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 1152x864 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

· When used with the Diamond Stealth SE boards (both PCI and VL) configured for 800x600 8-bit Greyscale, some video artifacts and noise may be seen when viewing NeXTTIme movies or performing other graphics-intensive operations. One of the color modes is recommended if this occurs.

· Diamond has changed the PCI deviceID on their newer Stealth adapters. This will cause autodetection to fail, thus the NEXTSTEP driver will defualt

to VGA display mode. Under NEXTSTEP 3.3, the workaround is to click Expert... while inspecting the driver in Configure.app, then modify the value of the Auto Detect setting to read 0x88d05333 0x88d15333 0x88f05333.

· Diamond Stealth 64 Series 2001 does not use an S3 controller, it uses the ARK Logic which is not supported.

Driver Version Notes

3.33 - Added support for ViRGE and ViRGE/VX chipsets.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Diamond Multimedia Systems, Inc.
2880 Junction Ave.
San Jose, CA 95134-1922
USA

(800) 4-MULTIMEDIA (Sales Info)
(408) 325-7000 (Main Phone)
(408) 325-7070 (Main Fax)

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WWW: http://www.diamondmm.com
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: ISA Serial Port

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/ISA_Serial_Port.pkg.compressed

Driver Name / Installer .pkg: ISASerialPort
Driver Type: System
Driver Scope: Generic-System
Supported Components: Intel i8250, Intel i82510, National Semi NS16450, National Semi NS16550, Startech ST16650
PC Bus / Interface Supported by Driver:** Integrated, ISA
Supported Connectors:
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This is a generic AT Compatible Serial Port Driver. It supports a variety of industry standard serial chips (UARTs), and can be configured for standard and non-standard configurations. This driver must be configured in order to use the Serial Pointing Device Driver and the Port Server Driver.

This driver replaces the SerialPorts driver shipped with NEXTSTEP 3.3

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

Serial printing does not work. HSD & Interfax Fax support does not work. These problems are under investigation.

See also: 1945_Serial_Pointing_Device_Driver_Overview and 1947_Port_Server_Driver_Overview documents

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Serial Pointing Device

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/SerialPointer.pkg.compressed

Driver Name / Installer .pkg: SerialPointingDevice
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:** EIA-232 (Serial)
Supported Connectors:
Access Mode: Serial
Adapter Memory:

General Overview notes: This is a generic Serial Mouse Driver. It supports most popular Serial Pointing devices on the market. This driver must be used in conjunction with the ISASerialPort driver

This driver replaces the SerialMouse driver shipped with NEXTSTEP 3.3

Supported Products / Add-on Adapters:
Alps Glidepoint
LogiTech FirstMouse
LogiTech MouseMan
LogiTech MouseMan Cordless
LogiTech TrackMan
Kensington Expert Mouse v2.0
Kensington Expert Mouse v4.0
Microsoft Serial Mouse
Mouse Systems PC Mouse III

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

None.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Port Server

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/PortServer.pkg.compressed

Driver Name / Installer .pkg: PortServer
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver:**
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver can be used in conjunction with the ISASerialPort driver to provide access to the serial ports for applications. This driver provides the interface commonly known as the TTY Layer and should be configured if the serial ports are being used.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

Serial printing does not work. HSD & Interfax Fax support does not work. These problems are under investigation.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Serial Port

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: SerialPorts
Driver Type: System
Driver Scope: Generic-System
Supported Components: Intel i8250, Intel i82510, National Semi NS16450, National Semi NS16550
PC Bus / Interface Supported by Driver:** Integrated, ISA
Supported Connectors:
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This driveris obsolete and has been replaced by the ISASerialPort Device driver. See NeXTanswer #1943_ISA_Serial_Port_Driver_Overview.rtf

This is a generic AT Compatible Serial Port Driver. It currently supports exactly two serial ports, corresponding to COM1 & COM2.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Known Problems

This driver is unreliable at speeds above 19,200.

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

A/UX: Missing /dev/cXd0s3 File (9/94)

After loading A/UX, I needed to mount the slice 3 partition onto "/users." For some reason, when A/UX loaded, the /dev/dsk/cXd0s3 and /dev/rdsk/cXd0s3 drivers did not load (where "X" is the SCSI ID of the disk being loaded). I had to shutdown and change the SCSI ID before creating and mounting a file system on slice 3 for "/users." Why is this?

This leads to another problem: when installing, the Installer automatically modifies "/etc/fstab" to include an entry for "/usr" on slice 2 of the drive. Since I had to change the SCSI ID of the drive, the fstab entry was now incorrect. When I started up the system after changing the SCSI address, I got the message, "The file system on /dev/dsk/cXd0s2 is damaged. Do I want to repair?" When you say yes, it says it can't make the repairs, since of course it can't find the SCSI ID in "/etc/fstab". I went into "/etc/fstab" and changed the entry to match the new drive ID, which of course solved the problem.

Why doesn't the installer automatically create a "fs" on slice 3 and permanently mount it? Why weren't the "/dev/dsk/cXd0s3" and "/dev/rdsk/cXd0s3" files loaded?

This article has been archived and is no longer updated by Apple.
Did you follow a nonstandard or standard procedure when installing A/UX? For instance, if you follow a nonstandard procedure and create a separate "Usr" partition, the slice 2 is automatically assigned to that partition. From the error message above, it seems that the "Usr" on slice 2 was created by the installation process, but we're not positive what originally partitioned.

An output of "dp /dev/rdsk/cXd0s31" would help identify what partitions have been partitioned and what associated slices have been assigned.

In general, if a particular device driver entry was missing from the /dev/[r]dsk directory, you don't have to shutdown the system and change the SCSI ID. The entry is easily re-created by either entering the "mknod" or "pname" command. For example,

```
mknod /dev/dsk/c6d0s3 b 24 3
chmod 600 /dev/dsk/c6d0s3
chown bin /dev/dsk/c6d0s3
chgrp bin /dev/dsk/c6d0s3
```

Note that 24 is the major device number and 3 is the minor device number for /dev/dsk/c6d0s3. b is indicated as a block device type.

```
pname -c6 -s3 "/users"
```

The /dev/[r]dsk/c6d0s3 files will be automatically created in the /dev/[r]dsk directory. Note that "/users" is the partition name in dpme (disk partition map entries). Use "dp /dev/rds/c6d0s31" to see its exact spelling.

When using HD Setup for A/UX, the predefined A/UX partitioning schemes include three partition assignments. The partition named "A/UX Root" is assigned with slice 0, partition named "Swap" is assigned with slice 1 and a 4 MB Macintosh partition is defined. Remaining space is used for free UNIX slice 3. If the "custom" button is selected, other partitions and associated slice numbers can also be selected. For example, A/UX Usr partition will have slice 2, Free UNIX partition will have slice 3 through 6, and so on.

The reason that the installation process doesn't make a file system and permanently mount on these partitions is because the pre-assigned partition/slice may not be big enough to make a real file system (either SVFS or UFS).

Article Change History:
23 Sep 1994 - Reviewed.
03 Jul 1992 - Reviewed.

Support Information Services
Published Date: Feb 20, 2012

NeXTSTEP for Sparc Hardware Q&A

Disclaimer

This document pertains to the NeXTSTEP operating system, which is no longer a supported product of Apple Computer. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software. Some questions in this Q&A document may not apply to version 3.3 or to any given specific version of NeXTSTEP.
This article has been archived and is no longer updated by Apple.

SPARCstation4 Known Problems

Q: After installation, why does my SPARCstation4 hang with ""localhost loginwindow Could not find WindowServer port!" messages?

A: NEXTSTEP does not support the optional video SIMM on SPARCstation4's. You must remove this SIMM for NEXTSTEP to work.

Solaris and NEXTSTEP

Q: Can NEXTSTEP be installed on a Sun which has other disks for Solaris attached to it?

A: Yes, it is possible to have NeXTSTEP installed on an external disk while maintaining Solaris on the internal disk.

Q: Does the NEXTSTEP disk have to be the one with the lowest SCSI ID?

A: No, NEXTSTEP can be installed on any disk with a valid SCSI ID. Generally, a SPARCstation internal disk is always at SCSI ID 3. External disks under SPARC may use SCSI ID 1, 2, or 5. SCSI ID 4 is generally used for tapes, and CD-ROM drives are generally at SCSI ID 6, but this is changeable.

Q: Is there a good way to toggle which disk/OS to boot?

A: You can specify which disk to boot in the Sun ROM monitor with **boot diskX** where X is the disk from which to boot. To see a list of SCSI devices on the system and their corresponding disk numbers, use the **probe-scsi** command at the Sun ROM monitor.

Also, if you wanted to set up the system to always default to booting from NEXTSTEP, you could set the NVRAM parameter as follows:
setenv boot-device diskX

Q: Is it possible to access Solaris files from NEXTSTEP, and vice versa?

A: No, you cannot mount a Solais UNIX filesystem from NEXTSTEP or vice versa. You can mount CDs intended for Solaris since they are ISO-9660 format.

Q: Okay, I've set up a dual-boot machine using one disk for NEXTSTEP and another for Solaris. Whenever I log in under NEXTSTEP, I get a panel which says "This disk is damaged: initialize?" with options to initialize, repair, or ignore. The default option is "Initialize." What should I do?

A: This happens because NEXTSTEP attempts to mount the Solaris disk but does not know how to read its filesystem. You should click "Ignore." *Choosing either of the other options may result in irreparable data loss on the Solaris disk.*

This can be avoided by adding an entry in **/etc/fstab** that will force NEXTSTEP to ignore the Solaris disk automatically. The disk type for the Solaris disk should be 'ignore'. See the mntent(5) UNIX manual page for more information.

Installing Solaris over NEXTSTEP

Q: Solaris 2.x can't format a disk on which NEXTSTEP was installed. Solaris complains about a trashed label.

A: Solaris expects the hard disk to be labeled a certain way. If you drop back a few versions of Solaris, it will work using

an old version of Sun's formatter/installer. A work around is to use SunOS 4.1.x to reformat and then install Solaris 2.x. Another solution is to boot single user with NEXTSTEP from a CD, run **sdform /dev/rsd0a**, boot off the Solaris CD with **boot cdrom /kernel/unix**, abort the install and run format. Then run **suninstall**.

CD-ROM Compatibility

Q: What CD-ROM drives can be used to install NEXTSTEP?

A: Due to restrictions with Sun hardware, only Sun CD-ROM drives can be used to install NEXTSTEP.

Q: Can a wider range of CD-ROM drives be used to read CD-ROMs once NEXTSTEP has been installed?

A: Yes.

OBP ROM Compatibility

Q: What version of OBP ROMs must my SPARCstation have to run NEXTSTEP 3.3?

A: Machines with OBPs before version 2.12 will hang during boot. To run NEXTSTEP on a systems with an OPB version before 2.12, the OBP ROMs must be upgraded. Customers should contact SUN for additional details.

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Matrox MGA Millenium Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Matrox_MGA_Mill.pkg.compressed
An updated release version of this driver, version 3.41, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/MatroxMGA2064W.pkg.compressed

Driver Name / Installer .pkg: MatroxMGA2064WDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Matrox MGA1064SG (Cyclone), Matrox MGA1164SG (Hurricane), Matrox MGA2064W (Storm), Matrox MGA2164W (Mistral), TI TVP3026 RAMDAC
PC Bus / Interface Supported by Driver:** AGP, PCI

General Overview notes: This graphics driver is designed to support the MGA Millennium and Mystique Graphics adapters from Matrox Graphics Inc. It may also support other adapters based on the MGA1064SG, MGA1164SG, MGA 2064W and MGA 2164W Graphics controller chipset from Matrox.

This driver supports the use of 2MB or 4MB of SGRAM for the MGA1064SG based adapters; 2MB, 4MB or 8MB of SGRAM for the MGA1164SG based adapters; 2MB, 4MB, or 8MB of WRAM for the MGA2064W based adapters; and 4MB, 8MB, 12MB, or 16MB of WRAM for the MGA2164W based adapters.

Supported Products / Add-on Adapters:
Matrox MGA Millennium
Matrox MGA Millennium II
Matrox MGA Millennium II AGP
Matrox Mystique
Matrox Mystique 220
Matrox Mystique 220 AGP

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 12MB WRAM, 16MB WRAM, 2MB WRAM, 4MB WRAM, 8MB WRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 1152x864 (4MB+), 1280x1024(8MB+), 1600x1200(8MB+), 1920x1080 (8MB+), 640x480 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 1800x1440 (8MB+), 1920x1080 (8MB+), 1920x1200 (8MB+), 640x480 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 1800x1440 (4MB+), 1920x1080 (2MB+), 1920x1200 (4MB+), 640X480 (1MB+)

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.31) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.30 - Initial Release of this Driver
3.31 - Added support for multi-headed displays and 8MB WRAM
3.34 - Fixed bugs in PLL locking code. Added 85Hz modes. Added HDTV resolutions.
3.36 - Added support for the MGA2164W (Millennium II) chipset.
3.37 - Updated pixel/system clock routines, and EPROM parsing.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

TA45698_NeXTSTEP_Driver_Matrox_MGA_Millenium_Display.pdf

Product Vendor

Matrox Graphics, Inc.
1025 St-Regis Blvd.
Dorval, Quebec
Canada H9P 2T4

(514) 685-7230
Published Date: Feb 20, 2012

A/UX: How To Figure Swap Partition Sizes

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Can you recommend a good size swap partition for best performance under A/UX? I'm using a 200MB drive and have a Macintosh IIfx with 20MB, though I'm also interested in recommendations for a 32MB Macintosh IIfx system.

Also, is there any formula (physical RAM +10MB, for instance) for determining a good swap size? I assume the swap size should be larger than the physical RAM in the system.

This article has been archived and is no longer updated by Apple.
The size of swap space should be larger than the physical memory size. Actually, there is no magic "formula".

A standard version of A/UX 2.0, based on an A/UX with 8MB of physical memory, has about 18MB of disk space allocated for swap purposes. 18MB is twice as much as the physical memory. Therefore, if disk space is not a restraint, we recommend two to two and a half times the physical memory size be assigned for swap space. If disk space is a concern, less than twice of physical memory size may be allocated for swap space.

Note that the swapping in and out activity occurs only when the available physical memory is used up. If your applications require large amounts of memory allocation, you should increase the swap size. Use the "swap -l" to view the current free swap size. If you have a reserved A/UX partition, you may use the "swap -a ..." to add additional swap area.

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: IBM ThinkPad 755CX Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/ThinkPad755CX.pkg.compressed

Driver Name / Installer .pkg: IBMThinkPad755CXDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Western Digital WD90C24
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This device driver supports the built in LCD and external CRT display for IBM Thinkpad 755CX system. It supports 800x600 display in 16-bit color.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
IBM ThinkPad 755CX

Special Features of Driver / Driver Notes:
This driver can display in 1024x768 mode on an external CRT if the LCD is not active.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**
800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 800x600 (1MB+)

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

LaserWriter IINTX: System Printer with VAX Host

How do I use a LaserWriter IINTX printer as system printer for a VAX host?

I'm looking for general pointers, including PATHWORKS, and some comparison shopping tips, such as equipment, labor and training requirements to install and support this kind of printer.

This article has been archived and is no longer updated by Apple.
PATHWORKS for Macintosh has a VAXshare Print service that does what you want.

VAXshare print servers work very much like AppleShare print servers. When you send a document to a VAXshare print server, VAXshare receives the file's contents. The server then prints instructions from your Macintosh application and saves a print file on the disk. VAXshare returns the printer codes to your application to signal that printing is done.

VAXshare print servers access both Apple and Digital PostScript network printers. Since the LaserWriter IINTX has to be on a LocalTalk network, you'll need a router between EtherTalk and LocalTalk. Examples of routers include the Apple Internet Router, Shiva FastPath, Farallon Liaison, Cayman GatorBox, or devices that connect the LaserWriter II printer to Ethernet, such as EtherPrint.

After installing PATHWORKS on a VAX, the system manager goes into the MSA$MANAGER program, adds a printer queue, and starts it. These printer queues are standard VMS queues, so they work the same way as other existing VMS queues (using SET QUEUES, START, and STOP QUEUES commands). VMS users also can print to these queues with the PRINT/QUEUE= command.

On the Macintosh side, selecting a VAXshare print spooler is similar to selecting an AppleShare Print Spooler. From the Chooser, select the zone (if necessary) then select the LaserWriter icon from the group of icons on the left side of the Chooser window.

There shouldn't be much training needed for doing this. On the VAX side, VMS System Managers are familiar with VMS queues, and installation on the VAX is done with standard VMSINSTAL. Macintosh users need only choose the standard printer/spooler name.

The only issue is the amount of printing you'll be doing. If there will be much printing that doesn't require laser quality, then a standard line printer might be all you need.

Published Date: Feb 18, 2012

Applesoft Internals: Using Applesoft ROM Subroutines (1 of 2)

The following notes, first published in The Apple Orchard (March 1980) are written for experienced 6502 machine language programmers who wish to use the Applesoft ROM subroutines. The addresses given are for an Apple II+ with an Applesoft firmware card, or Applesoft loaded into a Language Card.

Consult your Applesoft Reference manual for more information.
This article has been archived and is no longer updated by Apple.
Take special note of CHRGET, the heart of Applesoft. When Applesoft wants the next character of an instruction, it points TXTPTR at the program or input buffer, and JSRs to CHRGET. TXTPTR is temporarily set to the last used DATA statement when Applesoft READS DATA.

ABBREVIATIONS

msb: most significant bit or byte
lsb: least significant bit or byte
eol: end of line token ($00)

A: the 6502 accumulator
X: the 6502 X register
Y: the 6502 Y register
Z: the zero flag of the 6502 status register
C: the carry flag of the 6502 status register

A,X is a 16 bit number where A has the msb and X the lsb.

(Y,A) is the number or string whose address is in Y and A, with the msb in Y and lsb in A.

FAC: the floating point accumulator
ARG: the ARGument register

TXTPTR Routines

CHRGET 00B1
CHRGET increments TXTPTR. Use CHRGOT to get the character. TXTPTR now points at:

CHRGOT 00B7
CHRGOT loads A from TXTPTR and sets certain 6502 status flags. X and Y are not changed. On exit:

A = the character currently pointed at by TXTPTR
Z is set if A is ":" or eol ($3A or $00)
C is clear if A is an ASCII number("0" to "9").

LINGET DA0C
LINGET read a line number (integer 0 to 63999) from TXTPTR into LINNUM. LINGET assumes the 6502 registers and A have been set up by the JSR to CHRGET that fetched the first digit. LINGET normally exits through CHARGET, which fetches the character after the last digit. When the number is greater than 63999, LINGET exits via SYNTAX ERROR. LINNUM is zero when there is no number at TXTPTR.

GTBYTC E6F5
GTBYTC causes JSR to CHRGET to gobble a character, then evaluates the formula at TXTPTR, and then it returns a single byte integer in X and FACLO. On entry TXTPTR points to the first character of the formula. GTBYTC normally exits through CHRGET. If FAC is greater than 255 or less than 0, it exits through ILLEGAL QUANTITY ERROR.

GETBYT E6F8
GETBYT evaluates the formula at TXTPTR besides returning a single byte integer in X and FACLO. On entry, TXTPTR points to the first character of the formula. GETBYT normally exits through CHRGET. When FAC is greater than 255 or less than 0, it exits through ILLEGAL QUANTITY ERROR.

PLOTFNS F1EC
PLOTFNS gets two LORES plotting coordinates separated by a comma from TXTPTR (0-47,0-47). TXTPTR when entered, points to the first number of the formula. PLOTFNS puts the first number in FIRST and the second number in H2 and V2.

HFNS F6B9
HGNS gets HIRES plotting coordinates (0-279,0-191) from TXTPTR. TXTPTR points to the first character of the formula for the first number

upon entry. HFNS leaves the 6502 registers set up for HPOSN. When exiting:

A = vertical coordinate
X = lsb of horizontal coordinate
Y = msb of vertical coordinate

Device I/O Routines

INLIN D52C
Input a line of text without sending out a prompt from the current input device into the input buffer, BUF. INLIN uses GDBUF to strip off the most significant bit on all input characters.

INLIN+2 D52E
Input a line of text prompting with the character in X from the current input device into the input buffer, BUF. INLIN uses GDBUF to strip off the most significant bit on all input characters.

GDBUFS D539
Puts a zero at the end of the input buffer, BUF, and masks off the msb on all bytes. On entry: X = the end of the input line.
On exit:

A = 0
X = FF
Y = 1

INCHR D553
Get one character from the current input device in A and mask off the MSB. INCHR uses the main Apple input routines and supports normal handshaking.

STROUT DB3A
Print string pointed to by Y,A. The string must end with a null or a quote.

STRPRT DB3D
Print a string whose descriptor is pointed to by FACMO,FACLO.

OUTDO DB5C
Print the character in A. INVERSE, FLASH, and NORMAL in effect.

CRDO DAFB
Print a carriage return.

OUTSPC DB57
Print a space.

OUTQST DB5A
Print a question mark.

INPRT ED19
Print " IN " and the current line number from CURLIN. Uses LINPRT.

LINPRT ED24
Prints the 2 byte unsigned number in X,A.

PRNTFAC ED2E
Prints the current value of FAC. FAC is destroyed. Uses FOUT and STROUT.
Published Date: Feb 20, 2012

Lisa Basic+ 2.0

This article has been archived and is no longer updated by Apple.

You might expect the German umlaut, not a standard ASCII character, to get the interperter to generate a syntax error. Instead, the system hangs as if it were in an infinite loop; use the "pc 0" in the debugger to return to the command line. Avoid using option characters within the program text.

If a missing "&" in a multiline statement generates a syntax error instead of a system hang, something else may be wrong with the statement or with the system itself.

The renumbering of embedded numbers in 'REM' statements is often unsuccessful. Usually, the problem is that the number embedded in the 'REM' statement is both (a) the same as a line number in the program before or after the 'REM' statement itself, and (b) also a number that would be used in the renumbered sequence.

Lisa Basic+ supports two types of arrays, virtual and non-virtual (i.e. resident in memory). Both virtual and non-virtual arrays contain a limited number of elements: 2730 for real arrays and 16383 for integer arrays. (See the Basic+ User's Guide, page 9-2.) The system allocates a maximum of 32K of system memory to each non-virtual array dimensioned. Use the "LENGTH" command to tell you how much memory is available. With that amount, calculate the number of arrays you can dimension within the specific program.

Virtual array files (disk based) as well as arrays within the file can occupy more space than the available system memory. An example:

The maximum number of non-virtual arrays of maximum size with 504K of available memory is 16. Yet, if the program utilizes virtual arrays, the number of arrays that can be dimensioned is limited only by the amount of free disk space.

You can delete a file from within a basic program using the system statement 'Kill'. Refer to page 14-3 in the Basic Language manual for more details.

To transfer files with the file-manger to Slot 2 Channel 2:
1) press f for file-manager.
2) press t for Transfer.
3) in response to:
WHERE?
type -slot2chan2-

APPLE-. does terminate a LisaBasic program at the next logical stopping point; you can cause the program to resume by typing CONT. (Refer to page 3-11 in the Basic Language manual for details.) This method will NOT work, however, with a system hang due to, for instance, as an infinite loop; in such a case, you must implement the debugger in order to escape.

Published Date: Feb 18, 2012

A/UX: How To Get Classic Terminal Logon Screen at Launch (8/94)

Is it possible to launch A/UX so that a classic terminal logon screen comes up without having to use the Macintosh logon screen?

This article has been archived and is no longer updated by Apple.
Yes, and here's how:

* Modify the /etc/inittab file to have the "co" entry execute a different shell script (for instance /etc/unixlogin below) instead of /etc/loginrc (executes the Macintosh Login)

or

* Make the /mac/bin/Login program nonexecutable or nonexistent by renaming it. The /etc/loginrc shell script checks to see if /mac/bin/Login is executable. If not, it will execute "/etc/getty" instead of /mac/bin/Login.

```
#!/bin/sh
# /etc/unixlogin
/bin/screenrestore
exec /etc/getty console co_9600
```

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 20, 2012

Norton Utilities: Can‘t Override Empower Encryption

Can Norton Utilities bypass Empower and Fileguard security? Can Norton read folders and files protected by security software packages?

This article has been archived and is no longer updated by Apple.
Using the Norton Emergency disk, we could recover deleted files protected by Empower. All of these files were still encrypted, unreadable, and useless. Sometimes the file types no longer matched the original.

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: ESS 1x88 Audio

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/ESS1x88Audio.pkg.compressed
An updated BETA version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/ES1x88Audio.pkg.compressed

Driver Name / Installer .pkg: ES1x88AudioDriver
Driver Type: Sound
Driver Scope: Generic-Chipset
Supported Components: ESS Tech ES1688, ESS Tech ES1788, ESS Tech ES1868, ESS Tech ES1888
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This driver is designed to support on-board and add-on audio implementations based on ESS688, ESS1788 ESS1868, and ESS1888 chipset.

Supported Products / Add-on Adapters:
NewCom High Fidelity 16i E5X1853

Supported Products / Systems (ie integrated into PC System):
Compaq Prolinea
NEC Versa 4000
DEC Celebris GL & GL/ST

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

Driver Version Notes

3.30 - Initial introduction of this driver
3.31 - Added PnP personality and support for ESS1868

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

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Published Date: Feb 20, 2012

AppleShare: Modification Date Depends On Client‘s Clock

We have an AppleShare File Server. One morning, a user put a file at the root level. On his machine, the file correctly showed a modification date of 21 February.

When the server volume was mounted on another Macintosh, the modification date showed up as 18 February. We noticed that this Macintosh's clock was set to 18 February. When we reset the clock to the correct date, the modification date changed back to 21 February.

What's going on here? The date on any single machine should not affect the date that shows up for the file. Shouldn't the server be giving the creation date? Why would the Finder show the wrong date?
This article has been archived and is no longer updated by Apple.
This is not a bug and is intentional. Here is some text from "Inside AppleTalk, Second Edition," pages 13-21 and 13-22, that discusses this subject:

Date-time Values

"All date-time quantities used by AFP specify values of the server's clock. These values correspond to the number of seconds measured from 12:00 AM on January 1, 2000. In other words, the start of the next century corresponds to the date-time of 0. AFP represents date-time values with 4-byte signed integers."

"One of the AFP calls, allows the workstation to obtain the current value of the server's clock. At log on time, the workstation should read this value (s) and the value of the workstation's clock (w) and compute the offset between these values: s-w. All subsequent date-time values read from the server should be adjusted by subtracting this offset from the date-time. All subsequent date- time values sent to the server should be adjusted by adding this offset to the date-time. This adjustment will correct for differences between the two clocks and will ensure that all workstations see a consistent time base."

One thing to note here is with Apple's AFP servers, the time base is not adjusted if the workstation's clock and server's clock are within 15 minutes or so of each other. This is done so slight differences between the workstation's clock and the server's clock settings do not affect the file date-time values. If the time difference is more than 15 minutes, the time is adjusted to the nearest half hour. For example, if the server clock is 20 minutes ahead of the workstation clock, the date-time value for a file would be 30 minutes less on the workstation. Non-Apple AFP servers may do this differently.

Some Examples

Note: These examples assume the time zone values are set correctly on the server and the client unless otherwise specified.

* Example 1:
There is an AppleShare File Server in New York and its clock says it is 4:01 PM. There is an AppleShare client in Los Angles that is logged into the server in New York and its clock says it is 1:00 PM. A "Get Info" is done on file "X" by someone in New York on the New York server and the created and modified date-time says:

"Wed, Mar 4,1992, 7:07 PM"

At the workstation in Los Angeles, a "Get Info" is done on file "X" on the New York server, and the created and modified date-time says:

"Wed, Mar 4,1992, 4:07 PM".

As you can see, the client in Los Angeles shows the file created and modified date-time stamp as being 3 hours earlier.

* Example 2:
There is a AppleShare File Server in San Jose and its clock says it is 8:21 PM. There is a AppleShare client, also in San Jose, that is logged into this server and its clock says it is 8:00 PM. A "Get Info" is done on file "X" at the server and the created and modified date-time says:

"Wed, Mar 4,1992, 7:07 PM".

The client does a "Get Info" on file "X" and the created and modified date-time says:

"Wed, Mar 4,1992, 6:37 PM".

If the client's clock had been within 15 minutes of the server's clock, the file would have had the same date-time stamp.

All of our testing regarding this date-time stamping issue shows that the actual time shown in the "General Controls" or "Date & Time" Control Panel is what is used to compute the date-time offset between the client and the server.
Published Date: Feb 20, 2012

LaserWriter Performance: Color/Gray Scale vs Black & White

Does changing a LaserWriter's default dialogue box from color/gray scale to black and white improve printing performance? Can I use ResEdit to do this, or is there another way to change the default?

This article has been archived and is no longer updated by Apple.
On AppleLink, in the Tech Info Library, you will find a patched version of the LaserWriter 6.0.1 driver that defaults to black and white. Use the search criterion of "LaserWriter 6.z.1".

The LaserWriter 6.0.x drivers, when in "Black & White" mode, print black and white documents as fast or slightly faster than the LaserWriter 5.2 drivers. This is true for both text or graphic documents.

The LaserWriter 6.0.x drivers, when in "Color/Grayscale" mode, are as much as 8 times slower than the LaserWriter 5.2 drivers. Black and white text-only documents will print as if the "Black & White" mode was selected. The "Color/Grayscale" mode should be used only in situations where you are printing documents that are multicolor or gray scale images.

The LaserWriter 6.0.x drivers default to "Color/Grayscale" mode, so you'll have to change the setting every time you print if they want to use "Black & White" mode.

Published Date: Feb 18, 2012

TA45709_AUX_Upgrade_Kit_Availability_(TIL07205).pdf

A/UX 2.0.1: Upgrade Kit Availability

Is there a kit available to upgrade A/UX 2.0 to 2.0.1?

This article has been archived and is no longer updated by Apple.

Yes, it is part number: M0516LL/A (Incremental Update Kit) For international use, the part number is: M0516Z/A.

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: FTG Serial Light Pen

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/FTGSerLightPen.pkg.compressed

Driver Name / Installer .pkg: FTGSerialLightPen

Driver Type: Other

Driver Scope: Product Family

Supported Components:

PC Bus / Interface Supported by Driver:** EIA-232 (Serial)

Supported Connectors:

Access Mode: Serial

Adapter Memory:

General Overview notes: This driver will support several FTG light pen models connected via an FTG PXL-780 serial interface. This driver may be used in conjunction with other pointing devices to allow the user to select the most convenient input device at any given time.

Supported Products / Add-on Adapters:

PXL-780 Light Pen Interface (Serial)

FT-356 1-Button Light Pen

FT-357 2-Button Light Pen

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

FTG Data Systems

8381 Katella Ave

P.O.Box 615

Stanton, CA 90680

1-800-962-3900 x386

Published Date: Feb 20, 2012

Macintosh: When Application Colors Change Unexpectedly

I have a Macintosh IIsi with 5MB of memory, a 13-inch High Resolution color monitor with built-in video, 40MB hard disk, and NuBus adapter.

My problem appears randomly, always when running these applications: Telnet 2.3, Microsoft Word 4.0b, and Microsoft Excel 2.2a.

In Excel, when I call up a dialog box (to set borders, for example) the colors of the box will be messed up. If I keep reopening the dialog box the colors will eventually change. For example, the box may initially come up with a black background and black letters, then a blue background with black letters, than a red background, with black letters, and so on.

This article has been archived and is no longer updated by Apple.
It sounds like something is changing the System color table. We have experienced this when using the Kolor CDEV (the CDEV that allows you to change the color of the windows, buttons, scroll bars, and so on). If you're running MultiFinder, one of your applications may be setting the System color table to its own custom palette. 4th Dimension, for example, can change the System's color table.

Your workaround depends on whether it's an application or a CDEV that's changing the color. If it's something like Kolor, turning it off may be the only solution. Or perhaps there's been an update to the CDEV--check with the publisher for the latest version. With 4th Dimension, some people have used ResEdit to eliminate the offending resource. But this causes some applications to crash, so we don't recommend this solution.

Also, reinstalling the System may be a solution. It could be that your System color table has simply been corrupted.

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Patch 1 Overview

The NEXTSTEP Release 3.3 Patch 1 is a series of packages and scripts that provide fixes to several bugs introduced in NEXTSTEP Release 3.3. Please read the **Release Notes** and **Release Notes Addendum** thoroughly before applying the patches.

Caution: *These packages should only be installed on systems running NEXTSTEP Release 3.3.*

*****Do NOT install this patch on systems running NEXTSTEP 3.3J (Kanji Version). NEXTSTEP 3.3J incorporates the updates that this patch provides.**
This article has been archived and is no longer updated by Apple.

Packages:

The *NEXTSTEP Release 3.3 Patch Update* consists of two User Patch packages:

3.3Intel68kPatch.pkg, available from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/3.3_Patch_1/3.3_Int_68k_Patch1.tar

Contains updated system software for Intel PCs or NeXT computers running *NEXTSTEP Release 3.3*.

3.3HPPASPARCPatch.pkg, available from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/3.3_Patch_1/3.3_HP_SPARC_Patch1.pkg.tar

Contains updated system software for Sun or HP workstations running *NEXTSTEP Release 3.3*.

and one Developer Patch package:

3.3DeveloperPatch.pkg, available from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/3.3_Patch_1/3.3DeveloperPatch.pkg.tar

Contains updated developer tools for all types of computers running *NEXTSTEP Developer Release 3.3*.

In addition, the *NEXTSTEP Release 3.3 Patch Update was updated to include*:

3.3Patch.ImprovedDNS.post_install, available from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/3.3_Patch_1/3.3_Patch1_DNS_PostInstall

An installation script for improved DNS lookups.

3.3Patch.LibrariesOK.post_install, available from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/3.3_Patch_1/3.3_Patch1_Libs_PostInstall

Another installation script, for users with POSIX apps that can not be rebuild with the new libposix.a

libposix.a

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/3.3_Patch_1/libposix.a

The POSIX static library, for building posix applications for 3.3patch1 machines using **gethost*()** libc routines. Install as **/usr/lib/libposix.a.**
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Patch 1 Release Notes

This document describes how to install the *NEXTSTEP Release 3.3 Patch Update* and describes the fixes contained in the update. This update is to be installed *only* on computers running *NEXTSTEP Release 3.3*. Your existing NeXT Software License Agreement governs the use of this software update.

For download and distribution information, see the **NeXTSTEP 3.3 Patch 1 Overview**.
This article has been archived and is no longer updated by Apple.

INSTALLING THE NEXTSTEP RELEASE 3.3 PATCH UPDATE

The *NEXTSTEP Release 3.3 Patch Update* consists of two User Patch packages:

3.3Intel68kPatch.pkgPContains updated system software for Intel PCs or NeXT computers running *NEXTSTEP Release 3.3*.

3.3HPPASPARCPatch.pkgPContains updated system software for Sun or HP workstations running *NEXTSTEP Release 3.3*.

and one Developer Patch package:
3.3DeveloperPatch.pkgPContains updated developer tools for all types of computers running *NEXTSTEP Developer Release 3.3*.

Note the following points before you install the Patch Update packages:

Install just one package at a time. Install the User Patch package first; afterwards, install the Developer Patch package (if you're running *NEXTSTEP Developer Release 3.3*).

If you plan to use Emacs, be sure you've already installed the contents of the **Emacs.pkg** (contained on the *NEXTSTEP Release 3.3* CD-ROM) *before* installing the User Patch package.

When installing the Release 3.3 Patch Update packages, select the same architectures and languages as you did when originally installing the *NEXTSTEP Release 3.3* and *NEXTSTEP Developer Release 3.3* software.

Installing the NEXTSTEP Release 3.3 Patch Update Packages

Follow these instructions to install the *NEXTSTEP Release 3.3 Patch Update*.

1. Log in as **root**. (If you're not sure how to log in as **root**, see your system administrator.)

2. Make sure your computer is running *NEXTSTEP Release 3.3*. (You can find the NEXTSTEP version number with the Workspace Manager application's Info Panel command.)

Warning: Installing the *NEXTSTEP Release 3.3 Patch Update* on a computer that isn't running *NEXTSTEP Release 3.3* will result in unexpected issues.

3. Double-click the **3.3Intel68kPatch.pkg** file or the **3.3HPPASPARCPatch.pkg** file (be sure to choose the one that corresponds to the type of computer you're installing the package on).

4. Click the Install button in the Installer package window.
An Install Package panel opens. Use this panel to select the same architecture and languages as you did when originally installing the *NEXTSTEP Release 3.3* software.

5. Click Install in the Install Package panel, and if prompted for confirmation, click OK to proceed.
The Installer window displays information about the progress of the installation, which may take several minutes.

6. After Installer finishes installing the User Patch package:

192201_smBlksquare.tiff , If you *haven't* previously installed *NEXTSTEP Developer Release 3.3* on the computer, you're donePlog out and restart the computer.

340938_smBlksquare.tiff , If you *have* previously installed *NEXTSTEP Developer Release 3.3* on the computer, install the Developer Patch package by double-clicking the **3.3DeveloperPatch.pkg** file and repeating steps 4 and 5 (remember to select the same architectures as you did when originally installing the *NEXTSTEP Developer Release 3.3* software). Afterwards, log out and restart the computer.

NEXTSTEP Release 3.3 Patch Update Release Notes

The remainder of this file describes the new features and bug fixes that comprise the *NEXTSTEP Release 3.3 Patch Update*.

New Features

The following new features have been introduced in this update:

Faster HPPA compiler. A faster compiler for NEXTSTEP for PA-RISC workstations has been included in this release.

Issues Fixed in This Release

The following issues have been fixed in this update:

Drivers

Reference: 45838, 54418, 54461, 54462
Issue: HCRX & HCRX24 cards are not supported.
Fix: The new Hyperdrive graphics cards (HCRX and HCRX24) are now supported. Note that although the HCRX card is only 8 bits deep, it can be run in "color-recovery" mode as a 24-bit device. If you are running the HCRX card as the console boot device in 8-bit color mode, turn off boot graphics in your configuration to obtain the proper color map.

Reference: 50481
Issue: MIDI driver doesn't load.
Fix: This has been fixed.

Reference: 52993
Issue: When an HP computer running NEXTSTEP Release 3.3 boots with the serial driver configured, a getty turned on for a serial port, and the modem connected and turned on, the system panics.
Fix: This has been fixed.

Reference: 54419
Issue: On HPPA machines, choosing 8-bit color leads to color glitches.
Fix: 8-bit color modes had issues with bad color map entries. This has been fixed. Note, however, that a related bug (#54420) has not been fixed. This bug arises when you change the brightness on multi-headed HP 715'sPit causes color map glitches on 8-bit displays. The issue seems to occur only after power cycling and booting with boot graphics. Booting verbosely should avoid the issue.

gdb

Reference: 24436
Issue: gdb does not interpret floating point numbers correctly when specified as message arguments.
Fix: This has been fixed.

Reference: 50727, 54401
Issue: gdb occasionally hangs or panics when used with certain applications.
Fix: This has been fixed.

Reference: 52634
Issue: gdb's *step: command behaves like *next.:
Fix: *step: now steps *into* methods, instead of stepping over them.

Reference: 54968
Issue: Stack frames in gdb's browser are reversed.
Fix: Between NEXTSTEP Release 3.2 and Release 3.3 the top-to-bottom order in which stack frames are listed in the Edit/Browser tool were inadvertently reversed, so that the outermost function appeared at the bottom instead of the top. This was not done in an internally consistent way, so that if you clicked on the third stack frame from the bottom, for instance, Edit took you to the third one from the top. This has been fixed so that it works the way it did in NEXTSTEP 3.2.

Kernel

Reference: 51192
Issue: Cached kmsgs are not properly initialized
Fix: When using a cached kmsg, the ikm_delta field was not being initialized. This is especially important in the exception handing code when sending the exception message. Cached kmsgs are now properly initialized.

Reference: 54071
Issue: Certain procedures can cause the kernel to hang due to an ipc hash leak.
Fix: This has been fixed.

Libraries

Reference: 54173, 54399
Issue: libc's exp() gives incorrect results on Intel-based computers.
Fix: This has been fixed.

Reference: 54226
Issue: _openDefaults can leak 1024 bytes per invocation.
Fix: This has been fixed.

Reference: 54674
Issue: longjmp should preserve the FPU control word across fninit
Fix: This has been fixed.

Networking and Networking Tools

Reference: 54180
Issue: Packet size negotiation logic is flawed.
Fix: NetWare performs packet size negotiation during the server discovery process. This negotiation process is flawed. For example, suppose that the client station first sent its favorite packet size (1024 bytes for Ethernet, for example) to the server on the other side of a LAN switch. The server would then send back its favorite packet size (say, 4096 for FDDI) which the client simply accepted as the negotiated block sizePdespite the fact that this size is illegal for Ethernet. This issue arose because neither the server nor the client are aware of the existence of the LAN switch that is bridging the FDDI and Ethernet LANs.

The patch causes the workstation to ignore negotiated packet sizes larger than what its immediate medium can support.

This should be sufficient until such time as NeXT implements "burst mode" transfers.

Reference: 54216
Issue: Network socket `bind' fails to detect *address in use.:
Fix: A bug was introduced during the porting of Stanford's IP Multicast code that allowed multiple local clients to bind to the same IP address (that is, the code failed to detect that the address was in use). This patch corrects that error.

Reference: 36740, 39778, 49580, 49585, 49607, 49899, 50175, 51088, 51809, 51944, 53423
Issue: Various netinfo bugs.
Fix: A number of bugs were fixed in netinfo. The following are some of the more notable bugs that were fixed:

39778: *If you have a second account with a uid of 0, netinfo authentication can fail.* If a netinfo domain had multiple users with the same UID, authentication for that UID would be unreliable.

49607: *lookupd should number domains starting at 1.* Minor change. When lookupd received a SIGUSR2 to log it's current connections, it numbered domains started at 0 rather than 1.

49899: *Permission denied even when _writers is* *. Directories with **_writers *** were only writable by root.

50175: *nidomain must byte-swap master's address.* This bug caused **nidomain -c** to fail to create clones on Intel-based computers. The master's IP address was byte-swapped, resulting in an incorrect and unusable database.

51088: *Memory smasher in netinfod.* This bug would cause random netinfo crashes. It was the result of **ni_writeprop()** freeing some memory twice.

51809: *netinfod[PID]: tag test: can't get masters /machines/ip_address/I^AT*s^ directory.* The netinfo clone start-up configuration checking routine had a couple of syslog messages that were missing an argument. If a clone was mis-configured, it would print a garbled error message.

51944: *file name is freed, then used.* A very rare bug that only occurred if a file system error occurred while the server was shutting down, and it got an error while writing the checksum file.

53423 *netinfod shouldn't call ni_error() - localization calls getpwuid()*. A rare bug that could cause netinfo to hang before printing an error message if it detected an internal error.

Reference: 54242
Issue: NetInfoManager won't create clones on Intel-based computers.
Fix: This bug prevented NetInfoManager from creating clone netinfo servers on Intel-based computers. The bug affected clone creation using both the *Servers: panel and the *Manage Hierarchy: panel. Clones created using NetInfoManager would have the master's Internet address reversed, and as a result database initialization and updates would fail. This has been fixed.

Reference: 54245
Issue: SimpleNetworkStarter messes up mail server configurations.
Fix: This bug caused SimpleNetworkStarter to install its mail-server package every time it ran. The result was that the last computer that was configured using SimpleNetworkStarter would really be the mail server. Confusing information would be left behind on other computers, and mail would not be correctly configured. This has been fixed.

Reference: 54920
Issue: netinfo's clone self-check has RPC issues.
Fix: This bug caused sporadic start-up issues on clone netinfo servers. The bug was caused by errors in the clone configuration self-check routines that ran at start-up time. These self checks have been disabled in this update.

Software Localization

Reference: 49523
Issue: There is no Colors.. menu item in localized versions of Terminal.
Fix: This has been fixed: the Colors command is now present in the localized versions of Terminal.

Reference: 49525, 49559, 50876, 51668, 52463
Issue: Various cosmetic fixes are needed for localized text:

Raising the color panel from any application while you are working in a language other than English produces a *parse error: message in the console window (and the panel contains English text).

The window title that is displayed while loading Preferences is in English, even when you are working in a language other than English.

When working in French, Configure's Inspector.nib shows some English text.

When working in French, some configuration text fields aren't wide enough to contain entire sentences.

The Spanish version of Loginwindow's preferences panel is poorly formatted.
Fix: Several of the localized Preferences, Configure, and SimpleNetworkStarter files were fixed to provide cleaner UI.

Reference: 50792, 50794, 51190, 54229, 54279
Issue: UserManager has a number of bugs in the various localized versions:

The User Info confirmation panel does not display the path of the login shell when you are working in French.

The Program Hooks pop-up menu has no valid labels in the Group Default Configuration panel when you are working in French.

Some fields in the Create Bulk panel aren't properly localized.

Clicking on the User Account login name format pop-up list after creating multiple users in a domain and then reading an input file containing user names causes UserManager to crash.

This issue still exists when running UserManager in Swedish on Intel or NeXT architectures. As a workaround, run UserManager in another language.

The Group menu doesn't work when working in German.
Fix: This patch release fixes some connections in the nib files for the localized versions of UserManager so that now creating bulk accounts, creating groups, and inspecting group defaults all work properly in the localized versions.

Reference: 51223
Issue: You cannot choose a language other than English when you create a new user account.
Fix: New template files were added so that system administrators will be able to create new user accounts with certain localization defaults already set. If you are a system administrator and would like to use User Manager to create new user accounts with defaults localized for French, German, Italian, Spanish, or Swedish, you need to select all of the languages when you install the patch. This will ensure that all of the default files are available for your use in **usr/template/languages**.

Note that this will also install other updated language files that are included on the patch. If you use Preferences to select another language that has not been previously installed from the original release software, these updated files would appear in that language while the rest of the UI files in a particular application would appear in the next language you have selected in Preferences which has been installed.

A related bug still exists, however: if you install NEXTSTEP Release 3.3 using one of the European languages and then create an English user account with UserManager, when the new user logs in Workspace will use the language that you chose during installation, instead of English. The user can work around the issue by simply choosing the proper language in Preferences and then logging out and logging back in again. Note that new user accounts are only affected in this way if English is chosen when creating the user account.

Reference: 54171
Issue: Shift-hyphen does not produce an underscore in the UK keyboard mapping.
Fix: The *alt: and *shift: keys were reversed in the UK keyboard mapping file. This has been fixed.

Reference: 54228
Issue: Selecting Fixed Pitch Font in Font Preferences while working in a language other than English causes Preferences to crash.
Fix: This has been fixed.

Window Server

Reference: 54132
Issue: The WindowServer should use vm_allocate instead of malloc for backing storePcurrently, it almost never gives VM back to the operating system.
Fix: This has been fixed.

Reference: 54134, 54138
Issue: Certain images, displayed in certain graphics modes, can crash the WindowServer.
Fix: This has been fixed.

Reference: 54137
Issue: Flushing 12-bit windows on 24-bit displays takes longer than it should.
Fix: This has been fixed.

Miscellaneous Fixes

Reference: 51555, 51785
Issue: **cu** and **tip** incorrectly set the UID.
Fix: This has been fixed.

Reference: 51590
Issue: Use of DOS filenames greater than 31 characters in length causes issues in SoftPC
Fix: This has been fixed.

Reference: 52531
Issue: pbs and appkitServer are not launched with the correct group permissions.
Fix: pbs and appkitServer now launch with the correct group permissions.

Reference: 52842, 56026
Issue: CERT Advisory: sendmail vulnerabilities.
Fix: The sendmail security vulnerabilities described in CERT Advisory CA-95:05 have been fixed. Contact CERT for more details.

Reference: 54217
Issue: Services don't register in ProjectBuilder.
Fix: None of the Services items were active in the version of ProjectBuilder supplied with NEXTSTEP Release 3.3. For instance, third-party source code control apps such as DevMan didn't function as advertised. This has been fixed.

Reference: 54220
Issue: Floppy operations don't work as intended.
Fix: The floppy operations in workspace were broken. For instance, a floppy was not represented by the proper DOS, MAC, or NeXT floppy icon; instead, a folder icon was displayed. Or, after mounting a floppy (with Check for Disks), the disk was mounted but the Disk menu contained Check for Disks and Eject onlyPit was missing Initialize. These bugs have been fixed.

Reference: 54260
Issue: rld gets internal error: *lookup_symbol() failed.:
Fix: This has been fixed.

Reference: 54428
Issue: Configure treats the last byte of the EISA id as a *don't care: byte.
Fix: This fixes a issue where Configure would show multiple instances of some devices in the *Add Devices: panel.

Reference: 55452
Issue: Failure to read multiple backups on HPPA machines.
Fix: Reading of multiple files/backups failed. Creation of multiple backups on the same tape was not a Issue, but only the first backup could be read on a HP platform.
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Patch 1 Release Notes Addendum

This document describes how to install the *NEXTSTEP Release 3.3 Patch Update* and describes the fixes contained in the update. This update is to be installed *only* on computers running *NEXTSTEP Release 3.3*.

For download and distribution information, see the **NeXTSTEP 3.3 Patch 1 Overview**.
This article has been archived and is no longer updated by Apple.

INSTALLING THE NEXTSTEP RELEASE 3.3 PATCH UPDATE

The *NEXTSTEP Release 3.3 Patch Update* consists of two User Patch packages:

3.3Intel68kPatch.pkg Contains updated system software for Intel PCs or NeXT computers running *NEXTSTEP Release 3.3*.

3.3HPPASPARCPatch.pkg Contains updated system software for Sun or HP workstations running *NEXTSTEP Release 3.3*.

and one Developer Patch package:

3.3DeveloperPatch.pkg Contains updated developer tools for all types of computers running *NEXTSTEP Developer Release 3.3*.

In addition, the *NEXTSTEP Release 3.3 Patch Update Floppy* contains:

3.3PatchRelNotesAddendum.rtfd This document.

Read-Me-First.rtfd A pointer to the installation instructions in this document.

3.3Patch.ImprovedDNS.post_install An installation script.

3.3Patch.LibrariesOK.post_install Another installation script.

Note the following points before you install the Patch Update packages:

Install just one package at a time. Install the User Patch package first; afterwards, install the Developer Patch package (if you're running *NEXTSTEP Developer Release 3.3*).

If you plan to use Emacs, be sure you've already installed the contents of the **Emacs.pkg** (contained on the *NEXTSTEP Release 3.3* CD-ROM) *before* installing the User Patch package.

When installing the Release 3.3 Patch Update packages, select the same architectures and languages as you did when originally installing the *NEXTSTEP Release 3.3* and *NEXTSTEP Developer Release 3.3* software.

After installing the Release 3.3 Patch Update packages, you must run one of the provided installation scripts. See the next section to decide which script you need to run.

Deciding which Installation Script to run

There are two installation scripts (**3.3Patch.ImprovedDNS.post_install** and **3.3Patch.LibrariesOK.post_install**) included with the *NEXTSTEP Release 3.3 Patch Update.* You need to run one of these scripts after installing the **3.3Intel68kPatch.pkg** or **3.3HPPASPARCPatch.pkg** Patch Update packages.

If you run any POSIX-based application on your system, or if you run any statically linked programs that uses the *gethostbyname()* or *gethostbyaddr()* system calls, you should run **3.3Patch.LibrariesOK.post_install**.

If neither of the above circumstances apply to your system, then you should run **3.3Patch.ImprovedDNS.post_install**.

Given the choice, **3.3Patch.ImprovedDNS.post_install** script is the better alternative. This option enables the changes to **lookupd** described later on in this document (Reference: 36740, 54181, 57737). Unfortunately, this optimization introduced an incompatibility with certain functions in the previously shipped static libraries, and you will be unable to fix this problem until a new set of static libraries is made available.

See the comments inside the scripts for details on what changes the scripts are making to your system.

Installing the NEXTSTEP Release 3.3 Patch Update Packages

Follow these instructions to install the *NEXTSTEP Release 3.3 Patch Update*.

1. Log in as **root**. (If you're not sure how to log in as **root**, see your system administrator.)

2. Make sure your computer is running *NEXTSTEP Release 3.3*. (You can find the NEXTSTEP version number with the Workspace Manager application's Info Panel command.)

Warning: Installing the *NEXTSTEP Release 3.3 Patch Update* on a computer that isn't running *NEXTSTEP Release 3.3* will result in unexpected problems. There is no way to remove the patch once installed. Your only recourse will be to reinstall NEXTSTEP.

3. Double-click the **3.3Intel68kPatch.pkg** file or the **3.3HPPASPARCPatch.pkg** file (be sure to choose the one that corresponds to the type of computer you're installing the package on).

4. Click the Install button in the Installer package window.
An Install Package panel opens. Use this panel to select the same architecture and languages as you did when originally installing the *NEXTSTEP Release 3.3* software.

5. Click Install in the Install Package panel, and if prompted for confirmation, click OK to proceed.
The Installer window displays information about the progress of the installation, which may take several minutes.

6. After Installer finishes installing the User Patch package (either **3.3Intel68kPatch.pkg** or **3.3HPPASPARCPatch.pkg**):

If you *haven't* previously installed *NEXTSTEP Developer Release 3.3* on the computer, go to Step 7.

If you *have* previously installed *NEXTSTEP Developer Release 3.3* on the computer, install the Developer Patch package by double-clicking the **3.3DeveloperPatch.pkg** file and repeating steps 4 and 5 (remember to select the same architectures as you did when originally installing the *NEXTSTEP Developer Release 3.3* software).

7. Run one of the two installation scripts on the *NEXTSTEP Release 3.3 Patch Update Floppy:*

Double-click on the **3.3Patch.ImprovedDNS.post_install** or **3.3Patch.LibrariesOK.post_install** file to run the script that you decided was appropriate for system.

8. you're donePlog out and restart the computer.

Installing the NEXTSTEP Release 3.3 Patch Update Packages

from a Network Server

If you're planning on installing the update packages from a Network Server onto multiple machines, you can simplify the operations to be performed somewhat:

1. Copy the installation packages (**3.3Intel68kPatch.pkg**, **3.3HPPASPARCPatch.pkg,** and **3.3DeveloperPatch.pkg)** to a file server location visible from all client machines that are to be upgraded.

2. Copy whichever of the installation scripts you're using (**3.3Patch.ImprovedDNS.post_install** or **3.3Patch.LibrariesOK.post_install**) to **<packagename>.post_install**, and move it into the base system update packages, as follows:

Copy (and rename) the appropriate script file to **3.3Intel68kPatch.post_install.**

Open the target package file by selecting it and pressing cmd-O**.**

Move the script file into the package directory. Close the directory window.

Do the same for the **3.3HPPASPARCPatch.post_install** file and the **3.3HPPASPARCPatch.pkg** directory.

3. Now, when you run the Installer application to install the update packages, the installation script will get executed automatically, and will not have to be run manually (skip step 7).

Addendum to the NEXTSTEP Release 3.3 Patch Update Release Notes

This addendum describes late-breaking information about the *NEXTSTEP Release 3.3 Patch Update*.

Problems Introduced in This Release

The following problems were introduced in this update:

Networking and Networking Tools

Reference: 36740, 54181, 57737
Problem: **lookupd** and DNS interaction add delays to many processes.
Comments: Our intended fix was to move the processing of DNS requests out of **lookupd** and into the calling command or application. We have since discovered a side effect of the fix included with the patch. Any comment lines in the **/etc/hosts** file would cause an additional search of all hosts defined in the NetInfo hierarchy. These extra searches could result in an unacceptable delay for all **lookupd** requests.

Fix #1: Add a **-R** option to the **lookupd** command in the **/etc/rc** file. This will force **lookupd** to use the old (pre-patch) behavior. This fix is implemented by the **3.3Patch.LibrariesOK.post_install** installation script.

Fix #2: Remove all comment lines from the **/etc/hosts** file. You can do this either manually with your favorite editor, or by using the following commands as root.
sed '/^#/d' /etc/hosts > /tmp/hosts
mv /tmp/hosts /etc/hosts
This fix is implemented by the **3.3Patch.ImprovedDNS.post_install** installation script.

Libraries

Reference: 59018
Problem: Patch does not include static libraries.
Comments: The *NEXTSTEP Release 3.3 Patch Update* does not include any new static libraries. This means that any programs that are linked with static libs can not benefit from fixes included with this release. In particular, if programs use the *gethostbyname()* or *gethostbyaddr()* library routines, and are statically linked, they must use Fix #1 for the **lookupd**

problem. Applications linked with the POSIX libraries are effected by this bug.

Problems NOT Fixed in This Release

The following problems have NOT been fixed in this update:

Networking and Networking Tools

Reference: 49580, 57746
Problem: NetInfo reconnecting does not prefer machines on the local subnet.
Comments: Our intentions were to correct the NetInfo binding and connecting strategy to select the server for a NetInfo domain by first checking on the local host, then on the local subnet, and finally on any accessible server host. We have since discovered that the reconnecting strategy will not "prefer" the local subnet when searching for a server. If a server crashes, clients connected to it won't take advantage of the new strategy when they reconnect. In these few cases, performance won't be improved but will be the same as in Release 3.3.

Problems Fixed in This Release

The following problems have been fixed in this update, but were not documented in the original release notes:

Libraries

Reference: 54336, 54033
Problem: sparc spin_lock() loops infinitely if multi-threading lock not acquired first time through
Fix: This sparc-specific bug has been fixed.

Miscellaneous Fixes

Reference: 52842, 56026
Problem: CERT Advisory: sendmail vulnerabilities.
Fix: The sendmail security vulnerabilities described in CERT Advisories CA-95:05 and CA-95:08 have been fixed. Contact CERT for more details.
Published Date: Feb 20, 2012

Novell: How It Handles Desktop Information (11/94)

Does Novell duplicate the function of the Apple Desktop file or the Desktop Manager implementation on AppleShare?

What does the Resource Manager do when the desktop size exceeds the Resource Manager addressability limit?

This article has been archived and is no longer updated by Apple.
The AppleTalk Filing Protocol requires that each server maintain a desktop database containing information associating documents with applications and files with icons. This information helps the Finder know which icons to display for files, and which applications to launch when documents are opened. The Finder uses this database to build the familiar Macintosh graphical user interface.

In addition to a name, every Macintosh file has a four-character type code that identifies the nature of the file, and a four-character Creator code that identifies the application that created the file. For example, a document created by MacWrite has a Type value of WORD and a Creator value of MACA. The desktop database uses these values to find the appropriate icon for files of type WORD. Likewise, the desktop finds the appropriate application used for opening or printing files of this type using the value MACA.

When the Finder on a Macintosh workstation displays the contents of a server folder in a window, it attempts to find the appropriate icon for each file. First, the Finder looks in memory to see if it found the correct icon in a recent search. Then, it looks on the local Macintosh hard disk. If the icon is not found, the Finder requests the icon from the server. If the server volume's desktop database contains the appropriate icon, the server sends the icon to the Macintosh. If the icon is not found locally or in the server volume's desktop database, the Finder displays a generic icon for the file.

Once the Finder has determined that an icon cannot be found for a particular file type, it will not ask the server again until the Finder is restarted. This optimization prevents the Finder from repeatedly making the same request, which would slow the server.

In NetWare for Macintosh 4.0, the desktop database is stored in two files in the DESKTOP.AFP folder at the root of each volume. AFP.NLM creates the folder and database files on each volume that supports the Macintosh name space. These files, ICON.BTV and APPL.BTV, are in a proprietary, highly-optimized format, and are not meant to be used by programs other than AFP.NLM.

Maintaining and Rebuilding the Desktop Database

The Macintosh Finder and AFP.NLM share the responsibility of maintaining the desktop database. The Macintosh Finder incrementally updates the desktop database when it copies new files to the server volume. In version 7 and later, the Finder always ensures that when a document is copied to the server volume, the appropriate icons are also copied, if necessary. The Finder also updates the desktop database whenever it copies an application to the server volume, so that the application can be launched when documents are opened or printed.

NetWare for Macintosh is ultimately responsible for the contents and integrity of the desktop database for each of the volumes it supports. While it is possible to rebuild a server's desktop database using the System 6 Finder (but not MultiFinder), doing so will not enable you to locate the new color icons used in System 7. NetWare for Macintosh can examine all the files on each volume, and can rebuild the desktop database on each of its supported volumes. Because this process is carried out on the server, it is much faster and more efficient than rebuilding the desktop from a Macintosh workstation.

Article Change History:
09 Nov 1994 - Additional information on Novell Desktop file included.

Support Information Services
Published Date: Feb 20, 2012

NetInstalling NeXTSTEP 3.3 With Additional Drivers

/etc/rc.cdrom is the rc file used during installation. A modifiedversion is available so that new drivers (i.e. released after 3.3 shipped) can be placed in an install image and installed on systems during a Net Install. This will keep the system from needing to ask for the driver floppy when it reboots during the installation. Also, if the new serial and serial mouse drivers are present, it will modify the Instance0.table to use them.

This article has been archived and is no longer updated by Apple.

The following assumes you have already set up a server for doing Net Installs. You can download the updated rc.cdrom file from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/rc.cdrom

1) In /NEXTSTEP_INSTALL/etc (the /etc directory in the Nextstep install image), rename rc.cdrom to rc.cdrom.orig.

2) Get NeXTanswer #2085 and rename it to rc.cdrom. Copy the new rc.cdrom script to /NEXTSTEP_INSTALL/etc.

3) Create a /NEXTSTEP_INSTALL/RELEASED_DRIVERS directory (/RELEASED_DRIVERS in the NEXTSTEP_INSTALL image).

4) Put the driver ***.pkg** packages in the /NEXTSTEP_INSTALL/RELEASED_DRIVERS directory.

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Xircom Netwave

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/XircomNetwave.pkg.compressed
An updated BETA version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/XircomNewave.pkg.compressed

Driver Name / Installer .pkg: XircomNetwave
Driver Type: Networking
Driver Scope: Specific Product
Supported Components:
PC Bus / Interface Supported by Driver:** PCMCIA

General Overview notes: This is a wireless PCMCIA ethernet adapter operating at 1 Mbit/s.

Supported Products / Add-on Adapters:
Xircom CreditCard Netwave Adapter (CNW(AM))

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** Wireless EtherNet
Speed*: 1 Mb/s
Access Mode:** Memory Mapped
Buffer Size*: 32KB
Supported Connectors:**

Known Problems

Released Version 3.31 of this driver requires Version 3.31 or later of the Intel 82365/PCIC driver and Version 3.33 of the PCMCIABus driver.

See NeXTanswers 1968_Intel_82365_and_compatible_PCMCIA_chipset.pkg.compressed and 1969_PCMCIABus.pkg.compressed

Driver Version Notes

3.31 Initial release
3.32 Re-released in order to be compatible with 3.34 of the PCMCIABus driver; no functional changes were made.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

DAL 1.2: Accessing VM Host Issue

1) I'm trying to get DAL 1.2 for VM to work with an IBM 3090. I'm using a Macintosh II connected by a coax, a DCA MacIrma card, and am running "DAL debugger for MacIrma".

After trying several times, I keep getting the error #10646 (-43). What does this error mean?

2) What state should the server be in when attempting access?

3) What programming languages support DAL development?
This article has been archived and is no longer updated by Apple.
1) Error -10646 means the DAL client cannot load the Network Adapter. You probably have the wrong driver installed. MacIrma is shipping with the HLLAPI drivers, which DAL doesn't support. You need to call DCA and get the Apple API drivers. Apple does not have the rights to distribute them, so you have to get them from DCA.

To verify this, the following files should be in the system folder:

DFT: "MacIrma SNA 2.1.0" (or .1) and "MacIrma DAL Driver" 1.2.0
CUT: "MacIrma DAL Driver" 1.2.0

In addition, be sure that your coax line is correctly identified as CUT or DFT in you DAL connention script.

2) Once a session is established between the DAL client and the DAL server, the server will be ready to accept any request from the client. Perhaps an explanation of DAL Request/Reply relationship would help:

DAL uses a request/reply relationship between the desktop and the server(s). The user connects to the host machine using the query tool (HyperCard, 4th Dimension, or a custom C or Pascal program). The query tool application passes the request to the DAL API, which in turn establishes a connection to the host server. The DAL server on the host receives the request and translates it to the SQL dialect of the opened database. The server then checks the syntax and passes the translated request to the proper database. The database complies and passes the data back to the DAL Host Server. The Host Server checks for errors, mapping them to the standard error set that DAL supports. The server then assembles the results returned from the database sends them to the Macintosh. The query application sees the results are available and begins to put them, item by item into its own window (such as a spreadsheet window).

3) DAL provides Application Programming Interfaces for C, Pascal, and HyperCard.
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Intel 82556 Network

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Intel82556.pkg.compressed

Driver Name / Installer .pkg: Intel82556NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82556
PC Bus / Interface Supported by Driver:** EISA, PCI

General Overview notes: This driver supports Intel EtherExpress PRO/100 adapters based on the Intel 82556 chipset.

Supported Products / Add-on Adapters:
Intel EtherExpress PRO/100 EISA LAN Adapter (EILA8265)
Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8465)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This driver will NOT support Model B of the Intel EtherExpress PRO/100 PCI Ethernet Adapter. Model B is supported by the Intel 82557 Network Driver.

Networking Driver Details

Network Type:** 100 Base TX, EtherNet
Speed*: 10 Mb/s, 100 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: N/A
Supported Connectors:** UTP

Known Problems

Driver Version Notes

3.31 - First release of this driver

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: IBM ThinkPad 760CD Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/ThinkPad760CD.pkg.compressed

Driver Name / Installer .pkg: IBMThinkPad760CDDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Trident TGUI9320
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This device driver supports the built in LCD and external CRT display for IBM Thinkpad 760CD system. It supports 800x600 color LCD as well as the external display connector.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
IBM ThinkPad 760CD

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**
640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
640X480 (1MB+), 800x600 (1MB+)

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.30) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.30 - Initial version of this driver.
3.31 - Driver is now SMM aware and should work with all ThinkPad 760CD BIOS versions.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

Macintosh: What is the Resource Manager?

This article has been archived and is no longer updated by Apple.
The Resource Manager, one of the cornerstones of Macintosh's ROM-based user Interface Toolbox, was designed and implemented by Bruce Horn, a member of the Macintosh software team. It provides a way for applications to separate their code from the data they use--to keep the data, such as prompt strings, menus or icons, in a separate, structured part of the file. This allows the data to be edited by a utility program without any specific knowledge of that application.

Since all of the language-dependent parts of an application are resources, an application may be translated to another language (French, German, etc.) in a matter of hours by a nontechnical translator without access to the source code. Similarly, users with this utility program can customize the prompts and phrases in an application to suit their particular tastes.

The Resource Manager has proven so useful that now many other parts of the system use it in one way or another. Desk accessories, code segment, fonts, icons, windows, menus, controls, and dialogs are all kept as resources.
Published Date: Feb 20, 2012

DAL: Username and Password not Encrypted During Access (2/95)

When establishing a DAL session with a VAX over AppleTalk, is username and password information encrypted?

This article has been archived and is no longer updated by Apple.
The username and password information is not encrypted when sending to the host because AppleTalk does not encrypt. DAL does not furnish encryption, but uses whatever the network supplies.

Article Change History:
03 Feb 1995 - Corrected reference to AppleTalk.
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: FTG ISA Light Pen

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/FTGISALightPen.pkg.compressed

Driver Name / Installer .pkg: FTGISALightPen
Driver Type: Other
Driver Scope: Product Family
Supported Components: Custom
PC Bus / Interface Supported by Driver:** ISA
Supported Connectors: Custom
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This driver will support several FTG light pen models connected via an FTG PXL-395 ISA interface card. This driver may be used in conjunction with other pointing devices to allow the user to select the most convenient input device at any given time.

Supported Products / Add-on Adapters:
PXL-395 Light Pen Interface (ISA)
FT-356 1-Button Light Pen
FT-357 2-Button Light Pen

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

Driver Version Notes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

FTG Data Systems
8381 Katella Ave
P.O.Box 615
Stanton, CA 90680

800/962-3900 x386
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Trident Generic Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/TridentGeneric.pkg.compressed

Driver Name / Installer .pkg: TridentGenericDisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Trident TGUI9440, Trident TGUI9680, Universal RAMDAC
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver will support a variety of video display devices based on Trident 9xxx chipsets.

NeXT does not guarantee that this driver will work with any specific adapters or implementations, but expects that it will support many.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
This driver will not support the built-in display on IBM Thinkpad 760CD.

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.30) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.30 Original version, supports 9440 and 9680 based adapters.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Trident Microsystems Inc.
189 N. Bernardo Avenue
Mountain View, CA 94043-5203
USA

+1 (415) 691 9211 international phone number
+1 (415) 691 9260 fax
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Intel 82557 Network

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.33, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Intel82557Net.pkg.compressed
An updated BETA version of this driver, version 3.36, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/Intel82557Net.pkg.compressed

Driver Name / Installer .pkg: Intel82557NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82557, Intel i82558
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver supports the Intel EtherExpress PRO/100+, PRO/100(model B), and the PRO/10+ PCI adapters. The PRO/100+ adapter used the 82558 ethernet controller, while the other two adapter families uses the 82557 controller.

Supported Products / Add-on Adapters:
Intel EtherExpress PRO/100+ PCI LAN Adapter (10Base-T, 100Base-TX)
Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8465B) (10Base-T, 100Base-TX)
Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8475B) (10Base-T, 100Base-T4)
Intel EtherExpress PRO/10+ PCI LAN Adapter (PILA8500) (BNC, AUI, RJ-45)
Intel EtherExpress PRO/10+ PCI LAN Adapter (PILA8520) (RJ-45)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Networking Driver Details

Network Type:** 100 Base T4, 100 Base TX, EtherNet, Full Duplex
Speed*: 10 Mb/s, 100 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: N/A
Supported Connectors:** AUI, BNC, UTP

Known Problems

Driver Version Notes

3.30 - Initial beta version
3.32 - Improved performance; added workaround for intermittent receiver errata to prevent hang
3.33 - Added support for Pro/10+ PCI adapter
3.36 - Added support for 82558 based adapters

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Number Nine Motion771 Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated release version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/released/Num9Motion771.pkg.compressed

Driver Name / Installer .pkg: Number9Motion771DisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: IBM RGB524 RAMDAC, S3 968 (Vision)
PC Bus / Interface Supported by Driver:** PCI, VL-Bus

General Overview notes: This driver supports both 2MB & 4MB versions of the Number Nine MotionFX 771 display adapter. Both PCI & VL-Bus models are supported

Supported Products / Add-on Adapters:
Number Nine 9FX Motion 771 2MB PCI (NB9FX2-771-2P)
Number Nine 9FX Motion 771 4MB PCI (NB9FX2-771-4P)
Number Nine 9FX Motion 771 2MB VL-Bus (NB9FX2-771-2VL)
Number Nine 9FX Motion 771 4MB VL-Bus (NB9FX2-771-4VL)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 1152x864 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Driver Version Notes

3.30 - First version of the driver supports 2MB/4MB PCI/VL models using the S3/968 & IBM RGB524 RAMDAC.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

libFoundation User Patch

The libFoundation User Patch provides fixes to several bugs introduced in NEXTSTEP Release 3.3 Foundation Library.

This patch is useful for several 3rd party products. These vendors should inform you if you do need this patch. If you have any question about which products, please contact the vendors of those products.

This is the same Foundation library that is included with EOF, NEXTSTEP 3.3J, and WebObjects (including the demo). If you have either of these installed, you do not need this patch.

Caution: These packages should only be installed on systems running NEXTSTEP Release 3.3.
This article has been archived and is no longer updated by Apple.
The *NEXTSTEP libFoundation User Patch Update* consists of one package:

FoundationUserPatch.pkg, available from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/FoundationUserPatch.compressed

Contains updated shilb library for computers running *NEXTSTEP Release 3.3 and 3.3 patch 1*.

Installing the NEXTSTEP Release 3.3 Patch Update Packages

Follow these instructions to install the *libFoundation User Patch Update*.

1. Log in as **root**. (If you're not sure how to log in as **root**, see your system administrator.)

2. Make sure your computer is running *NEXTSTEP Release 3.3*. (You can find the NEXTSTEP version number with the Workspace Manager application's Info Panel command.)

Warning: Installing the *NEXTSTEP Release 3.3 Patch Update* on a computer that isn't running *NEXTSTEP Release 3.3* will result in unexpected problems.

3. Double-click the **FoundationUserPatch.pkg** file.

4. Click the Install button in the Installer package window.
An Install Package panel opens. Use this panel to select the same architecture and languages as you did when originally installing the *NEXTSTEP Release 3.3* software.

5. Click Install in the Install Package panel, and if prompted for confirmation, click OK to proceed.
The Installer window displays information about the progress of the installation, which may take several minutes.

6. After Installer finishes installing the User Patch package log out and restart the computer.
Published Date: Feb 20, 2012

PATHWORKS: Third-Party Printers Not Available

Are there any third-party printers that work with PATHWORKS?
This article has been archived and is no longer updated by Apple.
We are not aware of any third-party printers that support PATHWORKS.
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Number Nine Motion331 Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/Number9Motion331.pkg.compressed

Driver Name / Installer .pkg: Number9Motion331DisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: S3 764 (Trio64V+)
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver supports both 1MB & 2MB versions of the Number Nine MotionFX 331 display adapter.

Supported Products / Add-on Adapters:
Number Nine 9FX Motion 331 1MB PCI (NB9-FX1-331-1P)
Number Nine 9FX Motion 331 2MB PCI (NB9-FX1-331-2P)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This adapter is not recommended for applications requiring 32 bit color; 32 bit modes will appear dim because the hardware does not implement gamma correction.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.30) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.30 - First version of the driver supports 1MB/2MB PCI models using the S3/Trio64V+

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

WebObjects 3.5.1 Development FAQ

This article contains frequently asked questions (FAQ) regarding WebObjects 3.5.1 Development, with answers to those questions.
This article has been archived and is no longer updated by Apple.
Questions answered in this article:

1. Can I implement my WO bundles in some sort of hierarchy?
2. Is the NS-API version of the WebObjects adaptor available for both Solaris and Windows NT versions of the Netscape server?

Question 1: Can I implement my WO bundles in some sort of hierarchy?

Answer: WebObjects searches for a reusable component in these places and in this order:

1. The directory in which the WebObjects app executable is (only useful if that executable is in a .app or .debug, i.e. with Pro or Enterprise),

2. The app's directory under the WebObjects document root,

3. The WebObjects document root, <HTTPDocumentRoot>/WebObjects (this was meant as a way to share .wo's across different apps, but a more practical way to do that is to put the shared .wo's in a separate directory somewhere and symlink them to different apps' directories).

Question 2: Is the NS-API version of the WebObjects adaptor available for both Solaris and Windows NT versions of the Netscape server?

Answer: Yes, both are included with the Pro and Enterprise versions of WebObjects. The source for the CGI and the NSAPI adaptors are on the CD.

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: Bus Logic FlashPoint SCSI

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/BusLogicFPSCSI.pkg.compressed

Driver Name / Installer .pkg: BusLogicFPSCSI
Driver Type: SCSI
Driver Scope: Specific Product
Supported Components: BusLogic BA81C15
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: The BusLogic FlashPoint SCSI driver is designed to support the KT-930 SCSI adapter from BusLogic.

Supported Products / Add-on Adapters:
BusLogic KT-930 PCI SCSI Host Adapter
BusLogic KT-932 PCI Dual Chanel SCSI Host Adapter
BusLogic BT-950 PCI Wide SCSI Host Adapter

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2)
Access Mode: Bus Master DMA
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.31) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.31 - First released version of this driver

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Bus Logic, Inc.
4151 Burton Drive
Santa Clara, CA 95054
USA

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+1 (408) 492 1984 bulletin board system
WWW: http://www.buslogic.com/
Published Date: Feb 18, 2012

PATHWORKS: Printing on AppleTalk Phase 1 Networks

We are implementing the Tolas accounting system using PATHWORKS for Macintosh. We will be linking a MicroVAX to Macintoshe systems on Ethernet and using LocalTalk to connect to our LaserWriters. Since we are using AppleTalk Phase 1, we can't send files to the LaserWriters.

Can we do what we want without using PATHWORKS for Macintosh? Can we just run AppleTalk for VMS 3.0 and still support AppleTalk Phase 1?

This article has been archived and is no longer updated by Apple.

PATHWORKS for Macintosh is the name for an integrated set of components in one client/server product. The package includes file sharing, data access, electronic mail, and resource services for Macintosh clients. AppleTalk for VMS 3.0 is included in the product but it supports only AppleTalk Phase 2.

If you are using the Apple Internet Router, install the Upgrade Utility. If you are using non-Apple routers, use an equivalent Phase 1/Phase 2 transition utility. Because this is only a temporary solution, eventually you will want to upgrade all your routers to AppleTalk Phase 2.

Consult the AppleTalk Phase 2 Introduction and Upgrade Guide for upgrade procedures.

Published Date: Feb 20, 2012

Pentium Pro Performance under NeXTSTEP

Question

I have heard that there are performance problems with Pentium Pro systems due to the "Orion" chipset. Is NEXTSTEP effected by this problem?

This article has been archived and is no longer updated by Apple.

Answer

Some Pentium Pro systems have extremely poor PCI bandwidth. This directly translates to reduced video performance under NEXTSTEP. Machines built with the latest Intel chipset probably will not exhibit this problem.

Some customers have reported poor performance of NEXTSTEP on some Pentium Pro systems. The NeXT SQA department has performed some benchmark tests and determined that these problems are most likely the result of the PCI bandwidth problem with the first version of Intel's "Orion" support chip set. An Intel prototype system with the "B0" stepping of the Orion chipset performs as expected (i.e. really, really fast) under NEXTSTEP.

The following is an excerpt from an Intel press release:
"The Orion chipset, known internally as 82450, is one of a number of auxiliary chips that supplies the Pentium Pro microprocessor. An uncorrected chipset could limit the amount of so-called I/O bus traffic, or data transfer, that a computer handles to as low as five megabytes per second, instead of the regular 25 to 55 megabytes, said Intel spokesman Howard High."

Published Date: Feb 20, 2012

VAX RDBMS: Access from Macintosh and MS-DOS

Is there an RDBMS for VAX/VMS that fully uses the Macintosh as a VAX server client? Most RDBMS packages only use the Macintosh in VT100 emulation mode. I want a package that gives the Macintosh and PC the same screen look.
This article has been archived and is no longer updated by Apple.
Check the following Client/Server VAX database access products:

* Apple's Data Access Language (DAL):

An Apple DAL Server can run on VAX/VMS providing Data Access Language access to databases. The server works cooperatively with Macintosh applications that support Data Access Language.

The server receives a request from a Macintosh application, carries it out on the VAX, and sends the desired data back to the Macintosh application. The Macintosh application can be HyperCard, 4th Dimension, popular spreadsheet products such as Excel and WingZ, or C programs. DAL operates under existing host and database-management security and integrity schemes, assuring complete data security with no additional maintenance requirements.

The server supports serial lines (directly or via modem) or AppleTalk Data Stream Protocol (requires Apple's AppleTalk for VMS running on VAX system). Databases supported by DAL Server for VAX/VMS include: Informix, Ingres, Oracle, VAX Rdb/VMS, and Sybase.

Apple DAL Server is available from APDA.

* SequeLink, Version 2.1:

This program allows cooperative processing between Macintosh and VAX computers. With it, you can write a Macintosh front-end to a relational database residing on a VAX, using environments such as HyperCard, Microsoft Excel or 4th Dimension, and compiled languages such as C, Pascal, or MacApp. Your Macintosh application can then access transparently the relational database on the VAX, off-loading the VAX.

SequeLink can write on-line transaction processing application and decision support applications. SequeLink supports Oracle, Ingres, VAX Rdb/VMS, and Sybase. It runs over AppleTalk and DECnet. The SequeLink product family includes other client and server platforms, such as MS-DOS, OS/2, UNIX, AS/400, and MVS.

SequeLink, Version 2.1 is available from TechGnosis, Inc.
Published Date: Feb 20, 2012

PATHWORKS: VAXshare Support for LaserWriter 6.0.X

How do I get VAXshare Print Service in PATHWORKS for Macintosh to work with LaserWriter 6.0.X? The help facility in PATHWORKS doesn't help.

This article has been archived and is no longer updated by Apple.

There are two modules in the device control library that are not only unnecessary, their presence prevents the ADD PRINTER command from working correctly. Delete them with this command:

```
$ library/delete=(msap$permdict1,msap$permdictquery1) -
_$ sys$library:msap$devctl.tlb
```

Then, add the printer, using the /SETUP qualifier to specify the appropriate level of Laser Prep (msap$appledict70 = Laser Prep 6.0):

```
MSA$MANAGER> add printer "Spooler Name" -
_MSA$MANAGER> /queue=sys$print -
_MSA$MANAGER> /destination="Printer Name@Zone Name" -
_MSA$MANAGER> /setup=msap$appledict70
MSA$MANAGER> start printer "Spooler Name"
```

Other modules available in the device control library are:

MSAP$APPLEDICT66 (Laser Prep 5.0)
MSAP$APPLEDICT67 (Laser Prep 5.1)
MSAP$APPLEDICT68 (Laser Prep 5.2)

If /SETUP is not used, the default is 5.2.

Published Date: Feb 20, 2012

TA45736_Macintosh_IIsi_LC_Series_Not_Designed_for_Vertical_Operation_(TIL07216).pdf

Macintosh IIsi, LC Series: Not Designed for Vertical Operation

Article Change History

07/12/93 - REVISED
* To include Performa 400 series.
02/01/93 - REVISED
* To include the LC III.

I want to use my Macintosh IIsi and Macintosh LC in a vertical position. If I leave enough room for ventilation, will this cause any problems?

This article has been archived and is no longer updated by Apple.
The Macintosh IIsi, the Macintosh LC Family (LC, LC II, LC III), and Performa 400 series (Performa 400, 405, 430, 450) weren't designed to operate on their sides. Because Apple hasn't tested these computers in a vertical position, Apple can't recommend that customers use them this way.

We do know that the floppy-disk drives and hard drives will work properly either horizontally or vertically. Ventilation shouldn't be a problem as long as there's 4 to 6 inches of clearance around all the computer's vents.

Published Date: Feb 20, 2012

3Com EtherLink III OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: 3COM EtherLink III
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/EtherLink3.pkg.compressed

Driver Name / Installer .pkg: 3COM EtherLink III
Driver Type: Networking
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver*: EISA, ISA

General Overview notes: This driver supports the 3COM EtherLink III Ethernet Adapter.

Supported Products / Add-on Adapters:
3Com EtherLink III 3C509 ISA (BNC, AUI)
3Com EtherLink III 3C509B ISA (BNC, AUI)
3Com EtherLink III 3C509-TP ISA (RJ-45, AUI)
3Com EtherLink III 3C509B-TP ISA (RJ-45, AUI)
3Com EtherLink III 3C509-COMBO ISA (BNC, AUI, RJ-45)
3Com EtherLink III 3C509B-COMBO ISA (BNC, AUI, RJ-45)
3Com EtherLink III 3C509-TPO ISA (RJ-45)
3Com EtherLink III 3C509B-TPO ISA (RJ-45)
3Com EtherLink III 3C579 EISA (BNC, AUI)
3Com EtherLink III 3C579-TP EISA (AUI, RJ-45)
3Com EtherLink III 3C589C-COMBO (BNC, RJ-45)
3Com EtherLink III 3C589C-TP (RJ-45)

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Memory Mapped
Buffer Size*: 8KB
Supported Connectors:** AUI, BNC (10Base-2), RJ-45 (10Base-T)

Driver Version Notes

3.31 Significant performance improvements; added support for the 3C589 PC Card (PCMCIA) adapter - Requires version 3.34 or later of the PCMCIABus driver
4.01 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

3Com Corporation
5400 Bayfront Plaza
PO Box 58145
Santa Clara, California
95052-8145 USA

US & Canada toll-free pre-sales, product information: +1 (800) NET-3COM
Fax back system: +1 (408) 727-7021
US 24 hour BBS (24/96 8/1/N): +1 (408) 980-8204
France 24 hour BBS (24/96/14.4 8/1/N): +(33) (1) 69 86 69 54
UK 24 hour BBS (12-38.4k 8/1/N): +(44) (0) 628 897 086
WWW: http://www.3com.com/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: S3 ViRGE Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/S3ViRGEDisplay.pkg.compressed

Driver Name / Installer .pkg: S3ViRGEDisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: S3 325 (ViRGE)
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver supports the Number Nine Reality 332 and Diamond Stealth 3D 2000 display adapters. Other S3 ViRGE implementations that adhere to S3's reference BIOS should be supported as well.

Supported Products / Add-on Adapters:
Number Nine 9FX Reality 332 PCI Display Adapter
(90-332010-000, 91-332010-000, 91-332013-000)
Diamond Stealth 3D 2000 PCI Display Adapter

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
The 1152x864 modes listed below are supported only by the Number9 Reality 332 Display Adapter. These modes are not available on the Diamond Stealth 3D 2000, and are not supported on generic S3/ViRGE implementations.

This adapter is not recommended for applications requiring 32 bit color; 32 bit modes will appear dim because the hardware does not implement gamma correction.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB EDO DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Driver Version Notes

3.30 - Initial Version

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)

TA45738_NeXTSTEP_Driver_S_ViRGE_Display.pdf

URL: http://www.nine.com

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Diamond Multimedia Systems, Inc.
2880 Junction Ave.
San Jose, CA 95134-1922
USA

(800) 4-MULTIMEDIA (Sales Info)
(408) 325-7000 (Main Phone)
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(+44) 01753-501400 (UK)
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(+81) 03-5695-8401 (Japan)

WWW: http://www.diamondmm.com
Published Date: Feb 20, 2012

AppleShare PC: Using with Extended Memory (11/94)

I want to load parts of PhoneNet Talk software into extended memory. I also want to load AppleShare Print Server and File Server into the top 3MB of expanded memory on a 4MB 386 machine. I'll be running PFS FirstChoice and the QEMM-386 utility.

Can I do this? How?

This article has been archived and is no longer updated by Apple.
Yes, most of AppleShare PC can be loaded into a PC's "high memory" (conventional memory is the range from 0 to 640K, high memory is the range between 640K and 1024K). High memory is generally used by the PC BIOS, expansion cards, video memory, and other system resources. Very few PCs use their entire address range for such purposes. Most machines have space available that can be mapped to extended memory and used to load user software, such as drivers and TSR (Terminate and Stay Resident) utilities.

Unfortunately, DOS doesn't have a standard way to manage high memory ranges for user programs. It also can't find available ranges within high memory. Using this space means that programs sharing the same memory space may begin to write over each other resulting in unpredictable crashes, freezes, and generally weird behavior.

The QEMM-386 utility addresses this problem by providing extended, expanded, and high memory management functions. Extended and expanded memory is beyond the scope of this discussion and is somewhat irrelevant to your problem. What you should be concerned about is high memory.

QEMM-386 maps out available high memory ranges. Once this is done, QEMM-386 can then begin to "LOADHI" specific software, usually drivers and TSR utilities.

This whole process is a bit involved but is documented well in the QEMM-386 manuals. We strongly recommend that you read it. Below is a rough outline of the procedure. This general procedure must adapt to fit the needs of the specific hardware and software you're using.

1) Install AppleShare PC, and confirm it functions satisfactorily, allowing it to load from the AUTOEXEC.BAT file.

2) Perform a basic install of QEMM-386. Modify its line in the CONFIG.SYS file, enabling its "ON" option. Reboot. QEMM-386 and AppleShare PC should both load.

3) Exercise the installed hardware, meaning format floppy disks, print something, send something through each COM port, and so forth. The idea is to access memory ranges that may be associated with the PC hardware.

4) Without rebooting, use the QEMM analysis feature to determine which high memory ranges are available and which are already in use by the PC.

5) Modify the CONFIG.SYS line for QEMM-386 to INCLUDE and EXCLUDE the appropriate memory ranges discovered in the previous step. Also, remove the ON option you added in step 2. Reboot.

6) Use the QEMM-386 Optimize program to find which parts of the system and AppleShare PC it can load into the new high memory. This is a fairly automated process, but it requires three reboots. When complete, the Optimize program should indicate how much conventional memory was saved by loading software into high memory instead of conventional memory.

7) Confirm that the MINSES.EXE program is not one of those that is loaded into high memory. If it is, change it by removing the reference to LOADHI that loaded it. MINSES is a required part of the AppleShare PC software, but will cause problems if loaded into high memory. (MINSES and REDIR were both written by Microsoft, and assist in directing standard DOS commands to network devices.)

This is a very short description of the process, but it should give you a general idea of what to do. Again, we recommend reading the QEMM-386 manual for exact details. In addition to installation, the manual covers the different capabilities and uses for each PC memory type.

Additional information can be obtained from Farallon Computing, Inc.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

Adaptec 154x Family and Compatible OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Adaptec 154x family and compatible
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CDROM
An updated release version of this driver, version 4.01, is available on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/Adaptec1542B.pkg.compressed

Driver Name / Installer .pkg: Adaptec1542B
Driver Type: SCSI
Driver Scope: Product Family
Supported Components: Adaptec AIC-6251, Adaptec AIC-7970
PC Bus / Interface Supported by Driver:** EISA, ISA

General Overview notes: The Adaptec154x compatible driver is designed to support a variety of SCSI adapters from Adaptec and several third parties.

Supported Products / Add-on Adapters:
Adaptec 154xB (ISA)
Adaptec 154xC (ISA)
Adaptec 154xCF (ISA)
Adaptec 1542CP (ISA Plug and Play)
Adaptec 174x (EISA) in standard 154x mode only

Special Features of Driver / Driver Notes:
The onboard floppy controller, available on the 1542 cards, is not supported.

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2)
Access Mode: DMA
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

· For setup and installtion of the 154xB see
NeXTanswers document number 1107.

· For setup and installtion of the 154xC/CF see
NeXTanswers document number 1108.

· NEXTSTEP does not officially support the floppy controller integrated into the 1542B. Use the floppy controller integrated into your system's motherboard.

· When installing NEXTSTEP onto an IDE hard disk drive, the CD-ROM drive's SCSI ID number should be zero.

· Some users have reported problems during the installation process if the CD-ROM drive's SCSI ID number is set to zero. NEXTSTEP will freeze after displaying the message rootdev 608 when this problem is encountered. Setting the CD-ROM drive's SCSI ID to six has fixed the problem when nothing else seemed to work.

· Improper SCSI termination can cause strange, unreproducible errors. Be certain that the first and last devices on the SCSI bus (and only these two devices) are terminated.

· Avoid system configurations combining an Adaptec 154xB/C/CF and an ATI Ultra Pro EISA card. A hardware conflict exists which causes data corruption on SCSI hard disks.

· If your system includes an Adaptec 1542B and you do not have jumper six enabled it will hang. It will boot off the floppy and recognize the SCSI drives, but instead of starting the install process, it will hang with the messages:

fdisk: bogus bios info
some bios' can't handle non-sequential targets.

· The Adaptec 1542B does not support 2.88MB floppy drives attached as SCSI devices.

Driver Version Notes

4.00 Released on OPENSTEP 4.0 User CD-ROM
4.01 Added support for 1542CP Plug and Play adapter.

Future Planning

Future / Update Planning:
Reason for New Driver / Update:
New Driver / Update Timeframe:

New Driver / Update Description:
The 1542CP requires the latest EISABus driver to be first installed.

Note: Information contained in the "Future Planning" section of this document does not constitute a commitment on the part of NeXT to complete the planned development work.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Adaptec Inc.
691 South Milpitas Blvd.
Milpitas, CA 95035
USA

+1 (408) 945 8600 international phone number
+1 (800) 959 7274 USA toll-free (customer support) phone
+1 (408) 945 7727 bulletin board system
+1 (408) 957 7150 faxback system
+1 (408) 262 2533 fax
WWW: http://www.adaptec.com/
Published Date: Feb 20, 2012

Adaptec 274x and 284x SCSI Adaptor OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Adaptec 274x and 284x family
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Adaptec2740
Driver Type: SCSI
Driver Scope: Product Family
Supported Components: Adaptec AIC-7770
PC Bus / Interface Supported by Driver*: EISA, VL-Bus

General Overview notes: The Adaptec 274x series driver is designed to support the 274x series of EISA SCSI adapters and the 284x series of VL-Bus SCSI adapters. The 2(7,8)42 versions include a floppy controller.

Supported Products / Add-on Adapters:
Adaptec 2740 (EISA) - not tested but should work
Adaptec 2740T (EISA)
Adaptec 2840 (VLB)

Special Features of Driver / Driver Notes:
The 274x is available in a 'T' version that includes two SCSI channels, both channels are supported by this driver.

The onboard floppy controller available on the 2(7,8)42 cards is not supported.

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode: DMA
Attributes:** SCSI-2
Cache Size Supported:** N/A

Known Problems

The 284x driver uses port 4c00 by default. You must set the DIP switches on your 284x card to use this port. The correct settings are:
sw1:on
sw2:on
sw3:off
sw4:off

The 274x driver uses port 0x4c88 by default.

Driver Version Notes

4.01 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Adaptec Inc.
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Published Date: Feb 20, 2012

TA45742_PATHWORKS_VAXshare_Multilaunching_Applications__(TIL07218).pdf

PATHWORKS VAXshare: Multilaunching Applications (11/94)

I'm testing PATHWORKS for Macintosh and have a problem multilaunching Claris applications, such as MacDraw, on the VAX. I'm able to multilaunch Microsoft applications on the VAX.

Is this only a problem with Claris? Is there a way to fix this?

Ideally, I'd like to be able to share all the applications on the VAX between the Macintosh users.

This article has been archived and is no longer updated by Apple.
This situation isn't just limited to a PATHWORKS VAXshare server. We tried the same thing on an AppleShare File Server and got the same result.

Microsoft Technical Support says that Microsoft Word, Microsoft Excel, Microsoft File, and PowerPointare all multilaunch applications. Each has some limited multi-user capabilities as well.

This is not a limitation of Claris' software: these applications are not supported as multilaunch applications. The effects of multilaunching are unknown. Also, keep in mind possible licensing problems, because these applications are sold as single-user applications.

Check with the vendor of the application to determine if it provides multi-launch capability.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

OPENSTEP 4.x Driver: Adaptec 2940 and 7870 SCSI

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.

NOTE: Apple Enterprise Software has suspended on-going development of new drivers for the NeXTSTEP and OPENSTEP product lines. Where possible, we will be updating current drivers for minor product revisions. These drivers will be made available in the TIL.

For a complete list of supported drivers for the OPENSTEP operating system, see the **OPENSTEP Driver Compatibility Guide**.
This article has been archived and is no longer updated by Apple.

Availability Information

A version of this driver is on the OPENSTEP CD-ROM

An updated release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/Adaptec2940SCSI.pkg.compressed

Driver Name / Installer .pkg: Adaptec2940SCSIDriver

Driver Type: SCSI

Driver Scope: Product Family

Supported Components: Adaptec AIC-7850, Adaptec AIC-7870, Adaptec AIC-7870D, Adaptec AIC-7880

PC Bus / Interface Supported by Driver*: Integrated, PCI

General Overview notes:

The Adaptec 2940 series driver is designed to support the 2940 series of PCI SCSI adapters. A driver for Adaptec 7895 and other drivers, see the Adaptec 78xx Driver Overview, **TIL article 70011**.

Supported Products / Add-on Adapters:

Adaptec AHA-2930B (PCI)

Adaptec AHA-2940 (PCI)

Adaptec AHA-2940W (PCI, Wide SCSI)

Adaptec AHA-2940U (PCI, Ultra SCSI)

Adaptec AHA-2940UW (PCI, Ultra/Wide SCSI)

Adaptec AHA-2910B (PCI) - Not tested but should work.

Supported Products / Systems (ie integrated into PC System):

DEC EISA/PCI Server system w/ 7870 on motherboard

DEC Celebris GLST w/ 7850 on riserboard

HP Kayak on-board 7860 & 7880 based SCSI adapters.

Special Features of Driver / Driver Notes:

This driver does not support the Adaptec AHA-2920 (PCI)

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)

Access Mode: Bus Master DMA

Attributes*: SCSI-2

Cache Size Supported*: N/A

Known Problems

The Adaptec 2940 SCSI Host Adapter Driver supports Synchronous Data Transfer as well as Fast SCSI transfers. In order to enable Synchronous Data Transfer, this feature must be enabled in both the 2940's AutoSCSI program and in the NEXTSTEP Configure application, when configuring the Adaptec 2940 driver. In the AutoSCSI program, this feature is enabled in the SCSI Device Configuration menu, via the Initiate Sync Negotiation field. This can be enabled or disabled on a per-target basis. In the Configure application, the Synchronous button, if disabled, disables Synchronous Transfers for ALL targets. If enabled, the values selected in the AutoSCSI program are used to determine whether or not Synchronous Transfers occur on a per-target basis.

The Synchronous Transfer data rate is determined in the 2940's AutoSCSI program, via the Maximum Sync Transfer Rate field in the SCSI Device Configuration menu. Fast SCSI Transfers are enabled by selecting a value of 10 (i.e., 10 Megabytes/seconds) for this field. Note that if Synchronous Transfers are disabled, the Maximum Sync Transfer Rate field is meaningless. Also note that it is not recommended to select a value higher than 5 for a device which is in an external enclosure and connected to the 2940 via an external SCSI cable.

Driver Version Notes

3.33 - Added support for Adaptec's AIC-7850 chipset.

3.36 - Added support for Adaptec's AIC-7870 revision D (needed to support the latest revisions of the AHA2940 & AHA2940W)

3.37 - Integrate Adaptec's HIM v1.21 to support the AHA2940U & AHA2940UW Ultra SCSI host adapters.

4.00 - Released on OPENSTEP 4.0 User CD-ROM

4.02 - Fixes a bug which prevented adapters with BIOS rev. 1.32 from working on machines with Phoenix BIOS

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

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Published Date: Feb 20, 2012

Adaptec 6x60 SCSI Chipset OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Adaptec 6x60 chipset (add-on & integrated)
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: AIC6X60SCSI
Driver Type: SCSI
Driver Scope: Generic-Chipset
Supported Components: Adaptec AIC-6360
PC Bus / Interface Supported by Driver*: Integrated, ISA

General Overview notes: The Adaptec 6x60 Compatible SCSI driver is designed to support a variety of SCSI adapters which incorporate the Adaptec 6260 & 6360 SCSI controller chipsets.

Supported Products / Add-on Adapters:
Adaptec AVA-1505A (ISA)
Adaptec AVA-1515A (ISA)
Adaptec AHA-1520A (ISA)
Adaptec AHA-1530P (ISA) - Not tested but might work.
Adaptec Slim SCSI (PC/MCIA)

Supported Products / Systems (ie integrated into PC System):
Intel GX/Pro

Special Features of Driver / Driver Notes:
The onboard floppy controller, available on some cards, is not supported.

SCSI Driver Details

Supported Connectors: 25-pin DB25 (Mac SCSI), 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2)
Access Mode: PIO
Attributes*: SCSI-2
Cache Size Supported*: N/A

Known Problems

Never tested with Compaq Portable 486/M,C and does not work.
Next SCSI color printer currently does not work with the Adaptec 6x60 driver.

Driver Version Notes

3.32 - Adds support for Adaptec Slim SCSI (PC/MCIA) and SoundBlaster 16 integrated SCSI.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

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Published Date: Feb 20, 2012

AMD PC SCSI Adaptor OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: AMD PC SCSI
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: AMDPCSCSIDriver
Driver Type: SCSI
Driver Scope: Generic-Chipset
Supported Components: AMD Am53C974, AMD Am79C974
PC Bus / Interface Supported by Driver:** Integrated, PCI

General Overview notes: This driver should support the AMD Am53C974 family of PCI SCSI controllers. The 79C974 is a combo chip with contains an Am79C970 ethernet core and an Am53C974 SCSI core

Supported Products / Add-on Adapters:
The AMDPCSCSI driver is known to work with the following SCSI devices:
Toshiba CD-ROM XM-3401T
Peripheral Solutions 8mm Exabyte DAT Drive -- 8500
Syquest 88MB SQ5110 D3G 810
IOMEGA Bernoulli 230 BETA230 1.1408/2
Pinnacle Micro Tahoe 230MB MO J6CTahoe-130A
Quantum 504MB LPS5255S 311012 Hard Drive
Quantum LPS540S 590H01 Hard Drive
Next SCSI Color Printer
HSD Scan-X Color Scanner (UMAX engine)
COMPAQPC DPES-31080

Supported Products / Systems (ie integrated into PC System):
Compaq Deskpro XL
HP Vectra XU

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI)
Attributes*: SCSI-2
Cache Size Supported*: N/A

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

AMD PCnet32 Network Adaptor OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: AMD PCnet32
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: AMDPCnet32NetworkDriver
Driver Type: Networking
Driver Scope: Generic-Chipset
Supported Components: AMD Am79C965, AMD Am79C970, AMD Am79C974
PC Bus / Interface Supported by Driver:** Integrated, PCI, VL-Bus

General Overview notes: This driver is designed to support LAN adapters that use the AMDPCnet32 ethernet controller. The AMD PCnet32 Ethernet controller is used in both integrated designs (on-board system boards or accessory daughter cards) and add-on VL-Bus and PCI adapters. This OPENSTEP driver is designed to support generic implementations of the AMD Am79C965 and Am79C970 chipset (ie designs that follow the example design as provided by AMD). The 79C974 is a combo chip with contains an Am79C970 ethernet core and an Am53C974 SCSI core

Supported Products / Add-on Adapters:
X/Lan Add-On Adapter (based on Am79C970)

Supported Products / Systems (ie integrated into PC System):
Canon object.station 41
Compaq Deskpro XL (On-board)
HP Vectra XU (On-Board)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: N/A
Supported Connectors*: AUI, UTP

Known Problems

Due to reliability issues, it is not recommended that you use the this driver with HP Vectra XU machines.

IBM PCI Ethernet Adapter (based on Am79C970, IBM part #13H9237) is reported to work but has not been tested by SQA.

Driver Version Notes

3.33 - Added support for an updated version of PCnet32 PCI hardware.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

TA45746_AMD_PCnet_Network_Adaptor_OPENSTEP_Driver_Overview.pdf

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Published Date: Feb 20, 2012

ATI Display OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: ATI
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: ATI
Driver Type: Display
Driver Scope: Product Family
Supported Components: AT&T ATT20C491 RAMDAC, ATI 68800 (Mach32), ATI 68830 RAMDAC, ATI 68875 RAMDAC, Brooktree Bt481 RAMDAC, Brooktree Bt485 RAMDAC
PC Bus / Interface Supported by Driver*: EISA, Integrated, VL-Bus

General Overview notes: This driver is obsolete and has been replaced by ATIMach32.

The ATI graphics driver is designed to support the ATI 68800 graphics controller (also known as Graphics Ultra Pro or Mach 32). Although ATI makes a broad range of graphics controllers, only the 68800 supports the linear frame buffer mode required by NEXTSTEP for 32-bit,16-bit color or 8-bit grayscale. This driver supports EISA, custom LocalBus and VESA LocalBus versions of 68800 graphics adapters. This driver also supports a variety of RAMDAC's used with these chips. Although ATI has set some standards for choice of RAMDAC, this driver should only be expected to work with the specific systems and adapters listed. Note: ATI is in the process of updating the 68800 from Rev 3 to Rev 6A. Although the Rev 6A chip is designed to be compatible with Rev 3 drivers, this driver update will be tested with Rev 3 and Rev 6A chips.

Supported Products / Add-on Adapters:
ATI Graphics Ultra Pro (EISA, ATI 68875 RAMDAC)
ATI Graphics Ultra Pro (EISA, TI 34075 RAMDAC)
ATI Graphics Ultra Pro (VL-Bus, ATI 68875 RAMDAC)

Supported Products / Systems (ie integrated into PC System):
Intel GX/Pro (Custom LB, onboard ATI, TI 34075 RAMDAC)
Data General Dasher DE2 (Custom LB, TI 34075 RAMDAC)
AST Premmia 4D (Custom LB, onboard ATI, BT 481 RAMDAC)
Gateway V Series (VL-Bus, ATI 68875 RAMDAC)

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:

16 Bit Color Modes*:
1024x768 (2MB+), 1120x832 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1120x832 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

The ATI Ultra Pro driver reserves a large number of I/O ports to accomodate SoftPC in full-screen mode. Some of these ranges may conflict with other drivers. In particular, the range 0x52eee-0xfeef may be a problem. This conflict can be resolved simply by removing this reserved range from the driver configuration. Note, however, that this may prevent SoftPC from running correctly in full screen mode. The procedure to remove the port range is as follows:
- run Configure.app and select the display driver
- select the Expert options for the driver
- find the I/O Ports entry and double-click on the values to edit them
- scroll the field all the way to the right and delete the range 0x52ee-0xfeef. Make sure to hit return after editing, or the change won't be made.
- save the configuration and reboot

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

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Published Date: Feb 20, 2012

ATI Mach32 Display OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: ATI Mach32
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: ATIMach32
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: AT&T ATT20C491 RAMDAC, ATI 68800 (Mach32), ATI 68830 RAMDAC, ATI 68875 RAMDAC, Brooktree Bt481 RAMDAC, Brooktree Bt485 RAMDAC
PC Bus / Interface Supported by Driver*: EISA, Integrated, PCI, VL-Bus

General Overview notes: Generic Driver for the ATI Mach32 (Also known as 68800) Rev 3, Rev 6 and AX.

Supported Products / Add-on Adapters:
ATI Graphics Ultra Pro - EISA (with 2MB VRAM)
ATI Graphics Ultra Pro - PCI (with 2MB VRAM)
ATI Graphics Ultra Pro - VL-Bus (with 2MB VRAM)
ATI Graphics Ultra Pro XLR - VL-Bus (with 2MB DRAM) - not tested, but should work
ATI Graphics Ultra Pro XLR - PCI (with 2MB DRAM) - not tested, but should work

Supported Products / Systems (ie integrated into PC System):
Intel GX/Pro (Custom LocalBus, onboard ATI, TI 34075 RAMDAC)
Data General Dasher DE2 (Custom LocalBus, TI 34075 RAMDAC)
AST Premmia 4D (Custom LocalBus, onboard ATI, BT 481 RAMDAC)
Gateway V Series (VESA LocalBus, ATI 68875 RAMDAC)

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 1MB VRAM, 2MB DRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:

16 Bit Color Modes*:
1024x768 (2MB+), 1120x832 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1120x832 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

NeXT SQA has experienced some display problems with the ATI Mach32 VL-Bus adapter on machines using the OPTi chip-set. One of the problems is the machine will hang in any of the 8-bit greyscale display modes. However, machines without this chip-set behave normally.

NeXT SQA has witnessed some video noise in 800x600 display modes for adapters with the 68003 Mach32 chip.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

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Published Date: Feb 20, 2012

ATI Mach64 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: ATI Mach64
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: ATIMach64DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: ATI 88800 (Mach64)
PC Bus / Interface Supported by Driver*: Integrated, PCI, VL-Bus

General Overview notes: This new graphics driver is designed to support a variety of graphics adapters using the ATI 88800 graphics controller. Adapters based on the 88800 GX/CX (also known as the Mach64) graphics controller chipset can support 1MB, 2MB or 4 MB of VRAM or DRAM. This driver supports a variety of configurations including high-resolution and high-color (32bit) modes and several RAMDAC, frame buffer and interface bus (PCI and VL-Bus only) configurations.

Due to the wide range of possible combinations, only a few specific adapters will be tested by NeXT. Although this driver may work with most 88800 GX/CX based adapters, Apple will only support the specific adapters tested by Apple.

Supported Products / Add-on Adapters:
ATI Graphics Ultra Pro Turbo (PCI, with 2MB VRAM)
ATI Graphics Ultra Pro Turbo (PCI, with 2MB DRAM)
ATI Graphics Ultra Pro Turbo (PCI, with 4MB VRAM)
ATI Graphics Ultra Pro Turbo (PCI, with 4MB DRAM)
ATI Graphics Ultra Pro Turbo (VL-Bus, with 4MB VRAM)
ATI Graphics Ultra Pro Turbo (VL-Bus, with 4MB DRAM)

Supported Products / Systems (ie integrated into PC System):
AT&T Globalyst 600

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB DRAM, 2MB VRAM, 4MB DRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (4MB+), 800x600 (4MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x896 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152x896 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 800x600 (1MB+)

Known Problems

The Mach64 driver makes use of the board's BIOS to switch modes. This requires the user to set up the display adapter as specified in the documentation supplied by ATI. This will usually require running a setup utility. Until this is done, not all supported display modes will be available.

Driver Version Notes

3.33 - Added support for additional hardware
3.34 - Added support for ATI 68860 Rev C and ST1703 RAMDACs.
3.36 - Beta - Driver rewritten to call Adapter's BIOS to switch modes.
3.37 - First Released version that uses the Adapter's BIOS - should be robust to RAMDAC changes.
4.01 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

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Published Date: Feb 20, 2012

OPENSTEP Beep Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Beep
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Beep
Driver Type: Sound
Driver Scope: Generic-System

General Overview notes: Generic beep driver using internal speaker. The beep driver generates several different soudning beeps, but no high quality audio.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM
Published Date: Feb 20, 2012

BusLogic FlashPoint SCSI Adaptor OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Bus Logic FlashPoint
Last Update: October 11, 1996

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated BETA version of this driver, version 4.02, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/BusLogicFPSCSI.pkg.compressed

Driver Name / Installer .pkg: BusLogicFPSCSI
Driver Type: SCSI
Driver Scope: Specific Product
Supported Components: BusLogic BA81C15
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: The BusLogic FlashPoint SCSI driver is designed to support the KT-930 SCSI adapter from BusLogic.

Supported Products / Add-on Adapters:
BusLogic KT-930 PCI SCSI Host Adapter
BusLogic KT-932 PCI Dual Chanel SCSI Host Adapter
BusLogic BT-950 PCI Wide SCSI Host Adapter

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

SCSI Driver Details

Supported Connectors: 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2)
Access Mode: Bus Master DMA
Attributes*: SCSI-2
Cache Size Supported*: N/A

Driver Version Notes

3.31 - First released version of this driver
4.01 - Released on OPENSTEP 4.0 User CD-ROM
4.02 & 3.32 - Merged latest SCCB manager (6/12/96)

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

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Published Date: Feb 20, 2012

BusLogic Family SCSI Adaptor OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: BusLogic family
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: BusLogicSCSIDriver
Driver Type: SCSI
Driver Scope: Product Family
Supported Components: BusLogic BA90C30
PC Bus / Interface Supported by Driver*: EISA, ISA, PCI, VL-Bus

General Overview notes: The BusLogic SCSI driver is designed to support the 747C and 445C series SCSI adapters from BusLogic. This driver is specifically designed to support the 32bit extended modes supported by these adapters. In comparison to the Adaptec 154x compatible mode previously used to support the 747S and 445S adapters, these extended modes provide additional performance, and remove the double buffering required by the16MB address limitation. This driver may work with other versions of BusLogic SCSI adapters such as the 545C, 747S and 445S. Since these adapters are supported in Adaptec compatibility mode with the existing Adaptec 154x driver, this driver will only be tested and supported on the latest generation, higher performance 747C and 445C series adapters. Note: In general this driver was designed to work with any BusLogic bus master SCSI adapter.

Supported Products / Add-on Adapters:
BusLogic 546C ISA SCSI Host Adapter
BusLogic 747C EISA SCSI Host Adapter
BusLogic 445C VL-Bus SCSI Host Adapter
BusLogic 946C PCI SCSI Host Adapter (rev C and D only)
BusLogic 948 PCI SCSI Host Adapter (not tested, reported to work)
BusLogic 958 PCI Wide SCSI Host Adapter (not tested, reported to work)

Supported Products / Systems (ie integrated into PC System):
Canon object.station 41

Special Features of Driver / Driver Notes:
The onboard floppy controller, available on some cards, is not supported.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI)
Access Mode: DMA
Attributes*: SCSI-2
Cache Size Supported*: N/A

Known Problems

BusLogic firmware revs. before 4.25J may not work with this driver. In particular, firmware version 4.21 had a bug, which caused the Read Capacity data to be read up incorrectly.

BusLogic 946C rev A and B do not work with our driver.

Driver Version Notes

4.01 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Bus Logic, Inc.
4151 Burton Drive
Santa Clara, CA 95054
USA

+1 (408) 492 9090 phone
+1 (408) 492 1984 bulletin board system
WWW: http://www.buslogic.com/
Published Date: Feb 20, 2012

Logitech BusMouse OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: BusMouse
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: BusMouse
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: ISA
Supported Connectors:
Access Mode: PIO
Adapter Memory:

General Overview notes: This driver support Logitech and compatible Bus Mice.

Supported Products / Add-on Adapters:
Logitech MouseMan Bus
Logitech MouseMan Cordless

Known Problems

The Microsoft Bus mouse does not follow the Logitech protocol, and does not work with this driver.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Canon ObjectStation Display OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Canon object.station41 Display
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: CanonObjectstation41DisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Brooktree Bt485 RAMDAC, C&T 64200 (Wingine)
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This new graphics driver is designed to support the on-board Chips and Technologies Wingine graphics controller on the Canon object.station 41. The graphics subsystem of the object.station 41 was custom designed to operate with NEXTSTEP. The system uses a RAMDAC design modified to support NEXTSTEP's 4-4-4 internal 16bit color representation for improved graphics performance. This design includes 2MB VRAM and supports a variety of high resolution and high color (32bit) modes.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
Canon object.station 41

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1120x832 (2MB+), 1152x900 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1120x832 (1MB+), 1152x900 (1MB+), 1280x1024 (2MB+)

Known Problems

1024x768x72Hz 16-bit color mode is unstable on some Object.station computers.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Canon

USA toll-free phone sales and information: +1 (800) 349 6007
USA toll-free phone technical support: +1 (800) 830 1062
Canon FactsLine [fax-back service]: +1 (800) 526 4345
WWW: http://digifix.digifix.com/Developers/Canon_Computer_Systems.htmld/index.html
Published Date: Feb 20, 2012

Canon ObjectStation Sound OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Canon object.station41 Sound
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: CanonObjectstation41SoundSystem
Driver Type: Sound
Driver Scope: Specific Product
Supported Components: Analog Devices AD184
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: The Canon object.station 41 Sound System driver is designed to support the on-board audio system of the Canon object.station 41. The Canon system uses a chipset that is compatible with the Microsoft Sound System, and includes an integrated speaker and microphone. The driver is a derivative of the existing NeXT Microsoft Sound System driver with an additional initialization routine required by the specific chipset.

Supported Products / Systems (ie integrated into PC System):
Canon object.station 41

Special Features of Driver / Driver Notes:
The Driver Functionality Details are same as that for Microsoft Sound System.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Canon

USA toll-free phone sales and information: +1 (800) 349 6007
USA toll-free phone technical support: +1 (800) 830 1062
Canon FactsLine [fax-back service]: +1 (800) 526 4345
WWW: http://digifix.digifix.com/Developers/Canon_Computer_Systems.htmld/index.html
Published Date: Feb 20, 2012

Responder: When It Renames System at Startup

The Responder on my Macintosh LC makes me rename my computer every time I start it. I am running system software 6.0.7. Why does this happen?

This article has been archived and is no longer updated by Apple.
The first thing is to make sure you're using at least version 1.1.1 of Responder (actually, 2.0.x is the most recent version).

The next thing to check is the Get Info menu item in the Finder to see if the System file is locked. Responder writes the name of the client Macintosh to a resource in the System file. If the System file is locked, Responder is unable to make a permanent change to the System file.

Published Date: Feb 18, 2012

Chips and Technologies Wingine OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Chips & Technologies Wingine
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Wingine
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Brooktree Bt482 RAMDAC, C&T 64200 (Wingine), TI TLC34076 RAMDAC
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This driver supports Wingine 64200 based display implementations.

Supported Products / Systems (ie integrated into PC System):
Epson Wingine
LGI Wingine

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

16 Bit Color Modes*:
1024x768 (2MB+), 1120x832 (2MB+)

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Chips & Technologies Wingine 64300 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Chips & Technologies Wingine 64300
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Wingine64300DisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: C&T 64300 (Wingine)
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This driver supports the Wingine 64300 Display chipset on the NEC PowerMate 466D.

Supported Products / Systems (ie integrated into PC System):
NEC Powermate 466D

Special Features of Driver / Driver Notes:
The RAMDAC used in this system supports a Color Pallet only in 8 bit modes. This results in the brightness slider in Preferences, as well as automatic screen dimming, only working if an 8 bit mode is selected.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

16 Bit Color Modes*:
640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1120x832 (1MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

SoftPC will generate an illegal instruction error when switching to full screen mode.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Cirrus Logic GD542X Display Family OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Cirrus Logic GD542X Family
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: CirrusLogicGD542X
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Cirrus Logic GD542x
PC Bus / Interface Supported by Driver*: Integrated, ISA

General Overview notes: Generic SVGA 2-bit greyscale only driver

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Segmented Framebuffer
Adapter Memory: .5MB DRAM, 1MB DRAM

Known Problems

SoftPC and Nextime do not work correctly.

Driver Version Notes

3.30 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 18, 2012

Cirrus Logic GD5434 Display OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Cirrus Logic GD5434
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/CLGD5434.pkg.compressed

Driver Name / Installer .pkg: CirrusLogicGD5434DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Cirrus Logic GD5430, Cirrus Logic GD5434, Cirrus Logic GD5436, Cirrus Logic GD5446
PC Bus / Interface Supported by Driver*: Integrated, PCI, VL-Bus

General Overview notes: This driver is intended to support on-board implementations of GD5434 as well as add-on adapters.

Supported Products / Add-on Adapters:
Diamond SpeedStar 64 (PCI)
Orchid Kelvin 64 (with GD5434)

Supported Products / Systems (ie integrated into PC System):
Elonex WS4100
Intel Premier (with integrated GD5434)
HP Vectra XM Series3 (not tested but reported to work)

Special Features of Driver / Driver Notes:
Because this chip has an integrated RAMDAC with only an 8 bit palette, Preferences's Brightness slider (and hardware gamma correction in general) doesn't work for any non-8 bit modes. Also 32-bit color modes (where supported) look dark. There is no fix for these problems.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

Cirrus Logic GD5430 and GD5436 are not supported but is reported to work with this driver.

The GD5436 & GD5446 do not support 32 bit color modes. Only 8 & 16 bit modes are available for adapters based on these chips.

Driver Version Notes

3.31 - Added support for PCI cards and 8 bit color
4.00 - Released on OPENSTEP 4.0 User CD-ROM
4.01 - Added support for GD5446 chipset

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Cirrus Logic, Inc.
3100 West Warren Avenue
Fremont, CA 94538
510-623-8300

TA45760_Cirrus_Logic_GD_Display_OPENSTEP_Driver_Overview.pdf

fax: 510-252-6020

URL: www.cirrus.com
Published Date: Feb 18, 2012

TA45761_MacTerminal_Receive_Characters_(TIL07223).pdf

MacTerminal: Receive Characters

MacTerminal 3.0 is having trouble doing an XModem receive from a VAX without PATHWORKS.

What XModem receive character does MacTerminal look for?

This article has been archived and is no longer updated by Apple.
XModem uses ESC-A as the Auto Receive Character, and ESC-B as the MacBinary Auto Receive character.

Published Date: Feb 18, 2012

Cogent EM960 PCI OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Cogent EM960 PCI
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: CogentEM960NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: DEC DECchip21040
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver is now obsolete. An updated driver for the EM960 PCI has been made available as 1881_DECchip21040_Network_Driver.pkg.compressed. The readme is 1856_DECchip21040_Network_Driver_Driver_Overview.rtf.

Supported Products / Add-on Adapters:
Cogent EM960C (PCI, Combo)
Cogent EM960TP (PCI, TP Only)
Cogent EM964TP (PCI, TP Only, 4 ports - 1st port only supported)

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: N/A
Supported Connectors*: AUI, BNC, UTP

Known Problems

NeXT SQA has not tested the Cogent EM964TP.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Cogent, Inc.
Phone: (800) 426-4368
Direct Sales contact is Barre Pearson (barre@cogentdata.com)

Distributor:
Micro Central
Phone: (800) 836-4276
Published Date: Feb 20, 2012

Cogent EMaster EISA OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Cogent EMaster EISA
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: CogentEMaster
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82596
PC Bus / Interface Supported by Driver*: EISA

General Overview notes: This driver has been replaced by the Intel82596NetworkDriver.

Supported Products / Add-on Adapters:
EM932 (EISA, BNC/AUI)
EM932TP (EISA, UTP/AUI)
EM935XL (EISA, BNC/UTP/AUI)

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: DMA
Supported Connectors*: AUI, BNC, UTP

Known Problems

NeXT SQA has not tested the Cogent EM932TP.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Cogent, Inc.
Phone: (800) 426-4368
Direct Sales contact is Barre Pearson (barre@cogentdata.com)

Distributor:
Micro Central
Phone: (800) 836-4276
Published Date: Feb 20, 2012

Compaq Business Audio OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Compaq Business Audio
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: CompaqBusinessAudio
Driver Type: Sound
Driver Scope: Specific Product
Supported Components: Analog Devices AD184
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This Driver supports audio in Compaq DeskPro/M (EISA) and Compaq DeskPro/i (ISA) only. Note that newer Compaq systems use the Microsoft Sound System implementations.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
Compaq Deskpro / M
Compaq Deskpro / I

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Compaq Computers
20555 State Highway 249
Houston, TX 77070
USA

+1 (800) 345 1518 USA toll-free phone sales and information
+1 (800) 652 6672 USA toll-free phone technical support
+1 (800) 263 5868 Canada toll-free customer support phone
+1 (713) 370 0670 international phone
+1 (713) 378 1418 BBS
WWW: http://www.compaq.com/
Published Date: Feb 20, 2012

Compaq QVision OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Compaq QVision
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: QVision
Driver Type: Display
Driver Scope: Product Family
Supported Components: AT&T ATT20C505 RAMDAC, Brooktree Bt484 RAMDAC, Brooktree Bt485 RAMDAC, Brooktree Bt485A RAMDAC, Compaq QV30E00, Compaq QV32E02, Compaq QV35P04, Compaq QV64P10
PC Bus / Interface Supported by Driver*: EISA, Integrated, PCI

General Overview notes: This device driver supports the QVision family of display adapters and on-board implementations.

Supported Products / Add-on Adapters:
QVision 1024/E EISA (QV30E, QV32E)
QVision 1280/E EISA (QV32E)
QVision 1280/P PCI (QV35P, QV64P)

Supported Products / Systems (ie integrated into PC System):
Compaq Deskpro XE560
Compaq Deskpro XE466
Compaq Deskpro 5100

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1280x1024 (2MB+)

Driver Version Notes

3.31 - Added support for latest QVision 1280P (QV64P)
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Compaq Computers
20555 State Highway 249
Houston, TX 77070
USA

+1 (800) 345 1518 USA toll-free phone sales and information
+1 (800) 652 6672 USA toll-free phone technical support
+1 (800) 263 5868 Canada toll-free customer support phone
+1 (713) 370 0670 international phone
+1 (713) 378 1418 BBS
WWW: http://www.compaq.com/
Published Date: Feb 20, 2012

DECChip 21040 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: DECchip21040 Network
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: DECchip21040NetworkDriver
Driver Type: Networking
Driver Scope: Generic-Chipset
Supported Components: DEC DECchip21040, DEC DECchip21041
PC Bus / Interface Supported by Driver*: Integrated, PCI

General Overview notes: This networking driver supports most DECchip21040 & DECchip20141 based cards.

Supported Products / Add-on Adapters:
Cogent EM960 PCI
SMC PCI EtherPower (SMC 8432)
Digital EtherWORKS Turbo PCI (DE435)
Linksys EtherPCI LAN Card
DANPEX PCI Ethernet (EN-9400P3)
JCIS Condor (JC1260)
Kingston EtheRx PCI Ethernet (KNE40T & KNE40BT)

Supported Products / Systems (ie integrated into PC System):
DEC Celebris GL & GLST

Special Features of Driver / Driver Notes:
This driver replaces the Cogent EM960 PCI Ethernet Adapter driver.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: NA
Supported Connectors*: AUI, BNC, UTP

Driver Version Notes

3.32 - Added support for DECchip21041
3.36 - Added connector selection panel, fixed connector auto-detection
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Digital Equipment Corporation
146 Main St.

Maynard, MA 01754
USA

+1 (800) 332 4636 USA toll-free phone technical support
+1 (800) 722 9332 PC by DEC sales
+1 (508) 264 7111 international phone
+1 (800) 524 5694 fax
+1 (800) 388 3228 faxback
+1 (508) 496 8800 Bulletin Board System
WWW: http://www.dec.com/
Published Date: Feb 20, 2012

DECChip 21140 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: DECchip21140 Network
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: DECchip21140NetworkDriver
Driver Type: Networking
Driver Scope: Generic-Chipset
Supported Components: DEC DECchip21140
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver supports 10Mb/s and 100Mb/sec adapters based on DECchip21140.

Supported Products / Add-on Adapters:
Cogent EM100 Fast Ethernet Adapter
Cogent EM110 Fast Ethernet 10/100 Adapter
SMC 9332 Fast Ethernet 10/100 Adapter
DEC DE500 Fast EtherWORKS PCI 10/100
Cogent EM110-T4 Fast Ethernet 10/100/BNC Adapter

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type*: 100 Base T4, 100 Base TX, EtherNet
Speed*: 10 Mb/s, 100 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: NA
Supported Connectors*: BNC, UTP

Known Problems

Newer versions of the Cogent EM110 that use the DECchip21140A need to have the following line added to the Instance table in order for them to determine their ethernet address:

"Address Offset" = "20";

Driver Version Notes

3.32 - Added support for Cogent EM110-T4 adapters.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

A/UX: Wangbat Device Driver Now Available

Do you know of an A/UX device driver for a Wangbat 4mm helical scan tape backup unit?

This article has been archived and is no longer updated by Apple.
FWB Software, Inc. has a device driver for Wangbat 4mm tape drive backup units under A/UX 2.0.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
27 July 1993 - Company title updated from FWB, Inc. to FWB Software, Inc.
31 August 1992 - Reviewed for technical accuracy.

Published Date: Feb 20, 2012

Dell DGX JAWS OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Dell DGX (JAWS)
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: JAWS
Driver Type: Display
Driver Scope: Specific Product
Supported Components: INMOS IMS-G332 RAMDAC
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This driver supports the integrated DELL JAWS display adapter, which is highly optomized for NEXTSTEP.

Supported Products / Systems (ie integrated into PC System):
Dell 450DE/2 DGX

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

16 Bit Color Modes*:
1120x832 (2MB+)

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Dell Computer Corporation
11209 Metric Blvd.
Austin, Texas 78758
USA

+1 (800) 247 6821 USA toll-free phone
+1 (800) 950 1329 faxback system
+1 (512) 728 8528 bulletin board system
011 31 20 684 9291 Europe phone
011 866 2 391 2100 SE Asia phone
011 81 3 5420 5353 Japan phone
+1 (800) 727 8320 USA fax
WWW: http://www.dell.com/
Published Date: Feb 20, 2012

Diamond Stealth OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Diamond Stealth
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.02, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/DiamondStealth.pkg.compressed

Driver Name / Installer .pkg: DiamondStealthDisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: S3 732 (Trio32), S3 764 (Trio64), S3 764 (Trio64V+), S3 801, S3 805, S3 864 (Vision), S3 868 (Vision), S3 911
PC Bus / Interface Supported by Driver*: PCI, VL-Bus

General Overview notes: This graphics driver is designed to support the VL-Bus & PCI versions of the Stealth 64 and Stealth 3D Graphics adapters from Diamond Computer Corp. These cards are based on the or S3-968, S3-868, S3-Trio, or ViRGE graphics controller chipsets and support 2MB or 4 MB of RAM.

This driver replaces the older Diamond Stealth64 driver.

Supported Products / Add-on Adapters:
Diamond Stealth 64 DRAM PCI-Bus Display Adapter
Diamond Stealth 64 DRAM VL-Bus Display Adapter
Diamond Stealth 64 Video PCI-Bus Display Adapter
Diamond Stealth 64 Video VL-Bus Display Adapter
Diamond Stealth 64 VRAM PCI-Bus Display Adapter
Diamond Stealth SE PCI-Bus Display Adapter
Diamond Stealth SE VL-Bus Display Adapter
Diamond Stealth 64 DRAM T PCI-Bus Display Adapter
Diamond Stealth 64 DRAM T VL-Bus Display Adapter
Diamond Stealth 64 Video VRAM VL-Bus Display Adapter
Diamond Stealth 64 Video 3200 VL-Bus Display Adapter
Diamond Stealth 64 Video 2121XL DRAM PCI-Bus Display Adapter
Diamond Stealth 64 Video 3000 VRAM PCI-Bus Display Adapter
Diamond Stealth 3D 2000 PCI-Bus Display Adapter
Diamond Stealth 3D 3000 PCI-Bus Display Adapter

Special Features of Driver / Driver Notes:
This driver does not support gamma correction in 16 and 24 bit modes. This results in a somewhat dim screen when using 16 bits per pixel. Also, in these modes the brightness slider in preferences is inoperative.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 1MB VRAM, 2MB DRAM, 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 1152x864 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

· When used with the Diamond Stealth SE boards (both PCI and VL) configured for 800x600 8-bit Greyscale, some video artifacts and noise may be seen when viewing NeXTTIme movies or performing other graphics-intensive operations. One of the color modes is recommended if this occurs.

· Diamond has changed the PCI deviceID on their newer Stealth adapters. This will cause autodetection to fail, thus the NEXTSTEP driver will defualt to VGA display mode. Under NEXTSTEP 3.3, the workaround is to click Expert... while inspecting the driver in Configure.app, then modify the value of the Auto Detect setting to read 0x88d05333 0x88d15333 0x88f05333.

· Diamond Stealth 64 Series 2001 does not use an S3 controller, it uses the ARK Logic which is not supported.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM
4.01 - Added support for ViRGE and ViRGE VX chipsets.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Diamond Multimedia Systems, Inc.
2880 Junction Ave.
San Jose, CA 95134-1922
USA

(800) 4-MULTIMEDIA (Sales Info)
(408) 325-7000 (Main Phone)
(408) 325-7070 (Main Fax)

(+44) 01753-501400 (UK)
(+49) 8151-2660 (German)
(+81) 03-5695-8401 (Japan)

WWW: http://www.diamondmm.com
Published Date: Feb 20, 2012

Diamond Stealth64 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Diamond Stealth64
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: DiamondStealth64DisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: S3 964 (Vision)
PC Bus / Interface Supported by Driver*: PCI, VL-Bus

General Overview notes: This graphics driver is designed to support the VL-Bus & PCI versions of the Stealth 64 Graphics adapters from Diamond Computer Corp. These cards are based on the S3-964 graphics controller chipsets and support 2MB or 4 MB of VRAM. This driver supports both configurations including a variety of high-resolution and high-color (32bit) modes. DRAM-based cards are not supported.

Supported Products / Add-on Adapters:
Diamond Stealth 64 (PCI, 4MB VRAM)
Diamond Stealth 64 (PCI, 2MB VRAM)
Diamond Stealth 64 (VL-Bus, 4MB VRAM)
Diamond Stealth 64 (VL-Bus, 2MB VRAM)

Special Features of Driver / Driver Notes:
This driver also works with the Spider Tarantula 64PCI display adapter

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 1152x864 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 800x600 (1MB+)

Known Problems

Diamond Stealth 64 Series 2001 does not use an S3 controller, it uses the ARK Logic which is not supported.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Diamond Multimedia Systems, Inc.
2880 Junction Ave.
San Jose, CA 95134-1922
USA

(800) 4-MULTIMEDIA (Sales Info)
(408) 325-7000 (Main Phone)
(408) 325-7070 (Main Fax)

(+44) 01753-501400 (UK)
(+49) 8151-2660 (German)
(+81) 03-5695-8401 (Japan)

WWW: http://www.diamondmm.com
Published Date: Feb 20, 2012

DPT 2000 Family OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: DPT 2000 family
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: DPT2000SCSIDriver
Driver Type: SCSI
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver*: EISA, Integrated, ISA, PCI

General Overview notes: This driver is obsolete and has ben replaced by the DPTSCSIDriver.

The DPT 2000 Series driver update is designed to support the 2000 series of SCSI adapters from DPT. This driver specifically supports the DPT 2012 EISA, 2021 ISA, 2022 EISA, 2122 EISA Adapters. This driver does not support the DPT 2011 ISA Adapter. This driver replaces the NEXTSTEP 3.2 DPT 2012-B EISA SCSI Adapter driver.

Supported Products / Add-on Adapters:
DPT 2021/9x SmartCache III (ISA) - not tested, but should work
DPT 2022/9x SmartCache III (EISA)
DPT 2122/9x SmartCache III (EISA)
DPT 2122/9xW SmartCache III (EISA, Wide) - not tested, but should work
DPT 2122/9xDW SmartCache III (EISA, Differential, Wide) - not tested, but should work
DPT 2024 SmartCache III (PCI) - In future update
DPT 2124 SmartCache III (PCI) - In future update

Supported Products / Systems (ie integrated into PC System):
NEC Express II P60 (On-Board)

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode:
Attributes:** SCSI-2
Cache Size Supported*: 16MB, 4MB, 64MB

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Distributed Processing Technology
140 Candace Drive
Maitland, FL 32751
USA

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+1 (407) 831 6432 bulletin board system
+1 (407) 260 5366 fax
URL: http://www.dpt.com
Published Date: Feb 20, 2012

TA45774_Personal_LaserWriter_NT_Cause_of_Partial_TwoSided_Pages_(TIL07226).pdf

Personal LaserWriter NT: Cause of Partial Two-Sided Pages

When I try to print double-sided pages on a Personal LaserWriter NT using manual feed, very often the back side of the page doesn't print. Any ideas?

This article has been archived and is no longer updated by Apple.
This printing problem occurs if there is a delay feeding paper to the multi-purpose tray. The lower portion of the image will begin to disappear about 10 seconds after the Paper Out indicator lights, or about 4 seconds after the preceding page ejects. The amount of the image affected depends on the length of the delay. If too much time passes and the image disappears, the Personal LaserWriter NT will ignore that page entirely and continue with the rest of the print job.

Because double-sided printing requires feeding paper one sheet at a time, and because you must wait for the first sheet to complete before feeding the next, you have little time before the image begins to disappear.

The only workaround is to insert your pages more quickly. Before we figured out what was really happening, we noticed that the problem diminished the more we tried to reproduce it. We were getting better at feeding the paper, and so didn't cause a sufficient delay to see the problem.

Published Date: Feb 18, 2012

DPT SCSI Family OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: DPT SCSI family
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: DPTSCSIDriver
Driver Type: SCSI
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver*: EISA, Integrated, ISA, PCI

General Overview notes: The DPT SCSI driver update is designed to support the 2000 and 3000 series of SCSI adapters from DPT. This driver does not support the DPT 2011 ISA Adapter. The DPT 32xx series SmartRAID SCSI adapters include RAID and Cache capability, and support from 1 to 3 SCSI channels. This driver replaces the NEXTSTEP 3.3 DPT 2000 Adapter driver.

Supported Products / Add-on Adapters:
Model# Bus Description
PM2021/90 ISA SCSI adapter
PM2021/95 ISA SCSI adapter
PM2022/90 EISA SCSI adapter
PM2022/95 EISA SCSI adapter
PM2024 PCI SCSI adapter
PM2041W * ISA Wide SCSI adapter
PM2042W * EISA Wide SCSI adapter
PM2044W * PCI Wide SCSI adapter
PM2122/90 EISA SCSI adapter
PM2122/95 EISA SCSI adapter
PM2124 PCI SCSI adapter
PM2124W PCI WIDE SCSI adapter
PM2142W * EISA Wide SCSI adapter

PM3021 ISA SCSI RAID controller (Not tested, should work)
PM3222 EISA SCSI RAID controller
PM3224 PCI SCSI RAID controller
PM3224W PCI WIDE SCSI RAID controller

DPT-TWR n/a 6-bay SCSI Tower
DPT-TWR/W n/a 6-bay WIDE SCSI Tower (Not tested, should work)

* These products have not yet been tested by NeXT's SQA Dept.

Supported Products / Systems (ie integrated into PC System):
NEC Express II P60 (On-Board)

Special Features of Driver / Driver Notes:
The onboard floppy controller, available on some cards, is not supported.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode:
Attributes*: SCSI-2
Cache Size Supported*: 16MB, 4MB, 64MB

Known Problems

The following products have been reported as working:

PM2044UW PCI Ultra Wide SCSI adapter
PM2144UW PCI Ultra Wide SCSI adapter

PM3224W PCI WIDE SCSI RAID controller

PM3332UW EISA Ultra WIDE SCSI RAID controller

Driver Version Notes

4.03 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Distributed Processing Technology
140 Candace Drive
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+1 (407) 260 5366 fax
URL: http://www.dpt.com
Published Date: Feb 20, 2012

EIDE OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: EIDE
Last Update: February 18, 1998

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated BETA version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/EIDE.pkg.compressed

Driver Name / Installer .pkg: EIDE
Driver Type: System
Driver Scope: Generic-System
Supported Components: PC Tech RZ1000
PC Bus / Interface Supported by Driver*: Integrated, ISA, PCI
Supported Connectors: 40-pin Header (Internal IDE)
Access Mode: PIO
Adapter Memory:

General Overview notes: This drivers supports IDE disks and IDE ATAPI rev. 1.2 compliant CD-ROMs. It supports primary and secondary IDE controllers with up to 2 drives per controller.
This driver replaces the IDE driver distributed on the NEXTSTEP 3.3 CD.

Supported Products / Add-on Adapters:
The following ATAPI CD-ROM drives are supported:
Chinon CD-ROM CDS-525 (2X), firmware rev. W09
Matsushita CD-ROM CR-571 (2X), firmware rev. 1.0e -- Panasonic
Mitsumi CD-ROM 1B (4X), firmware rev. B02 -- model FX400
Sony CD-ROM CDU55E (2X), firmware rev. 1.0u
Sony CD-ROM CDU76E-S (4X), firmware rev. 1.0c
Toshiba CD-ROM XM-5302TA (4X), firmware rev. 0305
Philips CM207, firmware rev 1.10 (??) -- reported to work
SONY CD-ROM CDU76E-Q, firmware rev 1.0c (4X)
SONY CD-ROM CDU55D, firmware rev 1.0v (2X)
SONY CD-ROM CDU77E, firmware rev 1.0e (4X)
TORiSAN CD-ROM CDR-S1, firmware rev 1.70 (4X) -- SANYO
Chinon CD-ROM CDS-545, firmware rev ERc A1.0 (4X)
GoldStar CD-ROM GCD-R540, firmware rev 1.17 (4X)
GoldStar CD-ROM GCD-540C, firmware rev 1.01 (4X)
SANYO CRD-254P, firmware rev 1.02 (4X)
MATSHITA CD-ROM CR-574, firmware rev 1.06 (4X) -- Panasonic
Pioneer CD-ROM DR-UA124X, firmware rev 1.02 (4X) -- force detection
MITSUMI CD-ROM !B, firmware rev K02 (4X) -- DRM FX400B
TEAC CD-55E, firmware rev ?? (4X) -- Thinkpad 760CD
ATAPI CD-ROM SPEED-6X, firmware rev 6.2D (6X) -- ACER 665A
VERTOS 600ESD CD-ROM X6-IDE, firmware rev 1.20 (6X)
TEAC CD-56E, firmware rev 1.0D (6X)
MATSHITA UJDCD4700, firmware rev 1.11 (??)
TEAC CD-58E, firmware rev 1.1B (8X)
Toshiba CD-ROM XM-5602B, firmware rev 1426 (8X)
Sony CD-ROM CDU311, firmware rev 3.0i (8X)
EPSON CMD-2240 SPEED-6X, firmware rev R100 -- reported to work
Hitachi CDR-7730, firmware 1.1a (4X)
TEAC CD-524E, firmware 4.0D (24X)

Supported Products / Systems (ie integrated into PC System):
Other ATAPI 1.2 compliant CD-ROM drives should work with NEXTSTEP even if they are not in the supported list.

Special Features of Driver / Driver Notes:

NeXT's EIDE driver is not affected by the RZ1000 hardware bug.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

These devices are not supported.
1. NEC CDR-260 (2X)
2. NEC CDR-273

To get the Pioneer DR-UA124X 1.02 CD-ROM to work you must force detection. You can do this by going in Expert mode and adding the key "Slave"="ATAPI" (or "Master" as the case may be) to the table.

Driver Version Notes

3.33 - This version adds support for several new ATAPI CD-ROM drives and fixes some bugs.
3.34 - Fixed a bug which could cause machines to hang under very heavy load. Released on OPENSTEP 4.0 User CD-ROM
4.02 - Added device overrides and modified the inspector. The new overrides are documented in the driver help.
4.03 - Improved ATAPI support. Added support for Intel PIIX PCI IDE controllers. Added Bus Master support. Revised the driver Inspector.

New Driver / Update Description:
Use the following installation instructions when installing from a CD-ROM drive connected to the secondary EIDE controller:

1. Select Primary/Secondary(Dual) EIDE and ATAPI Device Controllers as the hard disk driver.

2. After the install program has finished reading from the CD-ROM, the Configure panel will appear. Double-click the Other icon. If the Primary/Secondary(Dual) EIDE and ATAPI Device Controllers driver is listed, remove it from the list. It is no longer necessary since the installation from the CD-ROM is complete. Add the appropriate EIDE driver to match your EIDE hardware configuration. You will need to add it twice to get a second instance of the EIDE driver to support the secondary EIDE controller. You will need to set the IRQ to 15, and I/O port address range to 0x170-0x177 in the second instance of the driver, in order to avoid conflicts with the first instance. Add any other necessary drivers while in Configure, and then click on theSave button.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.
Published Date: Feb 20, 2012

EISA Bus OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: EISABus
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/EISABus.pkg.compressed

Driver Name / Installer .pkg: EISABus
Driver Type: System
Driver Scope: Generic-System
Supported Components:

General Overview notes: This is a required driver that provides basic bus support for all system buses on Intel platforms. Without this driver, NEXTSTEP will not boot

Special Features of Driver / Driver Notes:
In order to better support various bus configurations, bus support was removed from the kernel and split into several bus drivers. All other bus drivers currently rely on the EISABus driver for basic services.

Driver Version Notes

3.31 - Allows Plug and Play to be turned off. This is required for Compaq's IBM Token Ring AutoSense 16/4 board to work in their PnP-Bios equipped machines ie. the Compaq Deskpro 5100 and Prolinea 575.
3.32 - Added "Force Cold Boot" switch to inspector panel. When this switch is turned on, the machine will be forced to go through a cold boot sequence every time it reboots
4.00 - Released on OPENSTEP 4.0 User CD-ROM
4.03 - Significant improvements to Plug and Play support. /usr/Devices/PnPDump is provided as a useful debugging tool.
4.05 - Updated PnP ID matching routine in order to work with ESS1868 based sound cards.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

ESS 1x88 Audio OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: ESS 1x88 Audio Driver
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.01, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/ES1x88Audio.pkg.compressed

Driver Name / Installer .pkg: ES1x88AudioDriver
Driver Type: Sound
Driver Scope: Generic-Chipset
Supported Components: ESS Tech ES1688, ESS Tech ES1788, ESS Tech ES1868, ESS Tech ES1888
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This driver is designed to support on-board and add-on audio implementations based on ESS688, ESS1788 ESS1868, and ESS1888 chipset.

Supported Products / Add-on Adapters:
NewCom High Fidelity 16i E5X1853

Supported Products / Systems (ie integrated into PC System):
Compaq Prolinea
NEC Versa 4000
DEC Celebris GL & GL/ST

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

The Plug and Play personality of this driver require EISABus driver version v4.05 or greater to be installed before configuring this driver.

Driver Version Notes

3.30 - Initial introduction of this driver
4.00 - Released on OPENSTEP 4.0 User CD-ROM
4.01 - Added PnP personality and support for ESS1868

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

ESS Technology, Inc.
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USA

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Published Date: Feb 20, 2012

Floppy Drive OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Floppy
Last Update: March 27, 1998

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.20, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/Floppy.pkg.compressed

Driver Name / Installer .pkg: Floppy
Driver Type: System
Driver Scope: Generic-System
Supported Components: Intel i82077, Intel i8272A
PC Bus / Interface Supported by Driver*: Integrated, ISA
Supported Connectors:
Access Mode: DMA
Adapter Memory: N/A

General Overview notes: This is the Floppy driver for AT Compatible Floppy controllers and 3.5inch drives. This driver currently supports only a single controller and drive. Both 720k (DD) & 1440k (HD) floppies.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM
4.20 - Various performance improvements

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

FTG ISA Light Pen OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: FTG ISA Light Pen
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: FTGISALightPen
Driver Type: Other
Driver Scope: Product Family
Supported Components: Custom
PC Bus / Interface Supported by Driver*: ISA
Supported Connectors: Custom
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This driver will support several FTG light pen models connected via an FTG PXL-395 ISA interface card. This driver may be used in conjunction with other pointing devices to allow the user to select the most convenient input device at any given time.

Supported Products / Add-on Adapters:
PXL-395 Light Pen Interface (ISA)
FT-356 1-Button Light Pen
FT-357 2-Button Light Pen

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

FTG Data Systems
8381 Katella Ave
P.O.Box 615
Stanton, CA 90680

800/962-3900 x386
Published Date: Feb 20, 2012

SMB File Transfer: Access over Ethernet

Will it ever be possible to access SMB servers over Ethernet?
This article has been archived and is no longer updated by Apple.
While the SMB protocols are not limited to Token Ring, they are usually used only with Token Ring. Since Apple's SMB File Transfer utility works so closely with the Texas Instruments Token Ring interface controller chip set on the TokenTalk NB card, it's difficult to port to an Ethernet environment without a major rewrite of the software.

A workaround is to use MacLAN Connect, a product that allows any PC or compatible to act as an AppleShare compatible server. All hard disks, LAN volumes or other storage devices are available to AppleShare-connected Macintosh workstations. MacLAN Connect supports LocalTalk, EtherTalk and TokenTalk.

For more information, search on "Miramar Systems"

Note: This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

Published Date: Feb 20, 2012

FTG Light Pen OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: FTG Light Pen
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: FTGSerialLightPen
Driver Type: Other
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver*: EIA-232 (Serial)
Supported Connectors:
Access Mode: Indirect Driver
Adapter Memory:

General Overview notes: This driver will support several FTG light pen models connected via an FTG PXL-780 serial interface. This driver may be used in conjunction with other pointing devices to allow the user to select the most convenient input device at any given time.

Supported Products / Add-on Adapters:
PXL-780 Light Pen Interface (Serial)
FT-356 1-Button Light Pen
FT-357 2-Button Light Pen

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

FTG Data Systems
8381 Katella Ave
P.O.Box 615
Stanton, CA 90680

800/962-3900 x386
Published Date: Feb 20, 2012

HP Vectra XM & XP Integrated OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: HP Vectra XM, XP Integrated
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: HPVectra_XM_XP_LAN
Driver Type: Networking
Driver Scope: Specific Product
Supported Components: AMD Am79C960
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This driver is only for the HP XM and XP Vectra series of computers. The Am79C960 is the ISA-based Ethernet controller used for the onboard Ethernet hardware in the HP Vectra XM and XP series of computers.

Supported Products / Systems (ie integrated into PC System):
HP Vectra XM
HP Vectra XP
Elonex WS4100 - Not tested, should work

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: DMA
Buffer Size*: N/A
Supported Connectors*: BNC, UTP

Known Problems

This driver exhibits a problem where performance steadily degrades with use.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Hewlett Packard
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USA

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+1 (408) 553 3500 bulletin board system
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WWW: http://www.hp.com/

TA45784_HP_Vectra_XM_XP_Integrated_OPENSTEP_Driver_Overview.pdf

Published Date: Feb 20, 2012

HP Vectra XP OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: HP Vectra XP
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: HPXPDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: S3 928P, TI TVP3020 RAMDAC
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This graphics driver is designed to support the on-board graphics controller of the Hewlett Packard Vectra XP series. The on-board graphics controller is based on the S3-928 chipset and can support 2MB or 4MB of VRAM.

Supported Products / Systems (ie integrated into PC System):
HP Vectra XP (4MB VRAM)
HP Vectra XP (2MB VRAM)

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x819 (2MB+), 1280x1024 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X819 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 800x600 (1MB+)

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. \\

Product Vendor

Hewlett Packard
3000 Hanover St.
Palo Alto, CA 94304
USA

+1 (800) 752-0900 USA toll-free phone

+1 (415) 857 1501 international phone
+1 (800) 333 1917 faxback system
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WWW: http://www.hp.com/
Published Date: Feb 20, 2012

HP Vectra XU OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: HP Vectra XU Display
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: HPXUDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: AT&T ATT21C498 RAMDAC, S3 864 (Vision), STG 170x
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This graphics driver is designed to support the on-board graphics controller of the Hewlett Packard Vectra XU series. The on-board graphics controller is based on the S3-864 chipset and supports 2MB of DRAM.

Supported Products / Systems (ie integrated into PC System):
HP Vectra/XU S3/864 on-board video

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Hewlett Packard
3000 Hanover St.
Palo Alto, CA 94304
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+1 (415) 857 1501 international phone

TA45786_HP_Vectra_XU_OPENSTEP_Driver_Overview.pdf

+1 (800) 333 1917 faxback system
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WWW: http://www.hp.com/
Published Date: Feb 20, 2012

IBM ThinkPad 755CX OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: IBM ThinkPad 755CX Display
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: IBMThinkPad755CXDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Western Digital WD90C24
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This device driver supports the built in LCD and external CRT display for IBM Thinkpad 755CX system. It supports 800x600 display in 16-bit color.

Supported Products / Systems (ie integrated into PC System):
IBM ThinkPad 755CX

Special Features of Driver / Driver Notes:
This driver can display in 1024x768 mode on an external CRT if the LCD is not active.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:

16 Bit Color Modes*:
800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 800x600 (1MB+)

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

IBM ThinkPad 760CD OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: IBM ThinkPad 760CD Display
Last Update: November 7, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/ThinkPad760CD.pkg.compressed

Driver Name / Installer .pkg: IBMThinkPad760CDDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Trident TGUI9320
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This device driver supports the built in LCD and external CRT display for IBM Thinkpad 760CD system. It supports 800x600 color LCD as well as the external display connector.

Supported Products / Systems (ie integrated into PC System):
IBM ThinkPad 760CD

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:

16 Bit Color Modes*:
640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
640X480 (1MB+), 800x600 (1MB+)

Driver Version Notes

4.00 - Initial version of this driver.
4.01 - Driver is now SMM aware and should work with all ThinkPad 760CD BIOS versions.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

IBM TokenRing OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: IBM Token Ring
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: IBMTokenRing
Driver Type: Networking
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** ISA

General Overview notes: This is the new version of the IBM Token Ring driver which adds support for the Auto sense adapters.

Supported Products / Add-on Adapters:
IBM 25F7367 (ISA, 16/4 Mbps, 8-bit, 64K)
IBM 25F9858 (ISA, 4Mbps, 8-bit, 16K)
IBM 67X0438 (ISA, 4Mbps, 8-bit, 16K)
IBM 60G3994A? (ISA, 16/4 Mbps, 16-bit, 64K)
IBM 92G7668 (Auto, ISA, 16/4 Mbps, 16-bit, 64K)
IBM 41H8450 (Auto, ISA, 16/4 Mbps, 16-bit, 64K)

Supported Products / Systems (ie integrated into PC System):
Token Ring option for Compaq DeskPro and Prolinea series

Special Features of Driver / Driver Notes:
3COM TokenLink III 3C619B (Auto, ISA, 16/4 Mbps, 64k) (untested) is reported to work using the "IBM Auto 16/4 Token Ring ISA Adapter" personality.

Networking Driver Details

Network Type*: Token Ring
Speed*: 16 Mb/s, 4 Mb/s
Access Mode*: Memory Mapped
Buffer Size*: 64KB
Supported Connectors*: STP, UTP

Driver Version Notes

3.33 Support Auto 16/4 and add Fast Path Transmit
3.34 Survive being disconnected from the MAU, both at boot time and during operation. Fix problem with being the first node on the network.
3.36 Fix problems on a busy token ring. Symptoms include netboot flakiness/receive congestion errors. Performance improvements were also made.
3.37 Fix problem with using an MTU too large for 4Mbit rings. The driver now limits the MTU to 4472 when it automatically switches to 4Mbit/s. The MTU is also limited by the ring speed selection made on the driver's Configure panel.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

IBM Corporation
P.O. Box 12195
Research Triangle Park, NC 27709-9990
USA

+1 (800) 772 2227 USA toll-free phone - Sales and Technical Support
+1 (800) 426 3333 USA toll-free phone - Information
+1 (800) 426 3395 fax back system
+1 (800) 426 1774 USA toll-free phone - IBM International Marketing Desk
011 61 2 634 9111 IBM Australia & New Zealand
011 3314 905 7000 IBM France
011 44 256 56144 IBM United Kingdom
011 813 3586 1111 IBM Japan
+1 (919) 517 0001 bulletin board system
http://www.ibm.com/
Published Date: Feb 20, 2012

TA45790_AppleWorks_Using_Spreadsheet_data_with_Business_Graphics_II_(TIL00723).pdf

AppleWorks: Using Spreadsheet data with Business Graphics II

This article discusses how to convert AppleWorks date to work with the Business Graphics II application.
This article has been archived and is no longer updated by Apple.
To convert Appleworks Spreadsheet data to work with Business Graphics II (from Business and Professional Software), first use AppleWorks to print the Spreadsheet data to a ProDOS Data Interchange Format (DIF) file.

From AppleWorks you can then convert this ProDOS DIF file to a DOS 3.3 DIF file. Business Graphics II can read this DOS 3.3 DIF file and plot the file's data.
Published Date: Feb 18, 2012

TA45791_AppleShare_File_Server_Multilaunch_Management_Utilities_(TIL07230).pdf

AppleShare File Server: Multilaunch Management Utilities

Are there any AppleShare utilities that limit the number of copies made of applications on the server?

This article has been archived and is no longer updated by Apple.
Here are two programs that restrict launch restrictions on AppleShare:

KeyServer

Developed and used at Dartmouth and available from Sassafras Software, is a launch control package which also provides rwall and motd capability.

LaunchBreak

Developed by the University of Michigan's Computer Aided Engineering Network, LaunchBreak 1.0.3 is available to not-for-profit educational institutions.

LaunchBreak's features:

* Monitors the usage and enforces an upper limit for copying applications on an AppleTalk network.

* Applications running under LaunchBreak can be rendered useless outside of a site's network, hindering software piracy.

* Applications can be located anywhere on the network.

* Doesn't interfere with legitimate copying of programs for backup. Applications can be freely copied, although the copied programs are still subject to control of LaunchBreak.

* The license server can run as a foreground application on an AppleShare server, or on another machine on the network.

* Remote administration of the license server

* Statistical record keeping on all server transactions.

System Requirements:

* System 6.0 or later

* AppleTalk Data Stream Protocol (ADSP).

For more information, search on "Sassafras" or "LaunchBreak"

Published Date: Feb 18, 2012

IDE OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: IDE
Last Update: December 18, 1997

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: IDE
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: Integrated, ISA
Supported Connectors: 40-pin Header (Internal IDE)
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This driver is obsolete and had been replaced by the EIDE driver.

Special Features of Driver / Driver Notes:
Always use the large disk option while installing NEXTSTEP.

Known Problems

Also supports PCI IDE adapters.
* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Intel 82365 and Compatible OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Intel 82365 and compatible PCMCIA chipset
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: PCIC
Driver Type: System
Driver Scope: Generic-Chipset
Supported Components: Intel i82365
PC Bus / Interface Supported by Driver*: PCMCIA
Supported Connectors:
Access Mode:
Adapter Memory:

General Overview notes: This driver supports the Intel 82365 chip set, which is used to provide PCMCIA socket support.

Supported Products / Add-on Adapters:
SwapBox Classic MMCD-D - Not test by SQA, might work.

Supported Products / Systems (ie integrated into PC System):
NEC Versa E Series
NEC Versa V Series
NEC Versa 4000
Compaq LTE Elite
IBM Thinkpad 755CX
IBM Thinkpad 760CD
Adaptec CardPark

Special Features of Driver / Driver Notes:
This driver is necessary when using the Intel 82365 PCMCIA chipset with PCMCIA devices. See also NeXTanswer 1801_PCMCIABus

Known Problems

Hot insertion and removal of PCMCIA devices is not supported.

Driver Version Notes

3.31 - Fixes a bug which could result in inconsistent adaptor initialization.
3.32 - Adds support for PCIC compatible PCI-PCMCIA Bus Bridges
4.01 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Intel 824X0 PCI OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Intel 824X0 PCI Chipset
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Intel824X0
Driver Type: System
Driver Scope: Generic-Chipset
Supported Components: Intel i824x0
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This driver fixes a flaw the the Intel 824X0 PCI chipsets. It only needs to be installed on PCI systems based on the Intel 82420 & 82430 chipsets.

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Driver Version Notes

3.30 - Initial Version - disables all PCI write-posting
3.31 - Re-enable PCI write-posting, on those systems that can safely support them.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

Intel 82556 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Intel 82556 Network
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Intel82556NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82556
PC Bus / Interface Supported by Driver:** EISA, PCI

General Overview notes: This driver supports Intel EtherExpress PRO/100 adapters based on the Intel 82556 chipset.

Supported Products / Add-on Adapters:
Intel EtherExpress PRO/100 EISA LAN Adapter (EILA8265)
Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8465)

Special Features of Driver / Driver Notes:
This driver does not support Model B of the Intel EtherExpress PRO/100 PCI Ethernet Adapter. Model B is supported by the Intel 82557 Network Driver

Networking Driver Details

Network Type*: 100 Base TX, EtherNet
Speed*: 10 Mb/s, 100 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: N/A
Supported Connectors*: UTP

Driver Version Notes

3.31 - First release of this driver
4.01 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
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+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

Intel 82557 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Intel 82557 Network
Last Update: March 26, 1998

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.05, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/Intel82557.pkg.compressed

Driver Name / Installer .pkg: Intel82557NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82557, Intel i82558
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver supports the Intel EtherExpress PRO/100+, PRO/100(model B), and the PRO/10+ PCI adapters. The PRO/100+ adapter used the 82558 ethernet controller, while the other two adapter families uses the 82557 controller.

Supported Products / Add-on Adapters:
Intel EtherExpress PRO/100+ PCI LAN Adapter (10Base-T, 100Base-TX)
Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8465BX) (10Base-T, 100Base-TX)
Intel EtherExpress PRO/100 PCI LAN Adapter (PILA8475B) (10Base-T, 100Base-T4)
Intel EtherExpress PRO/10+ PCI LAN Adapter (PILA8500) (BNC, AUI, RJ-45)
Intel EtherExpress PRO/10+ PCI LAN Adapter (PILA8520) (RJ-45)

Networking Driver Details

Network Type*: 100 Base T4, 100 Base TX, EtherNet, Full Duplex
Speed*: 10 Mb/s, 100 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: N/A
Supported Connectors*: AUI, BNC, UTP

Driver Version Notes

3.30 - Initial beta version
3.32 - Improved performance; added workaround for intermittent receiver errata to prevent hang
4.00 - Released on OPENSTEP 4.0 User CD-ROM (based on 3.32)
4.03 - Added support for Pro/10+ PCI adapter
4.05 - Added support for 82558 based adapters

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
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+1 (800) 525 3019 USA toll-free bulletin board system
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WWW: http://www.intel.com/
Published Date: Feb 20, 2012

Intel 82595 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Intel 82595 Chipset
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.04, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/Intel82595.pkg.compressed

Driver Name / Installer .pkg: Intel82595NetworkDriver
Driver Type: Networking
Driver Scope: Generic-Chipset
Supported Components: Intel i82595
PC Bus / Interface Supported by Driver*: ISA, PCMCIA

General Overview notes: This driver supports many Ethernet adapters which use the Intel82595 LAN Chipset.

Supported Products / Add-on Adapters:
Cogent EM595 TP (PCMCIA, UTP)
Cogent EM595 C (PCMCIA, UTP/BNC) - Not testeed, but should work
Cogent EM525 (ISA, BNC/AUI) - Not tested, but should work
Cogent EM525 TP (ISA, UTP) - Not tested, but should work
Cogent EM525 C (ISA, BNC/UTP/AUI)
Intel EtherExpress PRO/10 ISA (BNC/UTP/AUI)
Intel EtherExpress PRO/10 ISA Plug and Play (BNC/UTP/AUI)
Intel EtherExpress PRO/10+ ISA Plug and Play (BNC/UTP/AUI)

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: PIO
Buffer Size*: 64KB
Supported Connectors*: AUI, BNC, UTP

Known Problems

· This driver has not been tested with the Cogent 525 series, but should work.
· If you have stepping 3 of the EtherExpress Pro/10, the driver will complain with en0: 82595 unsupported stepping (3), but will continue to work

Driver Version Notes

3.30 Initial version
3.31 Added support for EE Pro/10 ISA
3.33 Added support for EE Pro/10+ ISA
4.00 Released on OPENSTEP 4.0 User CD-ROM
4.04 Added support for Plug and Play versions of the PRO/10 and PRO/10+. The Plug and Play versions of this driver require the latest EISABus driver version to be installed before configuring this driver.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
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WWW: http://www.intel.com/
Published Date: Feb 20, 2012

Intel 82596 OPENSTEP Driver Overview

This article discusses a device driver for OPENSTEP versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Intel 82596 Network
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Intel82596NetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82596
PC Bus / Interface Supported by Driver*: EISA, PCI

General Overview notes: This driver supports adapters based on the Intel 82596 chipset. This driver replaces the obsolete CogentEMaster driver.

Supported Products / Add-on Adapters:
Intel EtherExpress PRO/10 PCI (PILA8400) (BNC, UTP, AUI)
Intel EtherExpress PRO/10 PCI (PILA8420) (UTP)
Intel EtherExpress Flash32 EISA (EILA8225) (BNC, UTP, AUI)
Cogent eMaster EM935 EISA XL (BNC, UTP, AUI)
Cogent eMaster EM932 EISA (UTP, AUI)
Cogent eMaster EM932 EISA (BNC, UTP, AUI)
Cogent eMaster EM945 EISA FDE (BNC, UTP, AUI)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: N/A
Supported Connectors*: AUI, BNC, UTP

Known Problems

More than one instance of the adapter is autodetected in Configure.app.
The full-duplex feature of the Cogent EM945 FDE adapter was not tested.

Driver Version Notes

3.31 - First release of this driver
3.33 - Added support for EE PRO/10 PCI
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system (OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system (reseller information), viewing only
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WWW: http://www.intel.com/
Published Date: Feb 20, 2012

MacX: Window Position Problem (4/93)

Article Change History

04/20/93 - UPDATED
* To include MacX 1.2 information.

I'm using FrameMaker on a Sun, displaying in MacX 1.0. Some rootless windows are displaying their title bars underneath the MacX menu bar. MacX sets the top left corner of the X display server to be at (0,0), rather than compensating for the fact that the Macintosh menu bar is 20 pixels or so tall. I can't move these windows because I can't access their title bars.

I can adjust the window prefs file on the host, but the problem happens because of MacX's rootless operation, regardless of the host process.

This article has been archived and is no longer updated by Apple.
If your title bars are hidden under the Macintosh menu bar, drag the window out of the Macintosh menu bar while holding down the OPTION key.

Yes, it is true that the MacX 1.0 to 1.1.7 Window Manager sets the upper-left corner of the screen at origin (0,0). The Macintosh menu bar (MacX application in this case) is accounted in the entire screen coordinates. Therefore, when specifying the y coordinate for a rootless window, the height of the title bar must be taken into consideration. Otherwise, the application's title bar will be hidden under the Macintosh menu bar.

The MacX Window Manager automatically positions a window:

* if its display coordinates are off screen
or * if the command to create it doesn't have a geometry option
or * if the geometry option's x,y coordinates are 0,0
MacX 1.2 will position the window just below the menu bar.

Published Date: Feb 20, 2012

Intel EtherExpress 16 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Intel EtherExpress16
Last Update: February 5, 1998

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated BETA version of this driver, version 4.02, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/EtherExpress16.pkg.compressed

Driver Name / Installer .pkg: EtherExpress16
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Intel i82586
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This driver supports the Intel Ether Express 16 adapter family.

Supported Products / Add-on Adapters:
EtherExpress16 (ISA, BNC/AUI)
EtherExpress16TP (ISA, UTP/AUI)
EtherExpress16C (ISA, BNC/UTP/AUI)

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: PIO
Buffer Size*: 16KB
Supported Connectors*: AUI, BNC, UTP

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM
4.02 - Fixed a bug where the adapter/driver might cause a kernel panic under heavy network load.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

Intel TokenExpress OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Intel TokenExpress
Last Update: December 18, 1997

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: TokenExpress
Driver Type: Networking
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This adapter is not recommended for use with NEXTSTEP. New token ring installations should use the IBM Auto 16/4 Token Ring Adapter.

Networking Driver Details

Network Type*: Token Ring
Speed*: 16 Mb/s, 4 Mb/s
Access Mode*:
Buffer Size*:
Supported Connectors*: STP

Known Problems

This driver has been removed from 4.0 and all future versions of NEXTSTEP / OPENSTEP.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system (OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
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+1 (800) 525 3019 USA toll-free bulletin board system (reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

Intel GX Pro Audio OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: IntelGXProAudio
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: IntelGXProAudio
Driver Type: Sound
Driver Scope: Specific Product
Supported Components: Crystal Semiconducto
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This driver supports the on-board audio implementation on Intel GX/Professional systems.

Supported Products / Systems (ie integrated into PC System):
Intel GX/Professional

Special Features of Driver / Driver Notes:
Some old systems use DMA channels 5 and 6 instead of 3 and 6.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Intel

+1 (800) 628 8686 USA toll-free (customer service) phone
+1 (916) 356 3600 bulletin board system (OEM components)
+1 (800) 897 2536 USA toll-free bulletin board system
(OEM components), viewing only
+1 (800) 628 2283 faxback system (OEM components)
+1 (503) 645 6275 bulletin board system (reseller information)
+1 (800) 525 3019 USA toll-free bulletin board system
(reseller information), viewing only
+1 (916) 356 3105 faxback system (reseller information)
+1 (916) 356 6100 fax (customer support)
WWW: http://www.intel.com/
Published Date: Feb 20, 2012

A/UX: How to Collect System Crash Information (8/94)

How can I get an operating system dump when A/UX either hangs or crashes?
Is there any documentation on interpreting such output?

This article has been archived and is no longer updated by Apple.
Currently A/UX provides no BSD UNIX styled "crash" system dump. However, A/UX does provide a basic kernel debugger (a module linked into the kernel).

To make a kernel that contains the "debugger" module, invoke the "newconfig debugger" command to build a new kernel. To boot a kernel that contains the "debugger" module, make sure that the "launch" from the A/UX Startup contains the -s option. The -s option causes "launch" to load the kernel symbol table into memory and allows the debugger to display addresses as symbolic names.

To use the debugger, connect an ASCII asynchronous terminal to the modem port (tty0). The debugger reads from and writes to the modem port at 9600 speed with 8-bit characters.

Two ways you can activate the debugger:

* by pressing the programmer's interrupt switch to produce a non-maskable level 7 interrupt.

* by calling the debugger's "sysdebug()" routine.

The above information was documented in greater detail in the Release notes for "A/UX Device Drivers Kit Version 2.0". This kit is no longer available.

Article Change History:
24 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 20, 2012

ISA Serial Port OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: ISA Serial Port
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: ISASerialPort
Driver Type: System
Driver Scope: Generic-System
Supported Components: Intel i8250, Intel i82510, National Semi NS16450, National Semi NS16550, Startech ST16650
PC Bus / Interface Supported by Driver:** Integrated, ISA
Supported Connectors:
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This is a generic AT Compatible Serial Port Driver. It supports a variety of industry standard serial chips (UARTs), and can be configured for standard and non-standard configurations. This driver must be configured in order to use the Serial Pointing Device Driver and the Port Server Driver.

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

Serial printing does not work. HSD & Interfax Fax support does not work.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Matrox MGA Millenium OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Matrox MGA Millennium
Last Update: December 11, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated BETA version of this driver, version 4.10, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/MatroxMGA2064W.pkg.compressed

Driver Name / Installer .pkg: MatroxMGA2064WDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Matrox MGA1064SG (Cyclone), Matrox MGA1164SG (Hurricane), Matrox MGA2064W (Storm), Matrox MGA2164W (Mistral), TI TVP3026 RAMDAC
PC Bus / Interface Supported by Driver*: AGP, PCI

General Overview notes: This graphics driver is designed to support the MGA Millennium and Mystique Graphics adapters from Matrox Graphics Inc. It may also support other adapters based on the MGA1064SG, MGA1164SG, MGA 2064W and MGA 2164W Graphics controller chipset from Matrox.

This driver supports the use of 2MB or 4MB of SGRAM for the MGA1064SG based adapters; 2MB, 4MB or 8MB of SGRAM for the MGA1164SG based adapters; 2MB, 4MB, or 8MB of WRAM for the MGA2064W based adapters; and 4MB, 8MB, 12MB, or 16MB of WRAM for the MGA2164W based adapters.

Supported Products / Add-on Adapters:
Matrox MGA Millennium
Matrox MGA Millennium II
Matrox MGA Millennium II AGP
Matrox Mystique
Matrox Mystique 220
Matrox Mystique 220 AGP

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 12MB WRAM, 16MB WRAM, 2MB WRAM, 4MB WRAM, 8MB WRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 1152x864 (4MB+), 1280x1024(8MB+), 1920x1080 (8MB+), 640x480 (2MB+), 800x600 (4MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 1800x1440 (8MB+), 1920x1080 (8MB+), 1920x1200 (8MB+), 640x480 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 1800x1440 (4MB+), 1920x1080 (2MB+), 1920x1200 (4MB+), 640X480 (1MB+)

Driver Version Notes

3.30 - Initial Release of this Driver
4.00 - Released on OPENSTEP 4.0 User CD-ROM
4.05 - Added support for the MGA2164 (Millennium II) chipset.
4.06 - Updated pixel/system clock routines, and EPROM parsing.
4.08 - Added Mystique and Mystique 220 support

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Matrox Graphics, Inc.
1025 St-Regis Blvd.
Dorval, Quebec
Canada H9P 2T4

TA45805_Matrox_MGA_Millenium_OPENSTEP_Driver_Overview.pdf

(514) 685-7230
Published Date: Feb 20, 2012

Media Vision Jazz 16 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Media Vision Jazz 16
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: MVJazz16AudioDriver
Driver Type: Sound
Driver Scope: Product Family
Supported Components: Media Vision Jazz16
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This driver is intended to support several Jazz16 chipset based cards and motherboards implementations.

Supported Products / Add-on Adapters:
Media Vision Deluxe Sound Card
Media Vision Pro Sonic Sound Card

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker , CD-ROM Stereo Line-In
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

Mixer (part no. MVA508) in Media Vision Premium 3-D adapter is currently unsupported.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

MediaVision
3185 Laurelview Court
Fremont, CA 94538

+1 (800) 845-5870 USA toll-free (sales) phone
+1 (800) 638-2807 USA toll-free (technical support) phone
+1 (510) 770-8600 international phone
+1 (510) 770-0968 bulletin board system
+1 (510) 770-9592 fax

TA45806_Media_Vision_Jazz_OPENSTEP_Driver_Overview.pdf

Published Date: Feb 20, 2012

Microsoft Sound System OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Microsoft Sound System
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: MicrosoftSoundSystem
Driver Type: Sound
Driver Scope: Product Family
Supported Components: Analog Devices AD184
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This driver supports the Microsoft Windows Sound System. The driver should also work with any card that is 100% compatible with Microsoft Sound System.

Supported Products / Add-on Adapters:
Microsoft Sound System (ISA)

Special Features of Driver / Driver Notes:
1. The AudioTrix card made by MediaTrix uses CS4231 chipset, which will work with this driver.
2. NCR and Adaptec make SCSI cards with Microsoft Sound System compatible hardware on them. This driver should work with them.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear, 8-bit Mu Law

Known Problems

· This adapter card requires one DMA channel, an IRQ level, and a port address. To change the DMA channel and/or IRQ level, run the Configure application and then restart the computer to make the changes take effect.

· Line input is not supported.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Microsoft
WWW: http://www.microsoft.com/
Published Date: Feb 20, 2012

Number Nine GXE Family OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Number Nine GXE Family
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Number9
Driver Type: Display
Driver Scope: Product Family
Supported Components: AT&T ATT20C505 RAMDAC, Brooktree Bt484 RAMDAC, Brooktree Bt485 RAMDAC, Brooktree Bt485A RAMDAC, S3 928, S3 928P, TI TVP3020 RAMDAC
PC Bus / Interface Supported by Driver*: PCI, VL-Bus

General Overview notes: This driver is obsolete, and has been replaced by the S3GenericDisplay Driver. See NeXTanswer #1737_S3_Generic_Driver_Overview.rtf

This new Number 9 GXE graphics driver is designed to support a variety of VL-Bus and PCI graphics adapters from Number 9. These cards use the S3-928 graphics controller and support 1MB,2MB or 4MB of video frame buffer. Some versions of these adapters also support an optional additional 1MB of off screen memory, not required by NEXTSTEP. This version of the driver only supports1MB, 2MB or 4MB of VRAM.

Supported Products / Add-on Adapters:
#9GXE-VL Level 10 (VL-Bus, 1MB VRAM) - not tested, but should work
#9GXE-VL Level 11 (VL-Bus, 2MB VRAM)
#9GXE-VL Level 12 (VL-Bus, 2MB VRAM) - not tested, but should work
#9GXE-VL Level 14 (VL-Bus, 4MB VRAM) - not tested, but should work
#9GXE-VL Level 16 (VL-Bus, 4MB VRAM) - not tested, but should work
#9GXE-PCI Level 10 (PCI, 1MB VRAM) - not tested, but should work
#9GXE-PCI Level 12 (PCI, 2MB VRAM)

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152X819 (4MB+), 1280x1024 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X819 (1MB+), 1280x1024 (2MB+), 1600x1200 (4MB+), 800x600 (1MB+)

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

Number Nine GXE64 Pro OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Number Nine GXE64 Pro
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Number9GXE64ProDisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: S3 964 (Vision), TI TVP3025 RAMDAC
PC Bus / Interface Supported by Driver*: PCI, VL-Bus

General Overview notes: This graphics driver is designed to support the PCI and VL-Bus versions of the GXE64Pro Graphics adapters from Number Nine Corp. These cards are based on the S3-964 Graphics controller chipset and support 2MB or 4 MB of VRAM. This driver supports both configurations including a variety of high-resolution and high-color (32bit) modes. The high performance RAMDAC on these adapters allows support of very high resolutions including 1600x1200 with 16-bit color.

Supported Products / Add-on Adapters:
Number 9 GXE 64 Pro (PCI, 4MB VRAM)
Number 9 GXE 64 Pro (PCI, 2MB VRAM)
Number 9 GXE 64 Pro-1600 (PCI, 4MB VRAM, 200Mhz RAMDAC) - not tested, but should work
Number 9 GXE 64 Pro (VL-Bus, 4MB VRAM)
Number 9 GXE 64 Pro (VL-Bus, 2MB VRAM)
Number 9 GXE 64 Pro-1600 (VL-Bus, 4MB VRAM, 200Mhz RAMDAC) - not tested, but should work

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 1152x864 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 800x600 (1MB+)

Known Problems

Our driver currently does not work with BIOS rev 1.03.08 and higher.

The DRAM (non-Pro) versions of this card are not supported by this driver. See the S3 Generic Driver, NeXTanswer #1737_S3_Generic_Driver_Overview.rtf

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
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URL: http://www.nine.com
Published Date: Feb 20, 2012

Number Nine Imagine128 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Number Nine Imagine128
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Number9Imagine128DisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: Number9 Imagine, TI TVP3026-175 RAMDAC, TI TVP3026-220 RAMDAC
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver includes support for multi-headed displays and supports 4MB and 8MB configurations.

Supported Products / Add-on Adapters:
Number9 Imagine 128 (PCI) (NB128-V2-P)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM, 8MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 1152x864 (4MB+), 1600x1200(8MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (4MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Some PCI machines will not start up if there is more than one Number Nine Imagine128 display adpter present. This is a BIOS limitation.

Version 4.00 of this driver does not support the Series 2 Imagine 128 display adapters.

Driver Version Notes

3.30 - Initial Version - released only as beta
3.31 - Fixed minor bug that caused RAMDAC speed to be mis-read
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features

listed.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

PATHWORKS for Macintosh: System Software Requirements

With PATHWORKS for Macintosh, what system software is required?
This article has been archived and is no longer updated by Apple.
The Macintosh workstation must have the following software installed before you can install and use PATHWORKS for Macintosh:

* System Software version 6.0.4 or later
* AppleShare workstation software
* AppleTalk Phase 2 software (for use with EtherTalk card)

The AppleShare workstation software is required because you install the Macintosh software for PATHWORKS for Macintosh from a VAXshare file server.
Published Date: Feb 20, 2012

Number Nine Motion331 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Number Nine Motion331
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Number9Motion331DisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: S3 764 (Trio64V+)
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver supports both 1MB & 2MB versions of the Number Nine MotionFX 331 display adapter.

Supported Products / Add-on Adapters:
Number Nine 9FX Motion 331 1MB PCI (NB9-FX1-331-1P)
Number Nine 9FX Motion 331 2MB PCI (NB9-FX1-331-2P)

Special Features of Driver / Driver Notes:
This adapter is not recommended for applications requiring 32 bit color; 32 bit modes will appear dim because the hardware does not implement gamma correction.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Driver Version Notes

3.30 - First version of the driver supports 1MB/2MB PCI models using the S3/Trio64V+
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

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18 Hartwell Avenue
Lexington, MA 02173-3103

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URL: http://www.nine.com
Published Date: Feb 20, 2012

Number Nine Motion771 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Number Nine Motion771
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: Number9Motion771DisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: IBM RGB524 RAMDAC, S3 968 (Vision)
PC Bus / Interface Supported by Driver*: PCI, VL-Bus

General Overview notes: This driver supports both 2MB & 4MB versions of the Number Nine MotionFX 771 display adapter. Both PCI & VL-Bus models are supported

Supported Products / Add-on Adapters:
Number Nine 9FX Motion 771 2MB PCI (NB9FX2-771-2P)
Number Nine 9FX Motion 771 4MB PCI (NB9FX2-771-4P)
Number Nine 9FX Motion 771 2MB VL-Bus (NB9FX2-771-2VL)
Number Nine 9FX Motion 771 4MB VL-Bus (NB9FX2-771-4VL)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 1152x864 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Driver Version Notes

3.30 - First version of the driver supports 2MB/4MB PCI/VL models using the S3/968 & IBM RGB524 RAMDAC.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Number Nine Visual Technology

TA45814_Number_Nine_Motion_OPENSTEP_Driver_Overview.pdf

18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

Parallel Port OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: ParallelPort
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: ParallelPort
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: Integrated, ISA
Supported Connectors:
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This is a generic AT compatible parallel printer port driver

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

A/UX 2.0.1: Function Keys and CommandShell

Does A/UX 2.0.1 support the function keys in the CommandShell?

This article has been archived and is no longer updated by Apple.

Yes, A/UX 2.0.1 supports the Apple Extended Keyboard function keys in both the CommandShell environment and console emulator mode. In addition, A/UX 2.0.1 supports VT100 application keypad mode in the CommandShell environment, but not, however, in console emulator mode.

The console(7) manual pages provide more information on this subject.

Published Date: Feb 20, 2012

PCMCIA Bus OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: PCMCIABus
Last Update: October 28, 1996

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.02, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/PCMCIABus.pkg.compressed

Driver Name / Installer .pkg: PCMCIABus
Driver Type: System
Driver Scope: Generic-System
Supported Components:

General Overview notes: This driver provides PCMCIA Bus Services to the NEXTSTEP Operating System, PCMCIA Device Drivers, and to Configure. NEXTSTEP requires this driver if the system contains a PCMCIA slot

Known Problems

This driver does not support hot swapping of PCMCIA devices. In particular, attempting to hot swap the Adaptec SlimSCSI PCMCIA adapter can hang your machine.

Driver Version Notes

3.30 - Released on NEXTSTEP 3.3 User CD-ROM
3.31 - Fixed several bugs. Added support for cards needing shared memory.
3.33 - Added Auto-Detect logic; improved boot messages.
3.34 - Added support for level irqs required by EtherLink III adapter
4.00 - Released on OPENSTEP 4.0 User CD-ROM
4.02 (&3.35) - Audio is now enabled on a per-card basis. Verion 4.02 (& v3.35) enables Audio for any PCMCIA device that includes "Enable Audio" = "Yes"; in its Instance.table. For example: To enable Modem audio, add this key to the Serial Port Instance.table that corresponds to the Modem.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Port Server OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Port Server
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: PortServer
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: EIA-232 (Serial)
Supported Connectors:
Access Mode: Indirect Driver
Adapter Memory:

General Overview notes: This driver can be used in conjunction with the ISASerialPort driver to provide access to the serial ports for applications. This driver provides the interface commonly known as the TTY Layer and should be configured if the serial ports are being used.

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Known Problems

Serial printing does not work. HSD & Interfax Fax support does not work.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Pro Audio Spectrum 16 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Pro Audio Spectrum 16
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: ProAudioSpectrum16
Driver Type: Sound
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: The driver support Pro Audio SPectrum 16 and Pro Audio Studio card. It should also work with Pro Audio Basic 16 card and Logitech Audio Man sound card but these two are offcially not supported.

Special Features of Driver / Driver Notes:
There are well known problems with this card when used in conjucntion with an Adaptec 1542B.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

MediaVision
3185 Laurelview Court
Fremont, CA 94538

+1 (800) 845-5870 USA toll-free (sales) phone
+1 (800) 638-2807 USA toll-free (technical support) phone
+1 (510) 770-8600 international phone
+1 (510) 770-0968 bulletin board system
+1 (510) 770-9592 fax
Published Date: Feb 20, 2012

PS2-Style Mouse Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: PS/2-Style Mouse
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: PS2Mouse
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: Integrated
Supported Connectors:
Access Mode: PIO
Adapter Memory:

General Overview notes: This driver supports standard PS/2 Type Mice (also known as Keyboard or PIX Mice).

Supported Products / Add-on Adapters:
Rose Electronics ServeView Keyboard/Mouse/Display multiplexer

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

PS2-Style Keyboard OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: PS2Keyboard
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: PS2Keyboard
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: Integrated
Supported Connectors:
Access Mode: PIO
Adapter Memory:

General Overview notes: This driver supports standard AT Compatible keyboards. This is a required boot driver

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

S3 805-928 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: S3 805 / 928
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: S3
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: AT&T ATT20C491 RAMDAC, AT&T ATT20C505 RAMDAC, Brooktree Bt484 RAMDAC, Brooktree Bt485 RAMDAC, Brooktree Bt485A RAMDAC, S3 801, S3 805, S3 911
PC Bus / Interface Supported by Driver*: Integrated, VL-Bus

General Overview notes: This driver is obsolete and has been replaced by the S3GenericDisplay Driver.

Supported Products / Systems (ie integrated into PC System):
IBM PS/ValuePoint
Hewlett-Packard Vectra XM
DECpc 466d2 MTE

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1280x1024 (4MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1280x1024 (2MB+)

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

PATHWORKS-DECnet: Wide-Area Network Issues

I have a VAX in two countries: Hong Kong and Korea. Both sites have AppleTalk networks connected using PATHWORKS. I would like to connect these networks using X.25 (using VAX PSI software).

According to Digital and PATHWORKS documentation, I can run full DECnet over VAX PSI and have completely integrated operation. If I run PATHWORKS (AppleTalk-to-DECnet gateway), will I still have this level of transparency?

The literature I have read states that I can do this. But will I have to keep the X.25 link on all the time? How expensive is this? Or is the PSI software intelligent enough to connect to the X.25 network only when actually needed?
This article has been archived and is no longer updated by Apple.
In theory, your setup should work. As long as you have a line and a circuit between the two DECnet nodes, creating the DECnet tunnel is just a matter of defining the "tunnel" port, giving it a name, taking care of routing costs, turning on the system, and (most important) specifying a partner (the DECnet node name of the other VAX).

In practice, you may encounter these problems:

* With AppleTalk 3.0 for VMS, we don't recommend any tunneling below 56KB. In many X.25 networks, the connection between the computer and X.25 pad may be slower than the connection between the pads.

* The X.25 link should be up all the time. There is no way for DECnet PSI software to be dynamically connected and "know" when AppleTalk packets should go through. Even if the software could do this, the tunnel port definitions on both ends can't be dynamic.

* If your X.25 network has any two-minute delays, AppleShare will have problems. The ASP session timer expires at two minutes, terminating the session and losing the server connection.

* Another problem has to do with NBP lookup. You might not see the file server when opening the Chooser and selecting the AppleShare icon. Some sites have to change a resource called GNRL to increase the Chooser interval timer and retry timer values.

You can find a complete discussion of this subject in the Tech Info library in AppleLink. For more information, search on "AppleTalk and Wide and Area".
Published Date: Feb 20, 2012

S3 Generic OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: S3 Generic
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/S3Generic.pkg.compressed

Driver Name / Installer .pkg: S3GenericDisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: S3 732 (Trio32), S3 764 (Trio64), S3 764 (Trio64V+), S3 801, S3 805, S3 864 (Vision), S3 868 (Vision), S3 911
PC Bus / Interface Supported by Driver*: Integrated, PCI, VL-Bus

General Overview notes: This driver will support a variety of video display devices based on S3 chipsets. It is primarily intended to support implementations based on the S3 Vision864, Vision868, ViRGE, though it should also support many adapters based on other S3 products such as the Vision964, Vision968, Trio32, Trio64, & ViRGE/VX chips.

This driver is a generic chipset driver and as such, is only intended to be used as a last resort. If a driver is available that specifically supports your display adapter, that driver should be used rather than this generic driver.

Apple does not guarantee that this driver will work with any specific adapters or implementations, but expects that it will support many.

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: .5MB DRAM, 1MB DRAM, 1MB VRAM, 2MB DRAM, 2MB VRAM, 4MB DRAM, 4MB VRAM, 8MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1280x1024 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Driver Version Notes

3.32 - Added support for the Trio64V+ chipset
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

S3 ViRGE OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: S3 ViRGE Display Driver
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.01, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/S3ViRGE.pkg.compressed

Driver Name / Installer .pkg: S3ViRGEDisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components:
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver supports the Number Nine Reality 332 and Diamond Stealth 3D 2000 display adapters. Other S3 ViRGE implementations that adhere to S3's reference BIOS should be supported as well.

Supported Products / Add-on Adapters:
Number Nine 9FX Reality 332 PCI Display Adapter
(90-332010-000, 91-332010-000, 91-332013-000)
Diamond Stealth 3D 2000 PCI Display Adapter

Special Features of Driver / Driver Notes:
The 1152x864 modes listed below are supported only by the Number9 Reality 332 Display Adapter. These modes are not available on the Diamond Stealth 3D 2000, and are not supported on generic S3/ViRGE implementations.

This adapter is not recommended for applications requiring 32 bit color; 32 bit modes will appear dim because the hardware does not implement gamma correction.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB EDO DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com

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Diamond Multimedia Systems, Inc.
2880 Junction Ave.
San Jose, CA 95134-1922
USA

(800) 4-MULTIMEDIA (Sales Info)
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WWW: http://www.diamondmm.com
Published Date: Feb 20, 2012

SCSI Tape OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: SCSITape
Last Update: December 18, 1997

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: SCSITape
Driver Type: System
Driver Scope: Generic
Supported Components:
PC Bus / Interface Supported by Driver*: SCSI
Supported Connectors:
Access Mode: Indirect Driver
Adapter Memory:

General Overview notes: This is a SCSI Tape peripheral driver. It supports most SCSI tape drives that use the generic SCSI command set for Tape Devices. A SCSI Host Adapter and associated NEXTSTEP driver are required in order to use this driver

Special Features of Driver / Driver Notes:
Sun DAT drives cause other tape drives with higher SCSI ID's to not be registered. This is a hardware problem. The workaround is to place non-Sun tape drives at a lower SCSI ID than the Sun DAT drive.

Driver Version Notes

3.31 - Corrects a problem restoring data from tapes. This problem was encountered when using /dev/rst# device nodes, where # is a number. This problem only effects tape reads, so tapes written using this driver should be correct.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

MacX25: Using with Macintosh IIsi Issues

I installed MacX25 on a Macintosh IIsi and then tried to start the MacX25 Admin program. The MacX25 Admin program doesn't recognize my AppleSerial NB Card: I keep getting a "Status" "Out of service" message.

Is this a known problem?
This article has been archived and is no longer updated by Apple.
You are mostly likely using the first version of MacX25; the MacX25 server and MacX25 Admin software version 1.0 doesn't work on any computer that requires System Software 6.0.7 (such as the Macintosh IIsi). The problem involves the "Gestalt" function and is fixed in version 1.0.1 of MacX25.

Version 1.0.1 of MacX25 is compatible with both System 6.0.7 and System 7. To use the MacX25 server software under System 6.0.7, you'll need at least 2MB of RAM. Under System 7, you'll need at least 4MB of RAM.
Published Date: Feb 20, 2012

Serial Pointing Device OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Serial Pointing Device
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: SerialPointingDevice
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: EIA-232 (Serial)
Supported Connectors:
Access Mode: Indirect Driver
Adapter Memory:

General Overview notes: This is a generic Serial Mouse Driver. It supports most popular Serial Pointing devices on the market. This driver must be used in conjunction with the ISASerialPort driver

Supported Products / Add-on Adapters:
Alps Glidepoint
LogiTech FirstMouse
LogiTech MouseMan
LogiTech MouseMan Cordless
LogiTech TrackMan
Kensington Expert Mouse v2.0
Kensington Expert Mouse v4.0
Microsoft Serial Mouse
Mouse Systems PC Mouse III

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Serial Mouse OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: SerialMouse
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: SerialMouse
Driver Type: System
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: EIA-232 (Serial)
Supported Connectors:
Access Mode: Indirect Driver
Adapter Memory:

General Overview notes: This driver is obsolete and has been replaced by the SerialPointingDevice driver.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Serial Port OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: SerialPorts
Last Update: December 18, 1997

Availability Information

No updated versions of this driver are available

Driver Name / Installer .pkg: SerialPorts
Driver Type: System
Driver Scope: Generic-System
Supported Components: Intel i8250, Intel i82510, National Semi NS16450, National Semi NS16550
PC Bus / Interface Supported by Driver*: Integrated, ISA
Supported Connectors:
Access Mode: PIO
Adapter Memory: N/A

General Overview notes: This driveris obsolete and has been replaced by the ISASerialPort Device driver.

This is a generic AT Compatible Serial Port Driver. It currently supports exactly two serial ports, corresponding to COM1 & COM2.

Known Problems

This driver is unreliable at speeds above 19,200.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

LisaCalc 3.0: Problems Handling Large Documents

This article has been archived and is no longer updated by Apple.
LisaCalc has difficulty handling documents over 400 blocks long. If you try to build a file that large, an error may occur after you save and put away the document. If you attempt to redisplay it, you may see a dialog box saying "Unable to Redisplay the Document."

These problems have been fixed in Lisa Office System Release 3.1. The new LisaCalc size limit is approximately 700 blocks (350K). Larger documents still require much more time to calculate, update, print, and save.
Published Date: Feb 20, 2012

TrueType: Use LaserWriter 6.1 Driver or Later

After installing TrueType software that ships with the StyleWriter (for use under System Software 6.0.7) I can't print to the LaserWriter using the LaserWriter 5.2 drivers. I keep getting a dialog box telling me to update my printer drivers.

Do I have to use the LaserWriter 6.0.1 driver if TrueType is installed?

This article has been archived and is no longer updated by Apple.
The TrueType software that comes with the StyleWriter or Personal LaserWriter LS printer requires the LaserWriter 6.1 driver or later. The driver is on the Macintosh Printing Tools disk that comes with the StyleWriter printer. Everyone on the network should upgrade together to the newest driver.

The LaserWriter 6.1 driver doesn't use the separate Laser Prep file required by previous versions of the LaserWriter driver. Instead the Laser Prep code is downloaded with every print job. Because of this, users of this driver will not have Laser Prep "wars" when new versions of LaserWriter drivers are installed.

There is a Laser Prep file on the above printing disk, but only for upgrading AppleShare Print Servers that makes them compatible with the new LaserWriter driver. Here is the path:

Macintosh Printing Tools
LaserWriter Utilities
For AppleShare Print Server
Laser Prep

Published Date: Feb 18, 2012

SMC EtherElite 16 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: SMC EtherElite 16
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: SMC16
Driver Type: Networking
Driver Scope: Product Family
Supported Components: SMC SMC83C690
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This driver supports the SMC EtherCard Plus Elite16 Ethernet Adapter

Supported Products / Add-on Adapters:
SMC EtherCard Plus Elite16 Ethernet Adapter

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: Memory Mapped
Buffer Size*: 16KB
Supported Connectors*: AUI, BNC, UTP

Driver Version Notes

3.31 Performance improvements
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Standard Microsystems (SMC)
6 Hughes
Irvine, CA 92718

+1 (800) NET LEAD USA toll-free (technical support) phone
+1 (714) 707 5607 international (technical support) phone
+1 (714) 707 2481 bulletin board service
+1 (714) 707 2491 fax
WWW: http://www.smc.com/
Published Date: Feb 20, 2012

SMC EtherEZ-Elite 16 Ultra OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: SMC EtherEZ/Elite16 Ultra
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: SMCUltraNetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: SMC SMC83C790
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: The SMC EtherCard Elite16 Ultra is a 16-bit Ethernet Adapter
The SMC EtherEZ is a 16-bit Plug and Play Ethernet Adapter

Supported Products / Add-on Adapters:
SMC EtherCard Elilte Ultra16 (ISA)
SMC EtherCard Elilte Ultra16T (ISA)
SMC EtherCard Elilte Ultra16C (ISA)
SMC EtherEZ (8416BTA)
SMC EtherEZ (8416B)
SMC EtherEZ (8416T)
SMC EtherEZ (8416BT)
SMC EtherEZ (8416BA)
SMC EtherEZ (8416TA)

Networking Driver Details

Network Type*: EtherNet
Speed*: 10 Mb/s
Access Mode*: Memory Mapped
Buffer Size*: 16KB
Supported Connectors*: AUI, BNC, UTP

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Standard Microsystems (SMC)
6 Hughes
Irvine, CA 92718

+1 (800) NET LEAD USA toll-free (technical support) phone
+1 (714) 707 5607 international (technical support) phone
+1 (714) 707 2481 bulletin board service
+1 (714) 707 2491 fax
WWW: http://www.smc.com/

TA45834_SMC_EtherEZElite_Ultra_OPENSTEP_Driver_Overview.pdf

Published Date: Feb 20, 2012

SoundBlaster 16 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Sound Blaster 16
Last Update: December 22, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.01, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/SoundBlaster16.pkg.compressed
An updated BETA version of this driver, version 4.02, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/SoundBlaster16.pkg.compressed

Driver Name / Installer .pkg: SoundBlaster16
Driver Type: Sound
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This driver support most SoundBlaster 16 and 100% compatible sound cards.

Supported Products / Add-on Adapters:
Sound Blaster 16 Basic (ISA)
Sound Blaster 16 Value (ISA)
Sound Blaster 16 AWE (ISA)
Sound Blaster 16 SCSI-II (ISA)
Sound Blaster 16 Value PnP (ISA)
Sound Blaster AWE 32 (ISA)
Sound Blaster AWE 64 Value (ISA)
Sound Blaster AWE 64 Gold (ISA)

Special Features of Driver / Driver Notes:
Only simple playback and recording are supported. Wave table related hardware is unsupported.

The SCSI interface on the Sound Blaster 16 SCSI-II has been reported to work with our Adaptec 6x60 driver, though is not a supported configuration.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker , CD-ROM Stereo Line-In
Access Mode: DMA
Adapter Memory:
Attributes: 16-bit Linear, 8-bit Linear

Known Problems

In order to configure resources (like IRQ, DMA, port addresses) correctly, make sure that the system BIOS knows about the resources used by this and other ISA adapters.

Use the PnP personality for SB16 PnP boards and enable support for Plug and Play in the EISABus driver.

Driver Version Notes

3.33: Added support for Plug and Play cards.
4.00: Released on OPENSTEP 4.0 User CD-ROM
4.01: Updated the PnP personality tables. Improved reliability of sound playback and recording.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

SoundBlaster 8 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Sound Blaster 8
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: SoundBlaster8
Driver Type: Sound
Driver Scope: Product Family
Supported Components: Creative Labs
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This driver is intended to support all 8-bit Sound Blaster cards and compatible. Motherboards implementations should work as well.

Supported Products / Add-on Adapters:
Sound Blaster Basic ISA)
Sound Blaster Pro (ISA)
Sound Blaster Delux (ISA)
Sound Blaster Value (ISA)

Special Features of Driver / Driver Notes:
Limitations: Mixing is not supported and there is no sample rate conversion. Only the Sound Blaster Pro card has an on-board mixer and supports output volume control via software. For others there is typically a potentiometer in the adapter.

There are many kinds of Sound Blaster 8-bit cards and they have varying features.

Sound Driver Details

Supported Connectors: Mic In, Speaker Out
Access Mode: DMA
Adapter Memory:
Attributes: 8-bit linear

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

STB Pegasus OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: STB Pegasus
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: PegasusDisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: AT&T ATT20C505 RAMDAC, Brooktree Bt485A RAMDAC, S3 928
PC Bus / Interface Supported by Driver*: VL-Bus

General Overview notes: The STB Pegasus-VL graphics driver is designed to support the VL-Bus version of the Pegasus graphics adapter from STB. This card uses the S3-928 graphics controller and supports 1MB,2MB or 4MB of video frame buffer. This version of the driver only supports1MB, 2MB or 4MB of VRAM.

Supported Products / Add-on Adapters:
STB Pegasus (VL-Bus, 4MB VRAM)
STB Pegasus (VL-Bus, 2MB VRAM)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152X819 (4MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X819 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

PCI Versions of the STB Pegasus are not supported

Driver Version Notes

3.30 - Shipped with NS3.3 - based on interpreted IOVP code
3.31 - Total re-write in ObjC - 8 bit color modes added
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

STB Systems
1651 North Glennville, Suit 210
Richardson, TX 75081
(214) 234-8750
Published Date: Feb 20, 2012

SymbiosLogic 53C8xx SCSI OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: SymbiosLogic53C8xxSCSIDriver
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: SYM53c8
Driver Type: SCSI
Driver Scope: Generic-Chipset
Supported Components: NCR/SYM53c810, NCR/SYM53c815, NCR/SYM53c820, NCR/SYM53c825
PC Bus / Interface Supported by Driver*: Integrated, PCI

General Overview notes: This driver supports the NCR 53C8xx family of SCSI controllers.

Supported Products / Systems (ie integrated into PC System):
DEC Celebris XL/590

Special Features of Driver / Driver Notes:
Cmd queuing is disabled. Synchronous and wide data transfers are selectable through the Configure panel. Support for multiple adapters.

Suggest upgrading Symbios BIOS to version 3.07. Some systems have experienced a hang during initialization on previous BIOS versions.

SCSI Driver Details

Supported Connectors: 50-pin Centronics (Standard SCSI), 50-pin Header (Internal SCSI), 50-pin High Density (SCSI-2), 68-pin High Density (Wide SCSI)
Access Mode:
Attributes:** SCSI-2
Cache Size Supported*:

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Trident Generic OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Trident Generic
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: TridentGenericDisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Trident TGUI9440, Trident TGUI9680, Universal RAMDAC
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver will support a variety of video display devices based on Trident 9xxx chipsets.

NeXT does not guarantee that this driver will work with any specific adapters or implementations, but expects that it will support many.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
This driver will not support the built-in display on IBM Thinkpad 760CD.

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Driver Version Notes

3.30 Original version, supports 9440 and 9680 based adapters.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

TA45839_Trident_Generic_OPENSTEP_Driver_Overview.pdf

Product Vendor

Trident Microsystems Inc.
189 N. Bernardo Avenue
Mountain View, CA 94043-5203
USA

+1 (415) 691 9211 international phone number
+1 (415) 691 9260 fax
Published Date: Feb 20, 2012

DIGICARD: Connects Computers to DigiCard Networks (6/97)

Can a Macintosh LC attach to DigiCard network?

This article has been archived and is no longer updated by Apple.
DIGICARD can connect Apple Macintosh 512kE, Macintosh Plus, Macintosh SE, Macintosh LC, Macintosh Classic, and Macintosh IIsi computers to its networking system without any extra hardware. All that is required for each Macintosh is an external isolater box such as PhoneNet or DIGICARDs own brands AppNet, or for more permanent installations, a wallplate outlet called Cablepoint.

Apple IIe, Apple IIGS, and IBM PC compatibles require a network interface card to connect to the DIGICARD network. There are three types of interface cards: one for the Apple IIe or Apple IIgs, one for the Apple IIgs only, and one for IBM PC compatibles.

MacLagan & Wright are the developers of DIGICARD. They are based in Australia.

Published Date: Feb 20, 2012

Tseng Labs ET4000 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Tseng Labs ET4000
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: TsengLabsET4000
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Tseng Labs ET4000AX
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: 2-bit greyscale only SVGA driver

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Segmented Framebuffer
Adapter Memory: .5MB DRAM, 1MB DRAM

Known Problems

Does not work correctly with SotfPC and NEXTIME.

Driver Version Notes

3.30 - Released on NEXTSTEP 3.3 User CD-ROM
3.30 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Tseng Labs ET4000W32 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Tseng Labs ET4000W32
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: TsengET4000W32DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: AT&T ATT20C490 RAMDAC, AT&T ATT20C491 RAMDAC, AT&T ATT20C492 RAMDAC, Brooktree Bt484 RAMDAC, Brooktree Bt485 RAMDAC, Brooktree Bt485A RAMDAC, STG 170x, Tseng Labs ET4000W32
PC Bus / Interface Supported by Driver*: VL-Bus

General Overview notes: This driver supports implementations based on ET4000W32 chipset.

Display Driver Details

Access Mode: Linear Framebuffer

Known Problems

The current driver does not implement transfer tables, so the display appears dark, and the brightness slider in Preference doesn't work.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

VGA Display OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: VGA
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: VGA
Driver Type: Display
Driver Scope: Generic-System
Supported Components:
PC Bus / Interface Supported by Driver*: Integrated, ISA

General Overview notes: This is a generic VGA display driver. It only supports 640x480 pixels in 4 level gray scale. It is primarily used during installation and for laptops.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Segmented Framebuffer

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Weitek Power 9000 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Weitek Power 9000
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: WeitekP9000
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Weitek P9000
PC Bus / Interface Supported by Driver*: PCI, VL-Bus

General Overview notes: This driver supports display implementations base on the Weitek P9000, such as the Diamond Viper.

Supported Products / Add-on Adapters:
Diamond Viper (PCI)
Diamond Viper (VL-Bus)
Genoa VideoBlitz 9200-VL (VL-Bus) - not tested, but should work

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM, 2MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x900 (2MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152x900 (1MB+), 1280x1024 (2MB+), 800x600 (1MB+)

Known Problems

If you get Weitek P9000 unable to reserve framebuffer address 0x80000000 and it
boots up in standard VGA mode. Change the mapped memory address in the Configure.app to 0xA0000000.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Diamond Computer Systems
1130 East Arquez Ave.

Sunnyvale, CA 94086
USA

+1 (408) 736 2000 international phone
+1 (408) 730 5750 fax
+1 (408) 730 1100 bbs 2400 baud
+1 (408) 524 9301 bbs 9600+ baud
WWW: http://www.diamondmm.com/
Published Date: Feb 20, 2012

Weitek Power 9100 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Weitek Power 9100
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: WeitekP9100DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Brooktree Bt485 RAMDAC, IBM RGB525 RAMDAC, Weitek P9100
PC Bus / Interface Supported by Driver*: PCI, VL-Bus

General Overview notes: This driver supports display implementations base on the Weitek P9000, such as the Diamond Viper Pro.

Supported Products / Add-on Adapters:
Diamond Viper Pro (PCI, 2MB VRAM)
Diamond Viper Pro (PCI, 4MB VRAM)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB VRAM, 4MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x900 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152x900 (1MB+), 1280x1024 (2MB+), 1600x1200 (4MB+), 800x600 (1MB+)

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Diamond Computer Systems
1130 East Arquez Ave.
Sunnyvale, CA 94086
USA

TA45845_Weitek_Power_OPENSTEP_Driver_Overview.pdf

+1 (408) 736 2000 international phone
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+1 (408) 730 1100 bbs 2400 baud
+1 (408) 524 9301 bbs 9600+ baud
WWW: http://www.diamondmm.com/
Published Date: Feb 20, 2012

Western Digital WD90C24 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Western Digital WD90C24
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: WD90C24DisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: Western Digital WD90C24
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This display driver supports several Laptop systems using this Western Digital chipset.

Supported Products / Systems (ie integrated into PC System):
NEC Versa E Series
NEC Versa V Series
Compaq LTE Elite

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 640X480 (1MB+)

Known Problems

This driver does not work correctly with the latest version of the BIOS for the NEC Versa V.
This driver does not work correctly with the latest version of the BIOS for the NEC Versa E. You must backrev to a BIOS version that does not support power management.

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Xircom NetWave OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Xircom Netwave
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: XircomNetwave
Driver Type: Networking
Driver Scope: Specific Product
Supported Components:
PC Bus / Interface Supported by Driver*: PCMCIA

General Overview notes: This is a wireless PCMCIA ethernet adapter operating at 1 Mbit/s.

Supported Products / Add-on Adapters:
Xircom CreditCard Netwave Adapter (CNW(AM))

Networking Driver Details

Network Type*: Wireless EtherNet
Speed*: 1 Mb/s
Access Mode*: Memory Mapped
Buffer Size*: 32KB

Driver Version Notes

3.31 - Initial release
3.32 - Re-released in order to be compatible with 3.34 of the PCMCIABus driver; no functional changes were made.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

Macintosh: Multi-line Dial-in Access Software

I'm looking for a multi-line remote-access AppleTalk server or bulletin board system for the Macintosh.

Also, how do I go about setting up such a system?

This article has been archived and is no longer updated by Apple.

Multiple calls on a single phone number ("one-number access") are available from your local telephone company. This is the same service many businesses use for voice services.

Apple Remote Access MultiPort Server is a product from Apple that provides a flexible, scalable, and secure way to offer network access to large numbers of remote or mobile users. Used in conjunction with one or more Apple Remote Access Serial Cards, it allows a Macintosh computer or a Workgroup Server to support from 4 to 16 simultaneous dial-up connections.

On the client side users would have the Apple Remote Access Client for Macintosh software on their system to connect to a Apple Remote Access MultiPort server.

Another solution for allowing multiple dial up lines into an AppleShare network would be the use of network modems such as Shiva's NetModem. These modems are stand-alone AppleTalk devices that connect as a node. One NetModem would be required for each incoming line. Once connected, the computer dialing in would become a node on the network via the NetModem.

TeleFinder, by Spider Island Software, is a bulletin board program for the Macintosh that handles multiple callers. The program provides electronic mail (its own, not a gateway to other systems) and file transfers. It also sports a Macintosh interface: files and folders appear and behave much as they do in the Finder. And while Macintosh users have the benefit of a graphical interface, other computer users can have access using text commands.

TeleFinder handles as many phone lines as host Macintosh memory and processing power allow: a standard Macintosh II with 8 MB of RAM could handle six lines at 9600 baud or twenty or more phone lines at 2400 baud. Be aware that the Macintosh cannot efficiently manage multiple serial port activity. Ten or more callers on one Macintosh will definitely result in significant performance degradation.

Multiport serial cards are available from Creative Solutions and Applied Engineering.

For more information, search on "MultiPort", "Shiva", "TeleFinder", "Creative Solutions", or "Applied Engineering"

Article Change History:
11 May 1994 - Updated with MultiPort Server info and Shiva Netmodem.

Support Information Services

Published Date: Feb 20, 2012

Xircom Performance Series OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Xircom Performance Series
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: XircomIIpsNetworkDriver
Driver Type: Networking
Driver Scope: Product Family
Supported Components: Xircom Scipper/2
PC Bus / Interface Supported by Driver*: PCMCIA

General Overview notes: This driver supports the Xircom Performance Series PCMCIA Ethernet Adapters.

Supported Products / Add-on Adapters:
Xircom PS-CE2-10BT (PCMCIA, UTP)
Xircom PS-CE2-10BC (PCMCIA, UTP/BNC)

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** PIO
Buffer Size*:
Supported Connectors:** BNC, UTP

Known Problems

NeXT is investigating performance problems experienced with Version 2.10 of the Xircom Performance Series adapters. Once the problem is identified and resolved, a fixed version of the driver will be made available.

Driver Version Notes

3.31 - Initial beta release
3.32 - Released QA'd version
3.33 - Updated to be compatible with Version 3.34 of the PCMCIABus driver.
4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

OPENSTEP 4.0 Supplemental Release Notes

This file supplements not only the on-line release notes included on both the OPENSTEP 4.0 and OPENSTEP Developer 4.0 CD's (both Windows and Mach), but also any printed release notes packaged with those releases.

This article has been archived and is no longer updated by Apple.

Installation

Systems with the ªWindows 95 Shellº

OPENSTEP 4.0 for Windows won't install correctly on systems running the combination of Windows NT 3.51 and the beta version of the ªWindows 95 shell.º However, OPENSTEP 4.0 for Windows installs correctly on Windows NT 3.51 systems without the shell, as well as on systems running the beta versions of Windows NT 4.0. (69359)

Upgrading an NEC Express II/P60 ST

If you're planning to upgrade an NEC Express II / P60 ST from NEXTSTEP 3.3 to OPENSTEP 4.0 for Mach, please read the following:

The DPT2000 SCSI driver is now obsolete and has been replaced by the more generic DPTSCSI driver along with a ªdriver personalityº<the DPT On-Board SCSI driver<that's been created specifically for the NEC Express II / P60 ST. Unfortunately, machines running NEXTSTEP 3.3 with the DPT 2021 ISA SCSI personality installed and configured don't upgrade properly to the new DPT On-Board SCSI driver personality, preventing the machine from booting after the upgrade.

You can prevent this by using either of the following procedures:

· *Before upgrading to OPENSTEP 4.0*, download the DPTSCSI driver from NeXTanswers (**http://www.next.com/NeXTanswers/HTMLFiles/1889.htmld/1889.html**). Install the driver, then launch Configure.app. In Configure, select the SCSI icon, remove the curent driver, and add the DPT On-Board SCSI driver. Reboot and upgrade normally.

or,

· After upgrading, don't click on the Restart button in Upgrader. Instead, launch Configure.app, select the SCSI icon, remove the current driver, and add the DPT On-Board SCSI driver personality.

If you've already upgraded and cannot boot into OPENSTEP 4.0 for Mach, boot from the OPENSTEP installation boot diskette. Simply insert the disk into the disk drive, power on the machine, then type the following at the ªBoot:º prompt:

```
fd()mach_kernel rootdev=sd0
```

Follow the on-screen directions. Once OPENSTEP has booted, log in as **root** and launch Configure.app. In Configure, select the SCSI icon, remove the current SCSI driver, and add

the DPT On-Board SCSI driver personality.

Drivers

Pathlight SSA Driver

The Pathlight SSA driver is considered a beta-quality driver since it hasn't been officially tested by NeXT's Quality Assurance department. We recommend that you download and install the released version of this driver once it becomes available.

Intel82557 Network Driver

The Intel82557NetworkDriver is considered a beta-quality driver. There is one known bug in the driver which prevents the adapter from connecting with the network. This has been fixed in the latest 4.0 Beta driver, which can be obtained from NeXTanswers (**http://www.next.com/NeXTanswers/NABrowse?/NEXTSTEP/Intel_Configuration_Information/Drivers/4.0_Drivers/Beta**). We recommend that you download and install the released version of this driver once it becomes available.

Interface Builder

Nib File Compatibility

Any nib file generated by Interface Builder under OPENSTEP 4.0 (Windows or Mach) that contains a text object won't be OpenStep compliant.

Published Date: Feb 20, 2012

LaserWriter 6.0: How To Get Black & White Update Patch

How can I obtain the LaserWriter 6.0 driver with the patch that has black and white selected as the default?

This article has been archived and is no longer updated by Apple.
The LaserWriter 6.z.1 driver is on AppleLink in the Tech Info Library. Use the search criterion of "LaserWriter 6.z.1".

Also, the LaserWriter 6.1 driver defaults to black and white or Color/Gray scale, depending on what was used last. The LaserWriter 6.1 driver is on the Macintosh Printing Tools disk that comes with the Personal LaserWriter LS and the StyleWriter.

Published Date: Feb 18, 2012

Macintosh: Where To Find DRAM for Old-Style Video Boards

I want to upgrade my old 4-bit video card to 8-bit. Apple's memory upgrade kit for the old video card is now off the price list. I assume that these are just standard 64K DRAMs. Can you recommend a third-party source?

This article has been archived and is no longer updated by Apple.
The memory chips used to expand the old Macintosh II Video Card from 4-bit to 8-bit are not standard 64K DRAMs. VRAMs made by NEC were used on the board (part numbers: D41264C-12). The "-12" in the part number indicates that the chips have a 120ns rating.

Companies that sell these chips include:

* The Chip Merchant
* SHECOM COMPUTERS
* Peripheral Outlet

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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OPENSTEP 4.1 Installation for Windows NT 4.0

Unless otherwise stated, this information applies to NT 4.0 Gold and OPENSTEP/NT 4.1 only. The information presented here may or may not apply to versions of NT before 4.0 gold, or OPENSTEP/NT 4.0. You must performall of the following procedures as Administrator.
This article has been archived and is no longer updated by Apple.

Q: What does the OPENSTEP/NT Distribution install on my system?

A:

- All files are installed under the directory defined by the NEXT_ROOT environment variable.

- 2 services: machd and nmserver (in OPENSTEP 4.0, these are simply programs in the common StartUp group)

- 2 programs in the common startup group:pbs and WindowServer

- environment variables either added or changed: NEXT_ROOT, Lib, Path

- Registry entries (do a search for NeXT)

Q: How do I Manually uninstall OPENSTEP/NT 4.0?

A:

1. Quit any running OPENSTEP Applications

2. Kill the four daemons: machd, nmserver, pbs, WindowServer. They do not show up on the task list, so you will have to use pview or the Task Manager in NT 4.0 in order to kill them. Alternatively, remove the programs from the StartUp folder,and reboot your machine.

3. Remove the four daemons from the common StartUp folder.

4. Delete the entire NEXT_ROOT directory.

5. Remove or change the NeXT related environment variables: NEXT_ROOT, Lib, Path.

6. (Optional) Remove any registry references to NeXT software using the Registry Editor.

Q: How do I install OPENSTEP/NT 4.1 on NT 3.51?

A: Very carefully.

Changes were made in NT 4.0 gold that broke the installation process for OPENSTEP during the 4.1 beta process. We have fixed OPENSTEP/NT 4.1 so that it installs cleanly on NT 4.0 Gold, but this consequently broke the installation for NT 3.51. You can still successfully instally on NT 3.51 by following these steps:

1. Install as usual, but when asked if you want the installer to place programs in your startup folder, choose NO. The installation will complete successfully.

2. Place pbs and WindowServer in the common StartUp group.

pbs is in %NEXT_ROOT%\\NextLibrary\\Frameworks\\AppKit.Framework\\resources\\pbs.exe
WindowServer is in %NEXT_ROOT%\\NextLibrary\\System\\WindowServer.exe

3. (Optional) Create a NeXT program group and create the file extension associations within File Manager.

4. Reboot the machine.

Q: How do I Manually uninstall OPENSTEP/NT 4.1?

A:

1. Quit any running OPENSTEP Applications

2. Kill the four daemons: machd, nmserver, pbs, WindowServer. You must bring up the Services control panel to stop machd and nmserver. You can use pview or the NT 4.0 Task Manager to kill pbs and WindowServer. Alternatively, remove the programs from the StartUp folder,and reboot your machine.

3. Remove machd and nmserver as services. From the command prompt, type (replacing %NEXT_ROOT% with the actual NeXT root directory):
%NEXT_ROOT%\\NextLibrary\\System\\machd -remove
%NEXT_ROOT%\\NextLibrary\\System\\nmserver -remove

4. Remove pbs and WindowServer from the common StartUp folder.

5. Delete the entire NEXT_ROOT directory.

6. Remove or change the NeXT related environment variables: NEXT_ROOT, Lib, Path.

7. (Optional) Remove any registry references to NeXT software using the Registry Editor.

Q: I've installed OPENSTEP correctly, but it still won't run. What's wrong?

A: OPENSTEP must believe your NT system has network capability in order to run.

The nmserver service must have networking enabled in order to run. You can either put your NT machine on a network, or configure RAS to work around this. You need not connect to a service provider with RAS; just have it configured. If you have an ethernet card in your machine, removing it will make RAS configuration easier.
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OPENSTEP 4.1 Development for Windows NT 4.0

This document contains information on developing OPENSTEP 4.1 applications on Windows NT 4.0 Gold. The information presented here may or may not apply to versions of NT before 4.0 gold, or to other versions of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Q: Why does my application say "Class not loaded" at run time even though I clearly have the framework linked into my project?

A:

Even though it looks like your app build properly, the linker will not actually link in a dll unless you make direct reference to a symbol in the dll. Here is an example of how to directly reference symbols, taken from the template EOF application:

```
#ifdef WIN32
#import <EOControl/EOControl.h>
#import <EOAccess/EOAccess.h>
#import <EOInterface/EOInterface.h>

void _referenceAllEOFrameworks()
{
static id a,b,c;
a = [EODisplayGroup new]; // EOInterface
b = [EOEntity new]; // EOAccess
c = [EOEditingContext new]; // EOControl
}
#endif
```

You never need to call this code. Simplying having it in your project is sufficient.

Q: Why do I get error LNK 1120: unresolved externals even though I clearly have the framework linked into my project?

A:

There is a bug in the OPENSTEP/NT 4.1 makefiles that will not export symbols from subprojects within a framework. You can add the following to the Makefile.postamble in your main project as a workaround.

```
ifeq "WINDOWS" "$(OS)"
$(WINDOWS_DEF_FILE): $(OFILES) $(OTHER_OFILES)
$(SILENT) if [ ! -r "./$(WINDOWS_DEF_FILE)" ] ; then \\
$(ECHO) -n "Generating $(notdir $@)...." ; \\
(cd $(OFILE_DIR); $(DUMP_SYMBOLS) $(OFILES) $(OTHER_OFILES) `$(CAT) $(NAME).ofileList` | $(EGREP)
"(SECT).*(External).*(\\|)" | $(EGREP) -v "(__GLOBAL_$I)|(_OBJC_)" | $(SED) "s/ _/ /" > $(TMPFILE)) ; \\
$(ECHO) "LIBRARY $(NAME).dll" > $(GENERATED_DEF_FILE) ; \\
$(ECHO) "EXPORTS" >> $(GENERATED_DEF_FILE) ; \\
$(CAT) $(TMPFILE) | $(EGREP) "(SECT2)|(.objc_c)" | $(AWK) '{printf "\\t%s CONSTANT\\n", $$NF}' >>
$(GENERATED_DEF_FILE) ; \\
$(CAT) $(TMPFILE) | $(EGREP) -v "(SECT2)|(.objc_c)" | $(AWK) '{printf "\\t%s\\n", $NF}' >>
$(GENERATED_DEF_FILE) ; \\
$(RM) $(TMPFILE) ; \\
$(ECHO) "done"; \\
fi
endif
```

Also, globals and functions are not automatically exported from a framework. See below for the workaround.

Q: Why will a project build sometimes fail for seemingly no reason in the link stages?

A: Because you may have the executable running or open in gdb

You may sometimes get errors that look like the following when trying to build your project under NT:
D:/NeXT//NextDeveloper/Libraries/libNSWinMain.a
LINK : fatal error LNK1104: cannot open file "C:/Projects/ImageCrop/ImageCrop.debug/ImageCrop.exe"
gcc: Internal compiler error: program ld got fatal signal 127
make[1]: *** [C:/Projects/ImageCrop/ImageCrop.debug/ImageCrop.exe] Error 1
make: *** [debug] Error 2

This is likely caused by the fact that the application is either still running, or you still have a debug session running. On NT, it is impossible to delete or overwrite a file while some process is using it.

Q: Why do I get a segmentation fault when trying to use a bundle?

A:

There is a problem with code in a bundle trying to access global variables in the main application. Typically, when the bundle code tries to access the global variable, you will get a segmentation fault. The solution is to put these global symbols into a framework and link both the application and the bundle against the framework. You must also implement additional declarations (see below) to export symbols other than class and category names from your frameworks.

Q: How do I export symbols other than class names from my framework?

A:

The makefiles that ship with OPENSTEP/NT will build a framework properly with class and category names exported, but functions and public variables are not exported. You must take special measures to export them explicitly.

You can create a header file like the one below and include it in your framework, to be both included by the framework and applications that link against the framework.

```
#ifdef WIN32

#ifndef _BUILDING_MY_FRAMEWORK
#define _MY_FRAMEWORK_GOOP __declspec(dllimport)
#else
#define _MY_FRAMEWORK_GOOP __declspec(dllexport)
#endif _BUILDING_MY_FRAMEWORK
```

```
#ifdef __cplusplus
#define MY_FRAMEWORK_EXTERN _MY_FRAMEWORK_GOOP extern "C"
#define MY_FRAMEWORK_EXTERN extern "C"
#else
#define MY_FRAMEWORK_EXTERN _MO_WINDOWS_DLL_GOOP extern
#define MY_FRAMEWORK_PRIVATE_EXTERN extern
#endif __cplusplus

#endif WIN32
```

You could then create public header files in your framework that use the macros in this header file to export symbols. For instance:

```
#ifdef WIN32
#import "MyFrameworkGoop.h"

// This function is public
MY_FRAMEWORK_EXTERN somePublicFunction();
// This function is private to the framework
MY_FRAMEWORK_PRIVATE_EXTERN int somePrivateVariable;

#endif WIN32
```

Q: Why can't I debug bundles and frameworks?

A: gdb cannot read symbols from relocated bundles and frameworks under NT.

Both bundles and frameworks are dynamically loaded code, and may be relocated in memory if there is a conflict with previous dynamic loaded code. Typically, you will be able to debug the first bundle and framework loaded, but not subsequent ones. You can avoid relocation of dynamically loaded code by specifying a base address to the linker so that your code will be loaded in a non-conflicting range of memory.

Add the following lines to your Makefile.preamble.

For frameworks, use:
WINDOWS_PB_LDFLAGS = -image_base 0x00000000 (fill in an address)

For Bundles, use:
WINDOWS_PB_LDFLAGS = -Xlinker "/BASE:0x00000000" (fill in an address)

A good address to use would be the ones that you see the code being relocated to as things load in gdb.

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NeXTSTEP and OPENSTEP Time Zone Patch

This README document describes how to install the TimeZone Patch Update and describes the fixes contained in the update. This update is to be installed only on computers running NEXTSTEP 3.3, NEXTSTEP 3.3risc, OPENSTEP 4.0 for Mach, OPENSTEP 4.0 for NT, OPENSTEP 4.1 for Mach, and OPENSTEP 4.1 for NT. This problem has been corrected in OPENSTEP 4.2.

The 7th European Union Directive on Summer Time specifies that starting in 1996, Daylight Saving Time in the European Union will terminate on the last Sunday in October of each year. NeXT current software (including NEXTSTEP, OPENSTEP for Mach, and OPENSTEP for NT) thinks that DST in the European Union terminates on the last Sunday in September of each year.

To guarantee the integrity of the fixes included in this patch, you should only install this software when received from an authorized NeXT representative or a NeXT server. Your existing NeXT Software License Agreement governs the use of this software update. This patch updates only binary data files containing timezone information. It does not update any executables or scripts or documentation.

The OPENSTEP Current Patch List, **Document 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read this document if you're not sure which patches you need on your system.

Caution: You should make sure to back up your files before installing this patch update. On Mach, you should back up your /private/etc/zoneinfo and /usr/template/client/etc/zoneinfo directories. On NT, you should back up your $NEXT_ROOT/NextLibrary/Foundation.framework/Resources/TimeZoneInfo directory.

This article has been archived and is no longer updated by Apple.
Installing the TIMEZONE Patch Update on Mach

After downloading the Mach patch file from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/patches/4.1_TimeZone_Patch/TimeZonePatch_Mach.compressed

decompress it and follow these instructions to install the TimeZone Patch Update

1. Log in as root. (If you're not sure how to log in as root, see your system administrator.)

2. Make sure your computer is running NEXTSTEP 3.3, NEXTSTEP 3.3risc, OPENSTEP 4.0 for Mach, or OPENSTEP 4.1 for Mach. (You can find the version number with the Workspace Manager application's Info Panel command.)

Warning: Installing the TimeZone Patch Update on a computer that isn't running one of the above releases may result in unexpected problems.

3. Double-click the TimeZoneUpdate.pkg file.

4. Click the Install button in the Installer package window. An Install Package panel opens.

5. Click Install in the Install Package panel, and if prompted for confirmation, click OK to proceed.

The Installer window displays information about the progress of the installation.

6. Log out and restart the computer. You are now finished installing the patch.

Note: You may wish to confirm via your Date & Time system preferences in the /NextApps/Preferences.app that your computer's time zone is set correctly.

Installing the TIMEZONE Patch Update on NT

After downloading the NT patch file from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/patches/4.1_TimeZone_Patch/TimeZonePatch_NT.tar

follow these instructions to install the TimeZone Patch Update

1. Log in as Administrator onto your OPENSTEP for NT system. (If you're not sure how to log in as Administrator, see your system administrator.)

2. Make sure your computer is running OPENSTEP 4.0 for NT, or OPENSTEP 4.1 for NT. (You can find the version number with the Workspace Manager application's Info Panel command.)

Warning: Installing the TimeZone Patch Update on a computer that isn't running one of the above releases may result in unexpected problems.

3. Obtain a Bourne Shell prompt. This is located in the OPENSTEP Program Group.

4. Type cd·$NEXT_ROOT/NextLibrary/Frameworks/Foundation.framework/Resources/TimeZoneInfo. The $NEXT_ROOT environment variable refers to the top-level directory where the OPENSTEP software is installed.

5. Type $NEXT_ROOT/NextDeveloper/Executables/Utilities/gnutar.exe xvf tzupdate.tar. If you do not have a gnutar.exe file, you can download one from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/patches/4.1_TimeZone_Patch/gnutar.exe

6. If the file $NEXT_ROOT/NextLibrary/Frameworks/Foundation.framework/Resources/TimeZoneInfo/localtime exists, then delete it.

7. Copy the appropriate timezone file to the file name localtime. For example, to make the default time zone GB-Eire, type cp -p GB-Eire localtime. Alternatively, you can add the environment variable TZFILE to your environment using the System control panel. The value of the variable should be the path to the appropriate time zone configuration file relative to $NEXT_ROOT/NextLibrary/Frameworks/Foundation.framework/Resources/TimeZoneInfo. For example, to set your time zone to be GB-Eire, the value of the TZFile environment variable would be "GB-Eire".

8. Log out and restart the computer. You are now finished installing the patch.

TIMEZONE PATCH UPDATE Release Notes

The remainder of this file describes the bug fixes that comprise the TimeZone Patch Update.

Problems Fixed in This Patch Update

TA45855_NeXTSTEP_and_OPENSTEP_Time_Zone_Patch.pdf

The following problems have been fixed in this update:

TimeZone Data

Reference: 67469, 63998

Problem: European timezone information is incorrect for end of summer time (Daylight Saving Time).

Fix: For the affected European timezones, the timezone data now correctly ends summer time on the last Sunday in October, in accordance with the European Union's 7th Directive on Summer Time.

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NeXTSTEP 3.3 Driver: DEC21142 Network

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/DECChip21142Net.pkg.compressed

Driver Name / Installer .pkg: DEC21142Network
Driver Type: Networking
Driver Scope: Specific Product
Supported Components: DEC 21142, DEC 21143
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver supports the onboard ethernet LAN adapter in the DEC Celebris 61xx. The adapter is based on the DEC21142 chipset.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
DEC Celebris 61xx On-Board LAN Adapter

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type:** EtherNet
Speed*: 10 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*:
Supported Connectors:** AUI, BNC, UTP

Known Problems

In the system BIOS setup screen (F2 at boot), be sure to set "Plug and Play OS" to "off". If left on, the driver will fail to retrieve the correct ethernet address (it will most likely be ff:ff:ff:ff:ff:ff).

Driver Version Notes

3.31 Initial version supporting 10 Mbit/s only.
3.32 Adds support for DECchip21143 in 10 Mbit/s mode.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

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OPENSTEP 4.1 Release Notes: Application Kit

This document contains release notes for OPENSTEP version 4.1.
This article has been archived and is no longer updated by Apple.

New Features in 4.1

ComboBox

The NSComboBox class has been added to the Application Kit. It offers similar functionality to the Combo Box control defined in the Microsoft° Windows, user interface.

Splash Screen

OPENSTEP for Windows now provides support for a "splash" screen in applications<basically a panel that comes up with a static image as the application is being launched. To use this feature, simply provide an 8-bit uncompressed bmp image named **Splash.bmp** as a resource in your application. You can make it localizable if you wish. (Thus the image will be either in *appname*.app/Resources or *appname*.app/Resources/*language*.lproj.) At launch time, the image will be loaded and displayed before any other initialization in the application, and will be removed from the screen before the first window is displayed.

For other changes in 4.1 please refer to the "Changes since 4.0" section below.

New Features in 4.0

OpenStep

OpenStep brings numerous API changes to the AppKit relative to Release 3.3. These changes and the tools provided for applications to convert to OpenStep are described in **/NextLibrary/Documentation/NextDev/Conversion/ConversionGuide**, available on OPENSTEP for Mach.

New Text System

4.0 includes a new text system composed of several different classes: NSTextView (front-end UI), NSTextStorage and NSAttributedString (back-end text storage), NSLayoutManager (management of text layout process and info), and NSTextContainer (description of text flow areas). These classes provide an open, powerful interface and allow text editing in multiple languages, using the Unicode standard. Please refer to the documentation for detailed info. An overview can be found in **/NextLibrary/Documentation/NextDev/TasksAndConcepts/ProgrammingTopics/TextOverview.rtfd** (Mach) or in the **/NextLibrary/Documentation/NextDev/TasksAndConcepts/Topics.hlp** (Windows). There is also a separate release note which describes some of the defaults that can be used to customize the new text system and how to remap or add to the standard supported keybindings. In addition to these notes, the source code to several text-specific examples, including the full source to TextEdit, can be found in the **/NextDeveloper/Examples/AppKit** directory.

TableView

TableView has been completely rewritten and moved into the AppKit. All four classes making up the new TableView are public and fully subclassable.

Keyboard UI

Keyboard access is now provided to most of the controls in the AppKit. For more information, see the separate Keyboard UI Release Notes.

Formatting and Validation

Cells may now be assigned arbitrary object values, which are converted into presentation strings by associated formatter objects. This allows the developer to directly set an NSDate, for instance, as the value of a cell. The cell's associated date formatter will present a localized string representation of the date to the user. The formatter objects, along with control delegates, can also perform validation on user-entered data, thereby restricting entries to valid ranges or quantities, for instance only allowing dates between January 1, 1995 and June 30, 1995.

Rich Text in Cells

NSCell and subclasses can now display and edit rich text. The rich text is specified via instances of NSAttributedString. The new formatting/validation API also includes support for attributed strings.

RulerView

NSRulerView is designed as a general-purpose ruler that can be associated with any scroll view and used by any view that's in the scroll view. It supports both horizontal and vertical rulers, allows arbitrary markers along the rule, and can accept an accessory view.

System Colors

New API has been added to access system-defined colors, such as the color of buttons, controls, text and text selection colors. On Windows, where the user can change the system colors at any point, these colors will change at runtime to match the user's selection.

Help System

The AppKit's Help API has changed significantly. NSHelpPanel has been obsoleted in favor of a new class, NSHelpManager, which provides a more platform-independent approach to presenting help.

Known Problems in This Release

NSComboBox

Reference: 71826

Problem: NSComboBox should support keyboard interface

Description: NSComboBox does not support keyboard accelerators to open, dismiss, or navigate its popup list.

Workaround: None.

Reference: 60438

Problem: NSComboBox uses a private cell class.

Description: For the OPENSTEP 4.1 release, the cell class for NSComboBox is private.

Workaround: None.

NSTableView

TableView does not yet have printing support.

Reference: 51731

Problem: TableView does not fully support keyboard ui

Description: Only simple tabbing between editable cells is implemted in TableView. Arrow keys do not affect selection.

Workaround: Override keyDown: in a subclass or in the owning window and change the selection accordingly.

Reference: 63967

Problem: Header and row height do not change relative to font size

Description: When the developer changes the font size of the header view cells or data cells in a TableView, the heights of the header view and rows do not change appropriately.

Workaround: Manually change the height of the header view and row height.

NSCell

Reference: 52511

Problem: **setUpFieldEditorAttributes:** called only when editing

Description: **setUpFieldEditorAttributes:** is not called when non-editable text is displayed in cells. This makes it difficult to change colors in custom subclasses of NSCell.

Workaround: To display colored text in cells, text fields or attributed string values may be used.

NSImage

Reference: 60413

Problem: JPEG TIFFs don't work on Windows.

Description: Because the imageserver process is not yet available under Windows, JPEG TIFFs cannot be loaded in.

Workaround: None. The images can be compressed using another compression scheme using tiffutil on OpenStep for Mach.

New Text System

Reference: 58479

Problem: Rotated text views don't so selection very well

Description: The selection drawing (at least) in a rotated NSTextView needs work. The selection is generally drawn too large and leaves pixels around.

Workaround: None. Avoid editable rotated NSTextViews for now.

Reference: 50123

Problem: Some features are currently unimplemented

Description: The following features are currently unimplemented: Full justification, tabs other than left, certain paragraph style attributes, scaled images.

Workaround: None.

Reference: 54951

Problem: Screen fragments in containers with holes

Description: If you attempt to create an NSTextContainer with holes such that one physical line can have multiple line fragments, there are still problems with erasing old drawing below the hole when text is deleted.

Workaround: None.

Reference: 49744

Problem: Images are not scaled in scaled text

Description: Using the standard NSTextAttachment class, the images appear at 100%.

Workaround: This problem can be fixed by using a custom attachment cell.

Reference: 68768

Problem: Sometimes two lines will appear on top of each other

Description: The backing store is fine, but the text is laid out with two lines right on top of each other. This is fairly rare but somewhat disconcerting.

Workaround: Typing a character in the overlapped lines and then deleting it will fix the layout.

NSWindow

Reference: 71671

Problem: "Flash active caption bar" visual warning option might cause apps to hang

Description: If you have enabled SoundSentry (under Accessibility Options in the Control Panel), and turned on "Flash active caption bar" visual warning option, there is a good chance apps will hang when they call NSBeep(). This function is called by the Application Kit in a few cases<when you perform an unrecognized command key, for instance.

Workaround: None. Use one of the other visual warning options.

Reference: 72040

Problem: Resizing a modal panel causes it stop processing mouse down events

Description: If you resize a modal panel it will stop responding to mouse down events until it is dismissed and brought back on the screen again.

Workaround: Because keyboard events still work, you can dismiss the panel by navigating to the appropriate button via keyboard UI.

Reference: 71648

Problem: Closing a modal window or panel does not always end the modal session

Description: Closing a modal window or panel by clicking on the close box will not always end the modal session, leaving the application in a state where mouse clicks and key strokes are ignored. On Windows, modal panels often have a close box. This acts the same as a cancel button and, by default, clicking the close box while running modal will stop the modal session with the NSCancelButton return code. However, if the Window's delegate decides to control when the window should close by implementing windowShouldClose:, then it is also up to the delegate to stop the modal session in windowWillClose:. On Mach, modal windows and panels rarely have a close box; if they do they must stop modal in windowWillClose:.

Workaround: On Windows, a window delegate implementing windowShouldClose should stop the modal session in windowWillClose:. On Mach, any modal window or panel with a close box should stop the modal session in windowWillClose:

Reference: 64988

Problem: NSBackingStoreNonretained don't work under Windows

Description: Under Windows, nonretained windows aren't implemented.

Workaround: Use retained or buffered windows instead.

Reference: 69973

Problem: Miniaturizing and then restoring a window under Windows causes first responder to be lost

Description: When a window is miniaturized it loses track of its current first responder. When it is restored again, the first responder is not restored.

Workaround: You can use makeFirstResponder to set a first responder yourself or just make the user click something.

Reference: 69327

Problem: Clicking in the contents a window which is key won't bring it to the front

Description: Under Windows, if a non-key panel is in front of the key window, clicking in the content view of the key window will not bring it to the front.

Workaround: Clicking the title bar will bring it to the front.

Drag/Drop

Reference: 60829

Problem: On Windows, **ignoreModifierKeysWhileDragging** is never invoked on drag source

Workaround: None.

Reference: 67620

Problem: On Windows **draggedImage** always returns nil.

Description: During a dragging session, the DraggingInfo will always return nil when queried for its

draggedImage.

Workaround: None.

Reference: 63466

Problem: On Windows, the drag source's image offset is ignored

Description: Currently the dragged image will appear to the lower right of the cursor's hot spot.

Workaround: None.

NSFont

Reference: 61824

Problem: Microsoft's *WingDings* font is not supported well under OPENSTEP for Windows

Description: There isn't currently a Unicode mapping for any of the glyphs in it, even into the User Zone, so it works as any other "unknown" font (i.e., characters 0-255 are mapped directly to glyphs 0-255).

Workaround: None.

Keyboard UI

Reference: 51182

Problem: AccessoryViews are not added to keyView loop

Description: When a panel supporting accessory views, such as the SavePanel, is brought on screen, the accessory views are not automatically added to the keyView loop.

Workaround: Add the accessory view to the keyView loop by hand using setNextKeyView: before brining the panel on screen.

NSOpenPanel

Reference: 63490

Problem: On Windows, one can open file packages but not directories without extensions.

Description: The OpenPanel on Windows does not provide a way to select and open plain directories. Clicking on directories without extensions will expand the directory rather than opening it. Directories with extensions are correctly dealt with as file packages.

Workaround: Either require selectable directories to have extensions or provide a well defined file inside the directory for the user to select.

Accessory Views

On Windows, the PageLayout panel does not yet support application supplied accessory views. Also on Windows, accessory views in the Open, Save and Print panels work only on NT 4.0, not NT 3.51.

Changes since 4.0

The following list all the API changes and some of the bug fixes that were done in the Application Kit

between 4.0 and 4.1.

Note that in your application if you use any API which was added between 4.0 and 4.1, your application might not run under 4.0. (If you are not deploying under 4.0, then this is not an issue.) You can catch some of the potential problems by defining **STRICT_40** at compile time. This #define is used in the Application and Foundation Kits to mark new API.

Similarly, if you rely on a bug fix done in 4.1, your application may not function correctly under 4.0. Make sure you test on your intended deployment platform.

NSApplication

IBOutlet and **IBAction** are now defined in the kit and automatically imported if you import **AppKit.h**. You can remove your own custom definitions of these (if you had any).

The **hide:** method has been changed to do nothing on Windows.

The default value of the **NSUseRunningCopy** command line option has been changed to YES. This means that anytime you cause a second copy of the application to be launched, it will connect you to the already running copy. You should also If you wish to run multiple copies of an application, you should use "-NSUseRunningCopy NO". You might need this if you need to debug a new instance of the application while it's already running.

Another change is that all command line options which are not defaults options (meaning a pair of arguments where the first one starts with a "-") are now treated as file names to be opened, as if they were prefixed with -NSOpen.

As a result of these two changes, you can now associate documents with OPENSTEP apps on Windows simply by providing the location of the app. The default command line provided by the Explorer will be enough to open documents and also connect to a running copy of the application, if there is one.

On Windows, **[NSApplication init]** (called by **sharedApplication**) changes the current directory to the root of the drive from which the application is launched. This is done in order to avoid problems associated with the application starting off in random places (such as the directory of a file wrapper, when launched by double-clicking on a file in a file wrapper). One consequence of this is that any directory changes which take place in the **main()** function, before **sharedApplication**, will fail to stick.

NSWindow

In OPENSTEP for Windows, document edited state is now indicated in the title bar by prefixing the title with an asterisk. OPENSTEP for Mach still uses a broken "X".

Tracking rects are now implemented on Windows.

The following are not actually changes since 4.1, but are a couple things to be aware of concerning NSWindows in OPENSTEP for Windows.

· Under Windows, the frameRect and contentRect are currently the same size. The frameRect of an NSWindow under OPENSTEP for WIndows NT does NOT include the title bar, menu bar, resize border, etc...

· Under Windows, the contentView while a window is miniaturized is a NSImageView, not the original contentView. The contentView is restored when the window is deminiaturized. This is necessary because under some versions of Windows NT, the same actual window is used when the window is full size or miniaturized. It is just moved and resized when miniaturing or restoring. Since most content views are not prepared to size themselves that small, the content view is removed from the window while it miniaturizes and is restored when the window is restored.

NSTableView

A new notification, **NSTableViewSelectionDidChangeNotification**, and a corresponding delegate method, **tableViewSelectionIsChanging:**, have been added to NSTableView. The existing **NSTableViewSelectionDidChangeNotification** is only sent after the user has moused up when changing a selection. The new notification is sent while the selection is changing.

NSSavePanel

The save panel will now put up an alert letting you confirm before you replace an existing file.

NSInputServer

The following methods were added to NSInputServer. They are sent by current input manager when the application changes state so that the server can update its concept of who's current. The actually "active" sender is the last one to have sent a **senderDidBecomeActive:** message. These methods may not arrive in the expected order.

```
- (void)senderDidBecomeActive:(id)sender;
- (void)senderDidResignActive:(id)sender;
```

This method is sent by input manager when the conversation within a particular sender changes:

```
- (void)activeConversationWillChange:(id)sender oldConversation:(long)conv newConversation:(long)new;
```

NSTextView

To allow entering a character without an appropriate keyboard, you can now use the Alt key in conjunction with the digit keys from the keypad. While holding down the Alt key, type the index of the desired character in the encoding of the current font (in most cases this will be the NEXTSTEP encoding). The appropriate character will be inserted into the text when the Alt key is released.

NSWorkspace

The **openFile:withApplication:** will now correctly open the file with the specified application. In 4.0 this method always returned NO when an application name was supplied.

OPENSTEP for Window now contains an "open" command. Like on Mach, "open filename" will open the specified file in its registered application. You can also use the "-e" flag to open the file in TextEdit or the "-a" flag to launch an application.

NSAttributedString

If supplied a plain text file, the **initWithPath:documentAttributes:** method will now go ahead and still create an attributed string from the plain text contents. Note that if the file looks like an RTF file (has the appropriate magic header), but fails to open, the method will still return nil.

NSColor

Unarchived NSColors and NSColors created with **colorWithCalibratedRed:green:blue:alpha:** and **colorWithCalibratedWhite:alpha:** will be replaced by the cached and uniqued colors returned by methods such as [NSColor whiteColor] if they are exactly the same. In some cases this will greatly reduce the number of colors created at runtime and speed up certain operations. However, in the unlikely event that this causes problems in your application, or prevents your 4.0 application from running correctly under 4.1, you can set the **NSCachedColorConversion** default to NO.

System colors (such as those returned by [NSColor controlColor]) have been improved to generate colors which match those used by Windows. Under 8-bit color this should result in a visible

improvement in certain color schemes.

Changes before 4.0

There are tops scripts to assist PR1 to PR2 and PR2 to 4.0 migration. Many of the API changes that have happened between prereleases can be automatically applied to your code with these commands:

```
tops -semiverbose -scriptfile /NextDeveloper/OpenStepConversion/ConversionScripts/PR1toPR2.tops *.[mchCM] *.psw *.pswm

tops -semiverbose -scriptfile /NextDeveloper/OpenStepConversion/ConversionScripts/PR2to40.tops *.[mchCM] *.psw *.pswm
```

Formatting and Validation

NSFormatter and NSDateFormatter have moved into the Foundation Kit. FoundationKit now also includes a number formatter. Imports of <AppKit/NSFormatter.h> or <AppKit/NSDateFormatter.h> will need to be changed to import the corresponding file from Foundation; imports of <AppKit/AppKit.h> don't need to be changed. The tops script mentioned above takes care of this. Also, a new NSNumberFormatter has been added.

The control delegate message **control:validateObject:** has been changed to **control:isValidObject:**.

NSApplication

NSApplication defines a new delegate method similar to **-application:openFile:** called

```
-(void)application:(NSApplication *)app printFile:(NSString *)path
```

Upon launching, an application scans its command line arguments for -NSOpen and, now, -NSPrint arguments. These arguments are followed by the path to a file to open or print respectively. NSApplication sends the above messages to its delegate if it responds in this way for the files specified on the command line. These messages are also invoked in response to Speaker/Listener interaction, but this aspect is perhaps less interesting to developers.

This new message (and the new command-line argument -NSPrint) is supported on both Mach and Windows.

Under Windows NT, when you install OPENSTEP, Explorer associations are automatically created for each file extension that the OPENSTEP applications claim. The file-type's icon is associated with its extension and Open and Print commands are registered as well. These commands work through the new command-line options, and can be accessed through Explorer's right-mouse context menu. So, for example, right clicking an RTF file in Explorer will give you a menu that includes both Open and Print as well as some other stuff. Choosing Open or Print will cause TextEdit to open or print the file. Open is registered as the default command for these file extensions, so double-clicking an RTF file will open it in TextEdit.

A new notification, **NSApplicationWillTerminateNotification,** has been added to OpenStep. It is sent before the Application's **terminate** method after **applicationShouldTerminate** is queried.

A Windows-specific method has been added to allow access to the Windows application handle. This will only be of interest to developers calling the Win32 API directly. (Arguments that varioius types of Windows handles are declared as void currently to avoid polluting the namespace with the vast amount of un-prefixed names in the Windows system headers.)

```
- (void * /*HINSTANCE*/)applicationHandle;
```

A Windows-specific method has been added to allow developers to look up an NSWindow object given a Windows HWND handle. This will only be of interest to developers calling the Win32 API directly.

```
- (NSWindow *)windowWithWindowHandle:(void * /*HWND*/)hWnd;
```

A Windows-specific method has been added for developers who choose to implement their own WinMain() function If you do so, call the method below before doing any other AppKit calls. The arguments are those passed to WinMain() from the system.

```
+ (void)setApplicationHandle:(void * /*HINSTANCE*/)hInstance
previousHandle:(void * /*HINSTANCE*/)PrevInstance
commandLine:(NSString *)cmdLine
show:(int)cmdShow;
```

NSTableView

The table view has a new mode where it resizes all the columns, not just the last one, to fill the scroll view. In this mode, if the table view fits exactly into its scroll view, and is then grown, it will grow all of its resizable columns to keep itself the size of the scroll view. Here are the new methods to enable this:

```
- (void)setAutoresizesAllColumnsToFit:(BOOL)flag;
- (BOOL)autoresizesAllColumnsToFit;
```

While tracking a cell or performing the table view's action, one may discover what cell was clicked on to cause the action to perform with these additional methods:

```
- (int)clickedColumn;
- (int)clickedRow;
```

NSAttributedString

Parts of NSAttributedString and NSMutableAttributedString have moved into the Foundation Kit. Just using Foundation, without the Application Kit, you can create and manipulate attributed strings; however you do not have access to the standard attribute types such as color, font, and paragraph style. The rest of the attributed string functionality is provided by categories in Application Kit.

The following names have changed in NSAttributedString:

```
NSAttributedStringEditedAttributes -> NSTextStorageEditedAttributes
NSAttributedStringEditedCharacters -> NSTextStorageEditedCharacters
```

The following methods to read RTF:

```
+ (NSAttributedString *)attributedStringFromRTF:(NSData *)rtfData;
+ (NSAttributedString *)attributedStringFromRTFD:(NSData *)rtfData;
+ (NSAttributedString *)attributedStringFromRTFDFile:(NSString *)rtfdPath;
```

have been replaced by:

```
- (id)initWithRTF:(NSData *)data documentAttributes:(NSDictionary **)dict;
- (id)initWithRTFD:(NSData *)data documentAttributes:(NSDictionary **)dict;
- (id)initWithPath:(NSString *)path documentAttributes:(NSDictionary **)dict;
- (id)initWithRTFDFileWrapper:(NSFileWrapper *)wrapper documentAttributes:(NSDictionary **)dict;
```

The optional dict argument is for returning document-wide attributes, which currently include "PaperSize", "LeftMargin", "RightMargin", "TopMargin", and "BottomMargin". Pass NULL for dict if you don't care about these.

The following methods to write RTF:

```
- (NSData *)RTFFromRange:(NSRange)range;
- (NSData *)RTFDFromRange:(NSRange)range;
- (BOOL)writeRTFDToFile:(NSString *)path atomically:(BOOL)flag;
```

have been replaced by:

```
- (NSData *)RTFFromRange:(NSRange)range documentAttributes:(NSDictionary *)dict;
- (NSData *)RTFDFromRange:(NSRange)range documentAttributes:(NSDictionary *)dict;
```

```
- (NSFileWrapper *)RTFDFileWrapperFromRange:(NSRange)range documentAttributes:(NSDictionary *)dict;
```

Pass nil for dict if you don't want to specify any of the document attributes.

To write RTFD to file you will need to send **writeToFile:atomically:updateFilenames:** to the NSFileWrapper you get back from **RTFDFileWrapperFromRange:documentAttributes:**. The updateFilenames: flag should usually be YES (unless you are doing a "Save To").

The following method names are changed in NSMutableAttributedString:

Before:

```
- (void)fixAttributesAfterEditingRange:(NSRange)range;
- (void)fixFontAttributeAfterEditingRange:(NSRange)range;
- (void)fixParagraphStyleAfterEditingRange:(NSRange)range;
- (void)fixAttachmentAfterEditingRange:(NSRange)range;
```

After:

```
- (void)fixAttributesInRange:(NSRange)range;
- (void)fixFontAttributeInRange:(NSRange)range;
- (void)fixParagraphStyleAttributeInRange:(NSRange)range;
- (void)fixAttachmentAttributeInRange:(NSRange)range;
```

The value of **NSAttachmentCharacter** has been changed from 0xF6FF to 0xFFFC to match the one proposed in the Unicode standard. Code which uses this value will need to be recompiled; places where this value is archived explicitly might need to check for the old value. (RTF files did archive this value, so no need for changes there.) If the old value ever appears in an attributed string at runtime, the new value will be used, and a warning will be generated (single warning per app session).

The method **updateAttachmentsFromPath:** has been added to NSMutableAttributedString to allow updating the file name information in all the attachments in the attributed string.

NSImage

NSImage now understands the bmp, ico, and cur image formats. ico and cur files with multiple images will be loaded as images with multiple representations. Typically these representations will have different sizes (unlike multiple-representation tiffs, which have different depths); by default, NSImage will choose the largest image when compositing.

Windows-specific methods have been added to NSImage and NSBitmapImageRep which allow creation of these objects from a Windows icon handle or bitmap handle. These will only be of interest to developers calling the Win32 API directly.

```
- (id)initWithIconHandle:(void * /* HICON */)icon;
- (id)initWithBitmapHandle:(void * /* HBITMAP */)bitmap;
```

setFlipped: and **flipped** have been brought back into the API.

Compositing Operation name changes

Some of the constants declared by DPSClient for various compositing operations have had their names corrected:

Old Name	New Name
NSCompositeDataOver	NSCompositeDestinationOver
NSCompositeDataInreplace	NSCompositeDestinationIn
NSCompositeDataOut	NSCompositeDestinationOut
NSCompositeDataAtop	NSCompositeDestinationAtop

NSCursor

In order to make NSCursor immutable, the following methods:

```
- (id)initWithImage:(NSImage *)newImage;
- (void)setImage:(NSImage *)newImage;
- (void)setHotSpot:(NSPoint)spot;
```

have been replaced by:

```
- (id)initWithImage:(NSImage *)newImage hotSpot:(NSPoint)aPoint;
- (id)initWithImage:(NSImage *)newImage
foregroundColorHint:(NSColor *)fg
backgroundColorHint:(NSColor *)bg
hotSpot:(NSPoint)hotSpot;
```

The color hints in the latter method are ignored in OPENSTEP for Windows and for Mach.

The **initWithImage:** and **setImage:** methods are somewhat generic and hard to detect, so the tops script might fail to catch all your uses.

Another change in NSCursor since PR2 is the support for custom cursor selections on Windows. OPENSTEP applications will use the correct arrow and I-beam cursors where applicable. If you ask for the image of one of these standard cursors on OPENSTEP for Windows, you will get back the correct image used by the system. You should note that the size of this image may be different than the traditional 16x16 used on Mach. For animated cursors you will simply get back the first frame.

NSText

The following method names are changed in the NSText API:

Before:

```
- (NSString *)text;
- (void)setText:(NSString *)string;
- (void)setText:(NSString *)string range:(NSRange)range;
- (void)replaceRange:(NSRange)range withRTF:(NSData *)rtfData;
- (void)replaceRange:(NSRange)range withRTFD:(NSData *)rtfdData;
- (void)setColor:(NSColor *)color ofRange:(NSRange)range;
- (void)setFont:(NSFont *)font ofRange:(NSRange)range;
```

After:

```
- (NSString *)string;
- (void)setString:(NSString *)string;
- (void)replaceCharactersInRange:(NSRange)range withString:(NSString *)aString;
- (void)replaceCharactersInRange:(NSRange)range withRTF:(NSData *)rtfData;
- (void)replaceCharactersInRange:(NSRange)range withRTFD:(NSData *)rtfdData;
- (void)setTextColor:(NSColor *)color range:(NSRange)range;
- (void)setFont:(NSFont *)font range:(NSRange)range;
```

NSTextView

The following methods are added to NSTextView:

```
- (void)pasteAsPlainText:(id)sender;
- (void)pasteAsRichText:(id)sender;

- (NSPoint)textContainerOrigin;
- (void)invalidateTextContainerOrigin;

- (NSRange)rangeForUserTextChange;
- (NSRange)rangeForUserCharacterAttributeChange;
- (NSRange)rangeForUserParagraphAttributeChange;

- (BOOL)smartInsertDeleteEnabled;
- (void)setSmartInsertDeleteEnabled:(BOOL)flag;
- (NSRange)smartDeleteRangeForProposedRange:(NSRange)proposedCharRange;
- (void)smartInsertForString:(NSString *)pasteString replacingRange:(NSRange)charRangeToReplace
beforeString:(NSString **)beforeString afterString:(NSString **)afterString;
```

The following method names are changed in the NSTextView API to allow richer specification of

selected text attributes:

Before:

```
- (void)setSelectionColor:(NSColor *)color;
- (NSColor *)selectionColor;
```

After:

```
- (void)setSelectedTextAttributes:(NSDictionary *)attributeDictionary;
- (NSDictionary *)selectedTextAttributes;
```

Underlining is now supported in the new text system; **NSSingleUnderlineStyle** has been added as a possible value for the **NSUnderlineStyleAttributeName** attribute.

The delegate method **textView:clickedOnCell:inRect:** has been added to indicate single-clicks on text attachments.

The method **attachmentForDraggedFilename:** has been removed from the API.

NSTextStorage

NSTextStorage now sends out notification messages after edits:

```
NSTextStorageWillProcessEditingNotification
NSTextStorageDidProcessEditingNotification
```

It also has a delegate who gets the following messages:

```
- (void)textStorageWillProcessEditing:(NSNotification *)notification;
- (void)textStorageDidProcessEditing:(NSNotification *)notification;
```

These methods are called during post-edit processing (basically after **endEditing** has been called, or, if endEditing was not in effect, after each edit that causes **edited:range:changeInLength:**). The first notification is sent before attributes are fixed, the second is sent after the attributes are fixed, but before the layout managers are notified. During the execution of **textStorageWillProcessEditing:** the delegate can change the attributed string all it wants; during **textStorageDidProcessEditing:** it should refrain from changing the character contents. The changes done by the delegate will not cause further notifications to be sent. However, during the execution of these methods and notifications the delegate and the observers can obtain information about what's changed via the following methods:

```
- (unsigned)editedMask;
- (NSRange)editedRange;
- (int)changeInLength;
```

NSTextStorage now also has a clear funnel point for all post-edit processing:

```
- (void)processEditing;
```

This method sends the above notification methods, calls **fixAttributesInRange:**, and informs the layout managers of the changes.

The following methods, now much less useful, have been removed from the API:

```
- (void)verifyEdited:(unsigned)mask range:(NSRange)range changeInLength:(int)delta;
- (void)notifyEdited:(unsigned)mask range:(NSRange)range changeInLength:(int)delta
invalidatedRange:(NSRange)invRange;
```

Subclassers, note: NSTextStorage is now a semi-abstract class. It implements change management (**beginEditing**/**endEditing**), verification of attributes, and layout management notification. The one aspect it does not implement is the actual attributed string storage--this is left up to the subclassers, which need to override the two NSMutableAttributedString primitives **replaceCharactersInRange:withString:** and **setAttributes:range:**. These primitives should perform the change then call **edited:range:changeInLength:** to get everything else to happen.

Here is a sample NSTextStorage subclasser:

```
@implementation SimpleTextStorage

/* Provide your own init methods, whatever you wish... Here we provide one (initWithAttributedString:) and override the DI from super (init). */

- (id)initWithAttributedString:(NSAttributedString *)attrStr {
if (self = [super init]) {
contents = attrStr ? [attrStr mutableCopyWithZone:[self zone]] :
[[NSMutableAttributedString allocWithZone:[self zone]] init];
}
return self;
}

- init {
return [self initWithAttributedString:nil];
}

- (void)dealloc {
[contents release];
[super dealloc];
}

/* The next set of methods are the primitives for attributed and mutable attributed string... */

- (NSString *)string {
return [contents string];
}

- (NSDictionary *)attributesAtIndex:(unsigned)location effectiveRange:(NSRange *)range {
return [contents attributesAtIndex:location effectiveRange:range];
}

/* In the mutable primitives (and any non-primitives which are overridden and which don't go through the primitives), we need to call edited:range:changeInLength: to allow the text storage change management to do its job. */

- (void)replaceCharactersInRange:(NSRange)range withString:(NSString *)str {
[contents replaceCharactersInRange:range withString:str];
[self edited:NSAttributedStringEditedCharacters
range:range
changeInLength:(int)[str length] - (int)range.length];
}

- (void)setAttributes:(NSDictionary *)attrs range:(NSRange)range {
[contents setAttributes:attrs range:range];
[self edited:NSAttributedStringEditedAttributes range:range changeInLength:0];
}

@end
```

NSFileWrapper

A new public class has been added to the AppKit. NSFileWrapper provides support for the concept of a document wrapper (like a .rtfd, .nib, or many other NEXTSTEP file types). The new text system uses this class to handle RTFD documents, but it is designed to be generally useful. It handles reading and writing file packages in the file system as well as serializing them for use with the Pasteboard. See the General Reference for details.

NSTextAttachment

The following changes in NSTextAttachment take advantage of NSFileWrapper:

Before:

```
- (id)initWithContentsOfFile:(NSString *)path;
- (BOOL)writeToFile:(NSString *)path atomically:(BOOL)flag;
```

After:

```
- (id)initWithFileWrapper:(NSFileWrapper *)fileWrapper; /* Designated initializer */
- (void)setFileWrapper:(NSFileWrapper *)fileWrapper;
- (NSFileWrapper *)fileWrapper;
```

The **name** and **setName:** methods have also been removed from the API.

NSParagraphStyle

Subclassers, note: **NSParagraphStyle** and **NSMutableParagraphStyle** used to be abstract; they are now concrete.

setParagraphStyle: has been added to NSMutableParagraphStyle to allow setting all the values with one call.

NSRulerView/NSRulerMarker

The delegate method **rulerView:willSetClientView:** has been added to NSRulerView to give the existing client a chance to clean up.

The following method names are changed in NSRulerMarker:

Before:

```
- (void)setLocation:(float)location;
- (float)location;
- (id)initWithRulerView:(NSRulerView *)ruler location:(float)location image:(NSImage *)image imageOrigin:(NSPoint)imageOrigin;
```

After:

```
- (void)setMarkerLocation:(float)location;
- (float)markerLocation;
- (id)initWithRulerView:(NSRulerView *)ruler location:(float)location image:(NSImage *)image imageOrigin:(NSPoint)imageOrigin;
```

NSWorkspace

The following NSWorkspace methods will raise under OPENSTEP for Windows to indicate that they are not implemented (and the return value, being wrong, shouldn't be relied upon):

```
- (BOOL)fileSystemChanged;
- (BOOL)userDefaultsChanged;
- (NSArray *)mountedRemovableMedia;
- (NSArray *)mountNewRemovableMedia;
```

The following methods are no-ops:

```
- (void)checkForRemovableMedia;
- (void)findApplications;
- (void)hideOtherApplications;
- (void)noteUserDefaultsChanged;
- (void)noteFileSystemChanged;
- (BOOL)getFileSystemInfoForPath:isRemovable:isWritable:isUnmountable:description:type:;
- (int)extendPowerOffBy;
- (void)slideImage:(NSImage *)image from:(NSPoint)fromPoint to:(NSPoint)toPoint;
```

In addition, note that the **NSWorkspaceRecycleOperation** will currently remove the files in OPENSTEP for Windows.

NSBrowser

The width of columns are now dealt with as floats rather than ints to be consistent with the rest of the AppKit:

Before:

```
- (void)setMinColumnWidth:(int)columnWidth;
```

```
- (int)minColumnWidth;
```

After:

```
- (void)setMinColumnWidth:(float)columnWidth;
- (float)minColumnWidth;
```

A couple other api items changed names:

Before:

```
- (void)drawTitle:(NSString *)title inRect:(NSRect)aRect ofColumn:(int)column;
- (BOOL)browser:(NSBrowser *)sender selectCell:(NSString *)title inColumn:(int)column;
```

After:

```
- (void)drawTitleOfColumn:(int)column inRect:(NSRect)aRect;
- (BOOL)browser:(NSBrowser *)sender selectCellWithString:(NSString *)title inColumn:(int)column;
```

Selection may now be done by index as well as path. Previously the developer was forced to resort to NSMatrix apis when trying to select a row in a browser column by index. Now she may use:

```
- (void)selectRow:(int)row inColumn:(int)column;
- (int)selectedRowInColumn:(int)column;
```

And the following delegate method was added in parallel to allow the delegate to perform the selection:

```
- (BOOL)browser:(NSBrowser *)sender selectRow:(int)row inColumn:(int)column;
```

Alerts

Two pairs of new functions have been added to support the alert styles found in the Windows UI. **NSRunInformationalAlertPanel()** and **NSRunCriticalAlertPanel()** take the same paramenters as **NSRunAlertPanel()**, but on Windows they present an alert with the "informational" or "critcal" icons, respectively. On Windows **NSRunAlertPanel()** presents an alert with the "warning" icon. On Mach calling any of the three functions produces the same UI. Also note that on Windows alerts have no title, so the title argument to these functions is not displayed in the UI. In addition, **NSGetInformationalAlertPanel()** and **NSGetCriticalAlertPanel()** have been added, which have the same relationship to the existing **NSGetAlertPanel()**.

The function **NSRunLocalizedAlertPanel()** is removed from the API; use **NSRunAlertPanel()** with explicitly localized arguments instead.

Services

The API involved in vending services has changed in PR2. The need for two names to resolve a service provider has been removed. In PR1, services were advertised in the Info.plist using a combination of NSExecutable, and NSProviderName. The provider name is now obsolete, so you simply advertise a single name under the entry NSPortName. This entry has the same meaning as in 3.3 services. Usually NSPortName will be the name of your application as NSExecutable was (e.g. "Webster"). The following API changes have also been made:

· **registerServiceProvider:withName:** has been obsoleted. Use **setServicesProvider:**.
· **unregisterServiceProviderNamed:** has been obsolete. Use **setServicesProvider:nil**.

Two new functions, **NSRegisterServiceProvider()** and **NSUnregisterServicesProvider()** can be used to register service providers under a given name. These functions should only be used by service providers not creating an application object (filter services often fall into this category). The name argument should be the same as that specified by the NSPortName entry of the Info.plist. See the Services documentation for more details.

NSWindow

The following new methods control the resizing behavior of the window. The first pair are used to make a window resize in fixed increments. The second pair are used to make a window resize such that it maintains an aspect ratio.

```
- (void)setResizeIncrements:(NSSize)increments;
- (NSSize)resizeIncrements;
- (void)setAspectRatio:(NSSize)ratio;
- (NSSize)aspectRatio;
```

The following new methods provide an OpenStep alternative to the NEXTSTEP-specific feature of instance drawing. The first method saves away a part of the window's image. Typically after this step, some temporary drawing is done. The second method restores the previously saved image, undoing any drawing that has happened since it was saved. The third method releases the memory used to hold the saved image.

```
- (void)cacheImageInRect:(NSRect)aRect;
- (void)restoreCachedImage;
- (void)discardCachedImage;
```

The **fax:** method has been removed from the OpenStep specification, and is now specific to the Mach platform.

A Windows-specific method has been added to allow access to the Windows window handle of an NSWindow object. This will only be of interest to developers calling the Win32 API directly.

```
- (void * /*HWND*/)windowHandle;
```

NSView

The following new method removes a view from its view hierarchy, without marking that the now exposed region in its superview needs redisplay. This can be useful when a view is temporaily swapped in so as to draw something on behalf of its superview.

```
- (void)removeFromSuperviewWithoutNeedingDisplay;
```

The following method was added in order to preserve the utility of panels that "become key only if needed" (the Font Panel, for example). This feature was defeated by the advent of increased keyboard accessibility to the UI, as nearly all widgets now accept becoming the first responder, which meant the panel would become key almost no matter where the user clicked. The following method is implemented by a widget to return YES if clicking on it should cause one of these panels to become key (which is the same role **acceptsFirstResponder** used to play in these panels).

```
- (BOOL)needsPanelToBecomeKey;
```

The **fax:** method has been removed from the OpenStep spec, and is now specific to the Mach platform.

The following API was removed because it was unused in any of the OPENSTEP products.

```
@interface NSView(NSRIBPrinting)
- (BOOL)canPrintRIB;
@end

typedef enum _NSPosition {
NSNoPosition = 0,
NSLeft = 1,
NSRight = 2,
NSTop = 3,
NSBottom = 4
} NSPosition;
```

A new method has been added to NSView, which is to be overridden by subclassers to find when their

view is installed in a new superview.

```
- (void)viewWillMoveToSuperview:(NSView *)newSuperview;
```

Two new display methods have been added to round out the existing set.

```
- (void)displayIfNeededInRect:(NSRect)rect;
- (void)displayIfNeededInRectIgnoringOpacity:(NSRect)rect;
```

The **NSViewBoundsChangedNotification** notification present in PR1 has been added to the OpenStep spec.

Updating in NSApplication, NSWindow and DPSClient

Various updating mechanisms in the Application Kit are now driven by a new Foundation feature, where NSRunLoop will perform selectors registered by clients in a given order during it's next cycle. (See **performSelector:target:argument:order:modes:** in NSRunLoop.) The following constants represent these uses within the Application Kit:

NSUpdateWindowsRunLoopOrdering (500000)
All Windows are sent the update message. This is also the time when menu items are enabled and disabled.

NSDisplayWindowRunLoopOrdering (600000)
All Windows holding Views needing redisplay are given the chance to redraw.

NSResetCursorRectsRunLoopOrdering (700000)
If needed, cursor rectangles are reestablished.

DPSFlushContextRunLoopOrdering (800000)
The IPC channel to the Window Server is flushed, ensuring any buffered data is executed.

NSResponder

The **insertNewLine:** method was renamed to **insertNewline:**.

NSApplicationMain

The AppKit now provides a function NSApplicationMain() to take care of the initialization and startup of your application. This function is declared in NSApplication.h. Because of this, ProjectBuilder will now generate a trivial main function for your application:

```
#import <AppKit/NSApplication.h>

int main(int argc, const char *argv[]) {
NSApplicationMain(argc, argv);
}
```

Although developer's should not need access to the body of NSApplicationMain(), it is documented here in the rare case that it is necessary. If at all possible, avoid copying this code, as doing so may prevent your application from automatically inheriting features added in future releases.

```
int NSApplicationMain(int argc, const char *argv[]) {
NSAutoreleasePool * pool = [[NSAutoreleasePool alloc] init];
NSDictionary *info = [[NSBundle mainBundle] infoDictionary];
NSString *principalClassName = [info objectForKey: @"NSPrincipalClass"];
NSString *mainNibFile = [info objectForKey: @"NSMainNibFile"];
```

```
if (principalClassName) {
Class principalClass = NSClassFromString(principalClassName);
if (principalClass) {
[principalClass sharedApplication];
if ([NSBundle loadNibNamed: mainNibFile owner: NSApp]) {
[pool release];
[(NSApplication *)NSApp run];
[NSApp release];
exit(0);
}
else NSLog(@"Unable to load nib file: %@, exiting", mainNibFile);
}
else NSLog(@"Unable to find class: %@, exiting", principalClassName);
}
else NSLog(@"No NSPrincipalClass specified in info dictionary, exiting");
[NSApp release];
[pool release];
exit(1);
return 0;
}
```

NSHost

NSHost (or NXHost)'ing is supported only between OPENSTEP for Mach machines or from NEXTSTEP 3.x machines to OPENSTEP for Mach. You cannot run an OPENSTEP application NSHost'ed to a 3.x machine. NSHost'ing is also not supported on OPENSTEP for Windows.

ObjectLinks

ObjectLinks have been removed from the OpenStep specification, and in general the feature is not supported in OPENSTEP for Mach or Windows. The exception is that the following subset of the API may be used on either platform to walk through the linked data from documents written in NEXTSTEP 3.X:

```
@interface NSDataLinkManager : NSObject <NSCoding> {
- (id)initWithDelegate:(id)obj fromFile:(NSString *)path;
- (NSEnumerator *)sourceLinkEnumerator;
- (NSEnumerator *)destinationLinkEnumerator;
@end

@interface NSDataLink : NSObject <NSCopying, NSCoding>
- (NSArray *)types;
- (NSSelection *)sourceSelection;
- (NSSelection *)destinationSelection;
- (NSString *)sourceFilename;
- (NSString *)currentSourceFilename; - (NSString *)destinationFilename;
- (NSString *)sourceApplicationName;
- (NSString *)destinationApplicationName;
- (NSDataLinkManager *)manager;
- (NSDate *)lastUpdateTime;
- (NSDataLinkNumber)linkNumber;
- (NSDataLinkDisposition)disposition;
@end

@interface NSSelection : NSObject <NSCopying, NSCoding>
+ (NSSelection *)emptySelection;
+ (NSSelection *)allSelection;
+ (NSSelection *)currentSelection;
- (NSData *)descriptionData;
- (BOOL)isWellKnownSelection;
@end
```

Note that this API is a subset of the previously provided ObjectLinks API, with one exception: The **currentSourceFilename** method has been added to NSDataLink to allow the application to query the current location of the source file (whereas the **sourceFilename** method returns the original name).

-NSShowPS

On Windows NT, when apps are run with the arguments "-NSShowPS YES", they will produce a dump of their PostScript output in the file **$TEMP\\showps.txt** (where $TEMP is an environment variable usually containing "C:\\temp".

NSColor

The following methods have been added to NSColor:

```
@interface NSColor (NSDynamicSystemColors) // OpenStep/Mach: Windows Name:
+ (NSColor *)controlShadowColor; // darkGrayColor COLOR_3DSHADOW
+ (NSColor *)controlDarkShadowColor; // blackColor COLOR_3DDKSHADOW
+ (NSColor *)controlColor; // lightGrayColor COLOR_3DFACE
+ (NSColor *)controlHighlightColor; // lightGrayColor COLOR_3DLIGHT
+ (NSColor *)controlLightHighlightColor; // whiteColor COLOR_3DHILIGHT
+ (NSColor *)textColor; // blackColor COLOR_WINDOWTEXT
+ (NSColor *)textBackgroundColor; // whiteColor COLOR_WINDOW
+ (NSColor *)selectedTextColor; // blackColor COLOR_HIGHLIGHTTEXT
+ (NSColor *)selectedTextBackgroundColor; // lightGrayColor COLOR_HIGHLIGHT
+ (NSColor *)controlBackgroundColor; // lightGrayColor COLOR_WINDOW
+ (NSColor *)controlTextColor; // blackColor COLOR_BTNTEXT
+ (NSColor *)selectedControlTextColor; // blackColor COLOR_HIGHLIGHTTEXT
+ (NSColor *)selectedControlColor; // whiteColor COLOR_HIGHLIGHT
+ (NSColor *)scrollBarColor; // grayColor COLOR_SCROLLBAR
+ (NSColor *)gridColor; // grayColor COLOR_3DFACE

@end
```

These colors should be used by developers who want to create custom controls or subclass existing controls which honor the user's color preferences. For example, where

```
PSsetgray(NX_LTGRAY);
```

was used,

```
[[NSColor controlColor] set];
```

is now used.

These colors belong to their own color space, namely:

```
extern NSString *NSDynamicSystemColorSpace;
```

Since these colors may change dynamically, they do not respond to the component accessor methods declared in NSColor.h. To extract the components of a system color, you must use NSColor's **colorUsingColorSpaceName:** method to convert the color to a color space known to respond to the component accessor methods you need.

The following notification has been added which is sent when the system colors have been changed (such as through a system control panel interface):

```
extern NSString *NSSystemColorsDidChangeNotification;
```

The default **NSCMYKAdjust** is now YES by default. This basically enables the WindowServer's ability to use an enhanced algorithm for rendering device-dependent CMYK colors on an RGB device, resulting in a greater accuracy in the on-screen appearance of CMYK colors.

Applications can turn this off by registering this default with a NO value at startup time.

Platform specific resources

Under PR1 and PR2 including platform-specific versions of resource files (nibs, for instance), required

Makefile kludgery and/or source changes. This is no longer necessary.

NSBundle has been changed so that when it fetches a resource, it will look in the directory where the resource was found one additional time to check for a platform-specific version. The platform specific versions are indicated by appending "*-platformname*" to the base name of the resource. Valid platform names include **winnt** and **nextstep**.

For example, to include a Windows-specific version of Doc.draw in your project, simply add it as Doc-winnt.draw. The call [bundle pathForResource:@"Doc" ofType:@"draw"] will find the latter under OPENSTEP for Windows. Similarly a Windows-specific version of Edit.nib can be added as Edit-winnt.nib.

Note that ProjectBuilder also provides ways to specify platform-specific app and document icons, paths, and build options.

NSMenu

The OpenStep spec was amended to make NSMenu a subclass of NSObject, not NSPanel, and to replace NSMenuCell with the NSMenuItem protocol. NeXT's OPENSTEP products also provide an NSMenuItem class which conforms to the NSMenuItem protocol.

NSMenu and NSMenuItem provide almost all of the functionality of the old classes, but some window and cell specific features are no longer available. This change was motivated by the very different ways menus are handled on different operating systems (such as Microsoft Windows). See the headers for more detail.

The NSWindow and NSView have additional support for menus to support Microsoft Windows conventions. Each NSWindow can have its own menu bar or no menu bar at all. By default NSWindow objects have the application's main menu as their menu bar while NSPanels have no menu bar. Use -[NSWindow setMenu:] to set a different NSMenu to be used as the menu bar in an NSWindow. **setMenu:** in NSWindow only has an affect in OPENSTEP for Windows since on Mach, windows do not have menu bars, but the API does exist on both platforms.

NSViews can now have menus associated with them as well. An NSView's menu is used as a contextual popup menu accessed by right-clicking the view (this should be a familiar feature to users of Windows 95). By default an NSView has no contextual menu, but some AppKit objects will provide default context menus. Currently only NSTextView (and therefore also editable controls) have a default menu, but this is likely to change. You can set a menu to be used as the context menu for a view through -[NSView setMenu:]. Context menus currently only work on OPENSTEP for Windows.

Setting a menu for either a window or view on Mach has no affect, so there is no need to do this conditionally inside an #ifdef WIN32 or anything. Context menus for views may even be supported on Mach in a later release.

Interface Style

Some aspects of the new support for multiple interface styles (or UIs) have been made public.

The header NSInterfaceStyle.h is now public and can be used by developers writing classes that need to tailor their appearance to the current interface style (usually NSControl or NSView subclasses, but not always). The function **NSInterfaceStyleForKey()** can be used to determine which style is in effect at a given time. This API should be used instead of relying on #ifdef WIN32 so that your drawing will be correct in all cases. For instance, InterfaceBuilder lets the user specify what interface style to show when editing nibs so that you can see what your interface will look like on any supported platform without actually having to be running on that platform.

The default **NSInterfaceStyle** can be used to control what style to use. By default the native interface style will be used, but you can override that with this default. Currently supported values are **Windows95** and **Mach**. Not everything can obey this setting, but most AppKit objects do.

NSPopUpButton

NSPopUpButtons no longer have NSButtonCells for items, the items in a popup now have the type **(id <NSMenuItem>)**. Also, The **-(NSMatrix *)itemMatrix** method has been replaced with **-(NSArray *)itemArray** which returns an NSArray instead of an NSMatrix.

NSButton and NSButtonCell

The **setType:** method in NSButton and NSButtonCell has been renamed to **setButtonType:**, because the old name overloaded a method inherited from NSCell.

NSMatrix

Two new convenience methods have been added to NSMatrix:

```
- (int)numberOfRows;
- (int)numberOfColumns;
```

NSSavePanel

NSSavePanel now inherits from NSObject in the OpenStep specification to gain greater portability. This means that although on Mach NSSavePanel is implemented as a subclass of NSPanel, methods inherited from NSPanel and NSWindow are not considered part of the spec. In fact, on Windows NSSavePanel is implemented as subclass of NSObject since we are using the native UI.

A new method has been added to the SavePanel to validate the visible columns. For instance, say your filtering criteria have changed. Call this method to get the correct files displayed:

```
- (void)validateVisibleColumns;
```

NSScrollView

Methods have been added to access the content view of the ScrollView. The content view is the scroll view's clip view:

```
- (void)setContentView:(NSClipView *)contentView;
- (NSClipView *)contentView;
```

Windows application lifetime issues

Applications under Windows introduce some interesting life cycle issues. One issue is that because the menus are only present inside of windows, an application with no open windows has no UI. Another issue is that when you double-click a file, Windows generally starts a fresh copy of the associated application to open it even if there's another copy already running. In OPENSTEP we have addressed these issues by defining some default behaviors and providing some new API to ensure that developers can control the behaviors if necessary.

By default, on Windows, an Application will terminate when the last menu-bearing window is closed. In general, this is the right thing to do. Sometimes, however, you may need to do something different. A new NSApplication delegate message has been added to allow you to override this default behavior. When NSApplication notices the last menu-bearing window has been closed, it will send **-(BOOL)applicationShouldTerminateAfterLastWindowClosed:(NSApplication *)sender** to the application's delegate if it responds. This message is sent on both Mach and Windows so it may be necessary to tailor your app's response for the platform. On Mach, application do not, by default, terminate when windows are closed. If you implement this method you should return YES if the

application should terminate and NO if it should not. If you return YES you will shortly receive an -applicationShouldTerminate: messageas well. If you return NO you should also have arranged for some UI to remain. If you return NO and do nothing else, you are likely to lose all UI to your app and leave the user with no way to quit or do anything else.

On the other end of the life cycle, a new Windows-only feature has been added to NSApplication. If the arguments to the application on the command line includes the argument pair "-NSUseRunningCopy YES" then the app will check to see if a copy of itself is already running, and if it is, it will hand off to the running copy and exit. Any -NSOpen or -NSPrint requests will be forwarded on to the existing copy. When file associations are made for OpenStep apps, these arguments are included in the association. Therefore, double-clicking multiple .draw documents should end up opening them in a single copy of Draw. This feature is supported through a single NSApplication method. + **(void)useRunningCopyOfApplication** is called from the default implementation of the WinMain function. Apps that never want to use this feature can implement their own WinMain and avoid calling this method, but there should be very few good reasons to want to do that.

NSPasteboard and the NSFileContentsPboardType

NSFileContentsPboardType has been modified slightly to be the same as NSFileWrapper's serializedRepresentation. We expect this change to make the type much more useful. Among other things this means that NSFileContentsPboardType and NSRTFDPboardType use identical formats. There is still a semantic difference between the two, however. NSRTFDPboardType is used only for RTFD text and it must satisfy certain constraints on the actual file contents written (eg there must be a file inside called TXT.rtf and so forth).

In support of this change, and to make it easier to use NSFileContentsPboardType in your applications, NSPasteboard has some new API for dealing with this type. In the past you had to write this type onto the pasteboard from the filesystem. And when you read it from the pasteboard you had to write it to the file system. Now it is possible to wirte this type from an NSFileWrapper instance and to read it out and get a new NSFileWrapper instance. The disk need not be involved anymore. The new API is:

```
- (BOOL)writeFileWrapper:(NSFileWrapper *)wrapper;
- (NSFileWrapper *)readFileWrapper;
```

Notification name changes

Some of the names of AppKit notifications have changed to follow the general naming guidelines.

Old Name	New Name
NSColorListChangedNotification	NSColorListDidChangeNotification
NSColorPanelColorChangedNotification	NSColorPanelColorDidChangeNotification
NSImageRepRegistryChangedNotification	NSImageRepRegistryDidChangeNotification
NSViewFocusChangedNotification	NSViewFocusDidChangeNotification
NSViewFrameChangedNotification	NSViewFrameDidChangeNotification
NSViewBoundsChangedNotification	NSViewBoundsDidChangeNotification

NSDragOperation removed

The **NSDragOperation** typedef has been removed from the API, and all uses are replaced by **unsigned int**, since the values used for this type must be often or'ed together.

NSPageLayout

NSPageLayout now inherits from NSObject in the OpenStep specification to gain greater portability. This means that although on Mach NSPageLayout is implemented as a subclass of NSPanel, methods inherited from NSPanel and NSWindow are not considered part of the spec. In fact, on Windows NSPageLayout is implemented as subclass of NSObject since we are using the native UI.

In addition, the following methods and types have been removed from the OpenStep specification, but are still available on the Mach platform:

```
- (void)convertOldFactor:(float *)old newFactor:(float *)new
- (void)pickedButton:(id)sender.
- (void)pickedOrientation:(id)sender
- (void)pickedPaperSize:(id)sender
- (void)pickedUnits:(id)sender

enum {
NSPLImageButton, NSPLTitleField,
NSPLPaperNameButton,
NSPLUnitsButton,
NSPLWidthForm,
NSPLHeightForm,
NSPLOrientationMatrix,
NSPLCancelButton,
NSPLOKButton
};
```

The **runModal** and **runModalWithPrintInfo:** methods now return NSOKButton or NSCancelButton on all platforms.

NSPrintInfo

There are two new keys available in the NSPrintInfo dictionary on the Windows platform:

```
NSPrintMustCollate
NSPrintFormName
```

NSPrintMustCollate indicates whether collation occurs when multiple copies are printed. NSPrintFormName is the form name associated with the current print request, which might be different from the NSPrintPaperName.

NSPrinter

A new method has been added to return the names of configured printers available to the system. This name can then be passed to **printerWithName:** to create an NSPrinter. If no printers are available, an empty array is returned. If an error occurs, nil is returned.

```
+ (NSArray *)printerNames
```

NSPrintPanel

The NSPrintPanel class has been removed from the OpenStep specification. In addition, these related methods in NSPrintOperation have been removed from the specification :

```
- (void)setPrintPanel:(NSPrintPanel *)panel;
- (NSPrintPanel *)printPanel;
```

NSPrintPanel is still available as a platform specific interface; however, it now inherits from NSObject rather than NSPanel.

NSPrintOperation

The following methods were added to NSPrintOperation in the OpenStep specification to allow the accessory view to be set in the print panel:

```
- (void)setAccessoryView:(NSView *)aView;
- (NSView *)accessoryView;
```

The following methods have also been added to the specification. These methods are sent to the accessory view passed to the above methods if it responds to them.

```
- (void)updateFromPrintInfo;
```

```
- (void)finalWritePrintInfo;
```

New Graphics functions

Four new functions have been added to support conformance to the Windows UI look:

```
void NSRectFillListWithColors(const NSRect *rects, NSColor *colors, int count);
```

Fills each rectangle in the array *rects* with the color whose value is stored at the corresponding location in the array *colors*. Both arrays must be count elements long. Avoid rectangles that overlap, because the order in which they'll be filled can't be guaranteed.

```
void NSDrawDarkBezel(NSRect aRect, NSRect clipRect)
```

Draws a bordered rectangle with the appearance of a pushed-in button, clipped by intersecting with clipRect.

```
NSRect NSDrawColorTiledRects(NSRect boundsRect, NSRect clipRect, const NSRectEdge *sides,
NSColor *colors, int count)
```

Draws an unfilled rectangle, clipped by *clipRect*, whose border is defined by the parallel arrays *sides* and *colors*, both of length *count*. Each element of *sides* specifies an edge of the rectangle, which is drawn with a width of 1.0 using the corresponding color from *colors*. If the *edges* array contains recurrences of the same edge, each is inset within the previous edge.

```
void NSDrawLightBezel(NSRect aRect, NSRect clipRect)
```

Draws a rectangle with the appearance of an editable text field. Only the area that intersects *clipRect* is drawn.

NSFont

The method **maximumAdvancement** was added to the API to return the advancement of the widest glyph in the given font. If the font is fixed-pitch, this is the advancement of all the glyphs.

The following API additions (which are not in OPENSTEP) allow one to get/set a list of the user's "preferred" fonts, which are checked (in order) before any other fonts when searching for a font to render some character that cannot be rendered in a pre-given or specified font. The list should typically contain fonts with different encodings and glyph complements, as available.

```
+ (NSArray *)preferredFontNames;
+ (void)setPreferredFontNames:(NSArray *)array;
```

API has also been added to access the Windows system fonts.

```
+ (NSFont *)menuFontOfSize:(float)fontSize;
+ (NSFont *)titleBarFontOfSize:(float)fontSize;
+ (NSFont *)messageFontOfSize:(float)fontSize;
+ (NSFont *)paletteFontOfSize:(float)fontSize;
+ (NSFont *)toolTipsFontOfSize:(float)fontSize;
```

The existing NSFont methods systemFontOfSize: and boldSystemFontOfSize: now return the same as messageFontOfSize: and titleBarFontOfSize: respectively. This API is valid on Mach and Windows. On Mach it returns the standard system or bold system fonts. On WIndows it will return the user's font settings from the Display options control panel if the user's chosen fonts can be supported (currently bitmap fonts are not supported, but TrueType fonts are).

NSFontManager

NSFixedPitchFontMask mask was added so that the font manager can determine whether or not a font is fixed-pitch. It may be used in trait queries.

The method **fontNamed:hasTraits:** was added to help in searching for fonts with specified traits. The available traits are specified by the trait masks.

The new method **availableFontNamesWithTraits:** uses the given mask (which may contain several one bits) in testing the available fonts. The names of all fonts matching the given bits are returned in an array.

NSInputManager/NSInputServer

The method **doCommandByName:** was removed from the API and from the NSTextInput protocol in favor of **doCommandBySelector:**. (The latter was already in the API, but has been added to the NSTextInput protocol.) Along the same lines the NSInputServer method **doCommandByName:sender:conversation:** was also obsoleted.

The method **localizedInputManagerName** replaces the method **inputManagerName**.

Dead Keys

Dead key handling in DPSClient is now off by default. The new text object and keyboard UI rely on the input management layer to simulate dead keys. NSCStringText will turn dead key handling on and off as it gains and loses first responder status. Other custom views which need dead keys to be handled by DPSClient should also use the same approach.

Help System

The AppKit's Help API has changed significantly. NSHelpPanel has been obsoleted in favor of a new class, NSHelpManager. NSHelpManager provides a more platform-independent approach to presenting help.

Previously, the only way for your application to present help was through the NEXTSTEP Help panel. Context-sensitive help and all other help for your application was displayed in the Help panel. This made sense when NEXTSTEP was the only platform for your application.

OpenStep applications, however, can run on multiple platforms, and each platform provides its own support for online help. It's important to users that applications use the native online help system (on Windows, for instance, users want the Windows help system and don't want to have to learn how to use a different help system), so NSHelpManager does not provide a comprehensive solution for presenting help. Instead, it provides cross-platform support for context-sensitive help, and allows you to present more comprehensive help (conceptual and task-based help) in any way you choose.

Context Help

Context-sensitive help (also referred to as context help) gives the user a small amount of information when they help-click on an interface item. For example, if the user help-clicks on a menu item called "Copy", they should get context help that says something like "Copies the currently selected text to the pasteboard." This text appears in a small window near where the user help-clicked, and the window disappears when the user clicks anywhere else in the application.

To provide context help for your application, follow these steps:

1. For each interface item that needs context help, create an .rtf or .rtfd file containing the text and any images you want to appear when the user help-clicks on that interface item. Try to keep the text as brief as possible and the images as small as possible.

2. If you don't need to localize your context help files, in Project Builder simply add these files to the Context Help suitcase of your project.

If you do need to localize your context help files, first copy the files into the appropriate **.lproj** directory of your project, then use Project Builder to add them to the Context Help suitcase of your project.

3. In Interface Builder, connect each interface item to its context help file by doing the following:
a. Bring up the Interface Builder inspector and choose the Help display. The Help display lists all the context help files associated with your application.
b. Select an interface item.
c. In the inspector, choose the appropriate help file.

When you compile your application, **/usr/bin/compileHelp** packages your help files into a property list named Help.plist. NSHelpManager knows how to extract context help from an Help.plist file.

Comprehensive Help

Most applications provide some form of online help that is more comprehensive and detailed than context-sensitive help, such as conceptual or task help. NSHelpManager allows you to provide this sort of comprehensive help in any way you choose. Some help authors prefer to provide comprehensive help in HTML using a World-Wide Web browser; others use tools such as Digital Librarian or Concurrence; on Windows a full-featured native help system is available. Given the availability of rich tools like Digital Librarian and HTML browsers, OpenStep on Mach no longer supplies a native help system for comprehensive help.

When the user chooses the Help menu item, NSHelpManager simply asks the Workspace Manager to open the help file you have specified for your application. That file should be the starting point of your help, and should allow users to access whatever information they might need.

To specify a help file for your application, do one of the following:

· The simplest approach, not requiring you to specify the help file anywhere in your application, is to place the help file in your app wrapper and name it after your application. If you haven't specified a help file, NSHelpManager looks in the app wrapper for an appropriately named file.

On Mach, it must be an rtf file called <appName>.rtf.

On Windows, it must be a Windows help file called <appName>.hlp.

· To specify a help file that applies to all platforms, define the NSHelpFile key in your project's CustomInfo.plist file:

```
{
NSHelpFile = "ApplicationHelp.rtfd";
}
```

If your project does not have a CustomInfo.plist, simply create one (as in the example), and add it to your project's "Supporting Files" file category. When you build your project, the contents of CustomInfo.plist will be merged into your application's Info.plist

The specified value for the NSHelpFile key can be a full or relative path, and if it is relative, it is assumed to be a bundle resource (resolved using [[NSBundle mainBundle] pathForResource: <NSHelpFile value> ofType:nil]).

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OPENSTEP 4.1 Release Notes: Foundation Framework

This document contains release notes for OPENSTEP, release 4.1.
This article has been archived and is no longer updated by Apple.

About the Foundation Framework

The Foundation Framework is a library of Objective-C classes providing the infrastructure for non-user-interface object-based applications and other user-interface- and non-user-interface-based frameworks. The OPENSTEP Foundation is compliant with the Foundation portion of the OpenStep specification, and enriches OpenStep with a few extensions.

Within the Foundation are basic classes used by any Objective-C program: collection classes, Distributed Objects, persistence frameworks, Unicode and internationalization support, the foundations of event-driven programming, and facilities to insulate code from the underlying operating system.

These release notes are divided in four main sections:

· Comments on compatibility with OPENSTEP 4.0

· Notes specific to developers who have used previous releases of Foundation

· General comments on often-encountered issue areas and interesting things

· Known issues in this release

In the document below, "4.0" and "OPENSTEP 4.0" refer to all products that shipped with the 4.0 Foundation: OPENSTEP 4.0, D'OLE 4.0, and PDO 4.0 for HP-UX™ and Solaris™. "4.1" and "OPENSTEP 4.1" refers to OPENSTEP 4.1 for Mach and OPENSTEP Enterprise 4.1.

Changes and Compatibility Between OPENSTEP 4.0 and 4.1

There have been a number of changes to Foundation since the shipment of OPENSTEP 4.0, both defect fixes and a few method/function additions. These are enumerated in the section below.

Note that if your application uses API which was added between 4.0 and 4.1, your application might not run under 4.0. (If you do not want to deploy your application on 4.0, then this is not an issue.) You can catch some of the potential issues by defining the macro **STRICT_40** at compile time. This #define is similar to STRICT_OPENSTEP and is used in the Application and Foundation Kits to mark new API. Similarly, if you rely (perhaps unintentionally) on a bug fixed in 4.1, your application may not function correctly under 4.0. Make sure you test on your intended deployment platform.

A number of performance improvements were also made to Foundation between 4.0 and 4.1. Customers developing on 4.1 may find performance to be significantly worse in some cases when a project is deployed on 4.0.

Here are the feature and semantic changes to Foundation in 4.1. A list of most of the bugs fixed follows. Note that a fixed bug may also represent a semantic change from the point of view of the application.

· Some methods in 4.0 were not surrounded by **#if !defined(STRICT_OPENSTEP)** when they weren't, in fact, in OpenStep.

CLASS HEADER METHOD
NSCharacterSet NSCharacterSet.h +characterSetWithContentsOfFile:
NSConnection NSConnection.h -connection:shouldMakeNewConnection:
NSArray NSPathUtilities.h -pathsMatchingExtensions:

· These methods have been made public in 4.1. They were not public in 4.0, but existed in the 4.0 Foundation binary so there are no compatibility issues in using them. They are not in OpenStep, however.

CLASS HEADER METHOD
NSArray NSArray.h -makeObjectsPerformSelector:
NSArray NSArray.h -makeObjectsPerformSelector:withObject:
NSSet NSSet.h -makeObjectsPerformSelector:

NSSet NSSet.h -makeObjectsPerformSelector:withObject:

· These methods and functions were added to Foundation in 4.1 and are not present in the 4.0 Foundation binary. Applications which do not take some precaution in using them will not run correctly on OPENSTEP 4.0. These methods and functions are also not in OpenStep.

CLASS HEADER METHOD
NSBundle NSBundle.h +allBundles
NSBundle NSBundle.h +allFrameworks
NSFileHandle NSFileHandle.h +fileHandleWithNullDevice
NSFileHandle NSFileHandle.h -initWithNativeHandle:closeOnDealloc:
NSFileHandle NSFileHandle.h -initWithFileDescriptor:closeOnDealloc:
NSObject NSObject.h +instanceMethodSignatureForSelector:

FUNCTION HEADER
NSFrameAddress NSDebug.h
NSReturnAddress NSDebug.h
NSCountFrames NSDebug.h

· The NSUserDefaults' *_search* instance variable changed type from NSMutableArray * to NSArray *. This shouldn't be an issue, as applications should not be referencing the instance variables of NSUserDefaults directly.

· NSArray **-componentsJoinedByString:** sends **-description** to each of the array's objects and concatenates the results of that together, rather than using the objects directly. This means that this method will now operate on arrays which are composed of objects that are not NSStrings.

· The number-formatting sequences for NSCalendarDates (%d, %e, %H, %I, %j, %m, %M, %S, %w, %y, %Y) during the construction of a description can now contain formatting flags between the `%' and format code, to the extent that the string methods **+stringWithFormat:**, **-appendFormat:**, etc. understand them. Format flags are not understood during parsing from a format, however. Note that per 70220 [below], NSDateFormatters use their format string both to display the date and to parse a date from a string (which the user entered in a text field, for example), so this modest extension should not be used in the format string of NSDateFormatters. Setting the date formatter to allow natural language may obviate the issue [but may be undesirable for application reasons].

· The default uncaught exception handler now includes the name of the exception and a "backtrace" in the logged message it generates. The backtrace consists only of the return addresses on the execution stack. Additionally, on Windows™, an application exception is raised (via **RaiseException()**), which can be handled by a debugger.

· The *byref* keyword is no longer ignored when transporting NSCalendarDates (as a parameter or return value) over D.O. Thus, a parameter or return value which is declared with *byref* now results in a proxy to the calendar date instance, rather than a real calendar date instance. By default, NSCalendarDates still go over the wire bycopy. NSDates always go over the wire bycopy.

· The NSBundle class method **+pathForResource:ofType:inDirectory:** now first searches a **Resources** subdirectory of the third parameter if such a subdirectory exists. It used to examine only the directory specified in the third parameter.

· NSDate's **-dateWithCalendarFormat:timeZone:** and NSCalendarDate's **-setCalendarFormat:** now have the documented behavior with respect to the first parameter being **nil**. In 4.0, they would simply set the format to **nil**, which resulted in the various **-description** methods returning an empty string.

· NSString **-stringByAppendingPathComponent:** would refuse to append a component that began with `~' in 4.0. This was to prevent the accidental concatenation of "*~username*" onto a path, but `~' is a valid (but perhaps uncommon) first character of a file name, and that behavior was of marginal benefit, so it was eliminated.

· A missing strings file has been added to the Foundation, so in 4.1 error strings returned from the formatters (NSDateFormatter and NSNumberFormatter) will be localized.

This section contains many of the corrected defects to Foundation between OPENSTEP 4.0 and 4.1. Any of these present potential backwards-deployment issues.

Reference: 48447 [FIXED]

Platforms: HP-UX™

Issue: D.O. crashed sending some structures containing doubles

Description: D.O. would crash when attempting to send a parameter or return value which was a structure larger than 8 bytes and contained a double field.

Reference: 50670 [FIXED]

Platforms: All

Issue: NSMethodSignature's **-getArgumentTypeAtIndex:** and **-methodReturnType** returned too much information

Description: These NSMethodSignature methods returned a string which contained the type descriptors for the requested argument plus all the type descriptors for the arguments following.

Reference: 55579 [FIXED]

Platforms: All

Issue: Collections that contain themselves didn't unarchive well

Description: Unarchiving an object graph with a collection which contained itself, or contained an object which archived a reference to the collection, might have caused a program either to crash immediately when the archiving system attempted to retain it, or to crash later when a freed object was sent a message. The issue here was that the collection got retained when the recursive reference was unarchived (which is normal) before it had completed its initialization in **-initWithCoder:**, which can be an issue for objects which keep track of their own retain count (as the collection classes do).

Reference: 62019 [FIXED]

Platforms: All

Issue: Character tables were not Unicode 2.0 compliant

Description: The tables used by NSCharacterSet and shipped as resources with the 4.0 Foundation were compliant with Unicode 1.1. The Unicode 2.0 tables were not yet available at the time of release. The tables in 4.1 are Unicode 2.0 compliant.

Reference: 67201 [FIXED]

Platforms: Windows NT™

Issue: Files mapped with **-initWithContentsOfMappedFile:** could not be removed

Description: On Windows™, a file that a process has mapped cannot be removed; this is a feature of the operating system. However, even after an NSData initialized with **-initWithContentsOfMappedFile:** was deallocated, a program may not have been able to immediately remove the file. The issue was that an internal file-mapping object was autoreleased at the time the data was initialized.

Reference: 68041 [FIXED]

Platforms: All

Issue: NSString's **-stringByStandardizingPath** raised an exception in certain circumstances

Description: When passed an absolute path that ended with .., NSString's **-stringByStandardizingPath** method raised an exception.

Reference: 68223 [FIXED]

Platforms: All

Issue: **-stringByAbbreviatingWithTildeInPath** sometimes incorrectly abbreviated

Description: If the first part of a path matched the user's home directory, '~' would be substituted for that prefix, regardless of whether or not the partial component at the end of the prefix was a complete component or not. For example,

[@"/me-local/foo/bar" stringByAbbreviatingWithTildeInPath] => @"~/local/foo/bar"

if the example was executed by the "me" user whose account is "/me".

Reference: 68447, 68781 [FIXED]

Platforms: All

Issue: D.O. and archiving type signature checks didn't take structure tags into account

Description: The NeXT compiler does not include structure names in type encoding strings produced from typedefs of structures (for example, @encode(NSRange); instead, the structure tag is given as "?". This is a bug in the compiler, but one that cannot be fixed for backwards compatibility reasons. To achieve compatibility with SunSoft's compiler (which correctly emits all structure tags), a "?" as a structure tag was made to act as a "wildcard", matching anything. This is unlikely to affect user applications, but developers who construct their own type encoding strings should note this, as 4.1 will be more permissive than OPENSTEP 4.0 and NEXTSTEP was, a possible backwards-deployment issue.

Reference: 68790 [FIXED]

Platforms: All

Issue: NSConnectionDidDieNotification not sent in some circumstances

Description: If a client attempted to send a message to a server which had died before the client had processed the port death notification (which can take quite a while to arrive), an NSInvalidSendPortException would be raised rather than the NSConnectionDidDieNotification being sent.

Reference: 69174 [FIXED]

Platforms: All

Issue: Lossy conversion to NSASCIIStringEncoding more lossy than intended

Description: When NSString finds a non-ASCII character during lossy conversion to NSASCIIStringEncoding, NSString converts it to an underscore. In 4.0, when NSString found a non-ASCII character during such conversion, NSString converted the character and all the remaining characters in the string to underscores, even if they were ASCII.

Reference: 69321 [FIXED]

Platforms: Windows NT™

Issue: D.O. leaked every messaged object

Description: On NT, every object that was messaged via D.O. was leaked due to an extraneous retain.

Reference: 69471 [FIXED]

Platforms: All

Issue: NSPipe leaked file descriptors

Description: NSPipes and NSFileHandles do not take ownership of the file descriptor by default. If such an object was released without an explicit close of the descriptors, the descriptors were not recovered. The new methods **-initWithNativeHandle:closeOnDealloc:** and **-initWithFileDescriptor:closeOnDealloc:** allow for the creation of file handles which own the descriptors.

Reference: 69699 [FIXED]

Platforms: Windows NT™

Issue: **NSLog()** doesn't send duplicate output

Description: When running under a debugger, **NSLog()** would send output to the debugger and the event viewer and the standard error handle (which is often not defined for applications, but is for tools and other console-oriented processes). Now when a process is running under a debugger, **NSLog()** only sends its output to the debugger. The normal behavior of **NSLog()** is to send the string to the event viewer and standard error.

Reference: 69926 [FIXED]

Platforms: All

Issue: NSNotificationCenter sometimes sent duplicate notifications

Description: In some situations, NSNotificationCenter sent observers two (or more) copies of a single notification. This only happened to observers which were registered to receive any notification name (perhaps with restriction to particular object).

Reference: 70028 [FIXED]

Platforms: All

Issue: Fault objects could not forward messages

Description: EOFault would cause an unrecognized selector exception rather than causing **-forwardInvocation:** to be invoked on the faulted object when the fault was sent a message that the faulted object did not understand (in other words, an object faulted would not get an opportunity for forward an unknown selector). Faulted objects which wish to forward a message which may cause them to be faulted should override the new NSObject class method **+instanceMethodSignatureForSelector:** to return an NSMethodSignature for the eventual target of the forwarded message. See the subsection *Forwarding Messages in OpenStep* in the *General Comments* section below.

Reference: 70220 [FIXED]

Platforms: All

Issue: NSDateFormatter didn't convert input in the same way as output

Description: NSDateFormatters did not use the output format string to parse user-entered strings, so in most cases strings could not be entered in the same format in which they were displayed. Now a date displayed with "%m/%y" (for example) can also be entered in that format.

Reference: 70323 [FIXED]

Platforms: All

Issue: NSDateFormatter does not allow empty string

Description: Once the user had begun typing in a text field that had a date formatter, the user could not leave the field without entering a valid date; in particular, the user could not leave the field empty. Empty is now valid, and the date formatter produces **nil** for an empty string in its **-getObjectValue:forString:errorDescription:** method.

Reference: 70334 [FIXED]

Platforms: All

Issue: Time zones generated with wrong offset

Description: The **+timeZoneForSecondsFromGMT:** was incorrectly using the negative of the supplied parameter to generate the returned time zone. This also affected the parsing of dates where the time zone was specified with a raw GMT offset, like "-0700", but not where the time zone was a name, such as "GMT-0800" or "PST".

Reference: 70440 [FIXED]

Platforms: All

Issue: NSRunLoop incorrectly computed whether or not there was work to be done

Description: In some situations using background monitoring of file handles, NSRunLoop would not take into account the file handles in deciding whether or not it had any more input sources.

Reference: 70580 [FIXED]

Platforms: All

Issue: NSNumber hashed long long numbers incorrectly

Description: NSNumber hashed long longs by simply casting the value to (unsigned int). This caused some equal numbers to have different hash values, breaking the hash±isEqual: invariant.

Reference: 70612, 70718 [FIXED]

Platforms: All

Issue: NSDecimalNumber inaccuracies

Description: An error in the text from which the division algorithm was taken caused inaccuracies in the less significant end of the result of **-decimalNumberByDividingBy:withBehavior:** (in the fractional part, the ones, and tens digits, depending on the size of the numbers). Also, digits of precision were being lost during initialization on the less significant end of the number, and the decimal point was being incorrectly positioned in the result of **-decimalNumberBySubtracting:withBehavior:**.

Reference: 71006 [FIXED]

Platforms: Windows NT™

Issue: **NSFullUserName()** always returned **nil**

Description: The NETAPI32 DLL was not being loaded when needed. Note that this DLL is not implemented on Windows 95™, so this function will always return **nil** on Windows 95™. Applications should be prepared for a **nil** return value.

Reference: 71288 [FIXED]

Platforms: All

Issue: Issue popping initial autorelease pool

Description: A program could crash if it repeatedly created and released the top autorelease pool.

Notes for Users of Foundation Prior to OPENSTEP 4.0

There were several releases of the Foundation Framework prior to OPENSTEP 4.0. Foundation shipped with:

· NEXTSTEP 3.3
· Enterprise Objects Framework 1.0
· Enterprise Objects Framework 1.1
· Portable Distributed Objects 3.0
· D'OLE 3.5
· OPENSTEP 4.0 Prerelease 1
· OPENSTEP 4.0 Prerelease 2
· PDO 4.0 Prerelease 1

This section describes only API changes that have been made between those releases and OPENSTEP 4.0. For changes since OPENSTEP 4.0, see the section above titled *Changes and Compatibility Between OPENSTEP 4.0 and 4.1*. The semantics of many things have changed, but most not in a way that will affect programs (NEXTSTEP 3.3 Foundation-based programs and EOF 1.1 programs, being older, are more likely to be affected). Unfortunately, at this time there is no single source for information about such changes±refer to the *Foundation Framework Reference* and specific class specifications for the current behavior. This document does not describe extensions to Foundation provided by various NeXT products (for example, WebObjects or EOF).

Foundation is now packaged as a ProjectBuilder framework, and resides in **/NextLibrary/Frameworks/Foundation.framework**. The headers can be found in **/NextLibrary/Frameworks/Foundation.framework/Headers**.

All programs based upon previous version of Foundation should be recompiled (even if no conversion is necessary) to

function with this version of Foundation. Compiling against the old static "shlib" (the shared library shipped with NEXTSTEP 3.3, EOF 1.1, and PDO 3.0, and used by WebObjects) is not supported in OPENSTEP 4.0 (without EOF 1.1 installed).

This section is divided into a subsection for each of the previous releases of the Foundation Framework. There are no specific notes for Enterprise Objects Framework 1.0, Portable Distributed Objects 3.0, or WebObjects 1.0 developers; please refer to the section for Enterprise Objects Framework 1.1 developers. The API of the Foundation shipped with Portable Distributed Objects 3.0 and WebObjects 1.0 was identical to that in Enterprise Objects Framework 1.1 (other than extensions made by those products).

Notes Specific to NEXTSTEP 3.3 Developers

Items in the tables below (in the section titled *Tables Showing Foundation API Changes*) that are marked with "(NS33)" are changes made to Foundation between NEXTSTEP 3.3 and OPENSTEP 4.0. Also see the general comments in the section *Notes Specific to Enterprise Objects Framework 1.1 Developers* below. NEXTSTEP 3.3 developers should note the following additions to those comments:

· The header **NXAutoreleaseConnection.h** was not in NEXTSTEP 3.3. Comments referring to this header do not apply to NEXTSTEP 3.3 developers.

· Two additional headers, **NSLock.h** and **NSThread.h**, were not in NEXTSTEP 3.3, but are in OPENSTEP 4.0.

Notes Specific to Enterprise Objects Framework 1.1 Developers

Items in the tables below (in the section titled *Tables Showing Foundation API Changes*) marked with "(EOF11)" are changes made to Foundation between EOF 1.1 and OPENSTEP 4.0.

Some additional changes are not contained in the tables or are of particular note:

· Headers are now imported as **<Foundation/...>**, rather than **<foundation/...>**.

· The structure of imports has changed. The Foundation headers import all ANSI C headers they need and some of the Objective-C interfaces, but none of the operating system interfaces. The set of headers imported by each header has also changed in many places. Where a project was getting a header imported "for free" before, it may now need to import additional headers in order to compile.

· The header **NXAutoreleaseConnection.h** has been removed. Its contents have been moved to **NSCompatibility.h**.

· A **Foundation.h** header has been added, which includes the 15 ANSI C headers, and all Foundation headers except **NSCompatibility.h** and **NSDebug.h**.

· The top-level NSAutoreleasePool is no longer created for automatically±a program needs to create it itself. See the *Foundation Framework Reference* and the NSAutoreleasePool class specification for more information on creating autorelease pools.

· NSDictionary no longer constrains keys to be instances of NSString. Any object that meaningfully responds to **-hash**, **-isEqual:**, and **-copyWithZone:** can be an NSDictionary key.

· The name of the exception variable in the **NS_HANDLER...NS_ENDHANDLER** region has been changed from **exception** to **localException**.

· Some methods that are not in OpenStep, and were not guarded with **#if !defined(STRICT_OPENSTEP)**, now are guarded.

· NSObject no longer conforms to the NSCoding protocol. Instead, the classes that can be archived or distributed, and their subclasses, conform to the protocol explicitly.

· NSBundle's and NSNotificationCenter's instance variables are now declared **@private**.

· The type of the parameter to NSBundle's **+bundleForClass:** method changed from **id** to **Class**.

· The type of the parameter to NSValue's **+valueWithPointer:** method changed from **void *** to **const void ***.

· The typedef **NSStringEncoding** in **NSString.h** has changed from a typedef'd enumeration to a typedef'd scalar.

· The value of the enumeration constant **NSUnicodeStringEncoding** in **NSString.h** has changed from 0 to 10.

· The location of the resources has changed, and can now be found in the Foundation framework directory. If, in a previous release of the Foundation, your application was poking around in the Foundation resources, you should carefully consider why you were doing so, and stop doing it if possible.

· The declarations of the NSAutoreleasePool debugging methods and aids have moved from **NSAutoreleasePool.h** to **NSDebug.h**. Some of the methods are destined for obsolescence, and some new methods have been added.

· The header **NSObjCRuntime.h** now imports the headers **objc/zone.h** and **stdarg.h**.

· Many declarations and definitions were removed from the header **NSUtilities.h** and moved elsewhere, but all the previous material is still defined by importing **NSUtilities.h**. The headers to which things were moved are **NSEnumerator.h**, **NSObjCRuntime.h**, **NSDictionary.h**, and **NSString.h**.

Finally, the Foundation shipped with EOF 1.1 did not contain much of the functionality of the Foundation in OPENSTEP 4.0. These headers, and all the API they declare, were added between EOF 1.1 and OPENSTEP 4.0:

NSAttributedString.h NSFormatter.h NSPPL.h
NSByteOrder.h NSGeometry.h NSProcessInfo.h
NSCompatibility.h NSHashTable.h NSProtocolChecker.h
NSConnection.h NSHost.h NSProxy.h
NSDateFormatter.h NSInvocation.h NSRunLoop.h
NSDebug.h NSMapTable.h NSSerialization.h
NSDecimal.h NSMethodSignature.h NSSet.h
NSDecimalNumber.h NSNotificationQueue.h NSTask.h
NSDistantObject.h NSNumberFormatter.h NSTimer.h
NSDistributedLock.h NSPort.h NSUserDefaults.h
NSEnumerator.h NSPortCoder.h
NSFileHandle.h NSPortMessage.h
NSFileManager.h NSPortNameServer.h

The API added by these headers is not included in the tables below.

Notes Specific to D'OLE 3.5 Developers

Items in the tables below (in the section titled *Tables Showing Foundation API Changes*) marked with "(40PR1)" are changes made to Foundation between OPENSTEP 4.0 PR1 and OPENSTEP 4.0. This symbol also marks changes that apply to D'OLE 3.5 developers, with the exceptions noted below. See also the general comments in the section *Notes Specific to OPENSTEP 4.0 PR1 Developers* below.

The following are exceptions to the changes noted between OPENSTEP 4.0 PR1 and OPENSTEP 4.0, for D'OLE 3.5 developers:

· The header **NSPPL.h** isn't in D'OLE 3.5, but is in OPENSTEP 4.0. API changes referring to this header do not apply to D'OLE 3.5 developers.

· These methods were in D'OLE 3.5, but not in OPENSTEP 4.0 PR1:

CLASS HEADER METHOD
NSString NSPathUtilities.h +pathWithComponents: (+NeXT) (40PR1)
NSString NSPathUtilities.h -isAbsolutePath (+NeXT) (40PR1)
NSString NSPathUtilities.h -pathComponents (+NeXT) (40PR1)

Notes Specific to OPENSTEP 4.0 PR1 Developers

Items in the tables below (in the section titled *Tables Showing Foundation API Changes*) marked with "(40PR1)" are changes made to Foundation between OPENSTEP 4.0 PR1 and OPENSTEP 4.0.

Some additional changes are not contained in the tables or are of particular note:

· All applications, frameworks, libraries, bundles, tools, etc. compiled in PR1 should be recompiled.

· The header file **NSAccount.h** has been removed from Foundation. This header was NeXT-specific.

· The header file **NSByteStore.h** has been removed from Foundation (both from OpenStep and from NeXT's implementation).

· The import of the header **NSDebug.h** has been removed from **Foundation.h**; however, it still exists. This header contains features intended for debugging, but not for general use.

· **Foundation.h** now imports the 15 ANSI C headers (**assert.h**, **ctype.h**, **errno.h**, **float.h**, **limits.h**, **locale.h**, **math.h**, **setjmp.h**, **signal.h**, **stdarg.h**, **stddef.h**, **stdio.h**, **stdlib.h**, **string.h**, **time.h**) as a convenience.

· The header file **NSObjCRuntime.h** imported six obsolete headers (**ansi/ansi.h**, **objc/typedstream.h**, **objc/objc-class.h**, **architecture/byte_order.h**, **objc/hashtable.h**, **streams/streams.h**) in PR1. It no longer does so. This change may mean that some of these headers may need to be explicitly imported for code written on OPENSTEP 4.0 PR1 to recompile.

· A **STRICT_OPENSTEP** preprocessor guard now surrounds all API in the headers **NSDecimal.h** and **NSDecimalNumber.h**.

· The macro **FOUNDATION_EXPORT** is now always explicitly defined on Windows™ (that is, it cannot be predefined with the **-D** compiler option) in **NSObjCRuntime.h**.

· A new header and related functionality, **NSTask.h**, was added.

· See also changes noted in the section Notes Specific to OPENSTEP 4.0 PR2 Developers. All changes listed apply to OPENSTEP 4.0 PR1 developers.

Notes Specific to OPENSTEP 4.0 PR2 Developers

Items in the tables below (in the section titled *Tables Showing Foundation API Changes*) marked with "(40PR2)" are changes made to Foundation between OPENSTEP 4.0 PR2 and OPENSTEP 4.0.

Some additional changes are not contained in the tables or are of particular note. This list of changes applies to both OPENSTEP 4.0 PR1 and PR2 developers:

· The size of NSPort and NSRunLoop instances has changed. The NSPort class has become abstract and no longer has any instance variables. Applications, tools, frameworks, bundles, or libraries with subclasses of these two classes must be recompiled.

· The header file **NSPosixFileDescriptor.h** has been removed from Foundation. This header was NeXT-specific. The header **NSFileHandle.h** provides portable replacement functionality.

· A few new headers have been added. The API in these headers is not included in the tables below:

NSAttributedString.h NSFormatter.h
NSDateFormatter.h NSNumberFormatter.h
NSEnumerator.h NSProtocolChecker.h
NSFileHandle.h

· Many declarations and definitions were removed from the header **NSUtilities.h** and moved elsewhere, but all the previous material is still defined by importing **NSUtilities.h**. The headers to which things were moved are **NSEnumerator.h**, **NSObjCRuntime.h**, **NSDictionary.h**, and **NSString.h**.

· The header **NSObjCRuntime.h** now imports the headers **objc/zone.h** and **stdarg.h**.

· The type of the parameter to NSTask's **-setStandardInput:**, **-setStandardOutput:**, and **-setStandardError:** methods has changed from **NSPosixFileDescriptor *** to **id**.

· The declarations of the NSAutoreleasePool debugging methods and aids have moved from **NSAutoreleasePool.h** to **NSDebug.h**. Some of the methods are destined for obsolescence, and some new methods have been added.

· These methods are no longer declared on Windows™ platforms:

CLASS HEADER METHOD
NSDictionary NSFileManager.h -fileSystemFileNumber
NSDictionary NSFileManager.h -fileSystemNumber
NSFileManager NSFileManager.h -createSymbolicLinkAtPath:pathContent:
NSFileManager NSFileManager.h -pathContentOfSymbolicLinkAtPath:

Although they are still declared on Windows™, an application should not use the string constants **NSFileSystemNumber** or **NSFileSystemFileNumber**, either.

Notes Specific to PDO 4.0 PR1 Developers

Items in the tables below (in the section titled *Tables Showing Foundation API Changes*) marked with "(P40PR1)" are changes made to Foundation between PDO 4.0 PR1 and OPENSTEP 4.0 and PDO 4.0.

Some additional changes are not contained in the tables or are of particular note:

· The Foundation is now shipped as a shared library in PDO 4.0 for Solaris™. All applications, tools, frameworks, bundles, libraries, etc. should be recompiled to take advantage of this.

· The size of NSPort and NSRunLoop instances has changed. The NSPort class has become abstract and no longer has any instance variables. Applications, tools, frameworks, bundles, or libraries with subclasses of these two classes must be recompiled.

· The header file **NSPosixFileDescriptor.h** has been removed from Foundation. This header was NeXT-specific. The header **NSFileHandle.h** provides portable replacement functionality.

· A few new headers have been added. The API in these headers is not included in the tables below:

NSAttributedString.h NSFormatter.h
NSDateFormatter.h NSNumberFormatter.h
NSFileHandle.h NSProtocolChecker.h

· The type of the parameter to NSTask's **-setStandardInput:**, **-setStandardOutput:**, and **-setStandardError:** methods has changed from **NSPosixFileDescriptor *** to **id**.

Tables Showing Foundation API Changes

There are four tables that list the API changes between previous versions of Foundation and the version of Foundation in OPENSTEP 4.0. The first table lists general changes to API elements (classes, macros, functions, constants, and so on) except methods, the second table lists the changes to the set of methods offered by the classes in Foundation, the third table lists changes to the return values of methods (for methods that didn't change name, which are listed in the second table), and the fourth table lists changes in the location of declarations. Other miscellaneous changes that weren't described well in table format are given in the sections above.

Changes are noted from the perspective of a developer who used a previous release looking to port their Foundation-based code to OPENSTEP 4.0 (and not through any intermediate releases). For instance, changes that are marked as having been made between OPENSTEP 4.0 PR1 and PR2 do not necessarily apply to NEXTSTEP 3.3 developers (for example, an API might have been added for OPENSTEP 4.0 PR1, but removed for OPENSTEP 4.0 PR2).

The rows in the tables are marked with various symbols in the rightmost column. One set of symbols describes between which releases and OPENSTEP 4.0 the change was made:

SYMBOL MEANING
(NS33) Change occurred between NEXTSTEP 3.3 and OPENSTEP 4.0
(EOF11) Change occurred between EOF 1.1 and OPENSTEP 4.0
(40PR1) Change occurred between OPENSTEP 4.0 PR1 and OPENSTEP 4.0
(40PR2) Change occurred between OPENSTEP 4.0 PR2 and OPENSTEP 4.0

The other set of symbols indicate how the API changed. Both NeXT's implementation of Foundation, and the OpenStep specification (since version 1.0 was published) have changed. These symbols attempt to describe what has happened:

SYMBOL MEANING
(OpenStep,NeXT) Generically, a change that did not add or remove API, but affects OpenStep and NeXT's implementation
(OpenStep) Generically, a change that did not add or remove API and affects OpenStep, but not NeXT's implementation
(NeXT) Generically, a change that did not add or remove API and affects NeXT's implementation, but not OpenStep

(+OpenStep,+NeXT) Was in neither OpenStep nor NeXT's implementation, now in both
(+OpenStep,NeXT) Was in NeXT's implementation only, now also in OpenStep
(+OpenStep,-NeXT) Was in NeXT's implementation only, now in OpenStep only
(OpenStep,+NeXT) Was in OpenStep only, now also in NeXT's implementation
(OpenStep,-NeXT) Was in both, now in OpenStep only
(-OpenStep,+NeXT) Was in OpenStep only, now in NeXT's implementation only
(-OpenStep,NeXT) Was in both, now in NeXT's implementation only
(-OpenStep,-NeXT) Was in both, now in neither

(+OpenStep) Was in neither OpenStep nor NeXT's implementation, now in OpenStep only
(-OpenStep) Was in OpenStep only, now in neither
(+NeXT) Was in neither OpenStep nor NeXT's implementation, now in NeXT's implementation only
(-NeXT) Was in NeXT's implementation only, now in neither

Occasionally, to the right of the rightmost column is a note for removed API which names the replacement.

GENERAL CHANGES IN PUBLIC API SYMBOLS

SYMBOL TYPE HEADER

ABS macro NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
MAX macro NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
MIN macro NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSAccount class NSAccount.h (-NeXT) (40PR1) (NS33)
NSAdobeStandardCyrillicStringEncoding constant NSString.h (-NeXT) (40PR2) (40PR1) Use NSWindowsCP1251StringEncoding instead
NSAllocateMemoryPages function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSArchiverArchiveInconsistency exception NSException.h (-NeXT) (EOF11) (NS33)
NSArchiverClassError exception NSException.h (-NeXT) (EOF11) (NS33)
NSArchiverDescriptorError exception NSException.h (-NeXT) (EOF11) (NS33)
NSArchiverWriteReferenceError exception NSException.h (-NeXT) (EOF11) (NS33)
NSArgumentInfo typedef NSMethodSignature.h (-OpenStep,-NeXT) (40PR1)
NSBTreeBlock class NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSBTreeComparator typedef NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSBTreeCursor class NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSBTreeStoreKeyTooLargeException exception NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSBecomingMultiThreaded notification NSThread.h (-OpenStep,-NeXT) (40PR1) Use NSWillBecomeMultiThreadedNotification instead
NSBundleDidLoadNotification notification NSBundle.h (+NeXT) (40PR1) (EOF11) (NS33)
NSBundleDidLoadNotification notification NSBundle.h (+OpenStep,NeXT) (40PR2)
NSBundleLoaded notification NSBundle.h (-NeXT) (40PR1) Use NSBundleDidLoadNotification instead
NSByteStore class NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSByteStoreDamagedException exception NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSByteStoreFile class NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSByteStoreLockedException exception NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSByteStoreVersionException exception NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSCharacterConversionException exception NSString.h (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSCodingException exception NSException.h (-NeXT) (EOF11) (NS33)
NSComparisonResult typedef NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSConnectionDeath notification NSConnection.h (-OpenStep,-NeXT) (40PR1) Use NSConnectionDidDieNotification instead
NSConnectionDidInitializeNotification notification NSConnection.h (+NeXT) (P40PR1) (40PR2) (40PR1)
NSCopyMemoryPages function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSCurrencyString default name NSUserDefaults.h (-OpenStep,NeXT) (40PR2) Use NSCurrencySymbol instead
NSCurrencyString default name NSUserDefaults.h (OpenStep,-NeXT) (40PR1) Use NSCurrencySymbol instead
NSDateMissingTimeZone exception NSException.h (-NeXT) (EOF11) (NS33)
NSDeallocateMemoryPages function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSDecimalNumberBehavior class NSDecimalNumber.h (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberBehavior protocol NSDecimalNumber.h (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberBehaviors protocol NSDecimalNumber.h (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberHandler class NSDecimalNumber.h (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDistantObjectRequest class NSConnection.h (+NeXT) (40PR1)
NSEUCStringEncoding constant NSString.h (-NeXT) (EOF11) (NS33) Use NSJapaneseEUCStringEncoding instead
NSEqualRanges function NSRange.h (OpenStep,+NeXT) (EOF11) (NS33)
NSExceptionBase constant NSException.h (-NeXT) (EOF11) (NS33)
NSExtraRefCount function NSObject.h (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSFileGroupOwnerAccountName dict. key NSFileManager.h (+NeXT) (40PR1)
NSFileGroupOwnerAccountNumber dict. key NSFileManager.h (-NeXT) (40PR1) Use NSFileGroupOwnerAccountName instead
NSFileOwnerAccountName dict. key NSFileManager.h (+NeXT) (40PR1)
NSFileOwnerAccountNumber dict. key NSFileManager.h (-NeXT) (40PR1) Use NSFileOwnerAccountName instead
NSFullUserName function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSGetSizeAndAlignment function NSObjCRuntime.h (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSGroupAccount class NSAccount.h (-NeXT) (40PR1)
NSHPUXOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSHashStringLength constant NSString.h (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSISO2022JPStringEncoding constant NSString.h (+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSISOLatin2StringEncoding constant NSString.h (OpenStep,+NeXT) (EOF11) (NS33)
NSInconsistentArchiveException exception NSArchiver.h (OpenStep,+NeXT) (EOF11) (NS33)
NSInternationalCurrencyString default name NSUserDefaults.h (OpenStep,+NeXT) (P40PR1) (40PR2)
NSInternationalCurrencySymbol default name NSUserDefaults.h (-NeXT) (P40PR1) (40PR2) Use NSInternationalCurrencyString instead
NSIntersectsRect function NSGeometry.h (+OpenStep,+NeXT) (40PR1)
NSInvalidReceivePort exception NSException.h (-NeXT) (40PR1) Use NSInvalidReceivePortException instead
NSInvalidReceivePortException exception NSException.h (+NeXT) (EOF11) (NS33)
NSInvalidSendPort exception NSException.h (-NeXT) (40PR1) Use NSInvalidSendPortException instead
NSInvalidSendPortException exception NSException.h (+NeXT) (EOF11) (NS33)
NSJapaneseEUCStringEncoding constant NSString.h (OpenStep,+NeXT) (EOF11) (NS33)
NSLastException constant NSException.h (-NeXT) (EOF11) (NS33)
NSLoadedClasses constant NSBundle.h (+OpenStep,+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSLocalizedString macro NSBundle.h (OpenStep,+NeXT) (EOF11) (NS33)
NSLocalizedStringFromTable macro NSBundle.h (OpenStep,+NeXT) (EOF11) (NS33)
NSLocalizedStringFromTableInBundle macro NSBundle.h (OpenStep,+NeXT) (EOF11) (NS33)
NSLogPageSize function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSMACHOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSMakeRange function NSRange.h (OpenStep,+NeXT) (EOF11) (NS33)
NSMallocException exception NSException.h (OpenStep,+NeXT) (EOF11) (NS33)
NSNonRetainedObjectMapValueCallBacks struct NSMapTable.h (+OpenStep,+NeXT) (40PR1)
NSNotFound constant NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSNotInArray constant NSArray.h (-NeXT) (EOF11) (NS33)

NSOSF1OperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSObjCInadequateRuntimeInformation exception NSException.h (-NeXT) (EOF11) (NS33)
NSOldStyleException exception NSException.h (+NeXT) (EOF11) (NS33)
NSOpenStepRootDirectory function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSOpenStepUnicodeReservedBase constant NSCharacterSet.h (OpenStep,+NeXT) (EOF11) (NS33)
NSOwnedObjectIdentityHashCallBacks struct NSHashTable.h (+OpenStep,+NeXT) (40PR1)
NSOwnershipTransferException exception NSException.h (-NeXT) (EOF11) (NS33)
NSPPLBecameDirty notification NSPPL.h (-NeXT) (40PR1) Use NSPPLDidBecomeDirtyNotification instead
NSPPLSaved notification NSPPL.h (-NeXT) (40PR1) Use NSPPLDidSaveNotification instead
NSPageSize function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSParseErrorException exception NSException.h (-NeXT) (EOF11) (NS33)
NSPointFromString function NSGeometry.h (+OpenStep,+NeXT) (40PR1)
NSPortInvalidation notification NSPort.h (-NeXT) (40PR1) Use NSPortDidBecomeInvalidNotification instead
NSPortNameRegistrationError exception NSException.h (-NeXT) (EOF11) (NS33)
NSPortReceiveError exception NSException.h (-NeXT) (40PR1) Use NSPortReceiveException instead
NSPortReceiveException exception NSException.h (+NeXT) (EOF11) (NS33)
NSPortSendError exception NSException.h (-NeXT) (40PR1) Use NSPortSendException instead
NSPortSendException exception NSException.h (+NeXT) (EOF11) (NS33)
NSRangeFromString function NSRange.h (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSRealMemoryAvailable function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSRectFromString function NSGeometry.h (+OpenStep,+NeXT) (40PR1)
NSRoundDownToMultipleOfPageSize function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSRoundUpToMultipleOfPageSize function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSShiftJISStringEncoding constant NSString.h (+NeXT) (NS33)
NSShortDateFormatString default name NSUserDefaults.h (+NeXT) (40PR1)
NSSizeFromString function NSGeometry.h (+OpenStep,+NeXT) (40PR1)
NSSolarisOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSStandardApplicationPaths function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSStandardLibraryPaths function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSSunOSOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSTemporaryDirectory function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSThreadExiting notification NSThread.h (-OpenStep,-NeXT) (40PR1) (EOF11) Use NSThreadWillExitNotification instead
NSThreadWillExitNotification notification NSThread.h (+OpenStep,+NeXT) (40PR1) (EOF11)
NSTimeIntervalSince1970 constant NSDate.h (OpenStep,+NeXT) (EOF11) (NS33)
NSUTF8StringEncoding constant NSString.h (OpenStep,+NeXT) (EOF11) (NS33)
NSUTFStringEncoding constant NSString.h (-NeXT) (EOF11) (NS33) Use NSUTF8StringEncoding instead
NSUserAccount class NSAccount.h (-NeXT) (40PR1)
NSUserDefaultsChanged notification NSUserDefaults.h (-OpenStep,-NeXT) (40PR1) Use NSUserDefaultsDidChangeNotification instead
NSUserDefaultsDidChangeNotification notification NSUserDefaults.h (+OpenStep,+NeXT) (40PR1)
NSWillBecomeMultiThreadedNotification notification NSThread.h (+OpenStep,+NeXT) (40PR1) (EOF11)
NSWinLatin1StringEncoding constant NSString.h (-NeXT) (40PR2) (40PR1) Use NSWindowsCP1252StringEncoding instead
NSWindows95OperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSWindowsCP1250StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsCP1251StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsCP1252StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsCP1253StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsCP1254StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsNTOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSZoneFromPointer function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSZoneFromPtr function NSZone.h (-NeXT) (EOF11) Use NSZoneFromPointer instead
NS_VALRETURN macro NSException.h (-OpenStep,-NeXT) (EOF11) (NS33) Use NS_VALUERETURN instead
NS_VALUERETURN macro NSException.h (+OpenStep,+NeXT) (EOF11) (NS33)
NXReadNSObjectFromCoder function NSCompatibility.h (+NeXT) (P40PR1) (40PR2) (40PR1)
Nil constant NSObjCRuntime.h (+NeXT) (EOF11) (NS33)
exception variable NSException.h (-NeXT) (EOF11) (NS33) Use localException instead for exception object in handler region
localException variable NSException.h (OpenStep,+NeXT) (EOF11) (NS33)
obsolete macro NSObject.h (-NeXT) (EOF11) (NS33)

GENERAL CHANGES IN PUBLIC API METHODS

CLASS/PROTOCOL HEADER METHOD

NSArchiver NSArchiver.h +classNameEncodedForTrueClassName: (-NeXT) (EOF11) (NS33) Use -classNameEncodedForTrueClassName: instead
NSArchiver NSArchiver.h -classNameEncodedForTrueClassName: (OpenStep,+NeXT) (EOF11) (NS33)
NSArchiver NSArchiver.h -encodeClassName:intoClassName: (OpenStep,+NeXT) (EOF11) (NS33)
NSArchiver NSArchiver.h -replaceObject:withObject: (+NeXT) (EOF11) (NS33)
NSArray NSArray.h +arrayWithArray: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSArray NSArray.h +arrayWithContentsOfFile: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h +arrayWithObjects:count: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -arrayByAddingObject: (OpenStep,+NeXT) (EOF11) (NS33)
NSArray NSArray.h -arrayByAddingObjectsFromArray: (OpenStep,+NeXT) (EOF11) (NS33)
NSArray NSArray.h -descriptionWithIndent: (-NeXT) (EOF11) (NS33) Use -descriptionWithLocale:indent: instead
NSArray NSArray.h -descriptionWithLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSArray NSArray.h -descriptionWithLocale:indent: (OpenStep,+NeXT) (EOF11) (NS33)
NSArray NSArray.h -getObjects: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -getObjects:range: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -indexOfObject:inRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -indexOfObjectIdenticalTo:inRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -initWithContentsOfFile: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -sortedArrayHint (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -sortedArrayUsingFunction:context:hint: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -writeToFile:atomically: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSPathUtilities.h -pathsMatchingExtensions: (+NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h +pathForResource:ofType:inDirectory: (+OpenStep,+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h +pathForResource:ofType:inDirectory:withVersion: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h +setSystemLanguages: (-NeXT) (EOF11) (NS33)
NSBundle NSBundle.h +stripAfterLoading: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -bundleVersion (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)

NSBundle NSBundle.h -infoDictionary (+NeXT) (EOF11) (NS33)
NSBundle NSBundle.h -localizedStringForKey:value:comment: (-NeXT) (EOF11) (NS33) Use -localizedStringForKey:value:table: instead
NSBundle NSBundle.h -localizedStringForKey:value:comment:table: (-NeXT) (EOF11) (NS33) Use -localizedStringForKey:value:table: instead
NSBundle NSBundle.h -localizedStringForKey:value:table: (OpenStep,+NeXT) (EOF11) (NS33)
NSBundle NSBundle.h -pathForResource:ofType:inDirectory: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -pathsForResourcesOfType:inDirectory: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -resourcePath; (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -setBundleVersion: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSCalendarDate NSDate.h +calendarDate (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h +dateWithString:calendarFormat:locale: (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -addYear:month:day:hour:minute:second: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -dateByAddingYears:months:days:hours:minutes:seconds: instead
NSCalendarDate NSDate.h -dateByAddingYears:months:days:hours:minutes:seconds: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSCalendarDate NSDate.h -dayOfCommonEra (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -descriptionWithCalendarFormat:locale: (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -descriptionWithCalendarFormat:timeZone: (-NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -descriptionWithLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -initWithString:calendarFormat:locale: (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -years:months:days:hours:minutes:seconds:sinceDate: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSCharacterSet NSCharacterSet.h +characterSetWithContentsOfFile: (+NeXT) (EOF11) (NS33)
NSCharacterSet NSCharacterSet.h +punctuationCharacterSet (+NeXT) (EOF11) (NS33)
NSCharacterSet NSCharacterSet.h +punctuationCharacterSet (+OpenStep,NeXT) (40PR1)
NSCoder NSCoder.h -decodeBytesWithReturnedLength: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSCoder NSCoder.h -encodeByrefObject: (+NeXT) (40PR1) (EOF11) (NS33)
NSCoder NSCoder.h -encodeBytes:length: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSConnection NSConnection.h +currentConversation (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -addRequestMode: (+OpenStep,+NeXT) (40PR1)
NSConnection NSConnection.h -addRunLoop: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -connectionShouldMakeNewConnection: (+NeXT) (40PR1)
NSConnection NSConnection.h -createConversationForConnection: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -enableMultipleThreads (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -invalidate (+OpenStep,+NeXT) (40PR1)
NSConnection NSConnection.h -localObjects (+NeXT) (P40PR1) (40PR2)
NSConnection NSConnection.h -multipleThreadsEnabled (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -remoteObjects (+NeXT) (P40PR1) (40PR2)
NSConnection NSConnection.h -removeRequestMode: (+OpenStep,+NeXT) (40PR1)
NSConnection NSConnection.h -removeRunLoop: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -requestMode: (-OpenStep,-NeXT) (40PR1)
NSConnection NSConnection.h -requestModes (+OpenStep,+NeXT) (40PR1)
NSConnection NSConnection.h -runInNewThread (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -setRequestMode:: (-OpenStep,-NeXT) (40PR1) Use -addRequestMode: instead
NSCopyingProtocol NSObject.h -copy (-NeXT) (EOF11) (NS33)
NSData NSData.h +dataWithData: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +dateWithNaturalLanguageString: (+NeXT) (EOF11) (NS33)
NSDate NSDate.h +dateWithNaturalLanguageString:locale: (+NeXT) (EOF11) (NS33)
NSDate NSDate.h +dateWithString: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +dateWithTimeIntervalSince1970: (OpenStep,+NeXT) (EOF11) (NS33)
NSDate NSDate.h -descriptionWithCalendarFormat:timeZone: (-NeXT) (EOF11) (NS33)
NSDate NSDate.h -descriptionWithCalendarFormat:timeZone:locale: (OpenStep,+NeXT) (EOF11) (NS33)
NSDate NSDate.h -descriptionWithLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSDate NSDate.h -isEqualToDate: (+OpenStep,+NeXT) (40PR1)
NSDate NSDate.h -timeIntervalSince1970 (OpenStep,+NeXT) (EOF11) (NS33)
NSDecimalNumber NSDecimalNumber.h +decimalNumberBehaviorWithRoundingMode:scale:raiseOnExactness:raiseOnOverflow:raiseOnUnderflow:raiseOnDivideByZero: (-NeXT) (P40PR1) (40PR2) (40PR1) Use +decimalNumberHandlerWithRoundingMode:... instead
NSDecimalNumber NSDecimalNumber.h +decimalNumberHandlerWithRoundingMode:scale:raiseOnExactness:raiseOnOverflow:raiseOnUnderflow:raiseOnDivideByZero: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -decimalNumberBySubstracting: (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -decimalNumberBySubstracting:withBehavior: (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -decimalNumberBySubtracting: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -decimalNumberBySubtracting:withBehavior: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -maximumDecimalNumber (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -minimumDecimalNumber (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberBehavior NSDecimalNumber.h +defaultDecimalNumberBehavior (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberHandler NSDecimalNumber.h +defaultDecimalNumberHandler (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDictionary NSDictionary.h +dictionaryWithContentsOfFile: (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h +dictionaryWithDictionary: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDictionary NSDictionary.h +dictionaryWithObject:forKey: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDictionary NSDictionary.h +dictionaryWithObjectsAndKeys:... (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -descriptionWithIndent: (-NeXT) (EOF11) (NS33) Use -descriptionWithLocale:indent: instead
NSDictionary NSDictionary.h -descriptionWithLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -descriptionWithLocale:indent: (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -initWithObjects:forKeys: (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -initWithObjectsAndKeys:... (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -keysSortedByValueUsingSelector: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDictionary NSDictionary.h -objectsForKeys:notFoundMarker: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSDictionary NSFileManager.h -fileGroupOwnerAccountName (+NeXT) (40PR1)
NSDictionary NSFileManager.h -fileGroupOwnerAccountNumber (-NeXT) (40PR1) Use -fileGroupOwnerAccountName instead
NSDictionary NSFileManager.h -fileOwnerAccountName (+NeXT) (40PR1)
NSDictionary NSFileManager.h -fileOwnerAccountNumber (-NeXT) (40PR1) Use -fileOwnerAccountName instead
NSDistantObjectRequest NSConnection.h -conversation (+NeXT) (P40PR1) (40PR2) Note class was added after OPENSTEP 4.0 PR1
NSEnumerator NSEnumerator.h -allObjects (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
NSException NSException.h -exceptionName (-NeXT) (EOF11) (NS33)
NSException NSException.h -exceptionReason (-NeXT) (EOF11) (NS33)
NSException NSException.h -exceptionUserInfo (-NeXT) (EOF11) (NS33)
NSException NSException.h -name (OpenStep,+NeXT) (EOF11) (NS33)
NSException NSException.h -reason (OpenStep,+NeXT) (EOF11) (NS33)
NSException NSException.h -userInfo (OpenStep,+NeXT) (EOF11) (NS33)
NSMethodSignature NSMethodSignature.h +signatureWithObjCTypes: (-OpenStep,-NeXT) (40PR1)
NSMethodSignature NSMethodSignature.h -argumentInfoAtIndex: (-OpenStep,-NeXT) (40PR1) Use -getArgumentTypeAtIndex: instead

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NSMethodSignature NSMethodSignature.h -getArgumentTypeAtIndex: (+OpenStep,+NeXT) (40PR1)
NSMutableArray NSArray.h -removeObject:inRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -removeObjectIdenticalTo:inRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -removeObjectsInRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -replaceObjectsInRange:withObjectsFromArray: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -replaceObjectsInRange:withObjectsFromArray:range: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -setArray: (OpenStep,+NeXT) (EOF11) (NS33)
NSMutableArray NSArray.h -sortUsingSelector: (OpenStep,+NeXT) (EOF11) (NS33)
NSMutableCopyingProtocol NSObject.h -mutableCopy (-NeXT) (EOF11) (NS33)
NSMutableData NSData.h -setData: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSMutableDictionary NSDictionary.h -setDictionary: (OpenStep,+NeXT) (EOF11) (NS33)
NSMutableSet NSSet.h -setSet: (+NeXT) (40PR2) (40PR1)
NSNotification NSNotification.h +notificationWithName:object:userInfo: (OpenStep,+NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -name (OpenStep,+NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -notificationName (-NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -notificationObject (-NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -object (OpenStep,+NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -userInfo (OpenStep,+NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -addObserver:selector:name:object: (OpenStep,+NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -addObserver:selector:notificationName:object: (-NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -postNotificationName:object:userInfo: (OpenStep,+NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -removeObserver:name:object: (OpenStep,+NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -removeObserver:notificationName:object: (-NeXT) (EOF11) (NS33)
NSNumber NSValue.h -descriptionWithLocale: (+NeXT) (EOF11) (NS33)
NSNumber NSValue.h -descriptionWithLocale: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithBool: (+NeXT) (NS33)
NSNumber NSValue.h -initWithBool: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithChar: (+NeXT) (NS33)
NSNumber NSValue.h -initWithChar: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithDouble: (+NeXT) (NS33)
NSNumber NSValue.h -initWithDouble: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithFloat: (+NeXT) (NS33)
NSNumber NSValue.h -initWithFloat: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithInt: (+NeXT) (NS33)
NSNumber NSValue.h -initWithInt: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithLong: (+NeXT) (NS33)
NSNumber NSValue.h -initWithLong: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithLongLong: (+NeXT) (NS33)
NSNumber NSValue.h -initWithLongLong: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithShort: (+NeXT) (NS33)
NSNumber NSValue.h -initWithShort: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedChar: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedChar: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedInt: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedInt: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedLong: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedLong: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedLongLong: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedLongLong: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedShort: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedShort: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -isEqualToNumber: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObject NSConnection.h -connection:handleRequest: (+NeXT) (40PR1)
NSObject NSObject.h +copyWithZone: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObject NSObject.h +load (+NeXT) (40PR1)
NSObject NSObject.h +load (+OpenStep,NeXT) (P40PR1) (40PR2)
NSObject NSObject.h +mutableCopyWithZone: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObject NSObject.h -copy (OpenStep,+NeXT) (EOF11) (NS33)
NSObject NSObject.h -description (-NeXT) (EOF11) (NS33)
NSObject NSObject.h -mutableCopy (OpenStep,+NeXT) (EOF11) (NS33)
NSObject NSRunLoop.h -performSelector:object:afterDelay: (-OpenStep,-NeXT) (40PR1)
NSObject NSRunLoop.h -performSelector:withObject:afterDelay: (+OpenStep,+NeXT) (40PR1)
NSObject NSRunLoop.h -performSelector:withObject:afterDelay:inModes: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSObjectProtocol NSObject.h -description (OpenStep,+NeXT) (EOF11) (NS33)
NSObjectProtocol NSObject.h -perform: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -performSelector: instead
NSObjectProtocol NSObject.h -perform:withObject: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -performSelector:withObject: instead
NSObjectProtocol NSObject.h -perform:withObject:withObject: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -performSelector:withObject:withObject: instead
NSObjectProtocol NSObject.h -performSelector: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObjectProtocol NSObject.h -performSelector:withObject: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObjectProtocol NSObject.h -performSelector:withObject:withObject: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSPort NSPort.h -addConnection:toRunLoop:forMode: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPort NSPort.h -removeConnection:fromRunLoop:forMode: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPort NSPort.h -reservedSpaceLength (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPort NSPort.h -sendBeforeDate:components:from:reserved: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPortCoder NSPortCoder.h +portCoderWithReceivePort:sendPort:components: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPortCoder NSPortCoder.h -dispatch (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPortCoder NSPortCoder.h -isByref (+NeXT) (40PR1)
NSPortNameServer NSPortNameServer.h -portForName:host: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPortNameServer NSPortNameServer.h -registerPort:name: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSProcessInfo NSProcessInfo.h -operatingSystem (+NeXT) (40PR1)
NSProxy NSProxy.h +load (+NeXT) (40PR1)
NSProxy NSProxy.h +load (+OpenStep,NeXT) (P40PR1) (40PR2)
NSProxy NSProxy.h +respondsToSelector: (+NeXT) (40PR1)
NSRunLoop NSRunLoop.h -addPosixFileDescriptor:forMode: (-NeXT) (P40PR1) (40PR2) (40PR1)
NSRunLoop NSRunLoop.h -addRunLoopActivityMonitor: (-NeXT) (40PR1)
NSRunLoop NSRunLoop.h -cancelPerformSelector:target:argument: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSRunLoop NSRunLoop.h -performSelector:target:argument:order:modes: (+NeXT) (P40PR1) (40PR2) (40PR1)

NSRunLoop NSRunLoop.h -removePosixFileDescriptor:forMode: (-NeXT) (P40PR1) (40PR2) (40PR1)
NSScanner NSScanner.h +localizedScannerWithString: (OpenStep,+NeXT) (EOF11) (NS33)
NSScanner NSScanner.h -locale (OpenStep,+NeXT) (EOF11) (NS33)
NSScanner NSScanner.h -scanHexInt: (+NeXT) (EOF11) (NS33)
NSScanner NSScanner.h -scanHexInt: (+OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSScanner NSScanner.h -setLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSSet NSSet.h +setWithObjects:count: (+NeXT) (40PR2) (40PR1)
NSSet NSSet.h +setWithSet: (+NeXT) (40PR2) (40PR1)
NSString NSPathUtilities.h +pathWithComponents: (+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -fileSystemRepresentation (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -getFileSystemRepresentation:maxLength: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -isAbsolutePath (+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -pathComponents (+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -stringsByAppendingPaths: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h +availableStringEncodings (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h +localizedNameOfStringEncoding: (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h +localizedStringWithFormat:... (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h +string (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSString NSString.h +stringWithContentsOfFile: (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h +stringWithString: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSString NSString.h -caseInsensitiveCompare: (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h -doubleValue (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h -getLineStart:end:contentsEnd:forRange: (+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSString NSString.h -initWithFormat:locale:... (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h -initWithFormat:locale:arguments: (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h -lineRangeForRange: (+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSString NSString.h -lossyCString (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h -substringFromRange: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -substringWithRange: instead
NSString NSString.h -substringWithRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h -writeToFile:atomically: (OpenStep,+NeXT) (EOF11) (NS33)
NSThread NSThread.h +exit (OpenStep,+NeXT) (EOF11)
NSThread NSThread.h +sleepUntilDate: (OpenStep,+NeXT) (EOF11)
NSThread NSThread.h -exit (-NeXT) (EOF11)
NSTimer NSTimer.h -isValid (+OpenStep,+NeXT) (40PR1)
NSUnarchiver NSArchiver.h -classNameDecodedForArchiveClassName: (OpenStep,+NeXT) (EOF11) (NS33)
NSUnarchiver NSArchiver.h -decodeClassName:asClassName: (OpenStep,+NeXT) (EOF11) (NS33)
NSUnarchiver NSArchiver.h -replaceObject:withObject: (+NeXT) (EOF11) (NS33)
NSUserDefaults NSUserDefaults.h -setSearchList: (+OpenStep,+NeXT) (40PR1)
NSValue NSValue.h +valueWithBytes:objCType: (+NeXT) (EOF11) (NS33)
NSValue NSValue.h +valueWithBytes:objCType: (+OpenStep,NeXT) (40PR1)
NSValue NSValue.h -initWithBytes:objCType: (+NeXT) (EOF11) (NS33)
NSValue NSValue.h -initWithBytes:objCType: (+OpenStep,NeXT) (40PR1)
NSValue NSValue.h -isEqualToValue: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
Object NSCompatibility.h +allocWithZone: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h +instanceMethodForSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h +instancesRespondToSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h +poseAsClass: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -autorelease (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -conformsToProtocol: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -copyWithZone: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -dealloc (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -doesNotRecognizeSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -isKindOfClass: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -isMemberOfClass: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -methodForSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -perform:withObject: (-NeXT) (40PR1) (EOF11) (NS33) Use -performSelector:withObject: instead
Object NSCompatibility.h -perform:withObject:withObject: (-NeXT) (40PR1) Use -performSelector:withObject:withObject: instead
Object NSCompatibility.h -performSelector:withObject: (+NeXT) (40PR1)
Object NSCompatibility.h -performSelector:withObject:withObject: (+NeXT) (40PR1)
Object NSCompatibility.h -release (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -respondsToSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -retain (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -retainCount (+NeXT) (EOF11) (NS33)

METHOD RETURN TYPE CHANGES

CLASS/PROTOCOL HEADER METHOD OLD RET. TYPE NEW RET. TYPE

NSBundle NSBundle.h -classNamed: (id) (Class) (NeXT) (EOF11) (NS33)
NSBundle NSBundle.h -principalClass (id) (Class) (NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h +calendarDate (NSCalendarDate *) (id) (NeXT) (40PR1)
NSCalendarDate NSDate.h +dateWithString:calendarFormat: (NSCalendarDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSCalendarDate NSDate.h +dateWithString:calendarFormat:locale: (NSCalendarDate *) (id) (NeXT) (40PR1)
NSCalendarDate NSDate.h +dateWithYear:month:day:hour:minute:second:timeZone: (NSCalendarDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +date (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +dateWithTimeIntervalSince1970: (NSDate *) (id) (NeXT) (40PR1)
NSDate NSDate.h +dateWithTimeIntervalSinceNow: (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +dateWithTimeIntervalSinceReferenceDate: (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +distantFuture (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +distantPast (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h -addTimeInterval: (NSDate *) (id) (NeXT) (EOF11) (NS33)
NSDate NSDate.h -initWithTimeInterval:sinceDate: (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h -initWithTimeIntervalSinceNow: (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDecimalNumber NSDecimalNumber.h -initWithDecimal: (NSDecimalNumber *) (id) (OpenStep,NeXT) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -initWithMantissa:exponent:isNegative: (NSDecimalNumber *) (id) (OpenStep,NeXT) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -initWithString: (NSDecimalNumber *) (id) (OpenStep,NeXT) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -initWithString:locale: (NSDecimalNumber *) (id) (OpenStep,NeXT) (40PR2) (40PR1)
NSDictionary NSFileManager.h -filePosixPermissions (unsigned int) (unsigned long) (NeXT) (40PR1)

NSDictionary NSFileManager.h -fileSize (long long) (unsigned long long) (NeXT) (40PR1)
NSDictionary NSFileManager.h -fileSystemFileNumber (unsigned int) (unsigned long) (NeXT) (40PR1)
NSDictionary NSFileManager.h -fileSystemNumber (unsigned int) (unsigned long) (NeXT) (40PR1)
NSMethodSignature NSMethodSignature.h -methodReturnType (char *) (const char *) (OpenStep,NeXT) (40PR1)
NSMutableString NSString.h +stringWithCapacity: (NSMutableString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSNotification NSNotification.h +notificationWithName:object: (NSNotification *) (id) (NeXT) (EOF11) (NS33)
NSObject NSObject.h +initialize (id) (void) (NeXT) (EOF11) (NS33)
NSObject NSObject.h +load (id) (void) (NeXT) (EOF11) (NS33)
NSObject NSObject.h +superclass (id) (Class) (NeXT) (EOF11) (NS33)
NSObjectProtocol NSObject.h -superclass (id) (Class) (NeXT) (EOF11) (NS33)
NSPPL NSPPL.h +pplWithPath:create:readOnly: (NSPPL *) (id) (NeXT) (40PR1)
NSPPL NSPPL.h +pplWithPath:fromPPLData:readOnly: (NSPPL *) (id) (NeXT) (40PR1)
NSString NSString.h +localizedStringWithFormat:... (NSString *) (id) (OpenStep,NeXT) (40PR1)
NSString NSString.h +stringWithCString: (NSString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h +stringWithCString:length: (NSString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h +stringWithCharacters:length: (NSString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h +stringWithContentsOfFile: (NSString *) (id) (OpenStep,NeXT) (40PR1)
NSString NSString.h +stringWithFormat:... (NSString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSTask NSTask.h -standardInput (NSPosixFileDescriptor *) (id) (NeXT) (P40PR1) (40PR2)
NSTask NSTask.h -standardOutput (NSPosixFileDescriptor *) (id) (NeXT) (P40PR1) (40PR2)
NSTask NSTask.h -standardError (NSPosixFileDescriptor *) (id) (NeXT) (P40PR1) (40PR2)
NSTask NSTask.h +launchedTaskWithLaunchPath:arguments: (id) (NSTask *) (NeXT) (P40PR1) (40PR2)
NSTimeZone NSDate.h +timeZoneWithAbbreviation: (NSTimeZone *) (NSTimeZoneDetail *) (NeXT) (EOF11) (NS33)
NSUserDefaults NSUserDefaults.h -searchList (NSMutableArray *) (NSArray *) (OpenStep,NeXT) (40PR1)
Object NSCompatibility.h +poseAsClass: (id) (void) (NeXT) (NS33)

CHANGES TO API DECLARATION LOCATION

SYMBOL OLD HEADER NEW HEADER
ABS NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1)
MAX NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1)
MIN NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1)
NSCharacterConversionException NSException.h NSString.h (NeXT) (40PR1)
NSComparisonResult NSObject.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSObject.h
NSEnumerator class NSUtilities.h NSEnumerator.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
NSLog() NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
NSLogv() NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
NSNotFound NSObject.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSObject.h
NXReadNSObject() NSArchiver.h NSCompatibility.h (NeXT) (EOF11) (NS33)
NXWriteNSObject() NSArchiver.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[NSCoder -decodeNXObject:] NSArchiver.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[NSCoder -encodeNXObject:] NSArchiver.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[NSDictionary -descriptionInStringsFileFormat] NSUtilities.h NSDictionary.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
[NSString -propertyListFromStringsFileFormat] NSUtilities.h NSString.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
[NSString -propertyList] NSUtilities.h NSString.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
[Object +allocWithZone:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object +instanceMethodForSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object +instancesRespondToSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object +poseAsClass:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -autorelease] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -conformsToProtocol:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -copyWithZone:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -dealloc] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -doesNotRecognizeSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -isKindOfClass:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -isMemberOfClass:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -methodForSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -release] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -respondsToSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -retainCount] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -retain] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)

General Comments

Deep vs. Shallow Copies

In various places within the Foundation reference (primarily in the reference documentation for the collection classes), statements similar to the following are made in reference to ªdeep copiesº:

> ªdeepº means that all of the objects in the dictionary are copied, and all of the objects they contain are copied, and so on.

At a broad level, the above explanation is true. Strictly speaking, however, it is not and never has been. Immutable objects do a **[self retain]** when told to **copyWithZone:**. For leaf objects like NSStrings, this is quite reasonable. For collections, though, it has the following effect: as soon as an immutable collection is reached in the deep copy traversal of some object heirarchy, the immutable collection simply retains itself. Thus any mutable objects *it* might contain *are not copied.*

Foundation Examples

There are several Foundation examples in **/NextDeveloper/Examples/Foundation**.

Various examples illustrating the use of Distributed OLE and the NeXT ORB can be found on NeXTanswers. NeXTanswers can be accessed through NeXT's Web page, at http://www.next.com.

I/O Functionality

Two new Foundation classes, NSFileHandle and NSPipe, provide objects that represent open files or communications channels and support basic I/O operations. They make it easy for developers to write code that is directly portable to other platforms. The interfaces for these classes are declared in **NSFileHandle.h**. These classes replace the NSPosixFileDescriptor and NSPosixPipeDescriptor classes made available in OPENSTEP 4.0 prereleases. The differences from the predecessor classes for the most part involve naming and a refinement of semantics.

Archiving

NSUnarchivers own the objects that they decode. When an NSUnarchiver is deallocated, so are the objects that it has decoded, unless they have been retained. The following code, for example, will probably result in a decoded object being used after being freed:

```
NSAutoreleasePool *pool = [[NSAutoreleasePool allocWithZone:NULL] init];
NSUnarchiver *unarchiver = [[NSUnarchiver allocWithZone:NULL] initForReadingWithData:myData];
id object = [unarchiver decodeObject];
[unarchiver release];
[pool release];
... use or return object here ...
```

object should be retained before the NSUnarchiver is released, and probably also autoreleased if object is returned from the function or method. An exception to this are the **-decodeValueOfObjCType:at:** and **-decodeValueOfObjCTypes:...** methods. Objects "returned" from these two methods, like those returned from +**allocWithZone:** and **-copyWithZone:**, are not autoreleased, and must be explicitly released.

User Defaults

Foundation contains API (NSUserDefaults) which replaces the old defaults database suite of functions. User defaults with 4.0 applications are stored differently and in a different place than 3.3 user defaults. There is a new command-line utility called **defaults** that allows you to manipulate the new-style defaults just as **dread**, **dwrite**, and **dremove** allowed you to manipulate old-style defaults.

On Windows NT™, defaults are stored in the Windows™ registry. There is a program shipped with Windows NT™, **REGEDT32**, for viewing and editing registry entries. NSUserDefaults stores its domains and their key-value pairs under the entry **HKEY_CURRENT_USER\\Software\\NeXT\\UserDefaults**. The values are currently stored as strings in the property list format.

The command **/usr/bin/defconvert**, in OPENSTEP 4.0 for MACH, can be used to convert a user's 3.3 defaults database to 4.0-style defaults±simply run it from the command line with no parameters. This program converts all old-style defaults, even those of non-OpenStep applications, adding them to the user's new-style database. Since NEXSTEP 3.3 applications may not use the same default names after conversion to OPENSTEP 4.0, and 3.3 applications do not use the new defaults database, and increasing the size of the defaults database increases the amount of memory needed by each OpenStep application, converting an old defaults database to the new style usually provides little utility.

Errors in ASCII Property Lists

When a method like NSDictionary's +**dictionaryWithContentsOfFile:** is used to read and parse an ASCII property list from a file, parse errors and exceptions are suppressed, and **nil** is returned upon error. Sometimes a program wants to know about syntax errors in a property list, or wants finer-grained information about why a property list cannot be read and parsed. Another method, NSString's **-propertyList**, can be used for this purpose. The following example illustrates this:

```
- (id)readPropertyListFromFile:(NSString *)path mustBeOfType:(Class)targetClass logErrors:(BOOL)showErrors {
NSString *string;
id plist = nil;

string = [[NSString allocWithZone:NULL] initWithContentsOfFile:path];
```

```
if (showErrors && nil == string) {
NSLog(@"%@: string could not be read from '%@'", NSStringFromSelector(_cmd), path);
}
NS_DURING
plist = [string propertyList];
NS_HANDLER
if (showErrors) {
NSLog(@"%@: received exception while parsing: %@", NSStringFromSelector(_cmd), localException);
}
plist = nil;
NS_ENDHANDLER
[string release];
if (Nil != targetClass && ![plist isKindOfClass:targetClass]) {
if (showErrors) {
NSLog(@"%@: property list is not of desired type '%@'. It's an '%@'.",
NSStringFromSelector(_cmd), NSStringFromClass(targetClass), NSStringFromClass([plist class]));
}
[plist release];
plist = nil;
}
return plist;
}
```

Grammars for Serialization and ASCII Property List Formats

Grammars and description of the serialization (NSSerializer) and ASCII property list representation formats are available in the appendix to the OpenStep specification.

Strings which contain non-alphanumeric characters must be double quoted in property lists to ensure the entire string is parsed as one string object. Parse failures will result, otherwise.

Retain Cycles and Invalidation

The retain/release strategy used in Foundation allows an incautious programmer to create reference cycles in an object graph (that is, the graph of objects that retain one another in some manner). These cycles are self-sustaining and constitute a memory leak. The simplest example is to create a NSMutableArray instance and add it to itself. Since an array retains its objects, it retains itself independent of its normal usage. Retains are essentially distributed across the network via the Distributed Objects mechanism.

If retain cycles cannot be avoided by careful design, but are known *a priori*, the following technique can be used to recover the memory. For the objects in the cycle(s) whose retain counts are solely due to the cycle, all should be retained (perhaps in an array), each one told to release its retained objects, then all released. The action of releasing its retained objects would undoubtedly cause an object to become dysfunctional. Some objects already implement such a method by the name "-invalidate". It is a bug that neither NSObject nor the collections implement this method to facilitate cycle recovery.

More on Autoreleasing and Retaining

The following statements are false:

Returned objects are guaranteed to be valid for the scope of the current method.
Returned objects are guaranteed to be valid until the current autorelease pool is released.
Returned objects are guaranteed to be valid until the end of the current event loop.

The Foundation's retain count mechanism operates via **-retain** and **-release**. A code fragment such as:

```
id object = [collection returnObject];
```

creates a reference (in object) to the returned object, but does not increment the retain count of object. If you don't let the system know about your reference, by incrementing the retain count with **-retain**, the system can't ensure that your reference remains valid for any length of time. In practice, you can get away with such "weak references" most of the time. But the safest approach formalizes your reference to the object:

```
id object = [[collection returnObject] retain];
/* Do operations, some of which may be on 'object' */
...
/* Don't need object any longer */
[object release];
object = nil;
```

The -hash and -isEqual: Invariant

It is worthwhile to highlight an obscure requirement documented in NSObject class specification for the **-hash** method: The **-hash** and **-isEqual:** methods of a class must be defined so that if two objects are equal, their hash value is the same ([x isEqual:y] implies [x hash] == [y hash], but not the converse). This is easy to forget, but especially important to ensure when putting custom objects into some collections (such as NSSet and NSDictionary).

Forwarding Messages in OpenStep

Objects wishing to forward messages with the **-forwardInvocation:** method must also (re)implement the **-methodSignatureForSelector:** method. This is a result of the compiler not providing call stack descriptive information at each call site. Consequently, the runtime needs a source of information for how the stack frame is constructed. It needs this to build the invocation that will be supplied to the **-forwardInvocation:** method call. The **-methodSignatureForSelector:** method will need to be reimplemented to provide a method signature for selectors to which the object does not respond.

Fault objects in EOF which wish to forward messages should also override **+instanceMethodSignatureForSelector:**.

```
- (NSMethodSignature *)methodSignatureForSelector:(SEL)sel {
NSMethodSignature *result = [super methodSignatureForSelector:sel];

if (nil == result) { // must not respond to the selector, no runtime information available
result = [target methodSignatureForSelector:sel];
return result;
}

- (void)forwardInvocation:(NSInvocation *)invocation {
[invocation invokeWithTarget:target]; // let target implement methods that we do not
}
```

See the ForwardInvocation example in **/NextDeveloper/Examples/Foundation/ForwardInvocation**.

Debugging Aids

The *OpenStep Conversion Guide* describes several techniques for debugging Foundation and AppKit applications. The header file **NSDebug.h** also has some global flags, functions, and methods which may be useful. But be warned±although this header file is public, its contents are mostly unsupported, largely undocumented, and are subject to change without warning. Do not depend on API within this header for the operation of production programs.

Object Allocation Analysis

One of the useful flags defined in **NSDebug.h** is **NSKeepAllocationStatistics**, which allows you to analyze the object allocation activity in a program. The **AnalyzeAllocation** command line program can be used to analyze the output generated by running with this option enabled. You can also use the **ObjectAlloc** demo application which comes OPENSTEP for Mach and Windows to graph the object allocation activity in real time.

The +load Method

The **+load** message is sent to classes when they are added to the Objective C runtime. **+load** is usually received before **+initialize**. **+load** is not inherited by subclasses.

The order in which **+load** messages are sent to classes is unspecified (and specifically, a class's superclass is not guaranteed to have its **+load** method called before the class receives the message). Therefore, you should not use any subsystems or classes which are loaded at the same time, or more generally, which you do not know have received the **+load** message. If you do, you will probably cause execution of code which assumes that **+load** (and anything that *had* to be done in **+load**) has been previously executed.

There are two situations typically when classes are added to the runtime:
· when loaded dynamically from a bundle or framework by NSBundle
· at application launch

The restrictions on **+load** are perhaps most serious at launch time. The Foundation has classes and subsystems (as might any other library) which depend on **+load** being called before they are fully functional. For example, you should not use **NSZoneMalloc()** to allocate memory in **+load** methods which are statically linked into an application. You certainly should not create any objects.

Note that calling **+load** on a class isn't a solution (and is a generally bad idea), because that will cause **+initialize** to be sent first, which the class may not handle. Not to mention that doing so places into your code dependencies on which classes implement **+load** in a particular version of a library.

+load is not intended as a general initialization mechanism, and should only be used when absolutely necessary. Use **+initialize** for early initialization whenever possible.

Performance and NSNotificationCenter

NSNotificationCenter, although heavily optimized, by its nature can become a significant performance bottleneck if heavy use of notifications is made. The notification mechanism should be used judiciously.

NSAutoreleasePool's -addObject: Method

You should never use the NSAutoreleasePool instance method **-addObject:**. Use the **-autorelease** method, or **[NSAutoreleasePool addObject:]** to autorelease an object. Using the instance method incurs the risk of adding an object to a pool which is not the top autorelease pool, a semantically suspect operation, since the autorelease pool model is one of a (per-thread) stack of pools. OPENSTEP 4.0 does allow you to add objects to an autorelease pool that is not the top pool, but be warned that it is a much more expensive operation (and always will be) than adding an object to the top pool.

Frameworks as NSBundles

Frameworks are a specialized form of bundle. An application can statically link against a framework at compile time (like a library), or dynamically load a framework (like a bundle) at runtime. However, as a specialized type of bundle, there are some constraints placed on frameworks:

· A framework must have a **.framework** extension

· The name of the executable code of a framework must have the same name as the framework directory, minus the **.framework** extension. For example, the file name of the executable code for the framework **MyFramework.framework** must be **MyFramework** (or on Windows™, **MyFramework.dll**).

· On Windows™ only: The framework directory must be stored in a directory called **Frameworks**. The executable code (.dll) must be stored in a directory called **Executables** that has the same parent as the **Frameworks** directory. If the framework is statically linked into applications, the **Executables** directory (full path) should be in the PATH environment variable. (On other OPENSTEP platforms, the executable code file is stored within the framework directory, like a bundle.)

How NSBundles Search for Resources

The algorithm that NSBundles use to find resources has changed somewhat from that of NXBundles, and there are changes to the structure of bundles themselves. A bundle's resources are now stored in a directory call **Resources** within the bundle directory. Within the **Resources** directory are the non-localized resources and the localized resource directories (**English.lproj**, **Swedish.lproj**, etc., as with NXBundle). The addition of the **Resources** directory is primarily a way to simplify Framework versioning. Other changes have been made to reduce the amount of computation required to find resources.

Suppose we are searching for the resource with name **Main** and type **nib**. The bundle's resource path, the "top level", is searched first, for the file **Main.nib**. If the file is not found there, each of the language subdirectories are each searched, in the user's preference order. This is a change from NXBundle's behavior, where the language subdirectories were searched first. This change means that the localized version of a resource that also exists at the top level will not be found, but the top level one will be. All non-localized resources should be placed in the top level, and no localized resources should exist at the top level.

When a resource is found, the algorithm checks to see if a resource of the name **Main-*$(PLATFORM_OS)*** of type **nib** exists. ***$(PLATFORM_OS)*** represents the **make** variable of the same name, and takes on the same values that the **make** variable takes on at compile time. For example, on Windows™, during a project build, ***$(PLATFORM_OS)*** in the **Makefile.postamble** will have the value "winnt". When **Main.nib** is found in a directory, the search algorithm does one final check to see if **Main-winnt.nib** exists in that same directory. If it does, the search algorithm returns the path to that resource; if it does not, the search algorithm returns the path to **Main.nib**. Note that for **Main-winnt.nib** to be found, a file named **Main.nib** must exist in the same directory; this also applies within each language resource directory. It is expected that a developer will choose one of the platform-specific versions to name without this ***$(PLATFORM_OS)*** suffix, and give the other platform-specific versions of the resource extended names. The values that ***$(PLATFORM_OS)*** can take on are currently "winnt" (on OPENSTEP for Windows™), "nextstep" (on OPENSTEP for MACH), "hpux"(on PDO for HP-UX™), and "solaris" (on PDO for Solaris™).

Another way to accommodate platform-specific resources is by using the **inDirectory:** parameter of the resource-searching methods. The **inDirectory:** parameter is primarily intended to facilitate the collection of resources of a common type or purpose into a single directory; for example, all images could be put into a directory called **Images** within the resource directory. (Note that the AppKit's **+imageNamed:** method in NSImage does not support searching arbitrary directories for images.) As such, the **inDirectory:** parameter can be used to manage platform-specific resources. This is less "automatic" however, and requires the developer to specify the name of the platform-specific directory as well as replicate the required resources and language projects within that directory. The ***$(PLATFORM_OS)*** mechanism described above is simpler to use, particularly if the number of platform-specific resources is small.

Using API not in OpenStep

Many new methods and classes were added for 4.0 and some new methods for 4.1, many outside the purview of the OpenStep specification. To restrict those that are defined to the methods and classes in OpenStep, add the flag **-DSTRICT_OPENSTEP** to the **OTHER_CFLAGS** variable in the project's **Makefile.preamble**.

The Pointer Returned from malloc()

Asking **malloc()** for a block of memory that is close to the size of a page will give you a pointer for which NXZoneFromPtr() returns NULL. This is not a bug; blocks of memory allocated from **malloc()** do not necessarily come from a zone.

Known Issues in OPENSTEP 4.1

This section documents many of the known issues with Foundation in OPENSTEP 4.1.

Reference: 73751

Platforms: All

Issue: Incorrect behavior when copying NSMutableDictionaries.

Description: According to the OpenStep specification, when you send **copy** or **copyWithZone:** to an NSMutableDictionary you should get back a deep immutable copy. This was the behavior implemented in OPENSTEP 4.0. However, in OPENSTEP 4.1 (Windows NT, Mach, and PDO platforms) what you get back is a shallow immutable copy<the objects in the dictionary are merely retained instead of being copied.

This change in behavior can have subtle effects within any code that copies NSMutableDictionaries. For example, suppose you have a mutable dictionary populated with objects, and you create a copy (which should be a deep immutable copy). If you then modify one of the objects that you had put into the original dictionary, the modified object will appear in the copy of the dictionary as well as in the original. *This bug means that a copy of a dictionary can change out from under you unexpectedly* (see "Deep vs. Shallow Copies" under General Notes, above, for an explanation of when you can *expect* copies of dictionaries and other collection classes to change out from under you). In an application, you might see no change, incorrect operation, or a crash as a result. Because it doesn't always crash your applications, and because it manifests itself in a number of different ways, this bug can be particularly difficult to detect.

In the next release of OPENSTEP, this behavior will be changed back so that it once again matches the specification. We are currently evaluating a possible patch to correct the behavior in systems running OPENSTEP 4.1.

Workaround: While you may not be able to alter the way that libraries you link against are written, in your own code you can work around this bug simply by avoiding the use of either **copy** or **copyWithZone:** with NSMutableDictionaries. The easiest way to do this is to use the undocumented method **initWithDictionary:copyItems:**, as shown here:

[[NSDictionary allocWithZone:NULL] initWithDictionary:*original* copyItems:YES]

initWithDictionary:copyItems: will be public in the next releases of OPENSTEP Enterprise and OPENSTEP for Mach. This method only makes sense when you know you have a dictionary object, but that's often the case (**isKindOfClass:** can be used for testing this). Note that **initWithDictionary:copyItems:** isn't part of the OpenStep specification.

Reference: 47347

Platforms: All

Issue: NSArchiver and NSUnarchiver do not understand bitfields

Description: Structures containing bitfields cannot be archived and unarchived.

Workaround: Encode the members of a structure containing bitfields individually, encoding the bitfields as (unsigned) chars, shorts, or ints.

Reference: 47347

Platforms: All

Issue: NSArchiver and NSUnarchiver do not understand bitfields

Description: Structures containing bitfields cannot be archived and unarchived.

Workaround: Encode the members of a structure containing bitfields individually, encoding the bitfields as (unsigned) chars, shorts, or ints.

Reference: 49084

Platforms: All

Issue: NSInvocation always retains the return value

Description: NSInvocation always retains object return values. This can cause issues if the return value of a method is not a fully initialized object. Only **+alloc** and **+allocWithZone:** return uninitialized objects, so this is only an issue if you are using invocations to send either of those methods to a class object. If you write your own methods which return objects which are not fully initialized, you should avoid sending those messages with an NSInvocation or over Distributed Objects.

Workaround: None

Reference: 56644

Platforms: All

Issue: NSArchiver tracks **char *** pointers as equivalent to their contents

Description: During archiving, NSArchiver keeps track of the **char *** strings it has seen by the address passed in for encoding. If one uses the stack or **malloc()** to construct a **char ***, then encodes it using the "*" type primitive (or **@encode(char *)**), the archiver only remembers the stack/malloc address, assuming it has constant contents.

Workaround: Do not archive **char *** strings from the stack. Do not mutate or free malloc'd **char *** strings during archiving.

Reference: 56659

Platforms: All

Issue: Proxies cannot be notification observers unless they are retained

Description: Because NSNotificationCenter does not retain observers, registering an observer with a remote NSNotificationCenter (the observer would be a proxy in the remote process) will eventually cause a crash of the remote process when it tries to message a freed object, unless the remote process explicitly retains the proxy. This situation is a bit arcane, but the same type of issue can happen with other objects that don't retain objects that they know about.

Workaround: Use an explicit protocol to tell the server (the process vending the notification center) to register and unregister an observer. The server then retains and registers the observer with the vended notification center, and unregisters and releases the observer when you tell it to do so. (If you don't include the unregister half of the protocol, the object will never be released.)

Reference: 57984

Platforms: All

Issue: No way to get list of non-defaults command-line arguments

Description: In NEXTSTEP 3.3 (and earlier releases), command-line arguments that looked like defaults were removed from NXArgv. The array returned by **[[NSProcessInfo processInfo] arguments]**, NXArgv's replacement, however, contains all of the command-line arguments.

Workaround: Code that expected defaults options to have been stripped from NXArgv will have to be rewritten to skip default option names and their values, or the arguments array will need to be processed to remove them before using it. The **NSArgumentDomain** dictionary can be retrieved from the standard user defaults instance to find out what NSUserDefaults interpreted as a default option.

Reference: 59230

Platforms: Mach, HP-UX™, Solaris™

Issue: The main bundle can be allocated with the wrong directory

Description: If an application is not launched with a full path, NSBundle attempts to create the main bundle instance with the current directory. If the application is launched from the command-line without a full path, and the application is not in the current directory (but found via the shell path), the main bundle will not be created, and the **+mainBundle** method will always return **nil**. This will also be an issue if the application is launched without a full path and changes its current working directory before the **+mainBundle** method is first sent. The Workspace Manager always launches applications as a full path, so this is not an issue for applications launched with Workspace Manager.

Workaround: Launch the application with the full path; launch the app from the directory in which it exists (but not within an **.app** wrapper); create the main bundle instance before changing directories (if applicable); or within the app, change the working directory to the directory in which it lives and allocate the main bundle.

Reference: 61520

Platforms: All

Issue: Handler is called twice when deleting a directory

Description: NSFileManager's **-removeFileAtPath:handler:** method, when deleting a directory, calls the handler method **-fileManager:shouldProceedAfterError:** twice on each subdirectory or file error, and fails to call the handler for the top-level directory itself.

Workaround: None

Reference: 62235

Platforms: All

Issue: Can't search for characters case-insensitively

Description: NSString's **-rangeOfCharactersFromSet:** ignores the **NSCaseInsensitiveSearch** flag. This also affects NSScanner's **-scanCharactersFromSet:intoString:** method when the scanner has been set to be case insensitive.

Workaround: None

Reference: 62812

Platforms: All

Issue: Changed defaults don't appear sometimes to have taken affect

Description: The default NSUserDefaults domain search order places the NSArgumentDomain before the application's domain. This is usually desirable for reading defaults, but may not be if you set/change default values. If you set a value for a default that was passed as an option on the command-line, the value is correctly set/changed in the application's domain, but **-objectForKey:** will still return the value found in the NSArgumentDomain, because by default it is searched first.

Workaround: There are various workarounds depending upon the application and its use of user defaults. The following options are relative to a particular NSUserDefaults instance (that is, if you create multiple user defaults instances, you'd have to do the workaround for each individually).

1. Remove the NSArgumentDomain from the search list, perhaps after adding any keys it contains to the registration domain; command-line specified defaults will not be found, or not have priority over same-keyed defaults in the application's domain, however.

2. Move the NSArgumentDomain after the application's domain; command-line specified defaults will not have priority over same-keyed defaults in the application's domain, however.

3. Each time you set a default value, set it in the argument domain (difficult and not worth the trouble).

4. Best solution: Create a subclass of NSUserDefaults. For each defaults instance created, create a new volatile domain, tell the instance about it (**-setVolatileDomain:forName:**) perhaps calling it "ChangedDefaults" (don't give it a name beginning with "NS"!), and insert it first in the domain search list of the new defaults instance. Override the **-setObject:forKey:** and **-removeObjectForKey:** methods to set/remove the value in the "ChangedDefaults" volatile domain, and then call **[super ...]** to do the same for the application domain. The following code illustrates what these override methods might look like:

```
- (void)setObject:(id)value forKey:(NSString *)defaultName {
NSDictionary *changedDomain;
id oldValue;
[super setObject:value forKey:defaultName];
changedDomain = [self volatileDomainForName:@"ChangedDefaults"];
oldValue = [changedDomain objectForKey:defaultName];
if (![oldValue isEqual:value]) { // Something to do
NSMutableDictionary *newDomain;
newDomain = [[NSMutableDictionary allocWithZone:[self zone]]
initWithDictionary:changedDomain];
[newDomain setObject:value forKey:defaultName];
[self setVolatileDomain:newDomain forName:@"ChangedDefaults"];
[newDomain release];
}
}

- (void)removeObjectForKey:(NSString *)defaultName {
NSDictionary *changedDomain;
id oldValue;
[super removeObjectForKey:defaultName];
changedDomain = [self volatileDomainForName:@"ChangedDefaults"];
oldValue = [changedDomain objectForKey:defaultName];
if (oldValue) { // Something to do
NSMutableDictionary *newDomain;
newDomain = [[NSMutableDictionary allocWithZone:[self zone]]
initWithDictionary:changedDomain];
[newDomain removeObjectForKey:defaultName];
[self setVolatileDomain:newDomain forName:@"ChangedDefaults"];
[newDomain release];
}
}
```

Reference: 64605

Platforms: HP-UX™, Solaris™

Issue: NSBundles cannot dynamically load code

Description: Unlike NeXT's implementations of OpenStep on other platforms, Foundation in PDO for HP-UX™ and Solaris™ cannot dynamically load code. This is due to limitations in the compiler and Objective C runtime, which we hope to resolve in a future release.

Workaround: None

Reference: 66411

Platforms: Solaris™

Issue: Formatted floats sometimes loose sign

Description: Formatted strings created with the NSString methods like **+stringWithFormat:** lose the sign of floats formatted with **%f** (and **%g**) in some cases. For instance, [NSString stringWithFormat:@"%f", -2.3e-2] results in @"0.023000". The situations in which this occurs have not been fully qualified.

Workaround: Use **sprintf()** to create the character string with the desired format, then create the NSString from that with **+stringWithCString:**.

Reference: 66538

Platforms: All

Issue: NSString **+stringWithFormat:** doesn't work with **%p** or some formatting flags

Description: Unlike what the documentation says, NSString does **not** understand all ANSI C **printf()**-style formatting escapes and flags, and never has.

Workaround: Use **sprintf()** to create the character string with the desired format, then create the NSString from that with **+stringWithCString:**.

Reference: 66766

Platforms: All

Issue: NSBundle doesn't load _profile and _debug binaries in bundles

Description: NSBundle does not attempt to load code from debug or profile versions of their binary code, which the makefiles give the _debug and _profile suffixes, respectively. If the non-debug/non-profile binary doesn't exist in the bundle, no code will be loaded. NSBundle doesn't care how the binary has been compiled, it just only looks for the file with the name given by the **NSExecutable** key in the **Info.plist** file in the **Resources** directory.

Workaround: [Mach, Solaris™, HP-UX™]: Create a symbolic link named without the _profile or _debug suffix to the _profile or _debug binary at the top level of the bundle directory. [All platforms]: Move the _profile or _debug binary to a file of the same name without that suffix. [All platforms]: Modify the value of the **NSExecutable** key in the **Info.plist** file to include the desired _profile or _debug suffix.

Reference: 68449

Platforms: Windows

Issue: Cannot get a proxy for a distributed OLE object using OPENSTEP D.O.

Description: When trying to get a proxy for an OLE object, you may get the following error: "deserializeObjectAt: class `NSDistantIDispatchProxy' not loaded".

Workaround: Include **nxorb.m** (from **NextDeveloper/Libraries**) in your client. Although the *D'OLE Developer's Guide* states that **nxorb.m** is only needed for use with NXConnections, it's needed in some circumstances for NSConnections as well.

Reference: 71118

Platforms: All

Issue: Collections that contain themselves don't describe

Description: Sending the **-description** method to collections which contain themselves, or contain objects that contain the collection, causes infinite recursion.

Workaround: None

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OPENSTEP 4.1 Release Notes

This file contains a complete set of release notes for the following products:

· OPENSTEP Enterprise Release 4.1 (including PDO)
· OPENSTEP for Mach Release 4.1

Information specific to only one of the above products are identified in the individual note.

This file is divided into the following major sections:

· Important Notes (contains extremely important information about the release that should be read by all OPENSTEP developers and installers)
· Compiler Tools
· Compiler (OPENSTEP Enterprise)
· Compiler (OPENSTEP for Mach)
· Debugger
· Documentation
· Driver Development
· Interface Builder
· Netware
· NEXTIME Services
· PDO
· Printing
· Project Builder
· TextEdit
· True Type
· Window Server

The following topics are release noted in separate documents:

· Application Kit Framework
· Foundation Framework
· Enterprise Objects Framework

This article has been archived and is no longer updated by Apple.

Important Notes

The following notes are of particular importance, and should be reviewed by all OPENSTEP developers and installers.

Installing OPENSTEP Enterprise

· **Cannot install under directory names with spaces** (73170). Installation under any directory names or paths containing spaces will not work. For example, trying to install under **C:\\Program Files\\NeXT** will leave the installation unusable. Install OPENSTEP Enterprise only in a directory the complete path to which contains no spaces.

· The automated uninstaller included with OPENSTEP Enterprise doesn't clean up your System environment variables after a successful uninstallation and reboot. The system environment still contains OPENSTEP-specific entries for LIB and PATH. While this isn't necessarily harmful, successive install-uninstall cycles will cause your system environment to grow. To work around this issue, after uninstallation manually edit your system environment variables as described in the uninstallation section of the *OPENSTEP Enterprise Installation Guide*. (72486)

· **The new Daylight Savings Time (DST) rule in Germany isn't accounted for** (67469). In Germany the rules for ªdaylight saving timeº have changed. From now on, Daylight Savings Time ends on the last Sunday of October, instead of the last Sunday in September. Because Foundation doesn't account for this, unless you supply a new file for **/etc/zoneinfo,** all NeXT computers in Germany will use the incorrect time (including timestamps) between September 29th and October 27th.

This bug affects all customers in Europe running NEXTSTEP 3.3, NEXTSTEP 3.3risc, 3.3Patch, OPENSTEP for Mach (all versions), and OPENSTEP Enterprise (all versions). NeXT's Technical Support department has issued a patch to address this particular issue; consult NeXTanswers for more information.

Installing OPENSTEP for Mach

· **Upgrading SPARC Systems from NEXTSTEP 3.3 to OPENSTEP 4.1** At the conclusion of the upgrade process you're told to reboot your computer. On SPARC, systems, this reboot will fail and Workspace Manager will appear to be locked up. Since your system *has* been successfully upgraded, however, it's safe to reboot your SPARC system manually.

To manually reboot your SPARC, first wait for a minute or two (to allow your disk to sync up) and then press Command-NumLock. When prompted, select "r" to restart your system.

Binary Incompatibility

PDO 4.2 on Solaris is binary-incompatible with PDO 4.0 and previous PDO releases. You must re-link all executables on a PDO 4.2 system before they will run on PDO 4.2.

Known Issues in Deployed Systems

The following two issues are known to have occured in OPENSTEP Enterprise systems configured for deployment as well as for development.

Reference: 72130

Issue: Text could display incorrectly.

Description: Depending on the length of the document you have and how fast you are typing, displayed text might sometimes have issues. For instance, you might get overlapping lines or large blank areas between two lines.

Workaround: Typing will usually fix this right away. Note that in all cases, even though the display is garbled, your document is still correct, so there's no need to exit or restart the application.

Reference: 71671

Issue: "Flash active caption bar" visual warning option might cause applications to hang.

Description: If you have enabled SoundSentry (under Accessibility Options in the Control Panel under NT 4.0), and turned on the "Flash active caption bar" visual warning option, applications could hang when they attempt to beep.

Workaround: None. Use one of the other visual warning options.

New Linker

The Microsoft linker is now the default for project builds on Windows with OPENSTEP Enterprise. This linker is the same one that ships with Visual C++. For information on this linker, consult the Visual C++ documentation.

Project Builder

· **Pasting text into a .m file can cause Project Builder to crash** (73263). Pasting text starting with a tab after an unterminated comment in a source file can cause Project Builder to crash. In addition, typing an unterminated comment<a slash, an asterisk (*), and a space<and then pressing return can cause Project Builder to crash on Mach systems.

Uninstalling OPENSTEP Enterprise

The uninstaller supplied with OPENSTEP Enterprise doesn't remove OPENSTEP-specific references from your system environment variables. This can be done manually after uninstallation by simply deleting the NEXT_ROOT environment variable and removing all invalid references from both your **Path** and **Lib** environment variables.

If you would like more detailed instructions on how to make these changes, refer to the relevant step in "Uninstalling OPENSTEP for Windows" in the *OPENSTEP Enterprise Installation Guide*. Note that this guide is supplied in printed form only, and is packaged with the OPENSTEP Enterprise CD-ROM.

Compiler Tools

This file contains release notes for the 4.1 release of the Compiler Tools. It contains information about the following topics:

· The NeXT Mach-O GNU-based assemblers

· The NeXT Mach-O static link editor
· The NeXT Mach-O dynamic link editor
· Mach-O object tools (**nm**, **otool**, and so on)

Notes Specific to Release 4.1

New Features

There is only one new feature for the 4.1 release:

· The dynamic linker now has the environment variable DYLD_FRAMEWORK_PATH to better support the development of frameworks. See the man page for details.

Notes Specific to Release 4.0

New Features

Dynamically Linked Shared Libraries

The compiler tools now allow you to build and develop dynamic shared libraries and support the programs that use these libraries, including programs that use bundles. The tools to build or use dynamic shared libraries are in the 4.1 updates for the m68k, i386, sparc, and hppa target architectures.

All object files that are part of a dynamic shared library or that are to be in an executable should be compiled with the **-dynamic** flag. The **-dynamic** flag is now the default. Executables using shared libraries must also be linked with this flag when using **cc**(1) or **ld**(1) and must be using **crt1.o** (this is done automatically with **cc**(1) and the **-dynamic** flag). To build a dynamic shared library, use **libtool**(1) with the **-dynamic** option; typically you also specify the **-install_name** *library_name* option as well as other options (see the **libtool**(1) man page).

The dynamic linker is becoming more fully-featured. It contains some programmatic support for runtime loading (but as of yet no unloading or replacing).

The static link editor uses the symbol tables of dynamically-linked shared libraries to cause modules for undefined symbols to be pulled in from static libraries and to check for undefined symbols. The **ld**(1) flags for undefined checking **-undefined** {**error**, **warning**, **suppress**} can be used; the default is to treat undefined symbols as errors. This default holds for dynamically-linked shared libraries and bundles. In these cases the dependent libraries should be listed if available. If not available then **-U** *_symbol* or **-undefined** {**warning**, **suppress**} can be used until they are.

Using and Building Dynamic Shared Libraries from Project Builder

The 4.1 version of Project Builder supports a library project type which by default is a dynamic shared library and a framework project type which by default contains a dynamic shared library. Project Builder supports the use of dynamic libraries in other project types.

To build static libraries, un-comment the LIBRARY_STYLE definition in the project makefile (LIBRARY_STYLE is set to STATIC and commented out).

Tools that are complete

· The assember, link editor, and **otool** support position-independent code for the m68k, i386, sparc, and hppa architectures. The link editor, assember and **otool** fully support indirect undefined references using symbol pointers and symbol stubs. And the assembler now fully supports Mach-O files.

· The dynamic link editor now has the first level of support for runtime loading. Currently only loading of MH_BUNDLE files is supported. Comments in the header file **/NextDeveloper/Headers/mach-o/dyld.h** describe what is not yet implemented.

Tools that are not complete

· The dynamic link editor now has the first level of support for runtime loading. Currently only loading of MH_BUNDLE files is supported. Comments in the header file **/NextDeveloper/Headers/mach-o/dyld.h** describe what is not yet implemented.

· The tool **segedit**(1) does not have support for dynamic shared libraries.

The NeXT Mach-O GNU-based Assemblers

The NeXT assembler now a fully supports Mach-O files with the ability to create arbitrary sections with the **.section** and **.zerofill** directives. Contents of sections now correctly reflect the assembly code with respect to the section aligment and no unnecessary padding is added.

Major New Features

Support for position-independent code through the use of a new relocatable form of an expression: "*add_symbol* - *subtract_symbol* + *offset*" where *add_symbol* and *subtract_symbol* can be defined in different sections.

Documentation

Assembler Manual

The assembler manual has been updated to reflect support for dynamically-linked shared libraries. It contains appendices of the instructions for the i386, M68K, and PA-RISC processor architectures. An RTF version of the Assembler manual is in:

/NextLibrary/Documentation/NextDev/Reference/DevTools/Assembler

Compiler (OPENSTEP Enterprise)

This file contains developer release notes for the Windows and PDO compilers shipped with OPENSTEP Enterprise Release 4.1.

In this release, the compilers are based on the GNU C compiler version 2.7.2.

New Features

· If the name of your source file ends in **.cc**, **.cxx**, **.cpp**, or **.C**, **gcc** will attempt to compile your program with the C++ compiler. Similarly, if the name of your source file ends in **.mm** or **.M**, **gcc** will attempt to compile your program with the Objective-C++ compiler.

· The Objective-C++ compiler is now much more useable than the ones included with OPENSTEP for Windows Prerelease 3 and with PDO 4.0.

Including Windows Header Files in Objective-C Code

In general, you should be able to include any Windows header file in an Objective-C source module without issues. The System framework contains Microsoft's header files, with slight modifications to make them compatible with **gcc**. For instance, slight changes have been made for unnamed unions, Microsoft assembly, and so on. If you have issues including any of the Windows header files, try including the file **winnt-pdo.h** before the Windows header file that's causing issues.

The -Wmost Compiler Flag

The **-Wmost** compiler flag is equivalent to FSF's **-Wall**, except that it doesn't turn on **-Wparenthesis**. **-Wmost** also suppresses warning messages about inline functions and static constants that are not actually used. This flag is for internal use and is not officially supported. Its definition may change in a future release.

Known Bugs and Limitations

The following bugs or limitations are worth noting for the GNU C and C++ compilers for this prerelease.

· **Link errors on Windows NT** (69211). Programs on Windows NT must add explicit references to at least one class in each framework in order to avoid link errors at run time. For instance, you could add a function like that in the following code excerpt, which refers to classes in each of Enterprise Objects Framework's layers. Though never invoked, it forces the appropriate linking to occur.

```
#ifdef WIN32
```

```
#import <EOControl/EOControl.h>
#import <EOAccess/EOAccess.h>
#import <EOInterface/EOInterface.h>

void _referenceAllEOFrameworks()
{
[EODisplayGroup new]; // EOInterface
[EOEntity new]; // EOAccess
[EOEditingContext new]; // EOControl
}
#endif
```

If you create your project with the type "EOF Application," this code is automatically added to your project main file.

· **Don't depend on NEXT_OBJC_RUNTIME being predefined** (62096). Although the macro NEXT_OBJC_RUNTIME is predefined on the Windows NT compiler, your code shouldn't depend on this being the case, since this macro won't be predefined in future releases of the compiler.

· **Casting a receiver to conform to a protocol doesn't work** (68626). If, when invoking a method, you cast the receiver to conform to some protocol in order to make sure the compiler invokes the correct method in cases where there is more than one method with the same name, the Objective-C compiler will not pick up on the hint. The work around is to either compile your source file with the Objective-C++ compiler (use the **-x objective-c++** switch) or assign the object returned by the method invocation to some (temporary) variable that has the same type as that object.

· **Constant strings (both char * and NSString) should be 7-bit only**. Unless constant strings are 7-bit, your code will be non-portable as compilers will deal with 8-bit strings in a machine-dependent encoding.

· **Objective-C++ global constructors**. The Objective-C++ compiler sometimes ignores global constructors; they don't always get called.

· **Random name given to executable by default** (66861). If you create an executable and don't use the **-o** flag to explicitly tell **gcc** what to name it, **gcc** will most likely give it a random name.

· **Using pipes to communicate between compiler passes** (61306). The **-pipe** flag does not work.

· **-ObjC++ requires -lstdc++ when using C++ streams on PDO** (69156). When compiling C++ programs that use C++ streams with **gcc** on PDO platforms, if you specify the **-ObjC++** flag you must also specify the **-lstdc++** flag. So, for example, a program "foo" that uses **cout** (and therefore includes **iostream.h**) would be compiled using **gcc** as follows:

```
gcc -ObjC++ foo.cc -lstdc++
```

· **__declspec(dllexport) __stdcall doesn't work** (69194). On Windows NT, functions that are declared as **__declspec(dllexport)__stdcall** aren't handled properly. This may affect some Windows header files that you include in your programs.

· **The compiler sometimes tries to create a library instead of an executable** (69087). This happens on Windows NT when a function is declared as **__declspec(dllimport)** (perhaps in a header file), but the function is actually defined in the file being compiled. The workaround is to remove the offending **__declspec(dllimport)**.

· **-Wno-precomp flag isn't supported** (63746). On Windows NT and on PDO platforms, **gcc** refuses to do anything when the **-Wno-precomp** flag is specified. Currently, the precomp option isn't supported.

· **Reporting bugs** (68122). In some cases, when the compiler detects an internal error, it prints a message requesting that you send a bug report to some electronic mail address. Please disregard this message. All compiler bugs should be reported to the appropriate channels at NeXT Software.

· **cc -MM Foo.mm produces Foo.mm.o** (40491). Compiling a file that has either a **.M** or **.mm** extension with **-M** or **-MM** will produce a file whose name is the same as the source file with the addition of **.o**. The original extension is not stripped off before constructing the name of the **.o** file.

· **-traditional-cpp acts differently on Mach than on NT or PDO** (60175). On Windows NT and on PDO, **-traditional-cpp** changes the behavior of the preprocessor in the same way that **-traditional** does. This can result in compilation errors when recompiling an existing NEXTSTEP project on Windows NT or on PDO.

· **Inconsistent function declarations involving stdcall produce unexpected results** (69506). On Windows NT, if a function is forward-declared to be **stdcall** but not declared to be **stdcall** in the actual function definition, the compiler will emit code to pop the arguments off the stack, but won't adjust the function name.

· **The linker complains about objects exported as CONSTANT** (70212). On Windows NT, if you're building a framework and you create your own DEF file for it, defining exported objects as CONSTANT will produce a warning from the linker advising you to use the word DATA instead. If you substitute the word DATA for CONSTANT in your DEF file, some or all of your objects won't be exported correctly; the linker will be unable to find them. As a workaround, simply leave the declarations CONSTANT and ignore the linker warnings.

· **-static option causes linking to fail** (70326). The **-static** and **-dynamic** compiler flags are meaningless on Windows NT, and shouldn't be used.

· **Programs that use posing sometimes crash** (72283). If a program compiled with the Objective-C compiler contains an object that accesses its superclass while posing on a category, it will crash. To workaround this issue, either rewrite your code so that it doesn't do this, or compile the program with the Objective-C++ compiler (to do this, use the **-x objective-c++** switch).

· **Objective-C++ is broken in PDO on Solaris** (69089). In this release of PDO, **gcc**

doesn't compile Objective-C++ code correctly on Solaris machines. However, you can compile both Objective-C and C++ code<providing that they are in separate source files<with **gcc**.

· **Static constructors can't be used for run-time class initialization** (54831). The PDO compiler can't apply a user-defined constructor to a global or static C++ object and send an Objective-C message in the same file. To work around this issue, eliminate the constructor, the global, or the Objective-C code.

Compiler (OPENSTEP for Mach)

This file contains developer release notes for the 4.1 and 4.0 releases of the compiler. Items specific to or introduced in this release of OPENSTEP Release 4.1 are listed first, followed by items noted in earlier releases.

Notes Specific to Release 4.1

Known Bugs and Limitations

The following bugs or limitations are worth noting for the GNU C and C++ Compilers for this release.

· **Constant strings (both char * and NSString) should be 7-bit only** (52695). Unless constant strings are 7-bit, your code will be non-portable as compilers will deal with 8-bit strings in a machine-dependent encoding.

· **Missing precomps cause compiler warnings** (73313). If you only install the DeveloperLibs and EO2Developer packages for a single architecture (ªthinº), precomps won't be generated and the compiler will generate numerous warnings. While these warnings can safely be ignored, there are a couple of workarounds: either install the DeveloperLibs and EO2Developer packages for all three supported architectures (ªfatº), or run fixPrecomps manually to generate the missing precomp files. To do this, simply log in as root and type the following in a terminal window:

```
/usr/bin/fixPrecomps
```

Notes Specific to Release 4.0

In this release, the Mach compiler is based on the GNU C compiler version 2.5.8.
The compilers Windows and PDO compilers shipped with the OPENSTEP Enterprise release are based on the GNU C compiler version 2.7.2.

New Features

· **Frameworks.** You can now specify frameworks on the linker and preprocessor command

lines. The **-framework** flag is accepted by both the linker and the preprocessor, while the **-F** flag is accepted by the linker only. These flags are defined as follows:

-framework *framework-name*

Search the framework named *framework-name* when linking. The linker searches a standard set of directories for the framework. It then uses this file as if it had been specified precisely by name. The directories searched by the linker include a couple of standard system directories plus any that you specify with **-F**.

-F *directory*

Add the specified directory to the head of the list of directories to be searched for frameworks. If you use more than one -F option, the directories are scanned in left-to-right order; the standard framework directories (LocalLibrary/Frameworks, followed by /NextLibrary/Frameworks) come after.

In your Objective-C code, include framework headers using the following format:

```
#include <framework/include_file.h>
```

Where *framework* is the name of the framework (such as ªAppKitº or ªFoundationº<don't include the extension) and *include_file* is the name of the file to be included.

Known Bugs and Limitations

The following bugs or limitations are worth noting for the GNU C and C++ Compilers for this release.

· **Using -pipe** (67853). Although the compiler rarely crashes, if it does, it may generate some assembly language output before doing so. If you use the **-pipe** flag, the assembler may not be able to detect the fact that its input is incomplete. As a result, the assembler may produce an incomplete, but valid **.o** file. If you use the **make** utility to build your application, **make** will detect the fact that there was a issue during compilation. However, when **make** is subsequently invoked, it might not recompile the source file that caused the issue, and the linker will most likely complain about unresolved external symbols.

· **Reporting bugs** (68122). In some cases, when the compiler detects an internal error, it prints a message requesting that you send a bug report to some electronic mail address. Please disregard this message. All compiler bugs should be reported to the appropriate channels at NeXT Software.

Notes Specific to Release 4.0 PR2

In this release, the compiler is based on the GNU C compiler version 2.5.8.

New Features

· **Position-Independent Code Generation (PIC)**. The way the compiler generates code has changed. It now generates position-independent code by default when it builds

libraries, bundles and executables. You can control the code generation style using the **-dynamic** and **-static** compiler flags; **-dynamic** specifies that position-independent code generation is to be used, whereas **-static** specifies position-dependent code generation. For related information, see the note on drivers and kernel servers below.

· **C++ Templates**. The compiler has been updated to support C++ templates or parametrized types. For example, consider the following code:

```
#include <stream.h>
#include <String.h>
#include <SLList.h>

typedef SLList<String> StringList;
main(){
StringList listOfnames;

listOfnames.append("hello world");
cout <<listOfnames.remove_front() << "\\n";
}
```

Then the above code is built and run:

```
%> cc++ template.cc -o test -lg++
%> test
hello world
%>
```

· **Debugging features.** The compiler includes a couple new options to assist in debugging. Specify the **-H** flag on the command to have the compiler emit a listing of included header files (indented to reflect where they are included). Specify the **-dM** option after the **-E** (preprocess) option to get a listing of all macros along with their full definitions.

Changes

· **Building drivers and kernel servers**. If you are building drivers and kernel servers, be sure to include **-static** on the command line so that position-dependent code is generated. Compilation with the **-dynamic** option assumes that the dynamic link editor (**/usr/lib/dyld**) is present in the running program, and that is not the case for modules to be loaded into the kernel.

Known Bugs and Limitations

The following bugs or limitations are worth noting for the GNU C and C++ Compilers for this pre-release, since they were not mentioned in earlier releases.

· **wchar_t string literals** (38759). The compiler generates wide-character literals for the host endian-ness only. For example, if you are cross-compiling the string L"x" from m68k to i386, it will be a big endian wide string. The only workaround is not to cross-compile modules which depend on wide characters.

The GNU Source-Level Debugger

This file contains information about GDB, the GNU Debugger. For more information, see the debugging chapter in the *OPENSTEP Development Tools Reference* manual. On Mach, you may also refer to the **gdb**(1) manual page. On PDO platforms, see the **gdb** reference in **/NextLibrary/Documentation/NextDev/DevTools/Debugger.pdf**.

Notes Specific to GDB on Mach:

The **gdb** debugger in OpenStep 4.1 for Mach is based on the version 4.14 release from GNU/FSF. This brings with it many bug fixes and new features, many of which are mentioned in the debugging chapter of the *OPENSTEP Development Tools Reference* manual.

New Features

Dynamic Link-Editor Support

GDB supports debugging of dynamic shared libraries (sometimes known as Frameworks or Bundles in the OPENSTEP world). The presence of dynamic shared libraries has some impact on debugging, which is described in this section.

Debugging symbols for dynamic shared libraries are not present in the program itself. GDB obtains them when the running program attaches and links to the shared library. This means that before the program is actually running, GDB has no information about the contents of the dynamic shared libraries that it uses.

Because of this, it is not possible to set ordinary breakpoints in a shared library before that library has been attached. GDB provides a new command for this purpose, **future-break** or **fb**. If GDB cannot find the necessary symbols to resolve a **future-break** command, it defers the breakpoint and attempts to resolve it later, when new symbols from a shared library become available. Caveat: since the **future-break** command deals with names and symbols that are as yet unknown to the debugger, it cannot check spelling for you; if you make a spelling mistake, it will never be detected and the breakpoint will never take effect.

There is also an environment variable, **DYLD_LIBRARY_PATH**, which tells the dynamic link-editor where to search for dynamic libraries. This variable can be used to cause a library with debugging symbols to be linked, even though the library on the default path has no symbols. This environment can be set from within GDB by using the **setenv** command. In order to affect the program being debugged, it should be set before running the program.

The "view" interface

In prior releases, GDB supported a GUI interface that used the NEXTSTEP Edit application as a source file viewer (invoked by the **view** command). Edit has been replaced by Project Builder as the source file viewer for GDB, and the **view** command now connects GDB to Project Builder. You must start Project Builder yourself before giving GDB the **view** command (GDB will not start Project Builder automatically). Project Builder has its own user interface for interacting with GDB (see the Project Builder documentation).

Methods with Variable Number of Arguments

GDB now understands the syntax for calling a method with a variable number of arguments (for example, **[MyClass myMethod: 1, 2, 3, 4]**).

Known Issues

Known Issues with Dynamic Link-Editor Support

It has been observed that GDB sometimes hangs or crashes if you run a program that uses a dynamic shared library (Framework or Bundle), then recompile the dynamic shared library, and run the program again. If this happens to you, we recommend that you quit GDB and start a new debugging session every time you rebuild the library. You can use the **.gdbinit** file to help re-establish things such as breakpoints that you need in your debugging session.

Interrupting with ^C during Dynamic Symbol Loading

Immediately after you start your program running under GDB, the program will start to load dynamic shared libraries, and GDB will begin reading symbols from these libraries. If you attempt to interrupt GDB by typing ^C (control-C) during this process, the debugger will be left in a confused internal state from which the only known recovery is to quit the debugger and start over.

Notes Specific to GDB on Windows:

The GDB debugger for OPENSTEP for Windows is based on the version 4.15.1 release from GNU. This brings with it many, if not most of the features of debugging on UNIX and Mach, although there are inevitably some differences.

New Features

Dynamically Loaded Library (DLL) Support

GDB supports debugging of dynamically loaded libraries (DLLs). In OPENSTEP for Windows, Frameworks and Bundles are implemented as DLL's. The presence of DLLs has some impact on debugging, which is described in this section.

Debugging symbols for dynamically-loaded libraries are not present in the program itself. GDB obtains them when the running program attaches and links to the DLL. This means that before the program is actually running, GDB has no information about the contents of the DLLs that the program uses.

Because of this, it's not possible to set breakpoints or access data in a DLL before the DLL has been attached by the program. If you need to debug code in a DLL, or set breakpoints on a function or method in a DLL, you should first set a breakpoint on **main** (or some place in the program after the DLL has been attached but before the code you want to debug has been executed). Run your program up to that point. The program will load the DLL, and GDB will gain access to it's symbols, after which you should be able to set breakpoints in the DLL. If the DLL was built with the OpenStep compiler (**gcc**), and with **-g** debugging symbols, you should be able to step into functions or methods in the DLL just like ordinary

functions or methods in your program.

Attach and Detach

GDB's **attach** command works pretty much as it does on Mach. The process ID to attach to can be obtained from PVIEW, or by having the attachee call **getpid()** and output the result. However, when GDB attaches to an already-running process, it won't learn about symbols from DLLs that the process has already linked to.

The **detach** command is only partially useful at this time. **detach** will let the attached process continue to run, but a parent/child relationship continues to exist between the debugger and the detached process. Because of this, if you then quit the debugger, the detached process will also die.

When you attach to a running process, you will frequently find yourself in a non-debuggable area of code from which you cannot even get a backtrace. See the section on known issues, "Non-Debuggable Code" below for more information on this topic.

Add-Symbol-File

When GDB attaches to a running process, it does not read any symbols from DLLs that the process has previously linked itself to. If you need those symbols for debugging, you can explicitly cause GDB to load them by using the **add-symbol-file** command. This command takes two arguments: the fully-qualified filename of the DLL file, and a base address. For a DLL that you build, this base address will be the base address at which you linked the DLL plus 0x1000. Here are the base addresses to give to the **add-symbol-file** command for the major OPENSTEP DLLs:

· 0x30001000 System
· 0x31001000 nextpdo
· 0x32011000 Foundation
· 0x34021000 AppKit
· 0x38031000 NeXTApps
· 0x3A041000 DevKit
· 0x3C051000 ProjectBuilder
· 0x3C051000 InterfaceBuilder
· 0x40001000 Message
· 0x42011000 WebObjects
· 0x44021000 EOControl
· 0x46031000 EOAccess
· 0x48041000 EOInterface
· 0x4A051000 Sybase
· 0x4C061000 Oracle
· 0x4E071000 Informix
· 0x50081000 nextorb
· 0x52091000 EOModeler

Command Editing

GDB's command line history can be accessed by using the up and down arrow keys, or by using the EMACS key bindings (^P and ^N to scroll thru previous commands, ^B, ^A, ^E to move around on a line, and so on). Also, **set history expansion on** enables C-shell-like command history within GDB (**!!**, **!print** and so on). As usual, an empty newline repeats the previous command (except where specifically disabled, as with the **run** command).

Debugging Objective-C: Differences from Mach GDB

The Windows version of GDB is more of a multi-language debugger than the older GDB on Mach (especially the older version of GDB available with previous releases of NEXTSTEP). This GDB has separate features for many different languages, including Objective-C. It attempts to guess the source language by looking at the extension of the source file name ("**.m**" or "**.M**" for Objective-C). To find out what GDB's ªcurrent languageº is, type **show language**. To force the current language to Objective-C, type **set language objective-c**.

Calling Methods from GDB

To call a method in your program from GDB, use the **print**, **set**, or **call** commands with an argument that looks just like a method call in Objective C, as shown here:

```
(gdb) print [myClass showValue: 12]
```

If the method comes from a Category, you must include the category name, like this:

```
(gdb) print [myClass(myCategory) showValue: 12]
```

Listing and Setting Breakpoints on Methods

To refer to a method in a **list** or **break** command, you can give the full class and method name, including a `+' or `-' to indicate a class method or instance method. If there is a category name, you must give that too:

```
(gdb) list +[myClass init]
(gdb) break -[myClass(myCategory) showValue]
```

You can also set breakpoints or list a method just by giving a selector. If the selector is implemented by more than one class, gdb will list the corresponding methods and ask you to choose one or more:

```
(gdb) break init
[0] cancel
[1] all
[2] -[Change init] at Change.m:20
[3] -[DrawApp init] at DrawApp.m:130
[4] -[Graphic init] at Graphic.m:139
>
```

You would then enter your choice or choices at the ">" prompt.

Getting Information about Classes and Methods

GDB for Windows now has the **info classes** and **info selectors** commands. These commands accept the same regular expression language as GDB's **info type** and **info**

function commands (ie. the Unix style regular expression language). This is a change from the Mach gdb, where **info classes** and **info selectors** accept a slightly different regular expression language. For instance, to learn about class names beginning with NS (using the '^' character to designate ªbeginning withº):

```
(gdb) info classes ^NS
```

To learn about selectors, you can use the **info selectors** command. To find every selector containing the string "withObject:" you could enter:

```
(gdb) info selector withObject:
```

To learn about methods, you can use the **info function** command, which also takes a regular expression. Since the square bracket characters `[' and `]' are significant in regular expressions, you can quote them with a backward slash to prevent their being treated as special characters. To list all the methods of a class, you might say:

```
(gdb) info function \\[MyClass
```

To list all the methods whose selector ends with ªcount:º, you might say:

```
(gdb) info function count:\\]
```

If you want to know about a specific method of a specific class, but you are not sure if it belongs to a category, you could use the ª.*º wildcard sequence to stand for ªany number of any charactersº:

```
(gdb) info function MyClass.*mySelector:
```

Debugging Threads on Windows

The GDB for Windows is thread-aware. If you are debugging a multi-threaded program, you can use the **info threads** command to see a list of the currently active threads. Use the **thread** command to switch to one of the threads listed by **info threads**, giving it the number of the thread you want to debug (a small integer such as 1 or 2, not the thread ID).

When you switch threads, you will frequently find yourself in a non-debuggable area of code from which you cannot even get a backtrace. See the section on known issues, ªNon-Debuggable Codeº below.

Known Issues

Non-Debuggable Code

When you interrupt a program with ^C, attach to a running program, or switch threads in a running program, sometimes the program will be in the middle of executing Windows code that cannot be debugged. Often GDB cannot even give you a backtrace, because Windows has done something with the program stack. When this happens, if you don't want to simply let the program continue (for instance, you need to know exactly how you got to where you are), you can use the **stepi** command to step by single machine instructions until the Windows code cleans up the stack and returns, at which time you will suddenly be able to see symbols and backtraces again. GDB will notify you when you have returned to a

symbolic region (say, a function or a method) that it knows about. Usually this does not take too long; on the order of a few dozen instruction steps.

Notes Specific to GDB on PDO:

The **gdb** debugger for OPENSTEP Enterprise is based on the version 4.15.1 release from GNU. This brings with it many, if not most of the features of debugging on Mach, although there are inevitably some differences.

Debugging Objective-C: Differences from Mach gdb

The PDO version of **gdb** is more of a multi-language debugger than the older **gdb** on Mach (especially the older version of **gdb** available with previous releases of NEXTSTEP). This **gdb** has separate features for many different languages, including Objective-C. It attempts to guess the source language by looking at the extension of the source file name (**.m** or **.M** for Objective-C). To find out what **gdb**'s current language is, type **show language**. To force the current language to Objective-C, type **set language objective-c**.

Calling Methods from gdb

To call a method in your program from **gdb**, use the **print**, **set**, or **call** commands with an argument that looks just like a method call in Objective-C. For example:

```
(gdb) print [myClass showValue: 12]
```

If the method comes from a category, you must include the category name, as shown here:

```
(gdb) print [myClass(myCategory) showValue: 12]
```

Listing and Setting Breakpoints on Methods

To refer to a method in a **list** or **break** command, you can supply the full class and method name, including a + or - to indicate a class method or instance method. If there is a category name, you must give that too:

```
(gdb) list +[myClass init]
(gdb) break -[myClass(myCategory) showValue]
```

You can also set breakpoints or list a method just by giving a selector. If the selector is implemented by more than one class, **gdb** will list the corresponding methods and ask you to choose one or more:

```
(gdb) break init
[0] cancel
[1] all
[2] -[Change init] at Change.m:20
```

```
[3] -[DrawApp init] at DrawApp.m:130
[4] -[Graphic init] at Graphic.m:139
>
```

You would then enter your choice or choices at the ">" prompt.

Getting Information about Classes and Methods

gdb for PDO has the **info classes** and **info selectors** commands. These commands accept the same regular expression language as **gdb**'s **info type** and **info function** commands (that is, the UNIX-style regular expression language). This is a change from the Mach **gdb**, where **info classes** and **info selectors** accept a slightly different regular expression language. For instance, to learn about class names beginning with "NS" (using the "^" character to designate ªbeginning withº):

```
(gdb) info classes ^NS
```

To learn about selectors, you can use the **info selectors** command. To find every selector containing the string "withObject:" you could enter:

```
(gdb) info selector withObject:
```

To learn about methods, you can use the **info function** command, which also takes a regular expression. Since the square bracket characters ('[' and ']') have special significance in regular expressions, you can quote them with a backward slash to prevent their being treated as special characters. To list all the methods of a class, you might say:

```
(gdb) info function \\[MyClass
```

To list all the methods whose selector ends with "count:", you might say:

```
(gdb) info function count:\\]
```

If you want to know about a specific method of a specific class, but you aren't sure if it belongs to a category, you can use the ".*" wildcard sequence to stand for any number of any characters:

```
(gdb) info function MyClass.*mySelector:
```

Known Issues

Issues with Underscores

gdb doesn't correctly handle methods for which either the class, the category, or the selector has underscores in the name, except when the underscore is the first character of the class or selector name.

Thread Support

gdb has no support for debugging multiple threads on either Solaris or HP-UX.

Random SIGTRAPs

gdb occasionally throws random SIGTRAPs. If you verify that the instruction at the $PC is not a trap instruction, you should be able to continue by saying "signal 0" (that's a zero). This tells **gdb** to continue the child without passing any signal to it.

Documentation

This file contains release notes for the Documentation distributed with OpenStep 4.1.

Locating the Developer Documentation

All of the documentation for OPENSTEP 4.1 can be found on-line (some of the documents are supplied in printed form, as well). The easiest way to access this documentation is to open the NextDeveloper bookshelf using Digital Librarian (this bookshelf can be found in **/NextLibrary/Bookshelves**). Although the NextDeveloper bookshelf can be used directly to access the documentation, most developers prefer to create their own custom bookshelf containing just those documents of interest. Select the first entry in the NextDeveloper bookshelf, then click ªList Titlesº; the documents that are then listed detail how to create your own custom bookshelf.

In NEXTSTEP Release 3.3, as well as in prior releases, all developer documentation was located in a subdirectory of **/NextDeveloper/Documentation/NextDev**. In OPENSTEP 4.1, framework documentation has been moved to a location inside of the relevant framework. All remaining developer documentation can still be found under **/NextDeveloper/Documentation/NextDev**.

In keeping with the philosophy that all framework resources be located within the framework, framework reference documents are located in the directory **Resources/English.lproj/Documentation**, relative to the ª**.framework**º directory. So, for instance, reference documentation for the Application Kit Framework can be found in **/NextLibrary/Frameworks/AppKit.framework/Resources/English.lproj/Documentation**.

Release Notes

/NextLibrary/Documentation/NextDev/ReleaseNotes contains important information about the release that was known at the time that the OPENSTEP 4.1 CD-ROM was manufactured. Additional important information, which was discovered too late to be put onto the release, can be found on NeXTanswers. Request NeXTanswers #2455 for the location of the most up-to-date release notes for a variety of NeXT's software products.

Driver Development

OPENSTEP 4.1 cannot be used to develop Mach device drivers. Because NEXTSTEP 3.3 device drivers work on OPENSTEP 4.1 systems, we recommend that you use NEXTSTEP 3.3 Developer to create device drivers.

Interface Builder

This file contains release notes for Interface Builder distributed with OPENSTEP Release 4.1.

Notes Specific to Release 4.1

New Features

This release of Interface Builder supports these new features:

· *Context Menus*. Interface Builder on Windows NT has a context menus within editable windows and panels. A context menu is activated by clicking the right mouse button within a window or panel. In this way, operations such as Cut, Copy, and Group can be performed.

· *Interface Styles*. Interface Builder has a new preference which permits nib files to be viewed and edited in either Mach or Windows user interface style. Nib files opened after a change in the interface style preference will have the new interface style.

· *Control mnemonics.* Interface Builder enables users to set mnemonics for user-interface controls. In order to set a character in the title of a control to be a mnemonic, double-click the character while holding down the Alternate key.

· *OpenStep Compliance*. Interface Builder is OpenStep-compliant, and you can use it to create OpenStep nib files.

· *Custom Class Inspector*. You now use a new inspector display, the Custom Class Inspector, to specify a custom subclass of an object. For example, suppose you have defined a class MyButton to be a subclass of NSButton. To add an object of class MyButton to your interface, you do the following:

1. Define MyButton in the Classes view of the nib file window.
2. Drag the button from the Views palette to your interface.
3. Choose Custom Class from the pop-up list in the Inspector panel.
4. Select MyButton in the browser to set the class of the button.

Currently, this works only for NSView and NSWindow subclasses.

· *Connection Locking*. Connection locking prevents connections from being deleted when a nib file is edited. This feature is designed primarily for localization. To turn connection locking on or off, use the Preferences panel.

· *Nib Dumping.* A new tool, **nibTool**, prints the contents of a nib file in an ASCII format. **nibTool** is located in **/usr/bin**. You can easily compare two versions of a nib file if you use this tool to create ASCII representations of each. Currently, **nibTool** does not support nib files that use objects from custom palettes.

· *Typed Outlets and Actions.* The parser in Interface Builder has been improved, and many parsing bugs have been fixed. In addition, you can now specify typed outlets. Interface Builder considers any of the following to be an outlet when it appears in an interface:

```
id outlet;
id outlet1, outlet2, ...;
IBOutlet SomeClass *outlet;
IBOutlet SomeClass *outlet1, *outlet2, ...;
```

You can also specify the type of the argument to an action, and you can specify the return type to of an action to be **void**. Interface Builder considers any of the following to be an action:

```
- action:sender;
- (void)action:sender;
- action:(id)sender;
- (void)action:(id)sender;
- action:(SomeClass *)sender;
- (void)action:(SomeClass *)sender;
```

The declarations of IBOutlet are in <AppKit/NSNibDeclarations.h>.

· IB supports the new NSComboBox object. It appears on the DataViews palette.

· The date and number formatters now live on the DataViews palette, not the EOF palette.

Known Issues

These issues exist in this release of Interface Builder:

· If you are running with 8-bit color, testing your interface may cause Interface Builder to crash. After entering test interface mode, if you exit test interface mode by clicking on the close box of the last open window, Interface Builder will be `hidden' - none of your document windows will reappear. At this point, you can restore Interface Builder to its active state by restarting it from the start menu. Unfortunately, Interface Builder will be in an unstable state, and may crash after a few operations. The workaround is to always exit test interface mode via the `Exit' menu item. (72599)

· After displaying the inspector the first time, deleting a menu item or submenu may cause Interface Builder to crash. This can happen even if you close the inspector and then delete a menu item. The workaround is to either delete the menu item before you display the

inspector the first time, or to select the `Custom Class' inspector from the inspector popup before you delete the menu item. (72727)

· If you select BooksOnline from Interface Builder's Help menu on a system running Windows NT version 3.51, you'll discover that the links on the BooksOnline page appears to be broken. BooksOnline works correctly, however, if you invoke it from the OPENSTEP Enterprise program group.

· NEXTSTEP Release 2 nib files containing bitmaps unknown to the Application Kit are not loaded correctly. As a workaround, open the nib file in a Release 3 Interface Builder and save it before opening it in 4.1. For a list of bitmaps that the Application Kit supports, see the file **/NextLibrary/Frameworks/AppKit.framework/Headers/NSBitmapImageRep.h**.

· Interface Builder does not allow you to change the size of the document view when editing a ScrollView.

· The context-sensitive help links don't work for anything in the palettes window, and they don't work in the ScrollView Attributes display.

· Model files copied from a mail message are incorrectly referenced. In Interface Builder, if you drag a model file in from a mail message, it turns into an entity controller. Don't make a copy, and save the nib file. Then drag the model file from the mail message into **~/Library/Models**. Go back into the nib file and delete the combined controller/data source object. Then drag the model from **~/Library/Models** into Interface Builder. The resulting entity controller still references the model file in your mailbox.

Novell Netware

Novell Netware is not included in this release of OPENSTEP 4.1.

NEXTIME Framework

New Features in 4.0

OpenStep

The NEXTIME framework was introduced with release 4.0. It differs considerably from the architecture shipped with NEXTIME 1.0. The framework makes extensive use of the OPENSTEP Foundation classes.

NTMovieScreen

The new NTMovieScreen class provides a simple way to add movie support to applications.

An NTMovieScreen is an NSControl containing a NTMovieScreenCell in which you can display a NEXTIME movie. The user can then start and pause the movie's playback by clicking anywhere in the NTMovieScreen.

NTMovieScreenCell

NTMovieScreenCell is a subclass of NSActionCell for displaying the video data of a NEXTIME movie. Clicking the mouse within the cell's frame normally starts playback of the movie. If the movie is already playing, the click pauses the playback, so that the current video frame is displayed as a still image. The NTMovieScreenCell is normally associated with a NTMovieDocument or other object conforming to the NTMovieDocument and NTMovieDrawing protocols.

NTMovieControlView

The NTMovieControlView class provides a basic horizontal control bar to play, position, and step through movies. The view incorporates a pop-up volume control on systems with sound hardware. The class is intended to communicate with a NTMovieDocument or similar class.

NTMovieDocument

The NTMovieDocument manages a single movie, usually by displaying it in an NTMovieScreen and receiving control messages from an NTMovieControlView. Operations supported include play, pause, reset, fast forward or reverse, and step forward or backward. Notifications from the NTMovieDocument report changes in the movie's playback status and its position in time. The class provides support for editing movies from the pasteboard.

/usr/etc/showmacresources

The **showmacresources** program slightly modifies the state of the loaded Macintosh filesystem to enable or disable reporting of resource forks by the functions used to report directory contents. NEXTIME users can use this program to make finding and copying Macintosh Quicktime movie resource and data forks much easier.

showmacresources
showmacresources +

Enable reporting of resource forks on disks mounted after the command is run.

showmacresources -

Disable reporting of resource forks on disks mounted after the command is run.

The Macintosh filesystem must be loaded prior to running **showmacresources**. There are two ways to ensure that the Mac filesystem is loaded.

1) You can load the Macintosh filesystem by inserting a floppy. Simply insert a Macintosh CDROM or floppy, and, on non-NeXT hardware, click on the ªDisk->Check for Disksº Workspace menu item. Once the Workspace has found and displayed the disk, eject it. The Macintosh file system is now loaded.

2) You can load the Macintosh filesystem from a shell. To do so, run the following command as root:

```
kl_util -a /usr/filesystems/mac.fs/macfs_reloc
```

The Macintosh file system will be loaded.

If you always want to see resource forks for Macintosh files, you can modify your **/etc/rc.local** file to always load the Macintosh file system and modify it to show resource forks:

```
#
# Load Macintosh filesystem and modify to report resource forks
#
if [ -f /usr/filesystems/mac.fs/macfs_reloc -a -f /usr/etc/showmacresources ]; then
/usr/etc/kl_util -a /usr/filesystems/mac.fs/macfs_reloc
/usr/etc/showmacresources +
fi
```

Known Issues in This Release

Cursor during Movie Playback

If the cursor is placed in the movie screen area during movie playback, the cursor will disappear until moved again. When the cursor is moved across the playback area while the movie is playing, it may leave behind small squares of ªstaleº movie images which will disappear when the next key frame is drawn (usually within 1 second).

PDO

Known Issues in This Release

This section documents some of the known issues with this release of PDO. Known issues with specific portions of PDO (such as Foundation, the compiler, and so on) can be found in their own release note files.

Reference: 66188

Issue: Redefinition of MIN and MAX on HP/UX generates a warning

Description: On HP/UX, **param.h** doesn't guard against the redefinition of MIN and MAX. Since **NSString.h** indirectly includes **param.h**, if you've already imported **NSObjCRuntime.h** (which defines MIN and MAX, properly guarded against redefinition), you get a warning when **param.h** overrides these.

Workaround: Edit the copy of **param.h** that's located in **NextDeveloper/lib/gcc-lib/hppa1.1-nextpdo-hpux/2.7.2/include/sys** (relative to the location where PDO is installed), and place a guard around the MIN and MAX defines, as shown here:

```
#ifndef MIN
#define MIN(a,b) (((a)<(b))?(a):(b))
#define MAX(a,b) (((a)>(b))?(a):(b))
#endif
```

Reference: 68675

Issue: Hang while looking up connection after fork

Description: If you have a DO client which tries to look up a connection using NSConnection's **connectionWithRegisteredName:host:**, then forks a process, and then either exits or tries to look up the connection again, the client will hang. If the fork is omitted, the client won't hang.

Workaround: None.

Reference: 69152

Issue: HP-UX nmserver has issues when passing large structures

Description: On HP-UX systems, passing large structures over DO without having first defined a protocol can cause the nmserver to become non-functional.

Workaround: Use DO protocols when passing large structures over DO on HP-UX.

Reference: 69056

Issue: Multi-threaded DO example occasionally hangs on HP-UX

Description: Compiling and running the multi-threaded DO example in **/NextDeveloper/Examples/Foundation/MultiThreadedDO** occasionally results in a hang.

Workaround: None.

Deviations from the OpenStep Specification

The following items are known departures from the OpenStep specification:

· **[NSString stringByStandardizingPath]** raises when presented an absolute path ending in "**..**".

· PDO's implementation of dynamic loading of code from bundles doesn't work on either HP-UX or Solaris. This includes related functionality such as **+bundleForClass:**.

Printing

The following notes relate to printing, and augment those found in the Application Kit Release Notes.

Known Issues in This Release

Reference: 59276

Issue: Default printer in NEXTSTEP 3.3 vs. OpenStep apps

Description: Different default mechanisms are used for NEXTSTEP 3.3 and OpenStep 4.*x* applications. As a result, if you select a printer in TextEdit, it will not be the default printer in Edit.

Windows-Specific Notes

Third-party software is required to print to non-PostScript printers from OPENSTEP Enterprise applications.

Project Builder

This file contains release notes for the Project Builder application distributed with OpenStep 4.1. It includes information specific to OPENSTEP for Mach and to OPENSTEP for Windows as well as information general to both platforms.

Project Builder has undergone a radical redesign since NEXTSTEP 3.3. Its main window integrates a project browser with a full-featured code editor. You can bring up panels for building, debugging, finding information in the project, and setting project attributes. To familiarize yourself with the new Project Builder's capabilities and features, you can do one of the following.

· On Mach, choose the Help command from Project Builder's Info menu. This launches a Digital Librarian bookshelf containing the on-line book *OpenStep Development: Tools and Techniques*.

· On Windows, choose the How To command from Project Builder's Help menu. This launches a Windows Help version of the same book.

New Features for 4.1

New Makefiles

Project Builder includes new makefiles that offer several advantages over the previous ones. They:

· Build projects with lower overhead.
· Fix a number of extensibility issues.
· Allow a higher degree of parallelism with **gnumake -j**.
· Make it easier to diagnose issues.

When you first open a project that uses the old makefiles, Project Builder displays a panel that lets you :

· Convert immediately to the new makefiles.
· Keep your current makefiles.
· Defer the decision to later.

If you convert to the new makefiles, the project defines this path to them in MAKEFILEDIR:

$NEXT_ROOT/NextDeveloper/Makefiles/pb_makefiles

The original 4.0 Makefiles are located in this directory:

$NEXT_ROOT/NextDeveloper/Makefiles/project

Currently, you can override the MAKEFILEDIR attribute for your project in **Makefile.preamble** by setting it to the desired directory. Or you can edit the MAKEFILEDIR attribute in **PB.project**, but not through the user interface of Project Builder. You are strongly encouraged to convert your projects to the new makefiles if that is feasible. For instance, a new facility that automatically generates **.def** files (see below) depends on these makefiles. However, you might keep older makefiles intact for those exceptional projects that depend upon unique implementation details in the project makefiles.

Microsoft Linker

The Microsoft linker is now the default for projects on Windows built with Project Builder. This is the same linker that ships with Visual C++. For information on using the linker, consult the Visual C++ documentation. See the following item, "Automatic Generation of .def Files," for a related issue.

Automatic Generation of .def Files

On Windows, the Microsoft linker requires symbols exported from a framework DLL to be explictly specified. One way of doing this is in a **.def** file in the project (for example,

"MyFramework.def"). In prior releases, this file had to be manually created. Project Builder now generates a **.def** file for frameworks and dynamic libraries (that is, library projects producing DLLs). It re-creates the file the first time a project is built and, thereafter, updates it every time an object file changes. To get this feature, you must update to the new makefiles (See "New Makefiles," above).

If you currently have a **.def** file for a framework, and it is not highly customized, delete it and let Project regenerate it for you. Otherwise, leave it where it is. Project Builder creates a **.def** file only if there isn't one already in the project.

The **.def** file that Project Builder creates is comprehensive, so if you want to create a customized .**def** file that is a subset of it, first build your project. Then add the generated **.def** file in **derived_src** to Supporting Files in your project and edit it as necessary.

Note 1: You should use the CONSTANT keyword instead DATA in your **.def** file. The export of framework functions also requires a little extra code. For more on both of these items, see "Known Issues in this Release, " below.

Note 2: If you have prerelease versions of OPENSTEP 4.1 in which you used **Makefile.preamble-winnt** and **Makefile.postamble-winnt** for manually generating **.def** files, you can delete these files and now use Project Builder's automatic **.def** generation facility. Remember to remove all references to items involved in manual **.def** generation, particularly where your Makefiles include the platform-specific makefiles. Do this by disabling the option in your respective pûeamble and postamble files. For example:

```
#-include Makefile.preamble-$(PLATFORM_OS)
```

Specifying Installation Directories for Dynamic Libraries

On Windows, the makefiles for dynamic-library projects (that is, projects with "LIBRARY_STYLE = DYNAMIC") put the two files generated by the project in different locations. The **.dll** file is installed in INSTALLDIR and the **.lib** file is installed in the location for libraries that are imported into executable. You can specify this latter location in **Makefile.preamble** by setting IMPORT_LIBRARY_DIR to the correct path.

New Features for 4.0

Some or all of these new features may exist in the Windows version of Project Buiilder depending on its state at the time of the release:

· The new Launcher Panel allows you to run or debug executables built by the project.

· Printing is now supported.

· The Build Attributes Inspector allows you to specify OS specific values for compiler flags, linker flags, installation and build directories, and build tool.

· The Build Options panel values persist across invocations of Project Builder. The values you specify on this panel are saved per-user, per-project.

· In the Project Attributes Inspector for an application project, you can specify a help file and icons for both NT (**.ico**, **.ICO**) and Mach (**.eps**, **.tiff**).

· Project Builder by default sets tab stops at regular intervals of eight spaces each. There is now a defaults write, ªtabStopCharsº, that allows you alter this interval to any desired number of spaces, as long as that number is greater than zero.

4.1 Conversion Note

The **_main.m** files of 3.*x* applications have to be manually converted to the new **_main.m** content. To do this, copy the **main()** code from existing 4.1 projects or create a new project and copy its **main()** code. You can also copy and paste this code directly from here:

```
#import <AppKit/AppKit.h>

int main(int argc, const char *argv[]) {
return NSApplicationMain(argc, argv);
}
```

Known Issues in This Release < Windows

These issues are known to exist with this release on Windows:

Reference: 72980

Issue: Automatic **.def** file generation doesn't handle subprojects.

Description: The Project Builder feature that generates **.def** files only inspects the object (**.o**) files at the top level and overlooks the object files in subprojects. Complex projects<those with one or more subprojects<will therefore not build correctly. To work around this issue, add the following code to the **Makefile.postamble** of the library or framework.

```
ifeq "WINDOWS" "$(OS)"
$(WINDOWS_DEF_FILE): $(OFILES) $(OTHER_OFILES)
$(SILENT) if [ ! -r "./$(WINDOWS_DEF_FILE)" ] ; then \\
$(ECHO) -n "Generating $(notdir $@)...." ; \\
(cd $(OFILE_DIR); $(DUMP_SYMBOLS) $(OFILES) $(OTHER_OFILES) `$(CAT) $(NAME).ofileList` | $(EGREP)
"(SECT).*(External).*(\\|)" | $(EGREP) -v "(__GLOBAL_$I)|(_OBJC_)" | $(SED) "s/ _/ /" > $(TMPFILE)) ; \\
$(ECHO) "LIBRARY $(NAME).dll" > $(GENERATED_DEF_FILE) ; \\
$(ECHO) "EXPORTS" >> $(GENERATED_DEF_FILE) ; \\
$(CAT) $(TMPFILE) | $(EGREP) "(SECT2)|(.objc_c)" | $(AWK) '{printf "\\t%s CONSTANT\\n", $$NF}' >>
$(GENERATED_DEF_FILE) ; \\
$(CAT) $(TMPFILE) | $(EGREP) -v "(SECT2)|(.objc_c)" | $(AWK) '{printf "\\t%s\\n", $NF}' >>
$(GENERATED_DEF_FILE) ; \\
$(RM) $(TMPFILE) ; \\
$(ECHO) "done"; \\
fi
endif
```

Reference: 72815

Issue: Multiple Control-N's in rapid succession causes Project Builder to lock up

Description: Typing a series of Control-N characters one after the other causes Project Builder to display the Open Project panel. Clicking Cancel causes Project Builder to freeze. At this point, it can only be killed from Windows NT's Task Manager.

Reference: 72715

Issue: BooksOnline doesn't work when accessed from Project Builder on NT 3.51

Description: If you select BooksOnline from ProjectBuilder's Help menu on a system running Windows NT version 3.51, you'll discover that the links on the BooksOnline page appears to be broken. BooksOnline works correctly, however, if you invoke it from the OPENSTEP Enterprise program group.

Workaround: Access BooksOnline from the OPENSTEP Enterprise program group.

Reference: 72554

Issue: Source code versioning is error-prone with derived project files.

Description: Sometimes it might be difficult to keep derived project files (**Makefile** and *app***.iconheader**) and original project files (**PB.project**) synchronized in source-control situations. You can face a similar issue when you modify **Makefile** separately from **PB.project** and need to "back out" your changes.

Project Builder contains in its Resources directory a command-line tool that generates derived files from **PB.project**. The proper invocation of this tool, called FileWriter, is:

/NextDeveloper/Apps/ProjectBuilder.app/Resources/FileWriter -project [*path/*]PB.project -makefile [*path/*]Makefile [-iconheader *iconHeaderFile*]

Note that the **-iconheader** option is meaningful only on Mach.

Reference: 72542

Issue: LIBRARY_PATHS makefile variable not passed to linker

Description: If you add libraries to a project using Project Builder's Project->Add Files command, or if you add entries to the Library Search Order list in the project inspector, the LIBRARY_PATHS variable is created in the Makefile. However, this variable is not passed to the linker.

To work around this issue, assign the following value to the OTHER_LDFLAGS variable in **Makefile.preamble**:

OTHER_LDFLAGS = $(LIBRARY_PATHS)

Reference: 72344

Issue: Installation of **.lib** file in static library projects

Description: In static library projects (LIBRARY_STYLE=STATIC), the **.lib** file gets installed twice, once in the INSTALLDIR and once in the location specified by IMPORT_LIBRARY_DIR in **Makefile.preamble**. To have the **.lib** file installed only in the desired location (INSTALLDIR), set IMPORT_LIBRARY_DIR to INSTALLDIR.

Reference: 71975

Issue: The **libtool** utility does not recognize the **-read_only_relocs** flag.

Description: A serious side effect of this bug is that this option causes **libtool** to ignore all subsequent flags. Currently there is no workaround except for not using this flag.

Reference: 69061

Issue: Builds will fail if NEXT_ROOT has been modified to contain backward slashes.

Description: The installer specifies NEXT_ROOT with forward slashes, for example:

C:/NeXT/

Do not edit this variable in the Environment section of the System control panel, even if to change the forward slashes to backward slashes.

Reference: 72307

Issue: The Microsoft linker emits a bogus warning about CONSTANT keywords.

Description: When you build framework projects, you will see messages complaining about the use of CONSTANT keywords in your **.def** file. Because of issues with the linker, CONSTANT should be used in place of DATA. You can ignore the warnings.

Reference: 72308

Issue: Automatically generated **.def** files do not include public exported functions and variables.

Description: In creating the **.def** file for frameworks and dynamic libraries (DLLs), Project Builder handles Objective-C symbols and data but not functions or variables. If you have functions in your framework that need to be callable from the outside, or variables that should be externally accessible, define certain macros in a header file and then use them in your function declarations. These macros allow you to export non-static functions and variables from the DLL (*FRAMEWORK*_EXTERN) or to declare them as **extern**, but not exported (*FRAMEWORK*_PRIVATE_EXTERN).

Make a header file for each framework with functions and variables you wish to export (*Framework*Defines.h), and in it write the following macros (substitute your own

framework name for *FRAMEWORK*):

```
#ifndef _FRAMEWORKDEFINES_H
#define _FRAMEWORKDEFINES_H
#endif

#if defined(WIN32)

//
// For Windows
//

#ifndef _FRAMEWORK_BUILDING_DLL
#define _FRAMEWORK_WINDOWS_DLL __declspec(dllimport)
#else
#define _FRAMEWORK_WINDOWS_DLL __declspec(dllexport)
#endif

#ifdef __cplusplus
#define FRAMEWORK_EXTERN _FRAMEWORK_WINDOWS_DLL extern "C"
#define FRAMEWORK_PRIVATE_EXTERN extern "C"
#else
#define FRAMEWORK_EXTERN _FRAMEWORK_WINDOWS_DLL extern
#define FRAMEWORK_PRIVATE_EXTERN extern
#endif

#else

//
// For MACH and PDO
//

#ifdef __cplusplus
// This isnt extern "C" because the compiler will not
// allow this if it has seen an extern "Objective-C"
#define FRAMEWORK_EXTERN extern
#define FRAMEWORK_PRIVATE_EXTERN __private_extern__
#else
#define FRAMEWORK_EXTERN extern
#define FRAMEWORK_PRIVATE_EXTERN __private_extern__
#endif

#endif
```

You need to import this header in all your other headers and declare your function prototypes accordingly. Then, before building your framework, specify "-D_*FRAMEWORK*_BUILDING_DLL" in the Compiler Flags field of the Build Attributes inspector.

Additionally on Windows, Project Indexing doesn't work and, because of this, the ªDefinitionsº and ªReferencesº searches in the Project Find Panel don't work either.

Known Issues in This Release < Mach and Windows

Other issues with this release on both Mach and Windows are the following:

· When Escape is defined as the Meta key in Preferences (and Tab is bound to

indentation), Escape-/ (slash) does not cycle through all possible expansions (50288).

· Queries in the Project Find panel for macro references do not find existing uses of macros (55187).

· Comparing autosaved and last-saved versions of files in FileMerge does not work (56892).

· Header files in Framework projects do not become public by default (56924).

· Renaming a subproject doesn't rename the directory the subproject lives in (57211).

· You cannot switch to a second view when no files have been loaded into the code editor (57698). To workaround this issue, after selecting a text file in the upper browser, type Command-1 followed by Command-2. This switches back to a single view, and then splits it again so it can double the text file in the upper view.

· Indexing generates an error if a header file is empty (57790).

· Build errors in tear-off windows appear in the main editing view (58863).

· An exception may be raised when running a new executable (that is, after selecting a different executable from the Launcher Options panel) with no arguments selected when the previous executable had arguments. The workaround is to deselect the argments from the old executable before selecting the new one.

· Breakpoints on functions or methods without debugging information aren't displayed in the breakpoint inspector. (67785)

· Moving a breakpoint icon doesn't update the line number in the Breakpoint inspector. However, the location of the breakpoint is updated in **gdb**. (67712).

TextEdit

TextEdit is a new application based on the new text system. In addition to the standard text editing features in the 3.3 Edit application, it provides:

· "Wrap to Page" mode. This mode causes the document to be wrapped to the current page size (as opposed to the window size), and thus shows you a simple WYSIWYG representation of your pages. This mode also allows zooming.

· Support for new text object features such as kerning, ligatures, and baseline offsets.

· Ability to read/write plain text files in different 8-bit character encodings and Unicode. Coupled with the Kanji support in the new text object, you can read/write/edit Kanji files created by 3.3J or 4.1J. (You will need Kanji fonts and input manager.)

The alternate encoding to apply to a file is specified by a popup in the Open or Save panels.

The default item, "Default," tells TextEdit to use either the default 8-bit encoding of the system or Unicode. Other choices let you select different encodings. You can also set the default setting of this popup via the Preferences panel.

Sources to TextEdit are available with the developer software, in **/NextDeveloper/Examples/AppKit/TextEdit**.

Known Issues in This Release

Reference: 58895

Issue: Tabs in plain text mode

Description: Tabs in a plain text window are by default set to a multiple of the font width. However this setting isn't readjusted when the font is changed, so the tabs get out of sync.

Workaround: Either don't change the font of a plain text window on the fly, or change it via defaults and restart the application.

Reference: 58741

Issue: Displaying unrenderable characters too slow

Description: When given characters which are not valid for the current font, the text system might spend too much time trying to find a font to render them. This means that files with random binary data could take a long time to load.

Workaround: Avoid binary files. A few binary characters are probably fine, and will be displayed as boxes, but a total binary file (for instance, an executable), could keep TextEdit busy for a while.

Reference: None

Issue: Encoding popup in Open/Save panels not available under NT3.51

Description: Because accessory views aren't supported under NT3.51, there is no encoding popup in the Open/Save panels.

Workaround: You can use the popup in the Preferences panel to set the default choice for the popup, which will then be used when files are opened or saved.

In addition, please refer to the Application Kit release notes for the new text system bugs.

TrueType Fonts

This file contains release notes for the 4.1 TrueType font support. TrueType font support was introduced with the 4.0 release.

ttf2font

True Type font files can be converted to font files which are usable by the OpenStep Window Server and the Application Kit. The **ttf2font** command line utility converts a TrueType font file to a font directory which contains the Postscript Type 42 font definition as well as the Adobe Font Metrics file. The command line syntax is as follows

ttf2font [-o *outputPath*] *trueTypeFont.ttf*

where the **-o** option is used to identify the directory where **.font** files will be placed

As an example, the following command line converts the TrueType font file TIMES.TTF and places the resulting **.font** directory into the **~/Library/Fonts** directory using standard encoding:

ttf2font -o ~/Library/Fonts TIMES.TTF

Advanced options are also available and are as follows:

-v Verbose mode. All errors and messages are printed to standard output.

-e *encoding* Use a specific encoding scheme, where *encoding* is one of:

nextstep Nextstep encoding
standard Abobe standard encoding
isolatin1 ISO latin 1 encoding
symbol Symbol encoding
font Font-specific encoding

Encoding schemes stored within the font file are font-specific encoding schemes. The font vendor is responsible embeding a suitable encoding scheme for your platform.

Specifiying an encoding scheme other than **font**, causes the program to ignore the font specific encoding schemes stored within the file.

-p *platformID*
-s *platformSpecificID* Within a TrueType font file there are several tables which contain font specific encoding schemes. These encoding schemes are organized by platform; there can be more that one encoding scheme stored within a file, each identifying a different platform.

These options allow you to override the default platform. The *platformID* and *platformSpecificID* pair must identify a valid encoding scheme store within the file. The **-v** option allows you to observe the platform encoding schemes stored within the file. See *The TrueType Font Format Specification* for more details.

If no encoding option is specificed and the font does not contain alpha-numeric characters, the best font-specific encoding scheme is used. Otherwise, the default encoding is **standard**

encoding.

If no encoding schemes yield any glyph-to-character mappings, then all glyphs are linearly mapped to character codes 32 through 255.

Known Issues in This Release

· Printing of TrueType fonts can only performed on printers with Postscript interpreter versions greater that 2013 which have Type 42 font support.

· The TrueType fonts MS Line Draw and Symbol MT do not work.

Window Server

Notes Specific to Release 4.0

New Features in 4.0 (General)

A new release of DPS from Adobe (2015) has been integrated.

Better Font Support

This release includes support for CID fonts and TrueType (type 42) fonts. You can use the **ttf2font** conversion program to convert TTF files to a format suitable for use with OPENSTEP. (see TrueType release notes for details).

New Features in 4.0 (Mach Only)

Native 16-bit color support

We have implemented native support for RGB:555/16 framebuffers on Intel platforms . In previous releases, rendering to these framebuffers actually only used 4 bits per channel of precision (12 bits total). This new rendering implementation gives much improved color fidelity on RGB:555/16 displays. The only difference developers might notice is that **readimage** will now return 24 bit images from RGB:555/16 displays.

Backing Store Compression

The WindowServer now uses compression to conserve memory for window backing stores. Windows which have not been recently referenced are compressed. This leads to a slight increase in CPU usage by the WindowServer with the gain of significantly reducing memory requirements for window backing stores.

NXHosting

NXHosting is supported from 3.3 applications to the 4.0 WindowServer. NXHosting from 4.0 to 3.3 is not supported.

New Features in 4.0 (Window NT Only)

On Windows NT the WindowServer plays a different role in OPENSTEP than it does under Mach. It is not involved in Window region management or event distribution. Instead, it serves as a "drawing server" which interprets PostScript and provides backing stores for Windows windows. OPENSTEP applications still rendezvous with the WindowServer to do their drawing, but instead of creating windows via the WindowServer, they use WIN32 to create windows directly. The application then passes the Windows window number to the WindowServer and a backing store is created. All drawing is occurs in the WindowServer, and when **flushgraphics** is called, the backing store is transferred to the display via GDI's BitBlt.

NXHosting

NXHosting is not supported (inbound or outbound) on Windows NT.

Pixel Formats

We support drawing into the following DIB formats for backing stores:

8bit color (includes System Palette entries)
555 16bit color
565 16bit color
32 bit color

In Windows 16 color VGA mode, we use 8bit color backing stores. This mode is supported for diagnostics, but is not recommended and has some really bad color artifacts.

In Windows 32bit color mode, our rendering code currently does not gamma correct. This means that OPENSTEP applications will look dark, unless you display adaptor supports gamma correction in hardware.

Published Date: Feb 20, 2012

EOF 2.0 NT ODBC Adaptor Patch

This patch is version number 13.3. The ODBC Adaptor shipped with the EOF 2.0 release was version 13.1. You can find the version of the ODBC adaptor in the title of the ODBC Login panel. This patch is **only** for use with EOF 2.0 installed on Windows NT as part of OPENSTEP or WebObjects.

The WebObjects Current Patch List, **TIL article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read these documents if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.

Installing the ODBC Adaptor Patch

Download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/patches/2.0/ODBCAdaptorPatch_NT.tar.gz

In order to install this patch, you will need to use gzip and gnutar to expand the attachment. You'll end up with a supplemental NextLibrary directory, which you can then copy into your existing NextLibrary directory. You need to log in as Administrator to install this patch.

Caution: The patch will replace **\\NextLibrary\\Executables\\ODBCEOAdaptor.dll** and the entire **\\NextLibrary\\Frameworks\\ODBCEOAdaptor.framework** directory, so you should take care to create a back up these items before installing over the top of them.

Assuming you have **ODBCAdaptorPatch_NT.tar.gz** on c:/tmp and are using the Bourne Shell which ships with WebObjects or OPENSTEP Enterprise, here are the commands to install the patch:

```
$ cd $NEXT_ROOT
$ mv NextLibrary/Executables/ODBCEOAdaptor.dll NextLibrary/Executables/ODBCEOAdaptor.dll.bak
$ mv NextLibrary/Frameworks/ODBCEOAdaptor.framework NextLibrary/Frameworks/ODBCEOAdaptor.framework.bak
$ gzip -d -c c:/tmp/ODBCAdaptorPatch_NT.tar.gz | gnutar -xvf -
```

EOF ODBC Adaptor Patch Release Notes

Problems Fixed in This Patch Update

The following problems have been fixed in this update:

ODBC EOAdaptor

References: 73072

Problems: Attempts to save EO's that use the custom value capability will fail. an example is using the Movies example application and adding an image to a Talent. When you attempt to save the change, you will get an error: "NSImage does not respond to selector length".

Fix: The ODBCByteColumn and ODBCLongByteColumn classes now have a corrected implementation of takeInputValue: that calls adaptorValueByConvertingAttributeValue: to correctly convert the custom value into a NSString or NSData for storage purposes. See the EOF 2.0 release notes for the corrected implementation.

References: 73239

Problems: Attempts to reverse engineer a model from an existing ODBC datasource will fail with a dialog with the following message: "An unexpected error has occured which may cause EOModeler to malfunction. You may want to save copies of your open documents and quit EOModeler. Error: invalid name"

Fix: During model reverse engineering, the ODBC method desribeModelForTableNames is more careful to create valid names for it's EOEntities and EOAttributes. The previous adaptor just used the table name or column name and these names aren't always valid names for model objects. Additionally, while generating SQL we now add quotes around names of tables and columns if they contain any characters that aren't letters of the alphabet.

References: 74252

Problems: Creating an EOModel from a Microsoft Access database that uses replication will leave the s_GUID, s_Generation, and s_Lineage columns even though these aren't useful.

Fix: The reverse engineering code now looks for this column in Access databases, and will remove them from the list of classProperties and attributesUsedForLocking. If you want these columns included in your model, just mark them as class properties and/or attributes used for locking.

Published Date: Feb 20, 2012

EOF 2.0 Release Notes

This file contains the most up-to-date release notes for release 2.0 of Enterprise Objects Framework.
This article has been archived and is no longer updated by Apple.
The MachOS version of this release is 3-way fat; it can be used to develop software for NeXT, Intel, and SPARC. The OpenStep for Windows version of this release can be used to develop software for Intel machines running Windows NT.

Notes Specific to Windows NT Developers

References to filenames in this document use UNIX format. On Windows NT, you can interpret these by reading backslashes for the slashes and adding the installation directory (**c:\\NeXT** by default) to the beginning. For example, **/NextLibrary/Documentation** on Windows NT is **c:\\NeXT\\NextLibrary\\Documentation**.

In order to use Enterprise Objects Framework on Windows NT, you must purchase appropriate client libraries from your database vendor.

Here's what you need:

Oracle

Phone: (800) 542-1170
Ask for SQLNET V2.2 for PC/Windows NT

The Oracle adaptor on NT requires the Oracle 7.2 Client Library. It won't work with the 7.1 libraries.

Sybase

Phone: (800) 685-8225
Ask for: Open Client Runtime for PC/Windows NT

Informix

Phone: (800) (800)331-1763
Ask for: ESQL/C for Win32

Converting Release 1.x Applications to 2.0 (Mach only)

Enterprise Objects Framework 2.0 for Mach includes **tops** scripts for performing source code conversion of your Enterprise Objects Framework 1.x applications to 2.0. Because of the magnitude of changes in the architecture of the 2.0 release, these scripts are by no means sufficient for automatically converting your application. However, once you've decided how the structure of your application will evolve to take advantage of the new architecture, these scripts can be useful in identifying and sometimes making specific API conversions. The scripts, along with instructions for running them, can be found in **/NextDeveloper/EOF1xTo2Conversion**.

For more information on the differences between Enterprise Objects Framework 1.x and Enterprise Objects Framework 2.0, see the document *Differences Between Enterprise Objects Framework 1x and 2.0.* You can find it on-line in **/NextLibrary/Documentation/EnterpriseObjects/1x_To_2**.

Installing the Examples

This release provides on-line examples to help familiarize you with Enterprise Objects Framework 2.0. These examples are located in **/NextDeveloper/Examples/EnterpriseObjects**. Installing the examples involves these steps:

· Setting up users and databases on your database server for the example databases.
· Installing the example directory.
· Populating your database server with example data.

Setting up Database Accounts

The Enterprise Objects Framework 2.0 examples use two sets of tables: Movies and Rentals. Some examples use just one of the these databases, while others use both. The multi-database support in Enterprise Objects Framework 2.0 makes it possible for you to install these databases in three different configurations:

· Both sets of tables together in a single user/database.
· Each set of tables in its own user/database on the same database server.
· Each set of tables on its own database server (for example, Movies on Informix, Rentals on Oracle).

Depending on your desired setup, you use the tools available with your database server to set up one or two new user/databases. For example. on Sybase you might create a new database on your server called ªMoviesº and login with the user ªsaº. On Oracle you might create a new user with the name ªMoviesº. Once you have set up these accounts, you're ready to install the examples.

Copying the Example Directory

To configure and build the examples you need to copy the example directory to a writable area in your file system. You can do this by copying the **/NextDeveloper/Examples/EnterpriseObjects** folder into your home directory (or any other directory writable by you).

Configuring the Example Models

The model files used by the examples must be configured to use your adaptor and server. To configure the examples, run the **configure_examples** program in your copy of the examples directory. It will ask you for the name of the adaptor you wish to use (Informix, Oracle, Sybase, and so on) and for the login information for your database. It will then convert the example models for your server.

Populating the Databases

Now that the examples are configured, you can fill your example databases with sample data. The **install_database** tool in the **DatabaseSetUp** directory will connect to your databases, add the example tables, and fill them with data. If you later wish to remove the data, simple run the **drop_database** tool.

Building the Example Programs

With your example projects installed and your database filled with data, you are ready to build and run the examples. To do this, in a command shell **cd** to your example directory and type **make all**. This performs a **make install** on **BusinessLogic.framework** and **EOExtensions.framework** to put them in **/LocalDeveloper/Frameworks**, where they are shared by many of the other examples. It then makes all of the examples applications.

Note: The **/LocalDeveloper/Frameworks** directory must be created and writable by you in order to build the examples. On Mach this can be accomplished by using **su** to become the superuser and then executing the following commands:

```
mkdirs /LocalDeveloper/Frameworks
chmod a+w /LocalDeveloper/Frameworks
```

Enterprise Objects Framework Defaults

This section lists the user defaults for which Enterprise Objects Framework checks and changes its behavior.

Defaults in the NSGlobalDomain

To change these defaults, issue a command such as the following from a shell:

defaults write NSGlobalDomain EOAdaptorUseBindVariables NO

EOFDebugEditingContext
Default is NO.
EOControl Layer will log every time an object is changed.

EOFDebugUndo

Default is NO.
Logs each time something is pushed on or popped off an undo list.
Also logs in [_EOUndoStack dealloc]

EOAdaptorDebugEnabled
Default is NO.
Logs for connection attempst, all transaction activity (begin, rollback, commit), and SQL statements (SELECT, UPDATE, etc.).

EOProjectSourceSearchPath
An optional array of paths in which EOAccess will search for framework project directories that contain models.

EOAdaptorUseBindVariables
Default is YES.
Controls whether or not the SQL generation process will use bind variables (for Oracle and Informix).

EOOracleTableNamesSQL
SQL statement (default is "SELECT TABLE_NAME FROM USER_TABLES ORDER BY TABLE_NAME")
If you would like the model re-engineering process to look at a subset of the tables in the given schema, you can provide your own SQL statement like "SELECT TABLE_NAME FROM USER_TABLES ORDER BY TABLE_NAME where table_name not in ('MY_USELESS', 'FOO')".

EOOracleUseNoWaitLocks
Default is NO.
Controls whether Oracle uses NOWAIT locks.

EOSybaseInterfacesFile
Default is unset.
If this default is set, the SybaseAdaptor will initialize the client library to run with this interface file. This default is not applicable on Windows NT.

EOSybaseTableNamesSQL
This default can be used to change the default SQL used to determine the tables that will be analyzed in creating a new model.
Default is "select name from sysobjects where type = 'U' or type = 'V'".

EOSybaseAttributeSQL
SQL statement used to get the attribute information for a given table.
Default is "select a.name attr_name, b.type attr_type, b.name type_name, b.allownulls allownulls, c.type primary_key, a.length width, a.prec prec, a.scale scale from syscolumns a, systypes b, syskeys c where a.id = object_id('%@') and a.id *= c.id and (a.colid *= c.key1 or a.colid *= c.key2 or a.colid *= c.key3 or a.colid *= c.key4) and (c.type = 1 or c.type is null) and a.usertype = b.usertype and datalength(a.name) > 0 order by a.name".

EOSybaseRelationshipSQL
Default is "select a.keycnt, b.name tname, c.name cname, d.name dtname, e.name dcname from syskeys a, sysobjects b, syscolumns c, sysobjects d, syscolumns e where (b.type = 'U' or b.type = 'V') and a.depid is not null and a.depid > 0 and b.id = a.id and b.id = c.id and ((c.colid = a.key1 and e.colid = a.depkey1) or (c.colid = a.key2 and e.colid = a.depkey2) or (c.colid = a.key3 and e.colid = a.depkey3) or (c.colid = a.key4 and e.colid = a.depkey4)) and d.id = a.depid and d.id = e.id order by b.name, d.name".

EOSybaseStoreProcedureSQL
Default is "select name, id from sysobjects where type = 'P'".

EOSybaseStoredProcedureDetailsSQL
Default is "sp_sproc_columns %@".

InformixINFORMIXSERVER
No default value.
The name of the Informix server.

InformixInformixTableNamesSQL
This default can be used to change the default SQL used to determine the tables that will be analyzed in creating a new model.
Default is "select tabname, owner, tabid from informix.systables where (tabid > 99) and (tabname <> 'ANSI') order by tabname".

Defaults in the EOModeler Domain

To change these defaults, issue a command such as the following from a shell:

defaults write EOModeler DisableInheritenceCheck YES

BundlesToLoad
If you write extensions to EOModeler, you can get EOModeler to load them by setting this default. This default is an array, so remember to include parentheses when you set it. For example:

defaults write EOModeler BundlesToLoad "(/NextDeveloper/Apps/EOModeler.app/Resources/DiagramEditor.bundle, $HOME/eoexamples/ModelerBundle/ModelerBundle.bundle) "

RECORD_FETCH_LIMIT
Default is 100.
For the Data Browser in EOModeler. This controls how many rows to fetch before asking users if they want to fetch all, fetch another n rows, or just stop now.

Consistency Checks
All of these have the default NO.
DisableConsistencyCheckOnSave
DisableExternalNameCheck
DisableInheritenceCheck
DisablePrimaryKeyCheck
DisableRelationshipCheck
DisableStoredProcedureCheck

SkipBeautifyNamesOnModelCreation
Default is NO.
Setting this default to YES will cause EOModeler to leave the entity names and attribute names matching the exact names of their corresponding database objects (including the case).

DisableAdvancedOptions
Default is NO.
If set to YES, the EOModler runs in "Simplified mode". The advanced inspectors don't appear, the choices of table view columns is limited, and so on.

New Features for 2.0

· A new class, EOEditingContext, that manages an object graph and coordinates change notification. This class is also responsible for change tracking and undo. One EOEditingContext can also be nested inside another, thereby supporting nested in-memory transactions.

· Support for multiple databases.

· NSDecimalNumber, a class that provides a lossless representation of decimal numbers.

· User interface formatting and validation.

· Updatable relationships: Your business logic may now update relationship pointers in the object graph and the framework will automatically generate the appropriate foreign keys changes to affect the change in the database.

· Referential integrity rules. You can explicitly add referential integrity rules in EOModeler. They will be enforced by Enterprise Objects Framework in your running application.

· Improved support for modeling inheritance.

· Enterprise object±based validation.

· Update support for flattened attributes.

· Schema creation. You can use the Generate SQL command in EOModeler to generate SQL for a selected entity or entities.

· Automatic primary key generation: The Framework can now automatically assign primary keys for newly inserted objects.

· Structured qualifiers<that is, qualifiers are now independent of database and SQL.

· Incremental model loading for improved performance. Models now consist of an **.eomodeld** directory in which each entity has its own file. Entity descriptions are loaded into your application only as needed.

· Support for Informix servers.

· An ODBC adaptor (Windows NT only).

· Improved support for Oracle stored procedures.

· Reverse engineering of primary keys and relationships on all supported databases (Informix, Oracle, and Sybase). Enterprise Objects Framework can now read this information from the database and incorporate it into a model.

· The Sybase adaptor is now based on CT-Lib.

· The ability to edit the UserInfo dictionary in EOModeler.

For more discussion of these features, see the document *Differences Between Enterprise Objects Framework 1x and 2.0.*

New Features Shared with Enterprise Objects Framework 1.2

· An Informix adaptor is included in this release.

· Adaptors are now frameworks. Just as with the old bundle-based adaptors, framework adaptors can be dynamically or statically linked. If you need to reference a class defined in a particular adaptor from your application code (for example, the InformixChannel class), you have to add the adaptor to the Frameworks list for your project.

If you have custom adaptors that you're converting to 2.0, you need to convert them into frameworks. If you do this, note that you may encounter issues linking to the client libraries that weren't present when you were loading your adaptor as a bundle. For example, you can't use common symbols. If you use undefined symbols, you need to set a flag in the linker to tell it to ignore those symbols.

· EOAdaptor's use of **adaptor.info** has been removed. Instead, the **Info-*platform*.plist file** from the adaptor's bundle is consulted for the adaptor class name and adaptor major version number. The key names are as follows:

EOAdaptorMajorVersion
EOAdaptorClassName

To add key-value pairs to the infoDictionary, add an ASCII property list file named **CustomInfo.plist** to the supporting files category of your project. The project makefiles will automatically merge this into the **Info.plist** that is derived from your project.

· The following Enterprise Objects Framework 1.1 classes have been renamed and moved into the AppKit: NXTableView (renamed to NSTableView), and NXImageView (renamed to NSImageView).

· EOApplication is obsolete. NSApplication now manages the autorelease pool.

Login Panel Loading Changes

The Enterprise Objects Framework version 1.2 and 2.0 handle login panels differently than version 1.1 in order to factor them into separate bundles, thereby eliminating any link dependency on the AppKit in both the adaptors themselves and in EOAccess. This change allows a single adaptor binary to be used in both OpenStep for Windows and D'OLE. To convert your Enterprise Objects Framework 1.1 adaptor to the new API you must:

· Create a new bundle subproject called "LoginPanel" in your adaptor project, and move the login panel source files and nib file there.

· Remove the AppKit from the list of frameworks for the main bundle and add it (along with EOAccess and Foundation) to the **LoginPanel.bproj**.

· Change your LoginPanel class to subclass from EOLoginPanel rather than NSPanel.

· Change your login panel nib file so that the login window is a subclass of NSPanel (not your EOLoginPanel subclass). Change your file's owner to be the EOLoginPanel subclass.

· Implement - (NSDictionary *)runPanelForAdaptor:(EOAdaptor *)adaptor validate:(BOOL)validate
See **/NextDeveloper/Examples/EnterpriseObjects/FlatFileAdaptor/LoginPanel.bproj/ FlatFileLoginPanel.m** for an example implementation).

New Methods and Behavior

For a description of how Enterprise Objects Framework 2.0 differs from the preceding releases, see the document *Differences Between Enterprise Objects Framework 1x and 2.0.* See **/NextLibrary/Documentation/EnterpriseObjects/1x_To_2**.

Locating the Documentation for this Release

The documentation for this release is provided in RTF (readable on Mach only) and in PDF format to be readable (and printable) on all platforms. On Windows NT, documentation is available in the ªOpenStep Books Onlineº item of the OPENSTEP Enterprise program group. You can also find the documentation in the following on-line locations:

· The *Differences Between Enterprise Objects Framework 1x and 2.0* document describes how the product has changed between the 1x and 2.0 releases. See **/NextLibrary/Documentation/EnterpriseObjects/1x_To_2**.

· The *Enterprise Objects Framework Developer's Guide* provides a conceptual overview of the product. In addition to the hard copy book, a pre-production version of the book is provided on-line in PDF format. See **/NextLibrary/Documentation/NextDev/EnterpriseObjects/Guide**.

· The *Enterprise Objects Framework Reference* includes class specifications for the Enterprise Objects Framework classes. Reference documentation is located in **/NextLibrary/Frameworks** in one of these locations:

/EOAccess.framework/Resources/English.lproj/Documentation/Reference
/EOInterface.framework/Resources/English.lproj/Documentation/Reference
/EOControl.framework/Resources/English.lproj/Documentation/Reference

If You Need a PDF Reader...

If you need a PDF Reader, you can download one from one of the following web locations:

· For Windows or Solaris: **http://www.adobe.com/acrobat/**
· For NEXTSTEP: **http://www.BITart.com/PDFView/**

Other Documentation

There are other documents that may provide useful information to you, depending upon your application:

· The *OpenStep Conversion Guide* discusses how to use the automated conversion process to convert applications to OpenStep. See **/NextLibrary/Documentation/NextDev/Conversion/ConversionGuide**.

Known Issues in Release 2.0

Enterprise Objects Framework

These issues exist in this release of Enterprise Objects Framework:

Reference: 73506

Issue: Adding categories to the concrete adaptor classes (such as SybaseAdaptor) breaks the login panel on NT.

Description: If you add a category to a concrete adaptor class, whenever your application encounters an invalid connection dictionary the login panel won't appear.

Workaround: If you add a category to a concrete adaptor class, subsequently invoking **bundleForClass:** returns the bundle in which your category lives. Unfortunately,
Enterprise Objects Framework uses this method to load the LoginPanel bundle. To work around this issue you need to copy the **LoginPanel.bundle** from the adaptor resources directory (such as **SybaseEOAdaptor.framework/Resources**) into the resources directory of the application or framework to which you added the category.

Reference: 73506

Issue: EOActionAssociation doesn't present an error when it's given a bad selector.

Description: If the user types the wrong selector for the action key, the action association simply does nothing when the button is pressed. It should instead raise an exception or log so that developers have a better chance of detecting the typo.

Workaround: When a button wired with an EOActionAssociation doesn't trigger the expected behavior in an application, double-check that the key exactly matches the selector name.

Reference: 73448

Issue: When you send an EOEditingContext an **insertObject:** message immediately followed by a **deleteObject:** message, the EOEditingContext does not forget the object.

Description: Deleting newly inserted objects from an EOEditingContext does not remove them from the registered objects list. This is an issue because they can then be edited (for example, a relationship they are set on can be reset, causing the reverse, outbound relationship to be updated). Editing these objects puts them in the updated objects list, but they don't have a global ID, so the EOEditingContext raises an exception when it is sent **saveChanges** (this is good, because the deleted objects shouldn't be in the updated list in the first place).

Workaround: Send the EOEditingContext a **processRecentChanges** message before invoking **deleteObject:**.

Reference: 73414

Issue: The EODisplayGroup delegate method **displayGroupDidChangeSelection:** isn't invoked if a different object is selected under the same selection indexes.

Description: The EODisplayGroup delegate method, **displayGroupDidChangeSelection:** is invoked only when the list of selected *indexes* changes, not when the list of selected *objects* changes. So if the selection is at index 0 and a new object is inserted at index 0 and selected, the delegate is not called. This can be an issue in an inheritance application like Inventory, which displays a different sub-panel depending on the class of the selected object. When inserting a new object, the selection index may stay the same but a different object (the new one) is selected. If the new object is of a different class than the old, an exception will likely result when the old (inappropriate) sub panel refreshes.

Workaround: The delegate can register as an observer of the EODisplayGroup so that it gets **subjectChanged** messages when the contents have changed. It can then check that the **selectedObjects** array has changed, and if so forward itself the **displayGroupDidChangeSelection:** message.

Reference: 73219

Issue: Setting a delegate on an EOEditingContext that doesn't implement the method **editingContext:shouldPresentException:** causes exceptions to not be presented.

Description: If an EOEditingContext is assigned a delegate but that delegate doesn't implement **editingContext:shouldPresentException:**, then the EOEditingContext acts as if the method was implemented to return NO. This is incorrect; it should have the same behavior as when the delegate is not set: exceptions should be presented (via the message handler).

Workaround: When setting an EOEditingContext delegate, always implement **editingContext:shouldPresentException:** to return YES.

Reference: 72933

Issue: When the user framework adds a category to Enterprise Objects Framework classes, Enterprise Objects Framework fails to find **License.table** file.

Description: Enterprise Objects Framework verifies that certain features are licensed by looking up a **License.table** file in the the Resources directory of the EOAccess bundle. If a user application includes a framework that adds categories on certain Enterprise Objects Framework classes, Enterprise Objects Framework will incorrectly look for the license file in the user framework rather than EOAccess, resulting in Enterprise Objects Framework considering the feature as unlicensed

Workaround: Copy the **License.table** file from **/NextLibrary/Frameworks/EOAccess.framework/Resources** into the resources of the framework project that adds the category to Enterprise Objects Framework. *** Note that it is in violation of your software license agreement to use this technique to enable features of Enterprise Objects Framework for which you are not legally licensed.

Reference: 72903

Issue: Undo/Redo doesn't record unsuccessful deletions correctly

Description: When the deletion of an object fails due to a deny rule, the undo manager records an empty undo group. This means that although nothing actually happened during the operation, the operation will need to be undone before previous operations can be undone. For interactive programs this is not normally an issue since users rely on visual cues to determine how many times to undo. However, this may be an issue for code that programmatically performs undo operations.

Workaround: None.

Reference: 72795

Issue: The "New Editor..." menu item is missing on NT .

Description: The "New Editor" menu item is not present in the NT nib file. "New Editor" allows you to have two different windows open on the same document. This is helpful when you need to compare two entities.

Workaround: Since the implementation exists in EOModeler, you can actually just edit EOModeler's main nib on NT and get this working:

1. Go to $(NEXT_ROOT)/NextDeveloper/Apps/EOModeler.app/Resources/English.lproj
2. Make a backup copy of EOModelerNT.nib. In a shell type:
cp -r EOModelerNT.nib EOModelerNT.nib.original
3. Use Interface Builder to open the nib.
4. Use the "Classes" folder tab to add the **newEditor:** action to the EOModeler class.
5. Add a "New Editor" menu item in the "Tools" menu. Put it just above the "Preferences..." item.
6. Create the target/action connection from this new menu item to the **newEditor:** action in "File's Owner".

Reference: 72714

Issue: In-memory descending sort on a property than contains **nil**s does not work correctly.

Description: When you use EOSortOrdering to perform a descending in-memory sort of an array of objects in which the sorted property may contain **nil**, objects containing **nil** are sorted inconsistently.

Workaround: Add the following category to your application:

```
@implementation NSObject (_FIXEOSortOrderingComparison)
- (NSComparisonResult)compareDescending:(id)other
{
NSComparisonResult result;

if (other == [EONull null]) return NSOrderedAscending;
result = [(NSString *)self compare:other];
return (result == NSOrderedSame) ? result : -result;
}
@end
```

Reference: 72619

Issue: EOAdaptorChannel does not inherit EOAdaptor's delegate.

Description: According to the EOAdaptorChannel class specification and header file, the EOAdaptorChannel's delegate should automatically be kept in synch with its adaptor. However, if an EOAdaptor has been created and assigned a delegate, newly-created EOAdaptorContexts and EOAdaptorChannels are not automatically assigned the delegate. However, if a new delegate is assigned to an EOAdaptor, it's propagated to any of that adaptor's existing contexts and channels.

Workaround: Wait until all of the channels and contexts are instantiated before assigning the adaptor's delegate, or reassign the adaptor's delegate each time a new channel or context is created.

Reference: 72603

Issue: Column appears twice in SQL insert statement.

Description: This happens whenever a sub-entity has a flattened to-one relationship that is also in the parent entity. In this case, the column of the source attribute of the relationship appears twice in the insert statement.

Workaround: Ensure that the source attribute in the flattened to-one relationship in the sub-entity is *not* marked as a primary key, usedForLocking, or as a class property. This workaround has the adverse effect that the attribute will not be used for locking purposes.

Reference: 72531

Issue: EOEditingContext leaks object record structs when forgetting objects.

Description: Whenever an object is forgotten (unregistered) from an EOEditingContext (for example, when releasing the EOEditingContext), an internal structure is leaked.

Workaround: This bug is patched in WebObjects 3.0. OpenStep applications can plug this leak by executing the following statements during application initialization:

```
[EOEditingContext _enableFreeingObjectRecords:YES];
[EOUndoManager _setFreesUndoStacks:YES];
```

Reference: 72527

Issue: Foreign keys are not inserted into database as expected.

Description: In the case where an entity contains an attribute that is not marked as usedForLocking, as a class property, or as a primary key, and the attribute isn't used in any relationship on that entity, then the attribute won't be included in the SQL insert statement.

Workaround: Mark the attribute as used for locking.

Reference: 72483

Issue: To-many relationship properties in newly inserted objects aren't being properly initialized.

Description: Newly inserted objects should automatically get empty arrays assigned to their to-many relationship properties, so that when these properties are subsequently sent an **addObject:** message, everything works correctly.

Workaround: In the **awakeFromInsertionInEditingContext:** method of your enterprise object class, initialize variables that represent to-many relationships with new NSMutableArrays.

Reference: 72269

Issue: You can't tell Enterprise Objects Framework to not undo your changes when delete propagation fails.

Description: The EOEditingContext delegate method **editingContextShouldUndoUserActionsAfterFailure:** is supposed to allow programs to indicate that they do not want user actions undone if a validation or delete propagation error occurs. However, the EOEditingContext undoes the user action regardless of the return value from the method.

Workaround: None.

Reference: 72177

Issue: Deleted objects are still registered in the EOEditingContext after a **saveChanges** operation.

Description: If an object is deleted in the EOEditingContext and then the EOEditingContext is saved, the deleted object isn't forgotten by the EOEditingContext (i.e., sending the EOEditingContext the message **objectForGlobalID:** should return **nil**, but it doesn't).

Workaround: Fortunately, this should have no affect on most applications. However, if you need to work around this issue, remember the deleted objects in the **editingContextWillSaveChanges:** delegate, and then invoke **forgetObject:** for each object after a successful save.

Reference: 72027

Issue: PDO: EOKeyValueCoding is broken for doubles on HPUX

Description: EOKeyValueCoding is not working correctly for accessor methods that set and return doubles on HPUX under PDO 4.1 (and previous releases). This means that users cannot correctly fetch enterprise objects that have class properties with accessor methods that use doubles.

Workaround: Change your enterprise objects to use NSNumber *, NSDecimalNumber *, or **int** accessors.

Reference: 71553

Issue: EOPickTextAssociation displays an alert panel whenever the '[' character is entered.

Description: EOPickTextAssociation should either escape all substitution characters or wait until a complete expression is typed in before executing. Since it does not, EOQualifier thinks that it has found an illegal pattern and raises an exception, which the EOPickTextAssociation displays in an alert panel.

Workaround: None.

Reference: 70937

Issue: Validation methods don't check relationship optionality.

Description: Relationships can be marked as optional or mandatory in the Relationship Inspector of EOModeler. The validation methods supplied by Enterprise Objects Framework should verify that all relationships that are marked as mandatory have at least one object in them, but this property is ignored.

Workaround: Implement the check in your own validation method.

Reference: 70847

Issue: After disconnecting all EOColumnAssociations from a table view, you can't connect to a different EODisplayGroup.

Description: If the columns are connected via EOColumnAssociations to one EODisplayGroup, disconnected, and then you

attempt to connect a column to a different EODisplayGroup, all of the EODisplayGroup's properties appear as gray in the Inspector-- a connection is not allowed.

Workaround: This is actually a feature! When the first EOColumnAssociation was created, an EOTableViewAssociation was bound to the table itself. This association remains connected to the original EODisplayGroup even after the column has been disconnected, and this connection prevents columns from being connected to a different EODisplayGroup. To make the new connection, click on the table view and disconnect the EOTableAssociation.

Reference: 70260

Issue: Some validation error messages returned by the Framework have not been localized.

Description: Some validation error messages returned by the Framework's default validation methods (such as methods that check that a value doesn't exceed the maximum width specified in its attribute) are not localized.

Workaround: Implement an error handler for use with the EOEditingContext and have that handler look for the localized string in a file that the programmer has created.

Reference: 70049

Issue: EOModelGroup doesn't raise an exception when more than one entity has the same name.

Description: Although it is illegal to have the same entity name in two different models in a model group, EOModelGroup doesn't check to see if this is the case when adding a model.

Workaround: Verify that no two models have the same entity name in them either manually or by writing a method to perform the check.

Reference: 69934

Issue: EOQualifier needs a case insensitive 'like' operator.

Description: EOQualifier needs a case insensitive 'like' operator that works both in memory and in SQL.

Workaround: You can use a pattern like '*[Hh][Ee][Ll][Ll][Oo]*' or you can create a method on the enterprise object that always returns a version in uppercase and use that method as a key in the qualifier.

Reference: 69678

Issue: Enterprise Objects Framework does not insert or delete rows in the database in a way that is compatible with the database's referential integrity constraints.

Description: Enterprise Objects Framework performs its database operations in an order that causes the database's referential integrity constraints to be violated.

Workaround: Implement the **databaseContext:willOrderAdaptorOperationsFromDatabaseOperations:** method on the EODatabaseContext and order the adaptor operations so that they are compatible with the database's referential integrity constraints. For more discussion of this subject, see the section "How Do I Order Database Operations?" in the chapter "Answers to Common Design Questions" in the *Enterprise Objects Framework Developer's Guide*.

Reference: 69670

Issue: When you use the 'like' operator in a format string that's specified as an argument to the EOQualifier method **qualifierWithQualifierFormat:**, the operator is only recognized when it is all lowercase

Description: This method raises an exception when given a format string such as: "name LIKE 'fred'" because it only recognizes the LIKE operator when it is in lower case letters.

Workaround: Use 'like' instead of 'LIKE'.

Reference: 69039

Issue: Alert panel displaying adaptor error is never dismissed.

Description: This occurs whenever an adaptor operation that was invoked from an **awakeFromNib:** method displays an alert panel. The issue is that the entire object graph is not yet instantiated when **awakeFromNib:** is invoked.

Workaround: Database operations should be begun from the **applicationDidFinishLaunching:** method rather than the **awakeFromNib:** method. Of course, this means that any methods that indirectly cause database communication should also be invoked from the **applicationDidFinishLaunching:** method.

Reference: 46679

Issue: All private instance variables should be **@private** or begin with _.

Description: All instance variables in Enterprise Objects Framework should be considered private.

Workaround: Don't access Enterprise Objects Framework instance variables in client programs.

Reference: 46967

Issue: Using delete propagation triggers in database can cause Enterprise Objects Framework to become out of sync.

Description: The use of delete propagation triggers in the database instead of the model may cause Enterprise Objects Framework to become out of sync. This becomes a bigger issue if the Framework is executing several operations as part of a transaction and the transaction is rolled back by a trigger rule.

Workaround: See the chapter ªAnswers to Common Design Questions,º in the *Enterprise Objects Framework Developer's Guide* for information on handling this issue.

Reference: 47202

Issue: Conversion from money to double doesn't always work.

Description: Database number types are sometimes more precise than a C **float** or **double**. Consequently when these numbers are read in from the database, stored in a double, and then written back out to the database, rounding errors may appear. For instance, the value `2078927178.0000' is converted as `2078927178.0000002384185791'.

Workaround: Use the NSDecimalNumber class for money.

Reference: 47832

Issue: Don't mark as ªused for lockingº those attributes in the model with a custom data type unless the custom value class implements a value-based **isEqual:** method.

Workaround: Implement **isEqual:** on the custom data type and don't mark it used for locking.

Reference: 51250

Issue: You can't join on derived attributes.

Description: Invalid SQL is generated whenever an derived attribute is designated as a join attribute in a relationship.

Workaround: None.

Reference: 52557

Issue: Enterprise Objects Framework wrongly generates **t0.*nil***.

Description: Enterprise Objects Framework sometimes inappropriately generates SELECT statements that include text like ªt0.*nil*º. For example, this can happen when you make a column with no column name, a column with a column name like ªconvert(varchar(12), 'Default')º, or derived attributes with no column name.

Workaround: None.

Reference: 53598

Issue: Enterprise Objects Framework doesn't support to-one relationships joining on candidate (partial primary) keys in the destination.

Description: Enterprise Objects Framework doesn't support to-one relationships that join on only part of a compound primary key of the destination entity. This is because the Framework bases its uniquing of fetched objects on their full primary keys. If Enterprise Objects Framework fetches an object with a to-one relationship, it must look that object up in the uniquing table to see if it is already in memory. If it isn't, Enterprise Objects Framework must create a fault for it. Because objects are uniqued by their full primary keys, a candidate key is insufficient to do the lookup. Even doing lookups by both full primary key and by candidate key doesn't work, because a fault created for one relationship joined on the full primary key can't be correlated with a fault for another relationship joined to the same row based on the candidate key.

Workaround: Use a to-many relationship and define accessor methods for the enterprise object that emulate the to-one relationship by getting and setting the first object of the relationship array.

Reference: 61475

Issue: When performing a inheritance fetch, we need to group the fetches by tables.

Description: Enterprise Objects Framework does not currently take advantage of the union table method of inheritance mapping to perform a deep fetch of an inheritance hierarchy via a single fetch of all columns. Intead, it currently executes multiple fetches against the same table.

Workaround: The entire hierarchy can be mapped as a single entity and then EOModelGroup delegate methods can be used to tell Enterprise Objects Framework how to allocate the proper subclasses.

Reference: 64084

Issue: Inserted enterprise objects don't get removed from EODisplayGroup after sending **revert** to EOEditingContext.

Description: If you fetch objects into an EODisplayGroup and then insert a few objects and delete a few objects, and update a few objects, telling the EOEditingContext to revert will back out the updates, but not insertions or deletions.

Workaround: The actual insertions and deletions have been reverted, but the EODisplayGroup doesn't know how to revert its object list (since is doesn't keep track of what its original object list was before the insertion or deletions). The easiest workaround is to programatically tell all affected EODisplayGroups to refetch after telling the EOEditingContext to revert.

Reference: 64283

Issue: Enterprise Objects Framework 2.0 examples merge with obsolete Enterprise Objects Framework 1.1 examples.

Description: If a system has Enterprise Objects Framework 1.1 Developer installed on it (EODeveloper.pkg) and then upgrades to 4.0, the EODeveloper package (incorrectly) stays installed, and the examples stay in **/NextDeveloper/Examples/EnterpriseObjects**.

When the user later installs EO2Developer, the Enterprise Objects Framework 2.0 examples are merged with the Enterprise Objects Framework 1.1 example files already in **/NextDeveloper/Examples/EnterpriseObjects**.

Workaround: Uninstall 1.1 EODeveloper.pkg before installing EO2Developer.pkg.

Reference: 64968

Issue: Seemingly innocuous qualified fetch always causes exception.

Description: Some qualified fetches raise exceptions because values in the SQL have been formatted as strings when they should have been formatted as some other type.

This can happen whenever an external type has been entered erroneously that does not actually map to a column type recognized by the database. It may also occur when a Sybase model has no record of user defined types that have been used in the model.

Workaround: In the case of an erroneous external type definition, simply correct it. In the case of a user defined type, create a new model by reverse engineering the database, and copy the connection dictionary with the user defined type information from the new model to the original one.

Reference: 65165

Issue: **install_database** doesn't work: Sybase: Can't find type `decimal'.

Description: The **install_database** script in the **EnterpriseObjects/DatabaseSetUp** directory doesn't work for Sybase 4.9 servers.

When the models in the examples directory were converted to Sybase, the server version wasn't taken into account. Some of the attributes were converted to ªdecimalº data type and the Sybase 4.x server doesn't know about these.

Workaround: Use EOModeler to find and change all the external types from decimal to float in each of the models in your examples directory.

Reference: 68146

Issue: Fault failure leaves EOInterfaceLayer unstable.

Description: If an entity being displayed has a to-one relationship and the row with the corresponding foreign key cannot be found in the database, when you try to access the source object your user interface gets into a corrupted state.

Workaround: Enterprise Objects Framework raises an exception when a to-one relationship cannot be resolved (because of a referential integrity issue in the database). If this exception is raised by user interface code (for example, in displaying a master-detail relationship) the state of the user interface control objects can get corrupted. To prevent this you must prevent the exception. One way is to trap the exception by implementing the EODatabaseContext delegate method **databaseContext:failedToFetchObject:globalID:**. The other is to use a to-many relationship in your model instead of a to-one.

Reference: 68604

Issue: Repeated false alert that Enterprise Objects Framework 1x nib file is being converted to Enterprise Objects Framework 2.0.

Description: When you reopen a nib file after conversion you get the message: ªThis Enterprise Objects Framework 1x nib file has been translated to Enterprise Objects Framework 2.0. If you did not intend to convert to Enterprise Objects Framework 2.0, unload EOPalette, quit Interface Builder without saving this file, and reopen the nib.º

Workaround: Quit Interface Builder, then reopen the nib file.

Reference: 69211

Issue: Link errors on Windows NT.

Description: Programs on Windows NT must add explicit references to at least one class in each framework in order to avoid link errors at run time.

Workaround: Add a function like that in the following code snippet, which refers to classes in each of Enterprise Objects Framework's layers. Though never invoked, it forces the appropriate linking to occur.

```
#ifdef WIN32
#import <EOControl/EOControl.h>
#import <EOAccess/EOAccess.h>
#import <EOInterface/EOInterface.h>

void _referenceAllEOFrameworks()
{
[EODisplayGroup new]; // EOInterface
[EOEntity new]; // EOAccess
```

```
[EOEditingContext new]; // EOControl
}
#endif
```

If you create your project with the type "EOF Application," this code is automatically added to your project main file.

Oracle Adaptor

These issues exist in the Oracle adaptor supplied with this release of Enterprise Objects Framework:

Reference: 73333

Issue: The Oracle adaptor has character set issues on Sparc and m68k.

Description: The Oracle adaptor on Mach does not properly support certain character set conversion on certain architectures:

· On SPARC ISOLatin1 works, but Japanese character sets do not.
· On m68k non-ASCII ISOLatin1 characters are stripped and Japanese character sets don't work at all.

On Intel all character sets work fine, including European and Japanese.

Workaround: No workaround for this issue on EOF 2.0 is currently avaialable.

Reference: 62425

Issue: Oracle Adaptor doesn't read stored procedures inside of packages.

Description: There is no way to get the database to tell you the components (procedures and functions) that are inside a package definition. Clients can still create stored procedures in the model that will call into packages, it's just that model description using EOModeler won't create these at connect time.

Workaround: You can use EOModeler to create the stored procedure definitions in the model. Just set the external name of the stored procedure to *package-name***.***procedure-name*.

Reference: 63348

Issue: Converted models have no width information<Oracle fetches empty strings.

Description: The Enterprise Objects Framework 2.0 Oracle Adaptor has issues if you attempt to use an eomodel file from the Enterprise Objects Framework 1.0 release. These model files don't contain width information for string values, which results in all the strings being fetched with 0 length. If this happens for the column that is the primary key, you will also have issues with uniquing since every row will appear to have the same key.

Workaround: Use EOModeler to add width information for VARCHAR2 and RAW columns.

Sybase Adaptor

These issues exist in the Sybase adaptor supplied with this release of Enterprise Objects Framework:

Reference: 74943

Issue: Unable to correctly reverse-engineer schemas whose tables have more than 4 primary key components.

Workaround: Use the following defaults command executed in a shell-- note the use of key5 - key 8; the reason it stops at 8 is that Sybase limits the number of keys to 8:

```
defaults write NSGlobalDomain EOSybaseAttributeSQL '"select a.name attr_name, b.type attr_type, b.name type_name, b.allownulls allownulls, c.type primary_key, a.length width, a.prec prec, a.scale scale from syscolumns a, systypes b, syskeys c where a.id = object_id('\\"%@'\\") and a.id *= c.colid and (a.colid *= c.key1 or a.colid *= c.key2 or a.colid *= c.key3 or a.colid *= c.key4 or a.colid *= c.key5 or a.colid *= c.key6 or a.colid *= c.key7 or a.colid *= c.key8) and (c.type = 1 or c.type is null) and a.usertype = b.usertype and datalength(a.name) > 0 order by
```

a.name"

Reference: 74633

Issue: Can't link against the Sybase1x framework.

Description: The Sybase1x framework has a bug in its sybase1x.lib, such that anything linked against it will incorrectly attempt to load the nonexistent Sybase.dll (rather than Sybase1x.dll). If you just write code to the EOAdaptor generic level, things will work fine, but if you reference anything like SybaseChannel or SybaseColumn you won't be able to initialize your application (or framework).

Workaround: Make a copy of the Sybase1x.dll named Sybase.dll.

Reference: 73321

Issue: You can't update a BLOB and non-BLOB value in the same row.

Description: If you attempt to update a BLOB attribute and a non-BLOB attribute in the same row, the update to the non-BLOB attribute will succeed, but the update to the BLOB will fail because the adaptor attempts to get the io_desc structure with a SELECT statement that includes a WHERE clause for the old (pre-update) non-BLOB value. Thus, the adaptor doesn't get the io_desc, and the transaction rolls back.

Here is the SQL from an example in which the attributes "name", "image1", and "image2" have been changed:

Sep 27 14:21:43 trey[3138] *** executing SQL: UPDATE TREY_TEST SET NAME = 'test', IMAGE2 = 0xFFFF, IMAGE1 = 0xFFFF WHERE (PK = 24 AND NAME = 'foo')]
Sep 27 14:21:43 trey[3138] *** [executing SQL: SELECT t0.IMAGE1 FROM TREY_TEST t0 WHERE (t0.PK = 24 AND **t0.NAME = 'foo'**)]

Clearly, the name should no longer be 'foo' since it was just updated it to 'test'.

Workaround: Change the database schema to put the BLOB's into their own table accompanied only by a primary key that the adaptor doesn't update.

Reference: 73136

Issue: If an entity has more than 1 BLOB, updating one of the values will cause the other(s) to be set to 0xFFFF.

Description: When the Sybase adaptor is updating a row in which a BLOB value has changed, it first sets the value of the BLOB to 0xFFFF, and then it SELECT's the row in order to get the io_desc structure so it can write the BLOB. Unfortunately, the code that replaces the updated BLOB values with 0xFFFF is also replacing the BLOB values that didn't change with 0xFFFF.

Workaround: In order to work around this issue, you need to implement one of the delegate methods that gets called during the generation of SQL for updating the rows.

Reference: 72641

Issue: The Sybase DLL is not found when you run Enterprise Objects Framework 2.0 applications on Windows.

Description: The Sybase DLL is not furnished with the Enterprise Objects Framework 2.0 installation packages.

Workaround: The Sybase DLL and the necessary associated files are available through **TIL aricle 724712**. You must download and install these files.

Reference: 61481

Issue: When debugging, the new Sybase CT-Lib adaptor blocks if you you try to step over a call that requires a trip to the Sybase server.

Description: GDB hangs when you use the **next** command to step over a line of code which eventually causes a call to the Sybase client library.

Workaround: Set a breakpoint after the line and use **continue** rather than **next**.

Reference: 61999

Issue: An update fails for text that disallows NULL and has an empty field.

Description: Whenever a text or image column is being updated, the Sybase adaptor attempts to ensure that the column has been initialized correctly by assigning NULL to it. In cases where null is not allowed this does not work.

Workaround: Modify the table definition to allow nulls.

Reference: 62634

Issue: The Sybase adaptor is using **CS_CONVERT()** to convert numeric data into NSDecimalNumber.

Description: Fetching decimal numbers in locales that use a characters other than `.' for the decimal may not work.

Workaround: None.

Informix Adaptor

These issues exist in the Informix adaptor supplied with this release of Enterprise Objects Framework:

Reference: 74201

Issue: The Informix adaptor doesn't support the Japanese version of Informix.

Description: The Informix adaptor is based on a version of the Informix client library that doesn't include internationalization support.

Workaround: None.

Reference: 70232

Issue: Informix adaptor raises an exception when you try to sort on attributes that are not in the select list.

Description: Due to a restriction in the Informix adaptor, it's not possible to sort on attributes that aren't included in the select list. This means that it isn't possible to sort the results using an attribute that is not marked on the entity as either a primary key, used for locking, or a class property.

Workaround: If possible, add the attribute to the entity and mark it as used for locking. Otherwise, there is no workaround.

Reference: 63225

Issue: Informix adaptor does nothing for **returnValuesForLastStoredProcedureInvocation**.

Description: The Informix adaptor will not return variable values for stored procedures.

Workaround: Don't use stored procedures. If you need to access their logic, use an intermediate table to hold return values and then SELECT them back to your client.

Reference: 64031

Issue: UserDefaults are different between Enterprise Objects Framework1.2 and Enterprise Objects Framework2.0 InformixAdaptors.

Description: In Enterprise Objects Framework 1.2, the InformixAdaptor stores defaults in the following domain EOFInformixAdaptor and uses the following keys:
INFORMIXDIR, DBDATE, DBLANG, DBMONEY, InformixLogErrors, ShowSystables, ShowTableOwner, Beautify, DefaultIsolationLevel, GlobalOptimization, GlobalExplain, GlobalLockMode, GlobalPDQPriority, GlobalDataSkip, GlobalConstraints, DatabaseExclusive

Enterprise Objects Framework 2.0 stores defaults in the standard NSGlobalDomain and prefixed all keys with ªInformixº, that is:
InformixINFORMIXDIR, InformixDBDATE, InformixDBLANG, InformixDBMONEY, InformixLogErrors, InformixShowSystables, InformixShowTableOwner, InformixBeautify,, InformixDefaultIsolationLevel, InformixGlobalOptimization, InformixGlobalExplain, InformixGlobalLockMode, InformixGlobalPDQPriority, InformixGlobalDataSkip, InformixGlobalConstraints, InformixDatabaseExclusive.

Workaround: None.

ODBC Adaptor

These issues exist in the ODBC adaptor supplied with this release of Enterprise Objects Framework:

Reference: 73072

Issue: ODBC cannot save custom classes

Description: When you try to save a custom class (such as NSImage), an exception is raised with the message "NSImage does not respond to selector length raise." ODBC does not appear to be converting these classes to NSData like the other adaptors.

Workaround: A fixed version of the ODBC adaptor is available as **TIL article 72477**.

For anyone who is implementing an adaptor based on the ODBC example, here is the corrected source:

```
@implementation ODBCByteColumn
...
- (void)takeInputValue:(id)value
{
// Check for nulls
if(value == [EONull null]) {
_returnedLength = SQL_NULL_DATA;
return;
} else {
id primValue;
const void *bytes;
int length;
primValue = [_attribute adaptorValueByConvertingAttributeValue:value];
if ([primValue isKindOfClass:[NSString class]])
primValue = [primValue dataUsingEncoding:_encoding allowLossyConversion:YES];

if (![primValue isKindOfClass:[NSData class]])
[NSException raise:EOGeneralAdaptorException format:@"unable to create a byte representation for class \\"%@\\"", [primValue class]];

bytes = [primValue bytes];
length = [primValue length];
memcpy(_value, bytes, length);
_returnedLength = length;
}
}

@end

@implementation ODBCLongByteColumn
...
- (void)takeInputValue:(id)value
{
// Check for nulls
if(value == [EONull null]) {
_returnedLength = SQL_NULL_DATA;
return;
} else {
id primValue;
```

```
const void *bytes;
int length;
primValue = [_attribute adaptorValueByConvertingAttributeValue:value];
if ([primValue isKindOfClass:[NSString class]])
primValue = [primValue dataUsingEncoding:_encoding allowLossyConversion:YES];

if (![primValue isKindOfClass:[NSData class]])
[NSException raise:EOGeneralAdaptorException format:@"unable to create a byte representation for class \\"%@\\"", [primValue class]];

bytes = [primValue bytes];
length = [primValue length];

if (_valueLength < length) {
[self freeValue];
_valueLength = length;
[self allocateValue];
}
memcpy(_value, bytes, length);
_returnedLength = length;
}
}

@end
```

Reference: 72246

Issue: The ODBC adaptor source code provided as an example is only available on OpenStep for Windows NT.

Description: The source code for the ODBC adaptor is available on Windows NT as an example. It is not, however, included on Mach or PDO.

Workaround: Copy the source code from an NT machine or use the FlatFile adaptor (included on all releases) instead.

Reference: 70193

Issue: The ODBC adaptor does not support the stored procedure API.

Workaround: Subclass the adaptor and implement the functionality.

EOModeler

These issues exist in EOModeler with this release of Enterprise Objects Framework:

Reference: 73684

Issue: When you convert a model from 1.x to 2.0, any relationship information in the user dictionary is lost.

Workaround: Before opening the 1.x model in EOModeler 2.0, open a copy of it in Edit and perform a Find and Replace to convert "userDictionary" to "userInfo". Open the modified copy of the model in EOModeler.

Reference: 73585

Issue: In EOModeler on Windows NT, the "Preferences..." menu item is always disabled.

Workaround: One solution is to use Interface Builder to open the EOModeler NT nib file and make a target connection from the "Preferences..." menu item to File's Owner **preferences:** action.

Alternatively, you can use use the defaults database to control everthing in the Preferences panel, by issuing a command such as the following in a shell:

default write EOModeler DisableStoredProcedureCheck YES

You can use this technique to change all of the settings (listed below) that are normally modified through the Preferences

panel. Note that the default setting for all of these items is NO.

RecordFetchLimit (number) Limits the number of rows fetch before
the Data Browser asks you if you want to
fetch more.
DisableAdvancedOptions (BOOL) Run EOModeler in simplified mode
DisableConsistencyCheckOnSave(BOOL) Don't check consistency before saving
DisablePrimaryKeyCheck(BOOL) Don't check for primary keys
DisableRelationshipCheck(BOOL) Don't check relationship definitions
before saving
DisableExternalNameCheck(BOOL) Don't check for external names before
saving
DisableInheritenceCheck(BOOL) Don't check for inheritance issues
DisableStoredProcedureCheck(BOOL) Don't check for valid stored procedure usage

Reference: 73064

Issue: Putting an invalid name in the Parent column raises an exception.

Description: In the table mode view of entities in EOModeler, if you use the "Parent" field to enter the name of an entity that doesn't exist, you will get an uncaught exception with a message such as "NSInlineString does not respond to selector reason".

Workaround: Don't set the name to an an entity that doesn't exist. After this happens, save your changes and exit EOModeler.

Reference: 72926

Issue: Dragging an EOEntity into a newly-added nib doesn't always work if you already have the EOModel in the project

Description: Dragging an EOEntity into a nib will fail if the nib was recently added to the project. The general sequence of events leading to this issue is as follows:

1. Open an existing project that already includes an EOModel.
2. Open an existing nib.
3. Create a new nib, and save it into the project.
4. Try to drag an entity out of the model into your nib.

Now Interface Builder will ask you if you want add the model to your project, even thought the model is already in the project. Regardless of your answer, you won't see the EODisplayGroup or EOEditingContext show up in your new nib.

The issue is that each nib file gets assigned a model group when it is first opened, so the new nib starts with an empty model group. The bug is that the model group isn't being updated when you save the nib into a project.

Workaround: Revert the document.

Reference: 72662

Issue: If your model has compound primary keys and uses inheritance, performing a consistency check will raise an exception.

Description: If you have a model with compound primary keys and you're using inheritance, running a consistency check will raise an exception, even if the model is fine. This is tied to the inheritance checking performed by a consistency check.

Workaround: You can disable inheritance checking. This is useful if you have compound primary keys and no inheritance. To do this, use the following command from a shell:

defaults write EOModeler DisableInheritenceCheck YES

Reference: 67804

Issue: EOModeler can't find model from another framework.

Description: Issue 1: When you load a nib file into your application, it can't find the model you have in your framework. Issue 2: When you save changes to a model file in your framework, the change isn't reflected in open nib files.

Enterprise Objects Framework 2.0 finds models for an application by looking for all models in the application and in any frameworks used by the application. By default Enterprise Objects Framework looks for referenced framework in their *installation* location. Thus if you don't have the framework that contains the model installed, Enterprise Objects Framework won't find the model. Similarly, a change saved to a model in the framework project isn't noticed by Interface Builder since it's looking at the *installed* version, not the source version.

Workaround: You can tell Enterprise Objects Framework to look at the source for your framework projects by using the following defaults command (executed in a shell):

defaults write NSGlobalDomain EOProjectSourceSearchPath "($(HOME)/myProjectsDirectory1, /myOtherProjectsDirectory)"

Then, when Interface Builder or EOModeler is looking for models contained in one of your frameworks, it will first search all project directories within **$(HOME)/myProjectsDirectory1** and **/myOtherProjectsDirectory** before searching for the built versions.

Reference: 64339

Issue: Derived attributes don't work properly.

Description: Sometimes when you're trying to create a derived attribute, you may encounter seemingly random errors<the pop-up list in the Inspector reverting to Column, the text you typed in the field being erased or reverted, error panel telling you ªUnable to modify the attribute,º and so on.

Workaround: Always add a definition immediately after changing the attribute to from Column to Derived. Once you add a definition for a derived attribute, it can't be deleted<you can change it, but a definition must be present.

Reference: 62444

Issue: When you change a text field in an EOModeler Inspector and don't press Return, you can lose your changes.

Workaround: Always use the Return key.

Reference: 62447

Issue: Last column in EOModeler table mode isn't handled correctly when you resize.

Description: The last column in a table view can get clipped. If you widen the second-to-last column by dragging its right edge, the last column becomes narrower and the scroll knob doesn't appear until the mouse approaches the edge of the table view. If you save a model with a clipped column, then when you open it again the column remains clipped even if the browser is big enough to handle it.

Workaround: Widen the last column by dragging its right-most edge before widening the second-to-last column.

Reference: 62669

Issue: In EOModeler, the external types field isn't case insensitive for word-completion

Description: In the External Types field of the Attribute table view, word-completion needs to be be case-insensitive. For example, typing `v' should complete to `VARCHAR' just like typing `V' does.

Workaround: None.

Reference: 62727

Issue: Editing in Inspector with editing still active in table doesn't work.

Description: If you edit something in table mode, then, without tabbing out of the edited column, make a change in the Inspector, the change made in the table column is lost.

Workaround: None.

Reference: 63118

Issue: Schema generation may produce identifiers that are too long.

Description: If you have database table names that are long, the names generated for constraints may be too long.

Workaround: Keep your table names shorter, or edit the SQL EOModeler generates to keep the constraint names shorter.

Reference: 63119

Issue: EOModeler generates bogus foreign key constraints for compound keys.

Description: Schema generation in EOModeler can produce some confused constraint definitions for Oracle and Informix if you have non-normalized data (such as the TALENT and TALENT_PHOTO tables).

Workaround: You can work around this by editing the SQL generation scripts, or by just not asking EOModeler to generate the constraint information.

Reference: 63169

Issue: Models created from version 4.9 Sybase servers do not include stored procedures.

Workaround: Use EOModeler's Stored Procedure Editor to add the EOStoredProcedure objects to the model.

Reference: 63183

Issue: Trying to generate schema SQL will raise if any of the primary key attributes don't have a column name.

Workaround: None.

Reference: 69386

Issue: Trying to drag a model or an entity from EOModeler into a nib file sometimes fails.

Description: If you try to drag a model or an entity from EOModeler into a nib file, Interface Builder asks if you would like to add this model to the project. Sometimes the attempt to add the model to the project will fail.

Workaround: Relaunch Interface Builder by double-clicking on the nib icon in Project Builder. Try dragging the EOModel or EOEntity now<everything should work.

Reference: 59472

Issue: Derived attributes are limited and don't offer full SQL as advertised

Description: Placing a string or a numeric constant in the definition field of a derived attribute will cause invalid SQL to be generated. Definitions such as ªtitleº and ª0.0º will not work correctly. However, definitions such as ªatt1 + 5º should work correctly when ªatt1º specifies another attribute.

Workaround: None.

Reference: 57842

Issue: EODisplayGroups are missing their keys.

Description: Enterprise Objects Framework was probably unable to find the model file containing the entity used by the EODisplayGroup. To verify this, inspect the data source of the EODisplayGroup (click on the EODisplayGroup, bring up the Inspector panel, and selected the DataSource panel from the Inspector popup). If the ªModelº field is blank, then Enterprise Objects Framework was unable to find your model.

Workaround: Quit Interface Builder and verify that the model containing the entity referenced in the EODisplayGroup is

added as a resource in the project containing the nib file.

On-line Examples

Reference: 73332

Issue: The Studios example has a bad hard-coded path in its framework search order that keeps it from building on NT.

Description: If you try to build the Studios example on NT, the build will fail due to a bad path in framework search path.

Workaround: To correct this issue, follow these steps:

1. Open the project in Project Builder.
2. Choose Tools -> Inspector.
3. In the Inspector's Build Attributes view, use the second pop-up menu to display Framework Search Order.
4. Remove **d:\\NeXT\\NextLibrary\\Frameworks** from the search path list.

Reference: 73076

Issue: Oracle stored procedures example doesn't work

Description: The external names of the stored procedures are missing the prefix 'MOVIE_PROCEDURES.' This causes them to not work.

Workaround: Use the Stored Procedure view in EOModeler to change the external names of the two fetch procedures to MOVIE_PROCEDURES.FETCH_MOVIE_WITH_PRIMARY_KEY and MOVIE_PROCEDURES.FETCH_MOVIES_ALL.

Reference: 70557

Issue: The Customer example fails to propagate change to credit card.

Description: The relationship between CreditCard and Member is not modeled correctly in the examples. In the Customer application, you can modify a the number and type of a member's credit card, but the change to the primary key is not propagated to all of the objects that it relates to. Consequently, after saving the changes to the database, the credit card's number and type will have changed but the foreign key in the member table will still have the old values as the foreign key. This relationship would work correctly had the CreditCard class been modeled with an primary key identifier that was distinct from its number and type values and if the relationship were constructed on that primary key attribute. This would also be a more efficient implementation.

Workaround: None.

Reference: 69199

Issue: Error running **configure_examples** script on Windows NT.

Description: Running **configure_examples** will fail unless your path is properly specified.

Workaround: In order to install and run examples on NT, you need to add the following to your system path (in the System Control Panel):

.;c:\\NeXT\\LocalDeveloper\\Executables

(The above assumes that $NEXT_ROOT is defined as **c:\\NeXT**).

Reference: 69419

Issue: Example data for Movie and Rental models must be installed in different databases

Description: When installing data for more than one model in a database, the **eo_sequence_table** is only properly initialized for the first model installed.

Workaround: You can either install the data for each model in a different database or change the last line in the **install_database** script located in the DatabaseSetUp directory of your examples directory as follows:

Change this:

${EOUTIL} dump ../BusinessLogic/Rentals.eomodeld -source plist database -schemaCreate -postInstall < RentalData.plist

To this:

${EOUTIL} dump ../BusinessLogic/Rentals.eomodeld -source plist database -schemaCreate -postInstall -force < RentalData.plist

When you use the **-force** option as a workaround, exceptions are logged because the **eo_sequence_table** table and **eo_pk_for_table** procedure already exist when you execute **install_databases**. You can just ignore these exceptions.

Reference: 68231

Issue: **make all** in the Enterprise Objects Framework examples fails sometimes.

Description: The Enterprise Objects Framework examples will fail to make if **${NEXT_ROOT}/LocalDeveloper** is present on your system and you don't have write access to it. The makefile tries to install the BusinessLogic framework in the **/LocalDeveloper/Frameworks** directory.

Workaround: Execute **make** as root or ask your system administrator to create a **/LocalDeveloper/Frameworks** directory and make it writable by you.
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Creating Custom Project Types for ProjectBuilder

ProjectBuilder uses a set of built-in Project Types such as Application and Framework to describe standard types of projects that have proven useful in quickly developing typical applications of OPENSTEP. While most all development efforts can use combinations of projects instantiated from these project types (and organized hierarchically in a tree structure), it is possible to extend these project types. At launch time, PB reads the following search path, loading in project type definitions:

$NEXT_ROOT/NextLibrary/PrivateFrameworks/DevKit.framework/Resources/$LANGUAGE.lproj/ProjectTypes
$NEXT_ROOT/NextDeveloper/ProjectTypes
$NEXT_ROOT/LocalDeveloper/ProjectTypes
$HOME/Library/ProjectTypes

By loading the site-specific and user-specific project type definitions later, the built-in types can not only be augmented, but overridden. All you need do is place a new .projectType wrapper on this search path and re-launch ProjectBuilder.

This document assumes that you are using OPENSTEP release 4.1.
This article has been archived and is no longer updated by Apple.
To create a new project type definition called MyApplication, create a MyApplication.projectType directory with the following two components:

A "projectTemplate" directory containing the initial contents of projects that are created from this projectType. For example, a standard Info Panel and set of local frameworks could be added to the Application project template so that a new app could be site-specific "right out of the box".

An "Info.table" textual property-list file describing attributes of the Project Type. Valid keys include:

Allowable_SubprojectTypes - A list of names of subprojects which are valid as subprojects of this type of project.

AttributesInspector - The name of the Objective-C class that implements the "Project Attributes" Inspector in PB. Built into PB are: SubprojectInspector, ApplicationInspector, FrameworkInspector, LegacyInspector, PaletteInspector

DefaultExtension - The name a project gets by default (e.g. .bproj, .woa).

GeneratedFiles - The list of files this project derives and maintains itself (e.g. Makefile, iconHeader).

MAKEFILE - The name of the makefile that should be used to build this project (e.g. aggregate.make).

MAKEFILEDIR - The directory containing **MAKEFILE** (e.g. "$(NEXT_ROOT)/NextDeveloper/Makefiles/project")

Other_Keys - List of other keys (briefcases) in project. These and the other keys below are simply conceptual groupings of briefcases. ProjectBuilder will always display the briefcases grouped in a particular order. Otherwise, all briefcases are basically equal.

Resource_Keys - List of resource keys (briefcases) in project.

Source_Keys - List of source keys (briefcases) in project

Subproj_Keys - List of subproject keys (briefcases) in project.

Targets - The set of build targets these projects support by default in MAKEFILE.

PBProjectTypeSubClass - The name of the Objective-C class in PB that implements the customization functionality for this project type. Built into PB are: **PBApplicationProjectType**, **PBToolProjectType**, **PBPaletteProjectType**

ProvidesIcons - If set to "Yes", hints to PB that icons should be emmited for inclusion in the built binary file.

Public_Keys - The list of keys (briefcases) in which the "Public" attribute can be set.

DisplayName - The actual name that should be used in the PopUpList in PB when creating a new project. If not present, the base name of the .projectType wrapper

AliasNames - Other names this project type was previously known as (e.g. Subproject).

KeyForType - The Makefile key in the parent project this project is recorded under.

Localizable_Keys = The list of keys (briefcases) in which the "Localizable" attribute can be set.

CanCreateInExistingDirectory - If set to"Yes", this project can be created inside an existing directory. Otherwise, PB requires that it create a new directory from scratch for the project.

You can use /NextDeveloper/ProjectTypes/EOF Application.projectType as an example.

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OPENSTEP 4.0 NSNumberFormatter Class Documentation

This document contains the class documentation for the NSNumberFormatter class, which was left out of the class documentation for OPENSTEP 4.0. This information may not apply to OPENSTEP 4.2 or to any other specific verstion of OPENSTEP other than OPENSTEP 4.0.
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Note: This class is not a part of OpenStep.

NSNumberFormatter

Inherits From: NSFormatter : NSObject

Conforms To: NSObject (NSObject)
NSCoding
NSCopying
Declared In: Foundation/NSNumberFormatter.h

Class Description

Instances of NSNumberFormatter format the textual representation of cells that contain NSDecimalNumbers and convert textual representations of numeric values into NSDecimalNumbers. The representation encompasses integers, floats, and doubles; floats and doubles can be formatted to a specified decimal position. NSNumberFormatters can also impose ranges on the numeric values that cells can accept.

NSControl provides delegation methods that permit you to validate cell contents and to handle errors in formatting. See the specification of the NSFormatter class for details.

When a cell with a NSNumberFormatter is copied, the new cell retains the NSNumberFormatter object instead of copying it. You remove an NSNumberFormatter from a cell by specifying **nil** as the argument of NSCell's **setFormatter:** method.

Instances of NSNumberFormatter are mutable.

Creating an Instance of NSNumberFormatter

The easiest way to use NSNumberFormatter is to drag a formatter onto a control in Interface Builder. However, if you're not using Interface Builder to create your user interface or if you simply want more fine-grained control over an NSNumberFormatter (for example, to change the text attributes of the values displayed), you can create and manipulate instances of the class programmatically.

To create an NSNumberFormatter, allocate an instance of NSNumberFormatter and use one or more of NSNumberFormatter's ªset formatº methods to set its format. You then use NSCell's **setFormatter:** method to associate the NSNumberFormatter

instance with a cell.

For example, the following code excerpt creates an instance of NSNumberFormatter, sets its formatting for positive, zero, and negative values, and applies it to the cell of an NSTextField using NSCell's **setFormatter:** method:

```
NSNumberFormatter *numberFormatter =
[[[NSNumberFormatter alloc] init] autorelease];
[numberFormatter setFormat:@"$#,###.00;0.00;($#,##0.00)"];
[[textField cell] setFormatter:numberFormatter];
```

The value of a cell (NSCell) is represented by an object, typically an NSDecimalNumber object in this case. When this value needs to be displayed or edited, the cell passes its object to the NSNumberFormatter instance, which returns the formatted string. When the user enters a string, or when a string is programmatically written in a cell (using **setStringValue:**), the cell obtains the equivalent NSDecimalNumber object from the NSNumberFormatter.

The most common technique for assigning a format to an NSNumberFormatter object is to use the method **setFormat:**, as shown above. This method takes as an argument an NSString whose contents can be one of the following:

· @º*positiveFormat*º
  For example, @º$###,##0.00º (the syntax of format strings is discussed in the following section).
· @º*positiveFormat;negativeFormat*º
  For example, @º###,##0.00;(###,##0.00)º.
· @º*positiveFormat;zeroFormat;negativeFormat*º
  For example, @º$###,###.00;0.00;($###,##0.00)º. Note that zero formats are treated as string constants.

As implied in the preceding list, you're only required to specify a format for positive values. If you don't specify a format for negative and zero values, a default format based on the positive value format is used. For example, if your positive value format is ª#,##0.00º, an input value of ª0º will be displayed as ª0.00º.

If you don't specify a format for negative values, the format specified for positive values is used, preceded by a minus sign (-).

If you specify a separate format for negative values, its separators should be parallel to those specified in the positive format string. In NSNumberFormatter, separators are either enabled or disabled for all formats<both your negative and positive formats should therefore use the same approach.

As an alternative to using the **setFormat:** method, you can use the **setPositiveFormat:** and **setNegativeFormat:** methods.

Format String Syntax

Format strings can include the following types of characters:

· Numbers

Format strings can include numeric characters. Wherever you include a number in a format string, the number is displayed unless an input character in the same relative position ªoverwritesº it. For example, suppose you have the positive format string @ª9,990.00º, and the value 53.88 is entered into a cell to which the format has been applied. The cell would display the value as 9,953.88.

· Separators

Format strings can include the period character (.) as a decimal separator, and comma character (,) as a thousand separator. If you want to use different characters as separators, you can set them using the **setDecimalSeparator:** and **setThousandSeparator:** methods. When you enable localization for an NSNumberFormatter object by using the method **setLocalizesFormat:**, separators are converted to characters appropriate to the environment in which the application is running.

· Placeholders

You use the pound sign character (#) to represent numeric characters that will be input by the user. For example, suppose you have the positive format @º$#,##0.00º. If the characters 76329 were entered into a cell to which the format has been applied, they would be displayed as $76,329.00. Strictly speaking, however, you don't need to use placeholders. The format strings @º,0.00º, @º#,#0.00, and @º#,##0.00º are functionally equivalent. In other words, including separator characters in a format string signals NSNumberFormatter to use the separators, regardless of whether you use (or where you put) placeholders. The placeholder character's chief virtue lies in its ability to make format strings more human-readable, which is especially useful if you're displaying formats in the user interface.

· Spaces

To include a space in a format string, use the underscore character (_). This character inserts a space if no numeric character has been input to occupy that position.

· Currency

The dollar sign character ($) is normally treated just like any other character that doesn't play a special role in NSNumberFormatter. However, when you enable localization for an NSNumberFormatter object by using the method **setLocalizesFormat:**, the dollar sign character is converted to the currency symbol appropriate for the environment in which the application is running.

All other characters specified in a format string are displayed as typed. The following table shows examples of the how the value 1019.55 is displayed for different positive formats:

Format String Display

@ª#,##0.00º 1,019.55

@ª$#,##0.00º $1,019.55

@ª___,__0.00º 1,019.55

Working with Values as Attributed Strings

In NSNumberFormatter, positive, negative, zero, **nil**, and ªnot a numberº values are NSAttributedStrings. NSAttributedString objects manage character strings and associated sets of attributes (for example, font and kerning) that apply to individual characters or ranges of characters in the string. An association of characters and their attributes is called an *attributed string*. For more information on NSAttributedString, see the NSAttributedString class cluster specification in the *Foundation Kit Reference*, and the NSAttributedString Class Cluster Additions specification in the *Application Kit Reference*.

Because the values displayed by NSNumberFormatter are attributed strings, you can customize aspects of their appearance, such as their color and font. The NSNumberFormatter methods you use to do this are as follows:

- -·textAttributesForPositiveValues
- -·setTextAttributesForPositiveValues:
- -·textAttributesForNegativeValues
- -·setTextAttributesForNegativeValues:
- -·attributedStringForZero
- -·setAttributedStringForZero:
- -·attributedStringForNil
- -·setAttributedStringForNil:
- -·attributedStringForNotANumber
- -·setAttributedStringForNotANumber:

Using Separators

NSNumberFormatter supports two different kinds of separators: thousand and decimal. By default these separators are represented by the comma (,) and period (.) characters respectively, and by default they're disabled.

All of the following statements have the effect of enabling thousand separators:

```
// use setFormat:
[numberFormatter setFormat:@"#,###"];

// use setHasThousandSeparators:
[numberFormatter setHasThousandSeparators:YES];

// use setThousandSeparator:
[numberFormatter setThousandSeparator:@"_"];
```

If you use the statement [numberFormatter setHasThousandSeparators:NO], it disables thousand separators, even if you've set them through another means.

Both of the following statements have the effect of enabling decimal separators:

```
// use setFormat:
[numberFormatter setFormat:@"0.00"];

// use setDecimalSeparator:
[numberFormatter setDecimalSeparator:@"-"];
```

When you enable or disable separators, it affects both positive and negative formats. Consequently, both formats must use the same separator scheme.

You can use the **thousandSeparator** and **decimalSeparator** methods to return an

NSString containing the character the receiver uses to represent each separator. However, this shouldn't be taken as an indication of whether separators are enabled<even when separators are disabled, an NSNumberFormatter still knows the characters it uses to represent separators.

Separators must be single characters. If you specify multiple characters in the arguments to **setThousandSeparator:** and **setDecimalSeparator:**, only the first character is used.

You can't use the same character to represent thousand and decimal separators.

NSCell Methods for Number Formatting

NSCell provides methods that give you almost the same behavior as instances of NSNumberFormatter. Send **setEntryType:** to a cell to associate it with an NSNumberFormatter object; specify the numeric format with one of the constants listed below. The constant is equivalent to an NSNumberFormatter initialized with a certain range and a conversion specifier:

Constant Range Specifier

NSIntType MININT, MAXINT %d
NSPositiveIntType 1, MAXINT %d
NSFloatType -MAXFLOAT, MAXFLOAT %g
NSPositiveFloatType MINFLOAT, MAXFLOAT %g
NSDoubleType -MAXDOUBLE, MAXDOUBLE %g
NSPositiveDoubleType MINDOUBLE, MAXDOUBLE %g

Send NSCell's **isEntryAcceptable:** to a cell to determine if it can accept a numeric type as indicated by one of the above constants. Send NSCell's **setFloatingPointFormat:left:right:** to specify the number of digits that appear to the left and right of the decimal point. By invoking this method you do not lose any range of values for floats or values set either through **setEntryType:** or by initializing an NSNumberFormatter directly.

Note: The NSNumberFormatter approach is recommended over the NSCell methods because it allows you greater freedom in specifying the representation of numbers. However, NSCell's **setEntryType:**, **isEntryAcceptable:**, and **setFloatingPointFormat:left:right:** are OpenStep-compliant, whereas NSNumberFormatter is an extension to OpenStep.

Method Types

Set formats -·negativeFormat
-·setNegativeFormat:
-·positiveFormat
-·setPositiveFormat:
-·format
-·setFormat:

Set characteristics for displaying values
-·textAttributesForNegativeValues
-·setTextAttributesForNegativeValues:
-·textAttributesForPositiveValues
-·setTextAttributesForPositiveValues:
-·attributedStringForZero
-·setAttributedStringForZero:
-·attributedStringForNil
-·setAttributedStringForNil:
-·attributedStringForNotANumber
-·setAttributedStringForNotANumber:

Set separators -·hasThousandSeparators
-·setHasThousandSeparators:
-·thousandSeparator
-·setThousandSeparator:
-·decimalSeparator
-·setDecimalSeparator:

Enable localization -·localizesFormat
-·setLocalizesFormat:

Set float behavior -·allowsFloats
-·setAllowsFloats:

Set rounding behavior -·roundingBehavior
-·setRoundingBehavior:

Set minimum and maximum values -·minimum
-·setMinimum:
-·maximum
-·setMaximum:

Instance Methods

allowsFloats

-·(BOOL)**allowsFloats**

Returns YES if the receiver allows as input floating point values (that is, values that include the period character (.)), NO otherwise. When this is set to NO, only integer values can be provided as input. The default is YES.

See also: -·setAllowsFloats:

attributedStringForNil

-·(NSAttributedString *)**attributedStringForNil**

Returns the NSAttributedString used to display **nil** values. By default **nil** values are displayed as an empty string.

See also: -·**attributedStringForNil**

attributedStringForNotANumber

-·(NSAttributedString *)**attributedStringForNotANumber**

Returns the NSAttributedString used to display ªnot a numberº values. By default ªnot a numberº values are displayed as the string ªNaNº.

See also: -·**attributedStringForNotANumber**

attributedStringForZero

-·(NSAttributedString *)**attributedStringForZero**

Returns the NSAttributedString used to display zero values. By default zero values are displayed according to the format specified for positive values; for more discussion of this subject see the section ªCreating an Instance of NSNumberFormatterº in the Class Description.

See also: -·**setAttributedStringForZero:**

decimalSeparator

-·(NSString *)**decimalSeparator**

Returns an NSString containing the character the receiver uses to represent decimal separators. By default this is the period character (.). Note that the return value doesn't indicate whether decimal separators are enabled.

See also: -·**setDecimalSeparator:**

format

-·(NSString *)**format**

Returns an NSString containing the format being used by the receiver.

See also: -·**setFormat:**

hasThousandSeparators

-·(BOOL)**hasThousandSeparators**

Returns YES to indicate that the receiver's format includes thousand separators, NO otherwise. The default is NO.

See also: -·**setHasThousandSeparators:**

localizesFormat

-·(BOOL)**localizesFormat**

Returns YES to indicate that the receiver localizes formats, NO otherwise. The default is NO.

See also: -·**setLocalizesFormat:**

maximum

-·(NSDecimalNumber *)**maximum**

Returns the highest number that is allowed as input by the receiver.

See also: -·**setMaximum:**

minimum

-·(NSDecimalNumber *)**minimum**

Returns the lowest number that is allowed as input by the receiver.

See also: -·**setMinimum:**

negativeFormat

-·(NSString *)**negativeFormat**

Returns an NSString containing the format used by the receiver to display negative numbers.

See also: -·**setNegativeFormat:**, -·**setFormat:**

positiveFormat

-·(NSString *)**positiveFormat**

Returns an NSString containing the format used by the receiver to display positive numbers.

See also: -·**setPositiveFormat:**, -·**setFormat:**

roundingBehavior

-·(NSDecimalNumberHandler *)**roundingBehavior**

Returns an NSDecimalNumberHandler object to indicate the rounding behavior used by the receiver.

See also: -·**setRoundingBehavior:**

setAllowsFloats:

-·(void)**setAllowsFloats:**(BOOL)*flag*

Sets according to *flag* whether the receiver allows as input floating point values (that is, values that include the period character (.)). By default, floating point values are allowed as input.

See also: -·**allowsFloats**

setAttributedStringForNil:

-·(void)**setAttributedStringForNil:**(NSAttributedString *)*newAttributedString*

Sets to *newAttributedString* the NSAttributedString the receiver uses to display **nil** values.

See also: -·attributedStringForNil

setAttributedStringForNotANumber:

-·(void)**setAttributedStringForNotANumber:**(NSAttributedString *)*newAttributedString*

Sets to *newAttributedString* the NSAttributedString the receiver uses to display ªnot a numberº values.

See also: -·attributedStringForNotANumber

setAttributedStringForZero:

-·(void)**setAttributedStringForZero:**(NSAttributedString *)*newAttributedString*

Sets to *newAttributedString* the NSAttributedString the receiver uses to display zero values.

See also: -·attributedStringForZero

setDecimalSeparator:

-·(void)**setDecimalSeparator:**(NSString *)*newSeparator*

Sets to *newSeparator* the character the receiver uses as a decimal separator. If *newSeparator* contains multiple characters, only the first one is used. If you don't have decimal separators enabled through another means (such as **setFormat:**), using this method enables them.

See also: -·decimalSeparator

setFormat:

-·(void)**setFormat:**(NSString *)*aFormat*

Sets the receiver's format to the string *aFormat*. *aFormat* can consist of one, two or three parts separated by `;'. The first part of the string represents the positive format, the second part of the string represents the zero value, and the last part of the string represents the negative format. If the string just has two parts, the first one becomes the positive format, and the second one becomes the negative format. If the string just has one part, it becomes the positive format, and default formats are provided for zero and negative values based on the positive format. For more discussion of this subject, see the section ªCreating an Instance of NSNumberFormatterº in the Class Description.

For example, the following code excerpt shows the three different approaches for setting an NSNumberFormatter object's format using **setFormat:**:

```
NSNumberFormatter *numberFormatter =
[[[NSNumberFormatter alloc] init] autorelease];
```

```
// specify just positive format
[numberFormatter setFormat:@"$#,##0.00"];

// specify positive and negative formats
[numberFormatter setFormat:@"$#,##0.00;($#,##0.00)"];

// specify positive, zero, and negative formats
[numberFormatter setFormat:@"$#,###.00;0.00;($#,##0.00)"];
```

See also: -·**format**

setHasThousandSeparators:

-·(void)**setHasThousandSeparators:**(BOOL)*flag*

Sets according to *flag* whether the receiver uses thousand separators. When *flag* is NO, thousand separators are disabled for both positive and negative formats (even if you've set them through another means, such as **setFormat:**). When *flag* is YES, thousand separators are used. In addition to using this method to add thousand separators to your format, you can also use it to disable thousand separators if you've set them using another method. The default is NO (though you in effect change this setting to YES when you set thousand separators through any means, such as **setFormat:**).

See also: -·**hasThousandSeparators**

setLocalizesFormat:

-·(void)**setLocalizesFormat:**(BOOL)*flag*

Sets according to *flag* whether the dollar sign character ($), decimal separator character (.), and thousand separator character (,) are converted to appropriately localized characters as specified by the user's localization preference. While this feature may be useful in certain types of applications, it's probably more likely that you would tie a particular application to a particular currency (that is, that you would ªhard-codeº the currency symbol and separators instead of having them dynamically change based on the user's configuration). The reason for this, of course, is that NSNumberFormatter doesn't perform currency conversions, it just formats numeric data. You wouldn't want one user interpreting the value ª56324º as US currency and another user who's accessing the same data interpreting it as Japanese currency, simply based on each user's localization preferences.

See also: -·**localizesFormat**

setMaximum:

-·(void)**setMaximum:**(NSDecimalNumber *)*aMaximum*

Sets to *aMaximum* the highest number the receiver allows as input.

See also: -·**maximum**

setMinimum:

-·(void)**setMinimum:**(NSDecimalNumber *)*aMinimum*

Sets to *aMinimum* the lowest number the receiver allows as input.

See also: -·**setMinimum:**

setNegativeFormat:

-·(void)**setNegativeFormat:**(NSString *)*aFormat*

Sets to *aFormat* the format the receiver uses to display negative values.

See also: -·**negativeFormat**, -·**setFormat:**

setPositiveFormat:

-·(void)**setPositiveFormat:**(NSString *)*aFormat*

Sets to *aFormat* the format the receiver uses to display positive values.

See also: -·**positiveFormat**, -·**setFormat:**

setRoundingBehavior:

-·(void)**setRoundingBehavior:**(NSDecimalNumberHandler *)*newRoundingBehavior*

Sets to *newRoundingBehavior* the rounding behavior used by the receiver.

See also: -·**roundingBehavior**

setTextAttributesForNegativeValues:

-·(void)**setTextAttributesForNegativeValues:**(NSDictionary *)*newAttributes*

Sets to *newAttributes* the text attributes to be used in displaying negative values. For example, this code excerpt causes negative values to be displayed in red:

```
NSNumberFormatter *numberFormatter =
[[[NSNumberFormatter alloc] init] autorelease];
NSMutableDictionary *newAttrs = [NSMutableDictionary dictionary];

[numberFormatter setFormat:@"$#,##0.00;($#,##0.00)"];
[newAttrs setObject:[NSColor redColor] forKey:@"NSColor"];
[numberFormatter setTextAttributesForNegativeValues:newAttrs];
[[textField cell] setFormatter:numberFormatter];
```

An even simpler way to cause negative values to be displayed in red is to include the constant [Red] in your format string, for example:

```
[numberFormatter setFormat:@"$#,##0.00;[Red]($#,##0.00)"];
```

Note: When you set a value's text attributes to use color, the color only appears when the value's cell doesn't have input focus. When the cell has input focus, the value is displayed in standard black.

See also: -·**textAttributesForNegativeValues**

setTextAttributesForPositiveValues:

-·(void)**setTextAttributesForPositiveValues:**(NSDictionary *)*newAttributes*

Sets to *newAttributes* the text attributes to be used in displaying positive values.

See also: -·**textAttributesForPositiveValues**

setThousandSeparator:

-·(void)**setThousandSeparator:**(NSString *)*newSeparator*

Sets to *newSeparator* the character the receiver uses as a thousand separator. If *newSeparator* contains multiple characters, only the first one is used. If you don't have thousand separators enabled through any other means (such as **setFormat:**), using this method enables them.

See also: -·**thousandSeparator**

textAttributesForNegativeValues

-·(NSDictionary *)**textAttributesForNegativeValues**

Returns an NSDictionary containing the text attributes that have been set for negative values.

See also: -·**setTextAttributesForNegativeValues:**

textAttributesForPositiveValues

-·(NSDictionary *)**textAttributesForPositiveValues**

Returns an NSDictionary containing the text attributes that have been set for positive values.

See also: -·**setTextAttributesForPositiveValues:**

thousandSeparator

-·(NSString *)**thousandSeparator**

Returns an NSString containing the character the receiver uses to represent thousand separators. By default this is the comma character (,). Note that the return value doesn't indicate whether thousand separators are enabled.

See also: -·**setThousandSeparator:**

Published Date: Feb 20, 2012

EOF 2.0 NT Oracle Adaptor Patch

This patch is version number 278.1. The Oracle Adaptor shipped with the EOF 2.0 release was version 278. You can find the version of the Oracle adaptor under the big red Oracle logo of the Oracle Login panel. This patch is **only** for use with EOF 2.0 installed on Windows NT as part of OPENSTEP or WebObjects.

The WebObjects Current Patch List, **TIL article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read these documents if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.

Installing the Oracle Adaptor Patch

Download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/patches/2.0/OracleAdaptorPatch_NT.tar.gz

In order to install this patch, you will need to use gzip and gnutar to expand the attachment. You'll end up with a supplemental NextLibrary directory, which you can then copy into your existing NextLibrary directory. You need to log in as Administrator to install this patch.

Caution: The patch will replace **\\NextLibrary\\Executables\\OracleEOAdaptor.dll** and the entire **\\NextLibrary\\Frameworks\\OracleEOAdaptor.framework** directory, so you should take care to create a back up these items before installing over the top of them.

Assuming you have **OracleAdaptorPatch_NT.tar.gz** on c:/tmp and are using the Bourne Shell included with WebObjects or OPENSTEP Enterprise, here are the commands to install the patch:

```
$ cd $NEXT_ROOT
$ mv NextLibrary/Executables/OracleEOAdaptor.dll NextLibrary/Executables/OracleEOAdaptor.dll.bak
$ mv NextLibrary/Frameworks/OracleEOAdaptor.framework NextLibrary/Frameworks/OracleEOAdaptor.framework.bak
$ gzip -d -c c:/tmp/OracleAdaptorPatch_NT.tar.gz | gnutar -xvf -
```

EOF Oracle Adaptor Patch Release Notes

Problems Fixed in This Patch Update

The following problems have been fixed in this update:

Oracle EOAdaptor

References: 74355

Problems: The Oracle adaptor won't work with the Oracle 7.3 client libraries

Fix: This adaptor is actually linked against the OCIW32.LIB rather than the ORA72.LIB or the ORA73.LIB. Because the OCIW32.DLL doesn't change it's name each release, this means this adaptor should work against Oracle 7.2 and 7.3.

References: 74187

Problems: Every NSNumber or NSDecimalNumber that is created as a value fetched from the database is leaked.

Fix: The implementation of -[OracleNumberColumn fetchFromIndex:withZone:] no longer contains the extra retain call.

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: Number Nine Imagine128 Series 2 Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/Num9Imagine128s2.pkg.compressed

Driver Name / Installer .pkg: Number9Imagine128S2DisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: IBM RGB526 RAMDAC, IBM RGB528 RAMDAC, Number9 Imagine II, Number9 T2R
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This graphics driver is designed to support the Imagine 128 Series 2 and Revolution 3D adapters from Number Nine Visual Technology Inc.

This driver supports the use of 4MB, or 8MB of display memory. This driver also includes support for multi-headed displays.

Supported Products / Add-on Adapters:
Number9 Imagine 128 Series 2 (4MB) (90-228120-000)
Number9 Imagine 128 Series 2 (8MB) (90-228130)
Number9 Revolution 3D (4MB)
Number9 Revolution 3D (8MB)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 4MB VRAM, 4MB WRAM, 8MB VRAM, 8MB WRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1024x768 (4MB+), 1152x864 (4MB+), 1280x1024(8MB+), 1600x1200(8MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (4MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Some PCI machines will not start up if there is more than one Number Nine Imagine128 display adpter present. This is a BIOS limitation.

Driver Version Notes

3.30 - Initial Version - released only as beta
3.31 - Added support for Series 2 cards with integrated VGA controller. Added support for 8MB VRAM cards.
3.32 - Added support for Revolution 3D cards based on the T2R engine and WRAM display memory.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009
FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

TA45866_NeXTSTEP_Driver_Number_Nine_Imagine_Series_Display.pdf

Macintosh: Voicemail & Audiotex System Now Available

Do you know of any Macintosh product that handles DTMF (Dual Tone Multi Frequency) decoding, voice mail, and audiotex?

This article has been archived and is no longer updated by Apple.
TFLX, from Magnum Software, is a complete audiotex system for any 1MB Macintosh with a 20ns or faster hard disk.

TFLX is a combination hardware and software product. It connects to a serial port, has a sound digitizer, 1200 baud Hayes-compatible modem, serial port pass-through, and DTMF decoding. It can detect busy, ring, modem and fast busy recognition. The package is MultiFinder and AppleShare compatible and has a graphical user interface.

It also has database telemarketing capabilities, with keypad input for menu-driven operations.

The entire operation of the unit is programmable using Magnum's custom icon-oriented language.

For more information, search on "Magnum Software"

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: IBM ThinkPad 760ED Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/ThinkPad760ED.pkg.compressed

Driver Name / Installer .pkg: IBMThinkPad760EDDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Trident Cyber9382, Trident Cyber9385
PC Bus / Interface Supported by Driver:** Integrated

General Overview notes: This device driver supports the built in LCD for IBM Thinkpad 760E, 760ED and 560 systems. The external monitor is also supported in all modes.

Supported Products / Add-on Adapters:

Supported Products / Systems (ie integrated into PC System):
IBM ThinkPad 760E
IBM ThinkPad 760ED
IBM ThinkPad 560

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**

16 Bit Color Modes:**
1024x768 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.30) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.30 - Initial version of this driver
3.31 - Support added for ThinkPad 760E, and external monitor connector.
3.32 - Supports switching of display devices through "Fn-F7"
- Added support for 1280x1024 modes
- 70Hz modes replaced by 75Hz modes

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

EOF 2.0 NT Informix Adaptor Patch

This patch is version number 250.1. The Informix Adaptor shipped with the EOF 2.0 release was version 250. You can find the version of the Informix adaptor in the Informix Login panel.. This patch is **only** for use with EOF 2.0 installed on Windows NT as part of OPENSTEP or WebObjects.

The WebObjects Current Patch List, **TIL article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read these documents if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.

Installing the Informix Adaptor Patch

The patch can be downloaded from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/patches/2.0/InformixAdaptorPatch_NT.tar.gz

In order to install this patch, you will need to use gzip and gnutar to expand the attachment. You'll end up with a supplemental NextLibrary directory, which you can then copy into your existing NextLibrary directory. You need to log in as Administrator to install this patch.

Caution: The patch will replace **\\NextLibrary\\Executables\\InformixEOAdaptor.dll** and the entire **\\NextLibrary\\Frameworks\\InformixEOAdaptor.framework** directory, so you should take care to create a back up these items before installing over the top of them.

Assuming you have `InformixAdaptorPatch_NT.tar.gz` on C:\\tmp and are using the Bourne Shell included with WebObjects or OPENSTEP Enterprise, here are the commands to install the patch:

```
$ cd $NEXT_ROOT
$ mv NextLibrary/Executables/InformixEOAdaptor.dll NextLibrary/Executables/InformixEOAdaptor.dll.bak
$ mv NextLibrary/Frameworks/InformixEOAdaptor.framework NextLibrary/Frameworks/InformixEOAdaptor.framework.bak
$ gzip -d -c c:/tmp/InformixAdaptorPatch_NT.tar.gz | gnutar xvf -
```

Informix Adaptor Patch Release Notes

The following problems have been fixed in this update:

Informix EOAdaptor

References: 74658

Problems: The Informix adaptor won't work with the Informix 7.2 client libraries

Fix: This adaptor is now linked against ISQLT07C.lib rather than isqli710.lib. This means this adaptor works only with Informix 7.2.

Published Date: Feb 20, 2012

A/UX: Recover a Missing or Corrupted System Folder (5/95)

If the System Folder, "/mac/sys/System Folder", of an A/UX user gets accidentally thrown away in the trash, what System Folder can be used to replace the original contents? Are there any special files?

This article has been archived and is no longer updated by Apple.
The A/UX command "systemfolder" can generate a clean personal Folder in the $HOME directory. The contents of the newly created personal System Folder will include generic files from the "/mac/lib/SystemFiles/private" and "/mac/lib/SystemFiles/shared" directories. Follow these steps:

1) Log on as "root"

2) Type the command "systemfolder"

3) If you receive the message, "System Folder '/System Folder' already exists - updating", type the command: mv "System Folder" "old system". Then type the command "systemfolder"

4) Logout as root and login as the user.

5) You have created a clean System Folder, and you can then copy the Extensions and Control Panels you want into the "/mac/sys/System Folder".

Article Change History:
03 May 1995 - Updated article for clarity.
22 Aug 1994 - Reviewed for accuracy.

Support Information Services
Published Date: Feb 20, 2012

OPENSTEP 4.2 Release Notes: Application Kit

This document contains the following sections:

New Features in 4.2: High-level description of the changes in the Application Kit and related software between 4.1 and 4.2
New Features in 4.1: High-level description of the changes between 4.0 and 4.1
New Features in 4.0: High-level description of the changes between 3.3 and 4.0

Known Problems in This Release: List of important bugs in the Application Kit and related software in 4.2

Changes since 4.1: API and functionality changes in the Application Kit and related software between 4.1 and 4.2
Changes since 4.0: API and functionality changes between 4.0 and 4.1
Changes before 4.0: API and functionality changes between the prereleases of 4.0 and 4.0

This article has been archived and is no longer updated by Apple.

New Features in 4.2

Vertical SplitView

NSSplitView now supports vertical splits as well as horizontal splits.

ToolTips

It's now possible to add "tooltips" (short help messages which pop up as the user holds the mouse cursor over an item) to views. You can do this programmatically or via Interface Builder's Help panel.

Text Hyphenation & Justification

The text object now supports full justification & hyphenation. See the section "Changes since 4.1" for details.

ComboBoxCell

There is now a public NSComboBoxCell class. This allows you to use combo boxes in tableviews, among other things.

New Features in 4.1

ComboBox

The NSComboBox class has been added to the Application Kit. It offers similar functionality to the Combo Box control defined in the Microsoft° Windows, user interface.

Splash Screen

OPENSTEP for Windows now provides support for a "splash" screen in applications<basically a panel that comes up with a static image as the application is being launched. To use this feature, simply provide an 8-bit uncompressed bmp image named **Splash.bmp** as a resource in your application. You can make it localizable if you wish. (Thus the image will be either in *appname*.app/Resources or *appname*.app/Resources/*language*.lproj.) At launch time, the image will be loaded and displayed before any other initialization in the application, and will be removed from the screen before the first window is displayed.

For other changes in 4.1 please refer to the "Changes since 4.0" section below.

New Features in 4.0

OpenStep

OpenStep brings numerous API changes to the AppKit relative to Release 3.3. These changes and the tools provided for applications to convert to OpenStep are described in **/NextLibrary/Documentation/NextDev/Conversion/ConversionGuide**, available on OPENSTEP for Mach.

New Text System

4.0 includes a new text system composed of several different classes: NSTextView (front-end UI), NSTextStorage and NSAttributedString (back-end text storage), NSLayoutManager (management of text layout process and info), and NSTextContainer (description of text flow areas). These classes provide an open, powerful interface and allow text editing in multiple languages, using the Unicode standard. Please refer to the documentation for detailed info. An overview can be found in **/NextLibrary/Documentation/NextDev/TasksAndConcepts/ProgrammingTopics/TextOverview.rtfd** (Mach) or in the **/NextLibrary/Documentation/NextDev/TasksAndConcepts/Topics.hlp** (Windows). There is also a programming topic which describes some of the defaults that can be used to customize the new text system and how to remap or add to the standard supported keybindings. In addition to these notes, the source code to several text-specific examples, including the full source to TextEdit, can be found in the **/NextDeveloper/Examples/AppKit** directory.

TableView

TableView has been completely rewritten and moved into the AppKit. All four classes making up the new TableView are public and fully subclassable.

Keyboard UI

Keyboard access is now provided to most of the controls in the AppKit. For more information, see the separate Keyboard UI Release Notes.

Formatting and Validation

Cells may now be assigned arbitrary object values, which are converted into presentation strings by associated formatter objects. This allows the developer to directly set an NSDate, for instance, as the value of a cell. The cell's associated date formatter will present a localized string representation of the date to the user. The formatter objects, along with control delegates, can also perform validation on user-entered data, thereby restricting entries to valid ranges or quantities, for instance only allowing dates between January 1, 1995 and June 30, 1995.

Rich Text in Cells

NSCell and subclasses can now display and edit rich text. The rich text is specified via instances of NSAttributedString. The new formatting/validation API also includes support for attributed strings.

RulerView

NSRulerView is designed as a general-purpose ruler that can be associated with any scroll view and used by any view that's in the scroll view. It supports both horizontal and vertical rulers, allows arbitrary markers along the rule, and can accept an accessory view.

System Colors

New API has been added to access system-defined colors, such as the color of buttons, controls, text and text selection colors. On Windows, where the user can change the system colors at any point, these

colors will change at runtime to match the user's selection.

Help System

The AppKit's Help API has changed significantly. NSHelpPanel has been obsoleted in favor of a new class, NSHelpManager, which provides a more platform-independent approach to presenting help.

Known Problems in This Release

NSComboBox

Reference: 71826

Problem: NSComboBox should support keyboard interface

Description: NSComboBox does not support keyboard accelerators to open, dismiss, or navigate its popup list.

Workaround: None.

NSTableView

TableView does not yet have printing support.

Reference: 51731

Problem: TableView does not fully support keyboard ui

Description: Only simple tabbing between editable cells is implemted in TableView. Arrow keys do not affect selection.

Workaround: Override keyDown: in a subclass or in the owning window and change the selection accordingly.

Reference: 63967

Problem: Header and row height do not change relative to font size

Description: When the developer changes the font size of the header view cells or data cells in a TableView, the heights of the header view and rows do not change appropriately.

Workaround: Manually change the height of the header view and row height.

NSCell

Reference: 52511

Problem: **setUpFieldEditorAttributes:** called only when editing

Description: **setUpFieldEditorAttributes:** is not called when non-editable text is displayed in cells. This makes it difficult to change colors in custom subclasses of NSCell.

Workaround: To display colored text in cells, text fields or attributed string values may be used.

NSImage

Reference: 60413

Problem: JPEG TIFFs don't work on Windows.

Description: Because the imageserver process is not yet available under Windows, JPEG TIFFs cannot be loaded in.

Workaround: None. The images can be compressed using another compression scheme using tiffutil on OpenStep for Mach.

New Text System

Reference: 58479

Problem: Rotated text views don't do selection very well

Description: The selection drawing (at least) in a rotated NSTextView needs work. The selection is generally drawn too large and leaves pixels around.

Workaround: None. Avoid editable rotated NSTextViews for now.

Reference: 50123

Problem: Some features are currently unimplemented

Description: The following features are currently unimplemented: Tabs other than left, certain paragraph style attributes, scaled images.

Workaround: None.

Reference: 54951

Problem: Screen fragments in containers with holes

Description: If you attempt to create an NSTextContainer with holes such that one physical line can have multiple line fragments, there are still problems with erasing old drawing below the hole when text is deleted.

Workaround: None.

Reference: 49744

Problem: Images are not scaled in scaled text

Description: Using the standard NSTextAttachment class, the images appear at 100%.

Workaround: This problem can be fixed by using a custom attachment cell.

NSWindow

Reference: 71648

Problem: Closing a modal window or panel does not always end the modal session

Description: Closing a modal window or panel by clicking on the close box will not always end the modal session, leaving the application in a state where mouse clicks and key strokes are ignored. On Windows, modal panels often have a close box. This acts the same as a cancel button and, by default, clicking the close box while running modal will stop the modal session with the NSCancelButton return code. However, if the Window's delegate decides to control when the window should close by implementing

windowShouldClose:, then it is also up to the delegate to stop the modal session in windowWillClose:. On Mach, modal windows and panels rarely have a close box; if they do they must stop modal in windowWillClose:.

Workaround: On Windows, a window delegate implementing windowShouldClose should stop the modal session in windowWillClose:. On Mach, any modal window or panel with a close box should stop the modal session in windowWillClose:

Reference: 64988

Problem: NSBackingStoreNonretained don't work under Windows

Description: Under Windows, nonretained windows aren't implemented.

Workaround: Use retained or buffered windows instead.

Reference: 69973

Problem: Miniaturizing and then restoring a window under WindowsNT causes first responder to be lost

Description: When a window is miniaturized it loses track of its current first responder. When it is restored again, the first responder is not restored.

Workaround: You can use makeFirstResponder to set a first responder yourself or just make the user click something.

Drag/Drop

Reference: 60829

Problem: On Windows, **ignoreModifierKeysWhileDragging** is never invoked on drag source

Workaround: None.

Reference: 67620

Problem: On Windows **draggedImage** always returns nil.

Description: During a dragging session, the DraggingInfo will always return nil when queried for its draggedImage.

Workaround: None.

Reference: 63466

Problem: On Windows, the drag source's image offset is ignored

Description: Currently the dragged image will appear to the lower right of the cursor's hot spot.

Workaround: None.

NSFont

Reference: 61824

Problem: Microsoft's *WingDings* font is not supported well under OPENSTEP for Windows

Description: There isn't currently a Unicode mapping for any of the glyphs in it, even into the User Zone, so it works as any other "unknown" font (i.e., characters 0-255 are mapped directly to glyphs 0-255).

Workaround: None.

Keybord UI

Reference: 51182

Problem: AccesoryViews are not added to keyView loop

Description: When a panel supporting accessory views, such as the SavePanel, is brought on screen, the accessory views are not automatically added to the keyView loop.

Workaround: Add the accessory view to the keyView loop by hand using setNextKeyView: before brining the panel on screen.

Accessory Views

On Windows, the PageLayout panel does not yet support application supplied accessory views. Also on Windows, accessory views in the Open, Save and Print panels work only on NT 4.0, not NT 3.51.

Changes since 4.1

The following lists all the API changes and some of the bug fixes that were done in the Application Kit between 4.1 and 4.2.

Note that in your application if you use any API which was added in 4.2, your application might not run under 4.0 or 4.1. (If you are not deploying under a previous release, then this is not an issue.) You can catch some of the potential problems by defining **STRICT_40** or **STRICT_41** at compile time. These #defines are used in the Application and Foundation Kits to mark new API.

Similarly, if you rely on a bug fix done in 4.2, your application may not function correctly under 4.0 or 4.1. Make sure you test on your intended deployment platform.

NSSplitView

NSSplitView now supports vertical splits as well as horizontal splits:

```
- (void)setVertical:(BOOL)flag;
- (BOOL)isVertical;
```

In 4.2, splitview look & feel has been changed to be more Windows-like when running with the Windows interface style. There's no dimple, the split bar is thinner, and you get a resize cursor. The method **dividerThickness** returns the correct thickness of the bar.

ToolTips

Use the following API to set a tooltip on a view:

```
- (void)setToolTip:(NSString *)string;
- (NSString *)toolTip;
```

Specify a **nil** tooltip to cancel it.

Note that tooltips are currently not archived with views. However, if you set a tooltip in IB, they will be

correctly saved in the nib file, so this is not a serious issue.

NSComboBox

setFont: will now correctly change the font of the items in the drop down box. It will also call **setItemHeight:** to set the height of the items depending on the font size. If you wish to change the item height independently, you should call **setItemHeight:** after **setFont:**.

selectItemAtIndex: will now correctly set the item in the text field. It didn't do so in 4.1.

The formatter on a combo box will now be used in formatting items in the combo box in addition to the item in the text field.

NSApplication

Applications will now be properly terminated on Windows upon logoff or shutdown. This means the application delegate will get **applicationShouldTerminate:**, and if it answers NO, the shutdown will be cancelled.

Support for "hide" has been added to OPENSTEP for Windows. The default menu item for this is "Minimize All" under the "Windows" menu (with ctrl-h as the key equivalent). It is added there automatically by the kit (if not there). You can prevent this with the **NSDontAddMinimizeAllMenuItem** default. If you need to do this for your application, simply register this default at startup. Otherwise, like all defaults, users can also set this themselves.

In 4.0 and 4.1, the Application Kit erroneously called **setlocale**() to cause all C library functions to work in an localized way. The main impact of this was in European Windows systems, where primitives such as sprintf() started working in a localized fashion (expecting "," as decimal separator, for instance). This broke NSScanner's parsing of floating point numbers, and caused the infamous "red Project Builder windows on European Windows in certain cases" problem.

In 4.2, this bug has been fixed; the Application Kit no longer calls setlocale(). This should have no impact on Mach (where the operations of these functions were independent of the setlocale() call). On Windows this change means that sprintf(), etc will no longer by default work in a localized fashion. OPENSTEP-based objects will keep on working correctly with the appropriate locale info, so this hopefully has very little impact. Note that developers should avoid calling setlocale() themselves (or if they do, they should do it temporarily and restore the setting once they're done).

NSLayoutManager

The following API has been added to support hyphenation:

```
- (void)setHyphenationFactor:(float)factor;
- (float)hyphenationFactor;
```

Factor should be a float in the range 0.0-1.0. Whenever (width of the real contents of the line) / (the line fragment width) is below this value, hyphenation will be attempted when laying out the line. By default, the value is 0, meaning hyphenation is off. 1.0 causes hyphenation to be always attempted. Note that hyphenation will slow down text layout and increase memory usage, so it should be used sparingly.

You can save the hyphenation factor in an RTF file by specifying a value for **@"HyphenationFactor"** in the document attributes dictionary.

NSTextView

The following method has been added as the default target of the "Justify" menu item to allow full justification:

- (void)alignJustified:(id)sender;

NSOpenPanel

The open and save panels now allow directory selection on Windows. In addition, the open panel will correctly filter files to display only those with the specified extension (the "All Files" option lets the user override this).

NSView

In 4.2, tracking rects can be assigned to a view even if the window the view is in is deferred and has not been created yet. Note that this already worked on OPENSTEP for Windows in 4.1 but didn't on OPENSTEP for Mach. If you have a 4.2 application which uses tracking rects and it needs to run under 4.1, you should test it under 4.1 to make sure it does work. If not, you might have to delay your tracking rect creation or make your windows non-deferred.

Tracking rects now work in non-key windows on Windows. This was the case on Mach already.

NSColor

A bug in **decodeNXColor** which caused CMYK colors from 3.x archives to be read incorrectly in 4.0 and 4.1 has been fixed. (The colors were way off; instead of C, M, Y, K, the values 1-C, 1-M, 1-Y, and 1-K would be used.)

NSWindow

A bug causing certain windows on Windows to grow everytime they were brought on screen has been fixed.

On Windows in some cases mouse drag events could come before the mouse down; this has been fixed.

Ordering windows front would cause **NSWindowDidResizeNotification** to be sent on Windows. This is now done only when the window is resized.

Windows freed while minimized would leak their content views on Windows. This is no longer the case.

Changes since 4.0

The following list all the API changes and some of the bug fixes that were done in the Application Kit between 4.0 and 4.1.

NSApplication

IBOutlet and **IBAction** are now defined in the kit and automatically imported if you import **AppKit.h**. You can remove your own custom definitions of these (if you had any).

The **hide:** method has been changed to do nothing on Windows.

On Windows, **[NSApplication init]** (called by **sharedApplication**) changes the current directory to the root of the drive from which the application is launched. This is done in order to avoid problems associated with the application starting off in random places (such as the directory of a file-wrapper, when launched by double-clicking on a file in a file-wrapper). On consequence of this is that if your application changes the current directory in the **main()** function, this change will be overridden as soon as you call **sharedApplication**.

The default value of the **NSUseRunningCopy** command line option has been changed to YES. This means that anytime you cause a second copy of the application to be launched, it will connect you to the already running copy. You should also If you wish to run multiple copies of an application, you

should use "-NSUseRunningCopy NO". You might need this if you need to debug a new instance of the application while it's already running.

Another change is that all command line options which are not defaults options (meaning a pair of arguments where the first one starts with a "-") are now treated as file names to be opened, as if they were prefixed with -NSOpen.

As a result of these two changes, you can now associate documents with OPENSTEP apps on Windows simply by providing the location of the app. The default command line provided by the Explorer will be enough to open documents and also connect to a running copy of the application, if there is one.

NSWindow

In OPENSTEP for Windows, document edited state is now indicated in the title bar by prefixing the title with an asterisk. OPENSTEP for Mach still uses a broken "X".

Tracking rects are now implemented on Windows.

The following are not actually changes since 4.1, but are a couple things to be aware of concerning NSWindows in OPENSTEP for Windows.

· Under Windows, the frameRect and contentRect are currently the same size. The frameRect of an NSWindow under OPENSTEP for WIndows NT does NOT include the title bar, menu bar, resize border, etc...

· Under Windows, the contentView while a window is miniaturized is a NSImageView, not the original contentView. The contentView is restored when the window is deminiaturized. This is necessary because under some versions of Windows NT, the same actual window is used when the window is full size or miniaturized. It is just moved and resized when miniaturing or restoring. Since most content views are not prepared to size themselves that small, the content view is removed from the window while it miniaturizes and is restored when the window is restored.

NSTableView

A new notification, **NSTableViewSelectionIsChangingNotification**, and a corresponding delegate method, **tableViewSelectionIsChanging:**, have been added to NSTableView. The existing **NSTableViewSelectionDidChangeNotification** is only sent after the user has moused up when changing a selection. The new notification is sent while the selection is changing.

NSSavePanel

The save panel will now put up an alert letting you confirm before you replace an existing file.

NSInputServer

The following methods were added to NSInputServer. They are sent by current input manager when the application changes state so that the server can update its concept of who's current. The actually "active" sender is the last one to have sent a **senderDidBecomeActive:** message. These methods may not arrive in the expected order.

```
- (void)senderDidBecomeActive:(id)sender;
- (void)senderDidResignActive:(id)sender;
```

This method is sent by input manager when the conversation within a particular sender changes:

```
- (void)activeConversationWillChange:(id)sender oldConversation:(long)conv newConversation:(long)new;
```

NSTextView

To allow entering a character without an appropriate keyboard, you can now use the Alt key in conjunction with the digit keys from the keypad. While holding down the Alt key, type the index of the desired character in the encoding of the current font (in most cases this will be the NEXTSTEP encoding). The appropriate character will be inserted into the text when the Alt key is released.

NSWorkspace

The **openFile:withApplication:** will now correctly open the file with the specified application. In 4.0 this method always returned NO when an application name was supplied.

OPENSTEP for Window now contains an "open" command. Like on Mach, "open filename" will open the specified file in its registered application. You can also use the "-e" flag to open the file in TextEdit or the "-a" flag to launch an application.

NSAttributedString

If supplied a plain text file, the **initWithPath:documentAttributes:** method will now go ahead and still create an attributed string from the plain text contents. Note that if the file looks like an RTF file (has the appropriate magic header), but fails to open, the method will still return nil.

NSColor

Unarchived NSColors and NSColors created with **colorWithCalibratedRed:green:blue:alpha:** and **colorWithCalibratedWhite:alpha:** will be replaced by the cached and uniqued colors returned by methods such as [NSColor whiteColor] if they are exactly the same. In some cases this will greatly reduce the number of colors created at runtime and speed up certain operations. However, in the unlikely event that this causes problems in your application, or prevents your 4.0 application from running correctly under 4.1, you can set the **NSCachedColorConversion** default to NO.

System colors (such as those returned by [NSColor controlColor]) have been improved to generate colors which match those used by Windows. Under 8-bit color this should result in a visible improvement in certain color schemes.

Changes before 4.0

There are tops scripts to assist PR1 to PR2 and PR2 to 4.0 migration. Many of the API changes that have happened between prereleases can be automatically applied to your code with these commands:

```
tops -semiverbose -scriptfile /NextDeveloper/OpenStepConversion/ConversionScripts/PR1toPR2.tops *.[mchCM] *.psw *.pswm

tops -semiverbose -scriptfile /NextDeveloper/OpenStepConversion/ConversionScripts/PR2to40.tops *.[mchCM] *.psw *.pswm
```

Formatting and Validation

NSFormatter and NSDateFormatter have moved into the Foundation Kit. FoundationKit now also includes a number formatter. Imports of <AppKit/NSFormatter.h> or <AppKit/NSDateFormatter.h> will need to be changed to import the corresponding file from Foundation; imports of <AppKit/AppKit.h> don't need to be changed. The tops script mentioned above takes care of this. Also, a new NSNumberFormatter has been added.

The control delegate message **control:validateObject:** has been changed to **control:isValidObject:**.

NSApplication

NSApplication defines a new delegate method similar to **-application:openFile:** called

```
-(void)application:(NSApplication *)app printFile:(NSString *)path
```

Upon launching, an application scans its command line arguments for -NSOpen and, now, -NSPrint arguments. These arguments are followed by the path to a file to open or print respectively. NSApplication sends the above messages to its delegate if it responds in this way for the files specified on the command line. These messages are also invoked in response to Speaker/Listener interaction, but this aspect is perhaps less interesting to developers.

This new message (and the new command-line argument -NSPrint) is supported on both Mach and Windows.

Under Windows NT, when you install OPENSTEP, Explorer associations are automatically created for each file extension that the OPENSTEP applications claim. The file-type's icon is associated with its extension and Open and Print commands are registered as well. These commands work through the new command-line options, and can be accessed through Explorer's right-mouse context menu. So, for example, right clicking an RTF file in Explorer will give you a menu that includes both Open and Print as well as some other stuff. Choosing Open or Print will cause TextEdit to open or print the file. Open is registered as the default command for these file extensions, so double-clicking an RTF file will open it in TextEdit.

A new notification, **NSApplicationWillTerminateNotification,** has been added to OpenStep. It is sent before the Application's **terminate** method after **applicationShouldTerminate** is queried.

A Windows-specific method has been added to allow access to the Windows application handle. This will only be of interest to developers calling the Win32 API directly. (Arguments that varioius types of Windows handles are declared as void currently to avoid polluting the namespace with the vast amount of un-prefixed names in the Windows system headers.)

```
- (void * /*HINSTANCE*/)applicationHandle;
```

A Windows-specific method has been added to allow developers to look up an NSWindow object given a Windows HWND handle. This will only be of interest to developers calling the Win32 API directly.

```
- (NSWindow *)windowWithWindowHandle:(void * /*HWND*/)hWnd;
```

A Windows-specific method has been added for developers who choose to implement their own WinMain() function If you do so, call the method below before doing any other AppKit calls. The arguments are those passed to WinMain() from the system.

```
+ (void)setApplicationHandle:(void * /*HINSTANCE*/)hInstance
previousHandle:(void * /*HINSTANCE*/)PrevInstance
commandLine:(NSString *)cmdLine
show:(int)cmdShow;
```

NSTableView

The table view has a new mode where it resizes all the columns, not just the last one, to fill the scroll view. In this mode, if the table view fits exactly into its scroll view, and is then grown, it will grow all of its resizable columns to keep itself the size of the scroll view. Here are the new methods to enable this:

```
- (void)setAutoresizesAllColumnsToFit:(BOOL)flag;
- (BOOL)autoresizesAllColumnsToFit;
```

While tracking a cell or performing the table view's action, one may discover what cell was clicked on to cause the action to perform with these additional methods:

```
- (int)clickedColumn;
- (int)clickedRow;
```

NSAttributedString

Parts of NSAttributedString and NSMutableAttributedString have moved into the Foundation Kit. Just

using Foundation, without the Application Kit, you can create and manipulate attributed strings; however you do not have access to the standard attribute types such as color, font, and paragraph style. The rest of the attributed string functionality is provided by categories in Application Kit.

The following names have changed in NSAttributedString:

```
NSAttributedStringEditedAttributes -> NSTextStorageEditedAttributes
NSAttributedStringEditedCharacters -> NSTextStorageEditedCharacters
```

The following methods to read RTF:

```
+ (NSAttributedString *)attributedStringFromRTF:(NSData *)rtfData;
+ (NSAttributedString *)attributedStringFromRTFD:(NSData *)rtfData;
+ (NSAttributedString *)attributedStringFromRTFDFile:(NSString *)rtfdPath;
```

have been replaced by:

```
- (id)initWithRTF:(NSData *)data documentAttributes:(NSDictionary **)dict;
- (id)initWithRTFD:(NSData *)data documentAttributes:(NSDictionary **)dict;
- (id)initWithPath:(NSString *)path documentAttributes:(NSDictionary **)dict;
- (id)initWithRTFDFileWrapper:(NSFileWrapper *)wrapper documentAttributes:(NSDictionary **)dict;
```

The optional dict argument is for returning document-wide attributes, which currently include "PaperSize", "LeftMargin", "RightMargin", "TopMargin", and "BottomMargin". Pass NULL for dict if you don't care about these.

The following methods to write RTF:

```
- (NSData *)RTFFromRange:(NSRange)range;
- (NSData *)RTFDFromRange:(NSRange)range;
- (BOOL)writeRTFDToFile:(NSString *)path atomically:(BOOL)flag;
```

have been replaced by:

```
- (NSData *)RTFFromRange:(NSRange)range documentAttributes:(NSDictionary *)dict;
- (NSData *)RTFDFromRange:(NSRange)range documentAttributes:(NSDictionary *)dict;
- (NSFileWrapper *)RTFDFileWrapperFromRange:(NSRange)range documentAttributes:(NSDictionary *)dict;
```

Pass nil for dict if you don't want to specify any of the document attributes.

To write RTFD to file you will need to send **writeToFile:atomically:updateFilenames:** to the NSFileWrapper you get back from **RTFDFileWrapperFromRange:documentAttributes:**. The updateFilenames: flag should usually be YES (unless you are doing a "Save To").

The following method names are changed in NSMutableAttributedString:

Before:

```
- (void)fixAttributesAfterEditingRange:(NSRange)range;
- (void)fixFontAttributeAfterEditingRange:(NSRange)range;
- (void)fixParagraphStyleAfterEditingRange:(NSRange)range;
- (void)fixAttachmentAfterEditingRange:(NSRange)range;
```

After:

```
- (void)fixAttributesInRange:(NSRange)range;
- (void)fixFontAttributeInRange:(NSRange)range;
- (void)fixParagraphStyleAttributeInRange:(NSRange)range;
- (void)fixAttachmentAttributeInRange:(NSRange)range;
```

The value of **NSAttachmentCharacter** has been changed from 0xF6FF to 0xFFFC to match the one proposed in the Unicode standard. Code which uses this value will need to be recompiled; places where this value is archived explicitly might need to check for the old value. (RTF files did archive this value, so no need for changes there.) If the old value ever appears in an attributed string at runtime, the new value will be used, and a warning will be generated (single warning per app session).

The method **updateAttachmentsFromPath:** has been added to NSMutableAttributedString to allow updating the file name information in all the attachments in the attributed string.

NSImage

NSImage now understands the bmp, ico, and cur image formats. ico and cur files with multiple images will be loaded as images with multiple representations. Typically these representations will have different sizes (unlike multiple-representation tiffs, which have different depths); by default, NSImage will choose the largest image when compositing.

Windows-specific methods have been added to NSImage and NSBitmapImageRep which allow creation of these objects from a Windows icon handle or bitmap handle. These will only be of interest to developers calling the Win32 API directly.

```
- (id)initWithIconHandle:(void * /* HICON */)icon;
- (id)initWithBitmapHandle:(void * /* HBITMAP */)bitmap;
```

setFlipped: and **flipped** have been brought back into the API.

Compositing Operation name changes

Some of the constants declared by DPSClient for various compositing operations have had their names corrected:

Old Name	New Name
NSCompositeDataOver	NSCompositeDestinationOver
NSCompositeDataInreplace	NSCompositeDestinationIn
NSCompositeDataOut	NSCompositeDestinationOut
NSCompositeDataAtop	NSCompositeDestinationAtop

NSCursor

In order to make NSCursor immutable, the following methods:

```
- (id)initWithImage:(NSImage *)newImage;
- (void)setImage:(NSImage *)newImage;
- (void)setHotSpot:(NSPoint)spot;
```

have been replaced by:

```
- (id)initWithImage:(NSImage *)newImage hotSpot:(NSPoint)aPoint;
- (id)initWithImage:(NSImage *)newImage
foregroundColorHint:(NSColor *)fg
backgroundColorHint:(NSColor *)bg
hotSpot:(NSPoint)hotSpot;
```

The color hints in the latter method are ignored in OPENSTEP for Windows and for Mach.

The **initWithImage:** and **setImage:** methods are somewhat generic and hard to detect, so the tops script might fail to catch all your uses.

Another change in NSCursor since PR2 is the support for custom cursor selections on Windows. OPENSTEP applications will use the correct arrow and I-beam cursors where applicable. If you ask for the image of one of these standard cursors on OPENSTEP for Windows, you will get back the correct image used by the system. You should note that the size of this image may be different than the traditional 16x16 used on Mach. For animated cursors you will simply get back the first frame.

NSText

The following method names are changed in the NSText API:

Before:

```
- (NSString *)text;
- (void)setText:(NSString *)string;
- (void)setText:(NSString *)string range:(NSRange)range;
- (void)replaceRange:(NSRange)range withRTF:(NSData *)rtfData;
- (void)replaceRange:(NSRange)range withRTFD:(NSData *)rtfdData;
- (void)setColor:(NSColor *)color ofRange:(NSRange)range;
- (void)setFont:(NSFont *)font ofRange:(NSRange)range;
```

After:

```
- (NSString *)string;
- (void)setString:(NSString *)string;
- (void)replaceCharactersInRange:(NSRange)range withString:(NSString *)aString;
- (void)replaceCharactersInRange:(NSRange)range withRTF:(NSData *)rtfData;
- (void)replaceCharactersInRange:(NSRange)range withRTFD:(NSData *)rtfdData;
- (void)setTextColor:(NSColor *)color range:(NSRange)range;
- (void)setFont:(NSFont *)font range:(NSRange)range;
```

NSTextView

The following methods are added to NSTextView:

```
- (void)pasteAsPlainText:(id)sender;
- (void)pasteAsRichText:(id)sender;

- (NSPoint)textContainerOrigin;
- (void)invalidateTextContainerOrigin;

- (NSRange)rangeForUserTextChange;
- (NSRange)rangeForUserCharacterAttributeChange;
- (NSRange)rangeForUserParagraphAttributeChange;

- (BOOL)smartInsertDeleteEnabled;
- (void)setSmartInsertDeleteEnabled:(BOOL)flag;
- (NSRange)smartDeleteRangeForProposedRange:(NSRange)proposedCharRange;
- (void)smartInsertForString:(NSString *)pasteString replacingRange:(NSRange)charRangeToReplace
beforeString:(NSString **)beforeString afterString:(NSString **)afterString;
```

The following method names are changed in the NSTextView API to allow richer specification of selected text attributes:

Before:

```
- (void)setSelectionColor:(NSColor *)color;
- (NSColor *)selectionColor;
```

After:

```
- (void)setSelectedTextAttributes:(NSDictionary *)attributeDictionary;
- (NSDictionary *)selectedTextAttributes;
```

Underlining is now supported in the new text system; **NSSingleUnderlineStyle** has been added as a possible value for the **NSUnderlineStyleAttributeName** attribute.

The delegate method **textView:clickedOnCell:inRect:** has been added to indicate single-clicks on text attachments.

The method **attachmentForDraggedFilename:** has been removed from the API.

NSTextStorage

NSTextStorage now sends out notification messages after edits:

```
NSTextStorageWillProcessEditingNotification
NSTextStorageDidProcessEditingNotification
```

It also has a delegate who gets the following messages:

```
- (void)textStorageWillProcessEditing:(NSNotification *)notification;
- (void)textStorageDidProcessEditing:(NSNotification *)notification;
```

These methods are called during post-edit processing (basically after **endEditing** has been called, or, if endEditing was not in effect, after each edit that causes **edited:range:changeInLength:**). The first notification is sent before attributes are fixed, the second is sent after the attributes are fixed, but before the layout managers are notified. During the execution of **textStorageWillProcessEditing:** the delegate can change the attributed string all it wants; during **textStorageDidProcessEditing:** it should refrain from changing the character contents. The changes done by the delegate will not cause further notifications to be sent. However, during the execution of these methods and notifications the delegate and the observers can obtain information about what's changed via the following methods:

```
- (unsigned)editedMask;
- (NSRange)editedRange;
- (int)changeInLength;
```

NSTextStorage now also has a clear funnel point for all post-edit processing:

```
- (void)processEditing;
```

This method sends the above notification methods, calls **fixAttributesInRange:**, and informs the layout managers of the changes.

The following methods, now much less useful, have been removed from the API:

```
- (void)verifyEdited:(unsigned)mask range:(NSRange)range changeInLength:(int)delta;
- (void)notifyEdited:(unsigned)mask range:(NSRange)range changeInLength:(int)delta
invalidatedRange:(NSRange)invRange;
```

Subclassers, note: NSTextStorage is now a semi-abstract class. It implements change management (**beginEditing**/**endEditing**), verification of attributes, and layout management notification. The one aspect it does not implement is the actual attributed string storage--this is left up to the subclassers, which need to override the two NSMutableAttributedString primitives **replaceCharactersInRange:withString:** and **setAttributes:range:**. These primitives should perform the change then call **edited:range:changeInLength:** to get everything else to happen.

Here is a sample NSTextStorage subclasser:

```
@implementation SimpleTextStorage

/* Provide your own init methods, whatever you wish... Here we provide one (initWithAttributedString:) and override the DI from super
(init). */

- (id)initWithAttributedString:(NSAttributedString *)attrStr {
if (self = [super init]) {
contents = attrStr ? [attrStr mutableCopyWithZone:[self zone]] :
[[NSMutableAttributedString allocWithZone:[self zone]] init];
}
return self;
}

- init {
return [self initWithAttributedString:nil];
}

- (void)dealloc {
[contents release];
[super dealloc];
}

/* The next set of methods are the primitives for attributed and mutable attributed string... */

- (NSString *)string {
return [contents string];
}
```

```
- (NSDictionary *)attributesAtIndex:(unsigned)location effectiveRange:(NSRange *)range {
return [contents attributesAtIndex:location effectiveRange:range];
}

/* In the mutable primitives (and any non-primitives which are overridden and which don't go through the primitives), we need to call
edited:range:changeInLength: to allow the text storage change management to do its job. */

- (void)replaceCharactersInRange:(NSRange)range withString:(NSString *)str {
[contents replaceCharactersInRange:range withString:str];
[self edited:NSAttributedStringEditedCharacters
range:range
changeInLength:(int)[str length] - (int)range.length];
}

- (void)setAttributes:(NSDictionary *)attrs range:(NSRange)range {
[contents setAttributes:attrs range:range];
[self edited:NSAttributedStringEditedAttributes range:range changeInLength:0];
}

@end
```

NSFileWrapper

A new public class has been added to the AppKit. NSFileWrapper provides support for the concept of a document wrapper (like a .rtfd, .nib, or many other NEXTSTEP file types). The new text system uses this class to handle RTFD documents, but it is designed to be generally useful. It handles reading and writing file packages in the file system as well as serializing them for use with the Pasteboard. See the General Reference for details.

NSTextAttachment

The following changes in NSTextAttachment take advantage of NSFileWrapper:

Before:

```
- (id)initWithContentsOfFile:(NSString *)path;
- (BOOL)writeToFile:(NSString *)path atomically:(BOOL)flag;
```

After:

```
- (id)initWithFileWrapper:(NSFileWrapper *)fileWrapper; /* Designated initializer */
- (void)setFileWrapper:(NSFileWrapper *)fileWrapper;
- (NSFileWrapper *)fileWrapper;
```

The **name** and **setName:** methods have also been removed from the API.

NSParagraphStyle

Subclassers, note: **NSParagraphStyle** and **NSMutableParagraphStyle** used to be abstract; they are now concrete.

setParagraphStyle: has been added to NSMutableParagraphStyle to allow setting all the values with one call.

NSRulerView/NSRulerMarker

The delegate method **rulerView:willSetClientView:** has been added to NSRulerView to give the existing client a chance to clean up.

The following method names are changed in NSRulerMarker:

Before:

```
- (void)setLocation:(float)location;
- (float)location;
- (id)initWithRulerView:(NSRulerView *)ruler location:(float)location image:(NSImage *)image imageOrigin:(NSPoint)imageOrigin;
```

After:
- (void)setMarkerLocation:(float)location;
- (float)markerLocation;
- (id)initWithRulerView:(NSRulerView *)ruler location:(float)location image:(NSImage *)image imageOrigin:(NSPoint)imageOrigin;

NSWorkspace

The following NSWorkspace methods will raise under OPENSTEP for Windows to indicate that they are not implemented (and the return value, being wrong, shouldn't be relied upon):

- (BOOL)fileSystemChanged;
- (BOOL)userDefaultsChanged;
- (NSArray *)mountedRemovableMedia;
- (NSArray *)mountNewRemovableMedia;

The following methods are no-ops:

- (void)checkForRemovableMedia;
- (void)findApplications;
- (void)hideOtherApplications;
- (void)noteUserDefaultsChanged;
- (void)noteFileSystemChanged;
- (BOOL)getFileSystemInfoForPath:isRemovable:isWritable:isUnmountable:description:type:;
- (int)extendPowerOffBy;
- (void)slideImage:(NSImage *)image from:(NSPoint)fromPoint to:(NSPoint)toPoint;

In addition, note that the **NSWorkspaceRecycleOperation** will currently remove the files in OPENSTEP for Windows.

NSBrowser

The width of columns are now dealt with as floats rather than ints to be consistent with the rest of the AppKit:

Before:
- (void)setMinColumnWidth:(int)columnWidth;
- (int)minColumnWidth;

After:
- (void)setMinColumnWidth:(float)columnWidth;
- (float)minColumnWidth;

A couple other api items changed names:

Before:
- (void)drawTitle:(NSString *)title inRect:(NSRect)aRect ofColumn:(int)column;
- (BOOL)browser:(NSBrowser *)sender selectCell:(NSString *)title inColumn:(int)column;

After:
- (void)drawTitleOfColumn:(int)column inRect:(NSRect)aRect;
- (BOOL)browser:(NSBrowser *)sender selectCellWithString:(NSString *)title inColumn:(int)column;

Selection may now be done by index as well as path. Previously the developer was forced to resort to NSMatrix apis when trying to select a row in a browser column by index. Now she may use:

- (void)selectRow:(int)row inColumn:(int)column;
- (int)selectedRowInColumn:(int)column;

And the following delegate method was added in parallel to allow the delegate to perform the selection:

- (BOOL)browser:(NSBrowser *)sender selectRow:(int)row inColumn:(int)column;

Alerts

Two pairs of new functions have been added to support the alert styles found in the Windows UI. **NSRunInformationalAlertPanel()** and **NSRunCriticalAlertPanel()** take the same paramenters as **NSRunAlertPanel()**, but on Windows they present an alert with the "informational" or "critcal" icons, respectively. On Windows **NSRunAlertPanel()** presents an alert with the "warning" icon. On Mach calling any of the three functions produces the same UI. Also note that on Windows alerts have no title, so the title argument to these functions is not displayed in the UI. In addition, **NSGetInformationalAlertPanel()** and **NSGetCriticalAlertPanel()** have been added, which have the same relationship to the existing **NSGetAlertPanel()**.

The function **NSRunLocalizedAlertPanel()** is removed from the API; use **NSRunAlertPanel()** with explicitly localized arguments instead.

Services

The API involved in vending services has changed in PR2. The need for two names to resolve a service provider has been removed. In PR1, services were advertised in the Info.plist using a combination of NSExecutable, and NSProviderName. The provider name is now obsolete, so you simply advertise a single name under the entry NSPortName. This entry has the same meaning as in 3.3 services. Usually NSPortName will be the name of your application as NSExecutable was (e.g. "Webster"). The following API changes have also been made:

· **registerServiceProvider:withName:** has been obsoleted. Use **setServicesProvider:**.
· **unregisterServiceProviderNamed:** has been obsolete. Use **setServicesProvider:nil**.

Two new functions, **NSRegisterServiceProvider()** and **NSUnregisterServicesProvider()** can be used to register service providers under a given name. These functions should only be used by service providers not creating an application object (filter services often fall into this category). The name argument should be the same as that specified by the NSPortName entry of the Info.plist. See the Services documentation for more details.

NSWindow

The following new methods control the resizing behavior of the window. The first pair are used to make a window resize in fixed increments. The second pair are used to make a window resize such that it maintains an aspect ratio.

```
- (void)setResizeIncrements:(NSSize)increments;
- (NSSize)resizeIncrements;
- (void)setAspectRatio:(NSSize)ratio;
- (NSSize)aspectRatio;
```

The following new methods provide an OpenStep alternative to the NEXTSTEP-specific feature of instance drawing. The first method saves away a part of the window's image. Typically after this step, some temporary drawing is done. The second method restores the previously saved image, undoing any drawing that has happened since it was saved. The third method releases the memory used to hold the saved image.

```
- (void)cacheImageInRect:(NSRect)aRect;
- (void)restoreCachedImage;
- (void)discardCachedImage;
```

The **fax:** method has been removed from the OpenStep specification, and is now specific to the Mach platform.

A Windows-specific method has been added to allow access to the Windows window handle of an

NSWindow object. This will only be of interest to developers calling the Win32 API directly.

```
- (void * /*HWND*/)windowHandle;
```

NSView

The following new method removes a view from its view hierarchy, without marking that the now exposed region in its superview needs redisplay. This can be useful when a view is temporaily swapped in so as to draw something on behalf of its superview.

```
- (void)removeFromSuperviewWithoutNeedingDisplay;
```

The following method was added in order to preserve the utility of panels that "become key only if needed" (the Font Panel, for example). This feature was defeated by the advent of increased keyboard accessibility to the UI, as nearly all widgets now accept becoming the first responder, which meant the panel would become key almost no matter where the user clicked. The following method is implemented by a widget to return YES if clicking on it should cause one of these panels to become key (which is the same role **acceptsFirstResponder** used to play in these panels).

```
- (BOOL)needsPanelToBecomeKey;
```

The **fax:** method has been removed from the OpenStep spec, and is now specific to the Mach platform.

The following API was removed because it was unused in any of the OPENSTEP products.

```
@interface NSView(NSRIBPrinting)
- (BOOL)canPrintRIB;
@end

typedef enum _NSPosition {
NSNoPosition = 0,
NSLeft = 1,
NSRight = 2,
NSTop = 3,
NSBottom = 4
} NSPosition;
```

A new method has been added to NSView, which is to be overridden by subclassers to find when their view is installed in a new superview.

```
- (void)viewWillMoveToSuperview:(NSView *)newSuperview;
```

Two new display methods have been added to round out the existing set.

```
- (void)displayIfNeededInRect:(NSRect)rect;
- (void)displayIfNeededInRectIgnoringOpacity:(NSRect)rect;
```

The **NSViewBoundsChangedNotification** notification present in PR1 has been added to the OpenStep spec.

Updating in NSApplication, NSWindow and DPSClient

Various updating mechanisms in the Application Kit are now driven by a new Foundation feature, where NSRunLoop will perform selectors registered by clients in a given order during it's next cycle. (See **performSelector:target:argument:order:modes:** in NSRunLoop.) The following constants represent these uses within the Application Kit:

NSUpdateWindowsRunLoopOrdering (500000)
All Windows are sent the update message. This is also the time when menu items are enabled and disabled.

NSDisplayWindowRunLoopOrdering (600000)

All Windows holding Views needing redisplay are given the chance to redraw.

NSResetCursorRectsRunLoopOrdering (700000)
If needed, cursor rectangles are reestablished.

DPSFlushContextRunLoopOrdering (800000)
The IPC channel to the Window Server is flushed, ensuring any buffered data is executed.

NSResponder

The **insertNewLine:** method was renamed to **insertNewline:**.

NSApplicationMain

The AppKit now provides a function NSApplicationMain() to take care of the initialization and startup of your application. This function is declared in NSApplication.h. Because of this, ProjectBuilder will now generate a trivial main function for your application:

```
#import <AppKit/NSApplication.h>

int main(int argc, const char *argv[]) {
NSApplicationMain(argc, argv);
}
```

Although developer's should not need access to the body of NSApplicationMain(), it is documented here in the rare case that it is necessary. If at all possible, avoid copying this code, as doing so may prevent your application from automatically inheriting features added in future releases.

```
int NSApplicationMain(int argc, const char *argv[]) {
NSAutoreleasePool * pool = [[NSAutoreleasePool alloc] init];
NSDictionary *info = [[NSBundle mainBundle] infoDictionary];
NSString *principalClassName = [info objectForKey: @"NSPrincipalClass"];
NSString *mainNibFile = [info objectForKey: @"NSMainNibFile"];

if (principalClassName) {
Class principalClass = NSClassFromString(principalClassName);
if (principalClass) {
[principalClass sharedApplication];
if ([NSBundle loadNibNamed: mainNibFile owner: NSApp]) {
[pool release];
[(NSApplication *)NSApp run];
[NSApp release];
exit(0);
}
else NSLog(@"Unable to load nib file: %@, exiting", mainNibFile);
}
else NSLog(@"Unable to find class: %@, exiting", principalClassName);
}
else NSLog(@"No NSPrincipalClass specified in info dictionary, exiting");
[NSApp release];
[pool release];
exit(1);
return 0;
}
```

NSHost

NSHost (or NXHost)'ing is supported only between OPENSTEP for Mach machines or from NEXTSTEP 3.x machines to OPENSTEP for Mach. You cannot run an OPENSTEP application NSHost'ed to a 3.x machine. NSHost'ing is also not supported on OPENSTEP for Windows.

ObjectLinks

ObjectLinks have been removed from the OpenStep specification, and in general the feature is not supported in OPENSTEP for Mach or Windows. The exception is that the following subset of the API may be used on either platform to walk through the linked data from documents written in NEXTSTEP 3.X:

```
@interface NSDataLinkManager : NSObject <NSCoding> {
- (id)initWithDelegate:(id)obj fromFile:(NSString *)path;
- (NSEnumerator *)sourceLinkEnumerator;
- (NSEnumerator *)destinationLinkEnumerator;
@end

@interface NSDataLink : NSObject <NSCopying, NSCoding>
- (NSArray *)types;
- (NSSelection *)sourceSelection;
- (NSSelection *)destinationSelection;
- (NSString *)sourceFilename;
- (NSString *)currentSourceFilename; - (NSString *)destinationFilename;
- (NSString *)sourceApplicationName;
- (NSString *)destinationApplicationName;
- (NSDataLinkManager *)manager;
- (NSDate *)lastUpdateTime;
- (NSDataLinkNumber)linkNumber;
- (NSDataLinkDisposition)disposition;
@end

@interface NSSelection : NSObject <NSCopying, NSCoding>
+ (NSSelection *)emptySelection;
+ (NSSelection *)allSelection;
+ (NSSelection *)currentSelection;
- (NSData *)descriptionData;
- (BOOL)isWellKnownSelection;
@end
```

Note that this API is a subset of the previously provided ObjectLinks API, with one exception: The **currentSourceFilename** method has been added to NSDataLink to allow the application to query the current location of the source file (whereas the **sourceFilename** method returns the original name).

-NSShowPS

On Windows NT, when apps are run with the arguments "-NSShowPS YES", they will produce a dump of their PostScript output in the file **$TEMP\\showps.txt** (where $TEMP is an environment variable usually containing "C:\\temp".

NSColor

The following methods have been added to NSColor:

```
@interface NSColor (NSDynamicSystemColors) // OpenStep/Mach: Windows Name:
+ (NSColor *)controlShadowColor; // darkGrayColor COLOR_3DSHADOW
+ (NSColor *)controlDarkShadowColor; // blackColor COLOR_3DDKSHADOW
+ (NSColor *)controlColor; // lightGrayColor COLOR_3DFACE
+ (NSColor *)controlHighlightColor; // lightGrayColor COLOR_3DLIGHT
+ (NSColor *)controlLightHighlightColor; // whiteColor COLOR_3DHILIGHT
+ (NSColor *)textColor; // blackColor COLOR_WINDOWTEXT
+ (NSColor *)textBackgroundColor; // whiteColor COLOR_WINDOW
+ (NSColor *)selectedTextColor; // blackColor COLOR_HIGHLIGHTTEXT
+ (NSColor *)selectedTextBackgroundColor; // lightGrayColor COLOR_HIGHLIGHT
+ (NSColor *)controlBackgroundColor; // lightGrayColor COLOR_WINDOW
+ (NSColor *)controlTextColor; // blackColor COLOR_BTNTEXT
+ (NSColor *)selectedControlTextColor; // blackColor COLOR_HIGHLIGHTTEXT
+ (NSColor *)selectedControlColor; // whiteColor COLOR_HIGHLIGHT
+ (NSColor *)scrollBarColor; // grayColor COLOR_SCROLLBAR
```

```
+ (NSColor *)gridColor; // grayColor COLOR_3DFACE

@end
```

These colors should be used by developers who want to create custom controls or subclass existing controls which honor the user's color preferences. For example, where

```
PSsetgray(NX_LTGRAY);
```

was used,

```
[[NSColor controlColor] set];
```

is now used.

These colors belong to their own color space, namely:

```
extern NSString *NSDynamicSystemColorSpace;
```

Since these colors may change dynamically, they do not respond to the component accessor methods declared in NSColor.h. To extract the components of a system color, you must use NSColor's **colorUsingColorSpaceName:** method to convert the color to a color space known to respond to the component accessor methods you need.

The following notification has been added which is sent when the system colors have been changed (such as through a system control panel interface):

```
extern NSString *NSSystemColorsDidChangeNotification;
```

The default **NSCMYKAdjust** is now YES by default. This basically enables the WindowServer's ability to use an enhanced algorithm for rendering device-dependent CMYK colors on an RGB device, resulting in a greater accuracy in the on-screen appearance of CMYK colors.

Applications can turn this off by registering this default with a NO value at startup time.

Platform specific resources

Under PR1 and PR2 including platform-specific versions of resource files (nibs, for instance), required Makefile kludgery and/or source changes. This is no longer necessary.

NSBundle has been changed so that when it fetches a resource, it will look in the directory where the resource was found one additional time to check for a platform-specific version. The platform specific versions are indicated by appending "*-platformname*" to the base name of the resource. Valid platform names include **winnt** and **nextstep**.

For example, to include a Windows-specific version of Doc.draw in your project, simply add it as Doc-winnt.draw. The call [bundle pathForResource:@"Doc" ofType:@"draw"] will find the latter under OPENSTEP for Windows. Similarly a Windows-specific version of Edit.nib can be added as Edit-winnt.nib.

Note that ProjectBuilder also provides ways to specify platform-specific app and document icons, paths, and build options.

NSMenu

The OpenStep spec was amended to make NSMenu a subclass of NSObject, not NSPanel, and to replace NSMenuCell with the NSMenuItem protocol. NeXT's OPENSTEP products also provide an NSMenuItem class which conforms to the NSMenuItem protocol.

NSMenu and NSMenuItem provide almost all of the functionality of the old classes, but some window

and cell specific features are no longer available. This change was motivated by the very different ways menus are handled on different operating systems (such as Microsoft Windows). See the headers for more detail.

The NSWindow and NSView have additional support for menus to support Microsoft Windows conventions. Each NSWindow can have its own menu bar or no menu bar at all. By default NSWindow objects have the application's main menu as their menu bar while NSPanels have no menu bar. Use -[NSWindow setMenu:] to set a different NSMenu to be used as the menu bar in an NSWindow. **setMenu:** in NSWindow only has an affect in OPENSTEP for Windows since on Mach, windows do not have menu bars, but the API does exist on both platforms.

NSViews can now have menus associated with them as well. An NSView's menu is used as a contextual popup menu accessed by right-clicking the view (this should be a familiar feature to users of Windows 95). By default an NSView has no contextual menu, but some AppKit objects will provide default context menus. Currently only NSTextView (and therefore also editable controls) have a default menu, but this is likely to change. You can set a menu to be used as the context menu for a view through -[NSView setMenu:]. Context menus currently only work on OPENSTEP for Windows.

Setting a menu for either a window or view on Mach has no affect, so there is no need to do this conditionally inside an #ifdef WIN32 or anything. Context menus for views may even be supported on Mach in a later release.

Interface Style

Some aspects of the new support for multiple interface styles (or UIs) have been made public.

The header NSInterfaceStyle.h is now public and can be used by developers writing classes that need to tailor their appearance to the current interface style (usually NSControl or NSView subclasses, but not always). The function **NSInterfaceStyleForKey()** can be used to determine which style is in effect at a given time. This API should be used instead of relying on #ifdef WIN32 so that your drawing will be correct in all cases. For instance, InterfaceBuilder lets the user specify what interface style to show when editing nibs so that you can see what your interface will look like on any supported platform without actually having to be running on that platform.

The default **NSInterfaceStyle** can be used to control what style to use. By default the native interface style will be used, but you can override that with this default. Currently supported values are **Windows95** and **Mach**. Not everything can obey this setting, but most AppKit objects do.

NSPopUpButton

NSPopUpButtons no longer have NSButtonCells for items, the items in a popup now have the type **(id <NSMenuItem>)**. Also, The **-(NSMatrix *)itemMatrix** method has been replaced with **-(NSArray *)itemArray** which returns an NSArray instead of an NSMatrix.

NSButton and NSButtonCell

The **setType:** method in NSButton and NSButtonCell has been renamed to **setButtonType:**, because the old name overloaded a method inherited from NSCell.

NSMatrix

Two new convenience methods have been added to NSMatrix:

```
- (int)numberOfRows;
- (int)numberOfColumns;
```

NSSavePanel

NSSavePanel now inherits from NSObject in the OpenStep specification to gain greater portability. This means that although on Mach NSSavePanel is implemented as a subclass of NSPanel, methods inherited from NSPanel and NSWindow are not considered part of the spec. In fact, on Windows NSSavePanel is implemented as subclass of NSObject since we are using the native UI.

A new method has been added to the SavePanel to validate the visible columns. For instance, say your filtering criteria have changed. Call this method to get the correct files displayed:

```
- (void)validateVisibleColumns;
```

NSScrollView

Methods have been added to access the content view of the ScrollView. The content view is the scroll view's clip view:

```
- (void)setContentView:(NSClipView *)contentView;
- (NSClipView *)contentView;
```

Windows application lifetime issues

Applications under Windows introduce some interesting life cycle issues. One issue is that because the menus are only present inside of windows, an application with no open windows has no UI. Another issue is that when you double-click a file, Windows generally starts a fresh copy of the associated application to open it even if there's another copy already running. In OPENSTEP we have addressed these issues by defining some default behaviors and providing some new API to ensure that developers can control the behaviors if necessary.

By default, on Windows, an Application will terminate when the last menu-bearing window is closed. In general, this is the right thing to do. Sometimes, however, you may need to do something different. A new NSApplication delegate message has been added to allow you to override this default behavior. When NSApplication notices the last menu-bearing window has been closed, it will send **-(BOOL)applicationShouldTerminateAfterLastWindowClosed:(NSApplication *)sender** to the application's delegate if it responds. This message is sent on both Mach and Windows so it may be necessary to tailor your app's response for the platform. On Mach, application do not, by default, terminate when windows are closed. If you implement this method you should return YES if the application should terminate and NO if it should not. If you return YES you will shortly receive an -applicationShouldTerminate: messageas well. If you return NO you should also have arranged for some UI to remain. If you return NO and do nothing else, you are likely to lose all UI to your app and leave the user with no way to quit or do anything else.

On the other end of the life cycle, a new Windows-only feature has been added to NSApplication. If the arguments to the application on the command line includes the argument pair "-NSUseRunningCopy YES" then the app will check to see if a copy of itself is already running, and if it is, it will hand off to the running copy and exit. Any -NSOpen or -NSPrint requests will be forwarded on to the existing copy. When file associations are made for OpenStep apps, these arguments are included in the association. Therefore, double-clicking multiple .draw documents should end up opening them in a single copy of Draw. This feature is supported through a single NSApplication method. + **(void)useRunningCopyOfApplication** is called from the default implementation of the WinMain function. Apps that never want to use this feature can implement their own WinMain and avoid calling this method, but there should be very few good reasons to want to do that.

NSPasteboard and the NSFileContentsPboardType

NSFileContentsPboardType has been modified slightly to be the same as NSFileWrapper's serializedRepresentation. We expect this change to make the type much more useful. Among other things this means that NSFileContentsPboardType and NSRTFDPboardType use identical formats. There is still a semantic difference between the two, however. NSRTFDPboardType is used only for

RTFD text and it must satisfy certain constraints on the actual file contents written (eg there must be a file inside called TXT.rtf and so forth).

In support of this change, and to make it easier to use NSFileContentsPboardType in your applications, NSPasteboard has some new API for dealing with this type. In the past you had to write this type onto the pasteboard from the filesystem. And when you read it from the pasteboard you had to write it to the file system. Now it is possible to wirte this type from an NSFileWrapper instance and to read it out and get a new NSFileWrapper instance. The disk need not be involved anymore. The new API is:

```
- (BOOL)writeFileWrapper:(NSFileWrapper *)wrapper;
- (NSFileWrapper *)readFileWrapper;
```

Notification name changes

Some of the names of AppKit notifications have changed to follow the general naming guidelines.

Old Name	New Name
NSColorListChangedNotification	NSColorListDidChangeNotification
NSColorPanelColorChangedNotification	NSColorPanelColorDidChangeNotification
NSImageRepRegistryChangedNotification	NSImageRepRegistryDidChangeNotification
NSViewFocusChangedNotification	NSViewFocusDidChangeNotification
NSViewFrameChangedNotification	NSViewFrameDidChangeNotification
NSViewBoundsChangedNotification	NSViewBoundsDidChangeNotification

NSDragOperation removed

The **NSDragOperation** typedef has been removed from the API, and all uses are replaced by **unsigned int**, since the values used for this type must be often or'ed together.

NSPageLayout

NSPageLayout now inherits from NSObject in the OpenStep specification to gain greater portability. This means that although on Mach NSPageLayout is implemented as a subclass of NSPanel, methods inherited from NSPanel and NSWindow are not considered part of the spec. In fact, on Windows NSPageLayout is implemented as subclass of NSObject since we are using the native UI.

In addition, the following methods and types have been removed from the OpenStep specification, but are still available on the Mach platform:

```
- (void)convertOldFactor:(float *)old newFactor:(float *)new
- (void)pickedButton:(id)sender.
- (void)pickedOrientation:(id)sender
- (void)pickedPaperSize:(id)sender
- (void)pickedUnits:(id)sender

enum {
NSPLImageButton, NSPLTitleField,
NSPLPaperNameButton,
NSPLUnitsButton,
NSPLWidthForm,
NSPLHeightForm,
NSPLOrientationMatrix,
NSPLCancelButton,
NSPLOKButton
};
```

The **runModal** and **runModalWithPrintInfo:** methods now return NSOKButton or NSCancelButton on all platforms.

NSPrintInfo

There are two new keys available in the NSPrintInfo dictionary on the Windows platform:

```
NSPrintMustCollate
```

NSPrintFormName

NSPrintMustCollate indicates whether collation occurs when multiple copies are printed. NSPrintFormName is the form name associated with the current print request, which might be different from the NSPrintPaperName.

NSPrinter

A new method has been added to return the names of configured printers available to the system. This name can then be passed to **printerWithName:** to create an NSPrinter. If no printers are available, an empty array is returned. If an error occurs, nil is returned.

```
+ (NSArray *)printerNames
```

NSPrintPanel

The NSPrintPanel class has been removed from the OpenStep specification. In addition, these related methods in NSPrintOperation have been removed from the specification :

```
- (void)setPrintPanel:(NSPrintPanel *)panel;
- (NSPrintPanel *)printPanel;
```

NSPrintPanel is still available as a platform specific interface; however, it now inherits from NSObject rather than NSPanel.

NSPrintOperation

The following methods were added to NSPrintOperation in the OpenStep specification to allow the accessory view to be set in the print panel:

```
- (void)setAccessoryView:(NSView *)aView;
- (NSView *)accessoryView;
```

The following methods have also been added to the specification. These methods are sent to the accessory view passed to the above methods if it responds to them.

```
- (void)updateFromPrintInfo;
- (void)finalWritePrintInfo;
```

New Graphics functions

Four new functions have been added to support conformance to the Windows UI look:

```
void NSRectFillListWithColors(const NSRect *rects, NSColor *colors, int count);
```

Fills each rectangle in the array *rects* with the color whose value is stored at the corresponding location in the array *colors*. Both arrays must be count elements long. Avoid rectangles that overlap, because the order in which they'll be filled can't be guaranteed.

```
void NSDrawDarkBezel(NSRect aRect, NSRect clipRect)
```
Draws a bordered rectangle with the appearance of a pushed-in button, clipped by intersecting with clipRect.

```
NSRect NSDrawColorTiledRects(NSRect boundsRect, NSRect clipRect, const NSRectEdge *sides,
NSColor *colors, int count)
```

Draws an unfilled rectangle, clipped by *clipRect*, whose border is defined by the parallel arrays *sides* and *colors*, both of length *count*. Each element of *sides* specifies an edge of the rectangle, which is drawn with a width of 1.0 using the corresponding color from *colors*. If the *edges* array contains recurrences of the same edge, each is inset within the previous edge.

```
void NSDrawLightBezel(NSRect aRect, NSRect clipRect)
```

Draws a rectangle with the appearance of an editable text field. Only the area that intersects *clipRect* is drawn.

NSFont

The method **maximumAdvancement** was added to the API to return the advancement of the widest glyph in the given font. If the font is fixed-pitch, this is the advancement of all the glyphs.

The following API additions (which are not in OPENSTEP) allow one to get/set a list of the user's "preferred" fonts, which are checked (in order) before any other fonts when searching for a font to render some character that cannot be rendered in a pre-given or specified font. The list should typically contain fonts with different encodings and glyph complements, as available.

```
+ (NSArray *)preferredFontNames;
+ (void)setPreferredFontNames:(NSArray *)array;
```

API has also been added to access the Windows system fonts.

```
+ (NSFont *)menuFontOfSize:(float)fontSize;
+ (NSFont *)titleBarFontOfSize:(float)fontSize;
+ (NSFont *)messageFontOfSize:(float)fontSize;
+ (NSFont *)paletteFontOfSize:(float)fontSize;
+ (NSFont *)toolTipsFontOfSize:(float)fontSize;
```

The existing NSFont methods systemFontOfSize: and boldSystemFontOfSize: now return the same as messageFontOfSize: and titleBarFontOfSize: respectively. This API is valid on Mach and Windows. On Mach it returns the standard system or bold system fonts. On WIndows it will return the user's font settings from the Display options control panel if the user's chosen fonts can be supported (currently bitmap fonts are not supported, but TrueType fonts are).

NSFontManager

NSFixedPitchFontMask mask was added so that the font manager can determine whether or not a font is fixed-pitch. It may be used in trait queries.

The method **fontNamed:hasTraits:** was added to help in searching for fonts with specified traits. The available traits are specified by the trait masks.

The new method **availableFontNamesWithTraits:** uses the given mask (which may contain several one bits) in testing the available fonts. The names of all fonts matching the given bits are returned in an array.

NSInputManager/NSInputServer

The method **doCommandByName:** was removed from the API and from the NSTextInput protocol in favor of **doCommandBySelector:**. (The latter was already in the API, but has been added to the NSTextInput protocol.) Along the same lines the NSInputServer method **doCommandByName:sender:conversation:** was also obsoleted.

The method **localizedInputManagerName** replaces the method **inputManagerName**.

Dead Keys

Dead key handling in DPSClient is now off by default. The new text object and keyboard UI rely on the input management layer to simulate dead keys. NSCStringText will turn dead key handling on and off as it gains and loses first responder status. Other custom views which need dead keys to be handled by DPSClient should also use the same approach.

Help System

The AppKit's Help API has changed significantly. NSHelpPanel has been obsoleted in favor of a new class, NSHelpManager. NSHelpManager provides a more platform-independent approach to presenting help.

Previously, the only way for your application to present help was through the NEXTSTEP Help panel. Context-sensitive help and all other help for your application was displayed in the Help panel. This made sense when NEXTSTEP was the only platform for your application.

OpenStep applications, however, can run on multiple platforms, and each platform provides its own support for online help. It's important to users that applications use the native online help system (on Windows, for instance, users want the Windows help system and don't want to have to learn how to use a different help system), so NSHelpManager does not provide a comprehensive solution for presenting help. Instead, it provides cross-platform support for context-sensitive help, and allows you to present more comprehensive help (conceptual and task-based help) in any way you choose.

Context Help

Context-sensitive help (also referred to as context help) gives the user a small amount of information when they help-click on an interface item. For example, if the user help-clicks on a menu item called "Copy", they should get context help that says something like "Copies the currently selected text to the pasteboard." This text appears in a small window near where the user help-clicked, and the window disappears when the user clicks anywhere else in the application.

To provide context help for your application, follow these steps:

1. For each interface item that needs context help, create an .rtf or .rtfd file containing the text and any images you want to appear when the user help-clicks on that interface item. Try to keep the text as brief as possible and the images as small as possible.

2. If you don't need to localize your context help files, in Project Builder simply add these files to the Context Help suitcase of your project.

If you do need to localize your context help files, first copy the files into the appropriate **.lproj** directory of your project, then use Project Builder to add them to the Context Help suitcase of your project.

3. In Interface Builder, connect each interface item to its context help file by doing the following:
a. Bring up the Interface Builder inspector and choose the Help display. The Help display lists all the context help files associated with your application.
b. Select an interface item.
c. In the inspector, choose the appropriate help file.

When you compile your application, **/usr/bin/compileHelp** packages your help files into a property list named Help.plist. NSHelpManager knows how to extract context help from an Help.plist file.

Comprehensive Help

Most applications provide some form of online help that is more comprehensive and detailed than context-sensitive help, such as conceptual or task help. NSHelpManager allows you to provide this sort of comprehensive help in any way you choose. Some help authors prefer to provide comprehensive help in HTML using a World-Wide Web browser; others use tools such as Digital Librarian or Concurrence; on Windows a full-featured native help system is available. Given the availability of rich tools like Digital Librarian and HTML browsers, OpenStep on Mach no longer supplies a native help system for comprehensive help.

When the user chooses the Help menu item, NSHelpManager simply asks the Workspace Manager to

open the help file you have specified for your application. That file should be the starting point of your help, and should allow users to access whatever information they might need.

To specify a help file for your application, do one of the following:

· The simplest approach, not requiring you to specify the help file anywhere in your application, is to place the help file in your app wrapper and name it after your application. If you haven't specified a help file, NSHelpManager looks in the app wrapper for an appropriately named file.

On Mach, it must be an rtf file called <appName>.rtf.

On Windows, it must be a Windows help file called <appName>.hlp.

· To specify a help file that applies to all platforms, define the NSHelpFile key in your project's CustomInfo.plist file:

```
{
NSHelpFile = "ApplicationHelp.rtfd";
}
```

If your project does not have a CustomInfo.plist, simply create one (as in the example), and add it to your project's "Supporting Files" file category. When you build your project, the contents of CustomInfo.plist will be merged into your application's Info.plist

The specified value for the NSHelpFile key can be a full or relative path, and if it is relative, it is assummed to be a bundle resource (resolved using [[NSBundle mainBundle] pathForResource: <NSHelpFile value> ofType:nil]).

pswrap - new flags

pswrap supports some new flags which you may need to use in various circumstances.

-H <dir> This flag tells pswrap where to look for the dpsfriends.h file which needs to be included in the generated source. Passing '-H AppKit' will pick up the file from the OPENSTEP AppKit.
-I <include> This flag tells pswrap to emit an extra import statement. This flag in conjunction with the -e flag described below can be used by framework developers who need to export pswraps from their frameworks on Windows. Passing '-I \\"MyFrameworkDefines.h\\"' will cause '#import "MyFrameworkDefines.h"' to the generated source.
-e <extern decl> This flag tells pswrap how to declare extern functions in the generated headers. If your pswraps need to be exported from a framework project, you will need to supply an appropriate declaration for exporting the functions. Passing '-e MYFRAMEWORK_EXTERN' will cause "MYFRAMEWORK_EXTERN" to be used instead of "extern" when declaring external function prototypes.

The AppKit exports many pswraps. In order for those wraps to be truly exported on Windows, the AppKit has something like this in its Makefile.preamble:

PSWFLAGS = -I \\"AppKitDefines.h\\" -e APPKIT_EXTERN

Look at the AppKitDefines.h header file in $NEXT_ROOT/NextLibrary/Frameworks/AppKit.framework/Headers to see how this works. All Framework projects that have any functions in them should have a similar header file with a similar macro. Just remember to add these flags to pswrap if you need to export the wraps from your framework.

Localization

There are several localization features that are not documented elsewhere:

· It's possible to change the order of the arguments in a localized string by using the "$" modifier and the argument number:

```
/* Message in alert panel when something fails */
"Oh %@! %@ failed!" = "%2$@ blah blah, %1$@ oh!";
```

· The default **NSShowNonLocalizableStrings** can be used to catch strings which are not localizable. The strings will be logged and also displayed in the UI in upper case. Note that there will be some false positives, but this is still useful.

· The default **NSShowNonLocalizedStrings** will indicate strings which were meant to be localized but could not be found in the strings files. This can be used to catch problems with out-of-date localizations.

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OPENSTEP 4.2: Foundation Framework Release Notes

The Foundation Framework is a library of Objective-C classes providing the infrastructure for non-user-interface object-based applications and other user-interface- and non-user-interface-based frameworks. The OPENSTEP Foundation is compliant with the Foundation portion of the OpenStep specification, and enriches OpenStep with a few extensions.

Within the Foundation are basic classes used by any Objective-C program: collection classes, Distributed Objects, persistence frameworks, Unicode and internationalization support, the foundations of event-driven programming, and facilities to insulate code from the underlying operating system.

These release notes are divided in three main sections:

- Comments on compatibility with OPENSTEP 4.0 and 4.1
- General comments on often-encountered issue areas and interesting things
- Known issues in this release

In the document below, "4.0" and "OPENSTEP 4.0" refer to all products that shipped with the 4.0 Foundation: OPENSTEP 4.0, D'OLE 4.0, and PDO 4.0 for HP-UXTM and SolarisTM. "4.1" and "OPENSTEP 4.1" refer to OPENSTEP 4.1 for Mach and OPENSTEP Enterprise 4.1. "4.2" and "OPENSTEP 4.2" refer to OPENSTEP 4.2 for Mach and OPENSTEP Enterprise 4.2. All trademarks are property of their respective owners.
This article has been archived and is no longer updated by Apple.

Changes and Compatibility Between OPENSTEP 4.0, 4.1, and 4.2

There have been a number of changes to Foundation since the shipment of OPENSTEP 4.0 and a few since 4.1, both defect fixes and a few API additions. These are enumerated in the section below.

Note that if your application uses API which was added after 4.0, your application might not run under 4.0 (and similarly with 4.1 and API added after 4.1). (If you do not want to deploy your application on 4.0 or 4.1, then this is not an issue.) You can catch some of the potential issues by defining the macros **STRICT_40** and/or **STRICT_41** at compile time. This #define is similar to **STRICT_OPENSTEP** and is used in the Application and Foundation Frameworks to mark new API. Similarly, if you rely (perhaps unintentionally) on a bug fixed in 4.2, your application may not function correctly under 4.0 or 4.1. Make sure you test on your intended deployment platform.

A number of performance improvements have also made to Foundation for each release. Customers developing on 4.2 may find performance to be significantly worse in some cases when an application is deployed on 4.0, for example.

Here are the feature changes to Foundation in 4.1 (from 4.0):

Some methods in 4.0 were not surrounded by `#if !defined(STRICT_OPENSTEP)` when they weren't, in fact, in OpenStep.

CLASS	HEADER	METHOD
NSCharacterSet	NSCharacterSet.h	+characterSetWithContentsOfFile:
NSConnection	NSConnection.h	-connection:shouldMakeNewConnection:
NSArray	NSPathUtilities.h	-pathsMatchingExtensions:

These methods were made public in 4.1. They were not public in 4.0, but existed in the 4.0 Foundation binary so there are no compatibility issues in using them. They are not in OpenStep, however.

CLASS	HEADER	METHOD
NSArray	NSArray.h	-makeObjectsPerformSelector:
NSArray	NSArray.h	-makeObjectsPerformSelector:withObject:
NSSet	NSSet.h	-makeObjectsPerformSelector:
NSSet	NSSet.h	-makeObjectsPerformSelector:withObject:

These methods and functions were added to Foundation in 4.1 and are not present in the 4.0 Foundation binary. Applications which do not take some precaution in using them will not run correctly on OPENSTEP 4.0. These methods and functions are also not in OpenStep.

CLASS	HEADER	METHOD
NSBundle	NSBundle.h	+allBundles

NSBundle	NSBundle.h	+allFrameworks
NSFileHandle	NSFileHandle.h	+fileHandleWithNullDevice
NSFileHandle	NSFileHandle.h	-initWithNativeHandle:closeOnDealloc:
NSFileHandle	NSFileHandle.h	-initWithFileDescriptor:closeOnDealloc:
NSObject	NSObject.h	+instanceMethodSignatureForSelector:

FUNCTION	HEADER
NSFrameAddress	NSDebug.h
NSReturnAddress	NSDebug.h
NSCountFrames	NSDebug.h

Here are the feature changes to Foundation in 4.2 (from 4.1):

Some methods in 4.1 were not surrounded by #if !defined(STRICT_OPENSTEP) when they weren't, in fact, in OpenStep. They were guarded with #if !defined(STRICT_40).

CLASS	HEADER	METHOD
NSBundle	NSBundle.h	+allBundles
NSBundle	NSBundle.h	+allFrameworks
NSObject	NSObject.h	+instanceMethodSignatureForSelector:

This method was made public in 4.2. It was not public in 4.0 or 4.1, but existed in the 4.0 and 4.1 Foundation binaries so there is no compatibility issues in using it. It is not in OpenStep, however.

CLASS	HEADER	METHOD
NSDictionary	NSDictionary.h	-initWithDictionary:copyItems:

This method was made public in 4.2. It was not public in 4.1, but existed in the 4.1 Foundation binary so there is no compatibility issues in using it for 4.1 deployment. It does not exist in the 4.0 binary. It is also not in OpenStep.

CLASS	HEADER	METHOD
NSBundle	NSBundle.h	-load

These global variables were added to Foundation in 4.2 and are not present in the 4.0 nor the 4.1 Foundation binaries. Applications which use these global variables will not run on OPENSTEP 4.0 or 4.1. These global variables are not in OpenStep.

VARIABLE	HEADER
NSFileHandleDataAvailableNotification	NSFileHandle.h
NSPositiveCurrencyFormatString	NSUserDefaults.h
NSNegativeCurrencyFormatString	NSUserDefaults.h

These methods were added to Foundation in 4.2 and are not present in the 4.0 nor the 4.1 Foundation binaries. Applications which do not take some precaution in using them will not run correctly on OPENSTEP 4.0 or 4.1. These methods are not in OpenStep.

CLASS	HEADER	METHOD
NSFileHandle	NSFileHandle.h	-waitForDataInBackgroundAndNotifyForModes:
NSFileHandle	NSFileHandle.h	-waitForDataInBackgroundAndNotify
NSRunLoop	NSRunLoop.h	-configureAsServer
NSTask	NSTask.h	-interrupt

Some API was added to NSDebug.h. Production programs should not be referring to symbols declared in NSDebug.h.

General Comments

NSDates and the Year 2000

Dates are represented in Foundation with NSDate (and NSCalendarDate) objects and NSTimeInterval values. An NSTimeInterval is essentially a C-language double. NSDates (and NSCalendarDates) store the date that they represent with an NSTimeInterval, which represents the time delta, in seconds, from the Foundation reference date, 00:00:00 1 January 2001 GMT. This time delta is negative until the reference date. There is no special significance to the year 2000 to NSDate objects or NSTimeInterval values. However, refer to the topic *Risks in Parsing and Displaying Dates* in this section for more information on issues in date presentation and the year 2000.

Since the internal time representation will transition across zero (at the reference date) at some point in the future, unlike some other schemes which set the epoch to a date "always" in the past, there will be a brief instant, on the order of microseconds in length, in which an NSDate object created to represent the current time will have an NSTimeInterval of 0.0. The length of this instant is dependent on the resolution of the system time provided by the particular operating system and platform an application is running on. An NSTimeInterval of 0.0 has no special significance to NSDate or NSCalendarDate, but applications which use the NSTimeInterval of a date object in division should protect against division by zero. Such applications are vanishingly rare. More common might be to have an NSTimeInterval which represents the delta between two arbitrary date objects (such as when timing events), and applications should take appropriate caution in using such values (this is always a good idea apart from date usage).

Risks in Parsing and Displaying Dates

As with any communication between a program and a user, there can be miscommunication in showing dates to the user and reading dates the user types in. When a user types a date into a text field in an application they may intend one thing, and the program may interpret the date as something else. When a date is displayed to a user, the user may interpret the date incorrectly. While an application cannot control the user, there are certain things that an application can avoid doing, with respect to dates, to reduce the potential for confusion and ambiguity and data corruption.

- Avoid two-digit years and all uses of the "%y" date format specifier.
- Do not use natural language date parsing.
- Avoid time zone abbreviations.

Each of these points is explained in greater detail below. Whenever it is important (or critical) that the user get accurate information from the application, or the application get accurate information from the user, an application should avoid the ambiguous behaviors below and require strict conformance to a fully specified input format (for user input) and provide an equally verbose output description of dates. Alternatively an application could ask for confirmation of input dates, but this seems to be rather more heavyweight.

Avoid two-digit years and all uses of the "%y" date format specifier. Per POSIX and ANSI C (refer to section 7.12, ANSI/ISO 9899-1990 for ANSI C definitions), a two-digit year YY means 1900 + YY. The Foundation follows the lead of ANSI C here. Thus, when a user types "5/10/02" in to a text field with a date formatter with format "%d/%m/%y", a date of 5 October 1902 is successfully created. If the user meant 5 October 2002, they haven't entered that. Since %y means "two-digit year" it is not possible for the user to type anything that will get them a date in the year 2002 (for example, if the user types "5/10/2002" in this example, a date of 5 October 1920 will be successfully parsed). The date parsing routines parse at most two-digits for %y, in order to support dates formatted like "980409" (also not a good idea). Conversely, a user has no way of knowing whether "28/10/33" refers to 1933 or 2033 if they see that displayed on the screen or in printed output. If a program uses "%Y" in the format string instead, this issue is avoided.

Do not use natural language date parsing. The natural language parser is pretty sophisticated, but it is after all just sophisticated guessing. The natural language parser is also usually successful at creating a date from input, as long as the input is moderately close to something that looks like a date. However, as with the previous issue, this may not be the date the user intended. Relatedly, don't enable natural language parsing for date formatters. If it is enabled, and the user's input does not match the date formatter's format, the input string is given to the natural language parser.

Here is an example where the natural language parser may fail to parse the date the user intended: suppose the date formatter has a format "%d/%m/%Y" and the user types in "5-10-2002". This does not match the format (which has slashes), so the date formatter gives the input to the natural language parser. Now, what the "5" means and what the "10" means is ambiguous±it could equally be month-day-year or day-month-year. The natural language parser prefers a particular ordering, given by the NSDateTimeOrdering preference. If the user's preferred language is French, this is DMYH (denoting an ordering: day month year hour). The built-in default, if the user has no preferred language, is MDYH (denoting an ordering: month day year hour). NSDateTimeOrdering could also be set explicitly to something else by the user. If the user's preferred language is French, the date will be "correctly" parsed as 5 October 2002. By default it will be parsed as 10 May 2002. In general, an application writer can't know a priori what the preferences of the user will be. If natural language parsing is desired, this and other issues (such as use of 12- or 24-hour hour designations) should be taken into account and dealt with by the application.

Avoid time zone abbreviations. Time zone abbreviations are inherently ambiguous. Many time zones around the world map to the same abbreviations, by local convention, and there is usually very little information in the abbreviations (most are of acronyms of a phrase such as "*Something* Standard Time" or "*Something* Daylight Time", where the *Something* is the only differentiator). A time of 11:00 CST means something different to a person in New York, New York, U.S.A. (indicating time in Chicago) than someone in Sydney, Australia (indicating time in Darwin) (that hour by itself is also ambiguous; is it *ante meridiem* or *post meridiem*?). Use of time zone names of the form GMT+hhmm and GMT-hhmm (as in GMT+0100) can also be problematic, since the user cannot know what which convention (simple offset, or the POSIX minutes-west) is being used. Thus, GMT+0200 can indicate either Helsinki or the mid-Atlantic.

Foundation's Time Zone Data

The Foundation now uses its own time zone data files (which describe when changes to the standard time zone corrections from GMT occur) on all platforms. This provides for greater consistency of behavior, and the ability to unarchive and transport time zones to any Foundation platform. However, it's possible that the time zone data may become out-of-date relative to a particular platform's data as, for example, new operating system updates are installed, but the new versions of PDO or OPENSTEP are not. The Foundation's time zone data comes from a freely available source at elsie.nci.nih.gov, and is current with that source as of November, 1996. The Resources/TimeZoneInfo directory inside the Foundation.framework contains a file README.TimeZoneInfo which explains how the time zone data for Foundation can be updated from this source, if required. Part of the reason for choosing the data from elsie.nci.nih.gov is that it is an easily accessible source of current information (it is updated about once per month). It is also quite complete.

The time zone data that Foundation uses in 4.2 is compatible with the data used in 4.0 and 4.1. However, to save disk space on machines with disks with large allocation-block sizes, all of the data is bundled up into a serialized property list (TimeZones.splist). The top-level property list is a dictionary where the keys are time zone names (the same as the file names in 4.1) and the values are NSData objects containing the bytes of the files. To use the data to update a 4.1 installation (for example), the data objects in this file would need to be extracted into files with the file names given by the keys. It is fairly straightforward to write a Foundation-based program to do this. An example of the opposite process, taking a directory hierarchy and making the serialized property list is given in the Resources/TimeZoneInfo/README.TimeZoneInfo file described above.

With the adoption of the time zone data from elsie.nci.nih.gov, Foundation has also adopted the zone naming conventions of that data, where zone names usually have the form Area/Location, as in America/Sao_Paulo or Europe/Paris. The previous, and conventional UNIX, time zone names are supported for backwards compatibility.

The set of time zone abbreviations has also changed somewhat. How abbreviations map to time zones is an arbitrary choice of the Foundation, since time zone abbreviations are ambiguous. Use of time zone abbreviations is not encouraged (see Risks in Parsing and Displaying Dates in this section for more information). Sites can customize this to some extent±see the file Resources/TimeZoneInfo/README.TimeZoneInfo in the Foundation.framework.

Using performSelector: with Selectors Which Don't Return `id'

The NSObject methods -performSelector:, -performSelector:withObject:, and -performSelector:withObject:withObject: have an "id" return value. This is something of a holdover from pre-4.0 conventions where methods without otherwise interesting return values returned self. Much of the time one can "get away with" performing a selector to an object with these methods, where the target method does not have a return value or has a non-object return value. Such use is semantically suspect, however, and is not valid. Any situation where the -performSelector:... message may be forwarded will quickly illustrate this (with an abnormal program termination), as the NSInvocation object attempts to retain the return value from after invocation, because the selector for -performSelector:... is typed to return an object. Sending -performSelector: to a faulted object with a selector that does not return id is an example of this. This behavior extends also to various other "perform" methods such as the -makeObjectsPerformSelector: of some collection classes and the "delayed perform" and "ordered perform" methods in NSRunLoop.h.

Where Do NSLog()'d Messages Go?

NSLog() and NSLogv() do not log an error message to stderr, as stated in the documentation.

On HP-UX, Solaris, and Mach, it writes the log to STDERR_FILENO if the file descriptor is open. If that fails, the message is sent to the syslog subsystem, if it exists on a platform, with the LOG_USER facility (or default facility if LOG_USER doesn't exist on a platform), with priority LOG_ERR (or similar, depending on what the platform supports). If both of these attempts to write the message fail, the message is discarded.

On Windows platforms, the message is written to the STD_ERROR_HANDLE, if that handle is valid, on Windows platforms that support that standard handle. It is also written to the Windows Event Log on Windows platforms that support the Event Log, or to the file c:\\fndation.log on Windows platforms that do not, if that file can be opened. If all of these attempts fail, the message is discarded. On some Windows platforms, the message to the Event Log may be truncated if there is a limit to the size of a message that the Event Log can accept. On Windows platforms that support an application discovering whether or not it is running under a debugger, NSLog() and NSLogv() may only send the message to the debugger for its handling, via standard WIN32 mechanisms, and not also write the message to STD_ERROR_HANDLE and the Event Log. Note that a debugger may choose to not display messages thus sent to it, or may choose not to display all of the message±NSLog() and NSLogv() have no control over that.

Output from NSLog() and NSLogv() is serialized, in that only one thread in a process can be doing the writing/logging described above at a time. All attempts at writing/logging a message complete before the next thread can begin its attempts.

The effects of NSLog() and NSLogv() are not serialized with other subsystems than those discussed above (such as the standard I/O package) and do not produce side effects on those subsystems (such as causing buffered output to be flushed, which may be undesirable).

The format specification allowed by NSLog() and NSLogv() is that which is understood by NSString's formatting capabilities. That is not necessarily the set of format escapes and flags understood by printf(), as mentioned in the documentation.

Foundation Examples

There are several Foundation examples in /NextDeveloper/Examples/Foundation.

I/O Functionality

Two Foundation classes, NSFileHandle and NSPipe, provide objects that represent open files or communications channels and support basic I/O operations. They make it easy for developers to write code that is directly portable to other platforms. The interfaces for these classes are declared in NSFileHandle.h. These classes replace the NSPosixFileDescriptor and NSPosixPipeDescriptor classes made available in OPENSTEP 4.0 prereleases. The differences from the predecessor classes for the most part involve naming and a refinement of semantics.

Note that the new (in 4.2) -waitForDataInBackgroundAndNotify functionality only works for NSFileHandles which refer to sockets.

Archiving

NSUnarchivers own the objects that they decode. When an NSUnarchiver is deallocated, so are the objects that it has decoded, unless they have been retained. The following code, for example, will probably result in a decoded object being used after being freed:

```
NSAutoreleasePool *pool = [[NSAutoreleasePool allocWithZone:NULL] init];
NSUnarchiver *unarchiver = [[NSUnarchiver allocWithZone:NULL] initForReadingWithData:myData];
id object = [unarchiver decodeObject];
[unarchiver release];
[pool release];
... use or return object here ...
```

object should be retained before the NSUnarchiver is released, and probably also autoreleased if object is returned from the function or method. An exception to this are the -decodeValueOfObjCType:at: and -decodeValueOfObjCTypes:... methods. Objects "returned" from these two methods, like those returned from +allocWithZone: and -copyWithZone:, are not autoreleased, and must be explicitly released.

User Defaults

Foundation contains API (NSUserDefaults) which replaces the old defaults database suite of functions. User defaults with 4.0 applications are stored differently and in a different place than 3.3 user defaults. There is a new command-line utility called defaults that allows you to manipulate the new-style defaults just as dread, dwrite, and dremove allowed you to manipulate old-style defaults.

On Windows NT, defaults are stored in the Windows registry. There is a program shipped with Windows NT, REGEDT32, for viewing and editing registry entries. NSUserDefaults stores its domains and their key-value pairs under the entry HKEY_CURRENT_USER\\Software\\NeXT\\UserDefaults. The values are currently stored as strings in the property list format.

The command /usr/bin/defconvert, in OPENSTEP 4.x for MACH, can be used to convert a user's 3.3 defaults database to 4.x-style defaults--simply run it from the command line with no parameters. This program converts all old-style defaults, even those of non-OpenStep applications, adding them to the user's new-style database. Since NEXTSTEP 3.3 applications may not use the same default names after conversion to OPENSTEP 4.x, and 3.3 applications do not use the new defaults database, and increasing the size of the defaults database increases the amount of memory needed by each OpenStep application, converting an old defaults database to the new style usually provides little utility.

Errors in ASCII Property Lists

When a method like NSDictionary's +dictionaryWithContentsOfFile: is used to read and parse an ASCII property list from a file, parse errors and exceptions are suppressed, and nil is returned upon error. Sometimes a program wants to know about syntax errors in a property list, or wants finer-grained information about why a property list cannot be read and parsed. Another method, NSString's -propertyList, can be used for this purpose. The following example illustrates this:

```
- (id)readPropertyListFromFile:(NSString *)path mustBeOfType:(Class)targetClass logErrors:(BOOL)showErrors {
NSString *string;
id plist = nil;
```

```
string = [[NSString allocWithZone:NULL] initWithContentsOfFile:path];
if (showErrors && nil == string) {
NSLog(@"%@: string could not be read from '%@'", NSStringFromSelector(_cmd), path);
}
NS_DURING
plist = [string propertyList];
NS_HANDLER
if (showErrors) {
NSLog(@"%@: received exception while parsing: %@", NSStringFromSelector(_cmd), localException);
}
plist = nil;
NS_ENDHANDLER
[string release];
if (Nil != targetClass && ![plist isKindOfClass:targetClass]) {
if (showErrors) {
NSLog(@"%@: property list is not of desired type '%@'. It's an '%@'.",
NSStringFromSelector(_cmd), NSStringFromClass(targetClass), NSStringFromClass([plist class]));
}
[plist release];
plist = nil;
}
return plist;
}
```

Grammars for Serialization and ASCII Property List Formats

Grammars and description of the serialization (NSSerializer) and ASCII property list representation formats are available in the appendix to the OpenStep specification.

Strings which contain non-alphanumeric characters must be double quoted in property lists to ensure the entire string is parsed as one string object. Parse failures will result, otherwise.

Retain Cycles and Invalidation

The retain/release strategy used in Foundation allows an incautious programmer to create reference cycles in an object graph (that is, the graph of objects that retain one another in some manner). These cycles are self-sustaining and constitute a memory leak. The simplest example is to create a NSMutableArray instance and add it to itself. Since an array retains its objects, it retains itself independent of its normal usage. Retains are essentially distributed across the network via the Distributed Objects mechanism.

If retain cycles cannot be avoided by careful design, but are known a priori, the following technique can be used to recover the memory. For the objects in the cycle(s) whose retain counts are solely due to the cycle, all should be retained (perhaps in an array), each one told to release its retained objects, then all released. The action of releasing its retained objects would undoubtedly cause an object to become dysfunctional. Some objects already implement such a method by the name "-invalidate". It is a bug that neither NSObject nor the collections implement this method to facilitate cycle recovery.

More on Autoreleasing and Retaining

The following statements are false:

Returned objects are guaranteed to be valid for the scope of the current method.

Returned objects are guaranteed to be valid until the current autorelease pool is released.

Returned objects are guaranteed to be valid until the end of the current event loop.

The Foundation's retain count mechanism operates via -retain and -release. A code fragment such as:

```
id object = [collection returnObject];
```

creates a reference (in object) to the returned object, but does not increment the retain count of object. If you don't let the system know about your reference, by incrementing the retain count with -retain, the system can't ensure that your reference remains valid for any length of time. For example:

```
object = [array objectAtIndex:7]; // get object
[array removeObjectAtIndex:7]; // removes object and releases it
[object dosomething]; // object may be invalid here
```

- In that example, if array had the last retain on object, the second line will cause object to be deallocated and the third line will cause the application to crash. Here is another example with the AppKit:

```
id oldTitle = [myWindow title]; // get current title
[myWindow setTitle:@"Calculating..."]; // set temporary title
... do calculation here ...
[myWindow setTitle:oldTitle]; // restore previous title
```

Here, the -setTitle: method gets rid of its reference to the existing title string and takes a reference to the new title string. If the window had the only reference to the previous title string object, the last line of the example will attempt to setTitle: to a freed object. If the AppKit in its implementation happens to send -autorelease to the old title instead of -release, then the object referenced in oldTitle may not by freed by the time of the last line, but in general you cannot know whether such a method will release or autorelease the previous object. The Foundation almost exclusively uses -release, since that does not have the performance overhead of autoreleasing, and Foundation objects are so common in applications.

In practice, you can get away with such "weak references" much of the time. But the safest approach formalizes your reference to the object:

```
id object = [[collection returnObject] retain];
... do operations, some of which may be on object ...
/* Don't need object any longer */
[object release];
object = nil;
```

The -hash and -isEqual: Invariant

It is worthwhile to highlight an obscure requirement documented in NSObject class specification for the -hash method: The -hash and -isEqual: methods of a class must be defined so that if two objects are equal, their hash value is the same ([x isEqual:y] implies [x hash] == [y hash], but not the converse). This is easy to forget, but especially important to ensure when putting custom objects into some collections (such as NSSet and NSDictionary).

Forwarding Messages in OpenStep

Objects wishing to forward messages with the -forwardInvocation: method must also (re)implement the -methodSignatureForSelector: method. This is a result of the compiler not providing call stack descriptive information at each call site. Consequently, the runtime needs a source of information for how the stack frame is constructed. It needs this to build the invocation that will be supplied to the -forwardInvocation: method call. The -methodSignatureForSelector: method will need to be reimplemented to provide a method signature for selectors to which the object does not respond.

```
- (NSMethodSignature *)methodSignatureForSelector:(SEL)sel {
NSMethodSignature *result = [super methodSignatureForSelector:sel];

// if result is nil, self must not respond to the selector
if (nil == result)
result = [target methodSignatureForSelector:sel];
return result;
}

- (void)forwardInvocation:(NSInvocation *)invocation {
[invocation invokeWithTarget:target]; // let target implement methods that we do not
}
```

Faulted objects in EOF which wish to forward messages should also override +instanceMethodSignatureForSelector:.

See the ForwardInvocation example in /NextDeveloper/Examples/Foundation/ForwardInvocation.

Debugging Aids

The *OpenStep Conversion Guide* describes several techniques for debugging Foundation and AppKit applications. The header file NSDebug.h also has some global flags, functions, and methods which may be useful. But be warned±although this header file is public, its contents are mostly unsupported, largely undocumented, and are subject to change without warning. Do not depend on API within this header for the operation of production programs.

Object Allocation Analysis

One of the useful flags defined in NSDebug.h is NSKeepAllocationStatistics, which allows you to analyze the object allocation activity in a program. The AnalyzeAllocation command line program can be used to analyze the output generated by running with this option enabled. You can also use the ObjectAlloc demo application which comes OPENSTEP for Mach and Windows to graph the object allocation activity in real time.

The +load Method

The +load message is sent to classes when they are added to the Objective C runtime. +load is usually received before +initialize. +load is not inherited by subclasses.

The order in which +load messages are sent to classes is unspecified (and specifically, a class's superclass is not guaranteed to have its +load method called before the class receives the message). Therefore, you should not use any subsystems or classes which are loaded at the same time, or more generally, which you do not know have received the +load message. If you do, you will probably cause execution of code which assumes that +load (and anything that had to be done in +load) has been previously executed.

There are two situations typically when classes are added to the runtime:

- when loaded dynamically from a bundle or framework by NSBundle
- at application launch

The restrictions on +load are perhaps most serious at launch time. The Foundation has classes and subsystems (as might any other library) which depend on +load being called before they are fully functional. For example, you should not use NSZoneMalloc() to allocate memory in +load methods which are statically linked into an application. You certainly should not create any objects, or do anything with creates objects.

Note that calling +load on a class isn't a solution (and is a generally bad idea), because that will cause +initialize to be sent first, which the class may not handle. Not to mention that doing so places into your code dependencies on which classes implement +load in a particular version of a library. In the case of Foundation, for convenience sake, +load methods which must use Foundation API can call [NSObject self] first to make sure Foundation has performed the initialization it needs.

+load is not intended as a general initialization mechanism, and should only be used when absolutely necessary. Use +initialize for early initialization whenever possible.

Performance and NSNotificationCenter

NSNotificationCenter, although heavily optimized, by its nature can become a significant performance bottleneck if heavy use of notifications is made. The notification mechanism should be used judiciously.

NSAutoreleasePool's -addObject: Method

You should never use the NSAutoreleasePool instance method -addObject:. Use the -autorelease method, or [NSAutoreleasePool addObject:] to autorelease an object. Using the instance method incurs the risk of adding an object to a pool which is not the top autorelease pool, a semantically suspect operation, since the autorelease pool model is one of a (per-thread) stack of pools. OPENSTEP 4.x does allow you to add

objects to an autorelease pool that is not the top pool, but be warned that it is a much more expensive operation (and always will be) than adding an object to the top pool.

Frameworks as NSBundles

Frameworks are a specialized form of bundle. An application can statically link against a framework at compile time (like a library), or dynamically load a framework (like a bundle) at runtime. However, as a specialized type of bundle, there are some constraints placed on frameworks:

- A framework must have a .framework extension
- The name of the executable code of a framework must have the same name as the framework directory, minus the .framework extension. For example, the file name of the executable code for the framework MyFramework.framework must be MyFramework (or on Windows, MyFramework.dll).
- On Windows only: The framework directory must be stored in a directory called Frameworks. The executable code (.dll) must be stored in a directory called Executables that has the same parent as the Frameworks directory. If the framework is statically linked into applications, the Executables directory (full path) should be in the PATH environment variable. (On other OPENSTEP platforms, the executable code file is stored within the framework directory, like a bundle.)

How NSBundles Search for Resources

- The algorithm that NSBundles use to find resources has changed somewhat from that of NXBundles, and there are changes to the structure of bundles themselves. A bundle's resources are now stored in a directory named Resources within the bundle directory. Within the Resources directory are the non-localized resources and the localized resource directories (English.lproj, Swedish.lproj, etc., as with NXBundle). The addition of the Resources directory is primarily a way to simplify Framework versioning. Other changes have been made to reduce the amount of computation required to find resources.
-
- Suppose we are searching for the resource with name Main and type nib. The bundle's resource path, the "top level", is searched first, for the file Main.nib. If the file is not found there, each of the language subdirectories are each searched, in the user's preference order. This is a change from NXBundle's behavior, where the language subdirectories were searched first. This change means that the localized version of a resource that also exists at the top level will not be found, but the top level one will be. All non-localized resources should be placed in the top level, and no localized resources should exist at the top level.
-
- When a resource is found, the algorithm checks to see if a resource of the name Main-$(PLATFORM_OS) of type nib exists. $(PLATFORM_OS) represents the make variable of the same name, and takes on the same values that the make variable takes on at compile time. For example, on Windows, during a project build, $(PLATFORM_OS) in the Makefile.postamble will have the value "winnt". When Main.nib is found in a directory, the search algorithm does one final check to see if Main-winnt.nib exists in that same directory. If it does, the search algorithm returns the path to that resource; if it does not, the search algorithm returns the path to Main.nib. Note that for Main-winnt.nib to be found, a file named Main.nib must exist in the same directory; this also applies within each language resource directory. It is expected that a developer will choose one of the platform-specific versions to name without this $(PLATFORM_OS) suffix, and give the other platform-specific versions of the resource extended names. The values that $(PLATFORM_OS) can take on are currently "winnt" (on OPENSTEP for Windows), "nextstep" (on OPENSTEP for MACH), "hpux"(on PDO for HP-UX), and "solaris" (on PDO for Solaris).
-
- Another way to accommodate platform-specific resources is by using the inDirectory: parameter of the resource-searching methods. The inDirectory: parameter is primarily intended to facilitate the collection of resources of a common type or purpose into a single directory; for example, all images could be put into a directory called Images within the resource directory. (Note that the AppKit's +imageNamed: method in NSImage does not support searching arbitrary directories for images.) As such, the inDirectory: parameter can be used to manage platform-specific resources. This is less "automatic" however, and requires the developer to specify the name of the platform-specific directory as well as replicate the required resources and language projects within that directory. The $(PLATFORM_OS) mechanism described above is simpler to use, particularly if the number of platform-specific resources is small.

Using API not in OpenStep

- Many new methods and classes were added for 4.0 and some new methods for 4.1 and 4.2, many outside the purview of the OpenStep specification. To restrict those that are defined to the methods and classes in OpenStep, add the flag -DSTRICT_OPENSTEP to the OTHER_CFLAGS variable in the project's Makefile.preamble.

Foundation Defect and Change List

- This section documents many of the known issues with Foundation in OPENSTEP 4.0, 4.1, and 4.2, and the fixes and changes that have been made in OPENSTEP 4.1 and 4.2. Not all of the issues apply to the current release±refer to the Releases and Disposition fields in each note. Defects not present in the current release are of interest to those developing software on the current release with plans to deploy on a previous release. (However, we do not recommend that developers develop on a version newer than that planned for deployment.)

Reference: 36156

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSBundle -localizedStringForKey:value:table: caches default values

Description: NSBundle's -localizedStringForKey:value:table: method incorrectly caches the default value passed as the second parameter if the key isn't found in the table. On subsequent calls with the same key this first default value is returned. Sometimes, however, the default value may need to be different, even with the same key, in different locations in code.

Workaround: None

Reference: 41245

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSArray -componentsJoinedByString: extended

Description: NSArray -componentsJoinedByString: sends -description to each of the array's objects and concatenates the results of that message together, rather than using the objects directly. This means that this method will now operate on arrays which are composed of objects that are not NSStrings.

Workaround: None

Reference: 47347

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSArchiver and NSUnarchiver do not understand bitfields

Description: Structures containing bitfields cannot be archived and unarchived.

Workaround: Encode the members of a structure containing bitfields individually, encoding the bitfields as chars, shorts, or ints (or unsigned chars, shorts, or ints as appropriate).

Reference: 48447

Releases: OPENSTEP 4.0

Platforms: HP-UX

Disposition: Fixed in OPENSTEP 4.1

Issue: D.O. crashes sending some structures containing doubles

Description: D.O. would crash when attempting to send a parameter or return value which was a structure larger than 8 bytes and contained a double field.

Workaround: None

Reference: 49001

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Extended formatting for NSCalendarDates

Description: The number-formatting sequences for NSCalendarDates (%d, %e, %H, %I, %j, %m, %M, %S, %w, %y, %Y), during the construction of a description, can now contain formatting flags between the `%' and format code, to the extent that the string methods +stringWithFormat:, -appendFormat:, etc. understand them. Format flags are not understood during parsing from a format, however. Note that per 70220 [below], NSDateFormatters use their format string both to display the date and to parse a date from a string (which the user entered in a text field, for example), so this modest extension should not be used in the format string of NSDateFormatters. Setting the date formatter to allow natural language may obviate the issue (but may be undesirable for application reasons)

Workaround: None

Reference: 49084

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSInvocation always retains the return value

Description: NSInvocation always retains object return values. This can cause issues if the return value of a method is not a fully initialized object. Only +alloc and +allocWithZone: return uninitialized objects, so this is only an issue if a program uses invocations to send either of those methods to a class object. If an application contains its own methods which return objects which are not fully initialized, it should avoid sending those messages with an NSInvocation or over Distributed Objects.

Workaround: None

Reference: 50670

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSMethodSignature's -getArgumentTypeAtIndex: and -methodReturnType return too much information

Description: These NSMethodSignature methods return a string which contains the type descriptors for the requested argument plus all the type descriptors for the arguments following.

Workaround: Use NSGetSizeAndAlignment() to parse the first type. NSGetSizeAndAlignment() returns the first parameter pointer, advanced to the next type in the type string. Pass the return value of either of those methods as the first parameter to NSGetSizeAndAlignment() and pass NULL for the second and third parameters (or pass pointers to unsigned integers if either of those values is interesting); record the return value of that function in another variable. The difference between the return value and the first parameter is the length of the first type in the first parameter to NSGetSizeAndAlignment(). The single type string can then be strncpy()'d into its own buffer.

Reference: 51108

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: Kanji text in NSLog() messages shows as Unicode hex on Japanese systems

Description: Strings that contain non-ASCII characters are displayed with the non-ASCII characters translated to a hex representation (\\uNNNN). This makes strings with Kanji essentially unreadable.

Workaround: None

Reference: 55579

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Collections that contain themselves don't unarchive well

Description: Unarchiving an object graph with a collection which contains itself, or contains an object which archived a reference to the collection, may cause a program either to crash immediately when the archiving system attempts to retain it, or to crash later when a freed object is sent a message. The issue here is that the collection gets retained when the recursive reference is unarchived (which is normal) before it has completed its initialization in -initWithCoder:, which can be an issue for objects which keep track of their own retain count (as the collection classes do).

Workaround: None

Reference: 56330

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSConnection doesn't let go on NSRunLoop when it has nothing to do

Description: NSConnections do not register/un-register their ports with the run loop lazily, as they have something to serve. Specifically, an NSConnection with no root object and no local objects vended over the wire (no local proxies) should not have its ports registered with a run loop, since it can never receive any messages. This causes code like the following to never terminate:

id server = [NSConnection rootProxyForConnectionWithRegisteredName:@"name" host:@"*"];

... do stuff with server ...

[server release];

... do stuff which adds a one-shot timer to the current run loop ...

... and run the run loop ...

[[NSRunLoop currentRunLoop] run];

/* NOTREACHED */

Workaround: None

Reference: 56644

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSArchiver tracks char * pointers as equivalent to their contents

Description: During archiving, NSArchiver keeps track of the char * strings it has seen by the address passed in for encoding. If a program uses the stack or malloc() to construct a char *, then encodes it using the "*" type primitive (or @encode(char *)), the archiver only remembers the stack/malloc address, assuming it has constant contents.

Workaround: Do not archive char * strings from the stack. Do not mutate or free malloc'd char * strings during archiving.

Reference: 56659

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: Proxies cannot be notification observers unless they are retained

Description: Because NSNotificationCenter does not retain observers, registering an observer with a remote NSNotificationCenter (the observer would be a proxy in the remote process) will eventually cause a crash of the remote process when it tries to message a freed object, unless the remote process explicitly retains the proxy. This situation is a bit arcane, but the same type of issue can happen with other objects that don't retain objects that they know about.

Workaround: Use an explicit protocol to tell the server (the process vending the notification center) to register and unregister an observer. The server then retains and registers the observer with the vended notification center, and unregisters and releases the observer when the client tells it to do so. (If an unregister mechanism is not part of the protocol, and used, the object will never be released.)

Reference: 57984

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: No way to get list of non-defaults command-line arguments

Description: In NEXTSTEP 3.3 (and earlier releases), command-line arguments that looked like defaults were removed from NXArgv. The array returned by [[NSProcessInfo processInfo] arguments], NXArgv's replacement, however, contains all of the command-line arguments.

Workaround: Code that expected defaults options to have been stripped from NXArgv will have to be rewritten to skip default option names and their values, or the arguments array will need to be processed to remove them before using it. The NSArgumentDomain dictionary can be retrieved from the standard user defaults instance to find out what NSUserDefaults interpreted as a default option.

Reference: 58137

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: No way to create an NSData which does not free the bytes

Description: NSData and NSMutableData instances always take ownership of the byte pointer with which they are initialized, and then call free() to free the storage when they are deallocated. This applies to all existing creation and initialization methods. Only pointers to storage which can be passed to free() should be used to initialize data objects. As a corollary issue, there is no way to create a data object which refers to VM allocated storage.

Workaround: None

Reference: 59230

Releases: OPENSTEP 4.0, 4.1

Platforms: Mach, HP-UX, Solaris

Disposition: Fixed in OPENSTEP 4.2

Issue: The main bundle can be allocated with the wrong directory

Description: If an application is not launched with a full path, NSBundle attempts to create the main bundle instance with the current directory. If the application is launched from the command-line without a full path, and the application is not in the current directory (but found via the shell $PATH environment variable), the main bundle will be created with the wrong path. The Mach Workspace Manager always launches applications as a full path, so this is not an issue for applications launched with Workspace Manager.

Workaround: Launch the application with the full path, or launch the application from the directory in which it exists.

Reference: 61520

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Handler is called twice when deleting a directory

Description: NSFileManager's -removeFileAtPath:handler: method, when deleting a directory, calls the handler method -fileManager:shouldProceedAfterError: twice on each subdirectory or file error, and fails to call the handler for the top-level directory itself.

Workaround: None

Reference: 62019

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Character tables are not Unicode 2.0 compliant

Description: The tables used by NSCharacterSet and shipped as resources with the 4.0 Foundation are compliant with Unicode 1.1. The Unicode 2.0 tables were not yet available at the time of release.

Workaround: None

Reference: 62044

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Default uncaught exception handler changed

Description: The default uncaught exception handler now includes the name of the exception and a "numeric backtrace" in the logged message it generates. The backtrace consists only of the return addresses on the execution stack. Additionally, on Windows, an application exception is raised (via RaiseException()), which can be handled by a debugger.

Workaround: None

Reference: 62235

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: Can't search for characters case-insensitively

Description: NSString's -rangeOfCharactersFromSet: ignores the NSCaseInsensitiveSearch flag. This also affects NSScanner's -scanCharactersFromSet:intoString: method when the scanner has been set to be case insensitive.

Workaround: None

Reference: 62576

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSNumber -compare: results odd results with NaN

Description: Two NSNumbers containing with NaN (created, say, via +numberWithDouble:) compare NSOrderedSame and are -isEqual:. However, in C, NaN is not equal to NaN.

Workaround: None

Reference: 62812

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: Changed defaults don't appear sometimes to have taken affect

Description: The default NSUserDefaults domain search order places the NSArgumentDomain before the application's domain. This is usually desirable for reading defaults, but may not be if you set/change default values. If you set a value for a default that was passed as an option on the command-line, the value is correctly set/changed in the application's domain, but -objectForKey: will still return the value found in the NSArgumentDomain, because by default it is searched first.

Workaround: There are various workarounds depending upon the application and its use of user defaults. The following options are relative to a particular NSUserDefaults instance (that is, if you create multiple user defaults instances, you'd have to do the workaround for each individually).

1. Remove the NSArgumentDomain from the search list, perhaps after adding any keys it contains to the registration domain; command-line specified defaults will not be found, or not have priority over same-keyed defaults in the application's domain, however.

2. Move the NSArgumentDomain after the application's domain; command-line specified defaults will not have priority over same-keyed defaults in the application's domain, however.

3. Each time you set a default value, set it in the argument domain (difficult and not worth the trouble).

4. Best solution: Create a subclass of NSUserDefaults. For each defaults instance created, create a new volatile domain, tell the instance about it (-setVolatileDomain:forName:) perhaps calling it "ChangedDefaults" (don't give it a name beginning with "NS"!), and insert it first in the domain search list of the new defaults instance. Override the -setObject:forKey: and -removeObjectForKey: methods to set/remove the value in the "ChangedDefaults" volatile domain, and then call [super ...] to do the same for the application domain. The following code illustrates what these override methods might look like:

```
- (void)setObject:(id)value forKey:(NSString *)defaultName {
NSDictionary *changedDomain;
id oldValue;
```

```
[super setObject:value forKey:defaultName];
changedDomain = [self volatileDomainForName:@"ChangedDefaults"];
oldValue = [changedDomain objectForKey:defaultName];
if (![oldValue isEqual:value]) { // Something to do
NSMutableDictionary *newDomain;
newDomain = [[NSMutableDictionary allocWithZone:[self zone]]
initWithDictionary:changedDomain];
[newDomain setObject:value forKey:defaultName];
[self setVolatileDomain:newDomain forName:@"ChangedDefaults"];
[newDomain release];
}
}

- (void)removeObjectForKey:(NSString *)defaultName {
NSDictionary *changedDomain;
id oldValue;
[super removeObjectForKey:defaultName];
changedDomain = [self volatileDomainForName:@"ChangedDefaults"];
oldValue = [changedDomain objectForKey:defaultName];
if (oldValue) { // Something to do
NSMutableDictionary *newDomain;
newDomain = [[NSMutableDictionary allocWithZone:[self zone]]
initWithDictionary:changedDomain];
[newDomain removeObjectForKey:defaultName];
[self setVolatileDomain:newDomain forName:@"ChangedDefaults"];
[newDomain release];
}
}
```

Reference: 63974

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Time zone information not up-to-date

Description: The time zone information in Foundation's resources directory on Windows was quite a bit out-of-date. It has been updated for 4.2. The files contained in the directory and the way in which they are used has also changed internally in Foundation, so it is not possible to directly update a 4.1 deployment by copying the new resource files into the Foundation's resource directory. The Foundation now always uses its time zone data on all platforms, rather than any system data that may exist. For more information, see the section Foundation's Time Zone Data in the General Comments section of the Foundation release notes.

Workaround: None

Reference: 64605

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: HP-UX

Disposition: None

Issue: NSBundles cannot dynamically load code

Description: Unlike NeXT's implementations of OpenStep on other platforms, Foundation in PDO for HP-UX cannot dynamically load code. This is due to limitations in the compiler and Objective C runtime, which we hope to resolve in a future release.

Workaround: None

Reference: 66411

Releases: OPENSTEP 4.0, 4.1

Platforms: Solaris

Disposition: Fixed in OPENSTEP 4.2

Issue: Formatted floats sometimes loose sign

Description: Formatted strings created with the NSString methods like +stringWithFormat: lose the sign of floats formatted with %f (and %g) in some cases. For instance, [NSString stringWithFormat:@"%f", -2.3e-2] results in @"0.023000".

Workaround: Use sprintf() to create the character string with the desired format, then create the NSString from that with +stringWithCString:.

Reference: 66538

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSString +stringWithFormat: doesn't work with %p or some formatting flags

Description: Unlike what the documentation seems to say, NSString does not understand all ANSI C printf()-style formatting escapes and flags, and never has.

Workaround: Use sprintf() to create the character string with the desired format, then create the NSString from that with +stringWithCString:.

Reference: 66725

Releases: OPENSTEP 4.0, 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: Workaround CreateProcess() bug in NSTask

Description: There is a bug in CreateProcess() on Windows NT 3.51, and possibly 4.0, such that when an environment is provided that is of size n*2048+1 bytes (n >= 1), the call fails with error ERROR_MORE_DATA. NSTask now works around this bug.

Workaround: None

Reference: 66766

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSBundle doesn't load _profile and _debug binaries in bundles

Description: NSBundle does not attempt to load code from debug or profile versions of their binary code, which the makefiles give the _debug and _profile suffixes, respectively. If the non-debug/non-profile binary doesn't exist in the bundle, no code will be loaded. NSBundle doesn't care how the binary has been compiled, it just only looks for the file with the name given by the NSExecutable key in the Info.plist file in the Resources directory.

Workaround: [Mach, Solaris, HP-UX]: Create a symbolic link named without the _profile or _debug suffix to the _profile or _debug binary at the top level of the bundle directory. [All platforms]: Move the _profile or _debug binary to a file of the same name without that suffix. [All platforms]: Modify the value of the NSExecutable key in the Info.plist file to include the desired _profile or _debug suffix.

Reference: 67201

Releases: OPENSTEP 4.0

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.1

Issue: Files mapped with -initWithContentsOfMappedFile: cannot be removed

Description: On Windows, you cannot remove a file that a process has mapped; this is a feature of the operating system. However, even after an NSData initialized with -initWithContentsOfMappedFile: is deallocated, a program may not be able to immediately remove the file. The issue is that an internal file-mapping object was autoreleased at the time the data was initialized.

Workaround: The autorelease pool which was active at that time must be released, and then the mapping will be undone, and the file can be removed. Surround the initialization of the NSData with an autorelease pool so that when the data is deallocated, the mapping is immediately undone:

{

id tmpPool = [[NSAutoreleasePool allocWithZone:NULL] init];

mappedData = [[NSData allocWithZone:NULL] initWithContentsOfMappedFile:@"/temp/foo"];

[tmpPool release];

}

Reference: 67382

Releases: OPENSTEP 4.0, 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: NSTask -terminate does not terminate child processes of the subprocess

Description: The -terminate method in NSTask does not recursively terminate any and all child processes of the launched process on Windows, as it does on other platforms.

Workaround: None

Reference: 68041

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSString's -stringByStandardizingPath raises an exception in certain circumstances

Description: When passed an absolute path that ends with ª..º, NSString's -stringByStandardizingPath method raises an exception.

Workaround: None.

Reference: 68155

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: Windows

Disposition: None

Issue: NSUserDefaults does not reflect Windows Registry case semantics

Description: The Windows Registry is case-preserving but case-insensitive with respect to keys (registry keys, not default keys). NSUserDefaults

doesn't reflect this in its behavior, so, for example, if a persistent domain "MyApp" exists, and a persistent domain "MYAPP" is created, the new domain will eradicate the existing one and all defaults in the existing one will be lost. This does not affect default keys or values, only domain names.

Workaround: None

Reference: 68223

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: -stringByAbbreviatingWithTildeInPath sometimes incorrectly abbreviated

Description: If the first part of a path matched the user's home directory, '~' would be substituted for that prefix, regardless of whether or not the partial component at the end of the prefix was a complete component or not. For example,

[@"/me-local/foo/bar" stringByAbbreviatingWithTildeInPath] => @"~/local/foo/bar"

if the example was executed by the "me" user whose account is "/me".

Workaround: None

Reference: 68251

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Various minor defects in the semantics of some path utility methods in corner cases

Description: -stringByAppendingPathComponent: doesn't compress extra slashes when receiver is the empty string

"" + "///x/y//z" -> "///x/y//z"

-stringByAppendingPathExtension: will append an extension beginning with a slash

"abc" + "/a" -> "abc./a"

-stringByAppendingPathExtension: will append an extension beginning with a drive

"abc" + "c:foo" -> "abc.c:foo"

-stringByAppendingPathExtension: does not compress extra slashes in the appended extension (although it is very unusual to do this)

"abc" + "de///fg////h" -> "abc.de///fg////h"

-stringByDeletingPathExtension does not compress extra slashes when there is no extension

"///a/b//c" -> "///a/b//c"

Workaround: None

Reference: 68447, 68781

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: D.O. and archiving type signature checks don't take structure tags into account

Description: The NeXT compiler does not include structure names in type encoding strings produced from typedefs of structures (for example, @encode(NSRange)); instead, the structure tag is given as "?". This is a bug in the compiler, but one that cannot be fixed for backwards compatibility reasons. To achieve compatibility with SunSoft's compiler (which correctly emits all structure tags), a "?" as a structure tag now acts as a "wildcard", matching anything. This is unlikely to affect user applications, but developers who construct their own type encoding strings should note this, as 4.1 is more permissive than OPENSTEP 4.0 was, a possible backwards-deployment issue.

Workaround: None

Reference: 68449

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: Windows

Disposition: None

Issue: Cannot get a proxy for a distributed OLE object using OPENSTEP D.O.

Description: When trying to get a proxy for an OLE object, you may get the following error: "deserializeObjectAt: class `NSDistantIDispatchProxy' not loaded".

Workaround: Include nxorb.m (from NextDeveloper/Libraries) in your client. Although the D'OLE Developer's Guide states that nxorb.m is only needed for use with NXConnections, it's needed in some circumstances for NSConnections as well.

Workaround: None

Reference: 68675

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: HP-UX

Disposition: None

Issue: Hang while looking up connection after fork

Description: If you have a DO client which tries to look up a connection using NSConnection's connectionWithRegisteredName:host:, then forks a process, and then tries to look up the connection again, the client will hang. If the fork is omitted, the client won't hang.

Workaround: None

Reference: 68709

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Deadlock between NSTask and NSNotificationQueue

Description: A process can sometimes deadlock in NSTask's -waitUntilExit method. The triggering conditions are not fully understood.

Workaround: None

Reference: 68790

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSConnectionDidDieNotification not sent in some circumstances

Description: If a client attempts to send a message to a server which had died before the client had processed the port death notification (which can take quite a while to arrive), an NSInvalidSendPortException is raised rather than the NSConnectionDidDieNotification being sent.

Workaround: None

Reference: 69019

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: byref ignored by NSCalendarDates

Description: The byref keyword is no longer ignored when transporting NSCalendarDates (as a parameter or return value) over D.O. Thus, a parameter or return value which is declared with byref now results in a proxy to the calendar date instance, rather than a real calendar date instance. By default, NSCalendarDates still go over the wire bycopy. NSDates always go over the wire bycopy.

Workaround: None

Reference: 69056

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: HP-UX

Disposition: None

Issue: Multi-threaded DO example occasionally hangs on HP-UX

Description: Compiling and running the multi-threaded DO example in /NextDeveloper/Examples/Foundation/MultiThreadedDO occasionally results in a hang.

Workaround: None

Reference: 69110

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: (unsigned char)45 and (long long)-1 are ordered ascending

Description: This is actually correct behavior, in that NSNumber follows the C type promotion rules. Thus, the (long long)-1 is promoted to (unsigned long long)18446744073709551615 and (unsigned char)45 is promoted to (unsigned long long)45, and then the comparison makes sense. This is, however, not all that desirable.

Workaround: None

Reference: 69152

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: HP-UX

Disposition: None

Issue: HP-UX nmserver has issues when passing large structures

Description: On HP-UX systems, passing large structures over D.O. without having first defined a protocol can cause the nmserver to become non-functional.

Workaround: Use protocols when passing large structures over D.O. on HP-UX.

Reference: 69174

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Lossy conversion to NSASCIIStringEncoding more lossy than intended

Description: When NSString finds a non-ASCII character during lossy conversion to NSASCIIStringEncoding, NSString converts it to an underscore. In 4.0, when NSString finds a non-ASCII character during such conversion, NSString converts the character and all the remaining characters in the string to underscores, even if they were ASCII.

Workaround: None

Reference: 69293

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Change to +pathForResource:ofType:inDirectory:

Description: The NSBundle class method +pathForResource:ofType:inDirectory: now first searches a Resources subdirectory of the third parameter if such a subdirectory exists. It used to examine only the directory specified in the third parameter.

Workaround: None

Reference: 69321

Releases: OPENSTEP 4.0

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.1

Issue: D.O. leaks every messaged object

Description: On Windows, every object that is messaged via D.O. is leaked due to an extraneous retain.

Workaround: None

Reference: 69471

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSPipe leaks file descriptors

Description: NSPipes and NSFileHandles do not take ownership of the file descriptor by default. If such an object was released without an explicit close of the descriptors, the descriptors were not recovered. The new methods -initWithNativeHandle:closeOnDealloc: and -initWithFileDescriptor:closeOnDealloc: allow for the creation of file handles which own the descriptors.

Workaround: None

Reference: 69926

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSNotificationCenter sometimes sent duplicate notifications

Description: In some situations, NSNotificationCenter sent observers two (or more) copies of a single notification. This only happened to observers which were registered to receive any notification name (perhaps with restriction to particular object).

Workaround: None

Reference: 70028

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Fault objects could not forward messages

Description: EOFault would cause an unrecognized selector exception rather than causing -forwardInvocation: to be invoked on the faulted object when the fault was sent a message that the faulted object did not understand (in other words, an object faulted would not get an opportunity for forward an unknown selector). Faulted objects which wish to forward a message which may cause them to be faulted should override the new NSObject class method +instanceMethodSignatureForSelector: to return an NSMethodSignature for the eventual target of the forwarded message. See the subsection Forwarding Messages in OpenStep in the General Comments section below.

Workaround: None

Reference: 70172

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSCalendarDate -setCalendarFormat: doesn't handle nil format properly

Description: NSDate's -dateWithCalendarFormat:timeZone: and NSCalendarDate's -setCalendarFormat: now have the documented behavior with respect to the first parameter being nil. In 4.0, they would simply set the format to nil, which resulted in the various -description methods returning an empty string.

Workaround: None

Reference: 70220

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSDateFormatter didn't convert input in the same way as output

Description: NSDateFormatters did not use the output format string to parse user-entered strings, so in most cases strings could not be entered in the same format in which they were displayed. Now a date displayed with "%m/%y" (for example) can also be entered in that format.

Workaround: None

Reference: 70323

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSDateFormatter does not allow empty string

Description: Once the user had begun typing in a text field that had a date formatter, the user could not leave the field without entering a valid date; in particular, the user could not leave the field empty. Empty is now valid, and the date formatter produces nil for an empty string in its -getObjectValue:forString:errorDescription: method.

Workaround: None

Reference: 70334

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Time zones generated with wrong offset

Description: The +timeZoneForSecondsFromGMT: was incorrectly using the negative of the supplied parameter to generate the returned time zone. This also affected the parsing of dates where the time zone was specified with a raw GMT offset, like "-0700", but not where the time zone was a name, such as "GMT-0800" or "PST".

Workaround: None

Reference: 70440

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSRunLoop incorrectly computed whether or not there was work to be done

Description: In some situations using background monitoring of file handles, NSRunLoop would not take into account the file handles in deciding whether or not it had any more input sources.

Workaround: None

Reference: 70463

Releases: OPENSTEP 4.0, 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: Cannot NSLog() large messages

Description: Due to Event Log limitations on NT 3.51, NSLog()'d messages greater than ~32K are dropped and do not appear in the Event Log. Also, messages greater than ~60K stopped appearing in the console for console based processes. In 4.2, messages longer than ~32000 bytes are truncated and the message:

[NSLog log message too long; remainder deleted]

is appended before being sent to the Event Log. Multiple writes are done to the console for large messages.

Workaround: None

Reference: 70565

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSNumberFormatter is not handling nil and NaN correctly

Description: If you tab into a cell with an NSNumberFormatter, and the cell has a nil object value, if you tab out of the cell, the number formatter inserts NaN into the cell. This value can be persistent and hard to get rid of, even when a valid number is typed into the field.

Workaround: None

Reference: 70580

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSNumber hashed long long numbers incorrectly

Description: NSNumber hashed long longs by simply casting the value to (unsigned int). This caused some equal numbers to have different hash values, breaking the hash=isEqual: invariant.

Workaround: None

Reference: 70612, 70718

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: NSDecimalNumber inaccuracies

Description: An error in the text from which the division algorithm was taken caused inaccuracies in the less significant end of the result of -decimalNumberByDividingBy:withBehavior: (in the fractional part, the ones, and tens digits, depending on the size of the numbers). Also, digits of precision were being lost during initialization on the less significant end of the number, and the decimal point was being incorrectly positioned in the result of -decimalNumberBySubtracting:withBehavior:.

Workaround: None

Reference: 70955

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Cannot append path components beginning with tilde

Description: NSString -stringByAppendingPathComponent: would refuse to append a component that began with `~' in 4.0. This was to prevent

the accidental concatenation of "~username" onto a path, but `~' is a valid (but perhaps uncommon) first character of a file name, and that behavior was of marginal benefit, so it was eliminated.

Workaround: None

Reference: 70975

Releases: OPENSTEP 4.0, 4.1

Platforms: Mach

Disposition: Fixed in OPENSTEP 4.2

Issue: Loading bundles with duplicate or undefined symbols crashes applications

Description: In NEXTSTEP 3.3 and prior versions, attempting to load a bundle with symbols which duplicated already-existing symbols, or had undefined symbols which were still undefined after the bundle was loaded into the executable image, simply caused the bundle load to fail. In OPENSTEP, this causes an application to crash.

Workaround: By default, this is not fixed to restore the 3.3 behavior, since the fix is somewhat expensive. The 3.3 behavior can be enabled by setting the default NSSafeBundleLoading to YES in a user's defaults database. The success or failure of the operation can be tested with the NSBundle -load method.

Reference: 71118

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: Collections that contain themselves don't describe

Description: Sending the -description method to collections which contain themselves, or contain objects that contain the collection, causes infinite recursion.

Workaround: None

Reference: 71288

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Issue popping initial autorelease pool

Description: A program could crash if it repeatedly created and released the top autorelease pool.

Workaround: None

Reference: 71646

Releases: OPENSTEP 4.0

Platforms: All

Disposition: Fixed in OPENSTEP 4.1

Issue: Formatter.strings missing

Description: A missing strings file has been added to the Foundation, so in 4.1 error strings returned from the formatters (NSDateFormatter and

NSNumberFormatter) will be localized.

Workaround: None

Reference: 71911

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSMutableData -setData: method does not reduce length of receiving data

Description: The NSMutableData -setData: method will increase the length of the receiving data object to accommodate all the bytes in the parameter, but does not shrink the size of the receiving data if the parameter contains fewer bytes than the receiver.

Workaround: Do an explicit -setLength: after -setData:.

Reference: 71962

Releases: OPENSTEP 4.0, 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: NSBundle cannot identify the main bundle over Samba

Description: NSBundle is not able to identify the main bundle for applications launched from a directory mounted in Windows via Samba, where the Samba server has been configured to be case sensitive. Applications will terminate immediately on launch.

Workaround: Set the Samba server to be case insensitive (but this can cause other issues, such as files being inaccessible).

Reference: 72144

Releases: OPENSTEP 4.0, 4.1

Platforms: Mach

Disposition: Fixed in OPENSTEP 4.2

Issue: NSData's -writeToFile:atomically: always fails on DOS-formatted disks

Description: The temporary file that NSData creates when the second parameter to -writeToFile:atomically: is YES is not a valid file name on DOS-formatted disks (it's too long).

Workaround: None

Reference: 72464

Releases: OPENSTEP 4.0, 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: Domains seem to be missing

Description: NSUserDefaults sometimes fails to identify the longest-named domain in the registry as a domain, and it will be omitted from lists, such as that produced by the command `defaults domains'.

Workaround: None

Reference: 72479

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSScanner's -scanDouble: and -scanFloat: too eager

Description: In cases where NSScanner encounters a lone 'E' or a lone '.', it currently puts 0.0 into the variable and returns YES. In some future release, it will probably return NO in such a situation.

Workaround: None

Reference: 73292

Releases: OPENSTEP 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSMutableDictionary -setDictionary: crash

Description: The -setDictionary: method of NSMutableDictionary will cause an application to crash when the parameter is an empty immutable dictionary.

Workaround: None

Reference: 73320

Releases: OPENSTEP 4.1, 4.2

Platforms: All

Disposition: None

Issue: In NSNumberFormatter, specifying different formats for negative and positive values causes issues

Description: When the formats you specify for positive and negative values aren't parallel in their treatment of separators, for example:

[numForm setFormat:@"###,##0.00;-(##0.00)"];

the positive format takes on the separator characteristics of the negative format. For example, given the above statement, positive values will be displayed without thousand separators even though their format includes separators.

Workaround: None

Reference: 73352

Releases: OPENSTEP 4.0, 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: -stringByResolvingSymlinksInPath now does more

Description: On Windows, -stringByResolvingSymlinksInPath now fixes the cases of characters so that the case of the name in the returned string matches the on-disk case, and it also converts 8.3 names to the full names.

Workaround: None

Reference: 73686

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSFileHandle error notification not handled correctly

Description: If an error occurs in attempting a background monitoring operation, NSFileHandle may send an empty notification to observers. This may occur when a native file handle has not been configured correctly for use, for example.

Workaround: None

Reference: 73689

Releases: OPENSTEP 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: NSCalendarDate won't archive correctly unless TZFILE is set

Description: In 4.1, NSTimeZone attempted to use information from the registry to choose the default time zone, so that the TZFILE environment variable, required in 4.0, was no longer necessary. However, the time zone object that was created in the absence of TZFILE was not transportable over Distributed Objects, and could not be unarchived from an object archive on any platform (so NSCalendarDates which use the default time zone could not be unarchived either).

Workaround: Set the TZFILE environment variable for a user to the name of a time zone, like "US/Eastern" or "Japan".

Reference: 73751

Releases: OPENSTEP 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Incorrect behavior when copying NSMutableDictionarys

Description: According to the OpenStep specification, when you send -copy or -copyWithZone: to an NSMutableDictionary you should get back a deep immutable copy. This was the behavior implemented in OPENSTEP 4.0. However, in OPENSTEP 4.1 (all platforms) what you get back is a shallow immutable copy--the objects in the dictionary are merely retained instead of being copied.

This change in behavior can have subtle effects within any code that copies NSMutableDictionarys. For example, suppose you have a mutable dictionary populated with objects, and you create a copy (which should be a deep immutable copy). If you then modify one of the objects that you had put into the original dictionary, the modified object will appear in the copy of the dictionary as well as in the original. This bug means that a copy of a dictionary can change out from under you unexpectedly. In an application, you might see no change, incorrect operation, or a crash as a result. Because it doesn't always crash your applications, and because it manifests itself in a number of different ways, this bug can be particularly difficult to detect.

Workaround: While you may not be able to alter the way that libraries you link against are written, in your own code you can work around this bug simply by avoiding the use of either -copy or -copyWithZone: with NSMutableDictionarys. The easiest way to do this is to use the undocumented (in 4.1) -initWithDictionary:copyItems: method, as shown here:

[[NSDictionary allocWithZone:NULL] initWithDictionary:dict copyItems:YES]

This method only makes sense when you know you have a dictionary object, but that's often the case (-isKindOfClass: can be used for testing this). Note that -initWithDictionary:copyItems: isn't part of the OpenStep specification.

Reference: 73880

Releases: OPENSTEP 4.0, 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: NSFullUserName() always returned nil

Description: Note that this DLL is not implemented on Windows 95, so this function will always return nil on Windows 95. Applications should be prepared for a nil return value.

Workaround: None

Reference: 74192

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSTimeZones are not equal

Description: Unless the receiver and parameter are the same identical object, NSTimeZone's -isEqual: method returns NO for identical time zone objects.

Workaround: None

Reference: 74198

Releases: OPENSTEP 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Misbehavior in initializing NSArrays

Description: In 4.1, the following code doesn't cause a nil-object exception, but it should.

id ids[5] = {[NSObject new], nil, nil, [NSObject new], [NSObject new]};

id a = [NSMutableArray arrayWithObjects:ids count:5];

Workaround: None

Reference: 74246

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Time zone offsets not parsed well

Description: The date can be misparsed from a string with a bare time zone offset (as opposed to a time zone name). For example:

dateWithNaturalLanguageString:@"1996-10-22 13:44:03 -0700"

returns the date

700-10-22 13:44:03 -0800

Workaround: None

Reference: 74271

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSUserDefaults +initialize causes crash on second invocation

Description: If NSUserDefaults' +initialize method was invoked a second time, say by the presence of a subclass, an application would crash.

Workaround: A subclass can provide an empty implementation of +initialize so that NSUserDefaults implementation does not get called multiple times.

Reference: 74349

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSAutoreleasePool crashes with a memory fault

Description: NSAutoreleasePool can crash with a memory violation during an autorelease

if the following sequence of events occurs:

1. the non-top pools get a sum of exactly (2019 - 4 * P + 2048 * N) objects in them, where:

N is any integer N >= 2,

M is the maximum number of pools there have ever been at any instant, up to that point, and

P = { 0 if M <= 16; ceil(M - 13) / 4) if M > 16 }

2. the top pool grows to be large (having more than 4096 objects in it), and is then released

Upon the next autorelease, the autorelease pool will shrink its storage, shrinking it to exactly the amount required for the (2019 - 4 * P + 2048 * N) objects in the remaining pools, and then try to add the newly autoreleased object one slot past the end of the new storage. The shrink in this case is not taking into account the extra storage that will immediately be needed.

Workaround: None

Reference: 74560

Releases: OPENSTEP 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: Prefix "\\\\" stripped by path utilities

Description: The path utilities go to a lot of trouble to preserve a prefix "\\\\" on Windows, which indicates a UNC file name. However, due to a bug, this was being stripped in one common code path.

Workaround: None

Reference: 74725

Releases: OPENSTEP 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSMutableDictionary -initWithDictionary:copyItems: crash

Description: NSMutableDictionary's -initWithDictionary:copyItems: method can crash a program on a nil dictionary parameter.

Workaround: None

Reference: 74787

Releases: OPENSTEP 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSNumberFormatter may not use the default attributes

Description: -attributedStringForObjectValue:withDefaultAttributes: doesn't always use the default text attributes passed in as the second parameter. Specifically, they weren't used when formatting zero, nil, and NaN.

Workaround: None

Reference: 74791

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSFileHandle shouldn't raise if it doesn't write all the data

Description: The -writeData: method raises if it can't write all the data in one attempt.

Workaround: None

Reference: 74823

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSWeekDayNameArray is incorrect for French, German, Spanish, Swedish, & Italian.

Description: The NSWeekDayNameArray default in the French, German, Spanish, Swedish, & Italian language files in the Foundation resources start with Monday. The array should start with Sunday (even though Monday may be the conventional first-day-of-the-week).

Workaround: None

Reference: 74849

Releases: OPENSTEP 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSNumberFormatter's -attributedStringForObjectValue:withDefaultAttributes: doesn't work with nil second parameter

Description: NSNumberFormatter's -attributedStringForObjectValue:withDefaultAttributes: doesn't handle the case where nil is passed as the default attributes dictionary.

Workaround: None

Reference: 75011

Releases: OPENSTEP 4.0, 4.1

Platforms: Windows

Disposition: Fixed in OPENSTEP 4.2

Issue: Language preference in registry is inserted into NSLanguages default

Description: In 4.1, if the user did not have an NSLanguages default, NSUserDefaults looked into the Windows registry and created an NSLanguages default in the registration domain from the user's preferred language stored by the Control Panel. Now, the language from the registry is appended to the list if it doesn't already occur in the NSLanguages default (with the default being created in the registration domain as before if it doesn't exist). Also, whenever the language "English" is not present in the list, it is now appended to the list.

Workaround: None

Reference: 75359

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSData -hash algorithm is too simple

Description: NSData used to return the length of the data as its hash value. For EOF, where fixed-length data objects may be used as primary keys, this results in terrible hashing performance. NSData now uses a better algorithm that depends on the byte contents of the data.

Workaround: None

Reference: 75568

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSCalendarDate %F format flag truncates rather than rounds

Description: The %F format flag for NSCalendarDates indicates where milliseconds are to be indicated in a formatted string. However, it was truncating a series of nines in the result, rather than rounding. For example, if the millisecond value was 120, it might be stored as .119999999999..., and the formatting for %F would truncate the excess fractional part and result in "119" in the formatted string.

Workaround: None

Reference: 75881

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSNumberFormatter can use wrong formats

Description: If an NSNumberFomatter is asked to format a number after the positive format or negative format has been changed from the default, but before the -positiveFormat or -negativeFormat methods have been called (such as by -getObjectValue:forString:errorDescription:), the number formatter will use the previous positive or negative format(s) rather than the new ones.

Workaround: Call -positiveFormat after setting the positive format or -negativeFormat after setting the negative format.

Reference: 75947

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Issues with NSDecimalNumber addition and subtraction

Description: When two NSDecimalNumber objects have a large difference in their precision (for example, 1070464.1 and 10458008.858880000582251216050000055879), the numbers can be added or subtracted incorrectly.

Workaround: None

Reference: 76051

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Path utilities don't handle multi-byte strings

Description: The path utility methods can return corrupted strings for receiving strings which have multi-byte characters.

Workaround: None

Reference: 76181

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSValues and NSNumbers in 3.3 archives can't be unarchived

Description: In the 3.3 Foundation, NSValues and NSNumbers were archived in such a way that a helper class, NSValueDecoder, was needed to unarchive them. This class does not exist in the Foundation in 4.0 or 4.1, so such archives cannot be read in.

Workaround: None

Reference: 76716

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Date parsing not handling 1-digit numbers well

Description: If an application parsed the string "96/5" with the format "%y/%m", the application would raise an out-of-bounds exception. If the string was "96/05", things worked fine.

Workaround: None

Reference: 77004

Releases: OPENSTEP 4.0, 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: Attempting to transport or unarchive the local time zone object fails

Description: The object returned by [NSTimeZone localTimeZone] cannot be unarchived if archived, nor transported over the wire with Distributed Objects.

Workaround: None

Reference: 77079

Releases: OPENSTEP 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSArray methods not working with fault parameters

Description: The NSArray methods -indexOfObject:, -indexOfObject:inRange:, and -containsObject: cause a raise of a selector-not-recognized exception when the first parameter is a faulted object. The -firstObjectCommonWithArray: has the same issue when the array parameter is an array of faults.

Workaround: None

Reference: 77202

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: NSFileManager methods don't work on strict 8.3 DOS file systems

Description: The NSFileManager methods -createFileAtPath:contents:attributes: and -movePath:toPath:handler: can fail on FAT file systems which are strict about 8.3 file names, such as available on Mach. The FAT file systems of Windows NT and Windows 95 are more forgiving.

Workaround: None

Reference: 77309

Releases: OPENSTEP 4.0, 4.1, 4.2

Platforms: All

Disposition: None

Issue: Local proxies not immediately released when remote proxy released

Description: For performance reasons, Distributed Objects batches, on the remote side, release methods destined for local proxies. Whenever a synchronous method (i.e., non-oneway) is sent to a remote object, all pending releases on local objects are returned with the return value of the method (which may be void of course). Since the local proxy retains the object it represents (part of its function is to make sure the local object which has been vended remains valid at least as long as there is an outstanding remote proxy for it), a local object which has been vended over the wire, but released on the server side, will persist until the client sends a synchronous message to the server. If a client and server communicate only with oneway messages, local objects which are sent remotely by proxy (as a parameter for example) will persist "forever", or until the local connection is invalidated. This can be an issue for long-lived clients which maintain a persistent connection to a server.

Workaround: Occasionally send a synchronous message from the client to the server. The message does not have to have a return value or parameters, or do anything, but will serve to flush pended releases back to the client. Another workaround would be to occasionally invalidate the connection to the server and reconnect.

Reference: 77559

Releases: OPENSTEP 4.2

Platforms: Mach, HP-UX, Solaris

Disposition: None

Issue: Process name is empty string

Description: If argv[0] of a process is not an absolute path, and the Foundation can't find argv[0] by searching the PATH environment variable to compute the absolute path, the process name computation may result in the empty string. This can only happen if a process uses fork() and execve() (or related function) to create a Foundation-based process, and the first argument to execve() specifies an executabe which does not exist in the PATH list and the argv[0] passed into execve() is not that same full path, but a relative one. There isn't anything the Foundation can do in this case about computing the full path to the executable, for use in computing the main bundle for example. However, the process name should not be empty string, but rather the last component of argv[0] unchanged. An empty string for the process name causes trouble for other Foundation subsystems, like user defaults.

Workaround: Pass the same string in argv[0] as the first argument, to execve() or related function.

Reference: 77678

Releases: OPENSTEP 4.1

Platforms: All

Disposition: Fixed in OPENSTEP 4.2

Issue: NSNumber's -decimalValue method broken for non-English usage

Description: The -decimalValue method of NSNumber incorrectly computes its result for users whose defaults specify a decimal point other than period (`.'). This may cause NSNumberFormatters to not accept any input other than "2" in a text field. This affects the scale field in the AppKit's print panel in 4.1, for example.

Workaround: None

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OPENSTEP 4.2 Release Notes: Project Builder

This file contains release notes for the Project Builder application distributed with OpenStep 4.2. It includes information specific to OPENSTEP for Mach and to OPENSTEP for Windows as well as information general to both platforms.

Project Builder provides integrated code development capabilities for the sophisticated developer. Its main window combines a project browser with a full-featured code editor. You can bring up panels for building, debugging, finding information in the project, and setting project attributes. To familiarize yourself with Project Builder's capabilities and features, you can do one of the following"

- ·On Mach, choose the Help command from Project Builder's Info menu. This launches a Digital Librarian bookshelf containing the on-line book OpenStep Development: Tools and Techniques.
- ·On Windows, choose the How To command from Project Builder's Help menu. This launches a Windows Help version of the same book.

This article has been archived and is no longer updated by Apple.

New Features for 4.2

Click-to-Find Button

A new context help button has been added to the right of the toolbar. It activates the context help mode, denoted by the question-mark cursor. In context help mode, you can get information on UI items by clicking on them. You can also use this button for "Click-To-Find" operations to access symbols in the project's index. To get definitions for source code symbols, move the cursor over the source file and click when the symbol has been highlighted. This will bring up the finder panel to display the results.

Fuzzy Indexing

A new lighter-weight style of project indexing debuts in this release on both Mach and Windows. It provides a more reliable and low-cost index that is not based on the strict pre-processing and formal parsing methodology employed in 4.0 and 4.1 (which is only available on Mach via a defaults setting). In addition to using less virtual memory and CPU time, the fuzzy parsing system can index symbols inside #ifdefs that are not currently turned on in your builds.

Information about frameworks is shared across projects that link against them and can be accessed from the project find panel associated with each such projects. Information about other header files you may import is not currently stored. All existing preferences, indexing panel operations, and find panel queries now apply to the new Fuzzy Indexing feature.

Framework Documentation Access

Although the Find panel can be used to access documentation about a particular symbol, all of the documentation associated with a framework can now be browsed. The Frameworks suitcase will now show for each framework the on-line available documentation structure. This works as a direct link to the file system with the use of filtering. On Mach, the user can browse the documentation and display any file directly from the project browser. On Windows, the WinHelp system can be launched on a particular framework's documentation.

Syntax Coloring

It is now possible to use syntax coloring on source files (C, C++, Obj-C, Java). Syntax coloring is a feature that allows Project Builder to show parts of a source file (tokens) using different text attributes depending on their meaning. For instance, comments can appear in italic text and string constants in red.

A new "Syntax Coloring" preferences pane has been added to allow you to switch the syntax coloring off or change the font and color for each lexical category of text.

The current set of lexical categories include: Comments, Keywords, Strings, and Numbers. It is also possible to use the normal text attributes for a lexical category inherited from the existing "Fonts, Sizes & Colors" preferences pane. Tokens that don't appear in one of the lexical categories (such as identifiers) will always inherit these default attributes. Switching syntax coloring on and off takes place right away. Setting attributes for one or more tokens "dirties" the window; these settings are applied and saved to the defaults when Set is pressed. Revert takes you back to the previously-saved syntax-coloring preferences.

Improved Debugging

A number of bugs have been fixed in the Launcher/Debugger facilicities of Project Builder. New features include the ability to set the directory paths needed for dynamically loaded libraries and, on Windows, better integration between building and debugging an executable. When a path is entered in the Launcher Options Panel environment section, the Launcher sets the appropriate environment variable so that launched and debugged programs use dynamically-loaded libraries located in the specified directory. When building a project on Windows, the final link of the executable will fail if the executable is being run or debugged. Project Builder will now ask you if you want to stop a launched executable when building. If the executable is being debugged, Project Builder will notify gdb to release the executable and then reload its symbols when the build finishes. While the build is in progress, you cannot run the executable from within the debugger, but you can manipulate breakpoints.

New Features for 4.1

New Makefiles

Project Builder includes new makefiles that offer several advantages over the previous ones. These makefiles:

- Build projects with lower overhead.
- Fix a number of extensibility problems.
- Allow a higher degree of parallelism with gnumake -j.
- Make it easier to diagnose problems.

When you first open a project that uses the old makefiles, Project Builder displays a panel that lets you do one of the following:

- Convert immediately to the new makefiles.
- Keep your current makefiles.
- Defer the decision to later.

If you convert to the new makefiles, the project defines this path to them in MAKEFILEDIR:

$NEXT_ROOT/NextDeveloper/Makefiles/Project Builder_makefiles

The original 4.0 Makefiles are located in this directory:

$NEXT_ROOT/NextDeveloper/Makefiles/project

Currently, you can override the MAKEFILEDIR attribute for your project in Makefile.preamble by setting it to the desired directory. Or you can edit the MAKEFILEDIR attribute in Project Builder.project, but not through the user interface of Project Builder. You are strongly encouraged to convert your projects to the new makefiles if that is feasible. For instance, a new facility that automatically generates .def files (see below) depends on these makefiles. However, you might keep older makefiles intact for those exceptional projects that depend upon unique implementation details in the project makefiles.

Microsoft Linker

The Microsoft linker is now the default for projects on Windows built with Project Builder. This is the same linker that ships with the current Visual C++. For information on using the linker, consult the Visual C++ documentation. See the following item, "Automatic Generation of .def Files," for a related issue.

Automatic Generation of .def Files

On WIndows, the Microsoft linker requires symbols exported from a framework DLL to be explictly specified. One way of doing this is in a .def file in the project (for example, "MyFramework.def"). In prior releases, this file had to be manually created. Project Builder now generates a .def file for frameworks and dynamic libraries (that is, library projects producing DLLs). It re-creates the file the first time a project is built and, thereafter, updates it every time an object file changes. To get this feature, you must update to the new makefiles (See "New Makefiles," above).

If you currently have a .def file for a framework, and it is not highly customized, delete it and let Project Builder regenerate it for you. Otherwise, leave it where it is. Project Builder creates a .def file only if there isn't one already in the project.

The .def file that Project Builder creates is comprehensive, so if you want to create a customized .def file that is a subset of it, first build your project. Then add the generated .def file in derived_src to Supporting Files in your project and edit it as necessary.

Note: You should use the CONSTANT keyword instead DATA in your .def file. The export of framework functions also requires a little extra code. For more on both of these items, see "Known Problems in this Release, " below.

In creating the .def file for frameworks and dynamic libraries (DLLs), Project Builder handles Objective-C symbols and data but not functions. If you have functions in your framework that need to be callable from the outside, define certain macros in a header file and then use them in your function declarations. These macros allow you to export non-static functions from the DLL (FRAMEWORK_EXTERN) or to declare them as extern, but not exported (FRAMEWORK_PRIVATE_EXTERN). The following example shows how (substitute your own framework name for FRAMEWORK):

```
#ifndef _FRAMEWORKDEFINES_H

#define _FRAMEWORKDEFINES_H

#if defined(WIN32)

//

// For Windows

//

#ifndef _FRAMEWORK_BUILDING_DLL

#define _FRAMEWORK_WINDOWS_DLL __declspec(dllimport)

#else

#define _FRAMEWORK_WINDOWS_DLL __declspec(dllexport)

#endif

#ifdef __cplusplus

#define FRAMEWORK_EXTERN extern "C" _FRAMEWORK_WINDOWS_DLL

#define FRAMEWORK_PRIVATE_EXTERN extern

#else

#define FRAMEWORK_EXTERN _FRAMEWORK_WINDOWS_DLL extern

#define FRAMEWORK_PRIVATE_EXTERN extern

#endif
```

You need to import this header in all your other headers and declare your function prototypes accordingly. Then make sure you define FRAMEWORK_BUILDING_DLL when building your framework.

New Features for 4.0

Some or all of these new features may exist in the Windows version of Project Buiilder depending on its state at the time of the release:

- The new Launcher Panel allows you to run or debug executables built by the project.
- Printing is now supported.
- The Build Attributes Inspector allows you to specify OS specific values for compiler flags, linker flags, installation and build directories, and build tool.
- The Build Options panel values persist across invocations of Project Builder. The values you specify on this panel are saved per-user, per-project.
- In the Project Attributes Inspector for an application project, you can specify a help file and icons for both NT (.ico, .ICO) and Mach (.eps, .tiff).
- Project Builder by default sets tab stops at regular intervals of eight spaces each. There is now a dwrite, ªtabStopCharsº, that allows you alter this interval to any desired number of spaces, as long as that number is greater than zero.

Converting 3.x applications to 4.x

The _main.m files of 3.x applications have to be manually converted to the new _main.m content. To do this, copy the main() code from existing 4.1 projects or create a new project and copy its main() code. You can also copy and paste this code directly from here:

```
#import <AppKit/AppKit.h>

int main(int argc, const char *argv[]) {

return NSApplicationMain(argc, argv);

}
```

Known Problems in The 4.2 Release < Mach and Windows

These problems are known to exist with this release on both Mach and Windows:

Reference: 76564

Problem: Files containing C++ constructs are not indexed

Description: The symbol index is not built for source code modules that contain C++ code or for .h files that appear to contain declarations specific to C++. As well, reference queries do not work in the project find panel.

Reference: 76321

Problem: Project Builder edit caches file changes in memory between close and reopen of a project

Description: If you choose not to save changes to a file when closing a project, when the project is opened again Project Builder reuses the file buffer containing the unsaved changes for that file, instead of the version of the file from the disk

Reference: 76133

Problem: File renaming doesn't work properly

Description: Using the Inspector to change the name of a file causes exceptions to be raised inside Project Builder.

Reference: 76114

Problem: Yellow arrows are not displayed in the browser

Description: If you open a file and then index the project, the yellow arrow, which signifies the file is indexed, is not displayed for that file. The arrows are displayed for other files.

Reference: 77979

Problem: LIBRARY_STYLE=STATIC excludes frameworks

Description: If your builds terminate with link errors claiming that imported frameworks are undefined, check your Makefile.preamble to see if the following line is uncommented.

LIBRARY_STATIC = STYLE

If it is uncommented, prepend a hash character (#) to comment it out. Due to a change in the make process, "LIBRARY_STYLE=STATIC" tells the linker not to link against frameworks (such as AppKit and Foundation), even if they are added to the project.

Known Problems in The 4.2 Release < Windows

These problems are known to exist with this release on Windows:

Reference: 69061

Problem: Builds will fail if NEXT_ROOT has been modified to contain backward slashes.

Description: The installer specifies NEXT_ROOT with forward slashes, for example:

C:/NeXT/

Do not edit this variable in the Environment section of the System control panel, even if to change the forward slashes to backward slashes.

Reference: 72307

Problem: The Microsoft linker emits a bogus warning about CONSTANT keywords.

Description: When you build framework projects, you will see messages complaining about the use of CONSTANT keywords in your .def file. Because of problems with the linker, CONSTANT should be used in place of DATA. You can ignore the warnings.

Reference: 76192

Problem: Find results don't show the documentation icon for methods.

Description: After indexing the project, a find on a method name does not show the documentution icon

(a book) for methods which have documentation.

Reference: 75239

Problem: Project Builder thinks some .nib files have been modifed

Description: Open a project and then start Interface Builder. Open a .nib file with Interface Builder, not by double-clicking on the nib inside Project Builder. Build the project in Project Builder and Project Builder will warn that the .nib file is modified, when it is not. The workaround is to start Interface Builder by double-clicking the nib inside Project Builder.

Known Problems in The 4.2 Release < Mach

These problems are known to exist with this release on Mach:

Reference: 67785

Problem: Breakpoints on functions or methods without debugging information aren't displayed in the breakpoint inspector.

Reference: 67712

Problem: Moving a breakpoint icon doesn't update the line number in the Breakpoint inspector. However, the location of the breakpoint is updated in gdb.

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OPENSTEP 4.2 Release Notes For Pre-4.0 Foundation Users

In the document below, "4.0" and "OPENSTEP 4.0" refer to all products that shipped with the 4.0 Foundation: OPENSTEP 4.0, D'OLE 4.0, and PDO 4.0 for HP-UXTM and SolarisTM.

There were several releases of the Foundation Framework prior to OPENSTEP 4.0. Foundation shipped with:

- NEXTSTEP 3.3
- Enterprise Objects Framework 1.0
- Enterprise Objects Framework 1.1
- Portable Distributed Objects 3.0
- D'OLE 3.5
- OPENSTEP 4.0 Prerelease 1
- OPENSTEP 4.0 Prerelease 2
- PDO 4.0 Prerelease

This document only describes API changes that have been made between those releases and OPENSTEP 4.0. (For changes since OPENSTEP 4.0, see the release note Foundation.rtf.) The semantics of many things have changed, but most not in a way that will affect programs (NEXTSTEP 3.3 Foundation-based programs and EOF 1.1 programs, being older, are more likely to be affected). Unfortunately, there is no single source for information about such changes±refer to the Foundation Framework Reference and specific class specifications for the current behavior. This document does not describe extensions to Foundation provided by various NeXT products (for example, WebObjects or EOF).

Foundation is now packaged as a ProjectBuilder framework, and resides in /NextLibrary/Frameworks/Foundation.framework. The headers can be found in /NextLibrary/Frameworks/Foundation.framework/Headers.

All programs based upon previous version of Foundation should be recompiled (even if no conversion is necessary) to function with this version of Foundation. Compiling against the old static "shlib" (the shared library shipped with NEXTSTEP 3.3, EOF 1.1, and PDO 3.0, and used by WebObjects) is not supported in OPENSTEP 4.0 (without EOF 1.1 installed).

This section is divided into a subsection for each of the previous releases of the Foundation Framework. There are no specific notes for Enterprise Objects Framework 1.0, Portable Distributed Objects 3.0, or WebObjects 1.0 developers; please refer to the section for Enterprise Objects Framework 1.1 developers. The API of the Foundation shipped with Portable Distributed Objects 3.0 and WebObjects 1.0 was identical to that in Enterprise Objects Framework 1.1 (other than extensions made by those products).

This article has been archived and is no longer updated by Apple.

Notes Specific to NEXTSTEP 3.3 Developers

Items in the tables below (in the section titled **Tables Showing Foundation API Changes**) that are marked with "(NS33)" are changes made to Foundation between NEXTSTEP 3.3 and OPENSTEP 4.0. Also see the general comments in the section Notes Specific to Enterprise Objects Framework 1.1 Developers below. NEXTSTEP 3.3 developers should note the following additions to those comments:

- The header NXAutoreleaseConnection.h was not in NEXTSTEP 3.3. Comments referring to this header do not apply to NEXTSTEP 3.3 developers.
-
- Two additional headers, NSLock.h and NSThread.h, were not in NEXTSTEP 3.3, but are in OPENSTEP 4.0.

Notes Specific to Enterprise Objects Framework 1.1 Developers

Items in the tables below (in the section titled **Tables Showing Foundation API Changes**) marked with "(EOF11)" are changes made to Foundation between EOF 1.1 and OPENSTEP 4.0.

Some additional changes are not contained in the tables or are of particular note:

- Headers are now imported as <Foundation/...>, rather than <foundation/...>.
- The structure of imports has changed. The Foundation headers import all ANSI C headers they need and some of the Objective-C interfaces, but none of the operating system interfaces. The set of headers imported by each header has also changed in many places. Where a project was getting a header imported "for free" before, it may now need to import additional headers in order to compile.
- The header NXAutoreleaseConnection.h has been removed. Its contents have been moved to NSCompatibility.h.
- A Foundation.h header has been added, which includes the 15 ANSI C headers, and all Foundation headers except NSCompatibility.h and NSDebug.h.
- The top-level NSAutoreleasePool is no longer created for automatically±a program needs to create it itself. See the Foundation Framework Reference and the NSAutoreleasePool class specification for more information on creating autorelease pools.
- NSDictionary no longer constrains keys to be instances of NSString. Any object that meaningfully responds to -hash, -isEqual:, and -

copyWithZone: can be an NSDictionary key.

- The name of the exception variable in the NS_HANDLER...NS_ENDHANDLER region has been changed from exception to localException.
- Some methods that are not in OpenStep, and were not guarded with #if !defined(STRICT_OPENSTEP), now are guarded.
- NSObject no longer conforms to the NSCoding protocol. Instead, the classes that can be archived or distributed, and their subclasses, conform to the protocol explicitly.
- NSBundle's and NSNotificationCenter's instance variables are now declared @private.
- The type of the parameter to NSBundle's +bundleForClass: method changed from id to Class.
- The type of the parameter to NSValue's +valueWithPointer: method changed from void * to const void *.
- The typedef NSStringEncoding in NSString.h has changed from a typedef'd enumeration to a typedef'd scalar.
- The value of the enumeration constant NSUnicodeStringEncoding in NSString.h has changed from 0 to 10.
- The location of the resources has changed, and can now be found in the Foundation framework directory. If, in a previous release of the Foundation, your application was poking around in the Foundation resources, you should carefully consider why you were doing so, and stop doing it if possible.
- The declarations of the NSAutoreleasePool debugging methods and aids have moved from NSAutoreleasePool.h to NSDebug.h. Some of the methods are destined for obsolescence, and some new methods have been added.
- The header NSObjCRuntime.h now imports the headers objc/zone.h and stdarg.h.
- Many declarations and definitions were removed from the header NSUtilities.h and moved elsewhere, but all the previous material is still defined by importing NSUtilities.h. The headers to which things were moved are NSEnumerator.h, NSObjCRuntime.h, NSDictionary.h, and NSString.h.

Finally, the Foundation shipped with EOF 1.1 did not contain much of the functionality of the Foundation in OPENSTEP 4.0. These headers, and all the API they declare, were added between EOF 1.1 and OPENSTEP 4.0:

```
NSAttributedString.h
NSFormatter.h
NSPPL.h
NSByteOrder.h
NSGeometry.h
NSProcessInfo.h
NSCompatibility.h
NSHashTable.h
NSProtocolChecker.h
NSConnection.h
NSHost.h
NSProxy.h
NSDateFormatter.h
NSInvocation.h
NSRunLoop.h
NSDebug.h
NSMapTable.h
NSSerialization.h
NSDecimal.h
NSMethodSignature.h
NSSet.h
NSDecimalNumber.h
NSNotificationQueue.h
NSTask.h
NSDistantObject.h
NSNumberFormatter.h
NSTimer.h
NSDistributedLock.h
NSPort.h
NSUserDefaults.h
NSEnumerator.h
NSPortCoder.h
NSFileHandle.h
NSPortMessage.h
NSFileManager.h
NSPortNameServer.h
```

The API added by these headers is not included in the tables below.

Notes Specific to D'OLE 3.5 Developers

Items in the tables below (in the section titled Tables Showing Foundation API Changes) marked with "(40PR1)" are changes made to Foundation between OPENSTEP 4.0 PR1 and OPENSTEP 4.0. This symbol also marks changes that apply to D'OLE 3.5 developers, with the exceptions noted below. See also the general comments in the section Notes Specific to OPENSTEP 4.0 PR1 Developers below.

The following are exceptions to the changes noted between OPENSTEP 4.0 PR1 and OPENSTEP 4.0, for D'OLE 3.5 developers:

- The header NSPPL.h isn't in D'OLE 3.5, but is in OPENSTEP 4.0. API changes referring to this header do not apply to D'OLE 3.5 developers.
- These methods were in D'OLE 3.5, but not in OPENSTEP 4.0 PR1:

CLASS	HEADER	METHOD	
NSString	NSPathUtilities.h	+pathWithComponents:	(+NeXT) (40PR1)
NSString	NSPathUtilities.h	-isAbsolutePath	(+NeXT) (40PR1)
NSString	NSPathUtilities.h	-pathComponents	(+NeXT) (40PR1)

Notes Specific to OPENSTEP 4.0 PR1 Developers

Items in the tables below (in the section titled Tables Showing Foundation API Changes) marked with "(40PR1)" are changes made to Foundation between OPENSTEP 4.0 PR1 and OPENSTEP 4.0.

Some additional changes are not contained in the tables or are of particular note:

- All applications, frameworks, libraries, bundles, tools, etc. compiled in PR1 should be recompiled.
- The header file NSAccount.h has been removed from Foundation. This header was NeXT-specific.
- The header file NSByteStore.h has been removed from Foundation (both from OpenStep and from NeXT's implementation).
- The import of the header NSDebug.h has been removed from Foundation.h; however, it still exists. This header contains features intended for debugging, but not for general use.
- Foundation.h now imports the 15 ANSI C headers (assert.h, ctype.h, errno.h, float.h, limits.h, locale.h, math.h, setjmp.h, signal.h, stdarg.h, stddef.h, stdio.h, stdlib.h, string.h, time.h) as a convenience.
- The header file NSObjCRuntime.h imported six obsolete headers (ansi/ansi.h, objc/typedstream.h, objc/objc-class.h, architecture/byte_order.h, objc/hashtable.h, streams/streams.h) in PR1. It no longer does so. This change may mean that some of these headers may need to be explicitly imported for code written on OPENSTEP 4.0 PR1 to recompile.
- A STRICT_OPENSTEP preprocessor guard now surrounds all API in the headers NSDecimal.h and NSDecimalNumber.h.
- The macro FOUNDATION_EXPORT is now always explicitly defined on WindowsTM (that is, it cannot be predefined with the -D compiler option) in NSObjCRuntime.h.
- A new header and related functionality, NSTask.h, was added.
- See also changes noted in the section Notes Specific to OPENSTEP 4.0 PR2 Developers. All changes listed apply to OPENSTEP 4.0 PR1 developers.

Notes Specific to OPENSTEP 4.0 PR2 Developers

Items in the tables below (in the section titled Tables Showing Foundation API Changes) marked with "(40PR2)" are changes made to Foundation between OPENSTEP 4.0 PR2 and OPENSTEP 4.0.

Some additional changes are not contained in the tables or are of particular note. This list of changes applies to both OPENSTEP 4.0 PR1 and PR2 developers:

- The size of NSPort and NSRunLoop instances has changed. The NSPort class has become abstract and no longer has any instance variables. Applications, tools, frameworks, bundles, or libraries with subclasses of these two classes must be recompiled.
-
- The header file NSPosixFileDescriptor.h has been removed from Foundation. This header was NeXT-specific. The header NSFileHandle.h provides portable replacement functionality.
-
- A few new headers have been added. The API in these headers is not included in the tables below:

```
NSAttributedString.h
NSFormatter.h
NSDateFormatter.h
```

```
NSNumberFormatter.h
NSEnumerator.h
NSProtocolChecker.h
NSFileHandle.h
```

- Many declarations and definitions were removed from the header NSUtilities.h and moved elsewhere, but all the previous material is still defined by importing NSUtilities.h. The headers to which things were moved are NSEnumerator.h, NSObjCRuntime.h, NSDictionary.h, and NSString.h.
- The header NSObjCRuntime.h now imports the headers objc/zone.h and stdarg.h.
- The type of the parameter to NSTask's -setStandardInput:, -setStandardOutput:, and -setStandardError: methods has changed from NSPosixFileDescriptor * to id.
- The declarations of the NSAutoreleasePool debugging methods and aids have moved from NSAutoreleasePool.h to NSDebug.h. Some of the methods are destined for obsolescence, and some new methods have been added.
- These methods are no longer declared on WindowsTM platforms:

CLASS	HEADER	METHOD
NSDictionary	NSFileManager.h	-fileSystemFileNumber
NSDictionary	NSFileManager.h	-fileSystemNumber
NSFileManager	NSFileManager.h	-createSymbolicLinkAtPath:pathContent:
NSFileManager	NSFileManager.h	-pathContentOfSymbolicLinkAtPath:

- Although they are still declared on WindowsTM, an application should not use the string constants NSFileSystemNumber or NSFileSystemFileNumber, either.

Notes Specific to PDO 4.0 PR1 Developers

Items in the tables below (in the section titled Tables Showing Foundation API Changes) marked with "(P40PR1)" are changes made to Foundation between PDO 4.0 PR1 and OPENSTEP 4.0 and PDO 4.0.

Some additional changes are not contained in the tables or are of particular note:

- The Foundation is now shipped as a shared library in PDO 4.0 for SolarisTM. All applications, tools, frameworks, bundles, libraries, etc. should be recompiled to take advantage of this.
- The size of NSPort and NSRunLoop instances has changed. The NSPort class has become abstract and no longer has any instance variables. Applications, tools, frameworks, bundles, or libraries with subclasses of these two classes must be recompiled.
- The header file NSPosixFileDescriptor.h has been removed from Foundation. This header was NeXT-specific. The header NSFileHandle.h provides portable replacement functionality.
- A few new headers have been added. The API in these headers is not included in the tables below:

```
NSAttributedString.h
NSFormatter.h
NSDateFormatter.h
NSNumberFormatter.h
NSFileHandle.h
NSProtocolChecker.h
```

- The type of the parameter to NSTask's -setStandardInput:, -setStandardOutput:, and -setStandardError: methods has changed from NSPosixFileDescriptor * to id.

Tables Showing Foundation API Changes

There are four tables that list the API changes between previous versions of Foundation and the version of Foundation in OPENSTEP 4.0. The first table lists general changes to API elements (classes, macros, functions, constants, and so on) except methods, the second table lists the changes to the set of methods offered by the classes in Foundation, the third table lists changes to the return values of methods (for methods that didn't change name, which are listed in the second table), and the fourth table lists changes in the location of declarations. Other miscellaneous changes that weren't described well in table format are given in the sections above.

Changes are noted from the perspective of a developer who used a previous release looking to port their Foundation-based code to OPENSTEP 4.0 (and not through any intermediate releases). For instance, changes that are marked as having been made between OPENSTEP 4.0 PR1 and PR2 do not necessarily apply to NEXTSTEP 3.3 developers (for example, an API might have been added for OPENSTEP 4.0 PR1, but removed for OPENSTEP 4.0 PR2).

The rows in the tables are marked with various symbols in the rightmost column. One set of symbols describes between which releases and OPENSTEP 4.0 the change was made:

(NS33) Change occurred between NEXTSTEP 3.3 and OPENSTEP 4.0

(EOF11) Change occurred between EOF 1.1 and OPENSTEP 4.0

(40PR1) Change occurred between OPENSTEP 4.0 PR1 and OPENSTEP 4.0

(40PR2) Change occurred between OPENSTEP 4.0 PR2 and OPENSTEP 4.0

The other set of symbols indicate how the API changed. Both NeXT's implementation of Foundation, and the OpenStep specification (since version 1.0 was published) have changed. These symbols attempt to describe what has happened:

(OpenStep,NeXT) Generically, a change that did not add or remove API, but affects OpenStep and NeXT's implementation

(OpenStep) Generically, a change that did not add or remove API and affects OpenStep, but not NeXT's implementation

(NeXT) Generically, a change that did not add or remove API and affects NeXT's implementation, but not OpenStep

(+OpenStep,+NeXT) Was in neither OpenStep nor NeXT's implementation, now in both

(+OpenStep,NeXT) Was in NeXT's implementation only, now also in OpenStep

(+OpenStep,-NeXT) Was in NeXT's implementation only, now in OpenStep only

(OpenStep,+NeXT) Was in OpenStep only, now also in NeXT's implementation

(OpenStep,-NeXT) Was in both, now in OpenStep only

(-OpenStep,+NeXT) Was in OpenStep only, now in NeXT's implementation only

(-OpenStep,NeXT) Was in both, now in NeXT's implementation only

(-OpenStep,-NeXT) Was in both, now in neither

(+OpenStep) Was in neither OpenStep nor NeXT's implementation, now in OpenStep only

(-OpenStep) Was in OpenStep only, now in neither

(+NeXT) Was in neither OpenStep nor NeXT's implementation, now in NeXT's implementation only

(-NeXT) Was in NeXT's implementation only, now in neither

Occasionally, to the right of the rightmost column is a note for removed API which names the replacement.

GENERAL CHANGES IN PUBLIC API SYMBOLS

SYMBOL TYPE HEADER
ABS macro NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
MAX macro NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
MIN macro NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSAccount class NSAccount.h (-NeXT) (40PR1) (NS33)
NSAdobeStandardCyrillicStringEncoding constant NSString.h (-NeXT) (40PR2) (40PR1) Use NSWindowsCP1251StringEncoding instead
NSAllocateMemoryPages function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSArchiverArchiveInconsistency exception NSException.h (-NeXT) (EOF11) (NS33)
NSArchiverClassError exception NSException.h (-NeXT) (EOF11) (NS33)
NSArchiverDescriptorError exception NSException.h (-NeXT) (EOF11) (NS33)
NSArchiverWriteReferenceError exception NSException.h (-NeXT) (EOF11) (NS33)
NSArgumentInfo typedef NSMethodSignature.h (-OpenStep,-NeXT) (40PR1)
NSBTreeBlock class NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSBTreeComparator typedef NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSBTreeCursor class NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSBTreeStoreKeyTooLargeException exception NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSBecomingMultiThreaded notification NSThread.h (-OpenStep,-NeXT) (40PR1) Use NSWillBecomeMultiThreadedNotification instead
NSBundleDidLoadNotification notification NSBundle.h (+NeXT) (40PR1) (EOF11) (NS33)
NSBundleDidLoadNotification notification NSBundle.h (+OpenStep,NeXT) (40PR2)
NSBundleLoaded notification NSBundle.h (-NeXT) (40PR1) Use NSBundleDidLoadNotification instead
NSByteStore class NSByteStore.h (-OpenStep,-NeXT) (40PR1)

NSByteStoreDamagedException exception NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSByteStoreFile class NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSByteStoreLockedException exception NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSByteStoreVersionException exception NSByteStore.h (-OpenStep,-NeXT) (40PR1)
NSCharacterConversionException exception NSString.h (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSCodingException exception NSException.h (-NeXT) (EOF11) (NS33)
NSComparisonResult typedef NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSConnectionDeath notification NSConnection.h (-OpenStep,-NeXT) (40PR1) Use NSConnectionDidDieNotification instead
NSConnectionDidInitializeNotification notification NSConnection.h (+NeXT) (P40PR1) (40PR2) (40PR1)
NSCopyMemoryPages function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSCurrencyString default name NSUserDefaults.h (-OpenStep,NeXT) (40PR2) Use NSCurrencySymbol instead
NSCurrencyString default name NSUserDefaults.h (OpenStep,-NeXT) (40PR1) Use NSCurrencySymbol instead
NSDateMissingTimeZone exception NSException.h (-NeXT) (EOF11) (NS33)
NSDeallocateMemoryPages function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSDecimalNumberBehavior class NSDecimalNumber.h (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberBehavior protocol NSDecimalNumber.h (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberBehaviors protocol NSDecimalNumber.h (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberHandler class NSDecimalNumber.h (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDistantObjectRequest class NSConnection.h (+NeXT) (40PR1)
NSEUCStringEncoding constant NSString.h (-NeXT) (EOF11) (NS33) Use NSJapaneseEUCStringEncoding instead
NSEqualRanges function NSRange.h (OpenStep,+NeXT) (EOF11) (NS33)
NSExceptionBase constant NSException.h (-NeXT) (EOF11) (NS33)
NSExtraRefCount function NSObject.h (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSFileGroupOwnerAccountName dict. key NSFileManager.h (+NeXT) (40PR1)
NSFileGroupOwnerAccountNumber dict. key NSFileManager.h (-NeXT) (40PR1) Use NSFileGroupOwnerAccountName instead
NSFileOwnerAccountName dict. key NSFileManager.h (+NeXT) (40PR1)
NSFileOwnerAccountNumber dict. key NSFileManager.h (-NeXT) (40PR1) Use NSFileOwnerAccountName instead
NSFullUserName function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSGetSizeAndAlignment function NSObjCRuntime.h (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSGroupAccount class NSAccount.h (-NeXT) (40PR1)
NSHPUXOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSHashStringLength constant NSString.h (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSISO2022JPStringEncoding constant NSString.h (+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSISOLatin2StringEncoding constant NSString.h (OpenStep,+NeXT) (EOF11) (NS33)
NSInconsistentArchiveException exception NSArchiver.h (OpenStep,+NeXT) (EOF11) (NS33)
NSInternationalCurrencyString default name NSUserDefaults.h (OpenStep,+NeXT) (P40PR1) (40PR2)
NSInternationalCurrencySymbol default name NSUserDefaults.h (-NeXT) (P40PR1) (40PR2) Use NSInternationalCurrencyString instead
NSIntersectsRect function NSGeometry.h (+OpenStep,+NeXT) (40PR1)
NSInvalidReceivePort exception NSException.h (-NeXT) (40PR1) Use NSInvalidReceivePortException instead
NSInvalidReceivePortException exception NSException.h (+NeXT) (EOF11) (NS33)
NSInvalidSendPort exception NSException.h (-NeXT) (40PR1) Use NSInvalidSendPortException instead
NSInvalidSendPortException exception NSException.h (+NeXT) (EOF11) (NS33)
NSJapaneseEUCStringEncoding constant NSString.h (OpenStep,+NeXT) (EOF11) (NS33)
NSLastException constant NSException.h (-NeXT) (EOF11) (NS33)
NSLoadedClasses constant NSBundle.h (+OpenStep,+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSLocalizedString macro NSBundle.h (OpenStep,+NeXT) (EOF11) (NS33)
NSLocalizedStringFromTable macro NSBundle.h (OpenStep,+NeXT) (EOF11) (NS33)
NSLocalizedStringFromTableInBundle macro NSBundle.h (OpenStep,+NeXT) (EOF11) (NS33)
NSLogPageSize function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSMACHOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSMakeRange function NSRange.h (OpenStep,+NeXT) (EOF11) (NS33)
NSMallocException exception NSException.h (OpenStep,+NeXT) (EOF11) (NS33)
NSNonRetainedObjectMapValueCallBacks struct NSMapTable.h (+OpenStep,+NeXT) (40PR1)
NSNotFound constant NSObjCRuntime.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSNotInArray constant NSArray.h (-NeXT) (EOF11) (NS33)
NSOSF1OperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSObjCInadequateRuntimeInformation exception NSException.h (-NeXT) (EOF11) (NS33)
NSOldStyleException exception NSException.h (+NeXT) (EOF11) (NS33)
NSOpenStepRootDirectory function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSOpenStepUnicodeReservedBase constant NSCharacterSet.h (OpenStep,+NeXT) (EOF11) (NS33)
NSOwnedObjectIdentityHashCallBacks struct NSHashTable.h (+OpenStep,+NeXT) (40PR1)
NSOwnershipTransferException exception NSException.h (-NeXT) (EOF11) (NS33)
NSPPLBecameDirty notification NSPPL.h (-NeXT) (40PR1) Use NSPPLDidBecomeDirtyNotification instead
NSPPLSaved notification NSPPL.h (-NeXT) (40PR1) Use NSPPLDidSaveNotification instead
NSPageSize function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)

NSParseErrorException exception NSException.h (-NeXT) (EOF11) (NS33)
NSPointFromString function NSGeometry.h (+OpenStep,+NeXT) (40PR1)
NSPortInvalidation notification NSPort.h (-NeXT) (40PR1) Use NSPortDidBecomeInvalidNotification instead
NSPortNameRegistrationError exception NSException.h (-NeXT) (EOF11) (NS33)
NSPortReceiveError exception NSException.h (-NeXT) (40PR1) Use NSPortReceiveException instead
NSPortReceiveException exception NSException.h (+NeXT) (EOF11) (NS33)
NSPortSendError exception NSException.h (-NeXT) (40PR1) Use NSPortSendException instead
NSPortSendException exception NSException.h (+NeXT) (EOF11) (NS33)
NSRangeFromString function NSRange.h (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSRealMemoryAvailable function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSRectFromString function NSGeometry.h (+OpenStep,+NeXT) (40PR1)
NSRoundDownToMultipleOfPageSize function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSRoundUpToMultipleOfPageSize function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSShiftJISStringEncoding constant NSString.h (+NeXT) (NS33)
NSShortDateFormatString default name NSUserDefaults.h (+NeXT) (40PR1)
NSSizeFromString function NSGeometry.h (+OpenStep,+NeXT) (40PR1)
NSSolarisOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSStandardApplicationPaths function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSStandardLibraryPaths function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSSunOSOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSTemporaryDirectory function NSPathUtilities.h (+NeXT) (40PR1) (EOF11) (NS33)
NSThreadExiting notification NSThread.h (-OpenStep,-NeXT) (40PR1) (EOF11) Use NSThreadWillExitNotification instead
NSThreadWillExitNotification notification NSThread.h (+OpenStep,+NeXT) (40PR1) (EOF11)
NSTimeIntervalSince1970 constant NSDate.h (OpenStep,+NeXT) (EOF11) (NS33)
NSUTF8StringEncoding constant NSString.h (OpenStep,+NeXT) (EOF11) (NS33)
NSUTFStringEncoding constant NSString.h (-NeXT) (EOF11) (NS33) Use NSUTF8StringEncoding instead
NSUserAccount class NSAccount.h (-NeXT) (40PR1)
NSUserDefaultsChanged notification NSUserDefaults.h (-OpenStep,-NeXT) (40PR1) Use NSUserDefaultsDidChangeNotification instead
NSUserDefaultsDidChangeNotification notification NSUserDefaults.h (+OpenStep,+NeXT) (40PR1)
NSWillBecomeMultiThreadedNotification notification NSThread.h (+OpenStep,+NeXT) (40PR1) (EOF11)
NSWinLatin1StringEncoding constant NSString.h (-NeXT) (40PR2) (40PR1) Use NSWindowsCP1252StringEncoding instead
NSWindows95OperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSWindowsCP1250StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsCP1251StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsCP1252StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsCP1253StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsCP1254StringEncoding constant NSString.h (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSWindowsNTOperatingSystem constant NSProcessInfo.h (+NeXT) (40PR1)
NSZoneFromPointer function NSZone.h (OpenStep,+NeXT) (EOF11) (NS33)
NSZoneFromPtr function NSZone.h (-NeXT) (EOF11) Use NSZoneFromPointer instead
NS_VALRETURN macro NSException.h (-OpenStep,-NeXT) (EOF11) (NS33) Use NS_VALUERETURN instead
NS_VALUERETURN macro NSException.h (+OpenStep,+NeXT) (EOF11) (NS33)
NXReadNSObjectFromCoder function NSCompatibility.h (+NeXT) (P40PR1) (40PR2) (40PR1)
Nil constant NSObjCRuntime.h (+NeXT) (EOF11) (NS33)
exception variable NSException.h (-NeXT) (EOF11) (NS33) Use localException instead for exception object in handler region
localException variable NSException.h (OpenStep,+NeXT) (EOF11) (NS33)
obsolete macro NSObject.h (-NeXT) (EOF11) (NS33)

GENERAL CHANGES IN PUBLIC API METHODS

CLASS/PROTOCOL HEADER METHOD
NSArchiver NSArchiver.h +classNameEncodedForTrueClassName: (-NeXT) (EOF11) (NS33) Use -classNameEncodedForTrueClassName: instead
NSArchiver NSArchiver.h -classNameEncodedForTrueClassName: (OpenStep,+NeXT) (EOF11) (NS33)
NSArchiver NSArchiver.h -encodeClassName:intoClassName: (OpenStep,+NeXT) (EOF11) (NS33)
NSArchiver NSArchiver.h -replaceObject:withObject: (+NeXT) (EOF11) (NS33)
NSArray NSArray.h +arrayWithArray: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSArray NSArray.h +arrayWithContentsOfFile: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h +arrayWithObjects:count: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -arrayByAddingObject: (OpenStep,+NeXT) (EOF11) (NS33)
NSArray NSArray.h -arrayByAddingObjectsFromArray: (OpenStep,+NeXT) (EOF11) (NS33)
NSArray NSArray.h -descriptionWithIndent: (-NeXT) (EOF11) (NS33) Use -descriptionWithLocale:indent: instead
NSArray NSArray.h -descriptionWithLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSArray NSArray.h -descriptionWithLocale:indent: (OpenStep,+NeXT) (EOF11) (NS33)

NSArray NSArray.h -getObjects: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -getObjects:range: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -indexOfObject:inRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -indexOfObjectIdenticalTo:inRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -initWithContentsOfFile: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -sortedArrayHint (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -sortedArrayUsingFunction:context:hint: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSArray.h -writeToFile:atomically: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSArray NSPathUtilities.h -pathsMatchingExtensions: (+NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h +pathForResource:ofType:inDirectory: (+OpenStep,+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h +pathForResource:ofType:inDirectory:withVersion: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h +setSystemLanguages: (-NeXT) (EOF11) (NS33)
NSBundle NSBundle.h +stripAfterLoading: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -bundleVersion (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -infoDictionary (+NeXT) (EOF11) (NS33)
NSBundle NSBundle.h -localizedStringForKey:value:comment: (-NeXT) (EOF11) (NS33) Use -localizedStringForKey:value:table: instead
NSBundle NSBundle.h -localizedStringForKey:value:comment:table: (-NeXT) (EOF11) (NS33) Use -localizedStringForKey:value:table: instead
NSBundle NSBundle.h -localizedStringForKey:value:table: (OpenStep,+NeXT) (EOF11) (NS33)
NSBundle NSBundle.h -pathForResource:ofType:inDirectory: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -pathsForResourcesOfType:inDirectory: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -resourcePath; (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSBundle NSBundle.h -setBundleVersion: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33)
NSCalendarDate NSDate.h +calendarDate (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h +dateWithString:calendarFormat:locale: (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -addYear:month:day:hour:minute:second: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -
dateByAddingYears:months:days:hours:minutes:seconds: instead
NSCalendarDate NSDate.h -dateByAddingYears:months:days:hours:minutes:seconds: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSCalendarDate NSDate.h -dayOfCommonEra (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -descriptionWithCalendarFormat:locale: (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -descriptionWithCalendarFormat:timeZone: (-NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -descriptionWithLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -initWithString:calendarFormat:locale: (OpenStep,+NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h -years:months:days:hours:minutes:seconds:sinceDate: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSCharacterSet NSCharacterSet.h +characterSetWithContentsOfFile: (+NeXT) (EOF11) (NS33)
NSCharacterSet NSCharacterSet.h +punctuationCharacterSet (+NeXT) (EOF11) (NS33)
NSCharacterSet NSCharacterSet.h +punctuationCharacterSet (+OpenStep,NeXT) (40PR1)
NSCoder NSCoder.h -decodeBytesWithReturnedLength: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSCoder NSCoder.h -encodeByrefObject: (+NeXT) (40PR1) (EOF11) (NS33)
NSCoder NSCoder.h -encodeBytes:length: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSConnection NSConnection.h +currentConversation (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -addRequestMode: (+OpenStep,+NeXT) (40PR1)
NSConnection NSConnection.h -addRunLoop: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -connection:shouldMakeNewConnection: (+NeXT) (40PR1)
NSConnection NSConnection.h -createConversationForConnection: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -enableMultipleThreads (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -invalidate (+OpenStep,+NeXT) (40PR1)
NSConnection NSConnection.h -localObjects (+NeXT) (P40PR1) (40PR2)
NSConnection NSConnection.h -multipleThreadsEnabled (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -remoteObjects (+NeXT) (P40PR1) (40PR2)
NSConnection NSConnection.h -removeRequestMode: (+OpenStep,+NeXT) (40PR1)
NSConnection NSConnection.h -removeRunLoop: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -requestMode: (-OpenStep,-NeXT) (40PR1)
NSConnection NSConnection.h -requestModes (+OpenStep,+NeXT) (40PR1)
NSConnection NSConnection.h -runInNewThread (+NeXT) (P40PR1) (40PR2) (40PR1)
NSConnection NSConnection.h -setRequestMode:: (-OpenStep,-NeXT) (40PR1) Use -addRequestMode: instead
NSCopyingProtocol NSObject.h -copy (-NeXT) (EOF11) (NS33)
NSData NSData.h +dataWithData: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +dateWithNaturalLanguageString: (+NeXT) (EOF11) (NS33)
NSDate NSDate.h +dateWithNaturalLanguageString:locale: (+NeXT) (EOF11) (NS33)
NSDate NSDate.h +dateWithString: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +dateWithTimeIntervalSince1970: (OpenStep,+NeXT) (EOF11) (NS33)
NSDate NSDate.h -descriptionWithCalendarFormat:timeZone: (-NeXT) (EOF11) (NS33)
NSDate NSDate.h -descriptionWithCalendarFormat:timeZone:locale: (OpenStep,+NeXT) (EOF11) (NS33)
NSDate NSDate.h -descriptionWithLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSDate NSDate.h -isEqualToDate: (+OpenStep,+NeXT) (40PR1)

NSDate NSDate.h -timeIntervalSince1970 (OpenStep,+NeXT) (EOF11) (NS33)
NSDecimalNumber NSDecimalNumber.h
+decimalNumberBehaviorWithRoundingMode:scale:raiseOnExactness:raiseOnOverflow:raiseOnUnderflow:raiseOnDivideByZero: (-NeXT)
(P40PR1) (40PR2) (40PR1) Use +decimalNumberHandlerWithRoundingMode:... instead
NSDecimalNumber NSDecimalNumber.h
+decimalNumberHandlerWithRoundingMode:scale:raiseOnExactness:raiseOnOverflow:raiseOnUnderflow:raiseOnDivideByZero: (+NeXT)
(P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -decimalNumberBySubstracting: (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -decimalNumberBySubstracting:withBehavior: (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -decimalNumberBySubtracting: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -decimalNumberBySubtracting:withBehavior: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -maximumDecimalNumber (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -minimumDecimalNumber (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberBehavior NSDecimalNumber.h +defaultDecimalNumberBehavior (-NeXT) (P40PR1) (40PR2) (40PR1)
NSDecimalNumberHandler NSDecimalNumber.h +defaultDecimalNumberHandler (+NeXT) (P40PR1) (40PR2) (40PR1)
NSDictionary NSDictionary.h +dictionaryWithContentsOfFile: (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h +dictionaryWithDictionary: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDictionary NSDictionary.h +dictionaryWithObject:forKey: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDictionary NSDictionary.h +dictionaryWithObjectsAndKeys:... (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -descriptionWithIndent: (-NeXT) (EOF11) (NS33) Use -descriptionWithLocale:indent: instead
NSDictionary NSDictionary.h -descriptionWithLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -descriptionWithLocale:indent: (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -initWithObjects:forKeys: (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -initWithObjectsAndKeys:... (OpenStep,+NeXT) (EOF11) (NS33)
NSDictionary NSDictionary.h -keysSortedByValueUsingSelector: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSDictionary NSDictionary.h -objectsForKeys:notFoundMarker: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSDictionary NSFileManager.h -fileGroupOwnerAccountName (+NeXT) (40PR1)
NSDictionary NSFileManager.h -fileGroupOwnerAccountNumber (-NeXT) (40PR1) Use -fileGroupOwnerAccountName instead
NSDictionary NSFileManager.h -fileOwnerAccountName (+NeXT) (40PR1)
NSDictionary NSFileManager.h -fileOwnerAccountNumber (-NeXT) (40PR1) Use -fileOwnerAccountName instead
NSDistantObjectRequest NSConnection.h -conversation (+NeXT) (P40PR1) (40PR2) Note class was added after OPENSTEP 4.0 PR1
NSEnumerator NSEnumerator.h -allObjects (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
NSException NSException.h -exceptionName (-NeXT) (EOF11) (NS33)
NSException NSException.h -exceptionReason (-NeXT) (EOF11) (NS33)
NSException NSException.h -exceptionUserInfo (-NeXT) (EOF11) (NS33)
NSException NSException.h -name (OpenStep,+NeXT) (EOF11) (NS33)
NSException NSException.h -reason (OpenStep,+NeXT) (EOF11) (NS33)
NSException NSException.h -userInfo (OpenStep,+NeXT) (EOF11) (NS33)
NSMethodSignature NSMethodSignature.h +signatureWithObjCTypes: (-OpenStep,-NeXT) (40PR1)
NSMethodSignature NSMethodSignature.h -argumentInfoAtIndex: (-OpenStep,-NeXT) (40PR1) Use -getArgumentTypeAtIndex: instead
NSMethodSignature NSMethodSignature.h -getArgumentTypeAtIndex: (+OpenStep,+NeXT) (40PR1)
NSMutableArray NSArray.h -removeObject:inRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -removeObjectIdenticalTo:inRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -removeObjectsInRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -replaceObjectsInRange:withObjectsFromArray: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -replaceObjectsInRange:withObjectsFromArray:range: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSMutableArray NSArray.h -setArray: (OpenStep,+NeXT) (EOF11) (NS33)
NSMutableArray NSArray.h -sortUsingSelector: (OpenStep,+NeXT) (EOF11) (NS33)
NSMutableCopyingProtocol NSObject.h -mutableCopy (-NeXT) (EOF11) (NS33)
NSMutableData NSData.h -setData: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSMutableDictionary NSDictionary.h -setDictionary: (OpenStep,+NeXT) (EOF11) (NS33)
NSMutableSet NSSet.h -setSet: (+NeXT) (40PR2) (40PR1)
NSNotification NSNotification.h +notificationWithName:object:userInfo: (OpenStep,+NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -name (OpenStep,+NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -notificationName (-NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -notificationObject (-NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -object (OpenStep,+NeXT) (EOF11) (NS33)
NSNotification NSNotification.h -userInfo (OpenStep,+NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -addObserver:selector:name:object: (OpenStep,+NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -addObserver:selector:notificationName:object: (-NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -postNotificationName:object:userInfo: (OpenStep,+NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -removeObserver:name:object: (OpenStep,+NeXT) (EOF11) (NS33)
NSNotificationCenter NSNotification.h -removeObserver:notificationName:object: (-NeXT) (EOF11) (NS33)
NSNumber NSValue.h -descriptionWithLocale: (+NeXT) (EOF11) (NS33)
NSNumber NSValue.h -descriptionWithLocale: (+OpenStep,NeXT) (40PR1)

NSNumber NSValue.h -initWithBool: (+NeXT) (NS33)
NSNumber NSValue.h -initWithBool: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithChar: (+NeXT) (NS33)
NSNumber NSValue.h -initWithChar: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithDouble: (+NeXT) (NS33)
NSNumber NSValue.h -initWithDouble: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithFloat: (+NeXT) (NS33)
NSNumber NSValue.h -initWithFloat: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithInt: (+NeXT) (NS33)
NSNumber NSValue.h -initWithInt: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithLong: (+NeXT) (NS33)
NSNumber NSValue.h -initWithLong: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithLongLong: (+NeXT) (NS33)
NSNumber NSValue.h -initWithLongLong: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithShort: (+NeXT) (NS33)
NSNumber NSValue.h -initWithShort: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedChar: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedChar: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedInt: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedInt: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedLong: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedLong: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedLongLong: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedLongLong: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -initWithUnsignedShort: (+NeXT) (NS33)
NSNumber NSValue.h -initWithUnsignedShort: (+OpenStep,NeXT) (40PR1)
NSNumber NSValue.h -isEqualToNumber: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObject NSConnection.h -connection:handleRequest: (+NeXT) (40PR1)
NSObject NSObject.h +copyWithZone: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObject NSObject.h +load (+NeXT) (40PR1)
NSObject NSObject.h +load (+OpenStep,NeXT) (P40PR1) (40PR2)
NSObject NSObject.h +mutableCopyWithZone: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObject NSObject.h -copy (OpenStep,+NeXT) (EOF11) (NS33)
NSObject NSObject.h -description (-NeXT) (EOF11) (NS33)
NSObject NSObject.h -mutableCopy (OpenStep,+NeXT) (EOF11) (NS33)
NSObject NSRunLoop.h -performSelector:object:afterDelay: (-OpenStep,-NeXT) (40PR1)
NSObject NSRunLoop.h -performSelector:withObject:afterDelay: (+OpenStep,+NeXT) (40PR1)
NSObject NSRunLoop.h -performSelector:withObject:afterDelay:inModes: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSObjectProtocol NSObject.h -description (OpenStep,+NeXT) (EOF11) (NS33)
NSObjectProtocol NSObject.h -perform: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -performSelector: instead
NSObjectProtocol NSObject.h -perform:withObject: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -performSelector:withObject: instead
NSObjectProtocol NSObject.h -perform:withObject:withObject: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -performSelector:withObject:withObject: instead
NSObjectProtocol NSObject.h -performSelector: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObjectProtocol NSObject.h -performSelector:withObject: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSObjectProtocol NSObject.h -performSelector:withObject:withObject: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSPort NSPort.h -addConnection:toRunLoop:forMode: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPort NSPort.h -removeConnection:fromRunLoop:forMode: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPort NSPort.h -reservedSpaceLength (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPort NSPort.h -sendBeforeDate:components:from:reserved: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPortCoder NSPortCoder.h +portCoderWithReceivePort:sendPort:components: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPortCoder NSPortCoder.h -dispatch (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPortCoder NSPortCoder.h -isByref (+NeXT) (40PR1)
NSPortNameServer NSPortNameServer.h -portForName:host: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSPortNameServer NSPortNameServer.h -registerPort:name: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSProcessInfo NSProcessInfo.h -operatingSystem (+NeXT) (40PR1)
NSProxy NSProxy.h +load (+NeXT) (40PR1)
NSProxy NSProxy.h +load (+OpenStep,NeXT) (P40PR1) (40PR2)
NSProxy NSProxy.h +respondsToSelector: (+NeXT) (40PR1)
NSRunLoop NSRunLoop.h -addPosixFileDescriptor:forMode: (-NeXT) (P40PR1) (40PR2) (40PR1)
NSRunLoop NSRunLoop.h -addRunLoopActivityMonitor: (-NeXT) (40PR1)
NSRunLoop NSRunLoop.h -cancelPerformSelector:target:argument: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSRunLoop NSRunLoop.h -performSelector:target:argument:order:modes: (+NeXT) (P40PR1) (40PR2) (40PR1)
NSRunLoop NSRunLoop.h -removePosixFileDescriptor:forMode: (-NeXT) (P40PR1) (40PR2) (40PR1)
NSScanner NSScanner.h +localizedScannerWithString: (OpenStep,+NeXT) (EOF11) (NS33)

NSScanner NSScanner.h -locale (OpenStep,+NeXT) (EOF11) (NS33)
NSScanner NSScanner.h -scanHexInt: (+NeXT) (EOF11) (NS33)
NSScanner NSScanner.h -scanHexInt: (+OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSScanner NSScanner.h -setLocale: (OpenStep,+NeXT) (EOF11) (NS33)
NSSet NSSet.h +setWithObjects:count: (+NeXT) (40PR2) (40PR1)
NSSet NSSet.h +setWithSet: (+NeXT) (40PR2) (40PR1)
NSString NSPathUtilities.h +pathWithComponents: (+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -fileSystemRepresentation (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -getFileSystemRepresentation:maxLength: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -isAbsolutePath (+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -pathComponents (+NeXT) (40PR1) (EOF11) (NS33)
NSString NSPathUtilities.h -stringsByAppendingPaths: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h +availableStringEncodings (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h +localizedNameOfStringEncoding: (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h +localizedStringWithFormat:... (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h +string (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSString NSString.h +stringWithContentsOfFile: (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h +stringWithString: (+NeXT) (40PR2) (40PR1) (EOF11) (NS33)
NSString NSString.h -caseInsensitiveCompare: (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h -doubleValue (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h -getLineStart:end:contentsEnd:forRange: (+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSString NSString.h -initWithFormat:locale:... (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h -initWithFormat:locale:arguments: (OpenStep,+NeXT) (EOF11) (NS33)
NSString NSString.h -lineRangeForRange: (+NeXT) (P40PR1) (40PR2) (40PR1) (EOF11) (NS33)
NSString NSString.h -lossyCString (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h -substringFromRange: (-OpenStep,-NeXT) (40PR1) (EOF11) (NS33) Use -substringWithRange: instead
NSString NSString.h -substringWithRange: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h -writeToFile:atomically: (OpenStep,+NeXT) (EOF11) (NS33)
NSThread NSThread.h +exit (OpenStep,+NeXT) (EOF11)
NSThread NSThread.h +sleepUntilDate: (OpenStep,+NeXT) (EOF11)
NSThread NSThread.h -exit (-NeXT) (EOF11)
NSTimer NSTimer.h -isValid (+OpenStep,+NeXT) (40PR1)
NSUnarchiver NSArchiver.h -classNameDecodedForArchiveClassName: (OpenStep,+NeXT) (EOF11) (NS33)
NSUnarchiver NSArchiver.h -decodeClassName:asClassName: (OpenStep,+NeXT) (EOF11) (NS33)
NSUnarchiver NSArchiver.h -replaceObject:withObject: (+NeXT) (EOF11) (NS33)
NSUserDefaults NSUserDefaults.h -setSearchList: (+OpenStep,+NeXT) (40PR1)
NSValue NSValue.h +valueWithBytes:objCType: (+NeXT) (EOF11) (NS33)
NSValue NSValue.h +valueWithBytes:objCType: (+OpenStep,NeXT) (40PR1)
NSValue NSValue.h -initWithBytes:objCType: (+NeXT) (EOF11) (NS33)
NSValue NSValue.h -initWithBytes:objCType: (+OpenStep,NeXT) (40PR1)
NSValue NSValue.h -isEqualToValue: (+OpenStep,+NeXT) (40PR1) (EOF11) (NS33)
Object NSCompatibility.h +allocWithZone: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h +instanceMethodForSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h +instancesRespondToSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h +poseAsClass: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -autorelease (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -conformsToProtocol: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -copyWithZone: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -dealloc (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -doesNotRecognizeSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -isKindOfClass: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -isMemberOfClass: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -methodForSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -perform:withObject: (-NeXT) (40PR1) (EOF11) (NS33) Use -performSelector:withObject: instead
Object NSCompatibility.h -perform:withObject:withObject: (-NeXT) (40PR1) Use -performSelector:withObject:withObject: instead
Object NSCompatibility.h -performSelector:withObject: (+NeXT) (40PR1)
Object NSCompatibility.h -performSelector:withObject:withObject: (+NeXT) (40PR1)
Object NSCompatibility.h -release (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -respondsToSelector: (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -retain (+NeXT) (EOF11) (NS33)
Object NSCompatibility.h -retainCount (+NeXT) (EOF11) (NS33)

METHOD RETURN TYPE CHANGES

CLASS/PROTOCOL HEADER METHOD OLD RET. TYPE NEW RET. TYPE

NSBundle NSBundle.h -classNamed: (id) (Class) (NeXT) (EOF11) (NS33)
NSBundle NSBundle.h -principalClass (id) (Class) (NeXT) (EOF11) (NS33)
NSCalendarDate NSDate.h +calendarDate (NSCalendarDate *) (id) (NeXT) (40PR1)
NSCalendarDate NSDate.h +dateWithString:calendarFormat: (NSCalendarDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSCalendarDate NSDate.h +dateWithString:calendarFormat:locale: (NSCalendarDate *) (id) (NeXT) (40PR1)
NSCalendarDate NSDate.h +dateWithYear:month:day:hour:minute:second:timeZone: (NSCalendarDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +date (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +dateWithTimeIntervalSince1970: (NSDate *) (id) (NeXT) (40PR1)
NSDate NSDate.h +dateWithTimeIntervalSinceNow: (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +dateWithTimeIntervalSinceReferenceDate: (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +distantFuture (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h +distantPast (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h -addTimeInterval: (NSDate *) (id) (NeXT) (EOF11) (NS33)
NSDate NSDate.h -initWithTimeInterval:sinceDate: (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDate NSDate.h -initWithTimeIntervalSinceNow: (NSDate *) (id) (NeXT) (40PR1) (EOF11) (NS33)
NSDecimalNumber NSDecimalNumber.h -initWithDecimal: (NSDecimalNumber *) (id) (OpenStep,NeXT) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -initWithMantissa:exponent:isNegative: (NSDecimalNumber *) (id) (OpenStep,NeXT) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -initWithString: (NSDecimalNumber *) (id) (OpenStep,NeXT) (40PR2) (40PR1)
NSDecimalNumber NSDecimalNumber.h -initWithString:locale: (NSDecimalNumber *) (id) (OpenStep,NeXT) (40PR2) (40PR1)
NSDictionary NSFileManager.h -filePosixPermissions (unsigned int) (unsigned long) (NeXT) (40PR1)
NSDictionary NSFileManager.h -fileSize (long long) (unsigned long long) (NeXT) (40PR1)
NSDictionary NSFileManager.h -fileSystemFileNumber (unsigned int) (unsigned long) (NeXT) (40PR1)
NSDictionary NSFileManager.h -fileSystemNumber (unsigned int) (unsigned long) (NeXT) (40PR1)
NSMethodSignature NSMethodSignature.h -methodReturnType (char *) (const char *) (OpenStep,NeXT) (40PR1)
NSMutableString NSString.h +stringWithCapacity: (NSMutableString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSNotification NSNotification.h +notificationWithName:object: (NSNotification *) (id) (NeXT) (EOF11) (NS33)
NSObject NSObject.h +initialize (id) (void) (NeXT) (EOF11) (NS33)
NSObject NSObject.h +load (id) (void) (NeXT) (EOF11) (NS33)
NSObject NSObject.h +superclass (id) (Class) (NeXT) (EOF11) (NS33)
NSObjectProtocol NSObject.h -superclass (id) (Class) (NeXT) (EOF11) (NS33)
NSPPL NSPPL.h +pplWithPath:create:readOnly: (NSPPL *) (id) (NeXT) (40PR1)
NSPPL NSPPL.h +pplWithPath:fromPPLData:readOnly: (NSPPL *) (id) (NeXT) (40PR1)
NSString NSString.h +localizedStringWithFormat:... (NSString *) (id) (OpenStep,NeXT) (40PR1)
NSString NSString.h +stringWithCString: (NSString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h +stringWithCString:length: (NSString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h +stringWithCharacters:length: (NSString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSString NSString.h +stringWithContentsOfFile: (NSString *) (id) (OpenStep,NeXT) (40PR1)
NSString NSString.h +stringWithFormat:... (NSString *) (id) (OpenStep,NeXT) (40PR1) (EOF11) (NS33)
NSTask NSTask.h -standardInput (NSPosixFileDescriptor *) (id) (NeXT) (P40PR1) (40PR2)
NSTask NSTask.h -standardOutput (NSPosixFileDescriptor *) (id) (NeXT) (P40PR1) (40PR2)
NSTask NSTask.h -standardError (NSPosixFileDescriptor *) (id) (NeXT) (P40PR1) (40PR2)
NSTask NSTask.h +launchedTaskWithLaunchPath:arguments: (id) (NSTask *) (NeXT) (P40PR1) (40PR2)
NSTimeZone NSDate.h +timeZoneWithAbbreviation: (NSTimeZone *) (NSTimeZoneDetail *) (NeXT) (EOF11) (NS33)
NSUserDefaults NSUserDefaults.h -searchList (NSMutableArray *) (NSArray *) (OpenStep,NeXT) (40PR1)
Object NSCompatibility.h +poseAsClass: (id) (void) (NeXT) (NS33)

CHANGES TO API DECLARATION LOCATION

SYMBOL OLD HEADER NEW HEADER

ABS NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1)
MAX NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1)
MIN NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1)
NSCharacterConversionException NSException.h NSString.h (NeXT) (40PR1)
NSComparisonResult NSObject.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSObject.h
NSEnumerator class NSUtilities.h NSEnumerator.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
NSLog() NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
NSLogv() NSUtilities.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
NSNotFound NSObject.h NSObjCRuntime.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSObject.h
NXReadNSObject() NSArchiver.h NSCompatibility.h (NeXT) (EOF11) (NS33)

NXWriteNSObject() NSArchiver.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[NSCoder -decodeNXObject:] NSArchiver.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[NSCoder -encodeNXObject:] NSArchiver.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[NSDictionary -descriptionInStringsFileFormat] NSUtilities.h NSDictionary.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
[NSString -propertyListFromStringsFileFormat] NSUtilities.h NSString.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
[NSString -propertyList] NSUtilities.h NSString.h (NeXT) (40PR2) (40PR1) (EOF11) (NS33) For OpenStep compatibility, import NSUtilities.h
[Object +allocWithZone:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object +instanceMethodForSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object +instancesRespondToSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object +poseAsClass:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -autorelease] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -conformsToProtocol:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -copyWithZone:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -dealloc] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -doesNotRecognizeSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -isKindOfClass:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -isMemberOfClass:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -methodForSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -release] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -respondsToSelector:] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -retainCount] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)
[Object -retain] NSUtilities.h NSCompatibility.h (NeXT) (EOF11) (NS33)

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OPENSTEP 4.2 Release Notes

With every release of its software, NeXT provides notes containing information pertaining to the release. These notes apply to Releases 4.2 and 4.1, and in some cases to earlier releases as well.

These on-line Release Notes list new features, fixed bugs, and known bugs that will be of interest to developers using OPENSTEP‰ for Mach, OPENSTEP Enterprise, and PDO. These notes incorporate the latest known information about the release, and are thus more current than those found on the OPENSTEP Enterprise CD-ROM.

This article has been archived and is no longer updated by Apple.

About This Release

Release 4.2 is primarily a bug-fix release. In addition, numerous fixes and enhancements have been made to the development tools, and the compilers have been synched-up so that they use the same source base across NeXT's entire product line (OPENSTEP for Mach, OPENSTEP Enterprise, and PDO). Release 4.2 also supports Windows 95 as a deployment platform (debugging is supported, but compilation is not). Windows 95 is not supported for applications that use Apple's WebObjects frameworks, or any other feature of WebObjects not otherwise included in OPENSTEP Enterprise.

The various files containing release notes for developers are listed below. These files are included in the ªDeveloper Release Notesº target of the NEXTSTEP Developer bookshelf (in the directory /NextLibrary/Bookshelves), and are located in /NextLibrary/Documentation/NextDev/ReleaseNotes.

This file is divided into the following major sections:

- Installation--Important notes regarding product installation
- Compiler--The C, Objective-C, and C++ compilers
- CompilerTools--Assembler, Linker, and other compiler-related tools
- Converting Your Code--Converting your code from NEXTSTEP to OPENSTEP
- Debugging--The GNU Source-level Debugger
- Documentation--Locating on-line documentation
- DriverDevelopment--Developing device drivers
- D'OLE--The D'OLE ORB
- EnterpriseObjects--The Enterprise Objects Framework, Release 2.1
- ProjectBuilderSCM--Software Configuration Management extensions to Project Builder
- Supplemental User Notes--Notes applicable to deployment systems as well as development systems
- TextEdit--The TextEdit application

The following topics are release noted in separate documents:

- AppKit--The Application Kit framework
- FoundationPre40--Describes API changes that were made between OPENSTEP 4.0 and earlier releases. This note will be of interest only if you are upgrading an application to this release from a release of OPENSTEP, PDO, or D'OLE prior to 4.0.
- Foundation--The Foundation Framework
- ProjectBuilder--Project Builder

Installation

Upgrading from OPENSTEP 4.1 for Mach

Certain hardware configurations appear to cause upgrader to fail (installation hangs, and OPENSTEP is corrupted) when upgrading an OPENSTEP 4.1 system to OPENSTEP 4.2. This issue appears to occur on systems that have EIDE CD-ROM or hard drives, and affects upgrades performed either from a CD-ROM or over a network. It appears that you can work around this issue by placing a disk in the CD-ROM drive before attempting the upgrade.

If you encounter this issue, you'll need to install OPENSTEP 4.2 from scratch.

This issue does not occur when upgrading from NEXTSTEP 3.3.

Installing on Windows 95

While this release of OPENSTEP Enterprise now supports deployment on computers running Windows, 95, these same computers cannot be used to develop OPENSTEP software. (OPENSTEP software developed on Windows NT can be deployed on Windows 95.)

See the OPENSTEP Enterprise Installation Guide for instructions on installing the deployment packages (located in the OEDeploy directory on your OPENSTEP Enterprise 4.2 CD-ROM) on computers running either Windows 95 or Windows NT.

PDO Installation

Due to a possible bug in the SPARC's quad-precision emulation software, this release cannot be used on SPARCstation 5-class machines.

Installing on Japanese Language Systems

Attempting to do a ªtypicalº installation of the NT Server Deployment (OEMinSys) package on a Japanese language system will cause the installer to enter an infinite loop. If you need to install this package on a Japanese language system, choose "custom" when asked whether you want a ªtypicalº or ªcustomº installation. When presented with the components to install, de-select ªIMEº and proceed with the installation.

This issue doesn't arise on non-Japanese systems; nor does it arise when installing either the NT Deployment (OEDeploy) or NT Development (OEDev) packages.

Known Issues in This Release

This section lists important issues that were discovered after the CD-ROM was duplicated.

Building Bundles With PDO on Solaris

Although NSBundles now work in PDO 4.2 on Solaris, due to a makefile issue bundles don't build properly (an error occurs when linking). This issue can be fixed by updating bundle.make (in

/NextDeveloper/Makefiles/pb_makefiles) and libtool (in /NextDeveloper/bin). New versions of these files can be obtained through NeXTanswers; request NeXTanswer #2499 for the updated files.

Compiler

This file contains developer release notes for the 4.2 release of the compiler.

In the 4.2 OPENSTEP Enterprise, OPENSTEP for Mach, and PDO releases, the compilers on Mach, Windows and PDO are based on the GNU C compiler version 2.7.2.1 and are all built from a single source code base.

Notes From Release 4.2

Calling superclass methods from within a category (78005)

In the 4.2 prerelease, the Objective-C++ compiler would crash when processing code that called a superclass method from within a category. While this bug has been fixed in the final version of OPENSTEP 4.2 Developer for Mach, it still exists in the compilers included with OPENSTEP Enterprise 4.2. Thus, if you're using the Objective-C++ compiler and your category implementations call superclass methods, your code will compile on Mach but not on Windows NT or PDO. Note that this code will compile on Windows NT or on PDO if you use the Objective-C compiler.

Change in meaning of extern "C" to C++ compiler

The C++ and Objective C++ compilers no longer switch the list of valid keywords when they see the extern "C" construct. This may cause existing C++ and Objective C++ code to fail to compile. The extern "Objective-C" construct can still be used, as in the past, to switch to a mode in which C++-specific keywords such as "class" and "template" can be used as identifiers.

The header files on OPENSTEP and PDO 4.2 have been sanitized and no longer contain uses of C++ keywords as parameter names, struct field names, or function names. This should make C++ usage easier on OPENSTEP and more similar to other C++ development environments.

Recompiling C++ code with this new compiler may require the either the renaming of certain constructs in C header files you use or the use of extern "Objective-C" instead of extern "C".

Cleanup of predefined symbols (62096)

The macros NEXT_OBJC_RUNTIME and NEXT_PDO are no longer predefined on the Windows NT compiler. You should no longer depend upon them.

Casting a receiver to conform to a protocol is now working (68626).

If, when invoking a method, you cast the receiver to conform to some protocol in order to make sure the compiler invokes the correct method in cases where there is more than one method with the same name, the Objective-C compiler will now pick up on the hint.

Notes From Release 4.1

Including Windows Header Files in Objective-C Code

In general, you should be able to include any Windows header file in an Objective-C source module without issues. The System framework contains Microsoft's header files, with slight modifications to make them compatible with gcc. For instance, slight changes have been made for unnamed unions, Microsoft assembly, and so on. If you have issues including any of the Windows header files, try including the file winnt-pdo.h before the Windows header file that's causing issues.

The -Wmost Compiler Flag

The -Wmost compiler flag is equivalent to FSF's -Wall, except that it doesn't turn on -Wparenthesis. -Wmost also suppresses warning messages about inline functions and static constants that are not actually used. This flag is for internal use andits definition may change in a future release.

Notes From Release 4.0

Frameworks. You can now specify frameworks on the linker and preprocessor command lines. The -framework flag is accepted by both the linker and the preprocessor, while the -F flag is accepted by the linker only. These flags are defined as follows:

-framework framework-name

Search the framework named framework-name when linking. The linker searches a standard set of directories for the framework. It then uses this file as if it had been specified precisely by name. The directories searched by the linker include a couple of standard system directories plus any that you specify with -F.

-F directory

Add the specified directory to the head of the list of directories to be searched for frameworks. If you use more than one -F option, the directories are scanned in left-to-right order; the standard framework directories (LocalLibrary/Frameworks, followed by /NextLibrary/Frameworks) come after.

In your Objective-C code, include framework headers using the following format:

#include <framework/include_file.h>

Where framework is the name of the framework (such as ªAppKitº or ªFoundationº; don't include the extension) and include_file is the name of the file to be included.

If the name of your source file ends in .cc, .cxx, .cpp, or .C, gcc will attempt to compile your program with the C++ compiler. Similarly, if the name of your source file ends in .mm or .M, gcc will attempt to compile your program with the Objective-C++ compiler.

The Objective-C++ compiler is now much more useable than the ones included with OPENSTEP for Windows Prerelease 3 and with PDO 4.0.

Position-Independent Code Generation (PIC). The way the compiler generates code has changed. It now generates position-independent code by default when it builds libraries, bundles and executables. You can control the code generation style using the -dynamic and -static compiler flags; -dynamic specifies that position-independent code generation is to be used, whereas -static specifies position-dependent code generation. For related information, see the note on drivers and kernel servers below.

C++ Templates. The compiler has been updated to support C++ templates or parametrized types. For example, consider the following code:

```
#include <stream.h>
#include <String.h>
#include <SLList.h>
typedef SLList<String> StringList;
main(){
 StringList listOfnames;
```

```
    listOfnames.append("hello world");
    cout <<listOfnames.remove_front() << "\\n";
   }
```

Then the above code is built and run:

```
%> cc++ template.cc -o test -lg++
%> test
hello world
%>
```

Debugging features. The compiler includes a couple new options to assist in debugging. Specify the -H flag on the command to have the compiler emit a listing of included header files (indented to reflect where they are included). Specify the -dM option after the -E (preprocess) option to get a listing of all macros along with their full definitions.

Building drivers and kernel servers. If you are building drivers and kernel servers, be sure to include -static on the command line so that position-dependent code is generated. Compilation with the -dynamic option assumes that the dynamic link editor (/usr/lib/dyld) is present in the running program, and that is not the case for modules to be loaded into the kernel.

Known Bugs and Limitations

The following bugs or limitations are worth noting for the GNU C and C++ Compilers for this release.

Mach programs may need to be recompiled. Since release 4.1 on Mach, libgcc has changed in an incompatible way. It's possible that a small number of existing applications rely on the old libgcc and may crash because of the new libgcc in the base system libraries. We anticipate that this compatibility issue will be resolved in the final version of OPENSTEP 4.2 on Mach; at that time, it may be necessary for you to again recompile anything that now must be recompiled because of this fix.

Inline functions may not be properly expanded. In some circumstances, inline C functions and C++ member functions may not be emitted properly, causing assembler errors. You can work around this issue by ordering your inline function or member-function definitions ahead of their references. Passing -fkeep-inline-functions to the compiler also works around this issue, but may sometimes cause other code-generation issues.

Keyword-switching for extern "Objective-C" may be delayed. Although keyword-switching is no longer done inside a context tagged by the extern "C" linkage directive, the C++ keywords are turned off inside an extern "Objective-C" { ...} range. When entering and exiting this context, the actual switch in keyword sets may occurs a token or two late, meaning that you may get syntax errors on legal code. For example, if the first token following an extern "Objective-C" range is "class", this will be lexed as an identifier and not the C++ class keyword. You can work around this by re-ordering your declarations or inserting a dummy declaration after a keyword-switching boundary.

Link errors on Windows NT (69211). Programs on Windows NT must add explicit references to at least one class in each framework in order to avoid link errors at run time. For instance, you could add a function like that in the following code excerpt, which refers to classes in each of Enterprise Objects Framework's layers. Though never invoked, it forces the appropriate linking to occur.

```
#ifdef WIN32
#import <EOControl/EOControl.h>
#import <EOAccess/EOAccess.h>
#import <EOInterface/EOInterface.h>

void _referenceAllEOFrameworks()
{
       [EODisplayGroup new];       // EOInterface
       [EOEntity new];             // EOAccess
       [EOEditingContext new];     // EOControl
}
#endif
```

If you create your project with the type "EOF Application," this code is automatically added to your project main file.

The -Wno-precomp flag is not supported (63746). The precomp-related options are not yet supported on Windows NT.

Constant strings (both char * and NSString) should be 7-bit only. Unless constant strings are 7-bit, your code will be non-portable as compilers will deal with 8-bit strings in a machine-dependent encoding.

Objective-C++ global constructors. The Objective-C++ compiler sometimes ignores global constructors; they don't always get called.

Random name given to executable by default (66861). If you create an executable and don't use the -o flag to explicitly tell gcc what to name it, gcc will most likely give it a random name.

Using pipes to communicate between compiler passes (61306). The -pipe flag doesn't work in the Windows NT compiler.

Using -pipe (67853). Although the compiler rarely crashes, if it does, it may generate some assembly language output before doing so. If you use the -pipe flag, the assembler may not be able to detect the fact that its input is incomplete. As a result, the assembler may produce an incomplete, but valid .o file. If you use the make utility to build your application, make will detect the fact that there was an issue during compilation. However, when make is subsequently invoked, it might not recompile the source file that caused the issue, and the linker will most likely complain about unresolved external symbols.

ObjC++ requires -lstdc++ when using C++ streams on PDO (69156). When compiling C++ programs that use C++ streams with gcc on PDO platforms, if you specify the -ObjC++ flag you must also specify the -lstdc++ flag. So, for example, a program "foo" that uses cout (and therefore includes iostream.h) would be compiled using gcc as follows:

gcc -ObjC++ foo.cc -lstdc++

__declspec(dllexport) __stdcall doesn't work (69194). On Windows NT, functions that are declared as __declspec(dllexport)__stdcall aren't handled properly. This may affect some Windows header files that you include in your programs.

The compiler sometimes tries to create a library instead of an executable (69087). This happens on Windows NT when a function is declared as __declspec(dllimport) (perhaps in a header file), but the function is actually defined in the file being compiled. The workaround is to remove the offending __declspec(dllimport).

Inconsistent function declarations involving stdcall produce unexpected results (69506). On Windows NT, if a function is forward-declared to be stdcall but not declared to be stdcall in the actual function definition, the compiler will emit code to pop the arguments off the stack, but won't adjust the function name.

The linker complains about objects exported as CONSTANT (70212). On Windows NT, if you're building a framework and you create your own DEF file for it, defining exported objects as CONSTANT will produce a warning from the linker advising you to use the word DATA instead. If you substitute the word DATA for CONSTANT in your DEF file, some or all of your objects won't be exported correctly; the linker will be unable to find them. As a workaround, simply leave the declarations CONSTANT and ignore the linker warnings.

-static option causes linking to fail (70326). The -static and -dynamic compiler flags are meaningless on Windows NT, and shouldn't be used.

Static constructors can't be used for run-time class initialization (54831). The PDO compiler can't apply a user-defined constructor to a global or static C++ object and send an Objective-C message in the same file. To work around this issue, eliminate the constructor, the global, or the Objective-C code.

wchar_t string literals (38759). The compiler generates wide-character literals for the host endian-ness only. For example, if you are cross-compiling the string L"x" from m68k to i386, it will be a big endian wide string. The only workaround is not to cross-compile modules which depend on wide characters.

Compiler Tools

This file contains release notes for the 4.2 release of the Compiler Tools. It contains information about the following topics:

- The NeXT Mach-O GNU-based assemblers
- The NeXT Mach-O static link editor
- The NeXT Mach-O dynamic link editor
- Mach-O object tools (nm, otool, and so on)

Notes Specific to Release 4.2

New Features

There are no new features for the 4.2 release of the compiler tools.

Notes Specific to Release 4.1

New Features

There is only one new feature for the 4.1 release: The dynamic linker now has the environment variable DYLD_FRAMEWORK_PATH to better support the development of frameworks. See the man page for details.

Notes Specific to Release 4.0

New Features

Dynamically Linked Shared Libraries

The compiler tools now allow you to build and develop dynamic shared libraries and support the programs that use these libraries, including programs that use bundles. The tools to build or use dynamic shared libraries are in the 4.1 updates for the m68k, i386, sparc, and hppa target architectures.

All object files that are part of a dynamic shared library or that are to be in an executable should be compiled with the -dynamic flag. The -dynamic flag is now the default. Executables using shared libraries must also be linked with this flag when using cc(1) or ld(1) and must be using crt1.o (this is done automatically with cc(1) and the -dynamic flag). To build a dynamic shared library, use libtool(1) with the -dynamic option; typically you also specify the -install_name library_name option as well as other options (see the libtool(1) man page).

The dynamic linker is becoming more fully-featured. It contains some programmatic support for runtime loading (but as of yet no unloading or replacing).

The static link editor uses the symbol tables of dynamically-linked shared libraries to cause modules for undefined symbols to be pulled in from static libraries and to check for undefined symbols. The ld(1) flags for undefined checking -undefined {error, warning, suppress} can be used; the default is to treat undefined symbols as errors. This default holds for dynamically-linked shared libraries and bundles. In these cases the dependent libraries should be listed if available. If not available then -U _symbol or -undefined {warning, suppress} can be used until they are.

Using and Building Dynamic Shared Libraries from Project Builder

The 4.1 version of Project Builder supports a library project type which by default is a dynamic shared library and a framework project type which by default contains a dynamic shared library. Project Builder supports the use of dynamic libraries in other project types. To build static libraries, un-comment the LIBRARY_STYLE definition in the project makefile (LIBRARY_STYLE is set to STATIC and commented out).

Tools that are complete

The assember, link editor, and otool support position-independent code for the m68k, i386, sparc, and hppa architectures. The link editor, assember and otool fully support indirect undefined references using symbol pointers and symbol stubs. And the assembler now fully supports Mach-O files.

The dynamic link editor now has the first level of support for runtime loading. Currently only loading of MH_BUNDLE files is supported. Comments in the header file /NextDeveloper/Headers/mach-o/dyld.h describe what is not yet implemented.

Tools that are not complete

The dynamic link editor now has the first level of support for runtime loading. Currently only loading of MH_BUNDLE files is supported. Comments in the header file /NextDeveloper/Headers/mach-o/dyld.h describe what is not yet implemented

The tool segedit(1) does not have support for dynamic shared libraries.

The NeXT Mach-O GNU-based Assemblers

The NeXT assembler now a fully supports Mach-O files with the ability to create arbitrary sections with the .section and .zerofill directives. Contents of sections now correctly reflect the assembly code with respect to the section aligment and no unnecessary padding is added.

Major New Features

Support for position-independent code through the use of a new relocatable form of an expression: "add_symbol - subtract_symbol + offset" where add_symbol and subtract_symbol can be defined in different sections.

Documentation

Assembler Manual

The assembler manual has been updated to reflect support for dynamically-linked shared libraries. It contains appendices of the instructions for the i386, M68K, and PA-RISC processor architectures. An RTF version of the Assembler manual is in: /NextLibrary/Documentation/NextDev/Reference/DevTools/Assembler

Converting Your Code to OPENSTEP

This document describes how to convert your code from NEXTSTEP Release 3.x to OPENSTEP for Mach Release 4.x.

Release 4.0 is NeXT's first OpenStep-compliant release. OpenStep is an API that enables platform-independent development of client/server applications. The OpenStep API includes the Application Kit, the DPSClient library, and a new kit called the Foundation Framework, which provides an operating system independence layer. The OpenStep Application Kit is functionally equivalent to the NEXTSTEP Release 3 Application Kit, but its API has been reworked to make use of the Foundation Framework. Because Release 4.0 is OpenStep compliant, converting your code to it is a good way to make your application an OpenStep application.

To convert your code, you run a series of scripts. These scripts use tops, a tool that performs in-place substitutions on source files according to a set of rules. The script files contain the rules that tops applies to your code. Most of the scripts are provided in the release, but you must generate some of them before you start converting because they work directly on the custom classes in your code. OPENSTEP for Mach provides a tool that allows you to generate these scripts.

The scripts convert most of the NEXTSTEP API to the new OpenStep API. Some methods, classes, and functions have been altered in such a way that an automated conversion is not possible. For these, the conversion scripts produce an error message that identifies the obsolete code and tells you how to convert it.

You run the conversion in six stages. Each stage runs a different set of scripts. After each stage, you compile your code to identify places where the conversion was not automatic. It is recommended that you run some additional scripts to replace the Common classes with OpenStep API, making your code even more portable.

This document tells you how to set up your project for conversion and how to run the conversion scripts. A separate document, the OpenStep Conversion Guide, describes the changes made during each of the conversion stages and the reason for those changes. Its location on-line is /NextLibrary/Documentation/NextDev/Conversion/ConversionGuide. Read the first chapter of this guide (00_Intro.rtfd) for an overview of the differences between NEXTSTEP 3.X and OpenStep and for a discussion of the different strategies you might use when converting.

The Conversion Process

To convert your code, do the following:

1. Convert your project to a 4.0 project.

2. Generate the conversion scripts.

3. Run the six-stage conversion process and any optional conversions.

4. Convert your nib files.

5. Debug your application.

These steps are described further below.

Converting Your Project to a 4.x Project

Before you start the conversion process, you need to change your project and makefiles so that they use the new Release 4.0 development environment. The 4.0 development environment has many significant improvements over the 3.3 development environment. In particular, Project Builder has changed significantly. To convert your project, perform the following steps:

1. Read OPENSTEP Development: Tools and Techniques and the release notes for Project Builder and Interface Builder to learn about changes to the environment.

The document you are reading now does not describe how to use the new Project Builder. The book OPENSTEP Development: Tools and Techniques is on-line in the directory /NextLibrary/Documentation/NextDev/TasksAndConcepts/DevGuide. The release notes are in the directory /NextLibrary/Documentation/NextDev/ReleaseNotes.

2. Make sure your code compiles cleanly without warnings.

Perform this step so that any warnings that show up during conversion won't become mixed in with pre-existing warnings. Make sure the -Wall compiler option is being used.

Before you compile your 3.3 code on a 4.0 system, you need to change the search path for header files to the directory /NextDeveloper/OpenStepConversion/3.3Headers. To do this in the new Project Builder:

1. Choose Inspector from the Tools menu to bring up the project inspector.

2. From the inspector pop-up list, choose Build Attributes.

3. Choose Header Search Order from the pop-up list in the Build Attributes inspector.

4. Type /NextDeveloper/OpenStepConversion/3.3Headers and click Add.

3. Back up your project directory.

The conversion scripts modify your code in-place, and they do not create backups for you. It is strongly recommended that you back up your project after each conversion stage in addition to backing up before you begin, provided you have enough space.

4. Delete the NeXT-provided libraries (such as libNext) from your project, and add the corresponding frameworks (such as /NextLibrary/Frameworks/AppKit.framework).

All NeXT-provided libraries are replaced with frameworks in 4.0. A frameworks' executable code is a dynamic shared library. To add the Application Kit framework, in Project Builder choose Add File from the Project menu, select /NextLibrary/Frameworks/AppKit.framework from the Add File panel, and choose Frameworks from the file type pop-up list on the Add File panel. Add the Foundation Framework in the same way.

Frameworks are bundled differently than shared libraries. All of the support files for a framework are contained in the same directory, so you no longer have to know that the library itself resides in one place, its header files another place, and its documentation still a third place.

When you add a framework to your project, it doesn't appear in the Libraries suitcase. Instead, it appears in the Frameworks suitcase. You are able to see that framework's header files and documentation underneath that suitcase.

5. Change the application class in Project Builder.

In OpenStep, all keywords are prefixed with "NS", so the Application class is now NSApplication. If you are converting an application project, you need to change the class in Project Builder so that it will use the appropriate class when updating your main function. To do this, bring up the project inspector by choosing Inspector from the Tools menu. In the inspector, choose Project Attributes. Finally, type NSApplication in the field labelled Application Class.

6. Convert your makefiles.

The new Project Builder comes with new Makefile.postamble and Makefile.preamble files. Convert your preamble and postamble files if you performed some customization on them. You can find copies of the new templates in the directory /NextDeveloper/Makefiles/project. Rename your existing preamble and postamble files, copy the new templates into your project directory, rename the template (remove the .template extension), and merge any customizations you would like to keep into the new templates.

Most of the changes to the makefiles are additions made to support frameworks, however some makefile variables are now obsolete. The additions are documented in the comments in the preamble and postamble files. The following table lists the obsolete makefile variables and what you should use as a replacement.

Obsolete Makefile Variable Possible Replacement

BUNDLELDFLAGS OTHER_LDFLAGS

PALLETTELDFLAGS OTHER_LDFLAGS

COMMON_CFLAGS OPTIMIZATION_CFLAG, WARNING_CFLAGS

NORMAL_CFLAGS OPTIMIZATION_CFLAG, WARNING_CFLAGS

DEBUG_CFLAGS Use DEBUG_BUILD_CFLAGS.

PROFILE_CFLAGS Use PROFILE_BUILD_CFLAGS.

DYLD_APP_STRIP_OPTS LIBRARY_STRIP_OPTS (-S by default)

RELOCATABLE_STRIP_OPTS DYNAMIC_STRIP_OPTS (-S by default)

OTHER_DEBUG_LIBS Add libraries using Project Builder.

OTHER_PROFILE_LIBS Add libraries using Project Builder.

OTHER_JAPANESE_DEBUG_LIB Add libraries using Project Builder.

OTHER_JAPANESE_PROFILE_LIBS Add libraries using Project Builder.

BUNDLE_LIBS Add libraries using Project Builder.

PRECOMPS Use Project Builder Inspector to mark headers for precompiling.

In addition, the following are some other changes to makefiles of which you should be aware:

- If your project is a library shared by several other projects, consider converting it to a framework. For more information, see the book OPENSTEP Development: Tools and Techniques.
- Many things that you used to have to set using the Makefile preamble and postamble files you can now set using Project Builder. For example, you can set search paths and simple compiler flags. You should minimize your use of the preamble and postamble files and use the Project Builder interface instead. For more information, see the development environment release notes.
- The build process now uses gnumake instead of make.
- If you wrote any top-level double-colon targets that are also implemented by Project Builder, such as app::, install::, all::, now is a good time to rename them. It is likely that the variables passed to these rules and the order in which they are executed has changed. Consider using after_install::, before_install::, OTHER_INITIAL_TARGETS, or OTHER_PRODUCT_DEPENDS.
- Once you save your project in 4.0, it uses the new makefile behavior. If your project must use the 3.3 makefile behavior, set MAKEFILEDIR in Makefile.preamble to /NextDeveloper/Makefiles/app.

Generating the Conversion Scripts

Some of the conversion scripts need to understand your application's class hierarchy and how you implemented certain methods. For this reason, you must generate some of the conversion scripts yourself.

To generate conversion scripts, do the following:

1. Add /NextDeveloper/OpenStepConversion/UtilityScripts/shellscripts to your PATH environment variable. The convert command, which you use to convert your code, is in this directory.

2. In a Terminal window, enter these commands to create files that will be used to generate the conversion scripts:

% cd project_directory

% convert -preprocess

3. Modify the files StringMethods, StringDefines, RectMethods, and VoidMethods, which are used to generate the conversion scripts. Carefully read "Modifying the Files Used to Generate Conversion Scripts" below for instructions on how to do this. Once you perform step 4, you cannot return to this step.

WARNING: Do not move on to step 4 until you have fully completed step 3.

4. Generate the optional conversion scripts with this command:

% convert -makescripts

Modifying the Files Used to Generate Conversion Scripts

The convert -preprocess command creates a CONVERSION directory under your project directory and stores in it files that describe your application. These files and their contents are described in the table below.

File Description

ClassHierarchy1 Describes the class hierarchy before conversion in a format tops can understand.

ClassHierarchy2 Describes the class hierarchy after conversion in a format tops can understand.

StringMethods Lists methods that have (char *) or (const char *) as either a parameter type or return type.

StringDefines Lists #defines that were determined to be of type (const char *).

RectMethods Lists methods that use pointers to NXRects, NXSizes, or NXPoints as either a parameter or a return type.

VoidMethods Lists methods that did not specify a return type.

In order to generate conversion scripts that will convert your code properly, you need to modify all of the files produced by convert -preprocess except the class hierarchy files. The following sections provide instructions on this step.

After you modify these files and run convert -makescripts, some additional conversion scripts appear in the CONVERSION directory. These scripts are executed during the conversion process.

StringMethods

OpenStep provides a new object called NSString. NSString allows you to perform character manipulation on strings without requiring that you know which character encoding is being used. Using NSStrings, you can write truly portable and internationalized code, code that will work with any writing system supported by the Unicode standard. The Application Kit now uses NSStrings where it used to use C strings in method and function arguments and return values. Because of this and because of the advantages of NSStrings, you may want to convert all of the C strings in your application so that they use NSStrings.

The StringMethods file contains a list of every method in your application that takes a C string as an argument or returns a C string. It does not list overrides of Application Kit methods; those are taken care of by the conversion scripts provided in the release. All of the methods listed in this file will have their C string arguments and return values converted to NSStrings.

Only methods that don't modify the string should have their C strings converted. Look at the implementation of every method listed in the StringMethods file. If the method modifies its C strings, remove its name from the file. To skip the optional conversion of C strings to NSStrings entirely, delete all of the methods from this file. (You may want to save them in a different file.) Before you decide, you may want to read about the conversion of C strings to NSStrings in the OpenStep Conversion Guide. See the chapter "Converting the Common Classes."

You can locate a method's implementation easily in Project Builder by doing the following (for more information, see the development environment release notes):

1. Choose Find from the Tools menu to display the Project Find panel.

2. In the Project Find panel, enter the name of the method in the text field.

3. Make sure Definition is selected in the pop-up list.

4. Click the Find button.

StringDefines

This StringDefines file contains #define macros that are string constants or NXLocalizedString... function calls. These macros will be converted so that they create NSString objects instead of C strings. If this file lists macros that you want to remain C strings, delete the line naming that macro from the StringDefines file.

RectMethods

All Application Kit functions and methods that used to take the address of an NXRect or an NXSize now take the value of the structure. Similarly, all Application Kit functions and methods that used to return a pointer to an NXRect or NXSize now return the structure itself. This change was made to eliminate the aliasing issues that can occur when you pass pointers and to allow these methods to work better with the Distributed Objects system.

The RectMethods file contains a list of every one of your application's methods that takes a pointer to an NXRect, NXSize, or NXPoint structure or returns a pointer to one of these structures. (It does not list overrides of Application Kit methods.) All of the methods listed in this file will have their structure pointer arguments and return values converted to the actual structure.

Only methods that don't modify the structures should have their arguments and return types modified. Look at the implementation of every method listed in the RectMethods file. If the method modifies an NXRect, NXPoint, or NXSize structure, remove its name from the file. To skip the optional conversion of structure pointers entirely, delete all of the methods from this file. (You may want to save them in a different file.) Before you decide, you may want to read about the NXRect, NXPoint, and NXSize conversions in the OpenStep Conversion Guide. See the chapter "Converting the Common Classes."

VoidMethods

Previously, methods returned self by convention. Some methods return self to indicate success and nil to indicate failure. Returning self to indicate a Boolean value or returning self without any associated meaning made the API more confusing. In OpenStep, when a method has no real value to return, its return type is void. Where a method returned self or nil, it now returns BOOL. In addition to being cleaner API, returning void and BOOL helps you avoid creating unnecessary proxies if you're distributing objects. The VoidMethods file contains a list of every method in your application that has no return type specified (except for overrides of Application Kit methods).

Look at both the implementation and the uses of each of the methods listed in the VoidMethods file and perform the action listed below. (To look at all of the uses of a method, enter its name in Project Builder's Project Find panel, choose References from the pop-up list, and click Find. The bottom half of the Find panel lists all of the places the method is invoked.)

- If the method returns either self or nil and invocations of the method test the return value, change the prefix for that method in the VoidMethods file to SELFNIL-BOOL. This will convert the method to return BOOL. (By default, all methods in the file are prefixed with SELF-VOID, which means they will be converted to return void.)
- Delete the method from the VoidMethods file if its return type is ever used in any of the places where it is invoked (and it should not be converted to return BOOL).
- init... methods do not appear in the VoidMethods file because it is correct for them to return type id. If you have a method that starts with init... but is not a initialization method for its class, add it to the VoidMethods file if it should return void.
- Leave all +initialize methods in the file. The +initialize method now returns void.
- If the method returns a value other than self and that value is never used anywhere the method is invoked, change its prefix to OBJ-VOID.
- To skip the optional void conversion, delete all of the methods from the VoidMethods file. (You may want to save them to a different file.)

For example, consider the methods shown in the following code fragment. All of these methods except newCount would be listed in the VoidMethods file because they don't specify a return type. However, the countingObject method has a meaningful return value because countSomething expects it to return an object. countSomething is is the only method that should truly be converted to return void because it is invoked as if it already did return void. Thus, in the VoidMethods file, you would delete countingObject but leave countSomething.

```
- countingObject
{
return countingObject;
}

- countSomething
{
[[self countingObject] incrementCount];
return self;
}

- (int)newCount
{
[self countSomething];
return [countingObject currentCount];
}
```

Before you decide which methods should be converted to return void, you may want to read about the void conversion in the OpenStep Conversion Guide. See the chapter titled "Global API and Style Changes."

Running the Conversions

The conversion process is organized into six stages. Each stage runs a series of scripts on your code and makes changes based on the information in those scripts. When converting code for the first time, you should perform the conversion in stages. Here's the recommended procedure:

1. Back up the project directory.

2. In Project Builder, close all of the source files.

The convert script, which you run in the next step, changes your source files. If you have looked at these same source files in Project Builder before you run the script, the file displayed by Project Builder won't reflect the changes that convert makes. To make sure that you are always looking at the latest version of your files, close all of the files in Project Builder before you run the script.

You can see which files you have loaded in Project Builder using the Loaded Files panel. Choose Loaded Files from the Tools menu to bring up the Loaded Files panel. Select a file in the Loaded Files panel, then choose Close from the File menu to close it.

If you don't perform this step, convert will still work properly, but when you look at the source files after it is complete, they won't reflect the changes. To see the changes that convert made, press Command-u.

3. In a Terminal window, enter:

% cd project_directory

% convert -stagex

where x is the number (1 through 6) of the conversion stage you want to perform. If you don't specify source files on the command line, they will be identified with the pattern:

*.[hcmCM] *.psw* *.*proj/*.[hcmCM] *.*proj/*.psw*

In other words, all code files in your current directory and in the first level of subproject directories will be converted. If this is not sufficient, specify the appropriate file list after the -stage option:

convert -stagex file1 file2 ...

Each conversion stage takes several minutes to complete. Stage 1 is the longest stage.

WARNING: The conversion scripts should not be run out of order, and it is not recommended that they be run on the same file more than once. In general, it's a good idea to save a copy of your files after each stage.

4. Once the conversion is complete, use FileMerge to compare your project with the backup of your project. This is a good way to learn about the differences between NEXTSTEP and OpenStep. (To learn how to use FileMerge, see the development environment release notes.)

5. Open the project in Project Builder and use the Inspector panel to add /NextDeveloper/OpenStepConversion/IntermediateFrameworksx to the search path for frameworks, where x is the number of the conversion stage. (For stages 2 through 6, remove the IntermediateFrameworks directory for the previous step.)

In Project Builder, you change the search paths for frameworks from the Build Options inspector. Choose Inspector from the Tools menu to bring up the inspector panel, and choose Build Options from the inspector's pop-up list. In the Build Options inspector, there is another pop-up list. Choose Framework Search Order from that list. Type the new search path for frameworks, then click Add.

In between the first conversion stage and the last conversion stage, your code is in an interim state and will not compile successfully with either the NEXTSTEP 3.X headers or the OPENSTEP for MachOS Release 4.0 headers. The IntermediateFrameworks directories have NEXTSTEP headers at the intermediate stages of conversion so that your code will compile. Your code will not link successfully until after the sixth stage.

There is no IntermediateFrameworks directory for stage 6. After stage 6, you should use the default search path for frameworks (/NextLibrary/Frameworks).

NOTE: Be sure you change the Framework Search Order, not the Header Search Order.

7. Build your project and work through any error messages.

The conversion process places #error messages in places where automated conversion was not possible and #warning messages in places where the conversion might not be correct. You will see these messages when you compile. Once your code compiles successfully, back up your project again, and run the next stage.

If you need help deciding how to correct an error, see the OpenStep Conversion Guide. It describes how to correct most of the errors that occur. If you need more information about a particular class or function, look in the Foundation Framework Reference in /NextLibrary/Frameworks/Foundation.framework/Resources/English.lproj/Documentation or the Application Kit Reference in /NextLibrary/Frameworks/Foundation.framework/Resources/English.lproj/Documentation. If the class has no documentation yet, see the OpenStep Specification in /NextLibrary/Documentation/OpenStepSpec.

NOTE: If Project Builder is not showing you the updated source files (the source code does not match the warning you see), type Command-u. Be sure to close all files in Project Builder as described in Step 3 before you run the next conversion stage.

You may want to set the Continue After Error preference to Project Builder. If you do, Project Builder will continue to build even after it finds an error. You can find the Continue After Error preference in the Preferences panel, under Build.

8. If you're converting an application project, convert your nib files. To do this, use this command:

% convert -nib

Running All Conversions At Once

After you have converted at least one project and you are more familiar with the conversion, you may want to run all conversions at once. To do this, enter this command in the terminal window:

convert -all

This command runs all six conversion stages one by one, then converts any nib files. Before you enter this command, you still must generate the conversion scripts for the project as described earlier in this document. Remember to be very careful when modifying the files used to generate the conversion scripts. It will save you time in the end.

Running the Optional Conversions

After you have completed all of the conversion stages you may wish to run remaining optional conversions. The optional conversions are listed below.

Conversion Script Purposes

CustomIBAPI.tops Converts Interface Builder API for palettes.

ListToMutableArray.tops Converts List objects.

HashAndStringTableConversion.tops Converts HashTable and NXStringTable objects.

StringConversion2.tops Converts more C strings to NSStrings.

StreamToMutableData.tops Converts streams to NSMutableData objects.

StreamToString.tops Converts streams to NSString objects.

TableView.tops Converts NXTableView objects to NSTableView objects.

VMConversion.tops Converts MachOS virtual memory functions to Foundation functions.

To run a single script on your source code, use this command:

tops -scriptfile scriptFile *.[hcmCM] *.psw* *.*proj/*.[hcmCM] *.*proj/*.psw*

Where scriptFile is the complete path for the script (/NextDeveloper/OpenStepConversion/ConversionScripts/scriptName). See the OpenStep Conversion Guide for information on these scripts.

NOTE: Because the API changes between C strings and NSStrings and between NXTableViews and NSTableViews are significant, the usefulness of the scripts StringConversion2.tops and TableView.tops vary. You may want to run them on a copy of your code first to see if they help you.

The GNU Source-Level Debugger

This file contains information about GDB, the GNU Debugger. For more information, see the debugging chapter in the OPENSTEP Development Tools Reference manual. On Mach, you may also refer to the gdb(1) manual page.

Notes Specific to GDB on Mach:

New GDB Version

The GDB debugger in OpenStep 4.0 for Mach (and later versions) is based on the version 4.14 release from GNU/FSF. This brings with it many bug fixes and new features, many of which are mentioned in the debugging chapter of the OPENSTEP Development Tools Reference manual.

New Features

Dynamic Link-Editor Support

GDB supports debugging of dynamic shared libraries (sometimes known as Frameworks or Bundles in the OPENSTEP world). The presence of dynamic shared libraries has some impact on debugging, which is described in this section.

Debugging symbols for dynamic shared libraries are not present in the program itself. GDB obtains them when the running program attaches and links to the shared library. This means that before the program is actually running, GDB has no information about the contents of the dynamic shared libraries that it uses.

Because of this, it is not possible to set ordinary breakpoints in a shared library before that library has been attached. GDB provides a new command for this purpose, future-break or fb. If GDB cannot find the necessary symbols to resolve a future-break command, it defers the breakpoint and attempts to resolve it later, when new symbols from a shared library become available. Caveat: since the future-break command deals with names and symbols that are as yet unknown to the debugger, it cannot check spelling for you; if you make a spelling mistake, it will never be detected and the breakpoint will never take effect.

There is also an environment variable, DYLD_LIBRARY_PATH, which tells the dynamic link-editor where to search for dynamic libraries. This variable can be used to cause a library with debugging symbols to be linked, even though the library on the default path has no symbols. This environment can be set from within GDB by using the setenv command. In order to affect the program being debugged, it should be set before running the program.

The "view" interface

In prior releases, GDB supported a GUI interface that used the NEXTSTEP Edit application as a source file viewer (invoked by the view command). Edit has been replaced by Project Builder as the source file viewer for GDB, and the view command now connects GDB to Project Builder. You must start Project Builder yourself before giving GDB the view command (GDB will not start Project Builder automatically). Project Builder has its own user interface for interacting with GDB (see the Project Builder documentation).

Methods with Variable Number of Arguments

GDB now understands the syntax for calling a method with a variable number of arguments (for example, [MyClass myMethod: 1, 2, 3, 4]).

Known Issues

Debugging Apps that Use the Sybase Client Library

GDB hangs (actually, the new Sybase CT-Lib adaptor blocks) when you use the next command to step over a line of code which eventually causes a call to the Sybase client library.

More generally, when debugging a program that uses multiple threads it's possible to create a situation in which a deadlock will occur. Whenever the next or step commands are issued, GDB lets only the thread being debugged to execute. All other threads are suspended until the command is completed. Therefore, if you attempt to step over a line of code which tries to communicate with another thread, the program will deadlock.

To deal with issues like this, a "run-all-threads" option has been added to GDB. This controls whether or not all of the threads should execute while single-stepping. The default value for this option is "off", meaning the behavior is the same as in OPENSTEP 4.1. In order to prevent a deadlock like that described above, issue the following command in GDB:

set run-all-threads on

We recommend that you use this option only if you're experiencing a deadlock. Allowing other threads to execute while stepping through code can produce confusing results if, for example, the other threads may be changing the values of global data.

Known Issues with Dynamic Link-Editor Support

It has been observed that GDB sometimes hangs or crashes if you run a program that uses a dynamic shared library (Framework or Bundle), then recompile the dynamic shared library, and run the program again. If this happens to you, we recommend that you quit GDB and start a new debugging session every time you rebuild the library. You can use the .gdbinit file to help re-establish things such as breakpoints that you need in your debugging session.

Interrupting with ^C during Dynamic Symbol Loading

Immediately after you start your program running under GDB, the program will start to load dynamic shared libraries, and GDB will begin reading symbols from these libraries. If you attempt to interrupt GDB by typing ^C (control-C) during this process, the debugger will be left in a confused internal state from which the only known recovery is to quit the debugger and start over.

Notes Specific to GDB on Windows:

GDB Version

The GDB debugger for OPENSTEP for Windows is based on the version 4.15.1 release from GNU. This brings with it many, if not most of the features of debugging on UNIX and Mach, although there are inevitably some differences.

New Features

Dynamically Loaded Library (DLL) Support

GDB supports debugging of dynamically loaded libraries (DLLs). In OPENSTEP for Windows, Frameworks and Bundles are implemented as DLL's. The presence of DLLs has some impact on debugging, which is described in this section.

Debugging symbols for dynamically-loaded libraries are not present in the program itself. GDB obtains them when the running program attaches and links to the DLL. This means that before the program is actually running, GDB has no information about the contents of the DLLs that the program uses.

Because of this, it's not possible to set breakpoints or access data in a DLL before the DLL has been attached by the program. GDB provides a new command for this purpose, future-break or fb. If GDB cannot find the necessary symbols to resolve a future-break command, it defers the breakpoint and attempts to resolve it later, when new symbols from a shared library become available. Caveat: since the future-break command deals with names and symbols that are as yet unknown to the debugger, it cannot check spelling for you; if you make a spelling mistake, it will never be detected and the breakpoint will never take effect.

Attach and Detach

GDB's attach command works pretty much as it does on Mach. The process ID to attach to can be obtained from PVIEW, or by having the attachee call getpid() and output the result. However, when GDB attaches to an already-running process, it won't learn about symbols from DLLs that the process has already linked to.

The detach command is only partially useful at this time. detach will let the attached process continue to run, but a parent/child relationship continues to exist between the debugger and the detached process. Because of this, if you then quit the debugger, the detached process will also die.

When you attach to a running process, you will frequently find yourself in a non-debuggable area of code from which you cannot even get a backtrace. See the section on known issues, "Non-Debuggable Code" below for more information on this topic.

Add-Symbol-File

When GDB attaches to a running process, it does not read any symbols from DLLs that the process has previously linked itself to. If you need

those symbols for debugging, you can explicitly cause GDB to load them by using the add-symbol-file command. This command takes two arguments: the fully-qualified filename of the DLL file, and a base address. For a DLL that you build, this base address will usually be the base address at which you linked the DLL plus 0x1000. However, if the address of a DLL that you build conflicts with another DLL in the process, it may automatically be assigned a new address. If you run the program under GDB (instead of attaching to it), GDB displays the address at which each DLL actually landed.

Here are the base addresses to give to the add-symbol-file command for the major OPENSTEP DLLs:

· 0x30001000 System

· 0x31001000 nextpdo

· 0x32011000 Foundation

· 0x34021000 AppKit

· 0x38031000 NeXTApps

· 0x3A041000 DevKit

· 0x3C051000 ProjectBuilder

· 0x3C051000 InterfaceBuilder

· 0x40001000 Message

· 0x42011000 WebObjects

· 0x44021000 EOControl

· 0x46031000 EOAccess

· 0x48041000 EOInterface

· 0x4A051000 Sybase

· 0x4C061000 Oracle

· 0x4E071000 Informix

· 0x50081000 nextorb

· 0x52091000 EOModeler

Command Editing

GDB's command line history can be accessed by using the up and down arrow keys, or by using the EMACS key bindings (^P and ^N to scroll thru previous commands, ^B, ^A, ^E to move around on a line, and so on). Also, set history expansion on enables C-shell-like command history within GDB (!!, !print and so on). As usual, an empty newline repeats the previous command (except where specifically disabled, as with the run command).

Debugging Objective-C: Differences from Mach GDB

The Windows version of GDB has separate features for many different languages, including Objective-C. It attempts to guess the source language by looking at the extension of the source file name (".m" or ".M" for Objective-C). By default, GDB's ªcurrent languageº is Objective-C. At any time, you can find out what GDB's ªcurrent languageº is with show language. To force the current language to Objective-C, type set language objective-c.

Calling Methods from GDB

To call a method in your program from GDB, use the print, set, or call commands with an argument that looks just like a method call in Objective C, as shown here:

(gdb) print [myClass showValue: 12]

If the method comes from a Category, you must include the category name, like this:

(gdb) print [myClass(myCategory) showValue: 12]

Listing and Setting Breakpoints on Methods

To refer to a method in a list or break command, you can give the full class and method name, including a `+' or `-' to indicate a class method or instance method. If there is a category name, you must give that too:

(gdb) list +[myClass init]

(gdb) break -[myClass(myCategory) showValue]

You can also set breakpoints or list a method just by giving a selector. If the selector is implemented by more than one class, gdb will list the corresponding methods and ask you to choose one or more:

(gdb) break init

[0] cancel

[1] all

[2] -[Change init] at Change.m:20

[3] -[DrawApp init] at DrawApp.m:130

[4] -[Graphic init] at Graphic.m:139

>

You would then enter your choice or choices at the ">" prompt.

Getting Information about Classes and Methods

GDB for Windows now has the info classes and info selectors commands. These commands accept the same regular expression language as GDB's info type and info function commands (ie. the Unix style regular expression language). This is a change from the Mach gdb, where info classes and info selectors accept a slightly different regular expression language. For instance, to learn about class names beginning with NS (using the '^' character to designate ªbeginning withº):

(gdb) info classes ^NS

To learn about selectors, you can use the info selectors command. To find every selector containing the string "withObject:" you could enter:

(gdb) info selector withObject:

To learn about methods, you can use the info function command, which also takes a regular expression. Since the square bracket characters `[' and `]' are significant in regular expressions, you can quote them with a backward slash to prevent their being treated as special characters. To list all the methods of a class, you might say:

(gdb) info function \\[MyClass

To list all the methods whose selector ends with ªcount:º, you might say:

(gdb) info function count:\\]

If you want to know about a specific method of a specific class, but you are not sure if it belongs to a category, you could use the ª.*º wildcard sequence to stand for ªany number of any charactersº:

(gdb) info function MyClass.*mySelector:

Debugging Threads on Windows

The GDB for Windows is thread-aware. If you are debugging a multi-threaded program, you can use the info threads command to see a list of the

currently active threads. Use the thread command to switch to one of the threads listed by info threads, giving it the number of the thread you want to debug (a small integer such as 1 or 2, not the thread ID).

When you switch threads, you will frequently find yourself in a non-debuggable area of code from which you cannot even get a backtrace. See the section on known issues, ªNon-Debuggable Codeº below.

Known Issues

Non-Debuggable Code

When you interrupt a program with ^C, attach to a running program, or switch threads in a running program, in very rare instances the program will be in the middle of executing Windows code that cannot be debugged. Occasionally you'll find that GDB cannot even give you a backtrace, because Windows has done something with the program stack. When this happens, if you don't want to simply let the program continue (for instance, you need to know exactly how you got to where you are), you can use the stepi command to step by single machine instructions until the Windows code cleans up the stack and returns, at which time you will suddenly be able to see symbols and backtraces again. GDB will notify you when you have returned to a symbolic region (say, a function or a method) that it knows about. Usually this does not take too long; on the order of a few dozen instruction steps.

Documentation

This file contains release notes for the Documentation distributed with this release of OPENSTEP 4.2.

Locating the Developer Documentation

All of the documentation for OPENSTEP 4.2 can be found on-line (some of the documents are supplied in printed form, as well). On OPENSTEP for Mach, the easiest way to access this documentation is to open the NextDeveloper bookshelf using Digital Librarian (this bookshelf can be found in /NextLibrary/Bookshelves). Although the NextDeveloper bookshelf can be used directly to access the documentation, most developers prefer to create their own custom bookshelf containing just those documents of interest. Select the first entry in the NextDeveloper bookshelf, then click ªList Titlesº; the documents that are then listed detail how to create your own custom bookshelf.

In NEXTSTEP Release 3.3, as well as in prior releases, all developer documentation was located in a subdirectory of /NextDeveloper/Documentation/NextDev. In OPENSTEP 4.2, framework documentation has been moved to a location inside of the relevant framework. All remaining developer documentation can still be found under /NextDeveloper/Documentation/NextDev.

Driver Development

OPENSTEP 4.2 cannot be used to develop Mach device drivers. Because NEXTSTEP 3.3 device drivers work on OPENSTEP 4.2 systems, we recommend that you use NEXTSTEP 3.3 Developer to create device drivers.

In keeping with the philosophy that all framework resources be located within the framework, framework reference documents are located in the directory Resources/English.lproj/Documentation, relative to the ª.frameworkº directory. So, for instance, reference documentation for the Application Kit Framework can be found in /NextLibrary/Frameworks/AppKit.framework/Resources/

English.lproj/Documentation.

OPENSTEP Enterprise

On OPENSTEP Enterprise, double-click the BooksOnline entry in the NeXT Software program group to gain access to the complete on-line documentation set.

PDO

On PDO platforms, all documentation is located in /NextLibrary/Documentation.

Release Notes

/NextLibrary/Documentation/NextDev/ReleaseNotes contains important information about the release that was known at the time that the OPENSTEP 4.2 CD-ROM was manufactured. Additional important information, which was discovered too late to be put onto the release, can be found on NeXTanswers. Request NeXTanswers #2455 for the location of the most up-to-date release notes for a variety of NeXT's software products.

The NeXT OLE ORB

This document lists all of the API changes and some of the bug fixes relating to the NeXT ORB for this release.

New Features in This Release

Supporting Localization in OLE Automation

OLE Automation offers support for localization by allowing the developer to specify a locale when looking up the names of properties, or of methods and their arguments. In release 4.1, the NeXT ORB would always specify the default system locale for the machine it was running on when matching an OLE method or property to a given Objective-C method. As a result, the Objective-C protocols a client used to talk to an OLE server would depend on the host on which the server was running. For this reason, the ORB now has new methods which allow you to specify the language to use when connecting to OLE Automation objects. From Objective-C, instead of using:

-(id)objectWithRegisteredName:(NSString *)name

protocol:(NSString *)proto

host:(NSString *)hostName

you can now use:

-(id)OLEObjectWithRegisteredName:(NSString *)name

localeId:(unsigned long)localeId

host:(NSString *)hostName

From Visual Basic, the alternative to this standard call:

orb.connectTo(name, protocol, host)

is:

orb.connectUsingOLE(name, localeId, host)

In the above, the localeId arguments are Win32 LCID's: 4-byte quantities which specify a primary language and sublanguage. (For more details see the Microsoft Win32 SDK documentation.) Common values are 0x9, for ªneutralº English, or 0x409 for North American English.

These new methods set the locale for the returned object. Also, the locale propagates recursively to all objects returned from that one.

Bugs Fixed in This Release

Supporting ªOldº DO

In OPENSTEP 4.1, OLE clients were unable to connect to Objective-C servers using ªoldº (NXConnection-based) DO. This has been fixed in

release 4.2. However, this fix involves a change to the file nxorb.m (shipped on Windows systems in the directory NextDeveloper/Libraries). If you want Objective-C and OLE Automation objects to communicate using old DO, your Objective-C programs must be re-linked against the new version of this file.

Enterprise Objects Framework 2.1

This file describes new product features and explains how to install the examples. It does not contain complete release notes for release 2.1 of Enterprise Objects Framework. Complete release notes are installed when you install EOF 2.1.

For the 2.0 release notes (which include a lot of information that's still relevant for 2.1), see NeXTanswer #2455. If you have access to the World Wide Web, you can look up the URL http://www.next.com/NeXTanswers/HTMLFiles/2455.htmld/2455.html.

The documentation supplied with this release is 2.0 documentation. The 2.1 documentation will be made available when the product is released.

The MachOS version of this release is 3-way fat; it can be used to develop software for NeXT, Intel, and SPARC. The OpenStep for Windows version of this release can be used to develop software for Intel machines running Windows NT.

New Features for 2.1

- You can add methods to your interface in Interface Builder to perform queries and calculations on a specified class property.
- You can associate a qualifier with a display group in Interface Builder.
- Interface Builder allows you to set a fetch limit.
- You no longer have to add key paths as strings in Interface Builder-- instead, you can traverse the object graph in the Inspector to connect to the desired property.
- There is a new EOComboBoxAssociation.
- There is a new EOArrayDataSource class.
- EOModeler has a new "Explorer" outline interface that makes model traversal easier.
- When you connect a control to a display group in Interface Builder, a formatter is automatically added to the control based on the associated property's data type.
- There is a new Enterprise Objects Framework wizard that automates the creation of simple Enterprise Objects Framework applications. When you create an application in Project Builder, you have the option of either creating a conventional Enterprise Objects Framework application or using the wizard to automate application creation.
- EOModeler provides an Inspector for editing the connection dictionary.
- The Diagram View in EOModeler, formerly just an example, is now a part of the product.
- The Enterprise Objects Framework examples have been updated.
- The Oracle and Informix adaptors link with the newest client libraries.
- The new Oracle login panel is designed to work with SQL*Netv2.

Installing the Examples

This release provides on-line examples to help familiarize you with Enterprise Objects Framework 2.1. These examples are located in /NextDeveloper/Examples/EnterpriseObjects. Installing the examples involves these steps:

- Setting up users and databases on your database server for the example databases.
- Installing the example directory.
- Populating your database server with example data.

Note: When installing the examples for use with the Informix adaptor, use EOModeler's Connection Dictionary Inspector to set "databaseEncoding" to "Non-lossy ASCII" for the Movies and Rentals models. This will allow Enterprise Objects Framework to insert records with non-English characters.

Setting up Database Accounts

The Enterprise Objects Framework 2.1 examples use two sets of tables: Movies and Rentals. Some examples use just one of the these databases, while others use both. The multi-database support in Enterprise Objects Framework 2.1 makes it possible for you to install these databases in three different configurations:

- Both sets of tables together in a single user/database.

- Each set of tables in its own user/database on the same database server.
- Each set of tables on its own database server (for example, Movies on Informix, Rentals on Oracle).

Depending on your desired setup, you use the tools available with your database server to set up one or two new user/databases. For example. on Sybase you might create a new database on your server called ªMoviesº and login with the user ªsaº. On Oracle you might create a new user with the name ªMoviesº. Once you have set up these accounts, you're ready to install the examples.

Copying the Example Directory

To configure and build the examples you need to copy the example directory to a writable area in your file system. You can do this by copying the /NextDeveloper/Examples/EnterpriseObjects folder into your home directory (or any other directory writable by you).

Configuring the Example Models

The model files used by the examples must be configured to use your adaptor and server. To configure the examples, run the configure_examples program in your copy of the examples directory. It will ask you for the name of the adaptor you wish to use (Informix, Oracle, Sybase, and so on) and for the login information for your database. It will then convert the example models for your server.

Populating the Databases

Now that the examples are configured, you can fill your example databases with sample data. The install_database tool in the DatabaseSetUp directory will connect to your databases, add the example tables, and fill them with data. If you later wish to remove the data, simple run the drop_database tool.

Building the Example Programs

With your example projects installed and your database filled with data, you are ready to build and run the examples. To do this, in a command shell cd to your example directory and type make all. This performs a make install on BusinessLogic.framework and EOExtensions.framework to put them in /LocalDeveloper/Frameworks, where they are shared by many of the other examples. It then makes all of the examples applications.

Note: The /LocalDeveloper/Frameworks directory must be created and writable by you in order to build the examples. On Mach this can be accomplished by using su to become the superuser and then executing the following commands:

mkdirs /LocalDeveloper/Frameworks

chmod a+w /LocalDeveloper/Frameworks

Project Builder Software Configuration Management Extensions

Overview

Project Builder can now be extended to support interaction with third-party Software Configuration Management (SCM) systems. This is done by loading ªSCM Adaptor Bundlesº into Project Builder; these bundles plug into Project Builder's public SCM programmatic interface. OPENSTEP 4.2 on Windows includes a bundle that allows you to interact with INTERSOLV's PVCS Version Manager product. On both Mach and Windows, an unsupported bundle supports the GNU Concurrent Version System (CVS). Both integrations make use of the same GUI extensions to Project Builder, but invoke different sets of SCM operations that are specific to the SCM system under which the current project lives.

INTERSOLV Polytron Version Control System (PVCS)

The PVCS_Support bundle requires that PVCS Version Manager be installed on each machine that uses it. This integration has been tested on the current version on PVCS, which is 5.2.20. It will also work with Intersolv's upcoming release of PVCS Version Manager 5.3 (it's also possible that later versions of PVCS will work using this integration bundle). PVCS can be obtained directly from Intersolv:

1700 NW 167th Place

Beaverton, OR 97006

1-800-547-4000 (General Phone)

1-800-443-1601 (Tech Support Phone)

1-503-645-6260 (Tech Support Fax)

pvcs_answerline@intersolv.com

http://www.intersolv.com

Other SCM Products

The CVS_Support bundle requires the public-domain CVS package that can be found at many popular ftp sites on the Internet. While it has proven useful in some organizations, it is not a supported configuration management product and it does have its limitations.

Support is planned for other popular SCM products that are accessible from Mach or Windows. Please contact NeXT Product Marketing regarding future plans and schedules of SCM integrations with Project Builder.

Using an SCM Adaptor Bundle

Before using an SCM Adaptor Bundle from Project Builder, you must configure Project Builder to load the bundle at startup and you must set up the defaults database to specify your integration preferences.

Configuring Project Builder

To configure Project Builder to load an SCM bundle at startup, launch Project Builder and select Preferences from the main menu. In the Bundles pane of the Preferences panel, click Add; this brings up a file browser that allows you to select the location of the bundle. Select the PVCS or CVS bundle, as appropriate, from $(NEXT_ROOT)/NextDeveloper/PBBundles. Then, re-launch Project Builder<this causes the bundle to load and take effect.

Setup Defaults

You'll need to set some defaults in order to configure Project Builder to work with SCM. You may either use the SCM Preferences panel to set these defaults, or you may open a terminal and enter the defaults manually. If using a shell (such as the Bourne shell; defaults cannot be set from an MS-DOS prompt), enter the following commands to set the SCM defaults (replace any information in italics with your local information):

...If you're using PVCS:

defaults write ProjectBuilder PVCSDefaults '{path="PVCS_Executable_Path"; userName=unknown;}'

The following default should either be YES or NO, depending on whether or not you want to lock files automatically when you start to edit them in Project Builder.

defaults write ProjectBuilder lockOnEdit YES_or_NO

...If you're using CVS:

defaults write ProjectBuilder CVSDefaults '{path="CVS_Executable_Path";}'

Supported Operations

The SCM bundles support the following operations on files under SCM control:

- Create a new Work Directory from an existing Repository
- Add/Remove Files
- Lock/Unlock Files (PVCS only)
- Update Files
- Merge Files
- Tag Files
- Display History or Show Changes for Files

Some operations, such as creating a new repository or importing a project into it for the first time, must be performed using tools provided by the underlying SCM system.

PVCS User's Guide

Once you've configured Project Builder and the defaults database for use, you're ready to take your SCM system for a test drive. You may find the following guide helpful in getting started with Project Builder and PVCS:

OPENSTEP 4.2

PVCS Adaptor Bundle User's Guide

Overview

This document describes the usage of the Project Builder PVCS integration provided by the PVCS_Support bundle. It is assumed that you have access to the PVCS Version Manager product and its documentation.

Topics Covered

This tutorial covers the following topics:

- Layout of the "SCM" User Interface
- SCM Operations
- Creating a new Work Directory from an existing Repository
- Adding files to the Work Area
- Locking Files
- Checking in Changes
- Tagging Files
- Updating a Work Area
- Miscellaneous Operations

Before you begin...

Before following this tutorial, you must:

- Install INTERSOLV PVCS
- Configure the PVCS_Support bundle in PB and the defaults database
- Create a PVCS Repository

Note: When creating a repository with PVCS, using the "Project Assistant" is recommended. When prompted to add directories to the repository, make sure you "Add with Subdirs..." in order to incorporate all of the subdirectories in your project.

User Interface Layout

The SCM user interface consists of menu items, a main panel, and auxiliary panels. This section briefly describes the layout and functionality of

these widgets.

SCM Menu Items

Most of the SCM operations may be performed via the SCM menu items. The menu items are located under the "SCM" submenus of ProjectBuilder's "Project" and "File" main menus.

Project-->SCM

Show Panel

Displays the SCM Panel.

Show Console

Displays the SCM Console.

Create Work Directory

Displays the Create Work Directory panel.

Merge Files

Puts all project files into the SCM Panel and selects SCM's Merge operation in the panel.

Stamp Files

Puts all project files into the SCM Panel and selects SCM's Stamp operation in the panel.

Check In Files

Puts all project files into the SCM Panel and selects SCM's Check-In operation in the panel.

File-->SCM

Show Panel

Displays the SCM Panel.

Check In Files

Puts files selected in ProjectBuilder into SCM Panel and selects SCM's Check-In operation in the panel.

Lock Files

Puts files selected in ProjectBuilder into SCM Panel and selects SCM's Lock operation in the panel.

Unlock Files

Puts files selected in ProjectBuilder into SCM Panel and selects SCM's Unlock operation in the panel.

Stamp Files

Puts files selected in ProjectBuilder into SCM Panel and selects SCM's Stamp operation in the panel.

Show Changes

Diff's the files selected in ProjectBuilder with their corresponding repository head versions.

SCM Panel

Most of the SCM operations may also be performed via the SCM panel. To display the SCM panel if it's not already visible, click the Project-->SCM-->Show Panel menu item. The panel consists of five UI elements:

- Table View

- Update Status Button

- File Status Filter

- Miscellaneous Operation Buttons

- Core Operations Popup Button

Table View

The SCM table view contains rows representing a single file in the PB.project. The table view shows the files associated with the project in a flattened way, whereas ProjectBuilder arranges the files hierarchically in it's main project window. The first column of the table view shows the status of the files relative to the head of the repository. Since multiple users may be making changes to the repository, the status is never guaranteed to be totally up to date, although the statuses are sync'd with the head of the repository right when the project loads into ProjectBuilder. The second column in the table view displays the path of the file relative to the main project directory.

Update Status Button

Located in the upper right corner of the SCM panel is the "Update Status" button. The user may periodically click the "Update Status" button to update the local file statuses relative to a snapshot of the repository head at the time the update button is clicked.

File Status Filter

To the right of the table view, and below the "Update Status" button, is a file status filter popup button. The filter button indicates that only files with the given status will appear in the table view. For instance, to show only those files that are locally modified, select "Modified" in the filter popup button and the table view should change it's display to show only the files whose statuses equal "Modified". To show all files in the project, switch the filter popup button back to "All Files". Note that changing the filter does not run the status command, it just shows the currently known statuses.

Miscellaneous Operations Buttons

Below the filter setting you'll find miscellaneous operations buttons (Show Changes and Display History). See the Miscellaneous Operations section later in this document for information on these functions.

Core Operations Popup Button

Below the miscellaneous buttons you'll find the operation popup button. In order to perform an SCM operation you first need to select the files in the table view which you wish to operate on. Once you've selected the proper files, choose the operation you wish to perform in the operation popup and then click the "Execute" button. The operation will be performed and the output of the command will be written to the SCM console (display the console by clicking the Project-->SCM-->Show Console menu item). If there is a fatal error during the execution of the command the user will be notifiy via an alert panel. The user may also be prompted to enter additional information before the command is executed (like a check-in log message, for instance). See the sections later in this document relating to the SCM operations for more information.

SCM Auxiliary Panels

In addition to alert panels displaying important SCM errors, there exist a few auxiliary panels:

- SCM console

- Log Entry Panels

SCM Console

The SCM console, which displays pertinent repository log messages, may be made visible by clicking the Project-->SCM-->Show Console menu item. The console is read-only, but it may be cleared periodically by clicking the "Clear" button located at the lower right of the panel.

Log Entry Panels

The "Check-In" and "Stamp" log entry panels appear automatically when the respective "Check-in" or "Stamp" operations are performed. These panels prompt the user to enter a repository log message for each of these operations. See the Checking in Changes and Stamping Files sections later in this document for further information.

SCM Operations

The following sections describe SCM functionality for the following operations:

- Creating a New Work Directory
- Adding/Removing Files in the Work Area
- Locking/Unlocking Files
- Checking In Changes
- Stamping Files
- Merging the Work Area
- Miscellaneous Operations

Creating a New Work Directory

Follow these steps to create a new work directory:

- Display Create Work Directory Panel
- Set Work Directory and Repository Location
- Create and Open New Project

Display Create Work Directory Panel

Once you've created (and/or located) the source code repository, select Project-->SCM-->"Create Work Directory" from the ProjectBuilder main menu to create a new work area. This will bring up a panel that prompts you for the repository location and the local work directory location (the directory into which your local work area will be created).

Set Work Directory and Repository Location

You may click the "Set..." buttons next to the text fields on the panel in order to bring up a file browser will will allow you to graphically select the directories. You may also take advantage of path completion in the fields by typing a partial path and pressing your user defined path completion key (default is F2 on OpenStep/Windows).

Create and Open New Project

Once the directory information is complete, click "Create" to create and open the project. During the creation process, a local copy of the repository will be checked out into your local work directory, and the corresponding PB.project will be opened in ProjectBuilder. Once your local work directory is created you should never need to create it again. Simply opening an existing PB.project that was previously created with SCM should activate the SCM system for that project. An existing PB.project may be opened by either double-clicking on the PB.project file in the Windows file viewer, or by opening the project inside of ProjectBuilder via the Project-->Open... main menu item.

Adding/Removing Files in the Work Area

Whenever you add or remove files from the project using ProjectBuilder's add/remove files functionality, the SCM system is automatically notified

about the changes and acts accordingly.

Add Files

If you've added a file, SCM will add that file to the list it maintains for the repository and mark that file's status as "Added". You must select the file and "commit" the operation to write that file to the repository. If the operation is successful the file's status is set to "Up-To-Date".

Remove Files

When removing a file from the project, SCM immediately removes that file from the list it maintains and there is no need to commit the operation to the repository. Under PVCS files are never actually removed from the repository (they'll only be removed from the PB.project).

Locking/Unlocking Files

Lock Files

The PVCS source code repository system requires that users lock files in the repository that they are currently working on to prevent others from making changes to the files simultaneously. If you have your defaults set up correctly, the SCM bundle will lock files in PVCS automatically when you begin editing them in ProjectBuilder (see the section on setting up ProjectBuilder in the SCMReleaseNotes.rtf). In order to lock files manually, select the desired files in the table view, select "Lock" in the operation popup, and click the "Execute" button. This will lock the selected files and prevent others from modifying them in the repository. Note that if you attempt to lock a file that has a newer version in the repository, the lock will fail and the file status will be set to "Needs Update". See the section on Merging a Work Area later in this document if that situation occurs.

Unlock Files

You can unlock files in two different ways:

1. Select the files and then "Unlock" them using the SCM panel operation.

2. Check-In the desired locked files - if the check-in is successful the files will automatically be unlocked.

Checking in Changes

Follow this process to check in changes:

- Identify and Verify Modified Files

- Execute Check-In Operation

Identify and Verify Modified Files

If you have locally modified files (status equals "Modified") you may elect to check your changes into the repository. The file status must also indicate that the file is "Locked" (status should read "Locked and Modified") since PVCS requires files to be locked before check-in. If the file isn't locked (status just says "Modified"), select the unlocked/modified files in the table view and then choose "Lock" in the operation popup. Click the "Execute" button to lock the files. Once the files are locked you will be able to proceed with the check-in only if you have the latest version of the files checked out. If you don't, the file status will read "Needs Update". Select the files needing update in the SCM table view and execute the "Merge" operation to update the files (see the section Merge Work Area later in this document). Once this checklist is complete you should be able to check in the files.

Execute Check-In Operation

Select the modified/locked files in the SCM table view, select "Check In" in the operation popup, and click the "Execute" button. A log panel will open prompting you to enter a log message describing the changes you are about to check in. After you've entered your message click 'OK' and the check-in will occur. If you click 'Cancel' the check-in will be aborted.

Stamping Files

You may elect to stamp a set of files in order to distinguish the current versions in some special way. For instance, you might stamp the files in your project with "Release01" to indicate that the current repository versions correspond to "Release01" of your software. In order to stamp your files select the desired files in the table view, choose "Stamp" in the operation popup, and click the "Execute" button. A panel will appear prompting you to enter a string which will be used to identify the stamp. Enter something in the text field and click 'OK' to proceed. If you click 'Cancel' the operation will be aborted.

Merge a Work Area

You may elect to merge the contents of the repository head into your local files. The need to do this would arise if someone else checked-in changes to the repository which you haven't incorporated yet. If your file statuses have been updated recently enough, files that are in an intermediate state which requires updating will have their files statuses set to "Needs Update". To update your local files select the desired files in the table view, select Merge in the operation popup, and then click the "Execute" button. Ideally, the SCM system will be able to perform the merge without conflicts. However, if you revert the merged file to saved and find that the merge resulted in conflicts, you'll need to fix the conflicts before you attempt to check in your changes.

Miscellaneous Operations

Show Changes

The "Show Changes" button on the SCM panel will launch FileMerge and diff the files selected in the SCM table view relative to the corresponding repository head versions of those files.

Display History

The "Display History" button will display the repository history information (in the SCM console) on the selected files in the SCM table view. In order to view the history the SCM console must be visible. To make the console visible, click the Project-->SCM-->Show Console menu item.

CVS Note

With the CVS Adaptor, you must have the CVSROOT environment variable set for Project Builder to inherit. The repository path you specify when creating a new CVS work area (which is currently necessary to use the integration) must be relative to the CVSROOT path<it cannot be absolute.

Known Bugs and Limitations in the SCM Integrations

Reference: 1463

Issue: File and Project RENAME not supported

Description: Renaming files or projects under SCM control is not supported. Attempting to do so will result in a confused SCM state.

Reference: 1647

Issue: Checking in files sometimes makes them write protected

Description: Occasionally the user may be prompted to overwrite a read-only file or revert a file to saved. These alerts occur mainly because the revision control system is writing to the files without Project Builder's knowledge. In general it is acceptable to revert or overwrite the files and continue working. This issue will be fixed in the next release.

Bugs Specific to PVCS Integration

Currently, there are no known bugs specific to the integration with PVCS.

Bugs Specific to CVS Integration

Reference: 1482

Issue: Updating a file that has been added (but not committed) changes status to up-to-date

Description: If a file is added to a project and then updated before it is checked in, the file status is incorrectly changed to "Up-To-Date" instead of remaining "Added".

Workaround: Check-in added files before you perform any other SCM operations on them.

Reference: 1606

Issue: If there is a lock on the repository SCM will hang forever

Description: If there is a lock on the CVS repository, the SCM adaptor (and hence Project Builder) will hang indefinitely.

Workaround: Manually remove the lock from the CVS repository and restart Project Builder if necessary._

Supplemental User Notes

Most information useful for users is located in the printed user release notes. Additional notes that are relevant to both end-users and developers are listed here.

Sound.app Can Crash Workspace Manager

Sound.app has a bug that can cause Workspace Manager to crash. If Sound.app is the default application for a sound file, and you double-click that file, Sound.app will start<with an apparently blank sound (the title bar will show ªUntitledº). If you then drag the icon for the sound file from Sound.app's file well over the file viewer, Workspace Manager will report an error and you'll be automatically logged out.

TextEdit

TextEdit is a new application based on the new text system. In addition to the standard text editing features in the 3.3 Edit application, it provides:

· "Wrap to Page" mode. This mode causes the document to be wrapped to the current page size (as opposed to the window size), and thus shows you a simple WYSIWYG representation of your pages. This mode also allows zooming.

· Support for new text object features such as hyphenation, kerning, ligatures, and baseline offsets.

· Ability to read/write plain text files in different 8-bit character encodings and Unicode. Coupled with the Kanji support in the new text object, you can read/write/edit Kanji files created by 3.3J or 4.1J. (You will need Kanji fonts and input manager.)

The alternate encoding to apply to a file is specified by a popup in the Open or Save panels. The default item, "Default," tells TextEdit to use either the default 8-bit encoding of the system or Unicode. Other choices let you select different encodings. You can also set the default setting of this popup via the Preferences panel.

Sources to TextEdit are available with the developer software, in /NextDeveloper/Examples/AppKit/TextEdit.

Known Issues in This Release

Reference: None

Issue: Encoding popup in Open/Save panels not available under NT3.51

Description: Because accessory views aren't supported under NT3.51, there is no encoding popup in the Open/Save panels.

Workaround: You can use the popup in the Preferences panel to set the default choice for the popup, which will then be used when files are opened or saved.

In addition, please refer to the Application Kit release notes for the new text system bugs.

Published Date: Feb 20, 2012

IBM ThinkPad 760ED OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: IBM ThinkPad 760ED Display
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/ThinkPad760ED.pkg.compressed

Driver Name / Installer .pkg: IBMThinkPad760EDDisplayDriver
Driver Type: Display
Driver Scope: Specific Product
Supported Components: Trident Cyber9382, Trident Cyber9385
PC Bus / Interface Supported by Driver*: Integrated

General Overview notes: This device driver supports the built in LCD for IBM Thinkpad 760E, 760ED and 560 systems. The external monitor is also supported in all modes.

Supported Products / Systems (ie integrated into PC System):
IBM ThinkPad 760E
IBM ThinkPad 760ED
IBM ThinkPad 560

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 1MB DRAM, 2MB DRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

16 Bit Color Modes*:
1024x768 (2MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1280x1024 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

Driver Version Notes

4.01 - Initial version of this driver
4.02 - Supports switching of display devices through "Fn-F7"
- Added support for 1280x1024 modes
- 70Hz modes replaced by 75Hz modes

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 20, 2012

EOF 2.1 Release Notes

This document contains the most up-to-date release notes for release 2.1 of Enterprise Objects Framework.
This article has been archived and is no longer updated by Apple.
The MachOS version of this release is 3-way fat; it can be used to develop software for NeXT, Intel, and SPARC. The OpenStep for Windows version of this release can be used to develop software for Intel machines running Windows NT. The PDO version of this release can be used to develop software for Solaris and HPUX.

These release notes are organized into the following sections:

· Information About Other Releases
· Notes specific to Windows NT Developers
· Database Client Libraries
· New Features in Release 2.1
· Installing the Examples
· Enterprise Objects Framework User Defaults
· Locating the Documentation for this Release
· Known Issues in Release 2.1

Note: Because release 2.1 of Enterprise Objects Framework is based on the same architecture as release 2.0, many of the subjects in this document are relevant to both releases. Consequently, the term "release 2.x" is used where a discussion applies equally to releases 2.0 and 2.1.

Information About Other Releases

This document describes the features introduced, the bugs fixed, and the known issues in Enterprise Objects Framework release 2.1.

For a description of the features introduced in Enterprise Objects Framework release 2.0, see the 2.0 release notes. They contain a lot of information that's still relevant for 2.1, including information about converting release 1.x applications to 2.0 and a list of features shared with Enterprise Objects Framework release 1.2.

For a description of how Enterprise Objects Framework 2.0 and 2.1 differ from the preceding releases, see the document *Differences Between Enterprise Objects Framework 1x and 2.0* in **/NextLibrary/Documentation/NextDev/EnterpriseObjects/1x_To_2**.

Notes Specific to Windows NT Developers

References to filenames in this document use UNIX format. On Windows NT, you can interpret these by reading backslashes for the slashes and adding the installation directory (**c:\\NeXT** by default) to the beginning. For example, **/NextLibrary/Documentation** on Windows NT is **c:\\NeXT\\NextLibrary\\Documentation**.

To use Enterprise Objects Framework on Windows NT, you must have the appropriate database client libraries. The Sybase client libraries are provided on the OpenStep Enterprise 4.2 CD as an optional package. To install the Sybase client libraries, you must do a custom installation and explicitly specify that you want to install the package. To use Enterprise Objects Framework with Oracle or Informix, you must purchase the appropriate client libraries from your database vendor.

Here's what you need:

Oracle

Phone: (800) 542-1170
Ask for: SQLNET v2.2 for PC/Windows NT

The Oracle adaptor on NT requires the Oracle 7.3 or 7.2 Client Library. It won't work with the 7.1 libraries.

Informix

Phone: (800) 331-1763
Ask for: ESQL/C version 7.2 for Win32

Notes Specific to PDO Developers

To use Enterprise Objects Framework on PDO, you must have the appropriate database client libraries.

Here's what you need:

Oracle

Phone: (800) 542-1170
Ask for: 7.3.2 SQLNet V2 TCP/IP Client libraries

Informix

Phone: (800) 331-1763
Ask for: ESQL/C Version 7.20.UC2

Sybase

Phone: (800) 685-8225
Ask for: OpenClient/C Version 10.0.4

On PDO applications must explicitly link against the adaptor framework and the client libraries. For an example of how to do this, see the makefiles in the example "SimpleFetch" in **NextDeveloper/Examples/EnterpriseObjects**.

Database Client Libraries

This section includes some tips on using database client libraries with Enterprise Objects Frameworks. It is organized by database vendor.

Oracle

On Windows NT, using the latest release of the client library (7.3) requires you to use SQL*Net v2, which requires a **tnsnames.ora** file. **tnsnames.ora** is a file that you put on client machines, generally in the directory **Orant/Network/Admin**. The file contains information needed to connect to a server over the network. Entries in **tnsnames.ora** are keyed off of a server ID alias, and they include information such as the server ID, the host machine name, and the network protocol used by the client library to resolve the server ID alias. An entry in **tnsnames.ora** might resemble the following:

myServerAlias = (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)
(HOST=myMachine) (PORT=1521))(CONNECT_DATA=(SID=eof)))

Oracle provides tools you can use to create **tnsnames.ora** files. Refer to your Oracle documentation for more information on **tnsnames.ora** files and the tools you can use to create them.

If you're using the 7.2 version of the Oracle client libraries on Windows NT or if you're using Mach clients (the Oracle client included in the Mach release is 7.2), you can use either SQL*Net v1 or SQL*Net v2. To use SQL*Net v1, you should set your adaptor's connectionDictionary **serverId** entry to "T:<host-machine>:<server-name>".

To use SQL*Net V2 on Mach clients, you should create a **tnsnames.ora** file and put it in the **/etc** directory.

Informix

If you get the error "INFORMIXSERVER not in sqlhosts file (25596)" but can connect to your database server using the Informix ilogin program, you may need to run SetNet32 to update the environment variables used by Informix.

The Informix client libraries appear to have redundant sources of server information. They use the **sqlhosts** file (**$INFORMIXDIR/etc/sqlhosts**) as well as a collection of environment variables managed by the Setnet32 program.

See your Informix documentation for more information on the sqlhosts file and the Setnet32 program.

New Features for 2.1

Integration with Project Builder and Interface Builder

· There is a new Enterprise Objects Framework Wizard that automates the creation of simple Enterprise Objects Framework applications. When you create an application in Project Builder, you have the option of either creating an empty Enterprise Objects Framework application or using the wizard to automate the creation of the user interface.

· Interface Builder now has a "New Database Interface" command that invokes the Wizard to add a new interface to an existing project.

· You can display totals, averages, and other aggregate computations without writing any code. Interface Builder now allows you to form connections using special keys. For example, you can associate the maximum salary to a text field using the key **@max.salary**.

· You can create "query by example" user interfaces without writing any code. Using Interface Builder, you can connect user interface control objects to special keys such as **@query=.departmentName** or **@query>.budget**, and Enterprise Objects Framework constructs and applies qualifiers for them.

· In Interface Builder, you can specify a qualifier for an EODisplayGroup's EODatabaseDataSource using the Data Source Inspector.

· Interface Builder allows you to set a fetch limit for an EODisplayGroup's EODatabaseDataSource.

· You no longer have to manually add key paths to an EODisplayGroup in Interface Builder. Instead, you can use the Interface Builder's Inspector to traverse relationships and connect to the desired property.

· When you connect a user interface control to an EODisplayGroup in Interface Builder, a formatter based on the data type of the associated property is automatically added to the control.

· There is a new EOComboBoxAssociation.

· There is a new EOArrayDataSource class.

EOModeler

· EOModeler has a new "Explorer" outline interface that makes navigating the model easier.

· EOModeler provides an Inspector for editing the connection dictionary.

· EOModeler has a new Diagram View that helps you visualize relationships between entities.
· EOModeler supports cutting and pasting and model objects both within and between models. You can also drag and drop model objects within and between models.

· EOModeler supports quicker creation of EOModels by reading only the tables you specify.

Adaptors

· The Oracle and Informix adaptors link with the newest client libraries.

· The new Oracle login panel is designed to work more naturally with SQL*Netv2.

Framework

· The Framework supports whole-table caching for read-only entities, thereby avoiding redundant fetches of reference

data.

· Exceptions raised by the framework now contain more information. For example, validation exceptions include the object and property that failed validation, and update exceptions indicate the object and database operation that were involved in the failure.

Examples

· The Enterprise Objects Framework examples have been updated.

Installing the Examples

This release provides on-line examples to help familiarize you with Enterprise Objects Framework 2.x. These examples are located in **/NextDeveloper/Examples/EnterpriseObjects**. Installing the examples involves these steps:

· Setting up users and databases on your database server for the example databases.
· Installing the example directory.
· Populating your database server with example data.

Setting up Database Accounts

The Enterprise Objects Framework 2.x examples use two sets of tables: Movies and Rentals. Some examples use just one of the these databases, while others use both. The multi-database support in Enterprise Objects Framework 2.x makes it possible for you to install these databases in three different configurations:

· Both sets of tables together in a single user/database.
· Each set of tables in its own user/database on the same database server.
· Each set of tables on its own database server (for example, Movies on Informix, Rentals on Oracle).

Depending on your desired setup, you use the tools available with your database server to set up one or two new user/databases. For example. on Sybase you might create a new database on your server called ªMoviesº and login with the user ªsaº. On Oracle you might create a new user with the name ªMoviesº. Once you have set up these accounts, you're ready to install the examples.

Copying the Example Directory

To configure and build the examples you need to copy the example directory to a writable area in your file system. You can do this by copying the **/NextDeveloper/Examples/EnterpriseObjects** folder into your home directory (or any other directory writable by you).

Configuring the Example Models

The model files used by the examples must be configured to use your adaptor and server. To configure the examples, run the **configure_examples** program in your copy of the examples directory. It will ask you for the name of the adaptor you wish to use (Informix, Oracle, Sybase, and so on) and for the login information for your database. It will then convert the example models for your server.

Populating the Databases

Now that the examples are configured, you can fill your example databases with sample data. The **install_database** tool in the **DatabaseSetUp** directory will connect to your databases, add the example tables, and fill them with data. If you later wish to remove the data, simple run the **drop_database** tool.

Building the Example Programs

With your example projects installed and your database filled with data, you are ready to build and run the examples. To do this, in a command shell **cd** to your example directory and type **make all**. This performs a **make install** on **BusinessLogic.framework** and **EOExtensions.framework** to put them in **/LocalDeveloper/Frameworks**, where they are shared by many of the other examples. It then makes all of the examples applications.

Note: The **/LocalDeveloper/Frameworks** directory must be created and writable by you in order to build the examples. On Mach this can be accomplished by using **su** to become the superuser and then executing the following commands:

mkdirs /LocalDeveloper/Frameworks
chmod a+w /LocalDeveloper/Frameworks

Enterprise Objects Framework Defaults

This section lists the user defaults for which Enterprise Objects Framework checks and changes its behavior.

Defaults in the NSGlobalDomain

To change these defaults, issue a command such as the following from a shell:

defaults write NSGlobalDomain EOAdaptorUseBindVariables NO

EOFDebugEditingContext
Default is NO.
EOControl Layer will log every time an object is changed.

EOFDebugUndo
Default is NO.
Logs each time something is pushed on or popped off an undo list.
Also logs in [_EOUndoStack dealloc].

EOAdaptorDebugEnabled
Default is NO.
Logs for connection attempts, all transaction activity (begin, rollback, commit), and SQL statements (select, update, etc.).

EOProjectSourceSearchPath
An optional array of paths in which EOAccess searches for framework project directories that contain models.

EOAdaptorUseBindVariables
Default is YES.
Controls whether or not the SQL generation process will use bind variables (for Oracle and Informix).

EOOracleTableNamesSQL
SQL statement used to identify tables for the model reverse-engineering process.
Default is:

SELECT TABLE_NAME FROM USER_TABLES ORDER BY TABLE_NAME")

If you would like the model reverse-engineering to look at a different set of the tables, you can provide your own SQL statement, for example:

SELECT TABLE_NAME FROM USER_TABLES ORDER BY TABLE_NAME
WHERE TABLE_NAME not in ('MY_USELESS', 'FOO')

EOOracleUseNoWaitLocks
Default is NO.
Controls whether Oracle uses NOWAIT locks.

EOSybaseInterfacesFile
Default is unset.
If the default is set, the SybaseAdaptor initializes the client library to run with this interface the specified interfaces file.
This default is not applicable on Windows NT.

EOSybaseTableNamesSQL
This default can be used to change the default SQL used to determine the tables that are analyzed in creating a new model.
Default is

select name from sysobjects where type = 'U' or type = 'V'

EOSybaseAttributeSQL
SQL statement used to get the attribute information for a given table.
Default is

select a.name attr_name, b.type attr_type, b.name type_name, b.allownulls allownulls, c.type primary_key, a.length width, a.prec prec, a.scale scale from syscolumns a, systypes b, syskeys c where a.id = object_id('%@') and a.id *= c.id and (a.colid *= c.key1 or a.colid *= c.key2 or a.colid *= c.key3 or a.colid *= c.key4) and (c.type = 1 or c.type is null) and a.usertype = b.usertype and datalength(a.name) > 0 order by a.name

EOSybaseRelationshipSQL
Default is

select a.keycnt, b.name tname, c.name cname, d.name dtname, e.name dcname from syskeys a, sysobjects b, syscolumns c, sysobjects d, syscolumns e where (b.type = 'U' or b.type = 'V') and a.depid is not null and a.depid > 0 and b.id = a.id and b.id = c.id and ((c.colid = a.key1 and e.colid = a.depkey1) or (c.colid = a.key2 and e.colid = a.depkey2) or (c.colid = a.key3 and e.colid = a.depkey3) or (c.colid = a.key4 and e.colid = a.depkey4)) and d.id = a.depid and d.id = e.id order by b.name, d.name

EOSybaseStoreProcedureSQL
Default is

select name, id from sysobjects where type = 'P'

EOSybaseStoredProcedureDetailsSQL
Default is

sp_sproc_columns %@

InformixINFORMIXSERVER
No default value.
The name of the Informix server.

InformixInformixTableNamesSQL
This default can be used to change the default SQL used to determine the tables that will be analyzed in creating a new model.
Default is

select tabname, owner, tabid from informix.systables where (tabid > 99) and (tabname <> 'ANSI') order by tabname

Defaults in the EOModeler Domain

To change these defaults, issue a command such as the following from a shell:

defaults write EOModeler DisableInheritenceCheck YES

BundlesToLoad
If you write extensions to EOModeler, you can get EOModeler to load them by setting this default. This default is an array, so remember to include parentheses when you set it. For example:

defaults write EOModeler BundlesToLoad "(/LocalDeveloper/ModelerBundles/MyModelerBundle.bundle, $HOME/eoexamples/ModelerBundle/ModelerBundle.bundle) "

RECORD_FETCH_LIMIT
Default is 100.
For the Data Browser in EOModeler. This controls how many rows to fetch before asking users if they want to fetch all, fetch another n rows, or just stop now.

Consistency Checks
All of the following defaults have the default NO:
DisableConsistencyCheckOnSave

DisableExternalNameCheck
DisableInheritenceCheck
DisablePrimaryKeyCheck
DisableRelationshipCheck
DisableStoredProcedureCheck

SkipBeautifyNamesOnModelCreation
Default is NO.
Setting this default to YES will cause EOModeler to leave the entity names and attribute names matching the exact names of their corresponding database objects (including the case).

DisableAdvancedOptions
Default is NO.
If set to YES, the EOModeler runs in "Simplified mode". The advanced inspectors don't appear, the choices of table view columns is limited, and so on.

Locating the Documentation for this Release

The documentation for this release is provided in PDF and Windows Help formats. On Windows NT, you can view documentation by choosing OPENSTEP Books On-Line from the OPENSTEP Enterprise program group. You can also find the documentation in the following on-line locations:

· The *Differences Between Enterprise Objects Framework 1x and 2.0* document describes how the product has changed between the 1x and 2.0 releases. See **/NextLibrary/Documentation/NextDev/EnterpriseObjects/1x_To_2**.

· *Using Enterprise Objects Framework with OPENSTEP* provides a tutorial and information on creating an Enterprise Objects Framework application on OpenStep. In addition to the hard copy book, a version of the book is provided on-line in PDF format. See **/NextLibrary/Documentation/NextDev/EnterpriseObjects/UsingEOFwithOS**.

· The *Enterprise Objects Framework Developer's Guide* provides a conceptual overview of the product. In addition to the hard copy book, a version of the book is provided on-line in PDF format. See **/NextLibrary/Documentation/NextDev/EnterpriseObjects/Guide**.

· The *Enterprise Objects Framework Reference* includes class specifications for the Enterprise Objects Framework classes. Reference documentation is located in **/NextLibrary/Frameworks** in one of these locations:

/EOAccess.framework/Resources/English.lproj/Documentation/Reference
/EOInterface.framework/Resources/English.lproj/Documentation/Reference
/EOControl.framework/Resources/English.lproj/Documentation/Reference
/InformixEOAdaptor.framework/Resources/English.lproj/Documentation/Reference
/ODBCEOAdaptor.framework/Resources/English.lproj/Documentation/Reference
/OracleEOAdaptor.framework/Resources/English.lproj/Documentation/Reference
/SybaseEOAdaptor.framework/Resources/English.lproj/Documentation/Reference

If You Need a PDF Reader...

PDF readers for various platforms can be found on the OPENSTEP Enterprise CD-ROM in the /3RD_PRTY directory. Or, you can download one from one of the following web locations:

· For Windows or Solaris: **http://www.adobe.com/acrobat/**
· For NEXTSTEP: **http://www.BITart.com/PDFView/**

Note: If you're using the Acrobat Reader to view PDF files on Windows NT, some text may initially appear as gray lines. If this happens, you can fix it by choosing File -> Preferences -> General. In the General Preferences panel, uncheck the Greek Text option.

Other Documentation

Depending upon your application, the *OpenStep Conversion Guide* may also provide useful information to you. It

discusses how to use the automated conversion process to convert applications to OpenStep. See **/NextLibrary/Documentation/NextDev/Conversion/ConversionGuide**.

Known Issues in Release 2.1

This section describes known issues with release 2.1 of Enterprise Objects Framework. It is organized into the following sections:

· Access Layer
· Control Layer
· Interface Layer
· Miscellaneous Framework
· Informix Adaptor
· Oracle Adaptor
· Sybase Adaptor
· EOModeler
· On-line Examples
· Documentation

Access Layer

These issues exist in the access layer of this Enterprise Objects Framework release:

Reference: 77935

Issue: EOModelGroup's **setDelegate** method doesn't work correctly.

Description: **setDelegate** builds a lookup list to determine which methods the delegate implements. Unfortunately in the case of **subEntityForEntity:primaryKey:isFinal:** it checks the selector **subEntityForEntity:primaryKey:**.

Workaround: Have the delegate implement a dummy method **subEntityForEntity:primaryKey:**.

Reference: 77886

Issue: There are severe performance issues when you perform prefetching using hints or batch faulting

Description: The algorithm used for batch faulting and relationship prefetching for to-many relationships is O(n^2).This means that fetching 1000 records takes 100 times longer than fetching one tenth as many, rather than O(1) = 10x.

Workaround: You can use the statement [EODatabaseContext _setUseFastBatchAlgorithm:YES] to enable an alternative algorithm. Due to time constraints, this new algorithm has not been qualified as production quality.

Reference: 77721

Issue: Can't update rows containing string attributes with trailing spaces.

Description: The Enterprise Objects Framework adaptors automatically strip trailing spaces from string values fetched from the database. They also strip spaces on newly inserted strings before sending them to the database. This works fine until you fetch data that a non-Enterprise Objects Framework application inserted that contains trailing spaces. If that attribute is marked as "used for locking," Enterprise Objects Framework will be unable to update the row (because the version in the database is different from the space-stripped version in the snapshot).

Workaround: Do not mark columns that could contain trailing spaces as used for locking. Alternately, strip the spaces from the data in your server.

Reference: 77656

Issue: Firing a snapshot fault after replacing a to-many relationship locks up the application.

Description: if you replace a to-many property fault (with **nil** or with another array) and then invoke **saveChanges**, Enterprise Objects Framework goes into an infinite fault firing loop.

Workaround: Update a to-many relationship using the methods **addObject** and **removeObject**; do not replace it with **nil** or another array.

Reference: 77546

Issue: Inclusion of framework models in defaultModelGroup doesn't happen automatically on PDO.

Description: Applications on PDO that link with framewoks that include models don't automatically get the models put in the applications.

Workaround: Manually construct the the model group yourself at application initialization. For example:

```
EOModelGroup *group = [EOModelGroup new];

// repeat for each model containing framework used by app
NSBundle *bundle = [NSBundle bundleForClass:[SomeClassInFramework class]]
NSEnumerator *enumerator = [[bundle pathsForResourcesOfType:@"eomodeld" inDirectory:nil] objectEnumerator];
NSString *modelPath;
while (modelPath = [enumerator nextObject])
[group addModelWithFile:modelPath];

[EOModelGroup setDefaultGroup:group];
[group release];
```

Reference: 77631

Issue: If you're editing a model (in code or with EOModeler), sometimes an EORelationship will return **nil** from **inverseRelationship**, even though you just added the inverse relationship.

Description: The first time you ask an EORelationship for its inverse relationship, it searches all the relationships in its **destinationEntity** looking for an inverse. It caches the result of this search, and this cache does not always get invalidated when the relationships of the **destinationEntity** change.

Workaround: See the category on EORelationship in the **ModelerBundle/RelationshipExtras.m** example.

Reference: 77354

Issue: Issues saving changes to attributes with mutable custom value objects.

Description: Suppose you have a mutable custom value type, PhoneNumber, that implements methods such as **setAreaCode:** and **setPrefix:** to change an enterprise object's values. If you use such methods to modify an enterprise object's values and save changes, the enterprise object is not saved to the database.

Workaround: To use mutable value classes you must do three things:

1. In the PhoneNumber value class object, implement **isEqual:** to appropriately compare two instances.

2. If the PhoneNumber value is about to be modified, its owning enterprise object must invoke [self willChange] before the modification.

3. In your enterprise object class, you must implement a "set" method that copies rather than retains the object passed to it. For example:

```
- (void)setDayTimePhone:(PhoneNumber *)number {
[dayTimePhone autorelease]
dayTimePhone = [number copy];
}
```

#1 would be required, even in a perfect world. #2 is a requirement of the basic Enterprise Objects Framework architecture. #3 is a bug in Enterprise Objects Framework -- Enterprise Objects Framework should be passing enterprise objects a copy of their values, but instead it's passing the the same instance that's shared in the snapshot.

In general, the simplest workaround is to use **immutable** custom value objects.

Reference: 72619

Issue: EOAdaptorChannel does not inherit EOAdaptor's delegate.

Description: According to the EOAdaptorChannel class specification and header file, the EOAdaptorChannel's delegate should automatically be kept in synch with its adaptor. Indeed, if a new delegate is assigned to an EOAdaptor, the new delegate is propagated to any of that adaptor's existing contexts and channels. However, if you create an EOAdaptor, assign a delegate to it, and then create EOAdaptorContexts and EOAdaptorChannels, the newly-created contexts and channels don't have the delegate assigned to them.

Workaround: Wait until all of the channels and contexts are instantiated before assigning the adaptor's delegate, or reassign the adaptor's delegate each time a new channel or context is created.

Reference: 61475

Issue: Enterprise Objects Framework performs less efficient deep fetches for single-table inheritance mappings than it should.

Description: To perform a deep fetch, Enterprise Objects Framework performs a fetch for each concrete class in an inheritance hierarchy. For a single-table inheritance mapping, Enterprise Objects Framework should perform only one fetch and then sort the results in memory. For example, if Person, Employee, and Customer objects are stored in one table<the PERSON table<the Framework should perform one fetch on the PERSON table to fulfill a deep fetch request of Person, Employee, and Customer objects. Instead, it performs three fetches: one to get Person objects, one to get Employee objects, and another to get Customer objects.

Workaround: Define only one entity for the entire inheritance hierarchy, and use the EOModelGroup delegate methods **subEntityForEntity:primaryKey:isFinal:**, and **entity:classForObjectWithGlobalID:** to create instances of the proper subclasses from database rows.

Reference: 74251

Issue: Changes made during **saveChanges** are silently lost.

Description: If you change an enterprise object while its editing context is in its **saveChanges** method (for example, if you change an enterprise object in an EODatabaseContext delegate method), the changes may be silently lost.

Workaround: Don't make changes to objects during the save process. Instead, make the changes from the EOEditingContext delegate method **editingContextWillSaveChanges:**.

Reference: 74345

Issue: You can't update to-many relationship if the foreign key isn't marked as a class property or as used for locking.

Description: Suppose that an entity's foreign key attribute isn't marked as a class property or as used for locking. If you designate the foreign key attribute as a to-many relationship's destination key, the foreign key value isn't always updated. This occurs because the destination entity doesn't know that the attribute participates in a relationship. Therefore, the destination entity doesn't fetch the foreign key from the database or update it.

Workaround: Mark attributes that are destination keys of a to-many relationship so they are fetched. For example, you could:
· Mark them as class properties.
· Mark them as used for locking.
· Use them in inverse relationships to the problematic to-many's source entity.

Reference: 74379

Issue: EODatabaseContext can't be the direct parentObjectStore of an EOEditingContext.

Description: The EODatabaseContext requires that an EOObjectStoreCoordinator sit between it and any EOEditingContexts that it serves. This is the default configuration set up by the framework, so you shouldn't normally run into this issue. Just a reminder, you can set up an editingContext and be ready to go with this one line:

```
EOEditingContext *editingContext = [EOEditingContext new];
// automatically uses [EOObjectStoreCoordinator defaultCoordinator]
// as parentObjectStore
```

Any necessary EODatabaseContexts are created and registered automatically.

Workaround: Don't assign an EODatabaseContext as the parentObjectStore of an EOEditingContext. There's no benefit to doing so anyway.

Reference: 76526

Issue: Applying a qualifier with key path to top of horizontally mapped inheritance hierarchy generates invalid SQL.

Description: Enterprise Objects Framework's query building mechanism doesn't handle relationships to inheritance hierarchies. For example, suppose that you are are attempting to qualify a fetch through a to-many relationship (**planes**) that points to the top of a horizontally mapped inheritance hierarchy (for the entities Plane, FighterPlane, and TrainerPlane). If you want the query to test against all tables, you'd expect Enterprise Objects Framework to generate SQL similar to the following:

```
SELECT t0.AIRPORT_ID
FROM PLANE t1, FIGHTER t2, TRAINER t3, AIRPORT t0
WHERE
(t1.LENGTH <= 1000 AND t0.AIRPORT_ID = t1.AIRPORT_FK) OR
(t2.LENGTH <= 1000 AND t0.AIRPORT_ID = t1.AIRPORT_FK) OR
(t3.LENGTH <= 1000 AND t0.AIRPORT_ID = t1.AIRPORT_FK)
```

Instead, Enterprise Objects Framework generates the following SQL:

```
SELECT t0.AIRPORT_ID
FROM PLANE t1, AIRPORT t0
WHERE
(t1.LENGTH <= 1000) AND
t0.AIRPORT_ID = t1.AIRPORT_FK
```

In other words, only the table for the root of the hierarchy is queried.

Workaround: You can create a qualifier that generates the correct SQL by:

1. Adding relationships in the source entity to all the tables in the inheritance hierarchy. For example, to the Airport entity, you'd add the relationships **toFighters** and **toTrainers** to the destination entities FighterPlane and TrainerPlane, respectively. Mark the relationships so they aren't class properties.
2. When building your query, explicitly list these extra relationships. In the Planes example, you'd fetch from Airport where "planes.length < 1000 OR toFigtherPlanes.length < 1000 OR toTrainerPlanes.length < 1000"

Alternatively, you might be able to solve this issue more generally by writing a post processor for EOQualifiers that splits up clauses that perform inheritance tests. The post processor could even programmatically generate the additional relationships on demand and register them with the model using names like "plane_Subclass_Fighter".

A generic EOQualifier post processor could be wired into Enterprise Objects Framework so that application writers don't have to know it exists. The right place for such a mechanism is probably in EOKeyValueQualifier's **schemaBasedQualifierWithRootEntity:** method (see EOSQLQualifier.h). You could put the post processor code in a subclass of EOKeyValueQualifier (with an appropriate call to **super** after the transformation, if any, is performed) and have your subclass pose as EOKeyValueQualifier.

Reference: 47832

Issue: Enterprise Objects Framework can't update attributes whose internal types are custom (such as NSImages).

Description: A custom value class must implement **isEqual:** to be used for attributes marked as used for locking.

Workaround: Implement **isEqual:** in the custom value class or don't mark the attribute as used for locking.

Reference: 65078

Issue: Seemingly innocuous qualified fetch always causes exception.

Description: Some qualified fetches raise exceptions because values in the SQL have been formatted as strings when they should have been formatted as some other type. This can happen when you enter an invalid external type or when a Sybase model doesn't contain information about user-defined types that are used in the model.

Workaround: In the case of an invalid external type, simply correct it. In the case of a user defined type, create a new model by reverse engineering the database. The new model's connection dictionary contains information about user-defined types. Copy the connection dictionary from the new model to the original one.

Reference: 69039

Issue: Alert panel displaying adaptor error is never dismissed.

Description: This occurs whenever an adaptor operation that was invoked from an **awakeFromNib:** method displays an alert panel. The issue is that the entire object graph is not yet instantiated when **awakeFromNib:** is invoked.

Workaround: Database operations should be begun from the **applicationDidFinishLaunching:** method rather than the **awakeFromNib:** method. Of course, this means that any methods that indirectly cause database communication should also be invoked from the **applicationDidFinishLaunching:** method.

Reference: 76885

Issue: The set of valid values for the **databaseEncoding** entry of a connection dictionary are not documented, and the set can vary in different locales.

Description: A connection dictionary's **databaseEncoding** entry contains the localized name for the string encoding. The localized names are not documented. Furthermore, the localized names for string encodings can vary with the user's locale. Consequently, the specified encoding for an application might not work for users in different locales.

Workaround: You can find the localized name for string encodings in **/NextLibrary/Frameworks/Foundation.framework/Resources/*language*.lproj/EncodingNames.strings**.

Reference: 59472

Issue: Derived attributes are limited and don't offer full SQL as advertised.

Description: Placing a string or a numeric constant in the definition field of a derived attribute generates invalid SQL. Definitions such as ªtitleº and ª0.0º don't work correctly. However, definitions such as ªatt1 + 5º should work correctly when ªatt1º specifies another attribute.

Workaround: None.

Reference: 70049

Issue: EOModelGroup doesn't raise an exception when more than one entity has the same name.

Description: Although it is illegal to have the same entity name in two different models in a model group, EOModelGroup doesn't check to see if this is the case when adding a model.

Workaround: Manually verify that no two models have entities with the same name or write a method to perform the check.

Reference: 70260

Issue: Some error messages returned by the Framework's default validation methods (such as methods that check that a value doesn't exceed the maximum width specified in its attribute) aren't localized.

Workaround: Implement an exception handler for use with the EOEditingContext, and have the handler replace the error messages with localized strings.

Reference: 76152

Issue: Inserting and deleting objects involved in inverse, to-many relationships can be very slow.

Description: Suppose that a ServiceRequest has a to-one relationship to its CustomerServiceRepresentative, and that the CustomerServiceRepresentative has an inverse to-many relationship to its ServiceRequests. When you assign a request to a representative using **addObject:toBothSidesOfRelationshipWithKey:**, you fire the fault for the **CustomerServiceRepresentative.serviceRequests**. So, if a representative has a large number of requests, assigning a new request to a representative can be very slow. Correspondingly, when you delete a request, Enterprise Objects Framework fires the corresponding representative's **serviceRequests** fault so it can remove the request from the array.

Workaround: Set the inverse, to-many relationship so it isn't a class property. For example, in the above request-representative scenario, you would remove the **serviceRequests** relationship from the class properties of the CustomerServerRepresentative entity.

Control Layer

These issues exist in the control layer of this Enterprise Objects Framework release:

Reference: 77714

Issue: Qualifier for **nil** to-one relationship always returns no matches.

Description: If you want to fetch all employees without a department, you'd expect to be able to use the qualifier:

"toDepartment = nil"

Currently, this will always (incorrectly) return no matches because it's testing the primary key on the other side of the relationship rather than the foreign key on the employee side. This is a bug in the EOQualifier method **schemaBasedQualifierWithRootEntity:** when it translates object references to foreign key references.

Workaround: Query explicitly on the foreign key in the Employee object. For example, "deptID = nil". This works even if deptID is not a class property of Employee. Note, however, that in this case the qualifier only works when run against the database, not for in-memory evaluation.

Reference: 77668

Issue: **EOArrayDataSource.h** isn't imported by **EOControl.h.**

Workaround: Explicitly import **EOControl/EOArrayDataSource.h** in your code.

Reference: 68146

Issue: Fault failure leaves EOInterface layer unstable.

Description: If a displayed enterprise object has a to-one relationship to a non-existent destination row, attempting to access the destination object raises an exception and corrupts the state of user interface objects. (Enterprise Objects Framework raises an exception when a to-one relationship cannot be resolved due to a referential integrity issue in the database).

Workaround: See the chapter "Advanced Enterprise Object Modeling" in the *Enterprise Objects Framework Developer's*

Guide for information on handling optional to-one relationships.

Reference: 64084

Issue: Inserted enterprise objects don't get removed from EODisplayGroup after sending **revert** to EOEditingContext.

Description: If you fetch objects into an EODisplayGroup, insert a few objects, delete a few objects, and then update a few objects; telling the EOEditingContext to revert backs out the updates, but not insertions or deletions. The actual insertions and deletions have been reverted, but the EODisplayGroup doesn't know how to revert its object list (since is doesn't keep track of what its original object list was before the insertions and deletions).

Workaround: Programmatically tell all affected EODisplayGroups to refetch after telling the EOEditingContext to revert, or use **refetch:** (**invalidateAllObjects:**) instead of revert.

Reference: 72177

Issue: Deleted objects are still registered in the EOEditingContext after a **saveChanges** operation.

Description: If an object is deleted in the EOEditingContext and then the EOEditingContext is saved, the deleted object isn't forgotten by the EOEditingContext (i.e., sending the EOEditingContext the message **objectForGlobalID:** should return **nil**, but it doesn't).

Workaround: Fortunately, this should have no affect on most applications. However, if you need to work around this issue, remember the deleted objects in the **editingContextWillSaveChanges:** delegate, and then invoke **forgetObject:** for each object after a successful save.

Reference: 72269

Issue: You can't tell Enterprise Objects Framework to not undo your changes when delete propagation fails.

Description: The EOEditingContext delegate method **editingContextShouldUndoUserActionsAfterFailure:** is supposed to allow programs to indicate that they do not want user actions undone if a validation or delete propagation error occurs. However, the EOEditingContext undoes the user action regardless of the return value from the method.

Workaround: None.

Reference: 72903

Issue: Aborted deletions are incorrectly recorded in the undo stack as empty undos.

Description: When the deletion of an object fails due to a deny rule, the undo manager records an empty undo group. This means that although nothing actually happened during the operation, the operation still needs to be undone before previous operations can be undone. For interactive programs this is not normally an issue since users rely on visual cues to determine how many times to undo. However, this may be an issue for code that programmatically performs undo operations.

Workaround: None.

Reference: 74965

Issue: The EOEditingContext delegate method **editingContext:shouldPresentException:** isn't called when **saveChanges** is invoked programmatically.

Description: If you use the following code:

```
eo = [[[Movie alloc] init] autorelease];
[eo setTitle:nil]; // Assume that the TITLE column doesn't allow NULLs
[editingContext insertObject:eo];
```

[editingContext saveChanges];

the **editingContext:shouldPresentException:** delegate method isn't called. Instead, an exception is raised.

However, if you instead set a user interface control object as the target for the editing context's **saveChanges:** action, the delegate method is invoked.

Workaround: Always use **saveChanges:** instead of **saveChanges**. If you don't have an argument to pass, just use

[editingContext saveChanges:nil];

Reference: 76466

Issue: EOEditingContexts don't propagate uninserts.

Description: Propagate delete works fine for an object that that is fetched from the database. However, if an object is created and inserted in an editing context and then deleted (thus never being saved to the database), the delete isn't propagated to the destinations of the object's relationships. For example, suppose you create an ExpenseReport object and several LineItems for it. If you then delete the ExpenseReport, the delete doesn't propagate to the LineItems. If the LineItems can't exist without an owning ExpenseReport, EOEditingContext's **saveChanges** fails when the delete is performed within the same event as the insert.

Workaround: Call [editingContext processRecentChanges] before deleting the previously inserted object.

Reference: 76901

Issue: Associations are refreshed too early when the fetch limit panel is raised, possibly causing an exception.

Description: Suppose you have two EODisplayGroups that are set to fetch on load. If the second display group to fetch exceeds the fetch limit, an alert panel inquiring whether to continue the fetch pops up. Presenting the panel causes the run loop to flush the first display group's user interface drawing. If the first display group's user interface displays enterprise object properties via key paths, EOFaults may be fired. Since the default EODatabaseChannel is busy with the fetch for the second display group, an exception is raised because there isn't an available channel.

Workaround: There are three workarounds:

1. Don't use the fetch "prompt on limit" feature.
2. Implement your own fetch limit panel that doesn't invoke a modal event loop.
3. Register an additional EODatabaseChannel with the EODatabaseContext so the fetch of the faults can occur while the second EODisplayGroup fetch is paused.

Reference: 77181

Issue: The EOQualifier contains operator doesn't do SQL generation.

Description: The contains operator is meant to do to-many array comparison. For example, you might query on the Studio entity using the following qualifier format:

"movies contains %@", someMovieObj

The resulting qualifier works for an in-memory search, but doesn't generate SQL for a database search.

On the other hand, using the equality operator for to-many array comparison kind of works in SQL, but not in memory. For example, you might query on the Studio entity using the following qualifier format:

"movies = %@", someMovieObj

The resulting qualifier returns no matches when evaluated in memory because the array property is not equal to the movie object as determined by **isEqual:**. However, when it's evaluated in the database, it returns the same studio N times

(where N is the number of movies in the Studio's movies array), even though the qualifier is attempting to match only one movie.

Workaround: Use the contains operator for qualifiers in-memory evaluation and the equality (=) operator (with **usesDistinct** on the fetch specification) for evaluation in the database.

Reference: 69934

Issue: EOQualifier needs a case insensitive 'like' operator that works both in memory and in SQL.

Workaround: You can use a pattern like '*[Hh][Ee][Ll][Ll][Oo]*' or you can create a method on the enterprise object that always returns a version in uppercase and use that method as a key in the qualifier.

Interface Layer

These issues exist in the interface layer of this Enterprise Objects Framework release:

Reference: 77378

Issue: Undo of uncommitted edit in text field doesn't undo.

Description: Make a change in a text field, and then, without exiting the field, press undo. The change that you made in the text field is not undone.

This is happening because the editing context only knows about changes to enterprise objects. An uncommitted edit in a text field is not known to the enterprise object and thus not to the editing context or undo manager. Consequently, it won't be undone.

Workaround: Users can leave the field (tab or hit return) and then undo.

To make this work correctly, you'd need to subclass the EOGenericControlAssociation to register an undo record with the undo manager in **control:textShouldBeginEditing:**. The association would need to be smart enough to know to ignore callbacks from the undo manager when it has already committed the edit (since at that point the edit would be undone by the editing context).

Reference: 71553

Issue: EOPickTextAssociation displays an alert panel whenever the '[' character is entered.

Description: EOPickTextAssociation should either escape all substitution characters or wait until a complete expression is typed in before executing. Since it does not, EOQualifier thinks that it has found an illegal pattern and raises an exception, which the EOPickTextAssociation displays in an alert panel.

Workaround: None.

Reference: 76902

Issue: Query by example does not work correctly for to-many relationship properties.

Description: If a query interface's user interface control is bound to a to-many relationship property (using the EODetailSelection association, for example) the resulting query searches on only the first object added to the to-many relationship array (instead of searching on all the objects in the array).

Workaround: Don't use Query By Example for to-many relationship properties<implement your own query mechanism instead.

Reference: 57842

Issue: An EODisplayGroup doesn't show its keys in Interface Builder's Inspector.

Description: This occurs when Enterprise Objects Framework is unable to find the model file for an EODisplayGroup's entity. To verify that this is the issue, inspect the EODisplayGroup's data source (click on the EODisplayGroup, open the Inspector panel, and select the DataSource panel from the Inspector popup). If the Model field is blank, then Enterprise Objects Framework is unable to find your model.

Workaround: Quit Interface Builder and verify that the model containing the entity referenced in the EODisplayGroup is added as a resource in the project containing the nib file.

Reference: 65061

Issue: Interface Builder connections are broken when you make changes to a model.

Description: When the name of an EOAttribute or EORelationship is changed in a model, any EOAssociations that use the old name become invalid because EOAssociations' keys aren't automatically updated to the new name. Unfortunately, Interface Builder's Connection Inspector doesn't directly support breaking the connection.

Workaround: To repair broken connections:

1. Select the display object that's bound to the obsolete key.
2. Use the associations popup to select "Outlets."
This removes the old association connectors.
3. Reselect the appropriate association type and reform the association to the new key.

Reference: 67804

Issue: EOModeler can't find model from another framework.

Description: This issue has two symptoms:
· When you load a nib file into your application, it can't find the model you have in your framework.
· When you save changes to a model file in your framework, the change isn't reflected in open nib files.

Enterprise Objects Framework 2.x finds models for an application by looking for all models in the application and in any frameworks used by the application. By default Enterprise Objects Framework looks for referenced framework in their *installation* location. Thus if you don't have the framework that contains the model installed, Enterprise Objects Framework won't find the model. Similarly, a change saved to a model in the framework project isn't noticed by Interface Builder since it's looking at the *installed* version, not the source version.

Workaround: You can tell Enterprise Objects Framework to look at the source for your framework projects by using the following defaults command (executed in a shell):

defaults write NSGlobalDomain EOProjectSourceSearchPath "($(HOME)/myProjectsDirectory1, /myOtherProjectsDirectory)"

Then, when Interface Builder or EOModeler is looking for models contained in one of your frameworks, it will first search all project directories within **$(HOME)/myProjectsDirectory1** and **/myOtherProjectsDirectory** before searching for the built versions.

Alternatively, if you update a model in a framework, reinstall the framework (via **make install**), restart Interface Builder, and reopen the application nib file.

Reference: 68604

Issue: Repeated false alert that Enterprise Objects Framework 1x nib file is being converted to Enterprise Objects Framework 2.0.

Description: When you reopen a nib file after conversion you get the message: ªThis Enterprise Objects Framework 1x nib file has been translated to Enterprise Objects Framework 2.0. If you did not intend to convert to Enterprise Objects

Framework 2.x, unload EOPalette, quit Interface Builder without saving this file, and reopen the nib.º

Workaround: Quit Interface Builder, then reopen the nib file.

Reference: 70847

Issue: After disconnecting all EOColumnAssociations from a table view, you can't reconnect the table view columns to a different EODisplayGroup.

Description: Suppose you form EOColumnAssociations between all of a table view's columns and an EODisplayGroup, and suppose you then disconnect them all. Subsequent attempts to connect a column to a different display group are not allowed. (All of the display group's properties are grayed out in Interface Builder's inspector.)

The reason for this is as follows. When the first EOColumnAssociation for a table view is created, an EOTableViewAssociation is also created and connected to the table view itself. The EOTableViewAssociation remains connected to the original display group even after all the columns have been disconnected, preventing columns from being connected to a different display group.

Workaround: To make the new connection, click on the table view and disconnect the EOTableViewAssociation.

Reference: 73688

Issue: EOPalette finds the wrong models for projects contained in another project's directory.

Description: When you open a nib whose project is in a subdirectory of another project, Interface Builder uses the model from the parent directory, instead of the model from the nib's own project.

Workaround: Do not store projects directly inside another project's directory. Instead, put at least one level of directories between the projects. For example, instead of putting "test" projects directly in a master project's directory, put them in a subdirectory called "Tests".

Reference: 74947

Issue: If you drag a symbolic link for a model into Interface Builder and answer YES to the "add Model to project" panel, Interface Builder crashes.

Workaround: Drag the actual model file instead of the symbolic link.

Reference: 76591

Issue: EOPalette tries to load model files twice in aggregate projects.

Description: Suppose you have an aggregate project that contains a framework for business logic (and associated model files) and that also contains an application that uses the business logic framework. If you try to open the application's nib file, Interface Builder tries to add the model file to the EOModelGroup twice, raising an exception. This occurs because Interface Builder finds the model in the aggregate project and then finds it again in the framework linked by the application (which is part of the aggregate).

Workaround: Don't keep your application and framework projects in the same aggregate project.

Reference: 76892

Issue: Multiple fetch-on-load display groups associated with an invalid connection dictionary can cause an exception.

Description: When loading a nib file that has more than one display group set to fetch on load, an application can crash if the display groups' model has an invalid connection dictionary. A crash occurs because the second display group tries to run the adaptor's login panel while the first one already has the panel open. This confuses the Application Kit.

Workaround: Validate the connection dictionaries for all models in the [EOModelGroup defaultGroup] before opening the nib.

Miscellaneous Framework

These issues exist in this Enterprise Objects Framework release:

Reference: 46679

Issue: Enterprise Objects Framework's private instance variables aren't declared **@private** and don't have names that begin with the underbar ('_') character.

Description: All instance variables in Enterprise Objects Framework should be considered private.

Workaround: Don't directly access Enterprise Objects Framework instance variables.

Reference: 69211

Issue: Link errors on Windows NT.

Description: Programs on Windows NT must add explicit references to at least one class in each framework in order to avoid link errors at run time.

Workaround: Add a function like that in the following code snippet, which refers to classes in each of Enterprise Objects Framework's layers. Though never invoked, it forces the appropriate linking to occur.

```
#ifdef WIN32
#import <EOControl/EOControl.h>
#import <EOAccess/EOAccess.h>
#import <EOInterface/EOInterface.h>

void _referenceAllEOFrameworks()
{
[EODisplayGroup new]; // EOInterface
[EOEntity new]; // EOAccess
[EOEditingContext new]; // EOControl
}
#endif
```

If you create your project with the type "EOApplication," this code is automatically added to your project main file.

Reference: 72027

Issue: EOKeyValueCoding is broken for doubles on HPUX PDO.

Description: EOKeyValueCoding doesn't work correctly for accessor methods that set and return doubles on HPUX under PDO 4.1 (and previous releases). This means that users cannot correctly fetch enterprise objects that have class properties with accessor methods that use doubles.

Workaround: Change your enterprise objects' accessor methods to return and take as arguments NSNumbers, NSDecimalNumbers, or **int**s.

Informix Adaptor

These issues exist in the Informix adaptor supplied with this release of Enterprise Objects Framework:

Reference: 64031

Issue: Informix adaptor user defaults for Enterprise Objects Framework 2.x are different than those for Enterprise Objects Framework 1.2.

Description: In Enterprise Objects Framework 1.2, the InformixAdaptor stores defaults in the EOFInformixAdaptor domain and uses the following keys:
INFORMIXDIR, DBDATE, DBLANG, DBMONEY, InformixLogErrors, ShowSystables, ShowTableOwner, Beautify, DefaultIsolationLevel, GlobalOptimization, GlobalExplain, GlobalLockMode, GlobalPDQPriority, GlobalDataSkip, GlobalConstraints, DatabaseExclusive

Enterprise Objects Framework 2.x stores defaults in the standard NSGlobalDomain and prefixes all keys with ªInformixº, that is:
InformixINFORMIXDIR, InformixDBDATE, InformixDBLANG, InformixDBMONEY, InformixLogErrors, InformixShowSystables, InformixShowTableOwner, InformixBeautify, InformixDefaultIsolationLevel, InformixGlobalOptimization, InformixGlobalExplain, InformixGlobalLockMode, InformixGlobalPDQPriority, InformixGlobalDataSkip, InformixGlobalConstraints, InformixDatabaseExclusive.

Workaround: None.

Reference: 70232

Issue: Informix adaptor raises an exception when you try to sort on attributes that are not in the select list.

Description: Due to a restriction in the Informix adaptor, it's not possible to sort on attributes that aren't included in the select list. This means that it isn't possible to sort the results using an attribute that is not marked on the entity as either a primary key, used for locking, or a class property.

Workaround: If possible, add the attribute to the entity and mark it as used for locking. Otherwise, there is no workaround.

Oracle Adaptor

These issues exist in the Oracle adaptor supplied with this release of Enterprise Objects Framework:

Reference: 78072

Issue: Using the "Set Adaptor Info" menu item in EOModeler to change the connection string results in a model that can't connect to the Oracle database.

Description: If you have a connection dictionary that includes both the "serverID" and "hostMachine" keys and you use the "Set Adaptor Info" menu item to set the "serverID" value to a something new, the old hostMachine key remains in your connection dictionary. Unfortunately, this remnant will lead the OracleEOAdaptor to construct a connection string of the form "T:<hostMachine>:<serverID>" rather than just using "<serverID>".

This is likely to happen when you configure the examples to use a local database.

Workaround: You can remove the "hostMachine" key from the connection dictionary using the EOModeler ConnectionDictionary Inspector. Select the root EOModel, and display the Inspector. You can then select the row with the "hostMachine" key and click "Remove" to clear it from the connection dictionary.

Reference: 77517

Issue: If you try to update an enterprise object with an attribute that maps to a LONG RAW column while using on-demand locking, you get the following exception:

"fetchObject -- EODatabaseChannel 0x12345678: attempt to
lock object that has out of date snapshot"

Description: It appears that the Oracle database sometimes returns wrong BLOB values when it's passed "SELECT ... <long-raw-column,... FOR UPDATE". So when the EODatabaseChannel attempts to acquire a lock on the row, the results of the SELECT don't match the results that were gotten on the last SELECT (without the FOR UPDATE clause).

Workaround: None. You can't use on-demand locking if you're going to be updating tables with LONG RAW columns.

Reference: 77366

Issue: If you're using pessimistic locking in combination with batch faulting or prefetching of relationships, you'll get the error "ORA-01786: FOR UPDATE of this query expression is not allowed" when you run your application.

Description: When you use pessimistic locking mode in combination with batch faulting or prefetching of relationships, Enterprise Objects Framework generates a SQL statement like the following:

<OracleSQLExpression: "SELECT DISTINCT t0.CATEGORY, t0.DATE_RELEASED, t0.LANGUAGE, t0.MOVIE_ID, t0.RATING, t0.REVENUE, t0.STUDIO_ID, t0.TITLE FROM DIRECTOR t1, MOVIE t0 WHERE t1.TALENT_ID = :talentID AND t0.MOVIE_ID = t1.MOVIE_ID FOR UPDATE" withBindings:{talentID = 87; }>

This statement fails with the ORA-01786 error. The Oracle RDBMS doesn't support the use of DISTINCT with the FOR UPDATE clause.

Workaround: If you use the pessimistic locking mode against an Oracle database, you can't use the batch faulting or prefetching features.

Reference: 62425

Issue: Oracle Adaptor doesn't read stored procedures inside of packages.

Description: There is no way to get the database to tell you the components (procedures and functions) that are inside a package definition. Clients can still create stored procedures in the model that will call into packages, it's just that model description using EOModeler won't create these at connect time.

Workaround: You can use EOModeler to create the stored procedure definitions in the model. Just set the external name of the stored procedure to *package-name.procedure-name*.

Reference: 63348

Issue: Converted models have no width information<Oracle fetches empty strings.

Description: The Enterprise Objects Framework 2.x Oracle Adaptor has issues if you attempt to use an eomodel file from the Enterprise Objects Framework 1.0 release. These model files don't contain width information for string values, which results in all the strings being fetched with 0 length. If this happens for the column that is the primary key, you will also have issues with uniquing since every row will appear to have the same key.

Workaround: Use EOModeler to add width information for VARCHAR2 and RAW columns.

Reference: 73333

Issue: The Oracle adaptor has character set issues on Sparc and m68k.

Description: The Oracle adaptor on Mach does not properly support certain character set conversion on certain architectures:

· On SPARC ISOLatin1 works, but Japanese character sets do not.
· On m68k non-ASCII ISOLatin1 characters are stripped and Japanese character sets don't work at all.

On Intel all character sets work fine, including European and Japanese.

Workaround: To get non-ASCII character sets on SPARC and m68k, install the **EO2JOracleAdaptor.pkg** that's on the Enterprise Objects Framework 2.1 Mach CD.

Note: The EO2J Oracle Adaptor is built with the 7.0 version of the Oracle client libraries. Consequently, returning fetch sets from stored procedures is not supported.

Sybase Adaptor

These issues exist in the Sybase adaptor supplied with this release of Enterprise Objects Framework:

Reference: 62634

Issue: The Sybase adaptor uses **CS_CONVERT()** to convert numeric data into NSDecimalNumbers.

Description: Fetching decimal numbers in locales that use a characters other than `.' for the decimal may not work.

Workaround: None.

Reference: 63169

Issue: Models created for version 4.9 Sybase servers do not include stored procedures.

Description: EOModeler gets stored procedure information using functionality that isn't provided in old servers.

Workaround: Use EOModeler's Stored Procedure Editor to add EOStoredProcedure objects to a model.

Reference: 75024

Issue: The SQL generation for primary key support in the Sybase adaptor isn't sufficient.

Description: The SQL generated by EOModeler to support primary key generation in Sybase simply invokes the **sp_primarykey** stored procedure. **sp_primarykey** adds useful information to the syskeys table, but doesn't create constraints that enforce uniqueness (or NOT NULL) in the primary key columns.

Workaround: Add the constraints yourself using statements of the following form:

alter table <table-name> add constraint primary key (<column-name> {, <column-name })

EOModeler

These issues exist in EOModeler with this release of Enterprise Objects Framework:

Reference: 78497

Issue: If you try to save a 1.x **.eomodel** file in 2.1, you get the following error:

Apr 18 16:50:23 EOModeler[377] Unable to write file ~/projects/foo.eomodel/DiagramLayout

Description: In Enterprise Objects Framework 1.1, the model file was stored in one large property list file. When model files were put into a directory structure for 2.0, EOModeler was designed to open both **.eomodel** and **.eomodeld** model files. In 2.x releases EOModeler writes out any **.eomodel** file as one file.

The issue is that when you save models, the code in the Diagram View that saves layout information attempts to write into an **.eomodeld** directory. If it doesn't find one, it raises an exception.

This error can also occur if you perform a Save As operation and actually enter a name that ends in **.eomodel**.

The good news it that the Save of the file actually completes successfully, so any changes you made will not be lost. EOModeler is left in a potentially unstable state, but you can safely quit and restart it and the model will be fine.

Workaround: If you encounter this error, quit EOModeler and reopen the file. Choose "Save As" and provide a file name that ends in an **.eomodeld** extension.

Reference: 78222

Issue: In diagram mode in EOModeler, dragging around an entity that is being edited can lead to strange behavior and exceptions.

Workaround: Finish editing before moving the entity.

Reference: 77880

Issue: EOModeler exhibits odd behavior if you try to paste model objects from a closed window.

Description: Copy a model object (or objects), close the window from which you copied, and then open a new window. The Paste menu item is enabled in the new window, but if you try to paste, nothing happens.

Workaround: Don't close the original window before pasting the model objects.

Reference: 77608

Issue: Existing Enterprise Objects Framework projects don't see the new Enterprise Objects Framework 2.1 source code generation templates (used when you issue the "Generate Source Files..." command in EOModeler).

Description: Enterprise Objects Framework 2.1 includes fixes and additions to EOInterfaceFile.template and EOImplementationFile.template. If a user has a project from Enterprise Objects Framework 2.0 that contains the old versions of these files, the old versions will continue to be used.

Workaround: If you didn't customize the templates, then you should just remove thes old files from your project.

If want to build a customized template based on the newest versions, copy
/NextDeveloper/Apps/EOModeler.app/Resources/EOImplementationFile.template and
/NextDeveloper/Apps/EOModeler.app/Resources/EOInterfaceFile.template into your project directory.

Reference: 77603

Issue: When you create a subclass in your model and generate source files for it, the resulting header file won't compile.

Description: For example, suppose you create a Salesman subclass of Employee and generate source files for it. The header for Salesman correctly inherits from Employee, but it doesn't include the **Employee.h** header, so it can't be compiled.

```
// Salesman.h
//
// Created on Mon Mar 10 10:19:41 PST 1997 by NeXT EOModeler Version 304

#import <EOControl/EOControl.h>

@class Employee;
@class Department;

@interface Salesman : Employee <NSCoding>
{
}

@end
```

If you attempt to compile this code, you'll get this error:

```
Salesman.h:12: Cannot find interface declaration for `Employee', superclass of `Salesman'
gnumake: *** [Salesman.o] Error 1
```

Workaround: Change
`@class Employee`
to

#import "Employee.h"

Reference: 77134

Issue: If you open two different Diagram View windows for the same model file, the layout for only one of the windows is saved, and which layout is saved is indeterminate.

Workaround: Only open one Diagram View window for a model at a time.

Reference: 77191

Issue: Pasted attributes do not retain their primary key, used for locking, or class property settings.

Description: If you copy and paste an attribute, the pasted attribute's primary key, used for locking, and class property bits revert to their default settings, regardless of their state in the original. This occurs because the settings are actually maintained by the owning entity, which isn't incorporated into an attribute's pasteboard rendering.

Workaround: Manually set the bits after pasting.

Reference: 51250

Issue: You can't join on derived attributes.

Description: Invalid SQL is generated whenever a derived attribute is designated as a join attribute in a relationship.

Workaround: None.

Reference: 75801

Issue: Editing nested dictionaries with the UserInfo or ConnectionDictionary editors doesn't work.

Description: Suppose that a model has a userInfo or connection dictionary that contains another dictionary. If you use EOModeler's UserInfo or Connection Dictionary Inspector to edit the enclosed object, EOModeler converts it to a string. For example, if the userInfo dictionary contains the following dictionary:

```
myValue = {
hello = world;
}
```

and you convert "hello" and "world" to uppercase, EOModeler saves the following string to the model file:

myValue = "{\\n HELLO = WORLD;\\n}"

Similarly, EOModeler converts arrays to strings.

Workaround: If you need to store such compound data structures in your userInfo or connectionDictionary, you will need to edit it by hand using Edit, or write a your own custom Inspector.

Wizard

These issues exist in the Wizard with this release of Enterprise Objects Framework:

Reference: 77987

Issue: The Wizard for creating new EOApplications can't use models that are accessed through symbolic links

Description: In Project Builder, if you attempt to create a new EOApplication that requires an EOModel and you specify a symbolic link to an EOModel, you will get the following error:

"write: Cannot create directory <project-location>/<model-name>"

Workaround: Specify a path that doesn't include a symbolic link.

On-line Examples

These issues exist in the on-line examples included in this release of Enterprise Objects Framework:

Reference: 78215

Issue: The UsingStoredProcedures example doesn't work for Sybase or Oracle

Description: For Oracle, the insertMovie and deleteMovie stored procedures have arguments with bad columnNames. For Sybase, the nextPrimaryKey and fetchMovieWithPrimaryKey stored procedures have arguments with bad column names.

Workaround: You can either change the names of the arguments in the stored procedure definition (by editing **oraclesp.sql** or **sybasesp.sql**), or you can change the columnName of the problematic arguments. Here is a detailed list of the changes you need to make in EOModeler to the columnNames to make the EOModel stored procedures match those in the database:

OracleStoredProcedures.eomodeld/deleteMovie.storedProcedure
movieID
AMOVIE_ID => MOVIE_ID
OracleStoredProcedures.eomodeld/insert.storedProcedure
category
ACATEGORY => CATEGORY
dateReleased
ADATE_RELEASED => DATERELEASED
language
ALANGUAGE => LANGUAGE
movieID
AMOVIE_ID => MOVIE_ID
rating
ARATING => RATING
revenue
AREVENUE => REVENUE
studioId
ASTUDIO_ID => STUDIO_ID
title
ATITLE => TITLE
SybaseStoredProcedures.eomodeld/fetchMovieWithPrimaryKey.storedProcedure
name
MOVIE_ID => movie_id
SybaseStoredProcedures.eomodeld/nextMoviePrimaryKey.storedProcedure
name
MOVIE_ID => A_MOVIE_ID

Reference: 77990

Issue: Sometimes when you run the **install_database** script or use the schema object creation window in EOModeler, you might get one of the following errors.

Mar 27 10:19:34 eoutil[1577] Exception running dump: ORA-00955: name is already used by an existing object
create table !!! eo_temp_table as select max(MOVIE_ID) counter from MOVIE

Mar 27 10:27:54 eoutil[1591] Exception running dump: ORA-00955: name is already used by an existing object
create procedure !!! eo_set_sequence is
xxx number;
yyy number;
begin
select max(counter) into xxx from eo_temp_table;
if xxx is not NULL then
yyy := 0;
while (yyy < xxx) loop
select MOVIE_SEQ.nextval into yyy from dual;

```
end loop;
end if;
end;
```

Description: If the primary key support code dies unexpectedly, it can leave the **eo_set_sequence** stored procedure and the **eo_temp_table** table in the user's schema. This isn't an issue right away, but any subsequent attempt to run the **install_database** script will fail because the statements that attempt to create these schema objects will fail and the data loading will stop before it is finished.

Workaround: Use the following commands from SQLPlus to remove these objects before you attempt to create the schema objects with the **install_database** script.

```
SQL> drop table eo_temp_table;
SQL> drop procedure eo_set_sequence;
```

Reference: 64283

Issue: Enterprise Objects Framework 2.x examples merge with obsolete Enterprise Objects Framework 1.1 examples.

Description: If a system has Enterprise Objects Framework 1.1 Developer installed on it (EODeveloper.pkg) and then upgrades to 4.0, the EODeveloper package (incorrectly) stays installed, and the examples stay in **/NextDeveloper/Examples/EnterpriseObjects**.

When the user later installs EO2Developer, the Enterprise Objects Framework 2.x examples are merged with the Enterprise Objects Framework 1.1 example files already in **/NextDeveloper/Examples/EnterpriseObjects**.

Workaround: Uninstall 1.1 EODeveloper.pkg before installing EO2Developer.pkg.

Reference: 65165

Issue: **install_database** doesn't work: Sybase: Can't find type `decimal'.

Description: The **install_database** script in the **EnterpriseObjects/DatabaseSetUp** directory doesn't work for Sybase 4.9 servers.

When the models in the examples directory were converted to Sybase, the server version wasn't taken into account. Some of the attributes were converted to ªdecimalº data type and the Sybase 4.x server doesn't know about these.

Workaround: Use EOModeler to find and change all the external types from decimal to float in each of the models in your examples directory.

Reference: 68231

Issue: **make all** in the Enterprise Objects Framework examples fails sometimes.

Description: The Enterprise Objects Framework examples will fail to make if **${NEXT_ROOT}/LocalDeveloper** is present on your system and you don't have write access to it. The makefile tries to install the BusinessLogic framework in the **/LocalDeveloper/Frameworks** directory.

Workaround: Execute **make** as root or ask your system administrator to create a **/LocalDeveloper/Frameworks** directory and make it writable by you.

Reference: 70557

Issue: The Customer.app example doesn't propagate changes to CreditCard objects.

Description: The relationship between CreditCard and Member is not modeled correctly in the examples. CreditCard's primary key is composed of its **cardNumber** and **cardType** attributes. In the Customer application, you can modify the **cardNumber** and **cardType** of a Member's CreditCard, but these changes aren't propagated to the objects to which the

CreditCard is related. That is, after saving the changes to the database, the CreditCard's **cardNumber** and **cardType** are updated, but foreign keys in the MEMBER table still have the old values.

CreditCard should have a separate primary key identifier, such as **cardID**, on which the CreditCard-Member relationships are based. This approach would keep CreditCards and Members in sync, and it would also be a more efficient implementation.

Workaround: None.

Reference: 72246

Issue: The ODBC adaptor source code provided as an example is only available on OpenStep for Windows NT.

Description: The source code for the ODBC adaptor is available on Windows NT as an example. It is not, however, included on Mach or PDO.

Workaround: Copy the source code from an NT machine.

Note: If you just want the ODBC adaptor to see an example of a concrete adaptor, you can look at the FlatFile adaptor that's included in all releases.

Reference: 76020

Issue: In the Studios.app, buying the movies associated with a Talent doesn't update the Movies' Studios.

Description: The Studio class's **buyAllMoviesStarring:** method doesn't take advantage of Enterprise Objects Framework's EOKeyRelationshipManipulation methods. Instead, it simply invokes [self addToMovies:...].

Workaround: Change **Studio.m**'s **buyAllMoviesStarring:** implementation to the following:

```
- (void)buyAllMoviesStarring:(Talent *)talent
{
NSEnumerator *movieEnumerator = [[talent moviesStarredIn] objectEnumerator];
id movie;

while ( (movie = [movieEnumerator nextObject]))
[self addObject:movie toBothSidesOfRelationshipWithKey:@"movies"];
}
```

Reference: 69419

Issue: Example data for Movie and Rental models must be installed in different databases.

Description: When installing data for more than one model in a database, the **eo_sequence_table** is only properly initialized for the first model installed.

Workaround: You can either install the data for each model in a different database or change the last line in the **install_database** script located in the DatabaseSetUp directory of your examples directory as follows:

Change this:

${EOUTIL} dump ../BusinessLogic/Rentals.eomodeld -source plist database -schemaCreate -postInstall < RentalData.plist

To this:

${EOUTIL} dump ../BusinessLogic/Rentals.eomodeld -source plist database -schemaCreate -postInstall -force < RentalData.plist

When you use the **-force** option as a workaround, exceptions are logged because the **eo_sequence_table** table and

eo_pk_for_table procedure already exist when you execute **install_databases**. You can just ignore these exceptions.

Documentation

This issue exists in the documentation included in this release of Enterprise Objects Framework:

Reference: 77170

Issue: Enterprise Objects Framework Developer's Guide sections about ordering database operations are out of date.

Description: The sections "How Do I Order Database Operations" and "Constraints for Enforcing Relational Integrity Rules" in the chapter "Answers to Common Design Questions" in the Enterprise Objects Framework Developer's Guide need to be updated to reflect a new operation ordering algorithm.

The new algorithm works as follows:

· If an entity (Movie) has a to-one relationship to a second entity (Studio) and the inverse relationship is a to-many, then the second entity (Studio) is considered the *master*.
· If an entity (Talent) has a to-one relationship to a second entity (TalentPhoto) and the inverse relationship is also a to-one, then the entities are peers.

Enterprise Objects Framework builds up an entity ordering based on the "master-ness" of the entities. This ordering is built up dynamically and is enhanced as your application touches more and more entities.

Before sending operations to the database, Enterprise Objects Framework orders the operations based on the entity ordering. For inserts, Enterprise Objects Framework orders master entities first; whereas for deletes, Enterprise Objects Framework orders master entities last. Order on updates doesn't generally matter, Enterprise Objects Framework orders masters first.

This new algorithm should reduce the number of scenarios in which you have to reorder operations. However, if your database has sophisticated referential integrity, if it uses triggers, or there are referential integrity constraints that are not modeled as EORelationships, you may still need to reorder adaptor operations programmatically.
Published Date: Feb 20, 2012

Macintosh 8■24 GC Card: QuickDraw Printer Problem (11/94)

I'm having problems printing from a Macintosh II with a Macintosh Display Card 8*24 GC connected to a LaserWriter SC. When acceleration on the Macintosh Display Card 8*24 GC is on, QuickDraw fill patterns aren't printing properly. I am running System 6.0.5 with LaserWriter SC driver 1.1.

If I turn off acceleration on the Macintosh Display Card 8*24 GC and restart, everything works fine. But restarting each time I want to print is not a satisfactory solution.

This article has been archived and is no longer updated by Apple.
After doing some testing, we discovered that this problem happens with any of Apple's QuickDraw printers. We have told Engineering about the problem and will announce a solution when we have it.

In the mean time, we suggest that you switch off the Macintosh Display Card 8*24 GC's acceleration before printing. You can do this using the card's Control Panel without rebooting or even quitting from an open application. We realize that this isn't a solution, but it is an adequate temporary workaround.

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 20, 2012

Third Party Driver: Ensoniq Soundscape OPENSTEP Driver Overview

This article discusses a third-party device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2. This driver is not produced, distributed or supported by Apple Computer.
This article has been archived and is no longer updated by Apple.
Driver: ENSONIQ Soundscape
Last Update: July 12, 1997

Availability Information

All versions of this driver are available only from Sound Consulting directly. This driver is not produced, distributed or supported by Apple Computer.

Latest Release Driver version: Version 3.35, order from Sound Consulting at SS_NSI@Sounds.wa.com
Latest Beta Driver version: Version 3.36, contact Sound Consulting for availability

Driver Name / Installer .pkg: EnsoniqSoundscape
Driver Type: Sound (Audio & MIDI)
Driver Scope: Product Family (including OEM and third-party compatibles)
Supported Components: ENSONIQ, Gateway, NEC, Reveal, Spea
PC Bus / Interface Supported by Driver*: ISA and PnP

General Overview notes: This driver is intended to support all Soundscape cards and compatible implementations based on the ENSONIQ chip set. Cards shipped in Gateway systems are supported as well.

Supported Products / Add-on Adaptors:
ENSONIQ Soundscape (ISA)
ENSONIQ SoundscapeELITE (ISA)
ENSONIQ SoundscapeVIVO 90 (PnP)
Gateway Soundscape 2, 2000, & SS2000 (ISA)
Gateway Soundscape - OPUS based (ISA)
Gateway Soundscape Revision 0, Revision 1, et al (PnP)
Gateway SoundscapeOFFICE (PnP)
Gateway SoundscapeVIVO (PnP)
NEC Harmony (PnP)
Spea Media FX 16 (ISA)
Reveal SC-600 (ISA)

Supported Products / Systems (i.e. integrated into PC System):
Gateway Soundscape (integrated as bus card shipped with system) (ISA & PnP)

Special Features of Driver / Driver Notes:
The Soundscape wave table based MIDI synthesizer is supported on all cards which can execute ENSONIQ OTTO firmware. The driver works in conjunction with the MusicKit Mididriver to enable MIDI on the Soundscape card.

Caveats: All Soundscape interrupts will not be available with the standard MusicKit Mididriver. An update package is available from Sound Consulting which replaces the (human readable) configuration files in the Mididriver so that all Soundscape interrupt settings are available.

This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this driver's help topic.

There are many models of Soundscape cards and they have different mixing capabilities. Gateway cards have special internal connectors for modem audio which can be mixed in. Mixing of line-in and CD audio is supported by an external application or Preferences bundle.

Sound Driver Details

Supported Connectors*: 1/8" Microphone In, 1/8" Stereo Line In, 1/8" Stereo Speaker Out, CD-ROM Stereo Line In, TV Stereo Line In, Modem Mono Line In
Access Mode: DMA
Adapter Memory: N/A
Attributes: 16-bit Linear, 8-bit Linear, 8-bit mu-Law & A-Law

Known Problems
The are no known driver problems.

In order to configure resources (like IRQ, DMA, I/O Port Addresses) correctly, make sure that the system BIOS knows about the resources used by this and other ISA adaptors.

Use the PnP personality for Soundscape PnP boards and enable support for Plug-and-Play in the EISABus driver (if you are using the driver from NeXTanswers).

Driver Version Notes

3.30 - Initial release, 1st quarter, 1996
3.31 - Added more Help information and update the PnP personality tables, November 1996
3.32 - Support SoundscapeVIVO introduced at Apple WWDC, May 1997
3.33 - Demo created with limited abilities and timeout, June 1997
3.34 - Minor VIVO 90 enhancements, July 1997
3.35 - Currently shipping licensed version, July 1997
3.36 - Enhanced license keys, January 1998

Future Planning

Future / Update Planning: SoundscapeVIVO and VIVO 90 wavetable support
Reason for New Driver / Update: Newest VIVO cards do not support on-board synthesis, only external
New Driver / Update Timeframe: 4th quarter, 1998

New Driver / Update Description:
The new SoundscapeVIVO from Gateway and VIVO 90 from ENSONIQ have a reduced chip count and lower price, but are not compatible with the on-board synthesis support in the shipping driver. ENSONIQ have provided Sound Consulting with two models of the VIVO card along with engineering documentation and development is under way.

The first public release of Rhapsody will also be supported for all sound cards listed above.

Note: Information contained in the "Future Planning" section of this document does not constitute a commitment on the part of Sound Consulting to complete the planned development work.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers or the hardware manual for the device for additional information.

Driver Product Vendor:
Sound Consulting
Bellevue, WA
USA
Email: SS_NSI@Sounds.wa.com
Voice: +1 (425) 614-1180
Fax: +1 (425) 562-7236

Sound Card Hardware Product Vendor:
ENSONIQ Corporation
Soundscape Direct
P.O. Box 3035
155 Great Valley Parkway

Malvern, PA 19355-0735
USA

+1 (800) 776-8637 Soundscape Direct
+1 (610) 647-3930 Customer Service
+1 (610) 647-8908 fax

WWW: http://www.ensoniq.com/html/mi-distr.htm - List of International Distributors
WWW: http://www.ensoniq.com/multimedia/mm_html/t_card_identification.htm
Published Date: Feb 20, 2012

EOF 2.0 Multiple BLOB Problem Workaround

This article describes a workaround for a problem with Enterprise Objects Framework version 2.0. This problem has been fixed in EOF 2.1 and later versions.

The WebObjects Current Patch List, **TIL article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read these documents if you're not sure which patches you need on your system.

This article has been archived and is no longer updated by Apple.
The Multiple BLOB workaround example code is available from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/patches/2.0/Multiple_BLOB.compressed

Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: 3COM EtherLink XL

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/EtherLinkXL.pkg.compressed

Driver Name / Installer .pkg: EtherLinkXL
Driver Type: Networking
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver supports the 3Com EtherLink XL family of PCI Ethernet Adapters.

Supported Products / Add-on Adapters:
3Com EtherLink XL 3C900-TPO PCI (RJ-45)
3Com EtherLink XL 3C900-Combo PCI (BNC, AUI, RJ-45)
3Com EtherLink XL 3C905-TX PCI (10Base-T, 100Base-TX)
3Com EtherLink XL 3C905B-TX PCI (10Base-T, 100Base-TX)

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
3C905-TX cards identified with ASSY 03-0104-001 REV A may experience large number of receive errors and transmit timeouts. There is no workaround to this problem.

Networking Driver Details

Network Type:** 100 Base TX, EtherNet, Full Duplex
Speed*: 10 Mb/s, 100 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: 8KB
Supported Connectors:** AUI, BNC (10Base-2), RJ-45 (10Base-T)

Known Problems

Driver Version Notes

3.30 - Initial beta version
3.32 - Added support for 3C90xB adapter family. Single personality to handle all cards. Better media detection algorithm, and supports Nway auto-negotiation.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

3Com Corporation
5400 Bayfront Plaza
PO Box 58145
Santa Clara, California
95052-8145 USA

US & Canada toll-free pre-sales, product information: +1 (800) NET-3COM
Fax back system: +1 (408) 727-7021
US 24 hour BBS (24/96 8/1/N): +1 (408) 980-8204
France 24 hour BBS (24/96/14.4 8/1/N): +(33) (1) 69 86 69 54
UK 24 hour BBS (12-38.4k 8/1/N): +(44) (0) 628 897 086
WWW: http://www.3com.com/
Published Date: Feb 20, 2012

3Com EtherLink XL OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: 3COM EtherLink XL
Last Update: January 25, 1999

Availability Information

An updated release version of this driver, version 4.02, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/EtherLinkXL.pkg.compressed
An updated BETA version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/EtherLinkXL.pkg.compressed

Driver Name / Installer .pkg: EtherLinkXL
Driver Type: Networking
Driver Scope: Product Family
Supported Components:
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver supports the 3Com EtherLink XL family of PCI Ethernet Adapters.

Supported Products / Add-on Adapters:
3Com EtherLink XL 3C900-TPO PCI (RJ-45)
3Com EtherLink XL 3C900-Combo PCI (BNC, AUI, RJ-45)
3Com EtherLink XL 3C905-TX PCI (10Base-T, 100Base-TX)
3Com EtherLink XL 3C905B-TX PCI (10Base-T, 100Base-TX)

Supported Products / Systems:
Dell Optiplex GX/1 onboard 3C905B Ethernet controller

Special Features of Driver / Driver Notes:
3C905-TX cards identified with ASSY 03-0104-001 REV A may experience large number of receive errors and transmit timeouts. There is no workaround to this problem.

Networking Driver Details

Network Type*: 100 Base TX, EtherNet, Full Duplex
Speed*: 10 Mb/s, 100 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: 8KB
Supported Connectors*: AUI, BNC (10Base-2), RJ-45 (10Base-T)

Driver Version Notes

4.00 - Initial beta version
4.02 - Added support for 3C90xB adapter family. Single personality to handle all cards. Better media detection algorithm, and supports Nway auto-negotiation.
4.02 - Added support for Dell Optiplex GX/1 onboard 3C905B Ethernet controller

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

3Com Corporation
5400 Bayfront Plaza
PO Box 58145
Santa Clara, California
95052-8145 USA

US & Canada toll-free pre-sales, product information: +1 (800) NET-3COM
Fax back system: +1 (408) 727-7021
US 24 hour BBS (24/96 8/1/N): +1 (408) 980-8204
France 24 hour BBS (24/96/14.4 8/1/N): +(33) (1) 69 86 69 54
UK 24 hour BBS (12-38.4k 8/1/N): +(44) (0) 628 897 086
WWW: http://www.3com.com/
Published Date: Feb 20, 2012

Number Nine Imagine128 Series 2 OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Number Nine Imagine128 Series 2
Last Update: December 18, 1997

Availability Information

An updated release version of this driver, version 4.02, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/Num9Imagine128S2.pkg.compressed

Driver Name / Installer .pkg: Number9Imagine128S2DisplayDriver
Driver Type: Display
Driver Scope: Product Family
Supported Components: IBM RGB 526 RAMDAC, IBM RGB 528 RAMDAC, Number9 Imagine II, Number9 T2R
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This graphics driver is designed to support the Imagine 128 Series 2 and Revolution 3D adapters from Number Nine Visual Technology Inc.

This driver supports the use of 4MB, or 8MB of display memory. This driver also includes support for multi-headed displays.

Supported Products / Add-on Adapters:
Number9 Imagine 128 Series 2 (4MB) (90-228120-000)
Number9 Imagine 128 Series 2 (8MB) (90-228130)
Number9 Revolution 3D (4MB)
Number9 Revolution 3D (8MB)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 4MB VRAM, 4MB WRAM, 8MB VRAM, 8MB WRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1024x768 (4MB+), 1152x864 (4MB+), 1600x1200(8MB+), 640x480 (2MB+), 800x600 (2MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x864 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152X864 (1MB+), 1280x1024 (2MB+), 1600x1200 (4MB+), 640X480 (1MB+), 800x600 (1MB+)

Known Problems

Some PCI machines will not start up if there is more than one Number Nine Imagine128 display adpter present. This is a BIOS limitation.

The Revolution 3D cards used for driver development exhibited a slight distortion on screen under the following display modes:

1600x1200x32@70Hz
1280x1024x32@75Hz

The distortion causes the right side of windows to undulate. This is most noticeable on a text filled window with white background. This seems to be caused by some unknown hardware problem on those cards.

Driver Version Notes

4.00 - Initial Version
4.01 - Added support for Series 2 cards with integrated VGA controller. Added support for 8MB VRAM cards.
4.02 - Added support for Revolution 3D cards based on the T2R engine and WRAM display memory.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

Number Nine Visual Technology
18 Hartwell Avenue
Lexington, MA 02173-3103

Voice: (617) 674-0009

TA45883_Number_Nine_Imagine_Series_OPENSTEP_Driver_Overview.pdf

FAX: (617) 674-2919
BBS: (617) 862-7502 (8/1/N, up to 28kbps)
URL: http://www.nine.com
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Driver: DECChip 21X4X Networking

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.31, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/DECChip21x4xNet.pkg.compressed

Driver Name / Installer .pkg: DEC21X4XNetwork
Driver Type: Networking
Driver Scope: Specific Product
Supported Components: DEC DECchip21040, DEC DECchip21041, DEC DECchip21140, DEC DECchip21142, DEC DECchip21143
PC Bus / Interface Supported by Driver:** PCI

General Overview notes: This driver supports PCI-bus network adapters or on-board network adapters based on DECchip 21X4X LAN Controller. This includes the 21040, 21041, 21140, 21142, and 21143 LAN Controllers. Both 10Mb/s and 100Mb/s connection speeds are supported.

Supported Products / Add-on Adapters:
Adaptec-Cogent ANA-6911A/TX
Cogent EM110-TX Fast Ethernet 10/100 Adapter
Cogent EM960 PCI
DEC DE500 (21143 based) PCI 10/100
DEC DE500 Fast EtherWORKS PCI 10/100
DANPEX PCI Ethernet (EN-9400P3)
SMC 9332 Fast Ethernet 10/100 Adapter
SMC PCI EtherPower (SMC 8432)

Supported Products / Systems (ie integrated into PC System):
DEC Celebris GL On-Board LAN Adapter (21142/21143, 10 Mb/s module)
DEC Celebris GL On-Board LAN Adapter (21142/21143, 10/100 Mb/s module)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type:** 100 Base FX, 100 Base T4, 100 Base TX, EtherNet, Full Duplex
Speed*: 10 Mb/s, 100 Mb/s
Access Mode:** Bus Master DMA
Buffer Size*: NA
Supported Connectors:** AUI, BNC, UTP

Known Problems

Due to ongoing development and testing of OPENSTEP 4.0, the beta version (v3.30) of this driver will neither be tested on NEXTSTEP 3.3 nor upgraded to "Released" status.

Driver Version Notes

3.30 - Initial release
3.31 - Fixed a SROM parsing bug which prevented the driver from working with the ANA-6911A/TX cards.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 20, 2012

ATI Rage OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: ATI Rage
Last Update: June 16, 1998

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
An updated release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/ATIRage.pkg.compressed
An updated BETA version of this driver, version 4.04, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/beta/ATIRage.pkg.compressed

Driver Name / Installer .pkg: ATIRageDisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: ATI 3D Rage, ATI 3D Rage II, ATI 3D Rage II+, ATI 3D Rage Pro
PC Bus / Interface Supported by Driver*: AGP, Integrated, PCI

General Overview notes: This new graphics driver is designed to support a variety of graphics adapters based on the ATI Rage, Rage II, and Rage Pro graphics controllers. This driver supports a variety of configurations including high-resolution and high-color (32bit) modes and several frame buffer configurations.

Due to the wide range of possible combinations, only a few specific adapters were tested by Apple. Although this driver may work with most 88800 GX/CX based adapters, Apple will only support the specific adapters tested by Apple.

Supported Products / Add-on Adapters:
ATI All-In-Wonder
ATI 3D Pro Turbo
ATI 3D Pro Turbo PC2TV
ATI 3D Xpression+
ATI 3D Xpression+ PC2TV
ATI XPERT @ Work
ATI XPERT @ Play

Supported Products / Integrated:

Dell Optiplex GX1 (ATI Rage Pro AGP on-board) (requires driver version 4.04)

Special Features of Driver / Driver Notes:
Version 4.04 adds support the Rage card's on-board AGP implementation. This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB DRAM, 2MB VRAM, 4MB DRAM, 4MB VRAM, 6MB VRAM, 8MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes*:
1152x900 (4MB+), 1280x1024(4MB+), 1600x1200(8MB+), 640x480 (4MB+), 800x600 (4MB+)

16 Bit Color Modes*:
1024x768 (2MB+), 1152x896 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes*:
1024x768 (1MB+), 1152x896 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.

Product Vendor

ATI Technology
2880 Zanker Road
Suite 203
San Jose, CA 95134

+1 (416) 882 2600 international phone
+1 (905) 764 9404 bulletin board system

TA45885_ATI_Rage_OPENSTEP_Driver_Overview.pdf

+1 (416) 882 2600 faxback system
WWW: http://www.atitech.ca/
Published Date: Feb 20, 2012

NeXTSTEP 3.3 Drivers: ATI Rage Display

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.32, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/ATIRageDisplay.pkg.compressed

Driver Name / Installer .pkg: ATIRageDisplayDriver
Driver Type: Display
Driver Scope: Generic-Chipset
Supported Components: ATI 3D Rage, ATI 3D Rage II, ATI 3D Rage II+, ATI 3D Rage Pro
PC Bus / Interface Supported by Driver:** AGP, Integrated, PCI

General Overview notes: This new graphics driver is designed to support a variety of graphics adapters based on the ATI 3D Rage, Rage II and Rage Pro graphics controller. This driver supports a variety of configurations including high-resolution and high-color (32bit) modes and several frame buffer configurations.

Supported Products / Add-on Adapters:
ATI All-In-Wonder
ATI 3D Pro Turbo
ATI 3D Pro Turbo PC2TV
ATI 3D Xpression+
ATI 3D Xpression+ PC2TV
ATI XPERT @ Work
ATI XPERT @ Play

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Display Driver Details

Supported Connectors: 15-pin High Density (VGA)
Access Mode: Linear Framebuffer
Adapter Memory: 2MB DRAM, 2MB VRAM, 4MB DRAM, 4MB VRAM, 6MB VRAM, 8MB VRAM

Display Modes (Number in () after resolution indicates frame buffer size required)

32 Bit Color Modes:**
1152x864 (4MB+), 1280x1024(4MB+), 1600x1200(8MB+), 640x480 (4MB+), 800x600 (4MB+)

16 Bit Color Modes:**
1024x768 (2MB+), 1152x896 (2MB+), 1280x1024 (4MB+), 1600x1200 (4MB+), 640x480 (1MB+), 800x600 (1MB+)

8 Bit Color / Greyscale Modes:**
1024x768 (1MB+), 1152x896 (1MB+), 1280x1024 (2MB+), 1600x1200 (2MB+), 640X480 (1MB+), 800x600 (1MB+)

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

ATI Technology
2880 Zanker Road
Suite 203
San Jose, CA 95134

+1 (416) 882 2600 international phone
+1 (905) 764 9404 bulletin board system
+1 (416) 882 2600 faxback system
WWW: http://www.atitech.ca/
Published Date: Feb 18, 2012

Sybase DBKit Adaptor Compatability Patch

This patch solves a backward compatibility problem in OPENSTEP 4.x where DBKit applications give the following error when using the Sybase DBKit adaptor.

Error loading /NextLibrary/Adaptors/SybaseAdaptor.adaptor/SybaseAdaptor
rld(): Undefined symbols:
dyld_stub_binding_helper

The patch is a quad fat (m68k, Intel, HPPA, SPARC) copy of the NEXTSTEP 3.3 Sybase DBKit adaptor.

The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read this document if you're not sure which patches you need on your system.
This article has been archived and is no longer updated by Apple.
You can download the patch from:
ftp://ftp.next.com/pub/NeXTanswers/Files/Patches/SybaseDBKitAdaptorPatch/2548_SybaseDBKitAdaptorPatch.pkg.compressed

Installing the Sybase DBKit Adaptor Patch

Follow these instructions to install the *Sybase DBKit Adaptor Patch.*

1. Download the patch from Apple's FTP servers at:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/patches/SybaseDBKitPatch.compressed

2. Log in as **root**. (If you're not sure how to log in as **root**, see your system administrator.)

3. Make sure your computer is running *OPENSTEP Release 4.x*. (You can find the OPENSTEP version number with the Workspace Manager application's Info Panel command.)

4. Double-click the **SybaseDBKitAdaptorPatch.pkg** file.

5. Click the Install button in the Installer package window. An Install Package panel opens. Use this panel to select the same architecture and languages as you did when originally installing the *OPENSTEP 4.x User* software.

6. Click Install in the Install Package panel, and if prompted for confirmation, click OK to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.
Published Date: Feb 18, 2012

Personal LaserWriter LS: About the Paper Feeder Accessory

I'm confused about the optional paper and envelope feeder for the Apple Personal LaserWriter LS.

Apple's price list states that the Personal LaserWriter LS requires a Personal LaserWriter LS Paper Feeder to accept the optional Letter, Legal, and Envelope cassettes.

I've read all the available Personal LaserWriter LS literature and can find no other mention of the Paper Feeder. Do I really need to get the Paper Feeder, and where do I get more information about it?

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter LS has two standard ways to feed-in paper:

* Manual feeding using the multi-purpose tray, or
* stacking 50 pieces of paper or less in the multi-purpose tray.

There is an optional, dealer-installable, Personal LaserWriter LS Paper Feeder that works with the Personal LaserWriter Letter Cassette, Personal LaserWriter Legal Cassette, or Personal LaserWriter Envelope Cassette.

You don't need the Personal LaserWriter LS Paper Feeder to use the printer. It is only necessary if you want to have a 250-sheet capacity Personal LaserWriter Letter Cassette or Personal LaserWriter Legal Cassette, or the handy Personal LaserWriter Envelope Cassette.

The Personal LaserWriter LS Paper Feeder documentation is in the Personal LaserWriter LS Owner's Guide on pages 79-86.

The Apple part number for the Personal LaserWriter LS Paper Feeder is M8028G/A.

The Apple Personal LaserWriter LS product sheet (M1076LL/A) mentions the Personal LaserWriter LS Paper Feeder under the "Related Products" section.

Published Date: Feb 18, 2012

Unix Deployment Time Zone Error

This article discusses a common problem encountered while running version 4.2 of Portable Distributed Objects or version 3.5.1 of WebObjects on Solaris or HP-UX platforms.

This article has been archived and is no longer updated by Apple.

Q: Why do I get the error message

```
*** Could not find data for default time zone, using GMT
```

when running my OPENSTEP or WebObjects program on Solaris or HP-UX? The same program runs fine on other platforms.

A: This error is caused when the /etc/zoneinfo/localtime symbolic link is missing or pointing to a non-existing directory. This problem can happen after running the PDO 4.2 Install Script.
To fix the problem, you should su to root and do the following:

1) Remove the symbolic link if it exists.
2) Recreate the symbolic link. The commands will look something like:

```
cd /etc/zoneinfo
ln -s US/Pacific localtime
```

You can get a list of all the available timezones under the /etc/zoneinfo directory.

Published Date: Feb 18, 2012

DEC 21X4X OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: DEC21X4XNetwork
Last Update: February 5, 1998

Availability Information

An updated release version of this driver, version 4.01, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/DEC21X4X.pkg.compressed

Driver Name / Installer .pkg: DEC21X4XNetwork
Driver Type: Networking
Driver Scope: Generic-Chipset
Supported Components: DEC DECchip21040, DEC DECchip21041, DEC DECchip21140, DEC DECchip21142, DEC DECchip21143
PC Bus / Interface Supported by Driver*: PCI

General Overview notes: This driver supports PCI-bus network adapters or on-board network adapters based on DECchip 21X4X LAN Controller. This includes the 21040, 21041, 21140, 21142, and 21143 LAN Controllers. Both 10Mb/s and 100Mb/s connection speeds are supported.

Supported Products / Add-on Adapters:
Adaptec-Cogent ANA-6911A/TX
Cogent EM110-TX Fast Ethernet 10/100 Adapter
Cogent EM960 PCI
DEC DE500 (21143 based) PCI 10/100
DEC DE500 Fast EtherWORKS PCI 10/100
DANPEX PCI Ethernet (EN-9400P3)
SMC 9332 Fast Ethernet 10/100 Adapter
SMC PCI EtherPower (SMC 8432)

Supported Products / Systems (ie integrated into PC System):
DEC Celebris GL On-Board LAN Adapter (21142/21143, 10 Mb/s module)
DEC Celebris GL On-Board LAN Adapter (21142/21143, 10/100 Mb/s module)

Special Features of Driver / Driver Notes:
This device driver provides information in the Configure application's help panel. Choose Info>Help from the Configure menu and scroll down to find this device driver's help topic.

Networking Driver Details

Network Type*: 100 Base FX, 100 Base T4, 100 Base TX, EtherNet, Full Duplex
Speed*: 10 Mb/s, 100 Mb/s
Access Mode*: Bus Master DMA
Buffer Size*: NA
Supported Connectors*: AUI, BNC, UTP

Driver Version Notes

4.00 - Initial release
4.01 - Fixed a SROM parsing bug which prevented the driver from working with the ANA-6911A/TX cards.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 18, 2012

EOF 2.2 EODeleteRuleNoAction patch

This README document describes how to install an EOModeler bundle used with the Enterprise Objects Framework version 2.2 and WebObjects Release 3.5.1 in order to properly set the EODeleteRuleNoAction option in the EOModeler relationship inspector.

The EODeleteRuleNoAction is a new option added to EOModeler starting with EOF Version 2.2.

This EOModeler bundle is the fix for Apple bug ref. no. 2202107.

The WebObjects Current Patch List, **TIL article 70037**, contains information on all available patches and workarounds for all versions of WebObjects, including EOF patches. The OPENSTEP Current Patch List, **TIL article 70033**, contains information on all available patches and workarounds for all versions of OPENSTEP, including EOF patches. Please read these documents if you're not sure which patches you need on your system.
This article has been archived and is no longer updated by Apple.

Bug Description

The bug occurs when you use the Advanced EORelationship inspector to set a relationship's DeleteRule to "No Action" in an eomodel file. When you attempt to open this model at a later point in time, the delete rule will be mistakenly set to "Nullify", and you will see the following message in the console or application event log:

```
Invalid delete rule string:'EODeleteRunNoAction' on entity with name: 'toMovie'
```

Bug Workarounds

1) From within your application you can use the public API on EORelationship to set the EODeleteRule to be the desired value. This can be done with the following code sample:

```
// need to import EOClassDescription.h from EOControl where the
// enum is defined.

-(void)deleteRuleFix
{
// find out the relationship which needs to be fixed
   relToFix = [[[EOModelGroup defaultGroup] entityNamed:@"entityName"] relationshipNamed:@"relName"];
// set to the proper delete rule
   [relToFix setDeleteRule:EODeleteRuleNoAction];
}
```

2) Or you can load the DeleteRuleFix.bundle into EOModeler and any model written out will be correct. Download the NT version of the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/patches/2.2/EODeleteRulePatchNT.tar.gz

Or the 3-way fat Mach patch (intel, m68k, and sparc) from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/patches/2.2/DeleteRule.bundle.compressed

Installation of the DeleteRuleFix.bundle

First, you need to install the bundle. Then, we recommend that you drop the bundle into the Resources directory of the EOModeler.app. You also need to set the user defaults to get EOModeler to load the bundle during startup.

On NT (using the Bourne shell shipped with WebObjects):
<<Assuming that your $NEXT_ROOT is defined as C:/Next, that you have renamed the binary file to DeleteRuleFix.tar.gz, and that you have copied the NT binary patch into your C:/temp directory>>

```
% cd $NEXT_ROOT/NextDeveloper/Apps/EOModeler.app/Resources
% cp c:/temp/DeleteRuleFix.tar.gz .
% gzip -d DeleteRuleFix.tar.gz
% gnutar xf DeleteRuleFix.tar
% rm DeleteRuleFix.tar
% defaults write EOModeler BundlesToLoad "(c:/Next/NextDeveloper/Apps/EOModeler.app/Resources/DeleteRuleFix.bundle)"
```

On Mach, first decompress the file DeleteRule.bundle.compressed by using the Workspace File menu "Decompress". Then, you'll need to su to root in order to install the bundle:
<<Assuming that Workspace is placing the decompressed file into the default location: /tmp/O_DeleteRule_bundle/DeleteRuleFix.bundle >>

```
% su
Password:
```

```
# cd /NextDeveloper/Apps/EOModeler.app/Resources
# cp -r /tmp/O_DeleteRule_bundle/DeleteRuleFix.bundle .
# exit
% defaults write EOModeler BundlesToLoad "(/NextDeveloper/Apps/EOModeler.app/Resources/DeleteRuleFix.bundle)"
```

Testing for a proper installation of the patch

1. During launch, EOModeler will log the bundles that it loads. So look for the following message in the console of the Application event log, which means that the installation was correct:

```
Dec 11 16:01:05 EOModeler[17673] Loading bundle with path /NextDeveloper/Apps/EOModeler.app/Resources/DeleteRuleFix.bundle:
NSBundle </NextDeveloper/Apps/EOModeler.app/Resources/DeleteRuleFix.bundle> (not yet loaded)
```

2. Modify an EORelationship to have a delete rule of "No Action", save the mode, and then revert. If the Relationship is still set to "No Action", the bundle is loaded.

Note that if you have your own tool that you use to create or modify EOModels, you will need to load this bundle into that tool also in order to preserve the EODeleteRuleNoAction setting.

Published Date: Feb 18, 2012

EOF 2.2 LeakTester Example

There has been substantial interest in the difficult task of finding and fixing leaks in Enterprise Objects Framework, OpenStep, and WebObjects applications. As the EOF team was preparing for the final release of WebObjects 3.5, they wrote a small test app to help them find leaks in the framework. This example will help you learn how to write an application that should be able to run indefinitely with running out of memory. Also, if you think you have encountered a serious leak in the framework, you can use this app as a minimal test case for illuminating the problem.

This article has been archived and is no longer updated by Apple.

The LeakTester app takes a few input arguments:

-batchsize m [number, default 1]
-runs n [number, default 1]
-trials t [number, default 1]
-hang yn [YES/NO, default NO]

For each trial, at runtime the app will, using the Movies EOmodel:

- Empty the tables
- Insert movies (insert m * n movies)
- Add directors and actors (m*n objects fetched, m*n to-one faults fired, m*n to-many faults fired, m*n+m^2*n objects inserted)
- Modify objects (m*n objects fetched, m*n to-one faults fired, m*n to-many faults fired, m*n+m^2*n objects faulted in, m*n objects deleted, m*n objects inserted, m*n+m^2*n objects mutated)

The -hang option makes the app pause before quitting. This allows you to use pview or ps after the app finishes, rather than monitoring the app during its entire run.

The LeakTester source code can be downloaded from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/examples/LeakTester.m

You'll need to drop the Movies EOmodel into the app before compiling.

The following results were obtained on Windows NT, using pview.exe to examine the image at the end of the run. This app has only been tested using EOF 2.2, the EOF version that ships with WebObjects 3.5. You might notice that the results aren't quite as deterministic as one might hope, but this is the raw untouched data we got.

Oracle...
Batch Runs Trials Virtual-Size
6 4 1 27980
6 4 10 27980
6 4 25 27980
10 10 10 27980
--
10 10 100 28740
10 10 10 28740

Sybase...
Batch Runs Trials Virtual-Size
6 4 10 32860
6 4 1 32792
6 4 25 32860
--
10 10 1 33520
10 10 10 33588
10 10 100 33588

Informix...
Batch Runs Trials Virtual-Size

10 10 10 25492
10 10 1 23444
6 4 10 23444
6 4 25 23444
6 4 5 23460
--
10 10 10 25508
10 10 1 23460
--
6 4 100 25508
10 10 (37+) 30352 [This test was aborted after 37 trials due to server failure.]

Published Date: Feb 18, 2012

Intel and non-Intel processor compatibility

This article discusses processor compatability for NeXTSTEP and OPENSTEP systems.
This article has been archived and is no longer updated by Apple.
The Intel versions of NeXTSTEP and OPENSTEP have been tested on Intel 486, Pentium, and Pentium Pro processors. These are the only processors Apple supports for use with NeXTSTEP and OPENSTEP.

Some companies offer other x86 binary-compatible processors, such as the AMD K6, the Cyrix 5x86 and 6x86, and the Intel Pentium II. How well NeXTSTEP and OPENSTEP will run on these systems depends on how well their manufacturers implement x86 binary support. Our development tools do not optimize code for specific processors, so code developed on any of these systems will run on any other x86 or compatible processor.

Apple Enterprise Software has had reports of system instability while running NeXTSTEP and OPENSTEP on Cyrix 6x86-based systems. For this reason, we cannot recommend running NeXTSTEP or OPENSTEP on 6x86-based systems.
Published Date: Feb 18, 2012

Multiple Inheritance in Objective C

This document describes a technique for simulating C++ style mutual inheritance in Objective C.
This article has been archived and is no longer updated by Apple.

Multiple inheritance is a technique, used in C++ and some other object-oriented languages, whereby an object can inherit data and behavior from multiple superclasses. For the sake of simplicity, Objective C does not include multiple inheritance directly. Most of the time, using protocols or categories instead is a better solution. However, thanks to dynamic typing, you can also provide much of the function of multiple inheritance using OpenStep's implementation of NSObject. Here's how:

+ Create the classes from which you want your subclass to inherit. Be sure that your classes preserve encapsulation: you will not have direct access to your superclass' public instance variables.

+ Create a new subclass of NSObject and give it one instance variable: an array of objects of type id.

+ Create an init method that initializes one instance of each object from which you want your new object to 'inherit' and adds it to the array.

+ Override the forwardInvocation: method in your subclass. Your new method needs to do the following:
- Step through the array, testing each element with respondsToSelector: and the selector specified by the invocation. - If any array element responds to the selector, invoke the message on that element.
- If no element responds to the selector, call [self doesNotRecognizeSelector].

+ If you need to, override your subclass' respondsToSelector: method. This will not be necessary in most cases. The default implementation of respondsToSelector: does not recognize forwarding; that is, your new object will return NO to [myMIObject respondsToSelector:foo] even if it is able to forward foo messages to one of the elements of its array. Your new respondsToSelector method should:
- Step through the array, testing each element with respondsToSelector: and the selector specified.
- If any array element responds to the selector, return YES.
- If no array element responds to the selector, manually test the selector against each of your class' class and instance methods, if any.
- If your class does not respond to the selector, return [super respondsToSelector] to check the methods inherited from NSObject.

Since forwardInvocation: is only called if your new object can't respond to a message, you can override classes from either 'superclass' just as you would if they were true superclasses.

This particular implementation allows you to change the 'inheritance' of your object at runtime by changing the array; you could of course design a class along similar lines using statically typed instance variables instead of an array. This would allow you to design superclass objects that could communicate directly with each other through delegation or notification.

For more information on the techniques used here, see the Foundation framework documentation on the **NSObject** class, the **NSObject protocol** (for respondsToSelector:), and the **NSInvocation** class.

Published Date: Feb 18, 2012

Rhadsody Developer Release Filesystem

The Rhapsody Developer Release (RDR) has a fundamental incompatability with OPENSTEP/Mach (and NeXTStep) that you should be aware of when planning how to install and evaluate this software. Specifically, RDR/Intel uses a different file system format than either RDR/PPC or OPENSTEP/NeXTStep. You will not be able to set up systems to dual-boot RDR/Intel and previous Mach/Intel operating systems. You will also not be able to exchange external hard disks and/or removable media between RDR/Intel and other versions of Mach. Rhapsody/PPC will be able to read (mount read-only) media created on previous versions of Mach. Read/write access to older media is not supported.

This article has been archived and is no longer updated by Apple.

The specific technical issues are as follows:

OpenStep/Mach (all versions) used the original m68k UFS file format, for all architectures. Where necessary (Intel, etc) it was programmed to do byte-swapping on the file system structures as it read them off the disk.

The DR1 release of Rhapsody (for both PPC and Intel) does not have this byte-swapping code in it, so the two systems are currently using incompatable file system formats. It happens that the PPC version has the same byte sequence that the original m68k system used, so that Rhapsody/PPC can read OpenStep/Mach disks created on any architecture. Rhapsody/Intel can't read anyone else's disks.

In addition, the RDR native file system is based on the BSD4.4 file system. Previous Mach versions used the BSD4.3 file system format. The new file system supports huge (64 bit offset) files, and has some other changes. RDR only supports read access to the older file system.

Published Date: Feb 18, 2012

Macintosh: Remote Access to UNIX Servers

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

I want to access a UNIX server with my Macintosh using dial-up phone lines and modems.

What software do I need to do terminal emulation and file transfer?

This article has been archived and is no longer updated by Apple.

Many Macintosh communication programs, such as MacTerminal, MicroPhone, Smartcom II, Kermit, MacBLAST, VersaTerm, and so on, have VT100, VT52, VT102 terminal emulation. These programs also have file transfer protocols, such as X/Y/Zmodem, Kermit, MacBinary, and so on.

Most UNIX machines support these types of terminal emulation. As long as your UNIX machine has the same file transfer protocol (such as Kermit, or X/Y/Z Modem) as your Macintosh software, there should be no problem doing file transfers.

Published Date: Feb 18, 2012

NeXTSTEP 3.3 Driver: Yamaha OPL Audio

This document discusses a device driver for the NeXTSTEP operating system, version 3.3. This driver will not work with any version of OPENSTEP.
This article has been archived and is no longer updated by Apple.

Availability Information

An updated BETA version of this driver, version 3.30, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/drivers/beta/YamahaOPLAudio.pkg.compressed

Driver Name / Installer .pkg: YamahaOPLAudio
Driver Type: Sound
Driver Scope: Product Family
Supported Components: Yamaha OPL3-SA (YMF701B), Yamaha OPL3-SA3 (YMF715)
PC Bus / Interface Supported by Driver:** Integrated, ISA

General Overview notes: This driver supports Yamaha OPL3-SA and OPL3-SA3 based audio adapters.

Supported Products / Add-on Adapters:
Yamaha OPL3-SA3 (YMF715) based PNP audio adapters
Yamaha OPL3-SA (YMF701B) based on-board audio adapters

Supported Products / Systems (ie integrated into PC System):

Special Features of Driver / Driver Notes:

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker
Access Mode: PIO
Adapter Memory:
Attributes: 16-bit Linear, 8-bit Linear, 8-bit Mu Law

Known Problems

Driver Version Notes

3.30 - First driver for Nextstep 3.3.

** - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed. Check any available NeXTanswers and the hardware manual for the device for additional information.

Product Vendor

Published Date: Feb 18, 2012

Yamaha OPI Audio OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: Yamaha OPL Audio
Last Update: May 8, 1998

Availability Information

A release version of this driver, version 4.03, is avaiable on Apple's FTP servers at:
ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/drivers/released/YamahaOPLAudio.pkg.compressed

Driver Name / Installer .pkg: YamahaOPLAudio
Driver Type: Sound
Driver Scope: Product Family
Supported Components: Yamaha OPL3-SA (YMF701B), Yamaha OPL3-SA3 (YMF715)
PC Bus / Interface Supported by Driver*: ISA

General Overview notes: This driver supports Yamaha OPL3-SA and OPL3-SA3 based audio adapters.

Supported Products / Add-on Adapters:
Yamaha OPL3-SA3 (YMF715) based PNP audio adapters
Yamaha OPL3-SA (YMF701B) based on-board audio adapters

Sound Driver Details

Supported Connectors: 1/8" Microphone In, 1/8" Stereo Line-In, 1/8" Stereo Line-Out, 1/8" Stereo Speaker
Access Mode: PIO
Adapter Memory:
Attributes: 16-bit Linear, 8-bit Linear, 8-bit Mu Law

Driver Version Notes

4.00 - First realease for OPENSTEP 4.X User.

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
Published Date: Feb 18, 2012

Macintosh: Compressed Digital Audio Access from LaserDiscs

I'm interested in decoding "Time Compressed Audio" stored on a LaserDisc. This compression allows up to 300 hours of audio-only to be stored on a video LaserDisc.

Is there a Macintosh product for this purpose?

This article has been archived and is no longer updated by Apple.

```
Fast Trax Digital Technologies, Inc. of Irvine, California sells
encoder/decoder devices for the Macintosh and MS-DOS PC.  The Macintosh
needs only a software driver to use the equipment.

For more information, search on "Fast Trax".
```

Published Date: Feb 18, 2012

EOF 2.1 DB2 Adaptor Creation

This script modifies the ODBC adaptor example source code so that it can access DB2 databases. Building the modified adaptor requires IBM's DB2 CLI SDK; running it requires the DB2 CLI client libraries. Contact IBM directly for more information on these products, or visit their web page at:

http://www.software.ibm.com/data/db2

This script was written using EOF 2.1 installed on Windows NT and Solaris, and tested with DB2 version 2.1.2 and with a beta copy of version 5. It is provided as-is, and is not supported on any platform.
This article has been archived and is no longer updated by Apple.

Why It Works

Because the ODBC and DB2 API's are both based on the CLI specification, they are roughly source code compatible. This script allows you to recompile the ODBC adaptor against the DB2 CLI headers; a simple name change allows it to coexist with the ODBC adaptor. The new adaptor classes will be identical to the classes discussed in the ODBC adaptor class documentation.

Creating the DB2 Adaptor

+ Download the script from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/examples/odbc2db2

+ The ODBC adaptor source code example is not installed by the Solaris default installation. If you want to compile under Solaris, you will need to copy these files from an NT machine.

+ Modify the script if necessary. The ODBCDIR variable controls where the script will look for the ODBC example (the default is /NextDeveloper/Examples/EnterpriseObjects/ODBCAdaptor). The DB2DIR variable controls where the script will write the new DB2 example; the default is /NextDeveloper/Examples/EnterpriseObjects/DB2Adaptor).

+ Run the script. On Solaris, from a terminal shell, cd to the appropriate directory and type "./odbc2db2". On NT, use the command "sh odbc2db2".

+ Using ProjectBuilder or a text editor, open the Makefile.preamble-winnt or Makefile.preamble-solaris file appropriate to your build platform. Set the value of the DB2_DIR variable to the location of your DB2 SDK (the default values are C:/SQLLIB for NT and /opt/IBMdb2/V2.1 for Solaris).

+ If you are installing under Windows NT, set the install directory using ProjectBuilder's project inspector panel. On Unix, change the INSTALLDIR variable in the project's Makefile.

+ Build and install the framework. On NT, use ProjectBuilder's project panel; on Unix, cd to the project directory and type "make". You will see compilet warnings during the compilation process; ignore them.

Using the DB2 Adaptor

DB2 databases have a two level naming scheme consisting of a schema and a table. When creating a new model, the default entity names will be a concatenation of schema name and table name. The default schema name is the user's name. To modify that, specify the schema name in the connection string; i.e, use a connection string of the form DSN=dbname,UID=username,PWD=password,SCHEMALIST=schemaname. Optional keywords may also be specified in the DB2CLI.INI file.

More information

This script is provided as-is and is not supported by Apple Enterprise Software. For more information on using DB2, visit IBM's DB2 web page at:

http://www.software.ibm.com/data/db2/library/

For the most current information on what SDKs Apple offers, point your web browser to:

http://developer.apple.com/sdk/
Published Date: Feb 18, 2012

C++ Versus Objective C

"I already know C++. Why do I have to learn Objective C?"

Objective C and C++ are different in their design and intent. C++ extends and modifies C significantly to create a new object-oriented language. The complexity of these changes sometimes leads to confusing interactions between features. Learning C++ can be a lengthy process, and without a stable standard, differences between C++ compilers can add to the confusion.

Objective C is a set of simple extensions that provide ANSI C (or C++) with a simple but powerful standard object model. Most C programmers will be able to learn enough Objective C for most applications in a few days.

Because of this difference in design philosophy, each language has its own benefits and limitations. OPENSTEP's development tools give you the widest range of possibilities by allowing C programmers to write object-oriented code quickly with Objective C, while allowing C++ programmers to mix Objective C and C++ in their projects. Because of its simplicity, Objective C does lack some features that C++ provides; however, most of C++'s functionality can be accessed in other ways in Objective C. Apple also allows you to use all of the features of C++ by including native C++ objects in your OPENSTEP or WebObjects programming projects.

This article has been archived and is no longer updated by Apple.

Benefits of C++

Some of the unique features of C++ are:

+ Multiple inheritance

Objective C, like Java, does not support multiple inheritance. Instead, it allows the user to define a **protocol**. Declaring an Objective C class to conform to a protocol is similar to declaring a Java class to implement an interface; it defines a standard set of methods (member functions) that the class must respond to. Another object can check at runtime to see if a particular class conforms to a particular protocol. Thus, Boat would be a subclass of Vehicle and Duck would be a subclass of bird, and both would conform to the FloatingThings protocol. Unlike with multiple inheritance, only method declarations (member function declarations) are included, not definitions or instance variables (data members). Alternatively, the dynamic nature of Objective C allows you to simulate multiple inheritance: see **article 72567** for details.

+ A **friend**-ly language

C++ gives finer access control over all of an object's elements than Objective C, with private, public, and protected keywords and the concept of **friend** functions. Objective C does allow instance variables (data members) to be set as public, private, or protected, but does not have an equivalent construct for methods (member functions).

```
+ iostream.h
```

C++ provides a new implementation of the ANSI input/output library for stream-based i/o. Objective C does not have an analogous library, but some implementations of Objective C++ do allow you to call the C++ iostream library from your Objective C++ projects.

Benefits of Objective C

+ Dynamic typing and the id type

Any variable in an Objective C object may be declared as type id, meaning a pointer to an object of an undetermined type. The type can be determined at run time, and the appropriate messages sent. Using Objective C's SEL type, you can determine at runtime which message is sent to the object, and therefore what method (member function) is accessed. To avoid runtime problems, the programmer can also test at runtime (with the respondsToSelector: method) to see which messages an object recognizes. Class methods (static member functions) are also available; unlike C++ classes, Objective C classes are true objects and exist at runtime.

+ Categories and dynamic loading

The dynamic nature of Objective C allows existing classes to be extended at runtime. Objective C allows you to define categories, related sets of extensions to objects you've already created. For example, in converting a text-based app into a graphics app, the code your objects needed to draw themselves could be compiled as a category and loaded at run-time

only when needed. This saves memory and allows you to leave your original objects unmodified.

+ Simple and standard

C++ is a complex and evolving language, leading to differences between compilers and implementations; as a result, C++ users need to be more careful about using features like boolean types that may not be supported on all compilers. Objective C 's simplicity makes these problems less likely; it has also helped it maintain a stable standard. (And yes, Objective C does have a BOOL data type.)

+ Shortcuts

C++ doesn't have a monopoly on convenient features, either. Objective C's additions include C++-style // comments and the #import directive, which acts like the #include directive but ensures that each referenced file is included only once per project.

An Objective C Primer

A C++ programmer who starts working in Objective C is likely to notice the differences in syntax before the more subtle differences in implementation. For example, a call to a C++ Employee class instance's promoteToManager member function might look like this:

```
anEmployee.promoteToManager();
```

In Objective C, this same call would look like this:

```
[anEmployee promoteToManager];
```

A similar call with two arguments in C++...

```
anEmployee.promote(newPosition, newSalary);
```

...would look like this in Objective C:

```
[anEmployee promoteToPosition:newPosition atSalary:newSalary];
```

Here, the member function being called (in Objective C terminology, the instance method being messaged) is called promoteToPosition:atSalary:

Objective C's syntax and naming conventions are discussed in more detail in the book *Object-Oriented Programming and the Objective C Language*. This book also contains information on combining Objective C and C++ code in OPENSTEP projects and goes into more detail on the principles behind Objective C's object model. It is available as part of OpenStep's online documentation, or printed copies can be purchased from Apple Enterprise Software. More information, including a link to the Objective C Usenet FAQ, is available from the GNU Objective-C Project at http://world.std.com/~gsk/gnu-objc.html .

Published Date: Feb 18, 2012

Password Protecting OPENSTEP for Mach in Single User Mode

The ability to boot a UNIX system in single-user mode is a security concern, since single-user mode provides a root shell without requiring a password. This example allows you to force the user of an OPENSTEP for Mach system to supply a password before /bin/sh starts in single user mode. It does this by running a password checking program in the shell's startup file for root, /.profile. This document assumes that you are using OPENSTEP for Mach version 4.2.

This article has been archived and is no longer updated by Apple.

Disclaimer

This procedure has been tested for security holes, and appears to resist concerted efforts to defeat it. However, Apple disclaims any warranty of any kind, expressed or implied, as to its fitness for any particular use. This procedure has not been tested under any version of MacOS X Server.

This script may not work if the password you use is more than eight characters long. Remember to test the script immediately after installing it to be sure your password is being fetched correctly.

Required Files

The files needed for this example are available in compressed form on Apple's FTP site, at:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/examples/PW_Protected_SU.compressed

This archive includes:

- The pwcheck.c source code
- The makefile
- A sample /.profile file that runs the compiled example
- An RTF copy of this instruction file

Using Password Protection

To password protect single-user mode on your system, simply log in to a Unix shell as root, cd to the uncompressed directory containing the Makefile and source code and type "make." The pwcheck Makefile will automatically install the pw_check program and /.profile, place your local NetInfo domain's root password in your local /etc/password file, and protect your /etc/rc.boot file so that the startup sequence cannot be interrupted from the keyboard. Backup copies of your original files are created as /etc/passwd.orig, /etc/rc.boot.orig, and /.profile.orig.

The program prompts the user three times to enter a password. The default .profile included with this package will prompt for the root password, but you may specify another user's password in the command line. If the correct password is not entered in three attempts, the program halts the processor, shutting down the computer system.

Published Date: Feb 18, 2012

AppleWorks: Using With Wide Carriage ImageWriter

This article discusses how to use AppleWorks with the Wide Carriage ImageWriter.
This article has been archived and is no longer updated by Apple.
AppleWorks can print over the entire width of the Wide Carriage ImageWriter's platen. How you do it depends on whether you're using AppleWorks' word processor, datbase, or spreadsheet module:

- In the word processor or spreadsheet, press Open-Apple-O, set PW (platen width) to 13.2, and press Escape.

- In the database, press Open-Apple-O when in a Report Format and set PW (Platen Width) to 13.2.

To print the maximum number of characters per line, change the Characters per Inch setting to 17. This allows up to 224 characters per line.
Published Date: Feb 18, 2012

Apple IIGS: Error 0C Indicates Sound Chip Problem

My Apple IIGS (rev. 03 ROM) gives a self test error code of 0C000004, though everything seems to be working fine. What does this code mean?
This article has been archived and is no longer updated by Apple.
Apple IIGS Tech Note #95 explains the diagnostics test:

```
AA = 0C
DD = 01:  RAM data error
     02:  RAM address error
     03:  Data register failed
     04:  Control register failed
     05:  Oscillator interrupt timeout
```

In your case, the problem is a control register failure, specifically a bad sound chip. Since the sound chip is not socketed, you will have to replace the logic board of the Apple IIGS.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

Using the GDB Debugger

Gdb is the debugging tool used to debug WebObjects and OPENSTEP applications, and an integral part of the Apple Enterprise development environment. This document is designed to help you use gdb to quickly debug and test your applications.

This article has been archived and is no longer updated by Apple.

Breakpoints

Setting and Managing Breakpoints

To set a breakpoint, type **break** or **b** and the name of the function or method where you want to halt execution:

(gdb) break main

or

(gdb) b main

If the method you specify is implemented by several classes, gdb presents a list for you to choose from. At the prompt, type the number of the function or method where you want the breakpoint to be set.

```
(gdb) b init
[0] cancel
[1] all
[2] -[MovieMgr init] at MovieMgr.m:10

Non-debugging symbols:
[3] -[ColoredRanges init]
[4] -[EOAccessGenericFaultHandler init]
[5] -[EOAttribute init]
[6] -[EODelayedObserverQueue init]
[7] -[EOEditingContext init]
[8] -[EOEntity init]
.
.
.
[92] -[WOApplication init]
[93] -[WOComponent init]
[94] -[WOContext init]
[95] -[WODisplayGroup init]
[96] -[WODynamicURLString init]
[97] -[WOElementIDString init]
[98] -[WOEncodingDetector init]
[99] -[WOPageSessionStore init]
> 2
Breakpoint 5 at 0x40100a: file MovieMgr.m, line 10.
(gdb)
```

You can also specify the class along with the method name:

(gdb) break [MovieMgr init]

Remember that in Objective-C, if a method takes arguments, you must include the colons as part of the method name:

(gdb) break [MovieMgr setCurrentBatchNumber:]

If you need to put a breakpoint inside a function or method instead of at the start, you can specify stops by line number or by code address. Gdb interprets a breakpoint on an integer as a break on that line in the current source file. To set a breakpoint in a different file, specify the file name followed by a colon and the line number. To break at a code address, type the address preceded by an asterisk:

```
(gdb) break 10 break at line 10 in the current rile
(gdb) break MyObject.m:l0 break at line 10 in tile MyObject.m
(gdb) break *0x50069b4 break at the specified address
```

To find the line numbers of the next few commands to be executed from the current source file, use the **list** command.

```
(gdb) list
19
20 - (void)fetchMovies
21 {
22 EOFetchSpecification *fetchSpec;
23
24 ec = [[WOApp session] defaultEditingContext];
25 fetchSpec = [EOFetchSpecification fetchSpecificationWithEntityName:@"Movie"
26 qualifier:nil sortOrderings:nil];
27 movies = [ec objectsWithFetchSpecification:fetchSpec];
28 }
(gdb)
```

Once you have set your breakpoints, use the **info break** command to list them by breakpoint number:

```
(gdb) info break
Num Type Disp Enb Address What
3 breakpoint keep y 0x00401053 in -[MovieMgr fetchMovies] at MovieMgr.m:24
breakpoint already hit 1 time
4 breakpoint keep y 0x00401099 in -[MovieMgr fetchMovies] at MovieMgr.m:27
5 breakpoint keep y 0x0040100a in -[MovieMgr init] at MovieMgr.m:10
(gdb)
```

Once you know a break point's number, you can selectively enable or disable it with the **disable** (**dis**) and **enable** (**ena**) commands:

```
(gdb) disable 3

(gdb) ena 3
```

Accessing Variables

The **print** command (**p**) allows you to print information about an address, a variable, or a method.

```
(gdb) p fetchSpec
$1 = (EOFetchSpecification *) 0x40104c
(gdb)
```

Every expression you evaluate using the print command is assigned a value number and stored in your session's value history. This value, in the example above $1, can be used in further expressions:

```
(gdb) p [$1 entityName]
$2 = (void *) 0x403020
(gdb)
```

The values in the value history are not affected by scope. This means that $1 doesn't change to hold the new value of fetchSpec when your program enters a different scope.

The **print-object** (**po**) command takes an Objective C object as its arguments, and calls that object's printForDebugger: method. The default implementation of this method, inherited from the NSObject class, simply prints out the class name and hex address of the object:

```
(gdb) po ec
<EOEditingContext: 0x4463a0>
(gdb)
```

You can override this method in your classes to provide more useful data about a given object at run-time for debugging purposes. Many Foundation and AppKit objects, such as NSString and NSArray, already do this.

The **print** and **po** commands accept any valid Objective-C expression, including nested messages:

```
(gdb) p [[movies objectAtIndex:0] editingContext]
$2 = (void *) 0x4463a0
(gdb) po $2
<EOEditingContext: 0x4463a0>
(gdb)
```

Other Commands

next or **n** takes you to the next line of the current source file.
step or **s** steps into a method.
view or **v** highlights the line you are on in your source code in ProjectBuilder.

At any time, $ refers to the last value in history and $$ to the next-to-last value.

Pressing the enter key at the gdb prompt without typing a command repeats the last command executed.

Customizing GDB

Convenience Variables

Any name that begins with a `$' can be used as the name of a gdb **convenience variable**. These variables are implicitly typed and created at first reference. Use **print** to get the value of a convenience variable and **set** to set or change the value. You can use any valid C or Objective-C expression, including dynamically called methods or functions:

```
(gdb) p $myArray = [NSArray array]
$1 = (void *) 0x42f490
(gdb) po $1
()
(gdb) po $myArray
()
(gdb) p $num = 1230 % 4
$2 = 2
(gdb)
```

All registers have convenience variables associated with them. The **info registers** command dumps the contents of all registers so you can see the names associated with each register. The register convenience variables most often used are $fp, which holds the frame pointer, $sp for the stack pointer, and $pc for the program counter.

User-Defined Commands

As you learn more gdb features, you may want to create shorthand aliases for commands or macros of common command sequences. The **define** command allows you to choose a name to be associated with a command or sequence of commands. These user-defined commands become fully integrated in gdb: You only need type enough of the name to distinguish it from other commands, and the commands are listed in gdb's help system. You can even use the **document** command to enter documentation for your new command; this documentation is provided when you ask for **help** about the command.

```
(gdb) define pools
Type commands for definition of "pools".
End with a line saying just "end".
>p [NSAutoreleasePool showPools]
>end
(gdb) document pools
Type documentation for "pools".
```

End with a line saying just "end".
>Prints descriptions of the autorelease pools
>end
(gdb) help pools
Prints descriptions of the autorelease pools
(gdb)

User-defined commands can not take arguments. However, you can work around this is by using a convenience variable, with its value set prior to executing the command.

Preferences

Gdb's preference settings control editing, history, printing, and other behavior in the gdb environment. To see the full list of preferences and their current settings, use the **info set** command.

(gdb) info set
confirm: Whether to confirm potentially dangerous operations is on.
prompt: Gdb's prompt is '(gdb) ".
editing: Editing of command lines as they are typed is on.
verbose: Verbose printing of informational messages is on.
autoload-breakpoints: Automatic reseizing of breakpoints in dynamic code is on.
. . .

One preference setting commonly changed is **print elements**. When you print an array or string using the print command, gdb prints elements only up to the limit specified by this preference. By default the limit is set to 200; you can disable the limit by setting it to 0.

Initialization Files

A **.gdbinit** file consists of gdb commands as they would be typed at the command prompt. When gdb starts up, it reads the commands from the .gdbinit file in your home directory, then the .gdbinit file from the current project directory, and finally from the system .gdbinit file in /usr/lib. Use your personal .gdbinit file to set your preferences, and the system file to add path inclusions for subprojects and to define project-specific commands.

Advanced Debugging Techniques

Backtraces

Gdb provides a set of commands that allow you to examine the state of your application. Use the **backtrace** command (**bt**) to find out where control has come from, based on a list of stack frames. Use the **frame** command (**f**) to choose which of those stack frames is selected. The **info frame**, **info locals**, and **info args** commands provide you with more information about the chosen frame. Remember that gdb's command line interpreter can evaluate any C or Objective-C expression, so when your application is stopped in gdb, you can examine and set variables of your program, make function calls, send messages to objects, and so on.

Backtrace output looks like this:

(gdb) bt
#0 -[MovieMgr fetchMovies] (self=0x439750, _cmd=0x402127) at MovieMgr.m:28
#1 0x401030 in -[MovieMgr init] (self=0x439750, _cmd=0x310255d3)
at MovieMgr.m:12
#2 0x320434c0 in +[NSObject new] ()
#3 0x31017842 in objc_msgSendv ()
#4 0x320410d5 in -[NSInvocation invoke] ()
#5 0x540b4134 in NMSPerformSelector ()
#6 0x540bf01e in -[WOObjCExpression evaluateInScope:debugger:] ()
#7 0x540bb575 in -[WOBinaryExpression evaluateInScope:debugger:] ()
#8 0x540bc8d5 in -[WOExpressionStatement executeInScope:debugger:] ()
#9 0x540c27b0 in -[WOStatements executeInScope:debugger:] ()
#10 0x540bc6a7 in -[WOCompoundStatement executeInScope:debugger:] ()

```
#11 0x540bd45f in -[WOMethod executeInParentScope:debugger:forSelf:arguments:]
()
#12 0x540be5a5 in -[WOModule evaluateMethodNamed:forSelf:count:arguments:inScope
:debugger:] ()
#13 0x540b7289 in _NMSGenericMethod ()
#14 0x540b72dd in -[_NMSScriptedClassShadow _genericVararg:] ()
#15 0x4201d5ad in -[WOComponent(WOComponentPrivate) _initWithName:] ()
#16 0x4201e7bb in -[WOComponentDefinition(WOComponentGeneration) componentInstan
ce] ()
#17 0x42018a5f in -[WOApplication(WOPageManagement) pageWithName:] ()
#18 0x4201932f in -[WOApplication(WORequestHandlingInternals) _handleRequestInPr
eparedSession] ()
#19 0x42019277 in -[WOApplication(WORequestHandlingInternals) _handleRequestInPr
eparedApplication] ()
#20 0x42019915 in -[WOApplication(WORequestHandling) handleRequest:] ()
#21 0x4202a0c5 in -[WODefaultAdaptor handleConnection:] ()
#22 0x3203946f in _postNotification ()
#23 0x32039d6a in -[NSNotificationCenter postNotificationName:object:userInfo:]
()
#24 0x320604ad in -[NSConcreteFileHandle handleMachMessage:] ()
#25 0x3206f0c6 in -[NSRunLoop acceptInputForMode:beforeDate:] ()
#26 0x3206f268 in -[NSRunLoop runMode:beforeDate:] ()
#27 0x42018d75 in -[WOApplication(WORunning) run] ()
#28 0x4012d6 in main (argc=4, argv=0x436430) at main.m:183
#29 0x40144c in mainCRTStartup ()
(gdb)
```

You can then inspect the frames.

```
(gdb) f 12
#12 0x540be5a5 in -[WOModule evaluateMethodNamed:forSelf:count:arguments:inScope
:debugger:] ()
(gdb)
```

If you have the symbols, you can use **info args** to print the function's arguments and **info locals** to print the local variables:

```
(gdb) info args
self = (MovieMgr *) 0x439750
_cmd = (struct objc_selector *) 0x402127
(gdb) info locals
self = (MovieMgr *) 0x439750
fetchSpec = (EOFetchSpecification *) 0x448a80
(gdb)
```

If you do not have the symbols, you can still get to some of the argument information by using the frame pointer and offsets. (These offsets vary based on system architecture.)

```
p *(id *)($fp + 8) - prints the receiver of the message (often the same as self)
p *(SEL *)($fp + 12) - prints the selector (the method that was called)
p *(id *)($fp + 16) - prints argument 1
p *(id *)($fp + 20) - prints argument 2
p *(id *)($fp + 24) - prints argument 3
```

```
(gdb) f 12
#12 0x540be5a5 in -[WOModule evaluateMethodNamed:forSelf:count:arguments:inScope
:debugger:] ()
(gdb) p *(id *)($fp + 8)
$4 = (WOModule *) 0x43ab70
(gdb) p *(id *)($fp + 16)
$5 = (NSInlineCString *) 0x428ff0
(gdb) po $5
```

```
init
(gdb) p *(id *)($fp + 20)
$6 = (WOScriptedClass(/WebObjects/Projects/batch.woa/Main.wo/Main) *) 0x432ea0
(gdb)
```

For convenience, you may want to create user-defined commands for these offsets in your .gdbinit file.

Breakpoint Commands

You may want to execute the same commands each time you hit a given breakpoint. Gdb **breakpoint commands** nicely handle this task. Breakpoint commands enable you to specify a set of commands that gdb executes each time the breakpoint is reached. Any C or Objective-C expressions are allowed, as are other gdb commands such as turning breakpoints on and off or changing auto-display of expressions. You can also use the **silent** command, which causes gdb to skip the usual printing when arriving at a breakpoint, and the **continue** command, which continues execution of your application. The **commands** keyword is used to specify commands to execute; type help commands for syntax information.

For example, if you have introduced some code that causes your application to crash, you can use breakpoint commands to get past the errant code and reach another breakpoint while debugging. Just set a breakpoint right before the misbehaving code, and use the **jump** command to skip over it:

```
- someMethod
{
. .
[anObject free];
. . .
[anobject doOneMoreThing]; // Line #192: Oops, I didn't mean to do this!

. . . .
return self;
}
```

```
(gdb) break 192 Breaks on the line that sends message to freed object
(gdb) commands Starts the set of breakpoint commands
Type commands for when breakpoint 1 is hit, one per line.
End with a line saying just "end".
silent Turns off the somewhat noisy breakpoint announcement
jump 193 Jumps to the next line
continue Continues executing the program
end Ends the set of commands
```

Gdb will now skip over the line that sends a message to the freed object, allowing you to debug other things. At times, it may be more appropriate to use the **return** command to force a return from the current method or function.

You can also test a code fix directly in the debugger, without having to recompile and link your project. For example, if you've forgotten to allocate space for a string, you can insert a malloc call in the debugger:

```
- setStringValue:(const char *)newString
{
char *str;

strcpy(str, newstring); // Line #166: Bad news, forgot to allocate str
return self;
}
```

```
(gdb) break 166 ----> break on strcpy line
(gdb) commands
Type commands for when breakpoint 4 is hit, one per line.
End with a line saying just "end".
silent
print str = (char *) malloc(str,strlen(newString) + 1)
continue
```

end

These breakpoint commands stop before the strcpy, allocate the string, and continues execution. Don't forget to propagate the changes back to your original source code to permanently fix the problem!

Viewing SQL Debugging Output

Use this command to view the SQL that EOF generates as a result of your fetches:

(gdb) defaults write NSGlobalDomain EOAdaptorDebugEnabled YES

This command turns SQL logging off:

(gdb) defaults write NSGlobalDomain EOAdaptorDebugEnabled NO

Debugging Optimized Code

Debugging optimized code sometimes gives surprising results. Control flow may change due to loop invariant statements being moved out of a loop body or common subexpressions being eliminated. The debugger may be unable to set or print the value of a given variable because it doesn't have information necessary to find it. Variables may be moved into registers and two or more variables may share the same register when their live ranges don't overlap. Stack variables that never have their address taken and are used only across a very few instructions can "disappear" without a trace. If you ask gdb to print such a variable, even though the source clearly shows it is in scope, gdb will reply:

(gdb) print num
No symbol "num" in current context.

In this case, the **info locals** and **info args** commands will also report there is no record of the variable. To ensure that your variables are available to the debugger even after optimization, declare the variable **volatile**.

For More Information

Please see gdb's man page and on-line documentation for more information on the topics covered by this document.

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ImageWriter I: Compatible with Newer Macintosh Models (2/96)

I am having difficulty using a Macintosh Classic with a wide carriage

ImageWriter I. Are there any known incompatibilities with old ImageWriter

printers and the new computers or system software?

This article has been archived and is no longer updated by Apple.

There are no known compatibility problems with the ImageWriter I and Macintosh computer with DIN 8 serial ports, if the current ImageWriter driver and the proper cables are used.

The current ImageWriter driver is version 2.7 for System 6 users and version 7.0.1 for System 7.x users. The correct cable configuration is to use the original Macintosh to ImageWriter DB-9 to DB-25 cable, part number 590-0169, with the DB-9 to Mini DIN 8 Macintosh Peripheral Adapter cable, part number 590-0553.

When using these cables and the current ImageWriter driver, the printer

should work just fine.

Article Change History:

05 Feb 1996 - Made minor change.

06 Jul 1995 - Updated part numbers to reflect current models

Support Information Services

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EOF 2.2 Database Adaptor Patch Overview

This patch is now obsolete. Please see the WebObjects Current Patch List, **TIL article 70037**, for information on the most current patches for WebObjects and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.

About the EOF 2.2 Sybase Adaptor Patch

The Sybase Adaptor patch fixes two bugs:

All parameters required for Sybase stored procedures
Apple reference # 2203081

PROBLEM:
If you did not supply all values when executing a Sybase stored procedure, the execution would fail with an exception like:

```
Feb 19 11:23:53 WOF_3_5_Sybase_Patch[1027] Caught exception:EOGeneralAdaptorException
Sybase: Server:unknown Procedure:NEXT_MOVIE_PRIMARY_KEY Line:0 Procedure NEXT_MOVIE_PRIMARY_KEY expects
parameter @A_MOVIE_ID, which was not supplied.
```

This happens even though A_MOVIE_ID is not required for the stored procedure.

RESOLUTION:
The Sybase adaptor no longer requires optional arguments to stored procedures.

Cannot fetch float-NSDecimalNumbers along with text columns
Apple reference # 2208497

PROBLEM:
If you have an attribute with external type float, and internal type NSDecimalNumber, it will not fetch properly if a text column is also in the fetch. The attribute will be blank.

RESOLUTION:
The Sybase adaptor now correctly fetches these attributes.

Installing the EOF 2.2 Sybase Adaptor Patch

Windows NT
Download the Sybase patch for Windows NT from Apple's FTP servers at ftp.info.apple.com. The patch is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/

patches/2.2/Sybase_Patch.NT.gtar.gz
```

To install the patch, open up a shell (from the WebObjects start menu) and issue the following commands as root, replacing the patch file name with the full path of the patch file you downloaded:

```
cd $NEXT_ROOT

gunzip -c Sybase_Patch.NT.gtar.gz | gnutar xvf -
```

OPENSTEP/Mach
Download the Sybase patch for Mach from Apple's FTP servers at ftp.info.apple.com. The patch is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/

patches/2.2/Sybase_Patch.mach.gtar.gz
```

To install the patch, open up a Terminal and issue the following commands as root, replacing the patch file name with the full path of the patch file you downloaded:

```
cd /
```

```
gnutar xvzf Sybase_Patch.mach.gtar.gz
```

Solaris
Download the Sybase patch for Solaris from Apple's FTP servers at ftp.info.apple.com. The patch is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/

patches/2.2/Sybase_Patch.Solaris.gtar.gz
```

To install the patch, open up a Terminal and issue the following commands as root, replacing the patch file name with the full path of the patch file you downloaded:

```
cd $NEXT_ROOT

zcat Sybase_Patch.Solaris.gtar.gz | gnutar xvf -
```

HP-UX
Download the Sybase patch for HP-UX from Apple's FTP servers at ftp.info.apple.com. The patch is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/

patches/2.2/Sybase_Patch.HP-UX.gtar.gz
```

To install the patch, open up a Terminal and issue the following commands as root, replacing the patch file name with the full path of the patch file you downloaded:

```
cd $NEXT_ROOT

zcat Sybase_Patch.HP-UX.gtar.gz | gnutar xvf -
```

About the EOF 2.2 ODBC Adaptor Patch

The ODBC Adaptor patch fixes two bugs:

ODBC Adaptor cannot execute stored procedures with output parameters
Apple reference # 2208503

PROBLEM:
The EOF 2.2 (WebObjects 3.5) version of ODBCEOAdaptor.framework introduced a bug which causes an error when using a stored procedure with an output parameter.

RESOLUTION:
The ODBC adaptor now handles output parameters correctly.

ODBC adaptor leaks connections with Microsoft Access
Apple reference # 2209574

PROBLEM:
The EOF 2.2 (WOF 3.5) and earlier versions of ODBCEOAdaptor.framework did not release ODBC connections when using Microsoft Access (or any JET based data source) in order to work around a bug in the Microsoft odbcjt32.dll library; this bug caused a crash when SQLFreeConnect was called. The SQLFreeConnect bug was discovered in version 3.40.2829 of the DLL. Newer versions of the DLL (beyond 3.50) no longer exhibit the crashing problem.

RESOLUTION:
The patched version of this framework now checks the version of the DLL more carefully and allows SQLFreeConnect to be called unless the DLL version is 3.4X. The adaptor no longer leaks the ODBC Connection when running with fixed versions of odbcjt32.dll.

Installing the EOF 2.2 ODBC Adaptor Patch

Windows NT
Download the ODBC adaptor patch for Windows NT from Apple's FTP server at ftp.info.apple.com. The patch is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/EOF/

patches/2.2/ODBC_Patch.NT.gtar.gz
```

To install the patch, open a shell (from the WebObjects start menu) and issue the following commands as root: (replacing the patch file name with the full path of the patch file you downloaded)

```
cd $NEXT_ROOT

gunzip -c ODBC_Patch.NT.gtar.gz | gnutar xvf -
```

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Published Date: Feb 18, 2012

AddObjectIfAbsent: and slow EOF performance

This document describes a problem that can cause memory leaks and slow performance for OPENSTEP and WebObjects applications.

This article has been archived and is no longer updated by Apple.

Apple's Enterprise Objects Framework uses a category to add an **addObjectIfAbsent:** method to NSMutableArray:

```
@interface NSMutableArray (EOPointerBasedManipulation)
- (BOOL)addObjectIfAbsent:object;
   // adds an object to the array if and only if it isn't already in the array
   // return YES if object was not in the array or NO if it already was present
@end
```

Because this method is not documented, some Apple developers and writers of third-party frameworks have added their own **addObjectIfAbsent:** method. When EOF's EOObjectStoreCoordinator makes a call to **addObjectIfAbsent:** to register a notification, it does not receive the expected return value, and two additional notifications are generated. This can seriously affect system performance in applications which make a large number of database fetches. There are three possible solutions to the problem:

--Modify your implementation of the method to return the appropriate values, as shown above

--Modify your code to use Apple's implementation of this method

--Change the name of your custom method so Apple's implementation is not superceded.

Published Date: Feb 18, 2012

Using the Windows NT Wait Cursor With OPENSTEP

Applications built with OpenStep 4.2 Enterprise will not automatically call the Windows NT wait cursor during long operations such as launching applications and loading frameworks. If you know your application is about to begin a long operation, however, you can bring up the NT wait cursor manually. This document contains sample code for calling the NT wait cursor.

This article has been archived and is no longer updated by Apple.

The following sample code demonstrates how to call the Windows NT wait cursor on OPENSTEP 4.2 Enterprise.

```
#ifdef WIN32

#import <Windows.h>
// Apple OpenStep Enterprise NSCursor private initializer method
@interface NSCursor (Secret)
- (id) initWithCursorHandle: (HCURSOR) handle;
@end

#endif


@implementation NSCursor (waitCursor)

+ (NSCursor *) waitCursor

{
static NSCursor *waitCursor = nil;

#ifdef WIN32
if (!waitCursor) {
HCURSOR cursor = LoadCursor(NULL, IDC_WAIT);

if (cursor && [NSCursor instancesRespondToSelector: @selector(initWithCursorHandle:)])
waitCursor = [[NSCursor alloc] initWithCursorHandle: cursor];
}
#endif
return waitCursor;
}

@end

// some class implementation wanting to use a wait cursor

- (void) deactivateWaitCursor

{
#ifdef WIN32
NSCursor * const waitCursor = [NSCursor waitCursor];
NSArray * const windows = [NSApp windows];
const int count = [windows count];
int i;

[waitCursor setOnMouseEntered: NO];
for (i = 0; i < count; i++)
[[windows objectAtIndex: i] resetCursorRects];
#endif
return;
}

- (void) activateWaitCursor

{
#ifdef WIN32
```

```
NSCursor * const waitCursor = [NSCursor waitCursor];
NSArray * const windows = [NSApp windows];
const int count = [windows count];
int i;

[waitCursor setOnMouseEntered: YES];
for (i = 0; i < count; i++) {
NSWindow * const window = [windows objectAtIndex: i];
NSView * const contentView = [window contentView];

[window enableCursorRects];
[contentView addCursorRect: [contentView frame] cursor: waitCursor];
}
#endif
return;
}
```

Published Date: Feb 18, 2012

WebObjects Deployment Problems on HP-UX

This article discusses problems commonly encountered while deploying a WebObjects application on HP-UX.
This article has been archived and is no longer updated by Apple.
Q: I'm trying to deploy a WebObjects 3.5.1 or WebObjects 4 application on an HP-UX 10.20 web server. My applications crash out if I try to use Monitor.app to control more than a few application instances.

A: Because of multithreading limitations on HP-UX, only 15 concurrent Distributed Objects (DO) connections are available to any given process; because Monitor.app uses DO to communicate with applications, monitored apps reach the limit more quickly.

You may be able to increase this limit by increasing the MAXFILES and MAXFILES_LIM kernel parameters on your system. However, if you are running your WebObjects applications on a Mach, Windows NT, or Solaris machine, a better solution is to run monitor.app on that system instead of on the web server. Monitor does not need to run on the web server machine or make DO connections to it, although it does need to make DO connections to the application server. Because monitor.app does require access to the web server's WebObjects.conf file, you will need to provide access to the server machine via NFS or Samba, or, if the WebObjects.conf file does not change, you can use an exact local copy.
Published Date: Feb 18, 2012

OPENSTEP 4.2 for Mach Fax Patch

This patch is now obsolete. It was incorporated into OPENSTEP 4.2 Patch 4. Please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.
This patch is obsolete; please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This patch was incorporated into OPENSTEP 4.2 Patch 4.

Q: Under OPENSTEP 4.2 for Mach, some applications won't let me set a cover page for faxes--and a few won't let me fax at all! How can I fix this?

A: There was a problem with the English language cover page shipped with OPENSTEP 4.2. All you have to do is replace the file:

```
/NextLibrary/Fax/English.lproj/Cover.draw
```

with a corrected version. You will then be able to fax normally from all applications. You can download this corrected version from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/

Enterprise/openstep/patches/4.2_Fax_Patch/Cover.draw.compressed

NOTE: Some versions of OmniWeb for OPENSTEP Mach add a .Z extension to downloaded files, causing uncompression errors. To correct this problem, find the downloaded file in the file system and remove the .Z extension before uncompressing it.

Published Date: Feb 18, 2012

Linking Windows NT DLL‘s into WebObjects 3.0 applications

This document explains how to link a DLL into a compiled WebObjects 3.0 application on Windows NT. The procedure also applies to OPENSTEP Enterprise 4.1 on Windows NT.

This article has been archived and is no longer updated by Apple.

In most versions of OPENSTEP and WebObjects, linking a .dll into your project is simply a case of dragging and dropping the library's .lib file into the Libraries folder of your Project Builder project, then using the Inspector to add your library's header files to the project's search order.

However, there was a bug in the version of ProjectBuilder that shipped with OPENSTEP 4.1 and WebObjects 3.0. If you are using either of these versions, do not add the library with the ProjectBuilder browser. Instead, add the library name to the makefile directly, in the OTHER_LIBS keyword. Then put a copy of the .lib file in your application directory under the obj-i386-nextpdo-winnt3.5-opt directory. You will also need to add this value to the OTHER_LDFLAGS keyword:

OTHER_LDFLAGS = $(LIBRARY_PATHS)

These problems have been fixed in OPENSTEP 4.2 and WebObjects 3.1.

Published Date: Feb 18, 2012

A/UX: Directories; 32-bit Clean Warning; Number of Procs (9/94)

Here are a few A/UX questions:

1. I've got an NFS server online. How do I export specific directories (/usr/catman, for example) without exporting root or /usr?

2. How do I prevent the "32-bit clean" warning (for Macintosh applications stored and launched under A/UX file system) without resorting to a ResEdit fix?

3. I know how to increase the maximum number of processes using kconfig. Is it possible to increase my maximum number of PTYs to 64?

This article has been archived and is no longer updated by Apple.
1. All the NFS exported entries specified in the /etc/exports file are file system mount points. Currently, there is no way you can only "export" specific directories under a mounted file system.

We suggest you make and export a new file system for these specific directories.

2. SIZE resource is the only place to make this change. Here are two ways you can make a Macintosh application "recognizable" as a 32-bit clean so as not to get a "32-bit clean..." warning message everytime it is launched:

* use ResEdit
or
* use "changesize +32BitCompatible file" command under CommandShell.

Changesize command sounds easier than ResEdit.

3. Yes, it is possible to change the maximum # of PTYs via kconfig. Just specify the NPTY=64 within kconfig.

Article Change History:
06 Sep 1994 - Reviewed. Changed parent folder.
31 Aug 1992 - REVIEWED for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

WebObjects 3.5.1 Java Patch Overview

This patch is now obsolete. Please see theWebObjects Current Patch List, **TIL article 70037**, for information on the most current patches for WebObjects and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.

About This Patch

This patch corrects several Java-related bugs in WebObjects 3.5.1 for Windows NT and Solaris. It should be installed on all WebObjects 3.5.1 development and deployment systems running on Windows NT or Solaris. This patch also incorporates the changes to the Sybase and ODBC EOF adaptors included in a previously released patch. Once this patch is installed, be sure to read **TIL article # 72624** to learn about a problem that can occur when subclassing customObject and how to avoid it.

Installing WebObjects 3.5.1 Java Patch 2 on Windows NT 4.0

1. Download the Windows NT version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/webobjects/patches/

3.5.1/3.5.1_Java_Patch_NT.tar.gz
```

2. Log in as a user with Administrator privileges.

3. Open a Bourne shell. The Bourne shell should be available from your Start menu, under the WebObjects program group, or under your Apple root directory at Demos\\sh.exe.

4. Type the following at the shell prompt (make sure that there are no WebObjects or OPENSTEP applications running first):

```
cd $NEXT_ROOT

gunzip -c 3.5.1_Java_Patch_NT.tar.gz | gnutar xvfE -
```

6. Reboot your Windows NT system

On Windows NT, this patch replaces some of the files in the following directories. If you back up these directories before installing the patch, replacing them will return you to a "clean" installation:

- $NEXT_ROOT/NextDeveloper/Examples
- $NEXT_ROOT/NextDeveloper/Java
- $NEXT_ROOT/NextLibrary/Executables
- $NEXT_ROOT/NextLibrary/Frameworks
- $NEXT_ROOT/NextLibrary/Java

Installing WebObjects 3.5.1 Java Patch 2 on Solaris

1. Download the Solaris version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/webobjects/patches/

3.5.1/3.5.1_Java_Patch_Solaris.tar.gz
```

2. Log in as root. If you're not sure how to log in as root, see your system administrator.

3. Type the following at the shell prompt (make sure that there are no WebObjects applications running first):

```
cd $NEXT_ROOT

gnutar xvf 2674_WebObjects_3.5.1_Java_Patch_Solaris.tar
```

4. Reboot your Solaris system

New Features

New features in WebObjects 3.5.1 Java Patch 2

Java VM arguments: You may now pass "command line" arguments to the Java Virtual Machine. This is particularly useful for increasing the memory allocation pool (the garbage collected heap), which defaults to a maximum size of 16 MB. You should increase the pool size if you receive

a java.lang.OutOfMemoryError exception.

Here is some sample code showing how to pass these arguments. Be sure to add the JavaVM framework to your project. In YourApplication_main.m, do something like this:

```
#import <JavaVM/NSJavaVirtualMachine.h>
int main(int argc, const char *argv[])
{
NSAutoreleasePool* shutUp=[NSAutoreleasePool new];
NSMutableDictionary* myArguments=[NSDictionary dictionaryWithObjectsAndKeys:
[NSNumber numberWithInt:30*1024*1024], @"NSJavaMinHeapSize",
[NSNumber numberWithInt:60*1024*1024], @"NSJavaMaxHeapSize",
nil];
[NSJavaVirtualMachine setDefaultVirtualMachineArguments:myArguments];
return WOApplicationMain(@"Application", argc, argv);
}
```

You can ignore the compiler warning about the unused AutoreleasePool variable.

For a complete list of arguments, refer to the NSJavaVirtualMachine.h header in the JavaVM framework.

Problems Fixed

Corrected in WebObjects 3.5.1 Java Patch 2

DecimalNumber: Several of the next.util.DecimalNumber arithmetic methods raised exceptions when called. These methods now work properly.

CalendarDate: The next.util.CalendarDate constructor CalendarDate(java.util.Date date) would sometimes return an incorrect date. This has been fixed.

NoSuchMethodError exceptions: WebObjects applications written in Java would occasionally raise a java.lang.NoSuchMethodError exception, when the method did in fact exist. This was caused by a race condition on the interaction between Objective C's reference counting and Java's garbage collection. This has been fixed. These exceptions could also be raised if a subclass of next.eo.CustomObject did not implement a default constructor (that is, an -init method with no parameters). Chained initializer methods would give the same result if some of the methods in the chain did not have Java equivalents. After installing this patch, a missing default constructor will generate a more meaningful error message.

Java string retain crashes: A problem was fixed where Java strings were garbage collected before WebObjects had a chance to retain them. The missing strings caused some applications to crash under heavy use.

Multiprocessor crashes on Solaris: Because of improper use of lock files, WebObjects 3.5.1 applications would sometimes crash on multiprocessor Solaris machines. This behavior is fixed in this patch.

Incorrect cloning behavior: Previously, custom Java objects did not correctly implement the Cloneable interface. With this patch installed, subclasses of NextObject and CustomObject should be cloneable.

DirectToWeb application crashing: The previous version of this patch for Windows NT caused crashes when launching a DirectToWeb application. This has been corrected in the current patch release.

EOEditingContext can now retain all referenced objects: EOEditingContext's weak references to objects caused problems with Java's multithreaded garbage collection. If you are writing an application which accesses the Enterprise Objects Framework from Java, you may encounter two problems:

- EOEditingContext's processing of an EO's deallocation notification is not thread safe
- An object that is no longer retained by your application but has not been deallocated may be refetched. However, the reference may be reestablished too late to prevent the object from being deallocated.

In order to solve this problem, we have made it possible for EOEditingContext to retain all of its objects. Two class methods have been added:

```
+ (void)setInstancesRetainRegisteredObjects:(BOOL)flag;

+ (BOOL)instancesRetainRegisteredObjects;
```

If instancesRetainRegisteredObjects is YES, newly created EOEditingContexts will retain any EOs that it is observing. The default value for this flag is YES if an application contains Java, and NO otherwise. Each EOEditingContext caches the value of this flag, so it is possible to switch from one state to the other midway through your application. Note that only newly created EOEditingContexts will be affected by the flag.

In order to collect the EOs, you must either deallocate the editing context, or call the new method:

```
- (void)reset;
```

on the editing context. Calling reset causes the editing context to forget and release all of the objects that it is watching, and makes all of those objects effectively unusable. You typically will not not have to do anything to a Java WebObjects application in order to be compatible with this new behavior. A session's defaultEditingContext will get collected when the session times out, releasing all of the EOs fetched by that session.

Corrected in EOF 2.2 Sybase Adaptor Patch

All parameters required for Sybase stored procedures
Apple reference # 2203081

PROBLEM:
If you did not supply all values when executing a Sybase stored procedure, the execution would fail with an exception like:

```
Feb 19 11:23:53 WOF_3_5_Sybase_Patch[1027] Caught exception:EOGeneralAdaptorException
Sybase: Server:unknown Procedure:NEXT_MOVIE_PRIMARY_KEY Line:0 Procedure NEXT_MOVIE_PRIMARY_KEY expects
parameter @A_MOVIE_ID, which was not supplied.
```

This happens even though A_MOVIE_ID is not required for the stored procedure.

RESOLUTION:
The Sybase adaptor no longer requires optional arguments to stored procedures.

Cannot fetch float-NSDecimalNumbers along with text columns
Apple reference # 2208497

PROBLEM:
If you have an attribute with external type float, and internal type NSDecimalNumber, it will not fetch properly if a text column is also in the fetch. The attribute will be blank.

RESOLUTION:
The Sybase adaptor now correctly fetches these attributes.

Corrected in EOF 2.2 ODBC Adaptor Patch

ODBC Adaptor cannot execute stored procedures with output parameters
Apple reference # 2208503

PROBLEM
The EOF 2.2 (WebObjects 3.5) version of ODBCEOAdaptor.framework introduced a bug which causes an error when using a stored procedure with an output parameter.

RESOLUTION
The ODBC adaptor now handles output parameters correctly.

ODBC adaptor leaks connections with Microsoft Access
Apple reference # 2209574

PROBLEM:
The EOF 2.2 (WOF 3.5) and earlier versions of ODBCEOAdaptor.framework did not release ODBC connections when using Microsoft Access (or any JET based data source) in order to work around a bug in the Microsoft odbcjt32.dll library; this bug caused a crash when SQLFreeConnect was called. The SQLFreeConnect bug was discovered in version 3.40.2829 of the DLL. Newer versions of the DLL (beyond 3.50) no longer exhibit the crashing problem.

RESOLUTION:
The patched version of this framework now checks the version of the DLL more carefully and allows SQLFreeConnect to be called unless the DLL version is 3.4X. The adaptor no longer leaks the ODBC Connection when running with fixed versions of odbcjt32.dll.

Disclaimer

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PARTY CLAIM.

Published Date: Feb 18, 2012

PCI Bus OPENSTEP Driver Overview

This article discusses a device driver for the OPENSTEP Mach operating system, versions 4.0 through 4.2.
This article has been archived and is no longer updated by Apple.
Driver: PCI Bus
Last Update: December 18, 1997

Availability Information

A version of this driver is on the OPENSTEP CD-ROM
No updated versions of this driver are available

Driver Name / Installer .pkg: PCIBus
Driver Type: System
Driver Scope: Generic-System

General Overview notes: This driver provides PCI Bus Services to the NEXTSTEP Operating System, PCI Device Drivers, and to Configure. NEXTSTEP requires this driver if the system contains a PCI Bus (either as PCI Slots or as an embedded Bus)

Driver Version Notes

4.00 - Released on OPENSTEP 4.0 User CD-ROM

* - Indicates information that is inclusive of the entire capability of this driver. Not all devices supported by this driver may include all features listed.
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OPENSTEP 4.2 Pentium II Incompatibilities

There have been two problems reported by customers using OPENSTEP for Mach, version 4.2, with some Pentium II systems. This document presents simple workarounds for both of these problems.

This article has been archived and is no longer updated by Apple.

Keyboard problems with Pentium II/400 systems

Pentium II systems with Intel's 440BX chipset running OPENSTEP Mach 4.2 will crash when certain keys, such as CAPS LOCK, are pressed. The problem can be solved by changing the keyboard mapping. In the Preferences application, click on the Localization Preferences (the flag icon) and select **NeXTUSA** from the list of keyboards. The problems does not affect systems with NeXTUSA keyboard mapping. If your system continues to crash, check your bios for an option with a name like **LEGACY USB SUPPORT**. Make sure this option is enabled.

Installation problems with Pentium II/400 systems

Some Pentium II/400 motherboards contain built-in power management systems that are incompatible with OPENSTEP 4.2's power management software. As a result, OPENSTEP will hang during the installation process as it tries to access power management. To install OPENSTEP Mach 4.2 on these systems, you will need to disable OPENSTEP's power management software.

At the boot: prompt that appears when you start up your OPENSTEP system, type:

"APM"="No"

You will need to type this again each time your system boots during the install process.

After the operating system is installed, add the following line to your \\private\\Drivers\\i386\\System.config\\instance0.table file:

"APM" = "No";

OPENSTEP should now boot without attempting to communicate with your computer's power management system.

Published Date: Feb 18, 2012

Retain Counts Of Objects Loaded From .nib Files

This document explains how the Objective C retain and release cycle affects objects created by InterfaceBuilder under OPENSTEP 4.2.
This article has been archived and is no longer updated by Apple.

Q: What are the retain counts of objects loaded from .nib files? How do I make sure all of my interface objects are released when I'm finished with them?

A: All objects in a .nib file are created with internally consistent retain counts; that is, a view is retained by its superview or window and retains its subviews. The only exception to this is that objects in the top level of the nib are created with a retain count of 1. The "File's Owner" is expected to release each of these objects when they are no longer needed, and you should create outlets to these objects for this purpose. The top level of the nib consists of those objects that show up in Interface Builder's Instance view, excepting meta-objects like File's Owner and First Responder. The "release when closed" option in a window's inspector allows you to release windows for which you have no outlets. Do not use this option if you have an outlet to the window; release it manually instead. Remember that you are still responsible for releasing any objects that you retain in your custom objects' **init:** or **awakeFromNib:** methods.
Published Date: Feb 18, 2012

WOMonitor Q & A

This article contains questions and answers about the WOMonitor application running under WebObjects 3.5.1 and WebObjects 4.
This article has been archived and is no longer updated by Apple.

Q: I used WOMonitor to open an application on another host. The messages on the other machine indicate that the process is running, but Monitor says it is not. How can I make Monitor report the application status correctly?

A: This problem occurs when more than one copy of WOMonitor is running on a subnet. The MonitorProxy process on your application server uses Apple's Distributed Objects technology to find and connect to an instance of WOMonitor. If more than one instance of WOMonitor is started on a subnet, a race condition is created, and the WOMonitor instance which responds first is the only one that receives notifications.

You can avoid this problem by specifying the host to which you wish MonitorProxy to report. When you launch MonitorProxy on your application server, use the syntax:

MonitorProxy -mhost *monitor_hostname*

MonitorProxy will then only try to connect to a Monitor process running on the specified host. If you are not sure to which Monitor process your application is connecting, MonitorProxy will report the hostname whenever a connection is made. Even if no hostname is specified, MonitorProxy will only look for WOMonitor processes within its own subnet.

You can also use the -mhost argument while starting your WebObjects application manually. Any processes you start from within Monitor will have their -mhost argument set automatically.

Published Date: Feb 18, 2012

EOF and Multithreaded Applications

This document discusses multithreading under EOF 3.0 and previous releases.
This article has been archived and is no longer updated by Apple.

Q: Can I build a multi-threaded application using EOF?

A: **EOF 2.2** and previous releases are not thread-safe and EOF cannot be used in traditional multithreaded applications under WebObjects 3.5.1. Even if all of an application's EOF and database calls are contained in a single thread of a multithreaded application, there may be unpredictable failures as a result of this limitation.

For most applications, you can avoid the problem by using multiple processes instead of multiple threads. For each function you would otherwise assign to a new thread, start a new instance of a separate application process instead. You can use Apple's Distributed Objects (DO) technology to allow these applications to communicate with each other. You will still be able to use multithreading in those processes that do not involve EOF.

EOF 3.0 does support multithreading. In EOF 3.0, most objects support concurrent threads, except that only one active thread is allowed for each editing context and for each database context. This means that multiple requests can't be sent concurrently to a single database. Concurrenct, scalable database access is already available to WebObjects applications through running multiple instances. Multithreading now allows concurrency in most other EOF operations.

Complete information on multithreading under EOF 3.0 and WebObjects 4 is provided in the WebObjects 4 documentation.

Published Date: Feb 18, 2012

NeXTSTEP 3.2 And Earlier CERT Security Advisories

This document contains the security advisories issued for NeXTSTEP versions 3.2 and previous.
This article has been archived and is no longer updated by Apple.

Disclaimer

This document pertains to the NeXTSTEP operating system (versions 3.2 and previous). Apple Computer no longer provides support for these products. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software.

NeXTSTEP 2.x Advisories

==========

CA-91:20 CERT Advisory
October 22, 1991
/usr/ucb/rdist Vulnerability

The Computer Emergency Response Team/Coordination Center (CERT/CC) has
received information concerning a vulnerability in /usr/ucb/rdist (the
location of rdist may vary depending on the operating system). This
vulnerability is present in possibly all versions of rdist. Vendors
responding with patches are listed below. Additionally, some vendors
who do not include rdist in their operating systems are identified.
Operating systems from vendors not listed in either of the two categories
below will probably be affected and the CERT/CC has proposed a workaround
for those systems.

VENDORS THAT DO NOT SHIP rdist
(Note: Even though these vendors do not ship rdist, it may have been
added later (for example, by the system administrator). It is
also possible that vendors porting one of these operating systems
may have added rdist. In both cases corrective action must be taken.)

Amdahl
AT&T System V
Data General DG/UX for AViiON Systems

VENDORS PROVIDING PATCHES

Cray Research, Inc. UNICOS 6.0/6.E/6.1 Field Alert #132 SPR 47600

For further information contact the Support Center at 1-800-950-CRAY or
612-683-5600 or e-mail support@crayamid.cray.com.

NeXT Computer, Inc. NeXTstep Release 2.x

A new version of rdist may be obtained from your
authorized NeXT Support Center. If you are an authorized
support center, please contact NeXT through your normal
channels. NeXT also plans to make this new version of
rdist available on the public NeXT FTP archives.

Silicon Graphics IRIX 3.3.x/4.0 (fixed in 4.0.1)

Patches may be obtained via anonymous ftp from sgi.com in the
sgi/rdist directory.

Sun Microsystems, Inc. SunOS 4.0.3/4.1/4.1.1 Patch ID 100383-02

Patches may be obtained via anonymous ftp from ftp.uu.net or from local
Sun Answer Centers worldwide.

The CERT/CC is hopeful that other patches will be forthcoming. We will
be maintaining a status file, rdist-patch-status, on the cert.org
system. We will add patch availability information to this file as
it becomes known. The file is available via anonymous ftp to
cert.org and is found in pub/cert_advisories/rdist-patch-status.

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I. Description

A security vulnerability exists in /usr/ucb/rdist that
can be used to gain unauthorized privileges. Under some
circumstances /usr/ucb/rdist can be used to create setuid
root programs.

II. Impact

Any user logged into the system can gain root access.

III. Solution

A. If available, install the appropriate patch provided by
your operating system vendor.

B. If no patch is available, restrict the use of /usr/ucb/rdist
by changing the permissions on the file.

chmod 711 /usr/ucb/rdist

The CERT/CC wishes to thank Casper Dik of the University of Amsterdam,
The Netherlands, for bringing this vulnerability to our attention.
We would also like to thank the vendors who have responded to this problem.

If you believe that your system has been compromised, contact CERT/CC via
telephone or e-mail.

Computer Emergency Response Team/Coordination Center (CERT/CC)
Software Engineering Institute
Carnegie Mellon University
Pittsburgh, PA 15213-3890

Internet E-mail: cert@cert.org
Telephone: 412-268-7090 24-hour hotline:
CERT/CC personnel answer 7:30a.m.-6:00p.m. EST(GMT-5)/EDT(GMT-4),
on call for emergencies during other hours.

Past advisories and other computer security related information are available
for anonymous ftp from the cert.org (192.88.209.5) system.

NeXT rexd, /private/etc, Username me Vulnerabilities

The Computer Emergency Response Team/Coordination Center (CERT/CC) and NeXT Computer, Inc. have received information concerning three vulnerabilities in NeXT computers running various releases (see below) of NeXTstep software. For more information, please contact your authorized support center. If you are an authorized support provider, please contact NeXT through your normal channels.

Problem 1 DESCRIPTION: By default, rexd(8C) is enabled in NeXTstep versions 2.0 and 2.1. (Note that no NeXT software uses rexd.)

Problem 1 IMPACT: Leaving rexd enabled allows remote users to execute processes on a NeXT computer.

Problem 1 SOLUTION: Comment out or remove the rexd line in /etc/inetd.conf (unless you're using the remote execution facility), and either restart the computer or cause inetd to re-read it's configuration file, using:

kill -HUP <inetd pid>

Problem 2 DESCRIPTION: The /private/etc directory is shipped with group write permission enabled in all NeXTstep versions through and including 2.1.

Problem 2 IMPACT: Group write permission in /private/etc enables any user in the "wheel" group to modify files in the /private/etc directory.

Problem 2 SOLUTION: Turn off group write permission for the /private/etc directory, using the command:

chmod g-w /private/etc

or the equivalent operations from the Workspace Manager's Inspector panel.

Problem 3 DESCRIPTION: Username "me" is a member of the "wheel" group in all NeXTstep versions through and including 2.1.

Problem 3 IMPACT: Having username "me" in the "wheel" group enables "me" to use the su(8) command to become root (the user must still know the root password, however).

Problem 3 SOLUTION: Unless you have specific reason(s) not to, remove the user "me" from the wheel group.

The CERT/CC would like to thank NeXT Computer, Inc. for their response to this vulnerability. CERT/CC would also like to thank Fuat Baran for his technical assistance.

If you believe that your system has been compromised, contact CERT/CC
via telephone or e-mail.

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available for anonymous ftp from the cert.org (192.88.209.5)
system.

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CA-91:12 CERT Advisory
August 22, 1991
Trusted Hosts Configuration Vulnerability

The Computer Emergency Response Team/Coordination Center (CERT/CC) has
received information concerning a vulnerability in the configuration
of several system files. This advisory discusses a workaround since
there are no permanent patches available at this time.

This vulnerability is present in a very large number of UNIX-based
operating systems. Therefore, we recommend that ALL sites take the
corrective actions listed below.

I. DESCRIPTION:

The presence of a '-' as the first character in /etc/hosts.equiv,
/etc/hosts.lpd and .rhosts files may allow unauthorized access
to the system.

II. IMPACT:

Remote users can gain unauthorized root access to the system.

III. SOLUTION:

Rearrange the order of entries in the hosts.equiv, hosts.lpd,
and .rhosts files so that the first line does not contain
a leading '-' character.

Remove hosts.equiv, hosts.lpd, and .rhosts files containing only
entries beginning with a '-' character.

.rhosts files in ALL accounts, including root, bin, sys, news, etc.,
should be examined and modified as required. .rhosts files that
are not needed should be removed.

Please note that the CERT/CC strongly cautions sites about the

use of hosts.equiv and .rhosts files. We suggest that they NOT
be used unless absolutely necessary.

The CERT/CC wishes to thank Alan Marcum, NeXT Computer, for bringing
this security vulnerability to our attention. We would also like to
thank CIAC for their assistance in testing this vulnerability.

If you believe that your system has been compromised, contact CERT/CC via
telephone or e-mail.

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on call for emergencies during other hours.

Past advisories and other computer security related information are available
for anonymous ftp from the cert.org (192.88.209.5) system.

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CA-92:01 CERT Advisory
January 20, 1992
NeXTstep Configuration Vulnerability

The Computer Emergency Response Team/Coordination Center (CERT/CC)
has received information concerning a vulnerability in release 2 of
NeXTstep's NetInfo default configuration. This vulnerability will
be corrected in future versions of NeXTstep.

I. Description

By default, a NetInfo server process will provide information to
any machine that requests it.

II. Impact

Remote users can gain unauthorized access to the network's
administrative information such as the passwd file.

III. Solution

Ensure that the trusted_networks property of each NetInfo domain's
root NetInfo directory is set correctly, so that only those systems
which should be obtaining information from NetInfo are granted
access. The value for the trusted_networks property should be the
network numbers of the networks the server should trust.

Note that improperly setting trusted_networks can render your
network unusable.

Consult Chapter 16, "Security", of the "NeXT Network and System Administration" manual for release 2 for details on setting the trusted_networks property of the root NetInfo directory.

The CERT/CC wishes to thank NeXT Computer, Inc. for their cooperation in documenting and publicizing this security vulnerability.

If you believe that your system has been compromised, contact CERT/CC via telephone or e-mail.

Internet E-mail: cert@cert.org
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Past advisories and other information related to computer security are available for anonymous ftp from the cert.org (192.88.209.5) system.

NeXTSTEP 3.x Advisories

CA-93:02a CERT Advisory
January 21, 1993
REVISION NOTICE: New Patch for NeXT NetInfo "_writers" Vulnerabilities

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*** THIS IS A REVISED CERT ADVISORY ***
*** IT CONTAINS NEW INFORMATION ***

The CERT Coordination Center has received updated information from NeXT Computer, Inc. concerning vulnerabilities in the distributed printing facility of NeXT computers running all releases of NeXTSTEP software through NeXTSTEP Release 3.0. The online patch described in CERT Advisory CA-93:02 has been replaced with a new patch. The size and checksum information in this Advisory have been updated to reflect the new online patch.

For more information, please contact your authorized support center. If you are an authorized support provider, please contact NeXT through your normal channels.

I. Description

The default NetInfo "_writers" properties are configured to allow users to install printers and FAX modems and to export them to the network without requiring assistance from the system administrator. They also allow a user to configure other parts of the system, such as monitor screens, without requiring help from the system administrator. Vulnerabilities exist in this facility that could allow users to gain

unauthorized privileges on the system.

II. Impact

In the case of the "/printers" and the "/fax_modems" directories, the "_writers" property can permit users to obtain unauthorized root access to a system.

In the "/localconfig/screens" directory, the "_writers" property can potentially permit a user to deny normal login access to other users.

III. Solution

To close the vulnerabilities, remove the "_writers" properties from the "/printers", "/fax_modems", and "/localconfig/screens" directories in all NetInfo domains on the network, and from all immediate subdirectories of all "/printers", "/fax_modems", and "/localconfig/screens" directories. The "_writers" properties may be removed using any one of the following three methods:

A. As root, use the "niutil" command-line utility. For example, to remove the "_writers" property from the "/printers" directory:

/usr/bin/niutil -destroyprop . /printers _writers

B. Alternatively, use the NetInfoManager application: open the desired domain, open the appropriate directory, select the "_writers" property, choose the "Delete" command [Cmd-r] from the "Edit" menu, and save the directory.

C. To assist system administrators in editing their NetInfo domains, a shell script, "writersfix", is available via anonymous FTP from next.com (129.18.1.2):

Filename Size Checksum
-------- ---- --------
pub/Misc/Utilities/WritersFix.compressed 5600 25625 6

After transferring this file using BINARY transfer type, double-click on the file. A "WritersFix" directory will be created in your file system, containing the script ("writersfix") and some documentation ("WritersFix.rtf").

Consider removing "_writers" from other NetInfo directories as well (for example, "/locations"), noting the following trade-off between ease-of-use and security. By removing the "_writers" properties, the network and the computers on the network become more secure, but a system administrator's assistance is required where it previously was not required.

Please refer to the NeXTSTEP Network and System Administration manual for additional information on "_writers". Note that the subdirectories of the "/users" directory have "_writers_passwd" set to the user whose account is described by the directory. This is essential if users are to be able to change their own passwords, and this does not compromise system security.

The CERT Coordination Center wishes to thank Alan Marcum and Eric Larson of NeXT Computer, Inc. for notifying us about the existence of these vulnerabilities and for providing appropriate technical information.

If you believe that your system has been compromised, contact the CERT Coordination Center or your representative in FIRST (Forum of Incident Response and Security Teams).

Internet E-mail: cert@cert.org
Telephone: 412-268-7090 (24-hour hotline)
CERT personnel answer 7:30 a.m.-6:00 p.m. EST(GMT-5)/EDT(GMT-4), on call for emergencies during other hours.

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Software Engineering Institute
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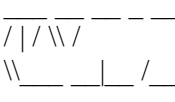
Past advisories, information about FIRST representatives, and other information related to computer security are available for anonymous FTP from cert.org (192.88.209.5).

The Computer Incident Advisory Capability



ADVISORY NOTICE

Automated Scanning of Network Vulnerabilities

September 30, 1993 1100 PDT Number D-25

PROBLEM: Automated attacks on networked computers.
PLATFORM: All systems supporting TCP/IP networking.
DAMAGE: Unauthorized access to information and computer resources.
SOLUTION: Examine machines for vulnerabilities detailed below and apply fixes as needed.

Critical Information about Automated Network Scanning Software

CIAC has learned that software allowing automated scanning of networked computers for security vulnerabilities was recently made publicly available on the Internet. The software package, known as ISS or Internet Security Scanner, will interrogate all computers within a specified IP address range, determining the security posture of each with respect to several common system vulnerabilities. The software was designed as a security tool for system and network administrators. However, given its wide distribution and ability to scan remote networks, CIAC feels that it is likely ISS will also be used to locate vulnerable hosts for malicious reasons.

While none of the vulnerabilities ISS checks for are new, their aggregation into a widely available automated tool represents a higher level of threat to networked machines. CIAC has analyzed the operation of the program and strongly recommends that administrators take this opportunity to re-examine systems for the vulnerabilities described below.

Also detailed below are available security tools that may assist in the detection and prevention of malicious use of ISS. Finally, common symptoms of an ISS attack are outlined to allow detection of malicious use.

ISS Vulnerabilities

The following vulnerabilities are tested for by the ISS tool. Administrators should verify the state of their systems and perform corrective actions as indicated.

Default Accounts The accounts "guest" and "bbs", if they exist, should have non-trivial passwords. If login access to these accounts is not needed, they should be disabled by placing a "*" in the password field and the string "/bin/false" in the shell field in /etc/passwd. See the system manual entry for "passwd" for more information on changing passwords and disabling accounts.

For example, the /etc/passwd entry for a disabled guest account should resemble the following:

guest:*:2311:50:Guest User:/home/guest:/bin/false

lp Account The account "lp", if it exists, should not allow logins. It should be disabled by placing a "*" in the password field and the string "/bin/false" in the shell field in /etc/passwd.

Decode Alias Mail aliases for decode and uudecode should be disabled on UNIX systems. If the file /etc/aliases contains entries for these programs, they should be disabled by placing a "#" at the beginning of the line and then executing the command "newaliases". Consult the manual page for "aliases" for more information on UNIX mail aliases.

A disabled decode alias should appear as follows:

decode: "|/usr/bin/uudecode"

Sendmail The sendmail commands "wiz" and "debug" should be

disabled. This may be verified by executing the

following commands:

% telnet hostname 25
220 host Sendmail 5.65 ready at Wed, 29 Sep 93 20:28:46 PDT
wiz
You wascal wabbit! Wandering wizards won't win!
(or 500 Command unrecognized)
quit

% telnet hostname 25
220 host Sendmail 5.65 ready at Wed, 29 Sep 93 20:28:46 PDT
debug
500 Command unrecognized
quit

If the "wiz" command returns "Please pass, oh mighty wizard", your system is vulnerable to attack. The command should be disabled by adding a line to the sendmail.cf configuration file containing the string:

OW*

If the "debug" command responds with the string "200 Debug set", you should immediately obtain a newer version of sendmail software from your vendor.

Anonymous FTP Anonymous FTP allows users without accounts to have restricted access to certain directories on the system. The availability of anonymous FTP on a given system may be determined by executing the following commands:

```
% ftp hostname
Connected to hostname.
220 host FTP server ready.
Name (localhost:jdoe): anonymous
530 User anonymous unknown.
Login failed.
```

The above results indicate that anonymous FTP is not enabled. If the system instead replies with the string "331 Guest login ok" and then prompts for a

password, anonymous FTP access is enabled.

The configuration of systems allowing anonymous FTP should be checked carefully, as improperly configured FTP servers are frequently attacked. Refer to CIAC Bulletin D-19 for more information.

NIS SunOS 4.x machines using NIS are vulnerable unless the patch 100482 has been installed. See CIAC Bulletin C-25 for more information regarding this patch.

NFS Filesystems exported under NFS should be mountable only by a restricted set of hosts. The UNIX "showmount" command will display the filesystems exported by a given host:

```
% /usr/etc/showmount -e hostname
export list for hostname:
/usr hosta:hostb:hostc
/usr/local (everyone)
```

The above output indicates that this NFS server is exporting two partitions: /usr, which can be mounted by hosta, hostb, and hostc; and /usr/local which can be mounted by anyone. In this case, access to the /usr/local partition should be restricted. Consult the system manual entry for "exports" or "NFS" for more information.

rusers The UNIX rusers command displays information about accounts currently active on a remote system. This may provide an attacker with account names or other information useful in mounting an attack. To check for the availability of rusers information on a particular machine, execute the following command:

```
% rusers -l hostname
hostname: RPC: Program not registered
```

If the above example had instead generated a list of user names and login information, a rusers server is running on the host. The server may be disabled by placing a "#" at the beginning of the appropriate line in the file /etc/inetd.conf and then sending the SIGHUP signal to the inetd process. For example, a disabled rusers entry might appear as follows:

```
#rusersd/2 dgram rpc/udp wait root /usr/etc/rusersd rusersd
```

rexd The UNIX remote execution server rexd provides only minimal authentication and is easily subverted. It should be disabled by placing a "#" at the beginning of the rexd line in the file /etc/inetd.conf and then sending the SIGHUP signal to the inetd process. The disabled entry should resemble the following:

```
#rexd/1 stream rpc/tcp wait root /usr/etc/rexd rexd
```

Available Tools

There are several available security tools that may be used to prevent or detect malicious use of ISS. They include the following:

SPI SPI, the Security Profile Inspector, will detect the system vulnerabilities described above, as well as many others. U.S. Government agencies interested in

obtaining SPI should send E-mail to spi@cheetah.llnl.gov or call (510) 422-3881 for more information.

COPS The COPS security tool will also detect the vulnerabilities described above. It is available via anonymous FTP from ftp.cert.org in the directory /pub/tools/cops/1.04.

ISS Running ISS on your systems will provide you with the same information an attacker would obtain, allowing you to correct vulnerabilities before they can be exploited. Note that the current version of the software is known to function poorly on some operating systems. If you should have difficulty using the software, please contact CIAC for assistance. ISS may be obtained via anonymous FTP from ftp.uu.net in the directory

/usenet/comp.sources.misc/volume39/iss.

TCP Wrappers Access to most UNIX network services can be more closely controlled using software known as a TCP wrapper. The wrapper provides additional access control and flexible logging features that may assist in both the prevention and detection of network attacks. This software is available via anonymous FTP from ftp.win.tue.nl in the file /pub/security/tcp_wrappers_6.0.shar.Z

Detecting an ISS Attack

Given the wide distribution of the ISS tool, CIAC feels that remote attacks are likely to occur. Such attacks can cause system warnings to be generated that may prove useful in tracking down the source of the attack. The most probable indicator of an ISS attack is a mail message sent to "postmaster" on the scanned system similar to the following:

From: Mailer-Daemon@hostname (Mail Delivery Subsystem)
Subject: Returned mail: Unable to deliver mail
Message-Id: <9309291633.AB04591@>
To: Postmaster@hostname

----- Transcript of session follows -----
<<< VRFY guest
550 guest... User unknown
<<< VRFY decode
550 decode... User unknown
<<< VRFY bbs
550 bbs... User unknown
<<< VRFY lp
550 lp... User unknown
<<< VRFY uudecode
550 uudecode... User unknown
<<< wiz
500 Command unrecognized
<<< debug
500 Command unrecognized
421 Lost input channel to remote.machine

----- No message was collected -----

If you should receive such a message, it is likely that your machine and others on your network have been scanned for vulnerabilities. You should immediately contact your computer security officer or CIAC for assistance in assessing the damage and taking corrective action.

For additional information or assistance, please contact CIAC at

(510) 423-9878 or send E-mail to ciac@llnl.gov. FAX messages to (510) 423-8002.

PLEASE NOTE: Many users outside of the DOE and ESnet computing communities receive CIAC bulletins. If you are not part of these communities, please contact your agency's response team to report incidents. Your agency's team will coordinate with CIAC. The Forum of Incident Response and Security Teams (FIRST) is a world-wide organization. A list of FIRST member organizations and their constituencies can be obtained by sending email to docserver@first.org with an empty subject line and a message body containing the line: send first-contacts.

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those of the United States Government nor the University of California, and shall not be used for advertising or product endorsement purposes.

NeXT SECURITY BULLETIN: NeXT-94:001-sendmail, 16 February 94

PROBLEM:
A security vulnerability has been identified in all versions of NEXTSTEP up to and including Release 3.2. This vulnerability, described in CERT advisories CA-93:16 and CA-93:16a, may allow unauthorized remote or authorized local users to gain unauthorized privileges. All sendmail recipient machines within a domain could potentially be vulnerable.

SOLUTION:
NeXT has corrected this vulnerability and provided a patch containing new binaries for both NeXT and Intel-based computers running NEXTSTEP Release 3.1 or Release 3.2.

Note: At the present time, NeXT has no plans to make a patch available for releases of NEXTSTEP prior to Release 3.1.

Published Date: Feb 18, 2012

A/UX 2.0.1: Internet Forwarder Bug

I'm trying to get an Internet forwarder running under A/UX 2.0.1. I have configured several systems the same way, with no luck. I've tried using a Macintosh IIfx, a Macintosh IIci and a Macintosh IIx, each with 2 rev K EtherTalk cards. The other systems on the networks include a Macintosh IIx on each network and a Decstation 2100 and a MacBlitz card on the 192.33.20 network.

Here are the procedures I've been using in my attempts to bring up the forwarder:

1) Install the cards into the system.

2) Do a newconfig nfs and answer "n" to the YP client prompt.

3) Configure IP & broadcast addresses & netmasks for each card
so /etc/NETADDRS file look like:

0 192.33.20.1 192.33.20.255 255.255.255.0
1 134.69.50.1 134.69.50.255 255.255.255.0

4) Set up my /etc/hosts file to include hosts on both sides of the
router as follows:

0x7F.0x00.0x00.0x01 loop lo loo localhost
192.33.20.1 jabberwock #ae0 host reference
134.69.50.1 jabberwock1 #ae1 host reference
192.33.20.2 manticore
134.69.50.4 fredsys
192.33.20.200 dextra # decstation 2100
192.33.20.201 blitzoid # macblitz 50/8

5) Restart the system and verify that the following daemons
are running:

/etc/portmap
/etc/inted
/etc/in.routed
/etc/nfsd 4 (4 of these)
/etc/biod 4 (4 of these)
/etc/rpc.lockd
/etc/rpc.statd

6) From system "manticore", which has an Internet address of
192.33.20.2, a broadcast address of 192.33.20.255 and a netmask of
255.255.255.0, I can ping jabberwock successfully on both sides
(192.33.20.1 and 134.69.50.1). Additionally, I can rlogin to both sides
of jabberwock (the /etc/hosts file contains EXACTLY the same info as
jabberwock's) using "rlogin jabberwock" and "rlogin jabberwock1".

7) From system "fredsys", that has an Internet address of 134.69.50.4,
a broadcast address of 134.69.50.255, and a netmask of 255.255.255.0, I
can access both sides of jabberwock the same as I could from manticore.
Again, the /etc/hosts file is identical to jabberwock's.

8) Neither ping nor Telnet nor rlogin is successful from manticore to
?redsys or vice versa. The /etc/hosts files are the same on all three
?f these machines. All of the addresses match up as they should.

9) Verify the cables and terminations; check the interfaces
with an ifconfig ae0 on all three machines and an ifconfig ae1 on
jabberwock. All addresses and interfaces show up as they should, but

to no avail.

10) At this point, I can't Telnet, ftp, ping or rlogin to fredsys from any system on the 192.33.20 network except jabberwock.

11) From jabberwock, I can ping all of the other systems on both nets. I can rlogin, etc. all of the other systems. I just can't cross the barrier from one net to the other.

Any suggestions?

This article has been archived and is no longer updated by Apple.

With the above configuration, we have been able to reproduce your problem. On an A/UX 2.0.1 Internet forwarder/router, the host "manticore" on network 192.33.20 CAN'T talk to the host "fredsys" on network 134.69 via A/UX 2.0.1 Internet forwarder host "jabberwock".

With the same configuration, but with the Internet forwarder/router (jabberwock) running A/UX 2.0, the problem goes away. Hosts ("manticore" and "fredsys" in this case for example) on different networks via A/UX 2.0 router CAN talk to each other.

Published Date: Feb 18, 2012

NeXTSTEP Graphics and PostScript Q&A

This document pertains to the NeXTSTEP operating system, which is no longer a supported product of Apple Computer. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software. Some questions in this Q&A document may not apply to version 3.3 or to any given specific version of NeXTSTEP.

This article has been archived and is no longer updated by Apple.

Q: Why does NeXTSTEP 3.3 show poor graphics performance when I use a PCI video card?

A: In order to work around a hardware problem involving the Intel 824x0 PCI host-bus chip, the Intel824X0 PCI driver supplied with NEXTSTEP version 3.3 disables Write-Posting--a performance feature--in this controller chip. Without this workaround, users of bus-mastering drivers, including PCI SCSI and ethernet drivers, would experience intermittent system crashes with possible resulting data corruption. Note that this is a problem with the controller chip, not with NEXTSTEP. Version 3.3 of NEXTSTEP simply implements a workaround to this operating-system independent hardware problem.

The tradeoff for this increased robustness is lower performance than would be possible if write-posting could be safely enabled. Given the potential for data loss which exists with this chip, NeXT strongly recommends that users of PCI bus mastering devices accept the lower performance this workaround causes. Though it is possible to achieve higher performance even for bus-mastering devices by disabling the Intel824X0 driver, this is not a recommended or supported system configuration because of the increased risk of system crashes and data loss.

If the PCI bus is only being used for video, however, and no PCI bus-mastering devices are installed, NeXT knows of no adverse impact which will result from removing the Intel824x0 driver, and substantially improved video performance may result. However, note that use of PCI devices with this driver disabled is not supported even for non bus-mastering devices and, if done, is at your own risk. In addition, if you chose to disable the Intel824x0 driver, you must ensure that if PCI bus-mastering devices are later installed in the system the Intel824x0 driver will be re-enabled at that time or an increased risk of data corruption will result.

The PCI chipset bug only occurs in the A0 stepping of the Intel 824x0 series of chipset. This bug was corrected in the A1 stepping of the chip which went into production around September of '94. Unfortunately, this chip is usually soldered directly to the motherboard; therefore, you should contact your PC vendor if you require servicing.

A new driver has been released for the Intel 824x0 chipset which automatically recognizes the flawed 824x0 chipset on your system. It will only disable write-posting if it detects a flawed chipset. See NeXTanswers document 1790_Intel_824X0_PCI_Chipset_Driver_Overview.rtf for more information.

Q: Will either of your color products (NeXTdimension or NeXTstation Color) support color lookup tables? What about NEXTSTEP for Intel Processors?

A: The NeXTdimension supports full 32-bit ªrealº color<approximately 16 million colors can be displayed at any given pixel. The hardware is configured as 8 bits of each color component: red, green, blue and alpha. The alpha component may be used to record relative transparency for any given pixel.

The NeXTstation Color supports 16-bit color<4 bits each: R, G, B and alpha. This allows 4096 different colors to be displayed at any given pixel. In addition, the WindowServer uses dithering to make the images look more realistic. Neither machine supports color-mapped color.

NEXTSTEP for Intel Processors follows the same guidelines as the black hardware does. At this time, the maximum color resolution supported on Intel hardware is 16-bit color. (Release 3.0)

Q: When using the color machines can I turn the color ªoffº (so that it will run in 2-bit mode) to increase performance?

A: No. The i860 processor on the NeXTdimension board speeds up the color operations to give performance equivalent to a monochrome cube with a MegaPixel display. (Release 3.0)

Q: If I read a TIFF file into the NeXT which contains a color palette, does the sofware understand the palette correctly or does it ignore that information as in 1.0?

A: Although NeXTStep does not, in general, support palette-based imaging, there is limited support in Release 2.0 and later. TIFF files which contain 8-bit palettes of 24-bit color values are read in and converted to 32-bit color images; other palettes-based images are not understood. (Release 3.0)

Q: My timed entry does not seem to be occurring when I use **DPSPeekEvent()**.

A: Timed entries are executed only when **getNextEvent:** or **DPSGetEvent()** is called. They will not be "triggered" by **DPSPeekEvent()**. A timed entry does not interrupt the current process; it will be executed the next time between events.

Q: How much movement triggers a mouse-moved event?

A: Any change in the screen coordinates of the cursor (even one pixel) creates a mouse-moved or mouse-dragged event. But see the documentation for **DPSSetTracking()**; event coalescing may be influencing your perception of how this works.

Q: How can I send a PostScript file directly to the WindowServer?

A: You should usually use NXImage. However, if that's not appropriate in your situation use the following code snippet. **Warning**: Do not use **PSRun()**, because your application may not work with -NXHost since the file you specified may not exist on the other machine.

```
int SendFileToPS(const char *fileName)
{
NXStream *st;
char *addr;
int len, maxlen;

st = NXMapFile(fileName, NX_READONLY);
if (st) {
NXGetMemoryBuffer(st, &addr, &len, &maxlen);
DPSWriteData(DPSGetCurrentContext(), addr, len);
NXCloseMemory(st, NX_FREEBUFFER);
return 0;
} else
return -1;
}
```

Q: If I fill a circle using PostScript, then stroke it with a different color using the default linewidth of 1, not all of the pixels get covered at the edges. I thought a linewidth of 0 could cause this problem, but a linewidth of 1 shouldn't! Drawing applications such as Draw.app demonstrate the same problem: Create a circle filled with black and outlined with white, using a line thickness of 1. You'll notice stray black pixels around the edges. What's going on here? How can this problem be avoided?

A: PostScript scanning should normally cause any non-zero linewidth to eliminate the stray pixels in the above scenarios. However, PostScript also has a "stroke adjustment" feature which, when turned on, tries to create lines of uniform thickness on low-resolution output devices (such as displays). This causes the above problems to appear<a line of width 1 drawn on a path might fail to fully cover the pixels on the edges of a fill done on the same path. By default, stroke adjustment is enabled for displays and disabled for printers.

Given this, developers of drawing and other applications should look into turning off stroke adjustment when displaying graphic objects created/manipulated by users in documents. This can be accomplished with

```
false setstrokeadjust
```

The previous strokeadjust value should be restored once the graphics are drawn; this can be done via gsave/grestore or by explicitly remembering the previous value:

```
currentstrokeadjust
false setstrokeadjust
... drawing code ...
```

setstrokeadjust

You can read more about the setstrokeadjust and currentstrokeadjust operators in section 6.5 of the PostScript Language Reference Manual 2nd edition (the level 2 red book).

Q: While drawing in a window performing animation, I also want to be able to accept events, such as a key stroke. But the animation must continue if no event occurs. Timed entries are not a solution because the animation must be continuous and smooth and is being drawn too fast for the granularity that timed entries provide.

A: Use DPSPeekEvent() to catch events while not blocking.

Q: There seems to be a problem with compositing. Using the CompositeLab in /NextDeveloper/Examples on a 2-bit screen, set the following parameters and use the SOVER operation:

Source gray=1 opacity=0.3 (white mostly transparent source)
Dest gray=0.8 opacity=1 (light gray opaque destination)

You will see that the result is the same color as the destination. Thus the 30% coverage from the white source is having no effect at all! Now change the source opacity to 0; this causes no change in the result. What's going on here?

A: The behavior is correct. Assume the case where the source is all white and is 33% opaque. Say the destination is 66% white and opaque. (This assures that we are using exact pixel values with no dithering.) The SOVER formula is:

sourceColor * sourceOpacity + destColor * (1 - sourceOpacity)

which for our case reduces to

1 * 1/3 + 2/3 * 2/3 = 7/9

which is rounded to 6/9, given that compositing only works on a per-pixel basis. Changing the opacity all the way down to 0 simply changes the resulting pixel to 6/9, thus no color change occurs.

Now using the parameters in the question

Source gray=1 opacity=0.3 (white mostly transparent source)
Dest gray=0.8 opacity=1 (light gray opaque destination)

We see that there are some source pixels with opacity of 0, and a few with opacity of 1/3. Source color is 1 in all cases. There are some dest pixels with gray of 1 and others with 2/3; opacity is 1 in both cases.

Thus every resulting pixel is computed from one of four formulas:

sourceColor * sourceOpacity + destColor * (1 - sourceOpacity)
1 * 0 + 1 * (1 - 0) = 1
1 * 1/3 + 1 * (1 -1/3) = 1
1 * 0 + 2/3 * (1 -0) = 2/3
1 * 1/3 + 2/3 * (1 -1/3) = 7/9

Thus the result is equal to the dest color in all cases.

If you wish to composite in a more accurate fashion, you can use 8-bit deep grayscale windows. However, this will use up a lot more memory and is probably not worth it.

Q: What do errors like the following mean?

DPS client library error while writing to connection DPS context c18c data -102

A: The error reporter is basically printing out the elements of data passed in the exception initiated by NX_RAISE(). Usually the header file that defines the exception codes tells what data items are also passed. Since this is a DPS client library error, we look through <dpsclient/dpsclient.h> for a write error exception code:

dps_err_select, dps_err_read and dps_err_write signal communication
errors in the connection. The OS return code is passed in arg1;
arg2 is unused.

In interpreting the dpsclient error message, the first data item is always the DPS context in which the error occurred. The second item corresponds to arg1. Note that any arg2 referred to in the exception code description doesn't get passed from the DPSErrorFunc into the NXRaise exception scheme. Luckily, there aren't any DPS errors where arg2 is essential info.

So, for the above error, the c18c is a DPS context and the -102 is a Mach return code. The Mach codes happen to be defined in <sys/message.h>. By the way, negative numbers in about the -100 to -1000 range tend to be Mach error return codes.

Q: I'm using NXImage to display a PostScript or TIFF file. When I display it on a color system, the image doesn't look right<there are large black areas.

A: Probably your image has transparency in it. The image was rendered into an NXImage and then composited onto the screen using **NX_COPY**. Since **NX_COPY** produces an exact copy of the bits from the source, transparent areas in the NXImage were copied onto the screen. On the monochrome MegaPixel display, these transparent areas expose to white, to emulate the way a sheet of paper might behave. NeXT's color devices act more like video devices, and they expose to black.

In order to avoid exposing the underlying device's representation of transparent, you should fill in the background and composite the NXImage using **NX_SOVER**:

```
- drawSelf:(NXRect *)rects :(int)rectCount
{
NXPoint pt = {0.0, 0.0};

NXSetColor(NX_COLORWHITE);
NXRectFill(rects);
[anImage composite: NX_SOVER toPoint: &pt];
return self;
}
```

Valid for 2.0, 3.0

Q: In my application I am reading in an NXImage. A nil is never returned, even if I

read in a bogus file. Is this a bug? Here is my code:

```
id myNXImage = [NXImage alloc];
if ([myNXImage initFromFile: "dummyName.tiff"] == nil)
{
/* this is never getting called! */
fprintf(stderr,"dummyName.tiff doesn't exist!\\n");
}
```

A: This is not a bug. The **initFromFile:** method is lazy and does not catch *all* the errors that might happen when loading an image. Your application should be prepared to check for errors later on down the line either through delegation or by checking the **composite:** or **lockFocus** return values. If you wish, you can force the image to be rendered immediately:

```
id myNXImage = [[NXImage alloc] initFromFile: filename];
if ([myNXImage lockFocus])
[image unlockFocus];
else
fprintf(stderr,"%s doesn't exist\\n", filename);
```

Although this behavior might seem confusing it allows for more optimal performance: the image isn't rendered into the cache until it is needed. Rendering a large or complex file can be slow<particularly for a complex EPS file.

Note: Another good approach for determining whether an image can be successfully rendered is the NXImage delegate method **imageDidNotDraw:inRect:**. If you have assigned a delegate for the image and implemented this method, it gets called when compositing fails for whatever reason. See the documentation on NXImage for more information about this method. Also note that this method of delegation may be the only way to catch a drawing error for an image which is being "handed" to the AppKit<an icon on a button, for example.

There is a known bug in Release 2 where **imageDidNotDraw:inRect:** fails to be called when encountering an error from within the method **composite:toPoint:**. This bug can be avoided by using the NXImage method **composite:fromRect:toPoint:**. This bug has been fixed in Release 3.

Valid for 2.0, 3.0

Q: I'm writing an application which can open either EPS or TIFF images using the NXImage class. How can I determine what kind of file I've opened without hacking the file name?

A: You can use the isKindOf: method from the Object class:

```
id myNXImage, myImageRep;

myNXImage = [[NXImage alloc] initFromFile: fileName];
myImageRep = [myNXImage lastRepresentation];
if ([myImageRep isKindOf: [NXBitmapImageRep class]])
{
/* then I'm a TIFF file! */
}
else if ([myImageRep isKindOf: [NXEPSImageRep class]])
{
```

```
/* then I'm an EPS file! */
}
```

The key here is that the NXImage instance itself does not understand EPS or TIFF information per se. NXImage manages the *representation* classes (one NXImage may have multiple representations) which do understand EPS and TIFF information.

Of course, it is reasonable to extract this information from the fileName as well. The following code snippet can be used to do this:

```
char *fileType = rindex(fileName, '.');

if (!fileType)
{
/* then I'm not an appropriate file! */
}
else if (!strcmp(fileType, ".tiff"))
{
/* then I'm a TIFF file! */;
}
else if (!strcmp(fileType, ".eps"))
{
/* then I'm an EPS file! */
}
```

Valid for 2.0, 3.0

Q: My application is a simple paint program. The user opens a TIFF image, then scribbles into it, and finally saves the new image as a TIFF file. However, the changes made by the user aren't saved into the TIFF file<it contains the original image. Why?

A: This occurs if you open the TIFF file like this:

```
image = [[NXImage alloc] initFromFile:fileName];
```

NXImage will have two representations<the file, and the cache. NXImage will treat the cache as a transitory image, and the file as its "best representation." The cache is the off-screen window to which the user's scribbles are drawn. When asked to write out the image, NXImage writes out its best representation of the image<which is the actual TIFF file residing on disk<thus ignoring completely the changes made to the image. To get around this you must fake out NXImage by forcing the cache to be the best representation of the image.

The following code snippet illustrates what you must do:

```
/* When the user opens the image */
rep = [[NXBitmapImageRep alloc] initFromFile:fileName];
[rep getSize:&imageSize];

image = [[NXImage alloc] initSize:&imageSize];

if ([image useCacheWithDepth:d] && [image lockFocus]) {
[rep draw];
[image unlockFocus];
}
```

```
[rep free];
```

This code sample initialized an NXBitmapImageRep from the file containing the opened image. The NXImage is initialized from this representation. Now the NXImage does not have a file which can serve as its best representation<it only has the cache. Thus when you tell NXImage to **writeTIFF:** the cache with all of the user's scribbles is written out properly.

Valid for 1.0, 2.0, 3.0

Q: I have allocated an instance of NXImage and an instance of NXBitmapImageRep. I then tell the NXImage to use the rep instance, like this:

```
NXRect originalSize;
id myRep, myImage;
int bitsPerPixel;

myRep = [[NXBitmapImageRep alloc] initFromFile: filename];
[myRep getSize: &originalSize];
myImage = [[NXImage alloc] initSize: &originalSize];
[myImage useRepresentation: myRep];
```

Then, later in my application I query the rep instance (as follows) and the query fails because myRep is nil! Why is this?

```
bitsPerPixel = [myRep bitsPerPixel]; /* this fails -- myRep is nil ! */
```

A: This is not a bug. Once you have ªgivenº the NXBitmapImageRep instance to NXImage (by calling useRepresentation:) then the NXImage "owns" that rep and can do what it wishes with it. (This is also true for any class of rep instance, not just NXBitmapImageRep) What the NXimage typically does is to turn that representation into an NXCachedImageRep and then free the NXBitmapImageRep. To prevent this behavior do a setDataRetained:YES on the NXImage instance. The setDataRetained: method defaults to NO. The NXImage then does not free the NXBitmapImageRep. For example, to correct the above example, add the following line prior to calling useRepresentation:

```
[myImage setDataRetained:YES];
```

Valid for 2.0, 3.0

Q: I want my application to periodically and automatically perform an operation. For instance, I want to save a backup file every 5 minutes, or I want to create a blinking cursor. How do I go about doing that? Should I use timer events?

A: What you actually want is a timed entry. The Display PostScript routines **DPSAddTimedEntry**() and **DPSRemoveTimedEntry**() are used to start and stop timed entries. These functions are described in the Next Developer Documentation in the DPS section. You install a timed entry to run at a specific interval and give a handler function which will be called at each interval. What actually happens is that for each cycle of the event loop, the application checks to see if there are any timed entries which are due. If so, then the handler function is called, thus "cutting" in line in front of any other events. Timed entries are ªcoalescedº in a sense because the next occurrence of a timed entry is set when

the current entry is processed. There is never more than one occurrence of a timed entry waiting to run and since timed entries aren't inserted into the event queue, you don't have to worry about timed entries overflowing the queue.

Timer events are not the correct thing to use in this instance, because they are intended to be used in modal loops. Each application has an event queue, where pending events are waiting to be processed. Each application has a main loop which simply polls for events, and then reacts accordingly. Modal loops allow you to create a loop which is secondary to the application loop, and supersedes it for a short time. You use modal loops when you have received one event and are then waiting for another which then terminates the modal loop. The modal loop must ensure that it will continue to get a continuous stream of events, and it does this with timer events. You use timer events in a modal loop in case the user is doing something that is not generating events (such as holding down the mouse button, and not moving it).

There are several programming examples that use timed entries. If you want a simple example of a timed entry, see the **BusyBox** example under **/NextDeveloper/Examples/AppKit**. The **ClockView** class there uses a timed entry to animate the movement of the hands. (Tip: It can be very helpful to drag **/NextDeveloper/Examples** into your Digital Librarian and index it. Another useful Librarian target is **/usr/include**.)

Valid for 1.0, 2.0, 3.0

Q: I've installed a timed entry to run at a specific interval in my application. I receive a timed entry and my application goes off to process it. For some reason the processing takes longer than the interval between the timed entries. The result is that a second entry happens before the application finishes processing the previous entry. Will the second entry be queued or does it interrupt?

For Releases 1 and 2:
A: Neither. The timed entry interval specifies the time that passes between the time the timed entry function returns and the time it is called again. Thus, if you have an interval of 10 seconds, and your timed entry function takes 5 seconds to execute, your function is called every 15 seconds.

Sometimes this might be a bad thing; it is then the responsibility of your timed entry function to adjust the interval. For instance, in the ClockView class (/NextDeveloper/Examples/Clock under 1.0 and /NextDeveloper/Examples/BusyBox under 2.0), the function that gets called at the top of the minute stops the timed entry and starts it again with an new interval equivalent to the number of seconds left to the next top of the minute. This prevents the clock from ªslowing downº and missing minutes when the system is slow. (It however does not bother with this in the seconds mode; missing a second or two here and there is okay.)

The Animator class shows how to create an ªadjustingº timed entry, which is a bit more complex. The Animator class is used by /NextDeveloper/Examples/BreakApp under Release 1 and /NextDeveloper/Examples/ToolInspector under Release 2.

For Release 3:
A: In Release 3, the system tries to call the function with the requested periodicity, regardless of how long the function takes to execute. However, if the function takes longer than the period to execute, the timed entries do not try to "catch up" to make up for the missed call(s).

In Releases 1 and 2, timed entries were accurate to only 15 ms. In Release 3, they are accurate to ~1 ms.

Valid for 1.0, 2.0,r 3.0
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NeXTSTEP Internetworking Q&A

Disclaimer

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This article has been archived and is no longer updated by Apple.

Sendmail Questions

Q: Why is sendmail timing out to my local mailhost?

Q: Why do I get "connection timed out" messages while trying to connect to my local mailhost. When I log in to the mailhost, it seems lightly loaded?

Q: Why is mail taking so long to deliver locally?

A: There are probably several possible answers to these questions. Here is one of them.

Mail gets queued up in /usr/spool/mqueue using two different files for each piece of mail. One file is the header information for the mail, and the other file is the body of the message. The directory /usr/spool/mqueue, like all directories, is simply a file that contains a listing of filenames and their associated inodes that are contained in the directory. The size of a directory is usually around 1 or 2 kilobytes. The more files you have in a directory and the longer the names of the files, the larger the size of the directory file is. The size of the directory file never decreases.

Whenever a file is created the system must open up the directory file and write some information into it. The larger the directory file is, the longer it takes to read through it and add the new entry. The same thing is true for deleting files.

If you have a mail server that deals with a lot of traffic and something causes the mail to get backed up in the queue, the directory file can grow very large (50+ KB) storing the names of the backed up mail. Even after clearing the entire queue, the size of the directory file remains the same, and creating and destroying files in that directory starts taking a significant amount of time. In fact, the mail server can become so slow that connections to it start timing out even though the machine seems to be very responsive.

The only solution is to create a new mqueue directory:

1. Find the incoming sendmail process and kill it.

```
% ps auxw | grep sendmail
root 206 0.0 0.8 1.55M 312K ? S 0:04 -accepting connections (sendmail)
% kill <PID> # PID is 206 in the above example
```

2. Wait for the outgoing sendmail processes to finish.

```
% ps auxw | grep sendmail
```

You can keep running the above command until all of the outgoing sendmail processes

have died or you can go ahead and kill them all. Sendmail should be tolerant of getting killed.

3. Move /usr/spool/mqueue to /usr/spool/mqueue.old and create a new mqueue

```
% cd /usr/spool
% mv mqueue mqueue.old
% mkdir mqueue
```

5. Move all of the files from mqueue.old into the new mqueue directory

```
% mv mqueue.old/* mqueue
```

6. Remove old mqueue directory

```
% rmdir mqueue.old
```

6. Restart sendmail

```
% /usr/lib/sendmail -bd -q30m
```

Valid for 1.0, 2.0, 3.0

Q: How do I cause mail to be automatically forwarded to destinations outside our local network through some outside service?

A: You'll need to make some minor changes to your mailhost's **sendmail.cf** file. The sendmail configuration file, **/etc/sendmail/sendmail.cf** is either a link to **sendmail.mailhost.cf** or is some variant of the mailhost configuration. You edit this file on your mailhost<the machine which is responsible for forwarding mail.

Look for the following lines near the top of the file (in the default **sendmail.mailhost.cf**, they start at line 30):

```
# If you want to use a relay mailer, examine ruleset 0. There are some
# rules that need to be uncommented
DMuucp

# major relay host: use the $M mailer to send mail to other domains
# To have mail automatically forwarded to other domains, you should
# replace this with the name of your major relay host.
DR mail-relay
CR mail-relay
```

The line

```
DMuucp
```

tells sendmail that mail destined for a machine off the local network should be forwarded using the ªuucpº mailer < i.e., using the UNIX UUCP facility. The lines

```
DR mail-relay
CR mail-relay
```

indicate that the machine called **mail-relay** is the forwarding host. Change these three lines to reflect your actual situation. Typically, **uucp** is the appropriate mailer if you're not on the

Internet. Either replace **mail-relay** with the name of your UUCP partner, or ensure that **mail-relay** is a host alias of that partner. (Note that if you make **mail-relay** be an alias for that partner and you're using UUCP as the relay mail mechanism, you have to modify the UUCP configuration files to reflect this alias.)

If you look at the comments which begin the excerpt included above, you see a note regarding uncommenting some lines in ªruleset 0.º Look for the following lines in **sendmail.cf** (at line 323 in the default **sendmail.mailhost.cf**):

```
# If you want to pass all other explicit domain names up the ladder
# to our forwarder then uncomment the following line.
#R$*<@$*.$+>$* $#$M $@$R $:$1<@$2.$3>$4 user@any.domain
# and comment out this one.
R$*<@$+.$->$* $#ddn $@ $2.$3 $:$1<@$2.$3>$4 user@any.domain
```

These lines describe how to forward non-local mail. In the default file for a mailhost, such mail is forwarded using the **ddn** mailer (i.e., over the Internet). We want to change that, to use the mail specified above, in the **DM** line. To do this, uncomment the third line and comment out the fifth line:

```
# If you want to pass all other explicit domain names up the ladder
# to our forwarder then uncomment the following line.
R$*<@$*.$+>$* $#$M $@$R $:$1<@$2.$3>$4 user@any.domain
# and comment out this one.
#R$*<@$+.$->$* $#ddn $@ $2.$3 $:$1<@$2.$3>$4 user@any.domain
```

WARNING: Be *very* careful when you modify a sendmail configuration file. As you might notice, the syntax is arcane and cryptic, and the ªrewriting rulesº in the configuration file are intricate.

Valid for 1.0, 2.0 ,3.0, 3.1

Q: My Release 3.0 client or mailhost machines are extremely slow. When I look at the processes, I see that there are several hung sendmail processes, and mail isn't being sent. My mailhost is a Sun (or a third party PC gateway program such as Banyan Vines or CCMAIL).

A: There are timing problems within the sendmail code on Release 3.0 that cause mail traversing Sun mailhosts (and certain mail gateways such as Banyan Vines and CCMAIL) to hang and take up excessive process time. The symptoms usually are:

· Machine is extremely slow.

· The sendmail process is using too much CPU time, or many sendmail processes are running, but never complete.

· Mail is not being delivered to the mailhost, or to the gateway.

The solution is as follows:

· Rename the file **/usr/lib/sendmail** to **/usr/lib/sendmail.30**.

· Copy **/usr/lib/sendmail.old** to **/usr/lib/sendmail**. The file **sendmail.old** is NeXT's Release 2 version of sendmail, and alleviates the timing errors.

Perform this procedure on Release 3.0 clients and/or any NeXT mailhosts which are forwarding mail to one of the above gateways.

Make sure the permissions are set correctly on the sendmail file:

-r-sr-x--x 1 root wheel 81920 Jul 21 14:48 sendmail*

Valid for 3.0 **only**

NFS Questions

Q: When I have a Sun Solaris 2.4 system as an NFS client and a NEXTSTEP 3.3 system as the NFS server, the access starts out very slow. What casues this and is there a way to speed up the access time?

A: This problem is caused by a change in the Solaris NFS code in the 2.4 release. The new version of NFS READDIR in the Solaris 2.4 release trys to request more than 1024 bytes of directory data (this gains faster reponse from the NFS servers that support the larger size). The NEXTSTEP NFS server (and other NFS servers which are based on older NFS source code) fail to repond to this request. Sun Solaris will retransmit the **READDIR** requests and eventually will dynamically change the **rsize** and **wsize** values for the mount to smaller values. You may verify this on the Sun with **nfsstat -m** command. In about 2 to 5 minutes the **rsize** and **wsize** will be reduced and the **READDIR** requests to the Next start working!

To workaround this problem set the **rsize** and **wsize** for the **mount** entries on a Solaris 2.4 NFS client to 1024 for all mounts from NEXTSTEP NFS servers.

Q: I logged in on an NFS client, and the Workspace Manager indicated that my home directory (which it knows correctly) is not a directory, and it can't change to the directory. Yet, there are no errors during (verbose) boot with the mount. My home directory is on a server. Everything looks correct in NetInfo. What's going on?

A: Check the current date on the client. Apparently, if it's extremely screwed up (e.g., something before the epoch, Thu Jan 1 00:00:00 1970), the NFS accesses don't function correctly.

Q: Why is the performance of my file server so poor? The load is high and rpc.mountd is taking up large chunks of CPU time.

A: There is a file called /etc/rmtab, which contains statistics about remotes mounts. See the man page rmtab(5) for details. When an NFS client crashes, it does not remove its entry in this file and so as more NFS clients crash, the file /etc/rmtab on the file server grows without bound. Eventually things break or slow down severely. Notable symptoms are:

· The file /etc/rmtab is large<there should only be one line for each NFS client mounting a

file system.

· High %CPU (e.g., higher than any other process) value as shown by ps -aux:

```
nfsserver% ps -aux | grep mount
USER PID %CPU %MEM VSIZE RSIZE TT STAT TIME COMMAND
root 276 19.6 1.4 1.23M 224K ? S 0:00 rpc.mountd
...
```

· High load values on the server immediately following multiuser boot.

· Home directories not mounting properly.

The fix is as follows:

1) Boot the machine in single-user mode.
2) Empty the file /etc/rmtab (e.g., cat /dev/null > /etc/rmtab).
3) Reboot.

This solves the problem.

Q: I've exported a directory from a file server. Some machines (perhaps) can mount that directory successfully, others cannot, and receive a message like:

```
Access denied for server:/directory
```

The directory on the server is exported for universal access (e.g., nidump exports . reports something like

```
/directory -ro
```

granting any machine read-only access rights). What's going on?

A: What's likely wrong here is that the server doesn't know about the client. Check the appropriate hosts databases (the machines directory in NetInfo, for example) in all applicable domains. The client must appear in there somewhere.

This typically will not be seen in a two-level NetInfo hierarchy, but could be seen in a three-level hierarchy.

This feature is an important part of NFS security, and is not a bug.

NIS/YP Questions

Q: My NIS (Yellow Pages) database doesn't seem to be examined correctly. One symptom, for instance, is that ypbind is running fine and ypcat works great, but ~user doesn't work.

A: This is likely caused by the lack of a + line in the UNIX *flat file*. If something isn't found in NetInfo, the system looks in the appropriate UNIX flat file. If that file is to "include" the appropriate NIS map, it must have a proper + line in it. At the point where NIS might be examined, it's as if the NetInfo database *did not exist*, and *was not referenced*.

A + line in the NetInfo database is irrelevant.

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NeXTSTEP Programming Kits Q&A

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This article has been archived and is no longer updated by Apple.

SoundKit Questions

Q: Why doesn't SoundView's *setReductionFactor:* work in Release 3?

A: There is a known bug in the SoundView's **setSound:** method which resets the reductionFactor even if you are explicitly setting it yourself. If you wish to use your own reductionFactor, you need to call **setReductionFactor:** after each call to **setSound:**.

The SoundEditor example released in 3.0 uses **setReductionFactor:**, but it doesn't work correctly because of this bug.

A point of confusion is that the reduction methods<setReduction and reduction<have been removed from the API for 3.0, but the reductionFactor methods<setReductionFactor and setReduction<are still part of the API.

Valid for 3.0, 3.1

Q: How can I determine a Sound's duration?

A: Send the Sound the sampleCount and samplingRate methods (if necessary) and divide the former number by the latter.

Q: How can I get Sounds to repeat one after the other, or the same one multiple times?

A: There are several approaches; however, none are guaranteed to work in all possible situations.

1) You can compute the duration of each sound just before you play it (following the approach in the answer to the first question). Set up a timed entry (see documentation on DPSAddTimedEntry) that occurs at a time equal to the sound's duration plus any desired delay between playings. When you get this timed entry, you tell the next Sound to play, and so forth.

2) If you don't require an Application event loop, you can reliably chain sounds together using the Sound library C functions. See the example file /NextDeveloper/Examples/Sound/chaintest.c, and the README file in the same directory. You are advised to use the SNDNotificationFun approach, as in this example, and to avoid the SNDWait() function.

3) If you require an Application with an event loop (the normal case), you might have

success using the SoundKit delegation method didPlay:. Create an object that is the Sound's delegate, or use an existing object. Provide it with these methods:

```
int sndCtr;

- init {
[mySound setDelegate:self]; /* mySound is the Sound to be looped */
sndCtr = 1;
}

- playIt {
[mySound play];
}

- didPlay:sender {
if (sndCtr++ < NUMTIMES)
[self playIt]; /* play it NUMTIMES in a row. Alternately, use some other terminating condition, or trigger other Sounds here */
}
```

This approach sometimes causes problems in the playback, however, particularly if the user interrupts the playing with an event such as a mouse-down. You'll have to try it for your specific case and see whether it works.

4) If none of these approaches is suitable, the workaround is to create a new Sound composed of multiple copies of the desired sound(s), using the SoundKit's copy/paste functionality. You can do this splicing programmatically with the insertSamples:at: method, or manually by using the SoundEditor example.

5) As a final option, you can combine the chaintest strategy with the SoundKit example above. Override Sound's "play" method and directly enqueue the soundstruct with SNDStartPlaying, giving it your own special SNDNotificationFun to do the chaining as in chaintest. The drawback of this approach is that you cannot safely send the delegate a soundDidPlay: message when the repeat count runs out.

Valid for 1.0, 2.0, 3.0

Q: I am porting my sound driver program from Release 2 to 3. But the kernel header file snd_msgs.h is no longer available in Release 3. What can I do to get a handle on the error codes returned by the SNDDRIVER functions?

A: You can include the following code in your program to provide for error handling:

```
#import <sound/sounderror.h> /* for SNDSoundError() */

#ifndef SNDDRIVER_NO_ERROR
#define SNDDRIVER_NO_ERROR 100 // non-error ack.
#define SNDDRIVER_BAD_PORT 101 // message sent to wrong port
#define SNDDRIVER_BAD_MSG 102 // unknown message id
#define SNDDRIVER_BAD_PARM 103 // bad parameter list in message
#define SNDDRIVER_NO_MEMORY 104 // can't allocate memory (record)
#define SNDDRIVER_PORT_BUSY 105 // access req'd to existing excl access port
#define SNDDRIVER_NOT_OWNER 106 // must be owner to do this
#define SNDDRIVER_BAD_CHAN 107 // dsp channel hasn't been inited
#define SNDDRIVER_SEARCH 108 // couldn't find requested resource
#define SNDDRIVER_NODATA 109 // can't send data commands to dsp in this mode
```

```
#define SNDDRIVER_NOPAGER 110 // can't allocate from external pager (record).
#define SNDDRIVER_NOTALIGNED 111 // bad data alignment.
#define SNDDRIVER_BAD_HOST_PRIV 112 // bad host privilege port passed.
#define SNDDRIVER_BAD_PROTO 113 // can't do requested operation in cur protocol
#define SNDDRIVER_MAX_ERROR 113
#endif

static char *snddriver_error_list[] = {
"sound success",
"sound message sent to wrong port",
"unknown sound message id",
"bad parameter list in sound message",
"can't allocate memory for recording",
"sound service in use",
"sound service requires ownership",
"DSP channel not initialized",
"can't find requested sound resource",
"bad DSP mode for sending data commands",
"external pager support not implemented",
"sound data not properly aligned",
"bad host provilege port passed",
"can't do requested operation in extant DSP protocol"
};

/*
* Error code to string conversion
*/
extern char *mach_error_string();
char *snddriver_error_string(int error)
{
if (error <= 0)
return mach_error_string(error);
else if (error >= SNDDRIVER_NO_ERROR && error <= SNDDRIVER_MAX_ERROR)
return snddriver_error_list[error-SNDDRIVER_NO_ERROR];
else
return SNDSoundError(error);
}

void snddriver_error(char *msg,int error)
{
char *errtype;
if (error <= 0)
errtype = "mach";
else if (error >= SNDDRIVER_NO_ERROR && error <= SNDDRIVER_MAX_ERROR)
errtype = "snddriver";
else
errtype = "sound";
fprintf(stderr,"%s\\n\\t%s error:%s\\n",msg,errtype,snddriver_error_string(error));
}
```

NetInfo Kit Questions

Q: I've read the release notes about the NetInfoKit (NIKit). Is there additional information about these objects and how to use them?

A: The only documentation that is currently available are the on-line Release Notes on 2.0 and whatever you can glean from the .h files. As you saw from those notes, it provides you with a rough overview of the objects available in the NIKit, but doesn't provide you with

any reference material. Through this document, we hope to shed some light on the NIKit objects, how to use them, and for what purpose.

Feedback for these objects would be greatly appreciated by the folks in engineering. Please send your feedback to bug_next@next.com.

NIDomain object
The first object, the NIDomain object, was created so that the other objects could have something through which to communicate to the NIKit database. The panel objects (like NIOpenPanel) use NIDomain to set and retrieve data from the NetInfo database. This object is the most likely one to change in future releases. You probably won't use NIDomain directly in your application, since the panel objects provide a higher level interface to it.

NIDomainPanel Object
The NIDomainPanel object is essentially a browser. It browses through the domain hierarchy, and displays it (much like the file system browser). To use the NIDomainPanel you should follow these steps:

- new
returns an id for the new instance of the NIDomainPanel.
- runModal
this runs a modal loop which exits when the user clicks ok or cancel
- exitFlags
returns whether the user clicked ok or cancel
- domain
returns the name of the domain that the user has selected.

The other methods are primarily there in case you wish to override them and provide some special functionality. Most useful are **cancel**, **ok** and **domain**.

NIOpenPanel Object
The next object, NIOpenPanel is a sub class of NIDomainPanel. It is used to display and select a particular directory from a list of its peers inside of any NetInfo domain in the hierarchy. It's analogous to the OpenPanel for filesystems. NIOpenPanel consists of the domain browser (which it inherits from the NIDomainPanel), buttons and a scrolling list of directories. You create an NIOpenPanel the same way in which you create a NIDomainPanel: using **new** and **runModal**. The other really interesting methods in NIOpenPanel are the **directory** and **setDirectoryPath** methods which you can use to programmatically browse to the directory path that you want from inside of the domains, or ask the NIOpenPanel where it currently is browsed to.

NISavePanel Object
NISavePanel is a subclass of NIOpenPanel, and is used to assist in saving changes to an open directory in a particular domain. NISavePanel is very much like NIOpenPanel, but with some additional functionality. It provides three different **runModal** routines. **runModal** is the one which you will use most frequently. It will start such that the browser is displaying your current domain. **runModalWithString** runs a modal loop, and starts up

such that the browser is displaying the domain which is passed in through "initialValue". **runModalwithUneditableString** is the same except for the fact that the directory is uneditable. It is used this way inside the NetManager and UserManager where the name of the directory is a fundamental property of the machine or user being edited and cannot be changed on the fly while performing a Save To.

NILoginPanel Object

And finally the NILoginPanel. This is probably the object for which you will have the most use. The login panel is used to verify (authenticate) a user's identification. You can either rely on the user id and password that are stored in the NI database, or you can use your own. There are three **runModal** methods in this object as well:

- (BOOL)runModal:sender inDomain:(void *) domainID;
This runs the login dialog modally with the default user "root".

- (BOOL)runModal:sender withUser:(char *)userName inDomain:(void *)domainID withString:(const char *)whatWarning allowChange:(BOOL)disableUser;
This runs the login dialog modally with the user as specified. You can change the message displayed on the panel by using the withString argument. Also, this method allows the user to
edit the default user name.

- (BOOL)runModalwithValidation:sender withUser:(const char *)userName inDomain:(void *) domainID withString:(const char *)whatWarning allowChange:(BOOL)enableUser;
This runs the login dialog modally as the previous method. However, this one requires validation.
With this modal method you can provide your own password validation scheme. You use this
in conjunction with the NILoginPanelDelegate's **authenticateUser** method.

At this point there is no example code from which you can learn to use these objects wisely (or at all). For examples about how these NIKit objects look and for an idea of how they can be put to good use, you can look at the system administration tools in /NextAdmin. Most of them use the NIKit. Future changes in the NIKit will be made to better support these applications.

Valid for 2.0, 3.0

DBKit Questions

Q: I put together a Database Kit program using InterfaceBuilder and it works fine in InterfaceBuilder's test mode. When I compile this program and try to run it independently, an attention panel opens and indicates: "Cannot load Adaptor: Oracle Adaptor." Why?

Q: I build a Database Kit application and add **libdbkit_s.a** to the Libraries directory in ProjectBuilder. Why do I still get the following error message in the console:

```
Error loading /NextLibrary/Adaptors/SybaseAdaptor.adaptor/SybaseAdaptor
rld(): Undefined symbols:
```

In GDB, the undefined symbols are reported as _sys_nerr, _sys_errlist, and _send.

A: In order for a Database Kit application to work, adaptor code must be made available to it. There are two ways to achieve this:

1) Hard-link an adaptor into your application. To do this, simply drag the adaptor you want onto the Libraries icon in ProjectBuilder's Files window. The adaptors provided by NeXT are located in **/NextLibrary/Adaptors**.

2) Dynamically load the adaptor code. To do this, you need to create a file in your project directory called **Makefile.preamble**, which contains the following line:

```
OTHER_LDFLAGS = -u libdbkit_s -u libNeXT_s -u libsys_s
```

Q: What are the pros and cons of dynamically loading adaptor code?

A:
Pros
You can write generic tools, without knowing which database they will be run against. Your application gets the latest and greatest version of adaptors, in case NeXT revises them.

Cons
Dynamically loading an adaptor slows down program startup (often by several seconds)

Q: How can I get hold of the DBBinder used by my application's DBDatabase object?

A: You can't. If you want to use DBBinders in your application, you have to create them yourself. See **/NextDeveloper/Examples/DatabaseKit/Binder** for some usage of a DBBinder.

Q: How can I view the SQL queries generated in my program?

A: You can trace the actual SQL queries generated by the Database Kit by having an object becoming the DBDatabase object's delegate. The delegate object must implement the **db:willEvaluateString:usingBinder:** method. For more details, see **Controller.m** in the **/NextDeveloper/Examples/DatabaseKit/AddressBook** example.

Q: What are the pros and cons of using one DBModule vs. two to implement insert/save in the case of a one-to-many relationship?

A: In case of 2 DBModules (one for the master table and one for the detail table), you don't have to find the detail fetchgroup programmatically. You can insert a new record into the detail module by simply connecting a button to the detail module **insertNewRecord:** method. When saving, you need to save the master module first, then save the detail module. See the **/NextDeveloper/Examples/DatabaseKit/OracleDemo** for an example of two modules.

In case of a single DBModule (representing the master table), you need to find the detail fetchgroup programmatically in order to insert a new record. However, you need to do only *one* save operation on the module, and it saves all changes from the root fetchgroup as well as the detail fetchgroup(s). The module save operation groups both fetchgroup saves as a single transaction.

Q: How can I synchronize a master DBModule with a detail DBModule ?

A: Just drag and drop the one-to-many relationship in the master DBModule onto the icon of the detail DBModule in the nib file. See **/NextDeveloper/Examples/DatabaseKit/OracleDemo** for more details on how to synchronize two modules.

Q: How do I connect a property of my table to a PopUpList object? I've tried connecting an attribute of my table to the PopUpList but nothing happens. The PopUpList still shows item 1, item 2, etc.

A: PopUpList connections can be made only to a field "x.y.z" where x is an entity, y is a one-to-one relationship, and z is a leaf-node field that is either a number or a string. For example, if you connect the attribute "name" from your Employee table to the PopUp, it only shows item1, item 2, etc. However, if you connect "Employee.Department.name", it shows all the names in the department.

Q: Which Application Kit objects are supported by the Database Kit?

A: The Database Kit contains various subclasses of DBAssociation designed to connect DBFetchGroups to certain Application Kit objects. Those Application Kit objects are:

TextField
Slider
Matrix of Cells or FormCells
NXBrowser
Text Object in a ScrollView
Button connected to a PopUp menu

Note:
Radio buttons and switches are not supported. See the RadioAssociation MiniExample for a workaround (radio buttons only).

Q: The model that I built with DBModeler shows only the views and tables that I own. How can I access all the views and tables in an Oracle database?

A: By default, DBModeler loads only those tables and views owned by the current user. However, you can extend the list of users for whom tables and views should be loaded. To do so, add the following to the defaults database<for example, to show the tables and views owned by the users David, Joe, Tony:

localhost> dwrite OracleAdaptor OracleTableOwners "'DAVID','JOE','TONY'"

The user names have to be quoted and the current user name has to be included as well. In order to load system tables, you can simply add the users 'SYSTEM' and 'SYS'. You can modify or change your list by using **dremove**, then **dwrite**. See the UNIX man pages for more information on **dread**, **dremove**, and **dwrite**. Note that this answer does not cover issues about access rights to system tables. Please refer to the Oracle manuals for further information.

Q: What should I do on my NEXTSTEP system in order to use my Oracle server with the Database Kit?

A: You need to do the following:
On the server side:

1) Check if oraserv is running.

2) Check if you have a file oratab under /etc. The oratab file has entries of the following format:

$ORACLE_SID:$ORACLE_HOME:<N|Y>
The entries in that file must match the entries you give to DBModeler. See item#4d. Specify "Y" so that the server can be started with dbstart at system boot up time.

On the client side:

3) Look at your /etc/services file:
a) Check with the Oracle DBA to verify that the database is using socket 1525 (this is the default). Enter the following into /etc/services:

orasrv 1525/tcp oracle

b) Niload the Oracle services. Be sure to check with the Oracle DBA to verify that the database is using socket 1525 (this is the default). If you want your entire network of NeXT machines to see the server, niload the entry in the root NetInfo domain on the master NetInfo server.

localhost> **su**
localhost# **niload services / </etc/services**

4) To access an Oracle server over TCP/IP.

a) Launch /NextDeveloper/Apps/DBModeler.app

b) Select the OracleAdaptor from the Preferences menu item.

c) Choose "New Model."

d) For the Oracle login panel, enter the appropriate information:

server id: <whatever ORACLE_SID is set to>
host: <server machine name>
login: <user login>
password: <user password>

e) Save the model in **~/Library/Databases**, **/LocalLibrary/Databases**, **/NextLibrary/Databases** or **/usr/local/Databases**. These are the default search paths that InterfaceBuilder uses to load models into the DatabaseKit palette.

f) From InterfaceBuilder, drag a DBModule palette (the lower left icon in the DBKit palette view) into the IB Objects suitcase. This operation creates an instance of DBModule. You can look at your model via the DBModule inspector and start creating your DBKit application.

Q: Why can I no longer load the Sybase/Oracle adaptor after I run **make install** on my DBKit application?

A: The problem is that **make install** does a complete stripping of the executable to save space by default. In order to force Makefile to recognize that DBKit adaptors need to be dynamically loaded, you must add the following line to your **Makefile.postamble**:

APP_STRIP_OPTS = $(DYLD_APP_STRIP_OPTS)

See also /NextDeveloper/Makefiles/apps/app.make for a full description of the rules.

Q: When I try to statically link an adaptor into my MAB [Multiple Architecture Binary] Database Kit application using NextStep Release 3.1 or 3.2, I get the following error at compilation time:

ld: for architecture i386
ld: warning /NextLibrary/Adaptors/SybaseAdaptor.adaptor/SybaseAdaptor cputype (6, architecture m68k) does not match cputype (7) for specified -arch flag: i386 (file not loaded)

ld: for architecture m68k
ld: warning /NextLibrary/Adaptors/SybaseAdaptor.adaptor/SybaseAdaptor cputype (7, architecture i386) does not match cputype (6) for specified -arch flag: m68k (file not loaded)

How can I overcome these errors?

A: The adaptors provided with Release 3.1 or 3.2 are for one single architecture type only. For example, to build a MAB Sybase Adaptor file, you need to do the following:

· Get the 2 versions of the file **SybaseAdaptor** from the directory **/NextLibrary/Adaptors/SybaseAdaptor.adaptor** . For convenience, we rename them respectively **SybaseAdaptor_m68k** and **SybaseAdaptor_i386** in this example.
· Use the Unix command **lipo(1)** to create a MAB adaptor file from these 2 input files. For example:

myhost> lipo **SybaseAdaptor_m68k SybaseAdaptor_i386** -create -output **~/Library/Adaptors/SybaseAdaptor_MAB**

Now, you can hard link the adaptor into your MAB application. See also adaptor_linking.rtf.

Q: When I use the DBBinder evaluateString method to issue SELECT statements with an Oracle adaptor and retrieve data from my tables, the LONG column values are always returned as NULL. What is going wrong?

A: This is a known problem with the Oracle Adaptor in Releases 3.1 and 3.2. If you use

InterfaceBuilder and the DBModule fetch mechanism to retrieve data from LONG columns, it works properly. However, if you must use a binder object, you need to set up your properly list before calling the binder evaluateString. For example, if you have a table **A** with two columns **attr1** and **attr2**, where **attr1** is defined as integer, and **attr2** is defined as LONG, you need to create a property list that includes these two attributes, and initialize the binder accordingly. See the code snippet below as an example:

```
/* Initialize the binder and set it up */
DBBinder *binder = [[DBBinder alloc] init];
List *resultList = [[List alloc] init];
List *props = [[List alloc]init];

[binder setDatabase:myDatabase];
[binder setContainer:(id)resultList];

/* This is the workaround to the LONG datatype problem.
You must create a property list that contains all the
columns you want to select in your query before doing
the evaluateString. */
myTable = [myDatabase entityNamed:"A"];
[props addObject:[myTable propertyNamed:"attr1"]];
[props addObject:[fooTable propertyNamed:"attr2"]];
[binder setProperties:props];
result = [binder evaluateString:"select * from A"];

/* Do the rest of the work, such as fetching data,
freeing the binder and other resources after they are used, etc...*/
```

Q: Whenever I try to run **make profile** against my DBKit application, I get the following error:

```
cc -g -pg -O -Wall -DPROFILE -I./sym -arch i386 -ObjC -u libdbkit_s -u libNeXT_s -u libsys_s -sectcreate __ICON
__header OrderByTest.iconheader -segprot __ICON r r -sectcreate __ICON app
/usr/lib/NextStep/Workspace.app/application.tiff -o OrderByTest.profile/OrderByTest i386_profile_obj/OrderBy.o
i386_profile_obj/OrderByTest_main.o /NextLibrary/Adaptors/OracleAdaptor.adaptor/OracleAdaptor -ldbkit_s -lMedia_s -
lNeXT_s
ld: multiple definitions of symbol _exit
/lib/gcrt0.o definition of _exit in section (__TEXT,__text)
/lib/libsys_s.a(exit.o) definition of absolute _exit (value 0x50023f6)
*** Exit 1
Stop.
*** Exit 1
Stop.
```

What's happening?

A: Since profiling with bundles is not possible, you have to hard-link the DBKit adaptor you are using instead of dynamically loading it. For example, if you are using the Sybase Adaptor, you can hard-link it by adding the following line to your Makefile.preamble:

```
OTHER_OFILES = /NextLibrary/Adaptors/SybaseAdaptor.adaptor/SybaseAdaptor
```

Since you are no longer using dynamic loading, you also need to remove all of the -u commands in the LDFLAGS or OTHER_LDFLAGS option from your Makefile.preamble. For example, you need to delete this line from your Makefile.preamble:

```
OTHER_LDFLAGS = -u libdbkit_s -u libNeXT_s -u libsys_s
```

Now, you should be able to link and profile your application as desired. Note that if you want to profile DBKit, you need to link with the profiled version of DBKit, **libdbkit_p.a**, instead of **libdbkit_s.a**.

Valid for 3.0, 3.1

Q: I have put together a DBKit program with InterfaceBuilder and it uses DBModule to make connections between UI Objects and Record List. The DBModule is the textDelegate for the instance TextFields. I type some characters into a TextField, and, without pressing Return or Tab, I clicked the Save button (or chose the Save menu command). I subsequently discovered that the data in the very last TextField was not saved. Why?

A: The problem is that **textWillEnd:endChar:** is not invoked when you click a button or choose a menu command without pressing Return, Tab or back Tab first. You need the following code to get the lastly-edited value in the action method of the Button or Menu item.

```
- save: sender
{
id association = [dbModule editingAssociation];
id fetchGroup = [association fetchGroup];
[fetchGroup takeValueFromAssociation: association];
...
...
}
```

Q: In DBModeler, how do I describe a multiple-field unique key for an entity? If a single property serves as a unique key for a record<such as "employee id" might serve for an employees entity<I can select the Unique Key box in the DBModeler Inspector. But how do I create a multiple-field key for a "sales" entity in which to identify a sale uniquely, I have to look at seller, buyer, and date?

A: You may check the "Unique Key" box in as many properties of an entity as you like. This is interpreted as a multiple-field key.

Q: I am having a problem when I have only one record in a tableview. I cannot delete it using the DBModule method **deleteRecord:**. When I print out the generated SQL, I only see the following:
BEGIN TRANSACTION
COMMIT TRANSACTION
What's happening?

A: This is a bug introduced in Release 3.2. To work around this problem, you should send a **saveModifications** message to the DBRecordList which matches your DBModule to save the deletion to the database. For example, you can use the following code snippet as a wrapper around your delete method:

```
delete:sender
{
[dbModule deleteRecord:sender];
#ifdef BUG_WORKAROUND
```

```
[[[dbModule rootFetchGroup] recordList] saveModifications];
#endif
return self;
}
```

Note that this bug will be fixed in a future release, thus you may need to put a #ifdef around the workaround. Also, the same code snippet can run on Release 3.1 without any effect.

Valid for 3.2 only

Q: What are the known problems with DBKit?

A: These are the known problems:

Sorting Records

Sorting cannot be set from InterfaceBuilder. To specify a sort order, you use the DBRecordList method **addRetrieveOrder:**(DBRetrieveOrder)*anOrder* **for:**(id<DBProperties>)*aProperty***;**

A problem is that when you reset the DBRecordList using the **setProperties:** method, it also resets the sort order. Both DBFetchGroup and DBModule send a **setProperties:** message before fetching. So, if you try to interpose in the fetch with a custom object, set up the sort order, then fetch, the sort order won't be set anymore. The way to get around this is to be the DBFetchGroup's delegate and respond to the **fetchGroupWillFetch:** message, and to set up the sort order on the sender's DBRecordList.

See the **/NextDeveloper/Examples/DatabaseKit/TableView** which changes the sort order every time you move the columns of the DBTableView.

Sybase Adaptor
· The adaptor doesn't infer relationships from the database.
· The adaptor doesn't read in system tables.

Oracle Adaptor
· The adaptor doesn't handle sequence numbers.
· The adaptor doesn't read relationships from the database.
· The adaptor doesn't handle catalog of databases.

DBModeler
· DBModeler doesn't import relationship information from the database into the dbmodels.

Keys
· You cannot update the primary key of your record. The only way is to delete the old record, do a save operation, and insert the new record with the modified key.

Qualifiers
· In general, all expressions in the qualifier need to be attributes or relationships coming from the qualifier's root entity. Only one-to-one relationship attributes can be built into the

qualifier. There is a known bug however with fetching with a qualifier built from one-to-one relationship attributes. As a workaround, you need to invoke the DBFetchGroup method **addExpression:** or create an expression implicitly using a connection to the File Owner. This bug has been fixed in Release 3.2.

· To qualify records fetched from a detail DBFetchGroup in case of a one-to-many relationship, you must use custom code. See the **/NextDeveloper/Examples/DatabaseKit/AssociationSybase** or **AssociationOracle** for more details.

· There is a known problem with parenthesizing qualifiers. As a workaround, follow the steps below:

Given the following qualifier:

```
[qual1 initForEntity:e FromDescription:"name = 'SMITH' OR name = 'JONES'"];
[qual1 addDescription:" AND age < 10 OR age > 20"];
```

This generates an SQL with no parenthesized grouping:

```
"name = 'SMITH' OR name = 'JONES' age < 10 OR age > 20"
```

The workaround is as follows:

```
[qual1 initForEntity:e FromDescription:"name = 'SMITH' OR name = 'JONES'"];
[qual2 initForEntity:e FromDescription:"(%@) AND (age < 10 OR age > 20)", qual1];
```

or more generally:

```
[qual1 initForEntity:e FromDescription:"name = 'SMITH' OR name = 'JONES'"];
[qual2 initForEntity:e FromDescription:"age < 10 OR age > 20"];
[qual3 initForEntity:e FromDescription:"(%@) AND (%@)", qual1, qual2];
```

These qualifiers then generate:

```
"(name = 'SMITH' OR name = 'JONES') AND (age < 10 OR age > 20)"
```

Update

· The Database Kit doesn't support modifying columns that are made of derived data (i.e. calculated expressions and the results of a join). For example, the following scenario does not work:

You have a module through which you fetch data for a few properties in that entity, including one property through the join. The fetch works fine, but when you update using **saveChanges:**, you get an attention panel titled "Database" with the message "Error occurred during transaction". The workaround is to add another module and fetch the data previously accessed through the join directly. Then, you'll have no problems resaving.

IndexingKit Questions

Q: I need to customize the two methods **source:***aSource* **willWriteRecord:**(unsigned)*record* and **source:***aSource*

didReadRecord:(unsigned)*recor*d from the IXRecordTranscription protocol to do a fast archiving of my custom data. However, I don't understand why *aSource* doesn't respond to the IXRecordManager API. How can I work around this problem?

A: The source inside the IXRecordTranscription protocol methods can either be an IXRecordManager or an IXDataRepository object. In the latter case, the record manager is its delegate. For example, in order to find the record manager, your code should look like this:

```
- source:aSource willWriteRecord:(unsigned)record
{

/* Check whether aSource is an IXRecordManager */
if (![aSource isMemberOf:[IXRecordManager class]])
aSource = [aSource delegate];

/* aSource is now an IXRecordManager */
/* Process your custom data here */
return self;
}
```

Valid for 3.0, 3.1, 3.2

Q: When I archive and unarchive an IXStore object, I am able to write it to a typedstream, but reading it back in gives me a memory protection failure with the following backtrace.

```
Program generated(1): Memory access exception on address 0xe
(protection failure).
0xa025f46 in -[IXStore read:] ()
(gdb) where
#0 0xa025f46 in -[IXStore read:] ()
#1 0x500c9be in InternalReadObject ()
#2 0x500f0f8 in NXReadObject ()
```

Why?

A: The memory smasher occurs in InternalReadObject() (the archiving code) when that method tries to send an **awake** message to the unarchived store, which has been freed. The store was freed because it didn't have transactions enabled and hence was in a partially updated state. To fix this problem, you can, for example, call **commitTransaction** in the **write:** method of your store object to finish all outstanding transactions before archiving. Note that this is only necessary if transactions are not enabled. If transactions are enabled, the store can be archived with incomplete transactions pending, and reading it back drops the uncommitted changes. See the code snippet below:

```
/* Make a new storage object with a brand new IXStore */
- init
{
[super init];
storage = [[IXStore alloc] init];
return self;
}

/* Archiving myself */
```

```
- read:(NXTypedStream *)stream
{
[super read:stream];
storage = NXReadObject(stream);
return self;
}

- write:(NXTypedStream *)stream
{
[super write:stream];
/* A convenient place to finish outstanding
transactions. Not needed if transactions are
enabled.
*/
[storage commitTransaction];
NXWriteObject(stream, storage);
return self;
}
```

Please note that this program crasher has been fixed in Release 3.2, and an exception error is raised instead. However, you still need to follow the above guideline to properly archive an IXStore object.

Valid for 3.1, 3.2

MusicKit Questions

Q: As I understand it, the MIDI timer and I/O is handled with the *msg_receive* call, which is a kind of polling that happens whenever the application has time to poll. But if the application is busy with other things, might not the polling interval become too great or too variable, which could have a musically unacceptable effect?

A: It's true that your application must go into a **msg_receive** to receive MIDI. However, it's possible to structure your application so that there is a separate Mach thread that does nothing or little else than service this **msg_receive**. This should provide the response time you need. For example, if you use the MusicKit (see ../NEXTSTEP_Developer/Other_Kits/music_software), there is a feature that allows the MusicKit performance (and, hence, the MIDI **msg_receive**) to run in a separate thread from the graphics event loop. (This feature is also useful for non-MIDI performances, such as those using DSP synthesis.) Alternatively, if you don't use the MusicKit, you can fork your own thread to handle the MIDI asynchronously to the event loop.

Running the Music Kit in a separate thread makes it unlikely that graphics will prevent you from receiving your MIDI in a timely fashion. However, the MusicKit scheduler (just like the AppKit event loop) is non-preemptive<there's no absolute limit to how much can be done before going back to the **msg_receive**. Therefore, if you write your own Performer, Instrument, or NoteFilter subclass, make it as efficient as possible, because you won't receive MIDI until you exit your code. In principle, the way to get the fastest MIDI response is to have your own separate thread loop processing the MIDI, without using the MusicKit. However, if that thread does much processing other than receiving MIDI, using the MusicKit would probably be just as efficient (and easier to program). The important

thing is to get back to the **msg_receive** as quickly as possible, whether in the MusicKit, the AppKit, or your own thread.

Valid for 1.0, 2.0, 3.0

Q: What music software is available for NeXT Computers?

A: There is a variety of third party music software available. See the Software and Peripherals Catalog for more details on these programs. You can obtain the catalog by calling 800-848-NeXT in the U.S.

The Music Kit' is an extensive development tool for programmers and is available in the CCRMA (Stanford's Center for Computer Research in Music and Acoustics) Music and DSP tools distribution. Send mail to musickit@ccrma.stanford.edu for more information. There are some music demos that can be used by non-programmers, such as ScorePlayer and Ensemble. Ensemble combines MIDI in and out with DSP synthesis, soundfile playback, real-time algorithmic composition, interactive note processing, and more.

In the /NextDeveloper/Examples directory, the SoundAndMusic subdirectory contains programs that are runnable by anyone who knows enough Unix to change directories and compile in a shell window.

Some public-domain software is available on the Internet archive servers. Z-quencer is a simple MIDI sequencer with the music displayed in piano-roll style (rather than as music notation). Looching is a program that plays continuous background music on the DSP. Programmers at NeXT created the Lisp Scorefile Package, a Lisp front end for generating Music Kit scorefiles, and RecordApp, a program for sound recording.

Also available for programmers are some environments for software (non-real-time) sound synthesis and soundfile processing, mostly ported from other Unix platforms. Some also do real-time DSP synthesis. Generally these are available with source for a nominal fee or free of charge. CSound was created at M.I.T. and was given a NeXT front end by Pete Yadlowsky (pmy@virginia.edu). F. Richard Moore at U. C. San Diego (frm@sdcarl.ucsd.edu) has ported cmusic, a software synthesis language, and pvoc, a phase vocoder (for sophisticated analysis and resynthesis of recorded sound). Paul Lansky at Princeton ported cmix and rtmix, programs for soundfile processing and mixing. John Rahn at the University of Washington (jrahn@blake.washington.edu) has a Lisp kernel for music composition. Mara Helmuth (mara@woof.columbia.edu) wrote Patchmix, a graphical unit generator patch program that helps you construct synthesis instruments and that writes out cmix code.

At Stanford University, Heinrich Taube has created Common Music, a compositional environment based on the Common Lisp Object System; it creates scorefiles, soundfiles, and DSP synthesis using the Music Kit. Bill Schottstaedt has developed Common Lisp Music, a Lisp-based software synthesis language that uses the DSP for acceleration rather than real-time synthesis. Perry Cook has written SPASM, an interactive vocal synthesis application, ResonatorLab, a real-time digital filter application, and miscellaneous other tools that can be used by non-programmers. Glen Diener is developing a music notation program. Bill Schottstaedt has made available another music notation package, called cmn,

in which editing is done from Lisp rather than graphically. The Stanford materials are available by anonymous ftp to ccrma.stanford.edu.

At Northwestern University, Bill Parod (bill_parod@nwu.edu) has created Just, a NeXT Music Kit application for exploring tuning systems and for retuning scorefiles.

There is an extension to TeX for music notation called MuTeX. We are told this works with the NeXT version of TeX, but that it doesn't include 92dpi screen fonts, so you have to print the scores on your printer to see the notation. Presumably someone could use TeX's companion program METAFONT, also bundled on NeXT's 2.0 Extended software release, to create a 92dpi screen font from the provided MuTeX fonts.

Note that there are non-NEXTSTEP programs available for other platforms that might run on NeXT computers under SoftPC or X. For example, SCORE is a powerful music notation program for the IBM PC, and there are some public-domain sound tools that run under X windows.

There is an email-based music interest group that occasionally has announcements of new music-related software for the NeXT. To subscribe, send email to next-music-request@wri.com.

Valid for 1.0, 2.0, 3.0
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Motorola: Hardware Q & A

Disclaimer

This document pertains to the Motorola 68k-based hardware systems sold by NeXT Computer. Apple Computer no longer offers hardware support for these computers. This information is provided only as a convenience to our customers who are still using this hardware. Questions in this Q&A document that refer to the NeXTSTEP operating system may not apply to version 3.3 or to any other specific version of NeXTSTEP.
This article has been archived and is no longer updated by Apple.

NeXTdimension Questions

Q: What is the programming environment for NeXTdimension?? Can a user program the i860 directly or does he/she have to use Display PostScript or NEXTSTEP? Can I program the NeXTdimension board directly?

A: No, it is not possible to write code (in C or Assembly language) that will run on the i860 processor on NeXTdimension.

The purpose of the processors on the NeXTdimension is to manage the 32-bit MegaPixel display. This consists of assisting in the rendering and manipulation of tremendous amounts of data on the screen, managing the backing store, virtual memory, and video data, and all the rest. In order to do this in an efficient and timely manner, we felt that providing a lower level API (like programming the board directly in Assembler) would sacrifice these goals.

In providing an Assembly/C language interface, we would have to also do some sort of timesharing, in order to ensure that the the display system would have control of the NeXTdimension when it needed it. This is not a simple task.

In addition to this, providing the Assembly/C language interface leaves third party developers vulnerable to future changes in the display system. By using the AppKit and Display PostScript, applications are cushioned from future changes. Rather than having large numbers of graphics customers with gross incompatibilities whenever we revise our display architecture, instead we have customers whose applications run across our entire line, albeit faster on some machines than others.

What you do get in the NeXTdimension system is very fast image manipulations. When you use NXImage, or do image operations in PostScript, these operations are speeded up, without any changes in your code. In addition, the processors on NeXTdimension makes it possible to manipulate 32-bit color images and video with excellent performance.

Q: What files are required for a NeXTdimension board to function properly?

A: The NeXTdimension-related files on Release 2.1 and later (NeXTdimension systems only) are as follows:

ND PostScript Driver:
In the directory /usr/lib/NextStep/Displays/NeXTdimension.psdvr:

reloc dynaloads into WindowServer
ND_MachDriver_reloc loaded into Mach

NDserver loads i860 code and provides I/O support

NOTE: The size of the virtual memory space on the i860 is directly related to the VSIZE that ps reports for the NDserver task. This task shows up in the output from **ps aux** as:

root 149 0.0 3.4 28.3M 280K ? S 40:47 (NextDimension) -NDSlot 2

CPU use by this task directly reflects I/O activity, including paging, by the i860.

Video Support:
/NextDeveloper/Headers/appkit/NXLiveVideoView.h include file for video view
/usr/lib/NextStep/GraphicsPackages/video_reloc dynaloads into WindowServer
/usr/shlib/libMedia_s.A.shlib shlib image
/usr/lib/libMedia_s.a shlib archive

(Prior to Release 3 the video library is libvideo_s instead of libMedia_s.)

Demos & Examples:
NeXTtv video/grab Demo
ScreenScape video out Demo
VideoApp generic video Example

Q: I've purchased a NeXTdimension system and wish to expand the memory. What performance advantages can I expect to gain from adding memory to the NeXTdimension board as opposed to the CPU board? Is there a mini-Mach running on the i860? Can the i860 swap to disk? Can I memory-map the memory on the ND board?

A: The DRAM on the NeXTdimension is used for displaying all windows which appear on the NeXTdimension monitor. The NeXTdimension board is driven by a Mach loadable device driver (which loads into the Mach kernel on the host) and a NeXTdimension screen driver, part of which loads into the WindowServer, and another part which loads into the i860. This i860 software consists of a mini Mach-like kernel, specially designed to support low-level PostScript drawing, 3D rendering, and virtual memory for window backing stores. It is NOT possible to program the i860 directly.

Neither the DRAM nor the VRAM on the NeXTdimension can be memory mapped by the application. When it becomes necessary, the i860 pages to disk via the host 68040<it does not write directly to disk itself.

Whether you increase memory on the 68040 or the NeXTdimension depends upon how you plan to use the system. In general we recommend that you keep them fairly balanced. If you are going to be keeping lots of windows on the ND system then we suggest that you keep the memory on the i860 somewhat ahead. The less paging you do the better. You cannot extend the VRAM [video ram] on the NeXTdimension.

Q: Why does NeXTSTEP run so slowly on my NeXTdimension?

A: The key to NeXTdimension configurations is simple<don't set the monochrome MegaPixel Display as the default screen if you configure the NeXTdimension system with

both monochrome and color displays. This configuration causes the NeXTdimension to run very slowly.

The NeXTdimension can be run either with just a color display, or with both monochrome and color displays simultaneously. For best performance when running with both displays, the color display should be set as the default screen. Make sure that your customers don't configure their systems to default to the monochrome display. This configuration works, but works very slowly.

For example, zooming to 200 percent in Scene while looking at a large TIFF file takes 130 seconds with the slow configuration. With any other NeXTdimension configuration, it takes only about 20 seconds.

How does this happen? With a new NeXTdimension system or upgrade to an existing NeXTcube, the system will power up and, by default, use only the color display. To configure a system with multiple displays, the user must run the Preferences application and use the multiple screens preference item to enable the monochrome screen.

The only way to get into the slow configuration is to drag the loginwindow icon over the monochrome screen to set it as the zero screen. Customers who may have already set this configuration can set the zero screen back to the color screen by dragging the loginwindow icon over to the color screen.

NeXT Printer Questions

Q: Where can I find replacement cmyk cartridges for my NeXT Color Printer?

A: The NeXT Color Printer uses the same engine as the Canon BJ 800/820 printers. Cartridges compatible with those printers can also be used with the NeXT printer.

Q: Can the cable for the NeXT Laser Printer be extended somehow?

A: No. There will be too much signal skew.

Q: What is the maximum weight of paper you can use in the NeXT Printer? What is the maximum size and number of pages you can use in the NeXT Printer?

A: Different countries use different paper measurement schemes.

In the United States, paper weight is traditionally measured in "pounds per square foot." In Europe it is measured in grammes per square meter (gsm).

· **Maximum Paper Size/Weight**
Cassette feed
60-80 gsm paper (Grammes per square meter or g/m2)
or
34 pound paper

Manual feed
Plain paper from 100mm x 175mm to 216mm x 356mm (60 gsm to 128 gsm).

· **Cassette Capability**
A4/Letter selection (Depth: 16mm - approx 150 sheets of 80 gsm paper)

Q: When shipping a printer, what has to be done to move it safely?

A: Remove the toner cartridge and place it in its own box. If left in the printer, all of the toner could spill out. If you still have the tabs which were removed from the printer when it was first unpacked, place the tabs back into the unit. See the "Setting Up the Printer" Chapter in the Getting Started manual for printer setup information.

Miscellaneous NeXT Computer Questions

Q: How can I change the voice alerts for my printer?

A: In versions prior to Release 3, the voice alerts can be found in the directory /usr/lib/NextPrinter. In Release 3 and later, they are located in /usr/lib/NextPrinter/*language*.lproj, where *language* is the name of language version of the sound you want to change. There are four of them:

manualfeed.snd "Your printer is waiting for paper"
nopaper.snd "Your printer is out of paper"
printeropen.snd "Your printer cover is open"
paperjam.snd "Paper is jammed in your printer"

These are ordinary CODEC-based sound files. One can replace them with one's own recording. (The execute bit need not be on.)

Q: Where can I find replacement cmyk cartridges for my NeXT Color Printer?

A: The NeXT Color Printer uses the same engine as the Canon BJ 800/820 printers. Cartridges compatible with those printers can also be used with the NeXT printer.

Q: When I try to format a floppy disk with my external SCSI floppy drive, it fails and shows an alert panel that says "Cannot initialize disk. See console for errors." In the console I see this message if it is a new unformatted disk:
/usr/etc/disk -i -h localhost -l "UntitledDisk" /dev/rsd1a
Target 5: MEDIA ERROR; block 0H retry 1
Target 5: MEDIA ERROR; block 0H retry 2
Target 5: MEDIA ERROR; block 0H retry 3
Target 5: MEDIA ERROR; block 0H retry 4
Target 5: MEDIA ERROR; block 0H retry 5
Target 5: MEDIA ERROR; block 0H retry 6
Target 5: MEDIA ERROR; block 0H retry 7
Target 5: MEDIA ERROR; block 0H retry 8
Target 5: MEDIA ERROR; block 0H retry 9
sd1 (5,0): sense key:0x3 additional sense code:0x12
SCSI Block in error = 0 (no valid label)

Read of sector 0 failed

If the disk have been formatted and I try to re-initialize the disk, I see this message in the console:
/usr/etc/disk -i -h localhost -l "UntitledDisk" /dev/rsd1a
disk name: PLI SUPER FLOPPY
disk type: removable_rw_scsi
device = /dev/rsd1a block size = 512 capacity = 1 MBytes
Disk Format in progress...
Format Complete
writing disk label
boot block extends beyond front porch

How can I initialize floppy disks?

A: This assumes your external SCSI floppy drive is at sd1.

You must be logged in as, or su'd to root.

(You type the things in bold...)

localhost:18# **sdform /dev/rsd1a**
device = /dev/rsd1a block size = 512 capacity = 1 MBytes

FORMATTING THIS DISK CAUSES ALL DISK DATA TO BE LOST
This will take approximately 5 minutes.

Do you wish to proceed? (Y/anything) Y

Disk Format in progress...
Format Complete
localhost:19# **disk /dev/rsd1a**
disk name: PLI SUPER FLOPPY
disk type: removable_rw_scsi
Disk utility

disk> **label**
label information: print, write? **write**
enter host name: localhost
enter disk label: UntitledDisk
writing disk label
disk> **quit**
localhost:20# **newfs /dev/rsd1a**
setting optimization for space with minfree less than 10
Warning: 12 sector(s) in last cylinder unallocated
/dev/rsd1a: 1392 sectors in 78 cylinders of 2 tracks, 9 sectors
1.4Mb in 5 cyl groups (16 c/g, 0.29Mb/g, 64 i/g)
super-block backups (for fsck -b#) at:
16, 320, 592, 896, 1168,
localhost:21# disk -e /dev/rsd1a
disk name: PLI SUPER FLOPPY
disk type: removable_rw_scsi
localhost:22#

Q: How do I use the serial port as a tty connection?

A: It is pretty much a plug-n-play operation once you have enabled the serial port to be accessed as a tty. You will need a terminal or a communications program which will run on whatever machine you plug into the serial port.

1) As root, edit the file "/etc/ttys" and set a terminal type and baud rate. Be sure to change the "off" to "on". (See "/etc/gettytab" for help in assigning a baud rate. Read the "man" page on "gettytab" and "getty" for more help.) Save the changes and power down.

Default entries in "/etc/ttys" shown below.
ttya "/usr/etc/getty std.9600" unknown off secure
ttyb "/usr/etc/getty std.9600" unknown off secure

2) You will need a null-modem serial cable. This cable switches the transmit and receive wires between the two plugs. Turn both systems off and plug this cable into the serial ports of the two machines.

PC serial port:
_____ Pin Signal
(1 2 3 4 5) --- ------
\\ o o o o o / 2 Receive Data
\\ 6 7 8 9 / 3 Transmit Data
\\ o o o o/
_____/

NeXT serial port:
(see "man zs" located online). Serial ports A and B use 8-pin miniature DIN (MiniDIN-8) connectors. Both ports on a 68040-based NeXT computer are RS-423 compatible; the ports on a 68030-based NeXT computer are RS-422 compatible (though different). The following diagram and table describe the pin configuration of each port: Pin 3 is Transmit Data and pin 5 is Receive Data. (see Appendix B:Cabling in the System Administration Guide located online)

Mini-din signals on 68030 systems:

Pin Signal
1 DTR Data Terminal Ready
2 DCD Data Carrier Detect
3 TXD- Transmit Data Minus
4 GND Signal Ground
5 RXD- Receive Data Minus
6 TXD+ Transmit Data Plus
7 A: RTXC Receive Clock
B: +5v +5 volts
8 RXD+ Receive Data Plus

NOTE: Previous NeXT documentation incorrectly referred to
pin 2 as CTS.

Mini-din signals on 68040 systems:

Pin Signal
1 DTR Data Terminal Ready
2 DCD Data Carrier Detect
3 TXD Transmit Data
4 GND Signal Ground
5 RXD Receive Data
6 RTS Request To Send
7 RTXC Receive Clock
8 CTS Clear To Send

3) Match the settings of your terminal or terminal emulator with those you have selected in "/etc/ttys". The default setting specified in "/etc/gettytab" will accept tty connections with even parity, 7 bits and 1 stop bit ;(E71). PC users will need to specify which com port the terminal program is to use and make sure that the port is enabled in their system's BIOS.
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NeXTSTEP Installation Q&A

Disclaimer

This document pertains to the NeXTSTEP operating system (versions 3.2 and previous). Apple Computer no longer provides support for these products. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software.
This article has been archived and is no longer updated by Apple.

Q: When I try to upgrade from Release 3.1 to 3.2, the Upgrade.app indicates the post-processing script failed. When I checked the upgrade log, I saw the following lines:

There isn't enough space to install all the languages.
ROOT: Undefined variable.

What's going on? How do I get the upgrade to complete? Is the computer now unusable?

Q: The Upgrade.app indicates the post-processing script failed, but then said the upgrade completed successfully. When I restart the computer, it panics with a "Can't mount root" error. What can I do?

A: This happens when there isn't enough free space on the hard disk being upgraded to install the languages packages. The post-processing script fails due to a bug: the environment variable **ROOT** isn't assigned before it's referenced. If you are using an Intel based computer, it is *unusable* if it's restarted; the device driver upgrade isn't complete at this point. If you are using a NeXT computer, English help didn't get installed. However, you *can* complete the upgrade, and thus make the computer usable.

+Intel users who haven't rebooted,
+NeXT computer users before or after rebooting

To complete the upgrade, type the following as the root user in a Terminal window (this assumes you're using the C-Shell as your login shell; if this isn't the case, adapt the following procedure, or start the C-Shell, **/bin/csh**).

Note: This procedure assumes that the 3.2 upgrade CD-ROM is mounted on the directory **/NEXTSTEP_3.2**. If this is not the case, substitute the actual mount point of the 3.2 upgrade CD-ROM for **/NEXTSTEP_3.2** throughout the following procedure.

```
setenv ROOT /NEXTSTEP_3.2
/NEXTSTEP_3.2/Upgrader.app/Default.upgrade/PostProcess / /NEXTSTEP_3.2
```

+Intel users who have rebooted

If you have already rebooted, your computer panics with the "Can't mount root" error. To complete the upgrade at this point, do the following:

1. Insert the 3.1 floppy disk into the floppy disk drive.
2. Start up the computer.
3. At the **boot:** prompt, type:

if you have a SCSI hard drive

```
fd()mach_kernel -s rootdev=sd0a
```

if you have an IDE hard drive
fd()mach_kernel -s rootdev=hd0a
4. At the # prompt, type the following, pressing the Enter key at the end of each line:
mount -o remount /
if you have a SCSI hard drive
mount -o ro /dev/sd1a /NEXTSTEP_3.2
if you have an IDE hard drive
mount -o ro /dev/sd0a /NEXTSTEP_3.2
nmserver -nonet
sh /etc/rc.net -h
portmap
nibindd
csh
setenv ROOT /NEXTSTEP_3.2
/NEXTSTEP_3.2/Upgrader.app/Default.upgrade/PostProcess / /NEXTSTEP_3.2
halt
5. Remove the floppy disk.
6. Restart the computer.

Q: When I try to install NEXTSTEP Release 3.2 for Intel Processors onto my computer, the keyboard locks up, and I am unable to complete the installation.

What's going on? How do I get the installation to complete? Is the computer now unusable?

A: There is a known bug which may lock up your keyboard during installation onto systems which do not have integrated PS/2 mouse support. The problem is in the PS/2 mouse driver, and removing the PS/2 mouse driver from your default configuration will work around the problem.

The following entry will prevent the PS/2 mouse driver from being automatically loaded. By default, NEXTSTEP loads the following drivers during installation and when booting **config=Default**: PS2Keyboard, PS2Mouse, Adaptec1542B, DPT2012, IDE, and Floppy. To remove the PS2Mouse driver from this list, type the following at the **boot:** prompt:

"Boot Drivers"="PS2Keyboard Adaptec1542B DPT2012 IDE Floppy"

While configuring during the installation process, be certain to remove the instance of the PS2Mouse driver which is automatically added by Configure.

Q:I have a two gigabyte or larger SCSI disk drive on which I'm trying to install NEXTSTEP Release 3.2. Everything seems to go fine until the installation program looks for disks to install on; then it can't find my hard disk drive. What's going on?

A:There is a known bug in the NEXTSTEP Release 3.2 installation process such that it will not recognize a hard disk drive larger than two gigabytes. This bug has been fixed in NEXTSTEP Release 3.3. Under 3.3, hard disks larger than two gigabytes will be automatically partitioned into as many two-gigabyte-or-smaller partitions as necessary. For example, a nine-gigabyte hard disk devoted solely to NEXTSTEP would be partitioned into five partitions, each with a size of approximately 9/5 = 1.8 gigabytes.

Q: Are there any peripherals known to be incompatible with NeXTSTEP versions 3.1 or 3.2?

A:There is a known incompatibility with the firmware found in Seagate IDE drives model numbers ST3550a and ST3588A when used with NEXTSTEP 3.1 and 3.2. This error manifests during installation when a sequence of IDE

error messages occur and installation stops. The error "Disk initialization failed" is then reported. A firmware upgrade to fix this problem is available through Seagate. Model ST3550a requires firmware update 9581, and model ST3385a requires firmware update 9588.

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NEXTSTEP 3.3 Netware Q&A

Disclaimer

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This article has been archived and is no longer updated by Apple.

Q: When connected to NetWare I try to transfer files larger than a few bytes in size, the attempt fails and a panel says I am no longer logged into the Netware server. What is going on?

A: There is a bug in NeXTSTEP version 3.3 where if the Netware v3.12 server is using 802.3 frames you will not be able to transfer files over a few bytes in size. The fix is to have the Netware server use a framing type other then 802.3. NeXTSTEP supports frame types: ethernet_ii, ethernet_snap, and ethernet_802.2. There is nothing you will need to change in NeXTSTEP.

Q: After Ugrading from 3.2 to 3.3 I see all the NetWare file servers available. I authenticate on one of the file servers, but can not see any of the directories or files on that server. The only directory listed is "SYS". What is going on?

A: The upgrade failed to update the file "/usr/lib/kern_loader/nuc/nuc_reloc". As "root" you'll need to copy the file off the NEXTSTEP 3.3 CDROM. With your NEXTSTEP 3.3 CDROM mounted, you can do so with the command:

ditto /NEXTSTEP_3.3/usr/lib/kern_loader/nuc/nuc_reloc /usr/lib/kern_loader/nuc

Q: Why does NEXTSTEP not recognize some Netware servers on my network?

A: The simple answer is that not all Netware servers are configured to use the same frame type. Frame type configuration under NEXTSTEP is automatic, so generally there is no need to configure it. When you boot NEXTSTEP, it sends out Nearest Server Query broadcast packets to find the nearest server. It tries twice using Ethernet-II framing, then twice with 802.2 over 802.3, then twice using 802.2 with SNAP headers over 802.3 then twice using raw 802.3. As soon as it gets a response from a server, it stops the search process, and configures itself to use the frame format which triggered the response.

If you want to override the automatic configuration, you can edit
/etc/rc. Find the line which launches /usr/netware/etc/npsd, and
add command-line options to it. Valid options are:

-v << verbose mode >>
-t ss << change timeout on server responses to ss seconds >>
-r nn << try each frame type nn times before giving up >>
-f ethernet_ii << ethernet type II frame type >>
-f ethernet_snap
-f ethernet_802.2
-f ethernet_802.3

For a complete description of npsd under NEXTSTEP 3.3, see the UNIX manual page.

There is no provision for communicating to different servers with different frame types. This means that all servers on your network must be using the same frame type if you want NEXTSTEP to be able to access them all.
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TA45929_ComTalk_and_NFS_Compatibility_Update_(TIL07265).pdf

ComTalk and NFS: Compatibility Update

Can I get an update on APT's ComTalk AppleTalk & TCP/IP Routing products and the new NFS software compatibility?

This article has been archived and is no longer updated by Apple.

NFS/Share from Intercon and Wollongong's NFS Client do not work across ComTalk gateways because of lack of support for splitting up and encapsulating larger UDP-type packets over AppleTalk/LocalTalk. These vendors are aware of this problem and are working on a fix. There are no problems supporting TCP-based services, such as Telnet, SMTP, FTP.

Other than this compatibility issue, these products are very fast, and have a comprehensive set of security options.

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NEXTSTEP Interface Objects Q&A

Disclaimer

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This article has been archived and is no longer updated by Apple.

Overview

This document contains development questions relating to windows, views, and other interface objects under NeXTSTEP 3.3 and/or previous versions.

Questions

Q: I would like to convert a point returned in an NXEvent from its base coordinates to a view coordinate system. There are several routines to convert coordinates between views and between the screen and base coordinate systems, but I have not found one to convert a base coordinate to a view's coordinate system. How do I do this?

A: Calling the following method with aView == nil converts the point from the base coordinate system of the window to the view's coordinate system:

```
- convertPoint:(NXPoint *)aPoint fromView:aView;
```

Q: I have a button which, when clicked, removes a View from a Window. However the button that does this is a subview of the View that is removed. This works except I get the following message on the console:

```
Assertion failed: You removed a View from the View hierarchy that had been lockFocus'ed
```

Is this a problem? Can I ignore the message?

A: Typically the action method for a control is called while in the mouseDown for that control. At this point the AppKit has performed a lockFocus on that control (while it is highlighted) and it will not remove the lockFocus until the action method has completed (and the highlight is turned off). For this reason it is not a good idea to be modifying the view hierarchy of any superviews from within the action method of a control. If it is not possible to restructure the code so that the hierarchy is modified outside of the action method, then the next best approach is to perform the action with a slight delay. The code might look like:

```
[self perform:@selector(removeView:) with:sender afterDelay:1 cancelPrevious:YES];
```

Q: How can I make connections in InterfaceBuilder between objects in different nib files, or in the same one loaded multiple times?

A: You can't. You need to make the association in your code. The object that is the nib file's owner should take care of communicating with any other objects (including the owners of other nib files). For example, the file's owner can have methods that return

instance variables referring to any objects from the nib file that you want other objects to be able to talk to. (You must have created outlets in Interface Builder for these objects, in order for the objects to be assigned to instance variables.) The file's owner can also set the delegate of an object it owns to be some external object.

It's conceptually impossible to make the connections in Interface Builder, because there's no way to know which *instance* of an object from one nib file is connected to an instance of some object from another nib file. Each nib file is loaded at a different time during the program execution, and any nib file can get loaded multiple times. Only your code "knows" when the various objects get created<namely, when you call **loadNibSection:owner:**. Remember that nib files are just templates; the objects are unarchived when you load the nib file. When you make connections in InterfaceBuilder, you're really just making the template of these connections. Only when the nib file is loaded do the objects and their interconnections get instantiated, so to speak. If the other nib file hasn't been loaded yet, you can't connect to its objects, since they don't exist in your program yet. That's why connections are limited to nib files. It's also one reason every nib file must have an owner: so that objects from that nib file can communicate with other objects in your program.

The same logic applies to loading the same nib file multiple times. A typical use of loading the same nib file multiple times is in applications that have the notion of a document. The document is described by a nib file that gets loaded each time you want a new document (usually when the user clicks on the "New" menu). There should generally be a new instance of the owner of the nib file for each time you want to load the same nib file. The only way to communicate between the objects in different documents is through their owners.

One example of multiply loaded nib files is /NextDeveloper/Examples/SoundAndMusic/SoundKit/SoundEditor. In this application, SoundController is the main object that loads in the application's main nib file. It also is responsible for creating SoundDocuments, each of which loads in its own nib data. In other words, a new instance of the SoundDocument class is the file's owner for each "instance" of SoundDocument.nib<or more precisely, for the objects collectively unarchived each time

```
[NXApp loadNibSection:SoundDocument.nib owner:self];
```

is called in SoundDocument's **init** method. Although it wasn't necessary, there could have been methods in SoundDocument to return the objects "inside" each SoundDocument's nib file. For example, SoundDocument could have implemented a method called **-soundView** that returned the variable **mySoundView**, which is an InterfaceBuilder outlet. This way any other objects could have talked to the SoundView, by messaging SoundController to get the current document (with the **document** method), and then messaging the current document to get its SoundView (with the **soundView** method).

Q: How do I programmatically create a window 80 characters wide for any given font?

A: The following code snippet works for a fixed width font such as Ohlfs or Courier. A non-fixed width font can only be approximated by choosing either an "average-width"

character, or the widest character in the font.

```
#import <math.h>
#import <appkit/Window.h>
#import <appkit/Font.h>

float maxcharwidth, screenwidth;
id screenFont, myWindow;
NXCoord leftMargin, rightMargin, topMargin, bottomMargin;
NXRect aRect;

[myText getMarginLeft: &leftMargin
right: &rightMargin
top: &topMargin
bottom: &bottomMargin];
screenFont = [myFont screenFont];

maxcharwidth = MAX([myFont getWidthOf: "0"],
[screenFont getWidthOf: "0"]);
screenwidth = ceil(maxcharwidth * 80.0) + leftMargin + rightMargin +1;

/* Now use that width when creating the window */
NXSetRect(&aRect, 0.0, 0.0, screenwidth, height);
#ifdef 1.0
myWindow = [Window newContent: &aRect
style: NX_TITLEDSTYLE
backing: NX_BUFFERED
buttonMask: NX_MINIATURIZEBUTTONMASK
defer: NO];
#else /* 2.0 or 3.0 */
myWindow = [[Window alloc] initContent: &aRect
style: NX_TITLEDSTYLE
backing: NX_BUFFERED
buttonMask: NX_MINIATURIZEBUTTONMASK
defer: NO];
#endif
```

Note that the ifdef for 1.0 is for illustration purposes only and is NOT defined in any NEXTSTEP include file.

The key is to get the width of any character (since all have the same width) of both the screen font and the printer font. Take the maximum width and do a ceil of the calculation, since the printer width may be fractional.

Note that a fudge factor of +1 is added to the calculation. This is a known bug.

Note also that this window does not contain a vertical scrollbar. If it did, the width of the scrollbar would need to be accounted for.

Q: How can my program tell whether it is running on a system with a color screen?

A: The PostScript graphics model allows you to do all your rendering in 24 bit color, and have the WindowServer display it in the best way possible (dithering down to 2 bits, if necessary). If there are situations in which you need to use the "inquire and adapt" approach, the AppKit provides you with a method in the Application class called **colorScreen** that returns the most colorful screen available to your application. By

examining this data structure, you can determine how deep your color screen is. Below is a code fragment that does this:

```
#import <appkit/Application.h>
#import <appkit/screens.h>
...
{
const NXScreen *deepestScreen;

deepestScreen=[NXApp colorScreen];

switch ( deepestScreen->depth ) {

case NX_TwelveBitRGBDepth :
/* Twelve Bit Color */
break;

case NX_TwentyFourBitRGBDepth :
/* True Color */
break;

case NX_TwoBitGrayDepth :
default :
/* Greyscale */
break;

}
}
```

Q: How can I tell whether a View can display color or not?

A: The previous question does not answer which kinds of rendering commands you should be sending for a given View. There are two headed systems, and other circumstances where the window you are drawing in is not based on the value of **colorScreen**. The most common thing you want to do is different rendering based on whether this View can display color or not. One way to do this is to use the **shouldDrawColor** method of View. Do the following in your drawSelf:: method for the View:

```
- drawSelf:(NXRect *)rects :(int)count
{
if ([self shouldDrawColor]) {
... color-specific drawing ...
} else {
...
}
...
}
```

If you need to know the actual depth of a given window, use the **depthLimit** method of Window. Here's some code for that:

```
NXWindowDepthLimit depth;
if ((depth = [myWindow depthLimit]) == NX_DefaultDepth) {
depth = [Window defaultDepthLimit];
}
```

Q: How do I display a new window I created programmatically?

A: If you allocate a window and initialize it with the **init** method, that window, by default, has display disabled. When display is disabled, the window appears on-screen without a title and its contentView is white. You must send it a **display** message to get things going (i.e., so that it draws itself properly). Simply sending it **orderFront**: is not sufficient.

If your window is allocated and initialized with the **initContent:style:backing:buttonMask:defer:** method, display is disabled only if the defer flag is set to NO. If it's YES, the window looks fine when it gets the **orderFront**: message.

Q: How do I make a window resize from a corner other than the upper right?

Q: I have a view that I want to resize. However, what I really want is for the window to be resized such that my view becomes the given size using the autosizing attributes that I have set in my window. How do I do that?

A: The following window method, sizeWindow:byCorner:, resizes a window to the given size by moving the given corner. The view method below it, sizeTo::byWindowCorner:, resizes a view by growing its window such that the view becomes the given size with respect to its autosizing settings. The two methods are implemented as categories to Window and View respectively.

```
// Format is 80 columns with 4 space tabs.
@interface Window(Sizing)
- sizeWindow:(NXCoord)width :(NXCoord)height byCorner:(int)corner
@end

@implementation Window(Sizing)

#define CORNER_UPPER_LEFT 0
#define CORNER_LOWER_LEFT 1
#define CORNER_UPPER_RIGHT 2
#define CORNER_LOWER_RIGHT 3

// Keep 'a' between x and y
#define CLAMP(a,x,y) (MAX((x), MIN((y), (a))))

/*****************************************************************************
This Method resizes the receiving window as if it was dragged with the given corner. This method is useful when you want the window to resize by a corner other that the default upper right.
*****************************************************************************/
- sizeWindow:(NXCoord)width :(NXCoord)height byCorner:(int)corner
{
NXRect newFrame;
NXSize minSize, maxSize;

// Clamp width and height to their respective minimum and maximum values
[self getMinSize:&minSize]; [self getMaxSize:&maxSize];
width = CLAMP(width, minSize.width, maxSize.width);
height = CLAMP(height, minSize.height, maxSize.height);

// Set newFrame from the old frame and the new sizes
NXSetRect(&newFrame, NX_X(&frame), NX_Y(&frame), width, height);

// Move the respective corner by the amount of growth and set newFrame
switch(corner) {
case CORNER_UPPER_LEFT:
NX_X(&newFrame) -= width - NX_WIDTH(&frame);
```

```
break;
case CORNER_LOWER_LEFT:
NX_X(&newFrame) -= width - NX_WIDTH(&frame);
NX_Y(&newFrame) -= height - NX_HEIGHT(&frame);
break;
case CORNER_UPPER_RIGHT:
break;
case CORNER_LOWER_RIGHT:
NX_Y(&newFrame) -= height - NX_HEIGHT(&frame);
break;
}
[self placeWindowAndDisplay:&newFrame];
return self;
}
@end


@interface View(Sizing)
- sizeTo:(NXCoord)width :(NXCoord)height byWindowCorner:(int)corner;
@end

@implementation View(Sizing)

/*****************************************************************************
This Method resizes the receiving view to the given width and height by resizing the window by the appropriate amount with respect to autosizing. This method is useful for those occasions when you know what size a view should be, but don't know how big to make the window to hold it. If you ask for a new width, it assumes the view is width sizable. The same goes for height. If the hierarchy contains a ClipView (ie, in a ScrollView) it assumes that you want the ClipView's subview to be fully exposed. The window size will not exceed the set maximum.
*****************************************************************************/
- sizeTo:(NXCoord)width :(NXCoord)height byWindowCorner:(int)corner
{
int autosizing = [self autosizing];
float widthGrowth = width - NX_WIDTH(&bounds);
float heightGrowth = height - NX_HEIGHT(&bounds);
float stretchingWidth = NX_WIDTH(&bounds);
float stretchingHeight = NX_HEIGHT(&bounds);
float newSuperWidth, newSuperHeight;
NXRect superFrame;

// If we are a contentView we simply need to grow window by our growth
if(self==[window contentView]) {
[window getFrame:&superFrame];
[window sizeWindow:NX_WIDTH(&superFrame) + widthGrowth
:NX_HEIGHT(&superFrame) + heightGrowth byCorner:corner];
}
else {
[superview getFrame:&superFrame];

// Add margins to stretching lengths if they have been turned on in IB
if(autosizing & NX_MINXMARGINSIZABLE) stretchingWidth += NX_X(&frame);
if(autosizing & NX_MAXXMARGINSIZABLE)
stretchingWidth += NX_WIDTH(&superFrame) - NX_MAXX(&frame);
if(autosizing & NX_MINYMARGINSIZABLE)
stretchingHeight += NX_Y(&frame);
if(autosizing & NX_MAXYMARGINSIZABLE)
stretchingHeight += NX_HEIGHT(&superFrame) - NX_MAXY(&frame);

// Add growth times a ratio of stetching length::view length to Super
newSuperWidth = NX_WIDTH(&superFrame) +
widthGrowth*stretchingWidth/NX_WIDTH(&bounds);
newSuperHeight = NX_HEIGHT(&superFrame) +
heightGrowth*stretchingHeight/NX_HEIGHT(&bounds);

// Resize the Superview
[superview sizeTo:newSuperWidth :newSuperHeight
```

```
byWindowCorner:corner];

// If we are a ClipView, bring the docview up to size
if([self isKindOf:[ClipView class]])
[[(ClipView *)self docView] sizeTo:width :height];
}
return self;
}
```

Q: How can I make a non-rectangular Window?

A: You cannot at present make a non-rectangular Window. We hear the request. Tell us how important is this ability compared with your other needs. The WhatADrag example on the 2.0 release (/NextDeveloper/Examples/WhatADrag) shows you how to create windows with transparency for dragging arbitrary shapes on the screen between windows. This does not produce true transparent windows, but it accomplishes most of what developers need transparent windows for.

Q: How can I make a non-rectangular View?

A: You can clip a View to a non-rectangular shape by creating a subclass of View, and overriding the following View method to establish your own clipping path.

```
- clipToFrame:(const NXRect *) frameRect
/*
* TYPE: Focusing and displaying; Clips to frame during focusing
*
* This method is provided to allow for your View to do arbitrary clipping
* during focusing. This method is called from within the focusing
* machinery if clipping is required. The default implementation just
* calls PSrectclip with the values in frameRect. You must use frameRect
* rather than just looking at your View's frame instance variable,
* because due to focusing, the origins may not be the same.
*/
{
PSrectclip(NX_X(frameRect), NX_Y(frameRect),
NX_WIDTH(frameRect), NX_HEIGHT(frameRect));
return self;
}
```

In addition, the 3.0 documentation on clipToFrame: contains an example of clipping the View to a circular region.

Q: I am using the Windows submenu. For each new window document that I create in my application, a new menu cell is added to the submenu with the window's title and a small X at the left-most edge of the menu cell. How do I programmatically control this X to make it broken when the document associated with the menu cell has been changed?

A: The window method setDocEdited: (BOOL)flag is responsible for displaying the broken X when it is set to YES. This method controls both the X in the menu cell, and the X on the upper right corner of the window. It has to be reset to NO **before saving the document**, so that the X reappears as non-broken. See the code snippet below:

/* In the case of a text object for example,this text delegate method is responsible for notifying that the document has changed. Please note that ruler and font changes as well as changes caused by spell checking the Text are not reflected by this text delegate method.
*/

```
- textDidChange: sender
{
[currentDocWindow setDocEdited:YES];
return self;
}
```

/* Remember to reset setDocEdited to NO **before saving** your file, so that the X shows as a regular X **when reading the file back in.**
*/

```
- saveFilename:(const char *)filename
{
[currentDocWindow setDocEdited:NO];

/* To generate a textDidChange message */
[currentDocWindow makeFirstResponder:currentDocWindow];
.....
return self;
}
```

/* After setting setDocEdited to YES, the state of isDocEdited is YES. You can query this state and, if appropriate, display an alert panel before the window closes. Note the use of NXStringTable here for ease of localization. Please refer to our user interface guidelines and release notes for more details.

*/

```
#define SAVE NX_ALERTDEFAULT
#define CLOSE NX_ALERTALTERNATE
#define CANCEL NX_ALERTOTHER

- windowWillClose:sender
{
int result;

if ([currentDocWindow isDocEdited]) {
if (!stringTable)
stringTable = [[NXApp delegate] stringTable];
result = NXRunAlertPanel([NXApp appName],
[stringTable valueForStringKey:
"The document %s has unsaved changes.\\nClose anyway?"],
[stringTable valueForStringKey:"Save"],
[stringTable valueForStringKey:"Close"],
[stringTable valueForStringKey:"Cancel"],
[currentDocWindow title]);
switch(result) {
case SAVE:
...
break;
case CLOSE:
break;
case CANCEL:
return nil;
}
```

```
}

.....

return self;
}
```

Q: How do I disable/enable menu cells?

A: The method setUpdateAction:(SEL)aSelector forMenu:aMenu is responsible for the menu cell update, where aSelector is your own update method, and aMenu the menu you want to update. This method has to be called inside appDidInit: because NXApp is responsible for the update. Doing so makes your program more efficient, since it needs to be done only once.

Q: Should I use the application method setAutoupdate:(BOOL)flag or the menu update method for updating the menu items? What are the trade-offs?

A: The application method setAutoupdate:YES causes the menus to stay up to date all the time (i.e., it only updates them when they are on-screen). Calling update directly every time something changes might be a lot of extra work for nothing. However, if things rarely change in the menu, it might be worth not incurring the window list traversal setAutoupdate: causes.

Example (adapted from /NextDeveloper/Examples/Draw)

```
static void initMenu(id menu)
/* A private C function:
* Sets the updateAction for every menu item which sends to the
* First Responder (i.e. their target is nil).
* Returns the active menu if is found in this menu.
*/
{
int count;
id matrix, cell;
id matrixTarget, cellTarget;

matrix = [menu itemList];
matrixTarget = [matrix target];

count = [matrix cellCount];
while (count--) {
cell = [matrix cellAt:count :0];
cellTarget = [cell target];
if (!matrixTarget && !cellTarget) {
[cell setUpdateAction:@selector(menuItemUpdate:) forMenu:menu];
} else if ([cell hasSubmenu]) {
initMenu(cellTarget);
}
}
}


/* Initializes the updateAction method for the menu cells.
setAutoupdate:YES means that updateWindows will be called
after every event is processed (to keep the menu items up to date).
*/
- appDidInit:sender
```

```
{
.....
initMenu([NXApp mainMenu]);
[NXApp setAutoupdate:YES];
return self;
}

#define TOGGLE 4 /* Some integer cell tag value */

- (BOOL)menuItemUpdate:menuCell
/* Here goes your own code for menu cell update. This is only a simple example
which toggles the state of the selected cell. The return value YES means
that the menu will be updated.
*/
{

BOOL cellState;


switch ([menuCell tag])
{
case TOGGLE: /* toggle menu cell state */
cellState = [menuCell isEnabled];
[menuCell setEnabled:!cellState];
return YES;
default:
break;
}

return NO;
}
```

Q: How do I find the id of a menu?

A: To obtain the menu id of the main menu use this:

```
[NXApp mainMenu]
```

There is no direct way to find the id of other menus unless you know the menu cell which corresponds to the menu in question. Then you can use the ActionCell method target which returns the target of the cell (i.e., its menu id). This method can be used to find any menu id. It is especially useful for finding the id of a submenu.

Example:

```
myMenuId = [myMenuCell target];
```

Q: How can I remove a menu cell from a menu? I can disable, enable, add, sizeToFit, update, and free, but I cannot get the actual cell to disappear from the submenu.

A: You need to remove the cell from the matrix maintained by the menu, and then have the menu resize to fit its new cells. Here is a code snippet:

```
- removeMenuCell:(int)cellNum from:theMenu
{
id matrix;

[theMenu disableFlushWindow];
matrix = [theMenu itemList];
```

```
[matrix removeRowAt:cellNum andFree:YES]; // remove cell
[theMenu sizeToFit]; // adjust menu to new size
[[theMenu reenableFlushWindow] flushWindow];
return self;
}
```

You can disable window flushing before removing the cell to avoid screen flicker, but be sure to reenable it once you're done. The above method is used if you know the number of the cell you want to remove. If you only have the menu cell's title, you can do this:

```
- removeMenuCellName:(const char*)cellTitle from:theMenu
{
int i, count;
id matrix, cells;
id cell;
const char* title;

[theMenu disableFlushWindow];
matrix = [theMenu itemList];
cells = [matrix cellList]; // get the List of cells
count = [cells count];
for(i = 0; i < count; i++)
{
cell = [cells objectAt:i];
title = [cell title];
if(title && !strcmp(title, cellTitle))
{ // compare to find correct title
[matrix removeRowAt:i andFree:YES];
break;
}
}
[theMenu sizeToFit]; // resize menu
[[theMenu reenableFlushWindow] flushWindow];
return self;
}
```

Q: Why does my View lose its TIFF image after I make a call to **setFlipped**? Here is what I did, and the results I got.

Description:

1. Create a viewScroller
2. Create an imageView
3. [viewScroller setDocView: imageView];
4. [imageView setFlipped:YES];
5. load tiff file into imageView
6. [imageView display];

Results:

1. Without the setFlipped: call, my TIFF image shows up fine, with the scrollers sized respective to the imageView.
2. With the setFlipped: call, my TIFF image DOES NOT show up, BUT the scrollers are sized respective to the imageView AND the y-axis scrollbar shows at the top (like it should be).

A: If you composite your TIFF image at the point (0,0), after flipping the view, you won't see anything because the image is in fact now off-screen, i.e. showing at the top left corner (imagine the image height going beyond the y axis<growing upward). However, if you composite at the point (0, height of view rectangle), the image is shown at the lower left corner. Now, if you composite at the point (0, height of the image), the image is shown as hanging from the top left corner.

Q: I created a pop-up list by dragging it from the InterfaceBuilder palette into a window, but it doesn't seem to be freed when the window is freed.

A: This is a bug. Freeing a window *does* free all of its views, but the pop-up list is not a member of the view hierarchy! It's attached as the target of a Button. There are two situations in which this bug can bite an unwary programmer:

1) An application creates multiple document windows by loading a nib section multiple times. In the nib section, there's a window containing a pop-up list. The application leaks a pop-up list instance and a DPS window each time a document is closed. Furthermore, MallocDebug's "Leaks" button won't find the missing nodes because a pop-up list is a window, and there are pointers to the missing pop-up lists in [NXApp windowList].

2) Same situation as in (1), except that each time, the nib section is loaded into a unique zone, and the zones are destroyed when the documents are closed. Destroying the zone gets rid of all the garbage, but now there are bad pointers in [NXApp windowList]. Some time later, the application crashes in code that you didn't write, referencing objects that you don't know about, leaving you very confused.

The solution is to free the pop-up list when you free the window. When setting up the nib file, make an outlet to the Button. In your code, use the outlet to ask the Button for its target before you free the window. The target is the pop-up list, which you then free explicitly.

Q: If I have a window delegate, which method should I use to close the window, the **close:** method or the **performClose:** method?

A: The **performClose:** method should be used instead of **close:** because it sends a **windowWillClose:** to its delegate, while the **close:** method doesn't. See the documentation in the reference manual about the window class for more information about these two methods.

Q: How do I set the current selection on a Popup?

A: In Release 2 and later, InterfaceBuilder has an object on the palette that presents a popup menu of choices. This is actually a button (when you ask InterfaceBuilder for the class of this object, sure enough, it's a button). It's a special button whose target is a PopUpList and action causes the popup menu to be displayed. There is no special message for setting the current selection of this popup, all you do is set the title to be the choice you want to set your popup to, as you would for an ordinary Button. So, if you have an outlet for a popup called "popUpButton" you can do this:

```
[popUpButton setTitle:"Item2"];
```

To get the number of the item currently selected, you have to send the indexOfItem: message to the PopUpList (which is the target of the popup Button). So, with the example above, you would use:

```
num=[[popUpButton target] indexOfItem:[popUpButton title]];
```

Q: In my application when my window becomes the key window or the main window, sometimes it doesn't display itself. What's going on?

A: There is a bug where **display** sometimes is disabled in a Window when the window becomes key and/or main. The result is that a window (or its delegate) tries to do some drawing in its **becomeKeyWindow** or **becomeMainWindow** (or **windowDidBecomeKey:** or **windowDidBecomeMain:**) method, and the drawing doesn't happen because some drawer observes that display is disabled.

Here's a workaround. You can do this little dance in either your delegate method or your override of Window's **becomeKeyWindow** or **windowDidBecomeMain**.

```
- windowDidBecomeMain:win
{
BOOL displayWasDisabledForActivation = [NXApp _isInvalid] &&
![win isDisplayEnabled];

if (displayWasDisabledForActivation)
[win reenableDisplay];

/* whatever you do now... */

if (displayWasDisabledForActivation)
[win disableDisplay];
return self;
}
```

The _isInvalid method is a private method, and as such is undocumented. Calling this ensures that you are in the case where this bug bites. We thought this might be prudent in case there was a different time when you really would like display to be disabled.

Valid for 2.0, 3.0

Q: I have a button which, when clicked, removes a View from a Window. However the button that does this is a subview of the View that is removed. This works except I get the following message on the console:

```
Assertion failed: You removed a View from the View hierarchy that had been lockFocus'ed
```

Is this a problem? Can I ignore the message?

A: Typically the action method for a control is called while in the mouseDown for that control. At this point the AppKit has performed a lockFocus on that control (while it is highlighted) and it will not remove the lockFocus until the action method has completed (and the highlight is turned off). For this reason it is not a good idea to be modifying the

view hierarchy of any superviews from within the action method of a control. If it is not possible to restructure the code so that the hierarchy is modified outside of the action method, then the next best approach is to perform the action with a slight delay. The code might look like:

```
[self perform:@selector(removeView:) with:sender afterDelay:1 cancelPrevious:YES];
```

There is also an example of this method in the DrawApp class of the Draw example.

Valid for 1.0, 2.0, 3.0

Q: I am trying to draw something to my view and am getting the message:

```
Assertion failed: No REAL window during lockFocus on a view
```

I've checked and the window instance variable of the view is non-nil. Why am I getting this message?

A: A REAL window is a PostScript window. Your check for a non-nil window assures that you have a AppKit-side window, but it doesn't check to make sure there is an associated PostScript window. When you grab a window in InterfaceBuilder, it is deferred by default. When a window is deferred the associated PostScript window won't be created until you actually bring that window on screen. You cannot draw to a window which doesn't yet have a PostScript window. You can change the deferred status using the ªDeferredº switch button on the InterfaceBuilder Window inspector or with the proper argument to the Window method (**initContent:style:backing:buttonMask:defer:**). If you're ever in doubt about a view's status, you can use the **canDraw** method which returns a boolean which indicates whether you are able to draw to that view.

Valid for 1.0, 2.0, 3.0

Q. The CompositeLab example in /NextDeveloper/Examples/AppKit sometimes hangs when I drag in non-standard image types for which filters need to be run. Typically it wakes up after a minute or so without having accepted the image; however, if I drag the same image in again, it accepts it without a problem.

A. During a drag session, an application should not make calls to Workspace or call methods and functions that would require contacting Workspace. Launching filter services, applications, obtaining icons for files, sliding images, and methods in the Workspace protocol fall in this category. Making such a request will cause the application to hang until either the request or the drag service times out; the results can be unpredictable and often both the request and the drag operation will fail.

In the case of CompositeLab, the application asks NXImage to open an file from the **performDragOperation:** method. If the image requires a filter and the filter needs to be launched, this request hangs CompositeLab. However, the same request succeeds the second time as the filter will have been launched by the Workspace after the first attempt times out.

The easiest workaround is to open the image in the **concludeDragOperation:** instead of the **performDragOperation:**. This latter method is invoked while the drag session is still in process, so requests to Workspace hang. The **concludeDragOperation:** method, on the other hand, is called after the drag session is terminated, so the application may contact Workspace during that time.

The following changes will make CompositeLab work correctly. Replace the existing **performDragOperation:** method with the following two methods. Note that although this new **performDragOperation:** doesn't perform the operation, it still validates the dragged data. This is important<the return value of this method determines whether Workspace causes the dragged file(s) to fly back to the source, indicating success or failure to the user.

```
- (BOOL)performDragOperation:(id <NXDraggingInfo>)sender
{
return ([self draggingUpdated:sender] == NX_DragOperationNone) ? NO : YES;
}

- concludeDragOperation:(id <NXDraggingInfo>)sender
{
Pasteboard *pboard = [sender draggingPasteboard];

if (includesType([pboard types], NXColorPboardType)) {
[self doColorDrag:sender];
[sourceColorWell setColor:sourceColor];
[destColorWell setColor:destColor];
[backColorWell setColor:backgroundColor];
} else {
(void)[self changeCustomImageTo:[[NXImage allocFromZone:[self zone]] initFromPasteboard:pboard]];
}
return self;
}
```

If an application wishes to actually open and display images during the drag session, it should ask NXImage if the image can be handled directly or requires a filter service, and open the image only if it falls into the former category. Of course, actually opening and displaying the image during the drag session isn't advisable in the first place as this operation might take a while.

Q: I'm trying to add a cell to a matrix or column of a browser that has already been loaded. I think I'm performing the right steps. I'm even explicitly calling a redisplay but the matrix never shows the new cell. What's going on?

A: When you add cells, the matrix needs to grow to a new size to accommodate them. Most likely the cells are being added, but without resizing the matrix, the new cells are being clipped from view. After adding cells, be sure to call **sizeToCells** (or **sizeToFit** depending on which you want) so the matrix will resize and you can see the new cells.

Here is code fragment that shows adding a cell to an already loaded column of a browser:

```
id matrix,cell;
int row;

matrix = [browser matrixInColumn:0];
```

```
[matrix getNumRows:&row numCols:NULL];
[matrix addRow];
cell = [matrix cellAt:row :0];
[cell setStringValue:"New Cell"];
[cell setLoaded:YES];
[cell setLeaf:YES];
[matrix sizeToCells]; <<--- Don't forget this!!
```

Valid for 1.0, 2.0, 3.0, 3.1

Q: How do I programmatically make a multiple selection in a matrix? I want it to behave exactly as though the user had shift-clicked to select several cells.

A: You must call **setState**: and **highlight:inView:lit**: for each cell that you want to select. Here is a code fragment which will select all the even-numbered cells and deselect all the odd-numbered cells in a matrix.

```
int rows;

[matrix getNumRows:&rows numCols:NULL];
[matrix lockFocus];
while (rows--) {
NXRect rect;
BOOL even = (((rows % 2) == 0) ? 1 : 0);
id cell = [matrix cellAt:rows:0];
[matrix getCellFrame:&rect at:rows :0];
[cell setState:even];
[cell highlight:&rect inView:matrix lit:even];
}
[matrix unlockFocus];
[[matrix window] flushWindow];
```

Valid for 1.0, 2.0, 3.0

Q: What is the difference between a Form and a FormCell? How do I make the correct connections in InterfaceBuilder?

A: A Form is a matrix of FormCells. Even a matrix with only one FormCell is a Form. If you have created a single FormCell with InterfaceBuilder and want to connect to the Form, carefully control-drag to the edge of the cell. When it is outlined in gray, you are connecting to the Form. Control-drag further into cell, and it is outlined in black; now you are connecting to the FormCell. Look at the "Comments" field in the InterfaceBuilder inspector while you are making your connection<it tells you what class the outlet is, for example, "Destination is of the Form Class." The same is true when you are connecting to a Form with more than one FormCell. Drag to the outside edge or in between cells; the form is outlined in gray and you are connecting to the form. Drag to a particular FormCell; it is outlined in black and you are connecting to that FormCell.

Note: In NEXTSTEP Release 3, the "Comments" field in the InterfaceBuilder Inspector has been replaced by a "Connections" field. The information displayed is self-explanatory: The left side shows the outlet name, while the right side shows the class name.

Valid for 1.0, 2.0, 3.0

Q: I am using the function **NXGetNamedObject**(const char * *aname*, id *owner*) to find the **id** of my NXBrowser object. My main program containing the **loadNibSection:owner:** was created by InterfaceBuilder and had NXApp in the **owner:** argument. However, passing NXApp as the owner always returns a nil **id**. What am I doing wrong?

A: By default, InterfaceBuilder assigns the Application object (NXApp) as the owner of a Window, and a View's Window as the owner of that View. Since NXBrowser is a subclass of View, you must use the NXBrowser's Window id instead of NXApp as owner in the function **NXGetNamedObject()**.

Below is a code snippet for illustration:

```
id myWindow, myBrowser;

/* Get the id for the browser's window */
myWindow = NXGetNamedObject("MyWindow", NXApp);
/* Get the id of the browser itself */
myBrowser = NXGetNamedObject("MyBrowser", myWindow);
```

Note that named objects are a big performance loser because of the memory it takes to keep track of all the names of the objects. For this reason, we would recommend that you use **loadNibSection***:owner*:**withNames:***NO* when loading in nib files. Try to use outlets instead of named objects whenever possible.

Valid for 2.0, 3.0

Q: I have subclassed Button and ButtonCell in my application. I am setting the cell class for my button in the **-init:** method for my Button subclass like this:

```
@implementation MyButton : Button

-init
{
[super init];
[MyButton setCellClass: [MyButtonCell class]];
return self;
}
@end
```

However my cell class is not being created and initialized properly. What is going on?

A: **setCellClass:** is a factory method and must occur prior to any instance creation<**init:** is too late. The correct place to do this is in the **+initialize** factory method for your Button subclass (which is called before any instances are created). This problem can occur with all Cell subclasses<such as TextField and NXBrowser. (**+initialize** is an Object factory method; see the Object class specification sheet for more information.)

```
@implementation MyButton : Button
```

```
+initialize
{
[super initialize];
[MyButton setCellClass: [MyButtonCell class]];
return self;
}
@end
```

Valid for 2.0, 3.0

Q: I have a matrix of cells, each 10 pixels high. The matrix lives within a ScrollView, and ten cells are visible at any time. I set my lineScrolling to 10.0, and my pageScrolling to 100.0 (10.0 pixels * 10 cells); line scrolling works fine, but page scrolling (alt-clicking on a scroll arrow) doesn't do what I expect. Instead of scrolling the matrix up or down by ten cells, it only scrolls it by a few pixels (in fact, less than the lineScroll amount). What's happening?

A: The pageScroll value, to quote the documentation, is the ªamount in common before and after the page scroll.º For example, if I set the pageScroll value to 40.0 in the above example, a page scroll will scroll away six of the ten cells currently visible. The 40.0 tells the ScrollView that you want 40.0 pixels of the previously visible contents to remain visible after the page scroll, which translates to 4 cells. With the pageScrolling set to 100.0 in the above example, the ScrollView thinks you want 100.0 pixels of the previously visible contents to appear after page scrolling. Since that's almost all the visible pixels, the matrix scrolls very little. Setting the pageScroll value to 0.0 will cause all ten cells to scroll out of view on a page scroll.

Valid for 1.0, 2.0, 3.0

Q: I would like to have an object in my custom palette do something different when it is unarchived in test mode in Interface Builder. How can I determine if I am in test mode?

A: You can use the **isTestingInterface** method which is defined in the IB (Interface Builder) protocol. See /NextLibrary/Documentation/NextDev/GeneralRef/08_InterfaceBuilder/Protocols/IB.rtf:

Protocol Description

Interface Builder's subclass of the Application class conforms to this protocol. Thus, objects in your custom palette can interact with Interface Builder's main module by sending messages (corresponding to the methods in this protocol) to NXApp.

isTestingInterface
- (BOOL)**isTestingInterface**

Returns YES if Interface Builder is in Test mode.

However, there is a bug with the **isTestingInterface** method in Release 3.1 and after. Even in test mode, **[NXApp isTestingInterface]** always yields **NO** during unarchiving (**read:**,

awake and **finishUnarchiving**). One possible workaround is to delay the isTestingInterface message by calling **perform:with:afterDelay:cancelPrevious:**. Another workaround you can consider is illustrated in Jeff Martin's StringList MiniExample. You can take a look at the StringList MiniExample available via NeXTAnswers, document #1254. The workaround is implemented in the awake method for FilenameList. It is *only* valid in *awake*:

```
// test to see if mainMenu is visible, which it isn't while test
// interface mode is being set up.

if([NXApp conformsTo:@protocol(IB)])
if([[NXApp mainMenu] isVisible]) {
// do something special for test mode
return self;
}
```

Valid for 3.0, 3.1

Q: It seems like the scrollView ignores the frame.origin of its docView. Also, does a ScrollView clip to its update rect(s)?

A: A ScrollView translates the coordinate system of its contentView in response to user movement of the scrollers. Since the frame of the docView is defined in the coordinate system of the contentView (i.e. it's a subview of the contentView), translating the coordinate system of the contentView has the effect of moving the frame, and hence the visible portion of the docView.

When you do a **setDocView**: the system translates the coordinate system of the contentView so that the contentView's bounds.origin is the same as the frame.origin of the docView. For example: if the frame.origin of your docView is {100.0,100.0}, the bounds.origin of the contentView will be {100.0,100.0} as well.

So the ScrollView does pay attention to what the frame.origin of the docView is, but it doesn't really matter what it is, at least initially.

User code really shouldn't make changes to the frame of the docView as it is being managed by its superview (a ClipView). To achieve scrolling use the - **rawScroll:** method.

No, the drawing is not clipped to the update rects; however, you can restrict the area being redrawn yourself by using **PSrectclip**() or **NXRectClip**() in your **drawSelf**:: method.

Valid for 1.0, 2.0, 3.0

Q: In my application I have subclassed the Text object and called it SubText. I have a ScrollView which I installed using InterfaceBuilder which has a standard Text object as its docView. I wish to replace that Text object with my own but I wish to maintain all the same behaviors<with a vertical scrollbar and text which resizes properly. How do I do that?

A: The following code snippet creates an instance of your new subclass of Text and inserts it into the docView of the ScrollView. The old Text object is then freed. In the code sample

``theSV'' is an outlet connected to the ScrollView. Because an existing ScrollView is used, certain setups are not required. See Chapter 9, page 35 of the Concepts volume of the 1.0 Technical Documentation for more information on setting up a brand-new ScrollView.

The key here that many people miss is to set the min size and max size on the Text object.

```
id stdDoc;
NXRect r;

/* Measure the old doc view. */
stdDoc = [theSV docView];
[stdDoc getFrame:&r];

[theSV setVertScrollerRequired:YES];
[theSV setHorizScrollerRequired:NO];
[theSV setDynamicScrolling:YES];

/* Instantiate the new Text object */
#ifdef 1.0
newDoc = [SubText newFrame:&r];
#else /* 2.0 or 3.0 */
newDoc = [[SubText alloc] initFrame: &r];
#endif
[newDoc moveTo:0.0:0.0];
[newDoc notifyAncestorWhenFrameChanged: YES];
[newDoc setVertResizable:YES];
[newDoc setSelectable:YES];
[newDoc setEditable: YES];
[newDoc setAutosizing:NX_WIDTHSIZABLE];
[newDoc setMinSize:&r.size];
r.size.height = 1.0e30;
[newDoc setMaxSize:&r.size];
[theSV setDocView:newDoc];

/* Free the old Text object */
[stdDoc free];
```

Note that the ifdef for 1.0 is for illustration purposes only and is NOT defined in any NeXTstep include file.

Valid for 1.0, 2.0, 3.0

Published Date: Feb 18, 2012

NeXTSTEP NT Printer Patch Overview

This document describes a problem printing to a Windows NT 3.1 Postscript printer from NeXTSTEP and provides a patch to work around the problem.
This article has been archived and is no longer updated by Apple.

Question

When I print from NEXTSTEP to a a remote Postscript printer on a NT 3.1 system which is using the Microsoft TCP/IP Printing software, the file prints out as ascii text containing Postscript source code and is not interpreted into the correct postscript image. What causes this and is there a way to fix the problem?

Answer

This problem is caused by a bug in the NT 3.1 system. A text file that starts with the characters %! should be interpreted by a Postscript printer as Postscript code and the printer should process the file into a Postscript image. The NT driver seems to set the printer mode to ignore this. A workaround to this problem is to use the **lpr -l** option. This option tells **lpr** to print the source literally and preserves in any control characters. This will cause NT to print the file correctly. This workaround can be made transparent to a users printing from NEXTSTEP applications by using a *wrapper script* in place of the **/usr/ucb/lpr** command. The wrapper script just adds the **-l** option and runs the real **lpr,** passing along any arguments.

An **Installer** Package has been create to install a this work around on your system. Just install the package as root on each system that prints to a remote Postscript printer on a NT 3.1 system. This will fix the problem with printing to NT 3.1. It does not effect printing to Next Laser Printers and also should not effect printing to any other type of printers, however, **faxing will no long work** correctly when the patch is installed. Faxes will be sent to the currently selected printer instead of the Fax modem.

You can download the patch from:

ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/patches/3.3/NT_Printing_Patch.compress

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NEXTSTEP uucp Q&A

Disclaimer

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This article has been archived and is no longer updated by Apple.

Q: I'm running **uucico** and all I get is "bus error"<no other messages, even with debugging turned on to any level. What might be wrong?

A: Ensure that the **uucico** program can access the UUCP spool directory. Since the program is (supposed to be) SetUID uucp and SetGID daemon, this means the uucp user must be able to read and write the directory.

If you examine the files using the UNIX **ls**(1) command, you should see the following (dates might be different, and the size of the spool directory might be different):

```
localhost [/me]-7% ls -ldg /usr/lib/uucp/uucico /usr/spool/uucp
---s--s--x 1 uucp daemon 90112 Nov 11 17:25 /usr/lib/uucp/uucico*
drwxr-xr-x 14 uucp daemon 1024 Dec 22 03:30 /usr/spool/uucp/
```

If you see different results, and you're not *absolutely certain* why they're different, you can set things right with the following commands:

```
localhost [/me]-7% su
localhost-1# chown uucp.daemon /usr/lib/uucp/uucico /usr/spool/uucp
localhost-2# chmod 755 /usr/spool/uucp
localhost-3# chmod 6111 /usr/lib/uucp/uucico
```

One other thing to note: the output of the **ls** on **uucico** is the same whether the owner and the group have execute permission or not. In UNIX parlance, the mode display in the **ls** is the same whether the numeric mode is 6001, 6011, or 6111. Be *sure* it's 6111: SetUID, SetGID, and execute for user, group, and other.

By the way, the rest of the commands in the UUCP suite are likely subject to the same limitations. We have verified that **uucp** behaves like **uucico** in this situation; we have not tested the rest of the suite, but anything which needs access to the spool directory are suspect. For completeness, here's another **ls -lg**:

```
localhost [/me]-8% ls -lg /usr/bin/uu* /usr/lib/uucp/uu*
---s--s--x 1 uucp daemon 24576 Nov 11 17:25 /usr/bin/uucp*
-rwxr-xr-x 1 uucp daemon 16384 Nov 11 17:26 /usr/bin/uudecode*
-rwxr-xr-x 1 uucp daemon 2984 Nov 11 17:26 /usr/bin/uuencode*
---s--s--x 1 uucp daemon 4620 Nov 11 17:25 /usr/bin/uulog*
---s--s--x 1 uucp daemon 5776 Nov 11 17:25 /usr/bin/uuname*
---s--s--x 1 uucp daemon 24576 Nov 11 17:26 /usr/bin/uupoll*
---s--s--x 1 uucp daemon 8716 Nov 11 17:26 /usr/bin/uuq*
---s--s--x 2 uucp daemon 3548 Nov 11 17:26 /usr/bin/uusend*
---s--s--x 1 uucp daemon 4260 Nov 11 17:26 /usr/bin/uusnap*
---s--s--x 1 uucp daemon 24576 Nov 11 17:25 /usr/bin/uux*
---s--s--x 1 uucp daemon 90112 Nov 11 17:25 /usr/lib/uucp/uucico*
---s--s--x 1 uucp daemon 11136 Nov 11 17:25 /usr/lib/uucp/uuclean*
---s--s--- 1 uucp daemon 32768 Nov 11 17:26 /usr/lib/uucp/uuxqt*
```

Q: uucico is being uncooperative. Specifically, if someone polls my machine, my machine hangs up the phone (the other side typically sees this after the second

imsg looking for SYNC<

message in the debug output). When I poll that same machine, uucico provides a core dump, after a segmentation fault. What's stranger still is that polling *some* machines works fine, and those machines can poll mine!

Q: uucico is crashing when it tries to transfer files other than mail. Mail comes through fine, but a file transfer won't. What's wrong?

A: The likely problem is that you have improperly formatted UUCP configuration files. For example, blank lines in your L.sys file can cause the first symptom, and malformed lines in your USERFILE can cause the second.. The UUCP system can't handle these.

In the case of the blank L.sys line, if the line is entirely empty<no spaces, no tabs, just empty<uucico works fine. However, if the line contains only whitespace<spaces and tabs<then uucico crashes. Remove the blank lines, or, if you like white space in your L.sys file, replace the blank lines with otherwise-empty comment lines.

In addition, if expected fields are missing, uucico has been known to crash. For example, the following L.sys entry will crash uucico:

```
π \\
"" ATdt555-1212 \\
ogin:~20- -ogin:- -ogin: name \\
ssword: YouKnowWhat
```

What was *desired* in this case was to send a newline if the prompt **ogin:** was not received. What happened instead is that uucico was looking for the next *expect* string in the *expect-send* sequence, and it wasn't there. To accomplish this, use the following instead:

```
π \\
"" ATdt555-1212 \\
ogin:~20-CR-ogin:-CR-ogin: name \\
ssword: YouKnowWhat
```

In the case of a malformed USERFILE, check for lines with a missing space. The format of USERFILE is

[user],[system] directory

You *must* have the space between the user,system and the directory. (Yes, user and system are both optional. The comma between them and the space following them are not.)

One other thing which can cause uucico to fail (silently on the remote, with a bus error locally) is if the program<which runs SetUID uucp and SetGID daemon<does not have appropriate access to the UUCP spool directory, /usr/spool/uucp. Ensure that the user **uucp** can read, write, and search (ªexecuteº) the spool directory. Recommended permissions are 755 (read, write, execute for the user; read, execute for the group; read, execute for others).

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Q: What are are the various UUCP (**uucp**, **uucico**, **uux**, **uuxqt**) debug messages, their

levels, and the modules from which they are emitted?

A: Following are the debug messages. There are two lists, separated by a line of em-dashes (<); search for an em-dash or for the word Module. (Note that the second list starts about half-way into the fileπ) The first is the debug messages sorted by level, the second is the messages sorted by module. (The messages are displayed by the UUCP System components when they are given the -x option.)

These lists are based on the Release 2 sources. The Release 1 lists differ only slightly.

UUCP System Debug Messages, Sorted by Level

```
1 anlwrk.c "opendir(%s) FAILS\\n",subdir(dir,pre[0])
1 anlwrk.c "opendir(%s) FAILS\\n",subdir(dir,pre[0])
1 cds224.c "timeout concord open\\n", ""
1 chkpth.c "*** Userpath malloc failed\\n", 0
1 chkpth.c "*** Userpath malloc failed\\n", 0
1 chkpth.c "Userpath calloc 1 failed\\n", 0
1 chkpth.c "Userpath calloc 1 failed\\n", 0
1 chkpth.c "Userpath calloc 2 failed!\\n", 0
1 cico.c "Ifn - %d, ", Ifn
1 cico.c "Loginuser - %s\\n", Loginuser
1 cico.c "Remote debug request ignored\\n", CNULL);
1 cico.c "Rmtname %s, ", Rmtname
1 cico.c "Role %s, ", Role ? "MASTER" : "SLAVE"
1 cico.c "cntrl - %d\\n", ret
1 cico.c "exit code %d\\n", code
1 cntrl.c "Cannot mkdirs(%s)\\n", fullname
1 conn.c "Call aborted on '%s'\\n", AbortOn
1 conn.c "Can't find %s, assuming DIR\\n", flds[F_LINE]
1 fio.c "%s\\n", ibuf
1 fio.c "%s\\n", ibuf
1 gio.c "%s\\n", text
1 gio.c "%s\\n", text
1 nov.c "timeout novation open %s\\n", dcname
1 pen.c "timeout penril open\\n", ""
1 pk1.c "pkopen: can't malloc i = 0\\n", CNULL
1 pk1.c "pkopen: i>= PKMAXSTMSG\\n", CNULL
1 pk1.c "pkopen: i>=NPLINES\\n", CNULL
1 tio.c "%s\\n", bufr
1 tio.c "%s\\n", text
1 ulockf.c "-- errno %d", errno
1 ulockf.c "Can't creat temp file %s ", tempfile
1 ulockf.c "Temp file write failed -- errno %d\\n", errno
1 uucpname.c "My uucpname = %s\\n", name
1 uucpname.c "gethostname", _FAILED
1 uucpname.c "gethostname", _FAILED
1 uucpname.c "getmyhname", _FAILED
1 uucpname.c "uname", _FAILED
1 uucpname.c "uuname search", _FAILED
1 uucpname.c "whoami search", _FAILED
1 uux.c "exit code %d\\n", code
1 uuxqt.c "COMMAND NOT FOUND\\n", CNULL
1 uuxqt.c "MAGIC CHARACTER FOUND\\n", CNULL
1 uuxqt.c "MALLOC FAILED", CNULL
1 va212.c "timeout va212 open\\n", 0
1 va811.c "timeout va811 open\\n", 0
1 vad.c "timeout vadic open\\n", ""
1 vent.c "timeout ventel open\\n", ""
2 cico.c "Max Grade this transfer is %c\\n", MaxGrade
```

```
2 conn.c "CAN'T FIND dialcodes prefix '%s'\\n", pre
2 conn.c "CAN'T OPEN %s\\n", DIALFILE
2 conn.c "Wrong time ('%s') to call\\n", flds[F_TIME]
2 logent.c "CAN'T FIOCLEX %d\\n", fd
2 rvmacs.c "No dialer/modem specification\\n", 0
2 setline.c "setline - %c\\n", type
2 va811.c "va811 close %d\\n", fd
2 va820.c "Dialer format error\\n", 0
2 va820.c "Dialer parity error\\n", 0
2 va820.c "Line Busy / No Answer\\n", 0
2 va820.c "Modem Busy\\n", 0
2 va820.c "Phone number too long\\n", 0
2 va820.c "RVADIC close %d\\n", fd
2 va820.c "RVADIC opened %d\\n", i
2 va820.c "Unknown MACS return code '%c'\\n", c&0177
2 vmacs.c "Busy signal\\n", 0
2 vmacs.c "Dialer Timeout or Abort\\n", 0
2 vmacs.c "Dialer format error\\n", 0
2 vmacs.c "Dialer parity error\\n", 0
2 vmacs.c "MACS close %d\\n", fd
2 vmacs.c "No dialer/modem specification\\n", 0
2 vmacs.c "Phone number too long\\n", 0
2 vmacs.c "Unknown MACS return code '%c'\\n", i
3 uuxqt.c "shio - %s\\n", cmd
3 uuxqt.c "status %d\\n", status
4 att2224.c "Baudrate set to 1200 baud", CNULL
4 att2224.c "Baudrate set to 2400 baud", CNULL
4 att2224.c "Baudrate set to 300 baud", CNULL
4 att2224.c "Can't open %s", dcname
4 att2224.c "Hanging up fd = %d\\n", fd
4 att2224.c "Open timed out %s", dcname
4 att2224.c "modem port - %s\\n", dcname
4 bsdtcp.c "TCP CLOSE called\\n", 0
4 bsdtcp.c "bsdtcpopn host %s, ", flds[F_PHONE]
4 bsdtcp.c "closed fd %d\\n", fd
4 bsdtcp.c "port %d\\n", ntohs(port)
4 cds224.c "calling %s -> ", telno
4 cds224.c "conDial failed\\n", CNULL
4 cds224.c "concord ok\\n", CNULL
4 cds224.c "got %s\\n", ok ? "?" : "that"
4 cds224.c "got %s\\n", ok ? "?" : "that"
4 cds224.c "got %s\\n", ok ? "?" : "that"
4 cds224.c "got %s\\n", ok ? "?" : "that"
4 cds224.c "wanted CDS >", CNULL
4 cds224.c "wanted CDS >", CNULL
4 cds224.c "wanted DIALING ", CNULL
4 cds224.c "wanted INITIATING " , CNULL
4 chkpth.c "can't stat directory %s\\n", subfile(dir)
4 chkpth.c "file is not writable: mode %o\\n", s.st_mode
4 chkpth.c "filename doesn't begin with /\\n", CNULL
4 chkpth.c "filename doesn't begin with /\\n", CNULL
4 chkpth.c "filename has /../ in it\\n", CNULL
4 chkpth.c "filename has /../ in it\\n", CNULL
4 chkpth.c "filename not in list\\n", CNULL
4 chkpth.c "filename not in list\\n", CNULL
4 cico.c "MaxGrade set to %c\\n", MaxGrade
4 cico.c "MaxGrade set to %c\\n", MaxGrade
4 cico.c "TCPIP connection -- ioctl-s disabled\\n", CNULL
4 cico.c "TCPIP connection -- ioctl-s disabled\\n", CNULL
4 cico.c "msg-%s\\n", msg
4 cico.c "send OO %d,", ret
4 cico.c "sys-%s\\n", Rmtname
```

```
4 cntrl.c "%s\\n", "RCVFILE:"
4 cntrl.c "%s\\n", "SNDFILE:"
4 cntrl.c "%s\\n", s
4 cntrl.c "*** TOP *** - role=%s\\n", role ? "MASTER" : "SLAVE"
4 cntrl.c "->PUBDIR %d\\n", status
4 cntrl.c "HUP:\\n", CNULL
4 cntrl.c "PROCESS: msg - %s\\n", msg
4 cntrl.c "Proto start-fail %c\\n", *c
4 cntrl.c "Proto started %c\\n", *c
4 cntrl.c "Protocol %s\\n", msg
4 cntrl.c "RQSTCMPT:\\n", CNULL
4 cntrl.c "W_FILE1 - %s\\n", W_FILE1
4 cntrl.c "chkpth ok Rmtname - %s\\n", Rmtname
4 cntrl.c "chkpth ok Rmtname - %s\\n", Rmtname
4 cntrl.c "expfile type - %d, ", i
4 cntrl.c "expfile type - %d\\n", i
4 cntrl.c "got %s\\n", msg
4 cntrl.c "got %s\\n", msg
4 cntrl.c "got FAIL\\n", CNULL
4 cntrl.c "msg - %s\\n", msg
4 cntrl.c "msg - %s\\n", msg
4 cntrl.c "protocol %s\\n", str
4 cntrl.c "rmesg - '%c' ", c
4 cntrl.c "wmesg '%c' ", m
4 cntrl.c "wrktype - %c\\n", wrktype
4 condevs.c " %s", type
4 condevs.c " %s\\n", dev
4 condevs.c "Dialing %s\\n", phone
4 condevs.c "Disable %s\\n", rdev
4 condevs.c "FIXLINE FAILED\\n", CNULL
4 condevs.c "OPEN FAILED: errno %d\\n", errno
4 condevs.c "Open timed out\\n", CNULL
4 condevs.c "Opening %s\\n",dcname
4 condevs.c "Reenable %s\\n", enbdev
4 condevs.c "Using %s\\n", cd->CU_brand
4 condevs.c "ioctl %f second break\\n", (float) bnulls/10
4 condevs.c "sent BREAK nulls - %d\\n", bnulls
4 condevs.c DIALINOUT, CNULL
4 conn.c "ABORT ON: %s\\n", AbortOn
4 conn.c "Using %s to call\\n", cd->CU_meth
4 conn.c "\\nexpect timed out\\n", CNULL
4 conn.c "dochat called %d\\n", dev->D_numargs
4 conn.c "fd %d NOT CLOSED by CU_clos\\n", Dcf
4 conn.c "finds (%s) called\\n", system
4 conn.c "for sys %s\\n", flds[F_NAME]
4 conn.c "getto: call no. %s ", flds[F_PHONE]
4 conn.c "got: %s\\n", ok ? "?" : "that"
4 conn.c "login %s\\n", "called"
4 conn.c "lost line kr - %d\\n, ", kr
4 conn.c "wanted \\"%s\\"\\n", want
4 conn.c (isprint(c) || isspace(c)) ? "%c" : "\\\\%03o", c
4 cpmv.c "full %s\\n", full
4 df12.c "Didn't get 'Ready' response.\\n", NULL
4 df12.c "Got 'Ready' response\\n", NULL
4 df12.c "Hanging up fd = %d\\n", fd
4 df12.c "Writing telephone number %s\\n", newphone
4 df12.c "dc - %s\\n", dcname
4 df12.c "df12 ok\\n", CNULL
4 df2.c "%s Open timed out\\n", dnname
4 df2.c "ACU write ok%s\\n", CNULL
4 df2.c "Fork Stat %o\\n", lt
4 df2.c "acu - %s\\n", dnname
```

```
4 df2.c "dc - %s, ", dcname
4 df2.c "dcf is %d\\n", dcf
4 dn.c "%s Open timed out\\n", dnname
4 dn.c "ACU write ok\\n", CNULL
4 dn.c "Fork Stat %o\\n", lt
4 dn.c "acu - %s\\n", dnname
4 dn.c "dc - %s, ", dcname
4 dn.c "dcf is %d\\n", dcf
4 expfile.c "mkdir - %s\\n", dir
4 fascomm.c "Baudrate reset to %d\\n", i
4 fascomm.c "Hanging up fd = %d\\n", fd
4 fascomm.c "\\nGOT: %s", cbuf
4 fascomm.c "dc - %s\\n", dcname
4 fascomm.c "fascomm ok\\n", CNULL
4 fio.c "Bad checksum\\n", 0
4 fio.c "Data corrupted\\n", 0
4 fio.c "RETRY:\\n", 0
4 fio.c "RETRY:\\n", 0
4 fio.c "ack - '%c'\\n", ack
4 gename.c "file - %s\\n", file
4 gnxseq.c "can't lock %s\\n", SQLOCK
4 hys.c "Baudrate reset to %d\\n", i
4 hys.c "Hanging up fd = %d\\n", fd
4 hys.c "\\nGOT: %s", cbuf
4 hys.c "dc - %s\\n", dcname
4 hys.c "hayes ok\\n", CNULL
4 hys24.c "Hanging up fd = %d\\n", fd
4 hys24.c "dc - %s\\n", dcname
4 hys24.c "hayes ok\\n", CNULL
4 micro.c "Hanging up fd = %d\\n", fd
4 micro.c "dc - %s\\n", dcname
4 micro.c "hayes ok\\n", CNULL
4 nov.c "Hanging up fd = %d\\n", fd
4 nov.c "dc - %s\\n", dcname
4 nov.c "novation failed\\n", CNULL
4 nov.c "novation ok\\n", CNULL
4 pen.c "%s\\n", errno == 4 ? "no carrier" : "can't open modem"
4 pen.c "%s\\n", telno
4 pen.c "calling %s -> ", telno
4 pen.c "got %s\\n", ok ? "?" : "that"
4 pen.c "got %s\\n", ok ? "?" : "that"
4 pen.c "got %s\\n", ok ? "?" : "that"
4 pen.c "penDial failed\\n", ""
4 pen.c "penDial ok\\n", ""
4 pen.c "wanted %s ", ">"
4 pen.c "wanted %s ", "NO.: "
4 pen.c "wanted %s ", "OK"
4 pk1.c "%d in pkgetpack\\n", pk->p_rpr
4 pk1.c "Noisy line - set up RXMIT\\n", CNULL
4 pk1.c "Set pk_rpr from %d to ", pk->p_rpr
4 pk1.c "pkcget: alarm %d\\n", pktimeout * 1000 + Ntimeout
4 pk1.c "tries = %d\\n", tries
4 rvmacs.c "Dialer returned %c\\n", c
4 rvmacs.c "STARTING CALL\\n", 0
4 systat.c "MAX RECALL COUNT %d\\n", count
4 systat.c "RETRY TIME (%ld) NOT REACHED\\n", retrytime
4 telebit.c "Baudrate reset to %d\\n", i
4 telebit.c "Baudrate reset to 9600\\n", 0
4 telebit.c "Hanging up fd = %d\\n", fd
4 telebit.c "\\nGOT: %s", cbuf
4 telebit.c "dc - %s\\n", dcname
4 telebit.c "telebit ok\\n", CNULL
```

```
4 ulockf.c "ultouch\\n", 0
4 uuclean.c "DEBUG# %s\\n", "START"
4 uuclean.c "stat on %s failed\\n", file
4 uuclean.c "unlink file %s\\n", file
4 uucp.c "Ename (%s) ", Ename
4 uucp.c "PATH %s\\n", Path
4 uucp.c "Ropt(%s) ", Ropt
4 uucp.c "UID %d, ", Uid
4 uucp.c "User %s,", User
4 uucp.c "\\n\\n** %s **\\n", "START"
4 uucp.c "all work here %d\\n", type
4 uucp.c "cmd (%s)\\n", cmd
4 uucp.c "ename(%s) ", ename
4 uucp.c "f1(%s) ", f1
4 uucp.c "f2(%s)\\n", f2
4 uucp.c "file1 - %s\\n", file1
4 uucp.c "receive file - %d\\n", type
4 uucp.c "s1(%s) ", s1
4 uucp.c "s2(%s) ", s2
4 uucp.c "send file - %d\\n", type
4 uucp.c "send uucp command - %d\\n", type
4 uux.c "\\n\\n** %s **\\n", "START"
4 uux.c "arg - %s:", *argv
4 uux.c "arg - %s\\n", inargs
4 uux.c "file s- %s, ", syspart
4 uux.c "local - %s\\n", local
4 uux.c "prm - %s\\n", prm
4 uux.c "r - %s, ", rest
4 uux.c "rest %s\\n", rest
4 uux.c "ret - %d\\n", ret
4 uux.c "s - %s, ", syspart
4 uux.c "xsys %s\\n", xsys
4 uuxqt.c "%s\\n", buf
4 uuxqt.c "User - %s\\n", User
4 uuxqt.c "\\n\\n** START **\\n", CNULL
4 uuxqt.c "bad command %s\\n", prm
4 uuxqt.c "cmd %s\\n", buf
4 uuxqt.c "cmd - %s\\n", cmd
4 uuxqt.c "exit cmd - %d\\n", ret
4 uuxqt.c "file - %s\\n", file
4 uuxqt.c "fin - %s, ", fin
4 uuxqt.c "fout - %s, ", fout
4 uuxqt.c "gtxfile: Nfiles > LLEN/2\\n", CNULL
4 uuxqt.c "gtxfile: move %s to CORRUPT \\n", file
4 uuxqt.c "iswrk\\n", CNULL
4 uuxqt.c "iswrk\\n", CNULL
4 uuxqt.c "process %s\\n", CNULL
4 uuxqt.c "sysout - %s, ", sysout
4 uuxqt.c "user - %s\\n", user
4 uuxqt.c "xfile - %s\\n", xfile
4 va212.c "%s\\n", telno
4 va212.c "calling %s -> ", telno
4 va212.c "got %s\\n", ok ? "?" : "that"
4 va212.c "got %s\\n", ok ? "?" : "that"
4 va212.c "got %s\\n", ok ? "?" : "that"
4 va212.c "got %s\\n", ok ? "?" : "that"
4 va212.c "got %s\\n", ok ? "?" : "that"
4 va212.c "va212 ok\\n", 0
4 va212.c "vadDial failed\\n", CNULL
4 va212.c "wanted %s ", "DIALING..."
4 va212.c "wanted %s ", telno
4 va212.c "wanted * ", CNULL
```

```
4 va212.c "wanted ANSWER TONE", CNULL
4 va212.c "wanted NUMBER? ", CNULL
4 va212.c "wanted ON LINE\\\\r\\\\n ", CNULL
4 va212.c errno == 4 ? "%s: no carrier\\n" : "%s: can't open\\n", dcname
4 va811.c " %s\\n", i ? _FAILED : "SUCCEEDED"
4 va811.c "DIALING...", CNULL
4 va811.c "got %s\\n", i ? "?" : "that"
4 va811.c "got %s\\n", i ? "?" : "that"
4 va811.c "va811 ok\\n", CNULL
4 va811.c "va811: NO RESPONSE\\n", 0
4 va811.c "va811: RESETTING\\n", CNULL
4 va811.c "va811: STARTING CALL\\n", 0
4 va811.c "va811: STORE NUMBER\\n", 0
4 va811.c "wanted %c ", 'B'
4 va811.c "wanted %c ", 'B'
4 va811.c errno == 4 ? "%s: no carrier\\n" : "%s: can't open\\n", dcname
4 va820.c "ACU %s\\n", dev->D_calldev
4 va820.c "ACU OPEN FAIL %d\\n", errno
4 va820.c "BAD PHONE NUMBER %s\\n", ph
4 va820.c "BAD VA831 RESPONSE %c\\n", c
4 va820.c "BAD VA831 WRITE %d\\n", errno
4 va820.c "BAD VA831 WRITE %d\\n", nw
4 va820.c "CLEARING VA831\\n", 0
4 va820.c "DIALING %s\\n", ph
4 va820.c "LINE %s\\n", dev->D_line
4 va820.c "SETTING UP VA831 (%d)\\n", va
4 va820.c "WAITING FOR ANSWER\\n", 0
4 vad.c "%s\\n", telno
4 vad.c "calling %s -> ", telno
4 vad.c "got %s\\n", ok ? "?" : "that"
4 vad.c "got %s\\n", ok ? "?" : "that"
4 vad.c "got %s\\n", ok ? "?" : "that"
4 vad.c "got %s\\n", ok ? "?" : "that"
4 vad.c "got %s\\n", ok ? "?" : "that"
4 vad.c "vadDial failed\\n", CNULL
4 vad.c "vadic ok\\n", CNULL
4 vad.c "wanted %s ", telno
4 vad.c "wanted * ", CNULL
4 vad.c "wanted DIALING: ", CNULL
4 vad.c "wanted NUMBER?\\\\r\\\\n ", CNULL
4 vad.c "wanted ON LINE\\\\r\\\\n ", CNULL
4 vent.c "%s\\n", errno == 4 ? "no carrier" : "can't open modem"
4 vent.c "%s\\n", telno
4 vent.c "calling %s -> ", telno
4 vent.c "got %s\\n", ok ? "?" : "that"
4 vent.c "got %s\\n", ok ? "?" : "that"
4 vent.c "got %s\\n", ok ? "?" : "that"
4 vent.c "venDial failed\\n", ""
4 vent.c "venDial ok\\n", ""
4 vent.c "wanted %s ", "$"
4 vent.c "wanted %s ", "DIAL: "
4 vent.c "wanted %s ", "ONLINE"
4 versys.c "%s\\n", koshername
4 versys.c "Alias: %s to ", *hostptr
4 vmacs.c "STARTING CALL\\n", 0
5 anlwrk.c "Workfilename repeated: %s\\n", file
5 anlwrk.c "Workfilename repeated: %s\\n", file
5 bsdtcp.c "tcpopen failed: errno %d\\n", errno
5 condevs.c "break TCSBRK %s\\n", sys_errlist[errno]
5 condevs.c "break TIOCCBRK %s\\n", sys_errlist[errno]
5 condevs.c "break TIOCGETP %s\\n", sys_errlist[errno]
5 condevs.c "break TIOCSBRK %s\\n", sys_errlist[errno]
```

```
5 condevs.c "break TIOCSETP %s\\n", sys_errlist[errno]
5 condevs.c "break ioctl %s\\n", sys_errlist[errno]
5 conn.c "BLANK\\n", CNULL
5 conn.c "BLANK\\n", CNULL
5 conn.c "DELAY\\n", CNULL
5 conn.c "NEW LINE\\n", CNULL
5 conn.c "NO CR - IGNORED NOT EOL\\n", CNULL
5 conn.c "NO CR\\n", CNULL
5 conn.c "RETURN\\n", CNULL
5 conn.c "TRAILING BACKSLASH IGNORED\\n", CNULL
5 conn.c "\\\\%o\\n", i
5 conn.c "clsacu ioctl %s\\n", sys_errlist[errno]
5 conn.c "send \\"%s\\"\\n", str
5 imsg.c "%c", c
5 imsg.c ">\\nimsg input<", CNULL
5 imsg.c ">got %d characters\\n", strlen(amsg)
5 imsg.c "imsg looking for SYNC<", CNULL
5 imsg.c "omsg <%s>\\n", buf
5 imsg.c isprint(c) || isspace(c)) ? "%c" : "\\\\%o", c & 0377
5 rvmacs.c "Using speed %d baud\\n", baudrate
5 uuxqt.c "%s opened\\n", CMDFILE
5 uuxqt.c "xcmd = %s\\n", xcmd
5 vmacs.c "%s Opened.", com
5 vmacs.c "ACU %s opened.\\n", acu
5 vmacs.c "ACU initialized\\n", 0
5 vmacs.c "Call connected\\n", 0
6 condevs.c "%c", *str
6 condevs.c "\\n", CNULL
6 condevs.c "slowrite ", CNULL
6 conn.c "BACKSLASHED %02xH\\n", cnt_char
6 pk0.c "Reack overflow on %d\\n", val
7 condevs.c "Setting Modem control to %d",modem_control
7 condevs.c "ret status on sense failed on Modem sense=%x<", ret
7 condevs.c "ret status on sense failed on Modem setup=%x<", ret
7 df12.c "Telephone number written\\n", NULL
7 df12.c "Writing # sign\\n", NULL
7 df12.c "Writing control select flag %c\\n", toneflag ? 'T' : 'P'
7 pk1.c "bad header (k==9) 0%o\\n", h->cntl&0xff
7 pk1.c "bad header 0%o,", hdchk&0xff
7 pk1.c "bp NULL %s\\n", ""
7 pk1.c "h->ccntl 0%o\\n", h->ccntl&0xff
7 pk1.c "rec h->cntl 0%o\\n", h->cntl&0xff
7 pk1.c "send 0%o\\n", cntl&0xff
7 pk1.c "state - 0%o\\n", pk->p_state
8 anlwrk.c "bldflst rejects %s, grade too low\\n",filename
8 anlwrk.c "bldflst rejects %s, grade too low\\n",filename
8 fio.c "%d", nl
8 fio.c "%d,", nl
8 fio.c "%d,", nl
8 fio.c "%d/", len
8 fio.c "%d/", len
8 fio.c ",%d", i
8 fio.c "\\n", 0
8 fio.c "\\n", 0
8 fio.c "\\nchecksum: %04x\\n", fchksum
8 fio.c "\\nchecksum: %04x\\n", sum
8 fio.c "send ack: 'G'\\n", 0
8 fio.c "send ack: 'Q'\\n", 0
8 fio.c "send ack: 'R'\\n", 0
8 tio.c "trddata expecting %ld bytes\\n",Nbytes
8 tio.c "twrdata sending %d bytes\\n",len
9 conn.c "Incoming baudrate is %d\\n", linebaudrate
```

```
9 imsg.c "\\nUsing \\\\%o as End of message char\\n", Mend
9 pk0.c "Reack count is %d\\n", ++Reacks
9 uuxqt.c "Compare %s and\\n", cmd
9 uuxqt.c "MATCHED %s\\n", xc
9 uuxqt.c "\\t%s\\n", *ptr
11 conn.c "ifadate returns %o\\n", g
11 pk1.c ".%06d sec\\n", tv.tv_usec
11 pk1.c "PKCGET stall for %d", tv.tv_sec
11 tio.c "trddata got %ld\\n",bytes
11 uuxqt.c "path = %s\\n", getenv("PATH")
11 versys.c "After Alias: %s\\n", *nameptr
11 versys.c "Alias doesn't match %s, remains unchanged\\n", *hostptr
11 versys.c "Alias expansion for %s\\n", *hostptr
11 versys.c "Alias line: %s\\n", buf
11 versys.c "Before Alias: %s\\n", *nameptr
11 versys.c "Compare against: %s\\n", p
11 versys.c "No %s file\\n", ALIASFILE
99 anlwrk.c "bldflst rejects %s\\n",filename
99 anlwrk.c "bldflst rejects %s\\n",filename
99 anlwrk.c "bldflst returns %d\\n",ret
99 anlwrk.c "bldflst returns %d\\n",ret
99 gnamef.c "gnamef returns %s\\n",filename
```

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UUCP System Debug Messages, Sorted by Module

```
anlwrk.c 1 "opendir(%s) FAILS\\n",subdir(dir,pre[0])
anlwrk.c 1 "opendir(%s) FAILS\\n",subdir(dir,pre[0])
anlwrk.c 5 "Workfilename repeated: %s\\n", file
anlwrk.c 5 "Workfilename repeated: %s\\n", file
anlwrk.c 8 "bldflst rejects %s, grade too low\\n",filename
anlwrk.c 8 "bldflst rejects %s, grade too low\\n",filename
anlwrk.c 99 "bldflst rejects %s\\n",filename
anlwrk.c 99 "bldflst rejects %s\\n",filename
anlwrk.c 99 "bldflst returns %d\\n",ret
anlwrk.c 99 "bldflst returns %d\\n",ret
att2224.c 4 "Baudrate set to 1200 baud", CNULL
att2224.c 4 "Baudrate set to 2400 baud", CNULL
att2224.c 4 "Baudrate set to 300 baud", CNULL
att2224.c 4 "Can't open %s", dcname
att2224.c 4 "Hanging up fd = %d\\n", fd
att2224.c 4 "Open timed out %s", dcname
att2224.c 4 "modem port - %s\\n", dcname
bsdtcp.c 4 "TCP CLOSE called\\n", 0
bsdtcp.c 4 "bsdtcpopn host %s, ", flds[F_PHONE]
bsdtcp.c 4 "closed fd %d\\n", fd
bsdtcp.c 4 "port %d\\n", ntohs(port)
bsdtcp.c 5 "tcpopen failed: errno %d\\n", errno
cds224.c 1 "timeout concord open\\n", ""
cds224.c 4 "calling %s -> ", telno
cds224.c 4 "conDial failed\\n", CNULL
cds224.c 4 "concord ok\\n", CNULL
cds224.c 4 "got %s\\n", ok ? "?" : "that"
cds224.c 4 "got %s\\n", ok ? "?" : "that"
cds224.c 4 "got %s\\n", ok ? "?" : "that"
cds224.c 4 "got %s\\n", ok ? "?" : "that"
cds224.c 4 "wanted CDS >", CNULL
cds224.c 4 "wanted CDS >", CNULL
cds224.c 4 "wanted DIALING ", CNULL
cds224.c 4 "wanted INITIATING " , CNULL
chkpth.c 1 "*** Userpath malloc failed\\n", 0
chkpth.c 1 "*** Userpath malloc failed\\n", 0
```

```
chkpth.c 1 "Userpath calloc 1 failed\\n", 0
chkpth.c 1 "Userpath calloc 1 failed\\n", 0
chkpth.c 1 "Userpath calloc 2 failed!\\n", 0
chkpth.c 4 "can't stat directory %s\\n", subfile(dir)
chkpth.c 4 "file is not writable: mode %o\\n", s.st_mode
chkpth.c 4 "filename doesn't begin with /\\n", CNULL
chkpth.c 4 "filename doesn't begin with /\\n", CNULL
chkpth.c 4 "filename has /../ in it\\n", CNULL
chkpth.c 4 "filename has /../ in it\\n", CNULL
chkpth.c 4 "filename not in list\\n", CNULL
chkpth.c 4 "filename not in list\\n", CNULL
cico.c 1 "Ifn - %d, ", Ifn
cico.c 1 "Loginuser - %s\\n", Loginuser
cico.c 1 "Remote debug request ignored\\n", CNULL);
cico.c 1 "Rmtname %s, ", Rmtname
cico.c 1 "Role %s, ", Role ? "MASTER" : "SLAVE"
cico.c 1 "cntrl - %d\\n", ret
cico.c 1 "exit code %d\\n", code
cico.c 2 "Max Grade this transfer is %c\\n", MaxGrade
cico.c 4 "MaxGrade set to %c\\n", MaxGrade
cico.c 4 "MaxGrade set to %c\\n", MaxGrade
cico.c 4 "TCPIP connection -- ioctl-s disabled\\n", CNULL
cico.c 4 "TCPIP connection -- ioctl-s disabled\\n", CNULL
cico.c 4 "msg-%s\\n", msg
cico.c 4 "send OO %d,", ret
cico.c 4 "sys-%s\\n", Rmtname
cntrl.c 1 "Cannot mkdirs(%s)\\n", fullname
cntrl.c 4 "%s\\n", "RCVFILE:"
cntrl.c 4 "%s\\n", "SNDFILE:"
cntrl.c 4 "%s\\n", s
cntrl.c 4 "*** TOP *** - role=%s\\n", role ? "MASTER" : "SLAVE"
cntrl.c 4 "->PUBDIR %d\\n", status
cntrl.c 4 "HUP:\\n", CNULL
cntrl.c 4 "PROCESS: msg - %s\\n", msg
cntrl.c 4 "Proto start-fail %c\\n", *c
cntrl.c 4 "Proto started %c\\n", *c
cntrl.c 4 "Protocol %s\\n", msg
cntrl.c 4 "RQSTCMPT:\\n", CNULL
cntrl.c 4 "W_FILE1 - %s\\n", W_FILE1
cntrl.c 4 "chkpth ok Rmtname - %s\\n", Rmtname
cntrl.c 4 "chkpth ok Rmtname - %s\\n", Rmtname
cntrl.c 4 "expfile type - %d, ", i
cntrl.c 4 "expfile type - %d\\n", i
cntrl.c 4 "got %s\\n", msg
cntrl.c 4 "got %s\\n", msg
cntrl.c 4 "got FAIL\\n", CNULL
cntrl.c 4 "msg - %s\\n", msg
cntrl.c 4 "msg - %s\\n", msg
cntrl.c 4 "protocol %s\\n", str
cntrl.c 4 "rmesg - '%c' ", c
cntrl.c 4 "wmesg '%c' ", m
cntrl.c 4 "wrktype - %c\\n", wrktype
condevs.c 4 " %s", type
condevs.c 4 " %s\\n", dev
condevs.c 4 "Dialing %s\\n", phone
condevs.c 4 "Disable %s\\n", rdev
condevs.c 4 "FIXLINE FAILED\\n", CNULL
condevs.c 4 "OPEN FAILED: errno %d\\n", errno
condevs.c 4 "Open timed out\\n", CNULL
condevs.c 4 "Opening %s\\n",dcname
condevs.c 4 "Reenable %s\\n", enbdev
condevs.c 4 "Using %s\\n", cd->CU_brand
```

```
condevs.c 4 "ioctl %f second break\\n", (float) bnulls/10
condevs.c 4 "sent BREAK nulls - %d\\n", bnulls
condevs.c 4 DIALINOUT, CNULL
condevs.c 5 "break TCSBRK %s\\n", sys_errlist[errno]
condevs.c 5 "break TIOCCBRK %s\\n", sys_errlist[errno]
condevs.c 5 "break TIOCGETP %s\\n", sys_errlist[errno]
condevs.c 5 "break TIOCSBRK %s\\n", sys_errlist[errno]
condevs.c 5 "break TIOCSETP %s\\n", sys_errlist[errno]
condevs.c 5 "break ioctl %s\\n", sys_errlist[errno]
condevs.c 6 "%c", *str
condevs.c 6 "\\n", CNULL
condevs.c 6 "slowrite ", CNULL
condevs.c 7 "Setting Modem control to %d",modem_control
condevs.c 7 "ret status on sense failed on Modem sense=%x<", ret
condevs.c 7 "ret status on sense failed on Modem setup=%x<", ret
conn.c 1 "Call aborted on '%s'\\n", AbortOn
conn.c 1 "Can't find %s, assuming DIR\\n", flds[F_LINE]
conn.c 11 "ifadate returns %o\\n", g
conn.c 2 "CAN'T FIND dialcodes prefix '%s'\\n", pre
conn.c 2 "CAN'T OPEN %s\\n", DIALFILE
conn.c 2 "Wrong time ('%s') to call\\n", flds[F_TIME]
conn.c 4 "ABORT ON: %s\\n", AbortOn
conn.c 4 "Using %s to call\\n", cd->CU_meth
conn.c 4 "\\nexpect timed out\\n", CNULL
conn.c 4 "dochat called %d\\n", dev->D_numargs
conn.c 4 "fd %d NOT CLOSED by CU_clos\\n", Dcf
conn.c 4 "finds (%s) called\\n", system
conn.c 4 "for sys %s\\n", flds[F_NAME]
conn.c 4 "getto: call no. %s ", flds[F_PHONE]
conn.c 4 "got: %s\\n", ok ? "?" : "that"
conn.c 4 "login %s\\n", "called"
conn.c 4 "lost line kr - %d\\n, ", kr
conn.c 4 "wanted \\"%s\\"\\n", want
conn.c 4 (isprint(c) || isspace(c)) ? "%c" : "\\\\%03o", c
conn.c 5 "BLANK\\n", CNULL
conn.c 5 "BLANK\\n", CNULL
conn.c 5 "DELAY\\n", CNULL
conn.c 5 "NEW LINE\\n", CNULL
conn.c 5 "NO CR - IGNORED NOT EOL\\n", CNULL
conn.c 5 "NO CR\\n", CNULL
conn.c 5 "RETURN\\n", CNULL
conn.c 5 "TRAILING BACKSLASH IGNORED\\n", CNULL
conn.c 5 "\\\\%o\\n", i
conn.c 5 "clsacu ioctl %s\\n", sys_errlist[errno]
conn.c 5 "send \\"%s\\"\\n", str
conn.c 6 "BACKSLASHED %02xH\\n", cnt_char
conn.c 9 "Incoming baudrate is %d\\n", linebaudrate
cpmv.c 4 "full %s\\n", full
df12.c 4 "Didn't get 'Ready' response.\\n", NULL
df12.c 4 "Got 'Ready' response\\n", NULL
df12.c 4 "Hanging up fd = %d\\n", fd
df12.c 4 "Writing telephone number %s\\n", newphone
df12.c 4 "dc - %s\\n", dcname
df12.c 4 "df12 ok\\n", CNULL
df12.c 7 "Telephone number written\\n", NULL
df12.c 7 "Writing # sign\\n", NULL
df12.c 7 "Writing control select flag %c\\n", toneflag ? 'T' : 'P'
df2.c 4 "%s Open timed out\\n", dnname
df2.c 4 "ACU write ok%s\\n", CNULL
df2.c 4 "Fork Stat %o\\n", lt
df2.c 4 "acu - %s\\n", dnname
df2.c 4 "dc - %s, ", dcname
```

```
df2.c 4 "dcf is %d\\n", dcf
dn.c 4 "%s Open timed out\\n", dnname
dn.c 4 "ACU write ok\\n", CNULL
dn.c 4 "Fork Stat %o\\n", lt
dn.c 4 "acu - %s\\n", dnname
dn.c 4 "dc - %s, ", dcname
dn.c 4 "dcf is %d\\n", dcf
expfile.c 4 "mkdir - %s\\n", dir
fascomm.c 4 "Baudrate reset to %d\\n", i
fascomm.c 4 "Hanging up fd = %d\\n", fd
fascomm.c 4 "\\nGOT: %s", cbuf
fascomm.c 4 "dc - %s\\n", dcname
fascomm.c 4 "fascomm ok\\n", CNULL
fio.c 1 "%s\\n", ibuf
fio.c 1 "%s\\n", ibuf
fio.c 4 "Bad checksum\\n", 0
fio.c 4 "Data corrupted\\n", 0
fio.c 4 "RETRY:\\n", 0
fio.c 4 "RETRY:\\n", 0
fio.c 4 "ack - '%c'\\n", ack
fio.c 8 "%d", nl
fio.c 8 "%d,", nl
fio.c 8 "%d,", nl
fio.c 8 "%d/", len
fio.c 8 "%d/", len
fio.c 8 ",%d", i
fio.c 8 "\\n", 0
fio.c 8 "\\n", 0
fio.c 8 "\\nchecksum: %04x\\n", fchksum
fio.c 8 "\\nchecksum: %04x\\n", sum
fio.c 8 "send ack: 'G'\\n", 0
fio.c 8 "send ack: 'Q'\\n", 0
fio.c 8 "send ack: 'R'\\n", 0
gename.c 4 "file - %s\\n", file
gio.c 1 "%s\\n", text
gio.c 1 "%s\\n", text
gnamef.c 99 "gnamef returns %s\\n",filename
gnxseq.c 4 "can't lock %s\\n", SQLOCK
hys.c 4 "Baudrate reset to %d\\n", i
hys.c 4 "Hanging up fd = %d\\n", fd
hys.c 4 "\\nGOT: %s", cbuf
hys.c 4 "dc - %s\\n", dcname
hys.c 4 "hayes ok\\n", CNULL
hys24.c 4 "Hanging up fd = %d\\n", fd
hys24.c 4 "dc - %s\\n", dcname
hys24.c 4 "hayes ok\\n", CNULL
imsg.c 5 "%c", c
imsg.c 5 ">\\nimsg input<", CNULL
imsg.c 5 ">got %d characters\\n", strlen(amsg)
imsg.c 5 "imsg looking for SYNC<", CNULL
imsg.c 5 "omsg <%s>\\n", buf
imsg.c 5 isprint(c) || isspace(c)) ? "%c" : "\\\\%o", c & 0377
imsg.c 9 "\\nUsing \\\\%o as End of message char\\n", Mend
logent.c 2 "CAN'T FIOCLEX %d\\n", fd
micro.c 4 "Hanging up fd = %d\\n", fd
micro.c 4 "dc - %s\\n", dcname
micro.c 4 "hayes ok\\n", CNULL
nov.c 1 "timeout novation open %s\\n", dcname
nov.c 4 "Hanging up fd = %d\\n", fd
nov.c 4 "dc - %s\\n", dcname
nov.c 4 "novation failed\\n", CNULL
nov.c 4 "novation ok\\n", CNULL
```

```
pen.c 1 "timeout penril open\\n", ""
pen.c 4 "%s\\n", errno == 4 ? "no carrier" : "can't open modem"
pen.c 4 "%s\\n", telno
pen.c 4 "calling %s -> ", telno
pen.c 4 "got %s\\n", ok ? "?" : "that"
pen.c 4 "got %s\\n", ok ? "?" : "that"
pen.c 4 "got %s\\n", ok ? "?" : "that"
pen.c 4 "penDial failed\\n", ""
pen.c 4 "penDial ok\\n", ""
pen.c 4 "wanted %s ", ">"
pen.c 4 "wanted %s ", "NO.: "
pen.c 4 "wanted %s ", "OK"
pk0.c 6 "Reack overflow on %d\\n", val
pk0.c 9 "Reack count is %d\\n", ++Reacks
pk1.c 1 "pkopen: can't malloc i = 0\\n", CNULL
pk1.c 1 "pkopen: i>= PKMAXSTMSG\\n", CNULL
pk1.c 1 "pkopen: i>=NPLINES\\n", CNULL
pk1.c 11 ".%06d sec\\n", tv.tv_usec
pk1.c 11 "PKCGET stall for %d", tv.tv_sec
pk1.c 4 "%d in pkgetpack\\n", pk->p_rpr
pk1.c 4 "Noisy line - set up RXMIT\\n", CNULL
pk1.c 4 "Set pk_rpr from %d to ", pk->p_rpr
pk1.c 4 "pkcget: alarm %d\\n", pktimeout * 1000 + Ntimeout
pk1.c 4 "tries = %d\\n", tries
pk1.c 7 "bad header (k==9) 0%o\\n", h->cntl&0xff
pk1.c 7 "bad header 0%o,", hdchk&0xff
pk1.c 7 "bp NULL %s\\n", ""
pk1.c 7 "h->ccntl 0%o\\n", h->ccntl&0xff
pk1.c 7 "rec h->cntl 0%o\\n", h->cntl&0xff
pk1.c 7 "send 0%o\\n", cntl&0xff
pk1.c 7 "state - 0%o\\n", pk->p_state
rvmacs.c 2 "No dialer/modem specification\\n", 0
rvmacs.c 4 "Dialer returned %c\\n", c
rvmacs.c 4 "STARTING CALL\\n", 0
rvmacs.c 5 "Using speed %d baud\\n", baudrate
setline.c 2 "setline - %c\\n", type
systat.c 4 "MAX RECALL COUNT %d\\n", count
systat.c 4 "RETRY TIME (%ld) NOT REACHED\\n", retrytime
telebit.c 4 "Baudrate reset to %d\\n", i
telebit.c 4 "Baudrate reset to 9600\\n", 0
telebit.c 4 "Hanging up fd = %d\\n", fd
telebit.c 4 "\\nGOT: %s", cbuf
telebit.c 4 "dc - %s\\n", dcname
telebit.c 4 "telebit ok\\n", CNULL
tio.c 1 "%s\\n", bufr
tio.c 1 "%s\\n", text
tio.c 11 "trddata got %ld\\n",bytes
tio.c 8 "trddata expecting %ld bytes\\n",Nbytes
tio.c 8 "twrdata sending %d bytes\\n",len
ulockf.c 1 "-- errno %d", errno
ulockf.c 1 "Can't creat temp file %s ", tempfile
ulockf.c 1 "Temp file write failed -- errno %d\\n", errno
ulockf.c 4 "ultouch\\n", 0
uuclean.c 4 "DEBUG# %s\\n", "START"
uuclean.c 4 "stat on %s failed\\n", file
uuclean.c 4 "unlink file %s\\n", file
uucp.c 4 "Ename (%s) ", Ename
uucp.c 4 "PATH %s\\n", Path
uucp.c 4 "Ropt(%s) ", Ropt
uucp.c 4 "UID %d, ", Uid
uucp.c 4 "User %s,", User
uucp.c 4 "\\n\\n** %s **\\n", "START"
```

```
uucp.c 4 "all work here %d\\n", type
uucp.c 4 "cmd (%s)\\n", cmd
uucp.c 4 "ename(%s) ", ename
uucp.c 4 "f1(%s) ", f1
uucp.c 4 "f2(%s)\\n", f2
uucp.c 4 "file1 - %s\\n", file1
uucp.c 4 "receive file - %d\\n", type
uucp.c 4 "s1(%s) ", s1
uucp.c 4 "s2(%s) ", s2
uucp.c 4 "send file - %d\\n", type
uucp.c 4 "send uucp command - %d\\n", type
uucpname.c 1 "My uucpname = %s\\n", name
uucpname.c 1 "gethostname", _FAILED
uucpname.c 1 "gethostname", _FAILED
uucpname.c 1 "getmyhname", _FAILED
uucpname.c 1 "uname", _FAILED
uucpname.c 1 "uuname search", _FAILED
uucpname.c 1 "whoami search", _FAILED
uux.c 1 "exit code %d\\n", code
uux.c 4 "\\n\\n** %s **\\n", "START"
uux.c 4 "arg - %s:", *argv
uux.c 4 "arg - %s\\n", inargs
uux.c 4 "file s- %s, ", syspart
uux.c 4 "local - %s\\n", local
uux.c 4 "prm - %s\\n", prm
uux.c 4 "r - %s, ", rest
uux.c 4 "rest %s\\n", rest
uux.c 4 "ret - %d\\n", ret
uux.c 4 "s - %s, ", syspart
uux.c 4 "xsys %s\\n", xsys
uuxqt.c 1 "COMMAND NOT FOUND\\n", CNULL
uuxqt.c 1 "MAGIC CHARACTER FOUND\\n", CNULL
uuxqt.c 1 "MALLOC FAILED", CNULL
uuxqt.c 11 "path = %s\\n", getenv("PATH")
uuxqt.c 3 "shio - %s\\n", cmd
uuxqt.c 3 "status %d\\n", status
uuxqt.c 4 "%s\\n", buf
uuxqt.c 4 "User - %s\\n", User
uuxqt.c 4 "\\n\\n** START **\\n", CNULL
uuxqt.c 4 "bad command %s\\n", prm
uuxqt.c 4 "cmd %s\\n", buf
uuxqt.c 4 "cmd - %s\\n", cmd
uuxqt.c 4 "exit cmd - %d\\n", ret
uuxqt.c 4 "file - %s\\n", file
uuxqt.c 4 "fin - %s, ", fin
uuxqt.c 4 "fout - %s, ", fout
uuxqt.c 4 "gtxfile: Nfiles > LLEN/2\\n", CNULL
uuxqt.c 4 "gtxfile: move %s to CORRUPT \\n", file
uuxqt.c 4 "iswrk\\n", CNULL
uuxqt.c 4 "iswrk\\n", CNULL
uuxqt.c 4 "process %s\\n", CNULL
uuxqt.c 4 "sysout - %s, ", sysout
uuxqt.c 4 "user - %s\\n", user
uuxqt.c 4 "xfile - %s\\n", xfile
uuxqt.c 5 "%s opened\\n", CMDFILE
uuxqt.c 5 "xcmd = %s\\n", xcmd
uuxqt.c 9 "Compare %s and\\n", cmd
uuxqt.c 9 "MATCHED %s\\n", xc
uuxqt.c 9 "\\t%s\\n", *ptr
va212.c 1 "timeout va212 open\\n", 0
va212.c 4 "%s\\n", telno
va212.c 4 "calling %s -> ", telno
```

```
va212.c 4 "got %s\\n", ok ? "?" : "that"
va212.c 4 "got %s\\n", ok ? "?" : "that"
va212.c 4 "got %s\\n", ok ? "?" : "that"
va212.c 4 "got %s\\n", ok ? "?" : "that"
va212.c 4 "got %s\\n", ok ? "?" : "that"
va212.c 4 "va212 ok\\n", 0
va212.c 4 "vadDial failed\\n", CNULL
va212.c 4 "wanted %s ", "DIALING..."
va212.c 4 "wanted %s ", telno
va212.c 4 "wanted * ", CNULL
va212.c 4 "wanted ANSWER TONE", CNULL
va212.c 4 "wanted NUMBER? ", CNULL
va212.c 4 "wanted ON LINE\\\\r\\\\n ", CNULL
va212.c 4 errno == 4 ? "%s: no carrier\\n" : "%s: can't open\\n", dcname
va811.c 1 "timeout va811 open\\n", 0
va811.c 2 "va811 close %d\\n", fd
va811.c 4 " %s\\n", i ? _FAILED : "SUCCEEDED"
va811.c 4 "DIALING...", CNULL
va811.c 4 "got %s\\n", i ? "?" : "that"
va811.c 4 "got %s\\n", i ? "?" : "that"
va811.c 4 "va811 ok\\n", CNULL
va811.c 4 "va811: NO RESPONSE\\n", 0
va811.c 4 "va811: RESETTING\\n", CNULL
va811.c 4 "va811: STARTING CALL\\n", 0
va811.c 4 "va811: STORE NUMBER\\n", 0
va811.c 4 "wanted %c ", 'B'
va811.c 4 "wanted %c ", 'B'
va811.c 4 errno == 4 ? "%s: no carrier\\n" : "%s: can't open\\n", dcname
va820.c 2 "Dialer format error\\n", 0
va820.c 2 "Dialer parity error\\n", 0
va820.c 2 "Line Busy / No Answer\\n", 0
va820.c 2 "Modem Busy\\n", 0
va820.c 2 "Phone number too long\\n", 0
va820.c 2 "RVADIC close %d\\n", fd
va820.c 2 "RVADIC opened %d\\n", i
va820.c 2 "Unknown MACS return code '%c'\\n", c&0177
va820.c 4 "ACU %s\\n", dev->D_calldev
va820.c 4 "ACU OPEN FAIL %d\\n", errno
va820.c 4 "BAD PHONE NUMBER %s\\n", ph
va820.c 4 "BAD VA831 RESPONSE %c\\n", c
va820.c 4 "BAD VA831 WRITE %d\\n", errno
va820.c 4 "BAD VA831 WRITE %d\\n", nw
va820.c 4 "CLEARING VA831\\n", 0
va820.c 4 "DIALING %s\\n", ph
va820.c 4 "LINE %s\\n", dev->D_line
va820.c 4 "SETTING UP VA831 (%d)\\n", va
va820.c 4 "WAITING FOR ANSWER\\n", 0
vad.c 1 "timeout vadic open\\n", ""
vad.c 4 "%s\\n", telno
vad.c 4 "calling %s -> ", telno
vad.c 4 "got %s\\n", ok ? "?" : "that"
vad.c 4 "got %s\\n", ok ? "?" : "that"
vad.c 4 "got %s\\n", ok ? "?" : "that"
vad.c 4 "got %s\\n", ok ? "?" : "that"
vad.c 4 "got %s\\n", ok ? "?" : "that"
vad.c 4 "vadDial failed\\n", CNULL
vad.c 4 "vadic ok\\n", CNULL
vad.c 4 "wanted %s ", telno
vad.c 4 "wanted * ", CNULL
vad.c 4 "wanted DIALING: ", CNULL
vad.c 4 "wanted NUMBER?\\\\r\\\\n ", CNULL
vad.c 4 "wanted ON LINE\\\\r\\\\n ", CNULL
```

```
vent.c 1 "timeout ventel open\\n", ""
vent.c 4 "%s\\n", errno == 4 ? "no carrier" : "can't open modem"
vent.c 4 "%s\\n", telno
vent.c 4 "calling %s -> ", telno
vent.c 4 "got %s\\n", ok ? "?" : "that"
vent.c 4 "got %s\\n", ok ? "?" : "that"
vent.c 4 "got %s\\n", ok ? "?" : "that"
vent.c 4 "venDial failed\\n", ""
vent.c 4 "venDial ok\\n", ""
vent.c 4 "wanted %s ", "$"
vent.c 4 "wanted %s ", "DIAL: "
vent.c 4 "wanted %s ", "ONLINE"
versys.c 11 "After Alias: %s\\n", *nameptr
versys.c 11 "Alias doesn't match %s, remains unchanged\\n", *hostptr
versys.c 11 "Alias expansion for %s\\n", *hostptr
versys.c 11 "Alias line: %s\\n", buf
versys.c 11 "Before Alias: %s\\n", *nameptr
versys.c 11 "Compare against: %s\\n", p
versys.c 11 "No %s file\\n", ALIASFILE
versys.c 4 "%s\\n", koshername
versys.c 4 "Alias: %s to ", *hostptr
vmacs.c 2 "Busy signal\\n", 0
vmacs.c 2 "Dialer Timeout or Abort\\n", 0
vmacs.c 2 "Dialer format error\\n", 0
vmacs.c 2 "Dialer parity error\\n", 0
vmacs.c 2 "MACS close %d\\n", fd
vmacs.c 2 "No dialer/modem specification\\n", 0
vmacs.c 2 "Phone number too long\\n", 0
vmacs.c 2 "Unknown MACS return code '%c'\\n", i
vmacs.c 4 "STARTING CALL\\n", 0
vmacs.c 5 "%s Opened.", com
vmacs.c 5 "ACU %s opened.\\n", acu
vmacs.c 5 "ACU initialized\\n", 0
vmacs.c 5 "Call connected\\n", 0
```

Q: I'm sending mail via UUCP. Things work *great* from my mail server (which is also my UUCP gateway). From a mail client, though, I get error messages indicating the remote UUCP machine is unknown. The bounce message looks like this:

Date: Mon, 13 Apr 92 13:11:11 CDT
From: Mailer-Agent (NeXT Mail Agent)
Subject: Returned mail: Unable to deliver mail
To: amm

----- Transcript of session follows -----
554 rhino!sandy... Never heard of UUCP host rhino

----- Unsent message follows -----
π

What's going on here?

A: One likely source of the problem is that **sendmail** might not have an uptodate notion of the known UUCP connections. If you've added the remote machine (**rhino** in the example, above) and neither rebooted the server nor restarted the **sendmail** process on the server, then **sendmail** doesn't know about the new connection.

A **sendmail** daemon process is started when the system boots, by **/etc/rc**. When **sendmail** starts up, it runs the command **uuname** to determine the known UUCP connections. (At least, it does this with all the standard configuration files NeXT ships.) The **uuname** command is run *only once*. It is this **sendmail** daemon that handles all the mail coming from the client machines.

So, why does mail originating locally work? A new **sendmail** process is run for each locally-originating message; this new **sendmail** process runs its own instance of **uuname** when it starts. Since **uuname** for the new **sendmail** process has been run after the new system's addition to **L.sys**, the new **sendmail** knows about the new system.

Q: UUCP is complaining about my mail missing newlines and mail is bouncing. What can I do?

A: If the bounced mail has errors like the example below, the problem can be fixed by editing your UUCP mailer specification in your sendmail.cf.

```
> From @scapa.cs.ubert.ca:me@uaneuro Thu Jun 6 11:32:04 1991
> Message-Id: <9106061732.AA10617@namao.ucs.ubert.ca>
> Date: Thu, 6 Jun 1991 12:34:01 -0600
> Illegal-Object: Syntax error in From: address found on scapa.cs.ubert.ca:
> From: uaneuro!me (My Account)
> ^-missing newline (LF)
> Illegal-Object: Syntax error in Message-Id: value found on scapa.cs.ubert.ca:
> Message-Id: <9106061834.AA00160@uaneuro>
> ^-missing newline (LF)
> Illegal-Object: Syntax error in To: address found on scapa.cs.ubert.ca:
> To: namao.ucs.ubert.ca!thorjman
> ^-missing newline (LF)
> From: me@uaneuro.uucp
> To: thorjman@namao.ucs.ubert.ca
> Subject: test 2 (non-NeXT)
```

The fix is to add a new definition of the end of line character to the UUCP mailer definition. Add the text shown in bold to the sendmail.cf file in use on your uucp mail hub machine.

```
###################################################################
#####
##### UUCP Mailer specification
#####
Muucp, P=/usr/bin/uux, F=msDFMhuU, S=13, R=23, E=\\n,
A=uux - -r $h!rmail ($u)
```

Q: I'm trying to connect to another machine using UUCP over the ethernet. When I run **uucico** in debug mode (**-x99**), I get the message

```
tcpopen failed: errno 61
root rhino (11/13-14:39-2883) FAILED (Connection refused)
```

My **L.sys** and **USERFILE** files are correct; the remote machine's, likewise. I have an entry for **uucp** in my **/services** directory in NetInfo:

```
myhost:22# niutil -read . /services/uucp
port: 540
protocol: tcp
```

name: uucp uucpd

What's wrong?

A: You also need to enable **uucp** in the file **/etc/inetd.conf**. We ship the system with the line in the file, but commented out:

```
# Run as user "uucp" if you don't want uucpd's wtmp entries.
# uucp stream tcp nowait root /usr/etc/uucpd uucpd
```

Just uncomment the ª uucp streamº line, send **inetd** a SIGHUP, and you're all set. See the inetd(8) UNIX Manual Page for details on the format of **inetd.conf**.

By the way, each step accomplished (**L.sys** and **USERFILE** being correct on both machines, a **uucp** entry in **/services** in NetInfo) is necessary in addition to the modification to **inetd.conf**.

Note also that in Release 1.0 and Release 1.0a a TCP-based UUCP connection does not work, even if you accomplish everything mentioned in this document. This is because of a bug, fixed in Release 2.

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PDO 4.2 Installation Q&A

This article contains questions and answers on PDO 4.2 installation issues.
This article has been archived and is no longer updated by Apple.

Q: What does PDO do to the header files on my system and will this affect my other developing environments?

A: The header files on some systems are incompatible with the ANSI C standard. The PDO install script runs the "fixincludes" script, provided by GNU with gcc, which fixes up some of these "broken" headers so they work correctly with ANSI C. The changes are syntactical in nature only; it doesn't add or remove any definitions. It also ensures that the standard ANSI header files are present (such as stdarg.h).

The "fixincludes" script does not modify directly any of the system header files. It makes a copy of each header it needs to fix (in /usr/NextDeveloper/lib/gcc-lib/`arch`/2.5.8/include) and modifies the copy. Gcc searches this directory before it searches the system directories, so it picks up the altered headers first. Since "fixincludes" makes a copy of the headers to a directory only gcc searches, this has no impact on any other compilers which might be installed.
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NEXTSTEP 3.3 Disk and Filesystem Q&A

Disclaimer

This document pertains to the NeXTSTEP operating system, which is no longer a supported product of Apple Computer. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software. Some questions in this Q&A document may not apply to version 3.3 or to any given specific version of NeXTSTEP.
This article has been archived and is no longer updated by Apple.

Q: How do I put a recycler on my external hard disk?

Q: My new external disk displays a panel indicating "No recycler for device..."

A: In order to have recycler on an external disk, you must have a .NextTrash directory at the mount point for the drive. As an example, here is how you would create a recycler for an external disk mounted as /archive (issue the following commands as root in a Terminal window):

localhost# **cd /archive**
localhost# **df .**
Filesystem kbytes used avail capacity Mounted on
/dev/sd2b 216311 152584 42095 78% /archive
localhost# **mkdir .NextTrash**
localhost# **chown root.wheel .NextTrash**
localhost# **chmod 1777 .NextTrash**
localhost# **ls -ldg .NextTrash**
drwxrwxrwt 19 root wheel 1024 Sep 30 10:42 .NextTrash/

After completing these steps, you'll need to reboot the system for the new recycler to be properly recognized.

Q: Are file system quotas supported by NeXT software?

A: No. Quotas are not supported by NEXTSTEP.

Q: Why does fcntl(fd, F_SETLK, &lockstruct) give EINVAL? What is the preferred method of file locking?

A: The current release of Sun's NFS file system has a number of problems regarding file locking. Sun has implemented a "first crack" at solving the problems associated with extending Unix's file locking to NFS. NeXT decided, upon looking at this, that there were too many hidden deadlock conditions inherent in the implementation to release. Instead, the current version of fcntl(2) will fail with EINVAL if the directives F_GETLK or F_SETLK are used. These directives will work when a new version of NFS file locking is available, in our 4.0 release.

In the mean time, if a file locking system is necessary for your application, the best system to use is to write out a file whenever your application accesses a file for writing. The easiest thing to do is to create a file of the same name with an added extension, like "LCK" for instance. Your application should check to see if this file exists before opening a file, and create the lock file, if one doesn't exist.

Here's one idea: if you open(2) a file with both CREATE and EXCLUSIVE turned on, then open(2) will return an error if the file exists, and will create the file if it doesn't. Something like

```
#include <sys/file.h>
int fd;

fd = open(lockfile, O_CREAT | O_EXCL, 0600);

if (fd < 0) { /* Something didn't work */
if (errno != EEXIST) { /* Real error occurred */
perror("Open failed");
exit(1);
}
else { /* Lock file is there */
/* await lock release */
}
}
else /* Things are OK */
```

This still has some problems when systems crash with files open, or the if the Workspace exits with your application still running. To deal with this, your application should erase these lock files (with the unlink(2) system call, for example) in an appDidTerminate: method. Also, when one of these lock files exist, you should display an alert panel asking if the user would like to override the lock.

For applications that run on a single machine (without any network file access) you can use flock(2)if you are concerned that your application may be run multiple times on the same machine. This scheme works for network files too, when that support is added.

Note: the fcntl(2) directives not associated with file locking:

```
F_{DUP,SET,GET}FD
F_{GET,SET}FL
F_{GET,SET}OWN
```

work fine.

Q: To where is the /mach symlink resolved when netbooting (or any other sort of booting)?

A: To the path of the kernel booted; typically, this is:

```
/private/tftpboot/mach
```

though it could be rather anything, depending on what was in the server's bootptab and NetInfo databases. By default, this file is itself a symlink, to /sdmach.

Default boot devices and $BOOTFILE values are

SCSI sdmach
OD odmach
Net /private/tftpboot/mach

Note that if the user booted with a command such as

```
bsd()MyMach
```

then $BOOTFILE will resolve to MyMach.

Q: I'm using rdist to do remote software distribution, or to copy files from an optical disk to my hard disk. But, rdist gives the error "permission denied." What's wrong?

A: Be sure the machine from which you're doing the rdist is in the .rhosts file of the target machine (this file contains a list of trusted remote hosts). /.rhosts is consulted if the rdist is being run as root. In other cases, the .rhosts file in the user's home directory and the hosts.equiv file are consulted, in the same manner as for rcp and rsh. (Note that hosts.equiv is NOT consulted when the rdist is being run as root.)

Q: I changed **/etc/fstab**, and now NEXTSTEP won't boot. If I boot the system in single-user mode, I can't edit **/etc/fstab** to fix it because the file system is read-only. What do I do to fix it?

A: The start-up script **/etc/rc.boot** makes the root filesystem read-write with the command:

```
mount -o remount /
```

The **mount** command looks in **/etc/fstab** for an entry that describes "/". It should find a line like:

```
/dev/sd0a / 4.3 rw,noquota,noauto 0 1
```

This means that the filesystem on the device sd0a should be mounted as the root ("/") filesystem. If this line in the **/etc/fstab** file is missing, incorrect, or damaged, the mount command fails. You are left with a read-only root filesystem.

The solution is to re-mount the root file system with the shell command:

```
# mount -o remount /dev/sd0a /
```

In this form, you are telling mount exactly which device to use, so it doesn't look in **/etc/fstab** and get confused. Once you have the root filesystem mounted read-write, fix it with a text editor (don't include any blank lines) or get a copy of a default **/etc/fstab**. You can find default copies in **/usr/template/client**. i.e.:

```
# cp /usr/template/client/etc/fstab.sd330 /etc/fstab
```

Then shut down and reboot your system:

```
# reboot
```

Q: Why is the ``high water mark" in my **/etc/swaptab** ignored?

A: This is probably due to an extra space in **/etc/swaptab**. The format of this file must be exactly as in **swaptab(5)**, without spaces after the commas. Thus

```
#
# /etc/swaptab
#
/private/vm/swapfile lowat=20971520,hiwat=73400320 # 20/70 MB
```

works as expected, but in

```
#
# /etc/swaptab
#
/private/vm/swapfile lowat=20971520, hiwat=73400320 # 20/70 MB
```

the **hiwat** is ignored (note the space after the first comma).

Q: My machine won't swap to my swapdisk (SCSI address 6). However, I think this used to work.

A: You may have a removable media device at a lower SCSI address than your swap disk. Devices with no media in them cannot return a disk label, causing **checkswap** to return FSR_NONE. The file /etc/rc.swap has a line

```
case $swapstatus in
0)
# No such disk was actually connected.
break;
;;
```

This can be fixed by removing the line with *break* in it. You end up with:

```
case $swapstatus in
0)
# No such disk was actually connected.
;;
```

The downside is that the script always scans for all SCSI devices looking for a swap device.

Q: What is the size of the swapfile for NEXTSTEP?

A: The size of the swapfile depends on the parameters set up in the **/etc/swaptab** configuration file and the demand for paging on the system. The swapfile dynamically grows on demand; the demand for swapping depends on the memory needs of the running applications, and the size of the ªrealº memory (the more real memory the less the demand for paging space).

The **swaptab** file looks like this:

```
#
# /etc/swaptab
#
/private/vm/swapfile lowat=20971520 # 20 Meg low water mark
```

This tells the system to use the file **/private/vm/swapfile** for swapping. It also specifies the parameter **lowat=20971520**, the ªlow water mark.º This low water mark is the smallest size to which the file shrinks. The paging file then grows as needed to meet demand.

A **hiwat=*n*** parameter may be used in the **swaptab** to set a limit on how large this file

grows.

Q: What size is the **swapfile** when a fresh copy of NEXTSTEP is installed ?

A: It starts out at 16MB out of the box. It should never get smaller, since this the default size of the lowat mark in /etc/swaptab.

Q: Will the **swapfile** get smaller (if above the low water mark) while the system is running, or is it reset only upon reboot?

A: The swapfile works in a stack-oriented manner<it shrinks only if the system detects that all pages above a certain address are unallocated. This rarely occurs. Consider launching a 4MB application which is completely paged out followed by one more page owned by some other application in the system. Even if the 4MB is freed the swapfile cannot be truncated until that extra page is freed. What generally happens is that long-running applications allocate a few pages at the high addresses, and **swapfile** apparently never shrinks.

During a reboot when paging is turned on (by the invocation of **mach_swapon**), the **swapfile** is immediately truncated to the minimum value.

Note: Despite the file being called the **swapfile**, NEXTSTEP uses pure demand-paged memory management. mach_swapon(8) tells the kernel to initiate paging.

Q: Why does BuildDisk.app indicate ªpermission deniedº and die? Doesn't it run as root?

A: One possible cause of this situation is related to running BuildDisk.app while your system is connected to a network. BuildDisk.app tries to ensure that what it's building will fit on the target disk. To do this, it calculates the size of each directory to be loaded. If, for example, you have **/NextDeveloper/Examples** imported from an NFS server, and, if there's a **.NextTrash** directory in that directory, the **root** user might not be able to see what's inside in order to determine the size.

Whenever possible, run BuildDisk.app on a system that's *disconnected* from the network.

If you *must* be connected to the network (e.g., if you're running BuildDisk.app on a NeXTstation that's NetBooted), and if you get a message like the above, go to the machine that's serving the flagged directory and remove the **.NextTrash** directory and its subdirectories (or whatever other directory is giving you problems). If removing the directory is inappropriate, either grant everyone read permission, or export the file system (via **exportfs** and the **/etc/exports** file; see the UNIX Manual Pages or the *NeXT Network and System Administration* manual) to grant root access as necessary to the NetBoot client.

It's also possible that you'll run out of space on the target machine if you're importing large directories from an NFS server.

Q: I want to customize the icon displayed for a directory in the Workspace File Viewer. How can I do this?

A: The Workspace Manager looks for a file called **.dir.tiff** in the directory. It uses this in place of the usual icon when displaying that directory in the Viewer. You may also want to place a file called **.opendir.tiff** in the directory. This is used in place of the ªopen folderº icon which is displayed when you drag new files to that directory. For best results, the tiff files should be 48 x 48 pixels square. The **.dir.tiff** icon is also used by Digital Librarian to represent the directory if you use it as a target.

For fun, you can put a **.dir.tiff** and a **.opendir.tiff** file in your home directory and replace the little house with something more representative of your personality!

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NEXTSTEP 3.3 Network and CD Boot Q&A

Disclaimer

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This article has been archived and is no longer updated by Apple.
Q: Can I boot from a release CD-ROM disc and not be required to initialize or upgrade the hard disk drive?

A: Yes. You will have the ability to view, copy, move, etc. files, run programs, and perform other similar operations. While you can't boot a full NEXTSTEP environment (Workspace Manager, et al.), you can boot single-user from the CD-ROM installation disc.

Intel (i386) architecture

Insert the CD-ROM disc and the boot floppy and boot the system. On the i386 architecture, booting starts from the floppy drive and continues to the CD-ROM.

At the boot: prompt type:
boot: **mach_kernel -s**
Follow any instructions (it may appear as though an install or upgrade is being performed; be patient) until the UNIX command line prompt is displayed. If you are asked which disk to install NEXTSTEP to, then you must have made a mistake at the boot prompt.

NeXT (m68k) architecture

Use <Command><Command><~> after power-on to get to the ROM monitor and type the following:

For Non-Turbo systems with internal floppy

Insert the boot floppy and type:
NeXT> **bfd -s**

For Non-Turbo systems with SCSI floppy

Insert the boot floppy and type:
NeXT> **bsd(*n*,0,0) sdmach -s rootdev=sd*n***
Where n is the unit number of the floppy drive. In this scenario, it may be helpful to have the CD-ROM drive set to a higher SCSI address than the SCSI floppy.

For Turbo systems

Turbo systems have the ability to boot directly off the CD-ROM drive without assistance from the floppy drive.
NeXT> **bsd(*n*,0,0) sdmach -s rootdev=sd*n***
Where n is the unit number of the CD-ROM drive.

All architectures

Mounting a hard disk
Note that when booted single user from a CD-ROM, the file system is mounted read-only. Certain functions may not be available. This state can be somewhat alleviated by mounting /tmp on another available disk. Use the -n option with the mount command to prevent writing to /etc/mtab (which fails, obviously). As an example:

mount -n /dev/<*device*> /tmp

where <device> is the disk you wish to mount (eg. sd0a, hd0a).

Once in single-user mode, you can still run the CD-ROM build disk scripts by running the rc scripts:
sh /etc/rc

Copying & Editing.

Under Release 3.3, you can use ditto(8) to perform a copy of an entire directory, preserving links and setuid and setgid

modes. pico(1) is a simple text editor that ships with 3.3 for those that find vi(1) confusing. See the man pages for information on these commands.

Q: From where does a netboot server (bootpd) get its ªserved kernelº information?

A: The netboot server gets its kernel information from two sources:

· NetInfo and
· /etc/bootptab.

(Yes, from both. Even if NetInfo is running, the file is consulted.)

There are two types of bootpd information: global (i.e., for all netboot clients) and local (i.e., for a specific client). The global information is read from the file /etc/bootptab; the local information comes from NetInfo (the /machines/client directory).

There are two pieces of global information: the tftpboot root directory, and the default kernel to be served. [What's tftpboot? It's the file transfer mechanism used for netbooting < trivial file transfer protocol boot.] All kernels which can be booted must be located in the tftpboot root directory, which is typically /private/tftpboot on our system. Any pathname given, either for the default kernel or for a per-client kernel, is relative to the tftpboot root directory; further, that directory is considered as the root directory for the tftpboot process, so a path like /sdmach will be interpreted as /private/tftpboot/sdmach. (Why is this done? Security: it prevents booting arbitrary files from the boot server.)

Then there's the local information: a host type, ethernet address, IP address, and bootfile. These are all obtained from NetInfo. Note that, although the host type appears in bootptab, it is not present in NetInfo; if an niload(8) is done, it MUST have the value 1 (else niload will yield an error). If you nidump bootptab, a 1 will be provided in the field.

Now, the stage is set for explaining how the netboot sequence occurs, regarding the boot protocol.

The following paragraph describes the boot sequence from the server's perspective:

1. A client sends a BOOTP broadcast, asking for the file boot (the name is in the PROM). This is the request for the ªblk0 loader,º also known as the ªbootstrap loader.º The server notices same.
2. The server then checks in NetInfo to determine if the ethernet address in the BOOTP request is known. The NetInfo hierarchy is searched, starting with the local domain, looking for a /machines entry with an en_address property whose value matches the address of the broadcaster.
3. If the ethernet address is known, the server responds to the client with information including the path to the bootstrap loader. This path is comprised of two components: the directory, and the file name. The directory is determined from /etc/bootptab (yes, even if NetInfo is running); this is the ªtftpboot rootº directory. The file name was specified by the broadcaster (the client) in 1, above, as boot.
4. A request from the client to transfer the bootstrap loader is received; the loader is sent back, using TFTP.
5. Another BOOTP request is received, this time for the pathname to the kernel. The path is sent, determined from a combination of NetInfo and /etc/bootptab. Specifically, the tftpboot root directory (at the top of the tree from which kernels can be obtained) is found in bootptab, as is the default kernel to be sent. The kernel to be sent can be overridden in NetInfo: the bootfile property in the client's directory in the /machines directory specifies this. (Domains are searched on the server, starting with the server's local domain, continuing up the NetInfo domain hierarchy.) It can also be overridden by the client, in the boot command specified [e.g., ben()new_mach]; note that any explicit path given for a kernel will be relative to the tftpboot root directory.

Transfer of the kernel, using TFTP, completes this phase of the boot sequence.

One other note. This notion of ªtftpboot rootº is a bit unusual. A chroot(2) is only effected during the actual transfer. If a path such as ../MyMach (e.g., ben()../MyMach) is given for the kernel, strange things will result. Specifically (assuming the normal tftpboot root) /private/MyMach (that is, /private/tftpboot/../MyMach) must exist, and MyMach must exist in the tftpboot root directory. It is the latter of these which will actually be TFTPed to the client. Note also that the kernel file name shouldn't have any dash characters (-) in it: the dash is used by the PROM's boot command to denote arguments to be passed to the booted kernel.

Q: I'm booting a NetBoot client<or, rather, trying to. But it keeps looping through the reboot, getting only as far as allocating a swapfile. What's wrong?

A: One cause of this could be that the client's private partition is not exported correctly. The private partition must be exported with root access for the client. Even when **/etc/exports** indicates a proper entry, if a parent directory of the client's private partition is a) on the same filesystem, and b) exported *without* root access for the client, then the client's private partition is not exported with root access for the client (note that exports information is stored in the NetInfo database in Release 3 and later; see the NetInfo exports directory and NFSManager.app).

A situation where this readily occurs is when you're trying to use a machine with one partition on the disk as the NetBoot server. This is *not* a supported configuration. In this situation, the **exports** file might look like:

```
/ -access=rhino:cockatoo
/clients/rhino -access=rhino,root=rhino
/clients/cockatoo -access=cockatoo,root=cockatoo
```

If the disk has only one partition then the clients' partitions is *not* exported with root access for the client. To fix this, change the **exports** file to:

```
/ -access=rhino:cockatoo,root=rhino:cockatoo
```

If you want to leave the explicit lines for the two client partitions, that causes no harm, and might help avoid a problem if you ever set things up on a two-partition disk.

Q: The commands *w* and *netstat* return "no namelist" on a netbooted client. What's going on?

A: The *w* command prints a summary of the current activity on the system, including what each user is doing, The *netstat* command symbolically displays the contents of various network-related data structures. Both of those commands examine the system namelist kept in the file */mach* (the kernel). The kernel namelist contains the current system addresses. On a netbooted client, */mach* references the path */clients/client/tftpboot/mach*. If this file is not present, any command that uses the kernel's namelist cannot complete successfully and returns a "no namelist" error.

To fix the problem, make a symbolic link to the kernel like this:

· On the netboot server, launch the Terminal application as root
· Run the following command:

```
server#ln -s /sdmach /clients/client/tftpboot/mach
```

where client is the name of your netbooted client.

w and *netstat* now return the correct data on your netbooted client. You need to repeat this procedure for each netbooted client.

This only applies if the netboot server and client are running the same version of the OS, on the same hardware architecture.

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NeXTSTEP Applications and Tools Q&A

Disclaimer

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This article has been archived and is no longer updated by Apple.

Q: When I attempt to print an Edit file from a shell, my output consists of several very long lines (i.e., it does not word wrap).

A: Edit does not save return characters in its files, but uses the word wrap capability of the AppKit's Text object to resize the lines to fit the window. You can use the UNIX command *fmt* to break the file into shorter lines.

% fmt *filename* | lpr

Also, the *enscript* command will convert text files to PostScript format for printing.
See the man pages for *fmt* and *enscript* for more information.

Q: How can I tell how much WindowServer memory my application is using? Some Application Kit programs can use a significant number of windows and bitmaps, and the memory used in these cases isn't easy to trace.

A: Use ProcessMonitor.app located in /NextDeveloper/Apps. This application allows you to measure and analyze your application's memory usage. In particular, the Display Postscript Inspector shows the amount of backing store and virtual memory used by your Application. A monitor panel displays this information in graphical form. For further information please refer to the documentation in /NextLibrary/Documentation/NextDev/DevTools/09_ProcessMonitor/ProcessMonitor.rtfd (for Release 3) or /NextLibrary/Documentation/NextDev/DevTools/04_DevApps/ProcessMonitor.rtfd (for Release 2).

Q: How can a NEXTSTEP application run windows on the WindowServer of a remote host?

A: Someone must be logged on to the host you would like the windows to appear on (the "target" host). The user that is logged on must have Public Window Server access on. This gives permission for a remote host to establish a connection to its WindowServer. Public Window Server access is set through the Preferences application. From a remote host, you can then launch an application and specify that the windows should appear on the target machine like this:

% /NextApps/Webster.app/Webster -NXHost TargetHost

In this case, Webster launches on the remote host and the windows show up on TargetHost. "TargetHost" must be the hostname; you cannot substitute an ip address.

It's not possible to use NXHost from a machine running Release 3 to a machine running an earlier release. However you can run an application on a Release 2 machine and have its windows display on a Release 3 machine. (In addition, you cannot use NXHost from a Release 1 machine to a Release 2 system, or vice versa.)

Q: How can I get my mouse pointer to stop jumping around, and to glide smoothly across the screen?

A: Type the following command into a shell window:

% dwrite NeXT1 MouseScaling "*string*"

Where "*string*" contains a single value indicating the number of integer pairs to follow, followed by the actual pairs. The integer pairs are (speed, acceleration) pairs. These integer pairs make the mouse movement on the screen dependent both on the distance the mouse was moved on the pad, and its acceleration and speed. When you change the mouse speed through the Preferences application, it creates one of these. Here's the format of a MouseScaling argument:

% dwrite NeXT1 MouseScaling "N x1 a1 x2 a2 x3 a3 x4 a4 ... xN aN"

To give the mouse a smoother motion across the screen, you must make the mouse movement linear (uniform, but slow). This **dwrite** will do the trick:

% dwrite NeXT1 MouseScaling "1 1 1"

This means that if you move the mouse x amount on the pad, it moves it by kx pixels on the screen regardless of how long it took. (k is the constant which translates the mouse pad coordinate system to the screen coordinate system.)

Warning: we cannot guarantee the support of **dwrite**s in future releases, so do not put this in your application or rely on it in any way.

Valid for 2.0, 3.0, 3.1

Q: Why won't the entry on the last line of of my **/etc/crontab** or **/etc/crontab.local** file not execute? I'm certain the syntax is correct (I can execute the same command from a shell).

A: You've probably used the Edit program to add the last line of **crontab** or **crontab.local**. The **cron** program is very sensitive to the format of these files. If there is not a newline character following the last line, **cron** will not execute the last line. The solution is to edit the file by placing the cursor after the last character and pressing the Return key. Note that **vi** does not exhibit this behavior (it automatically places a newline in the correct place).

Q:When I try to run **/usr/bin/calendar** with an argument, it returns the following error:

/tmp/calendar: syntax error at line 1: `^' unexpected

What's going on?

A:There is a bug in **/usr/bin/calendar** which causes the command **calendar -** to fail. **calendar -** is normally run via the **cron** utility; it examines each user's **~/calendar** file for things that will happen the next day, in order to send that user a reminder. **calendar** can be fixed with the following patch.

Line 20 of the file **/usr/bin/calendar** needs to be changed from:

```
( cat /etc/passwd; nidump passwd . ; /usr/lib/calendar -p ) | sort -t: -u +0 -1 |
```

to:

```
( cat /etc/passwd; nidump passwd . ) | sort -t: -u +0 -1 |
```

If you have network user accounts, change "nidump passwd ." to "nidump passwd /". This tells **calendar** to use the user list in the root NetInfo domain.

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NeXTSTEP Boot and Driver Disk Images

These floppy images have been created as a convenience for those who may have a damaged install floppy, or who need to get crucial drivers onto a NEXTSTEP floppy but don't have a running NEXTSTEP machine.

If you have a damaged installation floppy, the only way to create a new one, even under NEXTSTEP, is to make a copy of another one. The instructions for creating floppies from images under NEXTSTEP are in the next section.

If you have a machine configuration which requires a certain driver (usually a SCSI adapter driver) which is not provided on the installation driver floppy, and you don't already have a running NEXTSTEP system, you need to create one under another system. If you have DOS running on your PC, you can download the proper driver floppy image and create a NEXTSTEP disk under DOS using the rawrite program.

This document only discusses floppy images for the NeXTSTEP operating system, versions 3.3 and earlier. If you need OPENSTEP version 4.x floppy images, see **Document 71921**.
This article has been archived and is no longer updated by Apple.

Creating NEXTSTEP Floppies From Images Under NEXTSTEP

1 Make sure you are logged in as **root**.

2 Download the floppy image and decompress it from the Workspace via the File->Uncompress menu item. Make sure you are logged in as root.

3 Insert a blank 1.44 megabyte 3.5" HD floppy disk into the floppy drive.

4 In the Workspace, choose the command Check For Disks from the Disk menu. Initialize the disk as a NEXTSTEP filesystem. NEXTSTEP then formats and initializes the disk. When it is done initializing, select Eject from the disk menu, but leave the floppy in the drive.

5 If you have placed the image in **/tmp**, type this command to copy the boot floppy image to the new disk.

 # dd if=/tmp/*Floppy_Image* of=/dev/rfd0b

6 After a few minutes, the duplication will be complete. Type this command:

 # disk -e /dev/rfd0b

7 Physically eject the disk from the drive. It is ready to use.

Creating NeXTSTEP Floppies Under DOS

1 Download **rawrite 2** from:

ftp://ftp.debian.org/debian/tools/rawrite2.zip

and copy it to your DOS system. If necessary, rename the file to rawrite.exe.

2 Download the floppy image that you need to your DOS system. Remember that DOS will not support the original NeXTSTEP filename.

3 Prepare a floppy by formatting it for DOS.

4 Run **rawrite**. It will ask you for the source file (the floppy image) and the destination drive.

5 When rawrite has completed, the floppy is ready to be used under NeXTSTEP.

For more information about **rawrite**, see the Readme at the end of this document.

3.2 Boot Floppy Image

Download the 3.2 Boot Floppy Image from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.2_Boot_Disk.floppyimage

This floppy image is an exact copy of the boot floppy that shipped with NEXTSTEP 3.2.

3.2 Additional Drivers Floppy Image

Download the 3.2 Additional Drivers Floppy Image from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.2_Addl_Drivers.floppyimage

It contains these drivers:
1520_Adaptec154xDriver.ReadMe.rtf
1626_DPT2000SCSIDriver.ReadMe.rtf
1670_PS2KbdMouseDriver.ReadMe.rtf
1676_Adaptec6x60SCSIDriver.ReadMe.rtf
1692_Adaptec2740Driver.ReadMe.rtf
1694_IDE8265Driver.ReadMe.rtf

3.2 Motorola Boot Floppy Image

Download the 3.2 Motorola Boot Floppy Image from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.2_Moto_Boot_Disk.floppyimage

This floppy image is an exact duplicate of the installation floppy that ships with NEXTSTEP 3.2 for Motorola.

3.3 Boot Floppy Image

Download the 3.3 Boot Floppy Image from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.3_Boot_Disk.floppyimage

This floppy image is an exact copy of the floppy that shipped with NEXTSTEP 3.3.

3.3 Driver Floppy Image

Download the 3.3 Driver Floppy Image from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.3_Driver_Disk.floppyimage

This floppy image is an exact copy of the driver floppy that shipped with NEXTSTEP 3.3.

3.3 PCCard Installation Floppy Image

Download the 3.3 PCCard Installation Floppy Image from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.3_PCCard_Install.floppyimage

This floppy image is provided as a convenience for installing NEXTSTEP using PCCard(PCMCIA) SCSI or network adapters. It should be used only in conjunction with the 3.3 Additional Drivers Floppy. For instructions on using these floppy images to perform PCCard installations, see NeXTanswer 1985_Installing_from_PCCard_Devices.rtf.

3.3 Core Drivers Floppy Image

Download the 3.3 Core Drivers Floppy Imagefrom:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.3_Core_Drivers.floppyimage

It contains these drivers:
1784_EISABus_Driver_Overview.rtf
1785_Floppy_Driver_Overview.rtf
1790_Intel_824X0_PCI_Chipset_Driver_Overview.rtf
1799_PCI_Bus_Driver_Overview.rtf
1800_Intel_82365_and_compatible_PCMCIA_chipset_Driver_Overview.rtf
1801_PCMCIABus_Driver_Overview.rtf
1804_PS2Keyboard_Driver_Overview.rtf

This image contains the latest versions of the basic drivers needed during an install of NEXTSTEP. It should be used as the first Driver Floppy during an install.

The floppy driver is also on the NEXTSTEP CDROM, but may be needed in cases where you need to access the floppy while booted single-user off the CDROM. There is a link missing on the CDROM that is necessary for using driverLoader.

3.3 Additional Drivers Floppy Image

Download the 3.3 Additional Drivers Floppy Image from:

http://download.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.3_Addl_Drivers.floppyimage

1752_AMD_PC_SCSI_Driver_Overview.rtf
1754_SymbiosLogic53C8xxSCSIDriver_Driver_Overview.rtf
1759_Adaptec_274x_and_284x_family_Driver_Overview.rtf
1760_Adaptec_2940_family_and_7870_integrated_Driver_Overview.rtf
1761_Adaptec_6x60_chipset_add-on_and_integrated__Driver_Overview.rtf
1771_BusLogic_family_Driver_Overview.rtf
1830_DPT_SCSI_family_Driver_Overview.rtf
1839_EIDE_Driver_Overview.rtf

NOTE: This floppy image should be used with the 3.3 Core Drivers Floppy Image.

3.3 Motorola Boot Floppy Image

Download the 3.3 Motorola Boot Floppy Image from:

http://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.3_Moto_Boot_Disk.floppyimage

This floppy image is an exact duplicate of the installation floppy that ships with NEXTSTEP 3.3 for Motorola.

3.3 Beta Install Drivers Floppy Image

Download the 3.3 Beta Install Drivers Floppy Image from:

http://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/nextstep/floppyimages/3.3_Beta_Drivers.floppyimage

This floppy contains drivers necessary for installing NEXTSTEP for Intel Processors. The drivers are still in Beta, so they are separated from the main Additional Drivers Floppy. It contains the Beta versions of these drivers:

1758_Adaptec_154x_family_and_compatible_Driver_Overview.rtf
1839_EIDE_Driver_Overview.rtf
2129_Bus_Logic_FlashPoint_Driver_Overview.rtf

Readme For rawrite.exe Program

RaWrite 1.3

Disclaimer of Warranty

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Purpose

Write a disk image file to a floppy disk.

Equipment/Software Requirements
---

* PC/XT/AT or 100% compatible with at least 256K of RAM and a floppy disk drive.

* MS-DOS version 3.21 or greater.

* A formatted diskette.

This program uses well-documented generic low-level DOS and BIOS functions. It should run on nearly every PC in existance. PS/2's should be able to run RaWrite but this has not been tested.

CAVEAT

This program will write ANY disk file to a floppy, overwriting any previous information that may have been present. If you wish to re-use a diskette that has been written to by RaWrite then that diskette will probably need to be reformatted; all MS-DOS specific information will have been erased.

Usage

C> RAWRITE

And follow the prompts. All arguments are case-insensitive.

If the source and destination drives are the same, RaWrite will ask the user to swap diskettes as required. Rawrite allocates a large buffer in RAM to reduce the number of disk swaps.

RaWrite may be aborted at any time by typing ^C or CTRL-Break.

Errors

RaWrite attempts to determine if the diskette is a 1.44M, 1.2M, 720K, or 360K diskette by reading sectors 18, 15, and 9 in that order. If the inserted diskette is not one of the these types, then RaWrite will abort with an error message.

Errors such as write protect, door open, bad disk, bad sector, etc. cause a program abort with a short error message.

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NeXTSTEP Text Programming Q&A

Disclaimer

This document pertains to the NeXTSTEP operating system, which is no longer a supported product of Apple Computer. This information is provided only as a convenience to our customers who have not yet upgraded their systems, and may not apply to OPENSTEP, WebObjects, or any other product of Apple Enterprise Software. Some questions in this Q&A document may not apply to version 3.3 or to any other specific version of NeXTSTEP.
This article has been archived and is no longer updated by Apple.

Questions

Q: When should I use **NXLocalString()** and when should I use **NXLocalizedString()** in my code? The localization chapter in /NextLibrary/Documentation/NextDev/Concepts just discusses **NXLocalizedString()**.

A: **NXLocalString()** is an old name, and you should use **NXLocalizedString()** instead. The name **NXLocalString()** is only there for compatibility.

Q: The program **genstrings** complains if **NXRunLocalizedAlertPanel()** contains a constant (like from a #define) instead of a string. This means that we may end up having "OK" defined multiple times in the string table, since most alert panels include an "OK" button. Should I avoid using **NXRunLocalizedAlertPanel()**?

A: **NXRunLocalizedAlertPanel()** will be obsolete in the future, and we strongly recommend that you use **NXRunAlertPanel()** instead. It's true that **genstrings** doesn't eliminate duplicate entries from **NXRunLocalizedAlertPanel()**.

Q: The localization chapter in /NextLibrary/Documentation/NextDev/Concepts suggests using #define to retrieve a string just once. It seems like if we want to avoid extra lookups, we should define a variable, initialize it once to the result of an **NXLocalizedString()**, and then use it where necessary.

A: You are right. If you want to avoid extra lookups, you should define a variable to have the value. For example, you could do the following:

```
const char *fooString = NULL;
#define FOO_STRING (fooString = fooString ? fooString :
NXLocalizedString("Foo", NULL, "Nonsense."))
```

That way, the string will only be looked up if it is needed and will only be looked up at most once. The macro is a convenient way to make sure that the string has been initialized each time you want to use it, especially if you want to use it as an argument.

Q: How big a performance hit do I take for a lookup from a string table? At what size is it worth breaking up a string table into multiple files?

A: Lookups are cheap. It's only worth going to multiple files if you have hundreds of entries, or if you have a large number of entries which are almost never accessed or which are only accessed together such as error conditions or strings for a certain panel like an Inspector Panel.

Q: How can I determine which TextField is being edited, while performing a delegate

method such as textWillEnd: or textDidChange:?

A: All of TextField's delegate methods send the Text object as an argument. You can message this Text object to get *its* delegate, which has been set to the id of the TextField being edited. If you have several TextFields in a Matrix (or a Form) then the Matrix (or the Form) is the delegate of the Text object. In which case you should use the following method calls to get the actual TextField:

```
[[sender delegate] selectedCell];
```

This code also works for individual TextFields, because single Controls return self when asked for selectedCell. We recommend that you use the above code snippet in all cases.

Q: In my application I have overridden the Text object methods:

```
readRichText:atPosition:
writeRichText:forRun:atPosition:emitDefaultRichText.
```

However, no matter what I try, these methods are never called. I have also tried implementing the equivalent delegate methods:

```
textWillReadRichText:stream:atPosition:
textWillWriteRichText:stream:forRun:atPosition:emitDefaultRichText:
```

but I'm not getting anywhere here either. What am I doing wrong?

A: While these methods were implemented under 1.0, they have been obsoleted by replaceSelWithCell: and its associated methods in subsequent releases. Although these methods appear in the header file and the specification sheet for the Text object, they are never called within your application.

Q: How do the Text object margins work?

A: The margins do work, but it's difficult to correctly set them. You need to offset the values by the frame rectangle of the text. The following code snippet illustrates the necessary steps:

```
/* This routine assumes that you have defined currentDocText somewhere else */

#define DESIREDleftMARGIN some int value
#define DESIREDrightMARGIN some int value
#define DESIREDtopMARGIN some int value
#define DESIREDbottomMARGIN some int value

- setMargins:sender
{
NXRect aRect;

/* Get the current frame values */
[currentDocText getFrame:&aRect];
[currentDocText setMarginLeft: NX_X(&aRect) + DESIREDleftMARGIN
right: - NX_X(&aRect) + DESIREDrightMARGIN
top: NX_Y(&aRect) + DESIREDtopMARGIN
bottom: - NX_Y(&aRect) + DESIREDbottomMARGIN]; ];
return self;
}
```

If you call getMarginLeft:right:top:bottom:, the returned values are the same as the ones you provide to setMarginLeft:right:top:bottom:. So, to determine the "true" margins, you need to subtract the frame's dimensions.

Q: How do I get at the list of runs in a Text object, without subclassing the Text class? Once I have them, how do I determine how many of them there are?

A:

```
#import <appkit/Text.h>

@interface Text(Private)
- (int)nRuns;
@end

@implementation Text(Private)
-(int)nRuns
{
return theRuns->chunk.used/sizeof(NXRun);
}
@end

main ()
{
id text = [[Text alloc]
initFrame:NULL text:"Hello there" \\
alignment:NX_LEFTALIGNED];
printf("there are %d runs.\\n", [text nRuns]);
}
```

Q: I'm trying to use the pasteFont: method of the Text object to extract font information from the Font Pasteboard. The trouble is, when I try to do this, I always get the default font information<Helvetica 12pt. What am I doing wrong?

A: The solution is easy but perhaps not obvious. In order for the paste operation to have any effect, the Text object must contain a selection. It is not even strictly necessary that it contain any text. The following code illustrates the ªlow-painº method of extracting font values from the Pasteboard. (The alternative ªhigh-painº method would involve parsing the rich text format from the Pasteboard):

```
#import <appkit/Text.h>
#import <appkit/Font.h>


id font, myText;

/* Allocate a temporary Text object */
myText = [[Text alloc] init];

/* It must allow multiple fonts -- i.e. rich text */
[myText setMonoFont: NO];

/* Stick in some text -- optional */
[myText setText:"hello"];
```

```
/* And select it -- any selection will do so long */
/* as something is selected */
[myText setSel:0 :1];

/* pasteFont: will copy the font info from the Pasteboard
/* to the font in the Text object */
[myText pasteFont:sender];

/* Do what you need to with the font */
font = [myText font];

/* Then free up the Text object */
[myText free];
```

Q: How can you add text to the end of a text object?

A: The trick is to make a zero length selection at the end of the text, and add the new text there. The following code snippet illustrates the necessary steps:

```
/* This routine assumes that you have defined currentDocWindow somewhere else */

- addText:(const char *)newString
{
int length;
id currentDocText;

/* Get the current text document */
currentDocText = [[currentDocWindow contentView]docView];
length = [currentDocText textLength];
[currentDocText setSel:length :length];
[currentDocText replaceSel:newString];

return self;
}
```

Q: How do I append text to a text object, such that the new text makes use of a different font?

A: First of all, make sure that the text object can contain multiple fonts. Send the following message to your text object:

```
id myText;
...
[myText setMonoFont:NO];
...
```

Then, use the following code snippet to append the text, select the text, and change its font:

```
id myText;
int length;

...
length = [myText textLength];
[myText setSel:length:length]; // put an empty selection at the end of the text
[myText replaceSel:"some new text"]; // add some text
[myText setSel:length :[myText textLength]]; // select the newly added text
[myText setSelFont:[Font newFont:"Symbol" size:24.0]]; // change its font
...
```

The above code works in all releases and leaves the text selected.

The following code snippet **will not work** (in Release 1.0 or 2.0) due to the way in which setSelFont:, and replaceSel: interact. (For 3.0 this code snippet works similar to the code above except that the text is not highlighted when completed.)

```
id myText;
int length;

...
length = [myText textLength];
[myText setSel:length:length]; // put an empty selection at the end of the text
[myText setSelFont:[Font newFont:"Symbol" size:24.0]]; // change the font
[myText replaceSel:"some new text"]; // add some text
...
```

For 2.0:
To avoid some of the flashing that may occur to the text object while selecting and modifying the font programmatically, you should perform a **disableDisplay** on the window containing the text object before selecting and modifying the text. After the modifications you should then **reenableDisplay** on the window and **display** the text object.

Q: Why won't my textField become firstResponder? The following code is in my **appDidInit:** method:

```
[[NXApp mainWindow] makeKeyAndOrderFront:self];
[[NXApp mainWindow] makeFirstResponder:myTextField];
```

The I-beam cursor does not appear in myTextField. In the debugger, **makeFirstResponder:** returns the id of the window as it should. And when asked, the window claims that the textField *is* the firstResponder. What's going on?

A: The problem is that **makeFirstResponder:** just sets the firstResponder. It does not modify the selection. You have to explicitly set the selection if you want the cursor to appear in the TextField. The method **selectText:** does the trick<and it calls **makeFirstResponder:** for you. Try using the following code instead:

```
[[NXApp mainWindow] makeKeyAndOrderFront:self];
[myTextField selectText:nil];
```

The same is true of Form objects as well. For Forms you must do the following:

```
[[NXApp mainWindow] makeKeyAndOrderFront:self];
[myForm selectTextAt:0];
```

Q: I am trying to set the background color for my TextField. It seems that the color is being ignored. What is going on? Here is my code, which uses a color well:

```
- setBackgroundColorWithWell:sender
{
[myTextField setBackgroundColor:[sender color]];
[myTextField display];
return self;
}
```

A: You must set shades in both the color model and the gray model separately. The AppKit figures out what type of machine is being used and sets the window depth for the window accordingly.

The model of being able to specify colors and gray separately can be useful; typically you don't want to give a TextField some random color when it is displayed in a monochrome window. For instance, yellow 12 point text on a red background is usually reduced a few pixels when displayed in a 2-bit window. Thus, in most cases you might want a TextField to remain black on white on the monochrome display. Or you might want to just alter the foreground while always keeping the background white. If you do want the gray and color values to track, then you have to set them both, as shown below.

```
- setBackgroundColorWithWell:sender
{
[myTextField setBackgroundColor:[sender color]];
[myTextField setBackgroundGray: NXGrayComponent([sender color])];
[myTextField display];
return self;
}
```

Q: When I use the Action Cell method setAlignment: in conjunction with the Cell method setScrollable:, I experience some inconsistent behavior. If I have called [myTextCell setAlignment:NX_CENTERED] and [myTextCell setScrollable:YES], the display does not update in the cell. However, when the TextFieldCell is sent [myTextCell setScrollable:NO], then the display works fine.

A: The Text Object does not support scrolling for centered or right-justified text. To get proper display, you have to disable scrolling with [myTextCell setScrollable:NO] when using the method setAlignment: with the values NX_CENTERED or NX_RIGHTALIGNED. If your text is left-justified, scrolling will work fine, i.e. you can use[myTextCell setAlignment:NX_LEFTALIGNED] with [myTextCell setScrollable:YES].

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OPENSTEP 4.2 for Mach Patch 1 Overview

This patch is now obsolete. Please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework. This obsolete patch is provided here as a convenience to our customers who have not yet upgraded to the most current patch level.
This article has been archived and is no longer updated by Apple.

About This Patch

This OPENSTEP 4.2 for MachOS patch fixed several problems relating to date processing including a number of problems with processing dates after 1999. This patch is obsolete; please see the OPENSTEP Current Patch List, **TIL article 70033**, for information on the most current patches for OPENSTEP and Enterprise Objects Framework

Installing OPENSTEP 4.2 for Mach Patch 1

1. **Download** the Mach version of the patch from Apple's FTP site at ftp.info.apple.com. The file is located at:

```
/Apple_Support_Area/Apple_Software_Updates/MultiCountry/Enterprise/openstep/patches/4.2Mach_Patch1.pkg.compressed
```

2. Uncompress the Mach package file. Your web browser or FTP client may perform this step for you.

3. Log in as root. If you're not sure how to log in as root, see your system administrator.

4. Double-click on the 4.2_Mach_Patch1.pkg file. Make sure that no OPENSTEP applications are running before you perform this step.

5. Click the Install button in the Installer package window. An Install Package panel will open.

6. Click 'Install' in the Install Package panel and, when prompted for confirmation, **click OK** to proceed. The Installer window displays information about the progress of the installation, which may take several minutes.

Problems Fixed

Corrected in OPENSTEP 4.2 for Mach Patch 1

Four Digit Year Entry with /bin/date
Apple reference # : 2179467

PROBLEM:
Certain dates could not be input using the Unix /bin/date command which shipped with OPENSTEP 4.2.

RESOLUTION:
The /bin/date command now correctly handles 2-, 3-, and 4-digit years for dates in the valid Unix range (1 Jan 1970 - 31 Dec 2037). This patch allows four-digit year entry through /bin/date. In addition, input dates are now checked for validity and out-of-range dates are rejected.

New RCS Package
Apple reference # : 2249097

PROBLEM:
The version of RCS which shipped with OPENSTEP 4.2 did not handle dates after 1999 correctly in some commands.

RESOLUTION:
This patch installs RCS version 5.7, a much more recent version which does not experience this date problem. Please see the RCS documentation for a complete list of new and updated features in this release.

Hardware Clock Setting
Apple reference # : 2253935, 2258123

PROBLEM:
Previously, setting a date after 1999 with /bin/date or with the OPENSTEP Preferences application would cause an illegal value to be stored in the hardware clock of Intel and NeXT-branded Motorola hardware systems. As a result, some systems would show an incorrect year after reboot.

RESOLUTION:
With this patch, the hardware clock is now set correctly for dates after 1999.

Date handling in ftpd

Apple reference # : 2251927

PROBLEM:
The ftp daemon's MDTM command did not handle dates after 1999 correctly.

RESOLUTION:
The ftp daemon has been updated to handle these dates correctly.

tmac Macro Date Handling
Apple reference # : 2256331

PROBLEM:
Previously, default dates generated by the tmac macros used for troff and nroff typesetting were not correct for years after 1999.

RESOLUTION:
The various man, me, and ms macros now generate default dates after 1999 correctly.

Date reporting in atq
Apple reference # : 2258151

PROBLEM:
In OPENSTEP 4.2, the atq command displayed the job date incorrectly for jobs created with the at command after 1999.

RESOLUTION:
The atq command has been modified to correctly represent jobs scheduled from 1970 through 2037.

Job scheduling and execution with at and atrun
Apple reference # : 2263271

PROBLEM:
Under certain circumstances, atrun did not correctly handle jobs scheduled with at after 1999.

RESOLUTION:
The at and atrun commands have been modified to correctly and consistently handle the scheduling and execution of jobs regardless of date.

Date display in /usr/ucb/mail
Apple reference # : 2259253

PROBLEM:
In OPENSTEP 4.2, the Date: header of email messages written by /usr/lib/sendmail used a two-digit year in the creation time. This problem affected email created and read with the /bin/mail and /usr/ucb/mail programs.

RESOLUTION:
sendmail has been modified to write four-digit years in the date header.

ntpd Error Messaging
Apple reference # : 2260775

PROBLEM:
Under OPENSTEP 4.2, the error message returned when an excessive offset was encountered did not report the year correctly for years after 1999.

RESOLUTION:
This error message now reports the year correctly.

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MacRecorder Driver 1.0: Incompatible with Macintosh Portable

I'm trying to use Farallon's MacRecorder with my Macintosh Portable running System Software 6.0.7. The files SoundEdit and HyperSound are working fine.

When I place the MacRecorder Driver in the System Folder and restart, the driver doesn't load (the icon appears with an 'X' through it).

This article has been archived and is no longer updated by Apple.
The MacRecorder Driver 1.0 is not compatible with the Macintosh Portable. Version 1.0.2 is the latest version as of July 1992 and it is compatible with the Macintosh Portable and System 6.0.7.

Farallon has sold the MacRecorder software and hardware to MacroMedia (formerly MacroMind) and they're responsible for supporting the product now.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

Macintosh SE/30: Problems with Ethernet Caused by ADEV

My Macintosh SE/30 is freezing up when I use it as a server and router (using an AppleTalk Internet Router and a Kinetics Ethernet card). Could it be that the 68030 Direct Slot card is interfering with the processor in some way?

This article has been archived and is no longer updated by Apple.
We are not aware of any problems using the Macintosh SE/30 in the configuration you describe. The Macintosh SE/30-AppleShare-Router combination is freezing probably because of a problem with the Ethernet card's ADEV. We suggest you try reinstalling the ADEV and see if that solves the problem.

Published Date: Feb 18, 2012

Macintosh: Where Changes Are Stored When a File Is Edited

For security reasons, I need to know where changes stored during editing of a document. Is there a temporary document created, or are the changes stored in RAM until I save or exit the document?

This article has been archived and is no longer updated by Apple.
How a document stores changes varies depending on the manufacturer. For instance, MacPaint is a "RAM based" program and keeps its "changes" in the application heap space. MacPaint saves changes to disk only when you choose Save, whereas Microsoft Word buffers data to the disk.

Generally, if your program is creating "temp" files, it is writing changes to disk. For instance, with MultiFinder running, launch Microsoft Word and note how it creates a Word Temp file in the System folder. Quit Microsoft Word (saving your document using Save or Save As) and the "Word Temp" file disappears. Not all temp files are visible, and some applications may buffer data to disk without being so obvious.

If you must know if an application buffers user data to disk, ask the manufacturer of your software.

A related issue is the Virtual INIT and Virtual in System 7. By design, both programs buffer data to disk (but you have the option to turn them off).

Published Date: Feb 18, 2012

Solana H Server: Problems with Large Phase 2 Networks

Is there a problem using Solana H-Servers on large multiple-zone AppleTalk Phase 2 networks?

This article has been archived and is no longer updated by Apple.

There is a problem maintaining router tables on very large networks.

Occasionally, several routers can get their battery-backed RAM blown, though they still stay running from 30 minutes to several hours, depending on network traffic. When the routers finally start to go down, you'll begin to see erroneous, duplicated, and scrambled zone names and device names. Then all the routers will stop completely and begin flashing their error indicators.

You can restart the routers, but their routing tables will be scrambled. Each time you try restarting the problem only gets worse. Completely resetting PRAM only temporarily fixes the problem.

Solana has discontinued business to our knowledge, so we are unable to refer you to them directly for further information.

Published Date: Feb 18, 2012

System 7: Workaround for 32-bit Incompatible Boards

Article Change History

08/21/92 - REVIEWED
* For technical accuracy; edited.

If a computer is set to 32-bit mode under System 7 and has a 32-bit incompatible board installed, you get an error chime at startup and a sad Macintosh on the screen, or both. How do you fix the problem?

This article has been archived and is no longer updated by Apple.

To fix this, do the following:

* Remove the incompatible board or boards.

* If you still have your video card installed (assuming it's not the incompatible card), start up from a 6.0.x floppy and you will get a dialog prompting you to change to 24-bit addressing.

- OR -

* If you don't have your video card, start up from your System 7 and reset the Parameter RAM by holding down Command-Option-p-r at start up.

These procedures will reset the addressing to 24-bit mode.

Published Date: Feb 18, 2012

System 7.x: How to Prepare a Network Install Folder

Can the System 7.x Installer that is shipped on a floppy disk or CD ROM do a network install?
This article has been archived and is no longer updated by Apple.
Yes. There is only one version of the Installer and it can be setup to perform a network installation. This same process works for all versions of System 7.

This is how you do it:

1. Create a folder called Net Install on a shared volume.

2. Drag all disk images needed for the installation (all disks except the Disk Tools disk) to the Net Install folder. A folder will be created inside the Net Install folder that corresponds to each diskette.

3. Drag the Installer and the Install script from the Install Me First or Install 1 diskette to the top level of the Net Install folder.

4. The Net Install folder is now prepared for remote users to use for performing system software installations. Once they log into the remote volume, they double click the Installer icon and the installation process will run.

Published Date: Feb 18, 2012

System 7: Unmounting a Disk

How can I unmount a disk (floppy, server, or hard disk) and remove the disk image from the desktop, besides dragging it to the Trash? System 6.0.5 and System 6.0.7 eject a disk and remove its icon from the desktop when I press Option-Command-E.

This does not appear to work with System 7.0. All System 7.0 seems to support is Command-E, so you still have to drag an icon into the trash.

This article has been archived and is no longer updated by Apple.
Command-Option-E does not work in System 7.0. Command-Y has taken over that function.

Select the disk icon and either choose Put Away from the File menu, or use the keyboard equivalent, Command-Y.

Published Date: Feb 18, 2012

Mac OS: Hiding an Application When Switching to Another

Can I switch to another running application and hide the current application in one step?
This article has been archived and is no longer updated by Apple.
Yes you can. While holding down the Option key, select the application you want to switch to by selecting the application from the Application menu. You can also click in any open window of the application you wish to switch to.

Having the Option key held down hides the current application, including any windows open in the Finder, and makes the application you selected active.

This feature is possible with any version of the Mac OS beginning with Mac OS 7.0.

Published Date: Feb 18, 2012

MacTerminal, versions earlier than 2.0: Backspacing

This article has been archived and is no longer updated by Apple.
The host you communicate with using MacTerminal may or may not support the methods of backspacing available to you on the Macintosh. To determine whether the host does recognize methods of backspacing used by the Macintosh, try typing CTRL-H to delete a character, or hit the backspace key (upper right corner of the keyboard) to reposition the cursor without deleting the character. If neither method works, you'll need to consult the host's operating manual.

NOTE: In version 2.0, the backspace and delete keys can be swapped.
Published Date: Feb 18, 2012

System 7: How to See "About the Finder" Window

Article Change History

08/19/92 - RETITLED
* To be more specific.

Where can I find the black-and-white picture with mountains and a moon in the Finder?

This article has been archived and is no longer updated by Apple.

In the Finder, hold down the Option key and choose "About the Finder..." from the Apple menu for the "About the Finder" window from early versions of Macintosh system software.

Hold down both the Option and Command keys while selecting this option, and the cursor displays an amusing shape.

Published Date: Feb 18, 2012

TA45951_ThirdParty_Video_Cards_for_the_Macintosh_Family_(TIL07282).pdf

Third-Party Video Cards for the Macintosh Family

Do you know of any third-party video cards that work with the Macintosh Classic, Macintosh LC, and Macintosh IIsi?

This article has been archived and is no longer updated by Apple.
Lapis Technology manufactures a line of video interface cards, called the DisplayServer series, for the Macintosh family, including the Macintosh Classic, Macintosh LC, and Macintosh IIsi.

RasterOps Corporation also makes a line of video cards for the Macintosh family, including the Macintosh Classic, Macintosh LC, and Macintosh IIsi.

These cards support both Apple and third-party monitors.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

System 7: Correction to Installer Message on Macintosh Plus

This is a notice about an incorrect message given by the System 7 Installer on a Macintosh Plus.

This article has been archived and is no longer updated by Apple.
If customers attempt to install System 7 to floppy disks and choose "Minimal Installation for Macintosh Plus," the Installer screen INCORRECTLY reads as follows:

"This package contains the minimal set of system software for use on the Macintosh Plus. It is intended to create a high-density (FDHD) startup disk that will only be used with the Macintosh Plus."

This statement is incorrect. Aside from the hard drive requirement, users cannot install System 7 to high density floppy disks on a Macintosh Plus because there are no SuperDrives (FDHD 1.44MB) for the Macintosh Plus. The 1.44MB floppy drives are not supported by the Macintosh Plus ROMs.

Refer to the System 7 Installation manual, which states the hardware requirements--including a hard drive--to install System 7.

Published Date: Feb 18, 2012

TA45953_Lisa_Installing_the_Office_System_(TIL00729).pdf

Lisa 7/7: Installing the Office System

This article has been archived and is no longer updated by Apple.

If the system reboots at any time during installation of the Lisa Office System software, make sure the diskettes are not write-protected. The red tab must show through to the front of the micro diskette for the Lisa Office system to use the diskette.

Published Date: Feb 18, 2012

System 7: InterPoll Report of LaserWriter Driver Versions

Article Change History

09/02/92 - REVIEWED
* For technical accuracy; edited.

When I run Inter*Poll, I get blank lines where I should see LaserWriter driver version numbers. What causes this?

This article has been archived and is no longer updated by Apple.

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Inter*Poll 1.0.1 (Apple's network administration software) will get a blank
line for the LaserWriter driver version number from a Macintosh running
System 6.0.x with the System 7 printer driver.

There is no problem viewing System 7 drivers on System 7. The System 6
Responder can't read the System 7 driver resources.
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Published Date: Feb 18, 2012

System 7: Installing EtherTalk Phase 1 under System 7

Article Change History

08/24/92 - REVISED
* To include information from two other articles.

Are networks running AppleTalk Phase 1 still supported under System 7?

If so, how do I install AppleTalk Phase 1 for Ethernet under System 7?
Where is the Phase 1 resource we are to use?

This article has been archived and is no longer updated by Apple.

System 7 automatically installs and supports AppleTalk Phase 2 networking software. If your network consists entirely of LocalTalk, PhoneNet, or TokenTalk (or some combination thereof), this has absolutely no impact on you and you don't need to read any further. Phase 2 software only affects networks that have EtherTalk.

But a Phase 1 EtherTalk driver that works with System 7 is available on the CD that comes as part of the System 7 Group Upgrade Kit. The procedure and software for installing Phase 1 under System 7 are contained on the CD, or on AppleLink.

The reason for this approach is that Apple is migrating the installed base to AppleTalk Phase 2. We want all new System 7 users to automatically have Phase 2 software on their Macintosh computers. However, some people will be installing System 7 on their existing Phase 1 networks, and they will need the Phase 1 EtherTalk driver until they have completed their migration to Phase 2.

The datalink software (EtherTalk and TokenTalk) included and installed with System 7 is Phase 2. However, a network of mixed Phase 1 and Phase 2 drivers can be implemented, provided the network administrator has set up the internet routers with the appropriate migration utility. Migration issues will affect only those networks using EtherTalk datalink software, because no version of TokenTalk predates version 2.0.

Network applications (like AppleShare File Server and Print Server software), system software, and its associated services are Phase independent. They can connect to and use services on any AppleTalk network.

The following is the Read Me file that is found on the Group Upgrade Kit CD:

EtherTalk Phase 1

EtherTalk¿ software allows communication with AppleTalk¿ network services over Ethernet networking interface cards and media. EtherTalk Phase 2 software is part of Macintosh¿ system software version 7.0. This folder contains an earlier version of EtherTalk software, EtherTalk Phase 1.

You only need to install EtherTalk Phase 1 software for users who have Ethernet networking interface hardware and who are connected to a network that has not been upgraded to support AppleTalk Phase 2. AppleTalk Phase 2 transition and upgrade are discussed in the "System 7 Group Upgrade Guide."

To install the EtherTalk Phase 1 software, begin by installing the

EtherTalk software as part of the System 7 installation procedure. Next, drag the EtherTalk icon to the icon of your System Folder (not the open System Folder window). It is automatically placed in the Extensions folder inside the System Folder.

To select the EtherTalk Phase 1 software, open the Control Panels folder, located in the System Folder. Double-click the Network control panel. Finally, select the EtherTalk icon.

Published Date: Feb 18, 2012

A/UX: Sendmail and Domain Name Server (8/94)

How do I get "sendmail" to work under A/UX?

This article has been archived and is no longer updated by Apple.
The version of "sendmail" in A/UX requires your local network to be running with Domain Name Server (DNS), which is /etc/named. The README file in /usr/lib/sendmail.conf directory describes in more detail the type of mailers currently supported.

Choose one of the machines on your network as a primary Domain Name Server
to prevent any host name conflicts. (See the "Setting Up Network Mail" section in the "A/UX Network System Administration" manual on how to do this.)

The distributed sendmail.cf file included with A/UX doesn't work on every network.

After you have a Domain Name Server configured and running properly on the network, execute these commands to get sendmail working:

CD /usr/lib
kill -9 the-running-sendmail-process-id
mv sendmail.cf sendmail.cf.orig
mv sendmail.cf.NEW sendmail.cf
rm -f sendmail.fc # remove the old sendmail frozen file
sendmail -bz # create a new sendmail frozen file
/usr/lib/sendmail -bd -q30m # restart the sendmail

To get all the domain names resolved with the domain name server machine, create a file called /etc/resolv.conf on the machines not running /etc/named.

Here is an example of the content of /etc/resolv.conf:

domain support.apple.com
nameserver 130.43.4.9

Article Change History:
23 Aug 1994 - Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

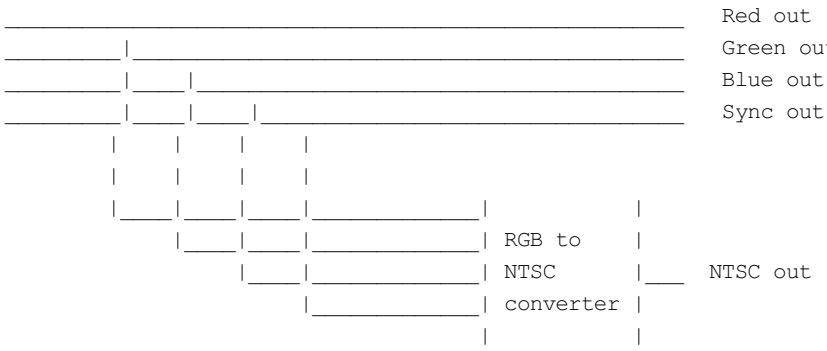
Macintosh: How To Get Simultaneous RGB and NTSC Output

I'm trying to setup my Macintosh so it can simultaneously output an NTSC video signal for cable TV and an RGB signal for an Electrohome projector.

I've been able to do this by tapping the RGB signal from the Macintosh and feeding into a scan converter, but this creates a lot of interrupts on the projector.

I've been looking at NTSC boards, like the one from TrueVision, but these boards don't support simultaneous RGB output. What I need is a single board that outputs both signals.

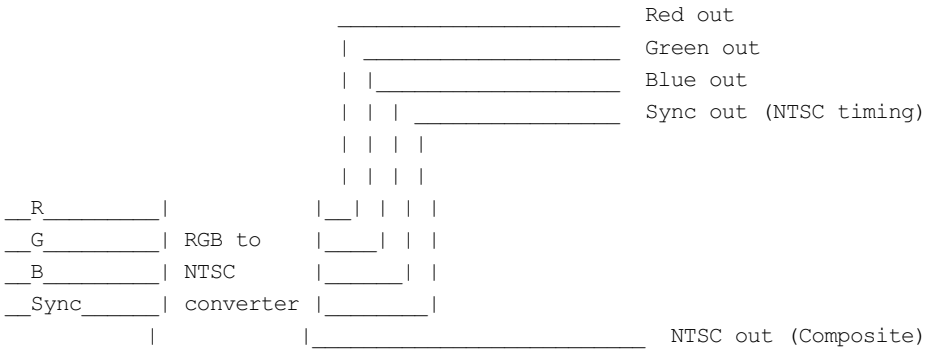
Here's what I've been doing:



This article has been archived and is no longer updated by Apple.
We doubt there is one video card available that provides simultaneous Macintosh-style RGB (synchronization rate of around 31K) and NTSC signals (synchronization rate of around 15K).

However, if your Electrohome projector is a multi-sync RGB monitor that has NTSC sync timing, there are several options available. You can use a TrueVision NuVista card and have its RGB signal timed to the NTSC sync signal. Both the RGB signal and the composite signal are timed to the 15K sync of the NTSC specification. If your Electrohome projector has the ability to sync to NTSC timing, the Macintosh video output can go to the Electrohome as RGB and as composite NTSC for TV devices.

Here's the schematic:



The converters discussed below use this approach to drive both a RGB device and a NTSC device with the same video image simultaneously.

There are several cards that will work. The key is that the video card must be able to produce the NTSC sync timing to drive the converter.

* The NuVista+ (newer) or NuVista (older) with VIDI/O Box

* Several RasterOps video cards with their Video Expander Box

* The Macintosh Display Card 4*8, Macintosh Display Card 8*24, and Macintosh Display Card 8*24 GC with either the VIDI/O or Video Expander

* Any cards listed as compatible with VIDI/O or Video Expander

RGB devices used in this situation must be able to sync to the 15K NTSC timing produced by the video cards.

The TrueVision card has a variety of NuVista+ cables for connecting different products, including BNC, S-Video, composite (RCA style), and so on. The NuVista+ video card is like the VIDI/O Box on the Macintosh NuBus card: the card doesn't need a separate converter box.

Cables for the VIDI/O Box and the Video Expander Box use standard RCA style connectors for composite NTSC, standard S-Video connectors for the S-Video NTSC, and individual BNC connectors for the NTSC RGB. Depending on what you need, standard off-the-shelf cables may work, or you may need to create custom cables.
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TechWorks (Technology Works)

TechWorks (Technology Works)
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Company Profile:
Hardware and Software. TechWorks develops and markets memory modules (SIMMs) and Ethernet cards for the Macintosh as well as the GraceLAN family of network administration and troubleshooting products.
Published Date: Feb 18, 2012

LocalTalk PC Card: LAP Driver (11/94)

Is there a driver for the old LocalTalk PC Card now called the PhoneNetTalk PC Card from Farallon that will give my software raw LAP packets? I don't want a DDP interface like ATALK.SYS. The Clarkson packet driver, "localtlk", doesn't do what I want because it has a packet interface that uses ATALK.SYS and gives IP packets. What I need are raw LAP packets.

This article has been archived and is no longer updated by Apple.
We haven't seen a driver that has LAP level packets, but there is a source of information available that may help. The APDA document, "LocalTalk PC Card and Driver Preliminary Notes" (APDA part number M7055), describes how to write low-level software to control and communicate with the card. The note contains sample code in C and detailed information about programming.

For specifics on other cards, you'll need to contact the manufacturer. We suggest you contact DayStar Digital, Inc. on the LT200, and Sun Select (formerly Sitka Corp.) about the FlashCard. Also contact Farallon for information on the PhoneNetTalk PC Card.

To locate a vendor's address and phone numbers, use vendor name as a search string

Article Change History:
07 Nov 1994 - Reviewed for technical accuracy.
22 Jul 1993 - Updating company names.

Published Date: Feb 18, 2012

Honeywell: Available Terminal Emulation Software

What is the status of Honeywell's PC7800?

This article has been archived and is no longer updated by Apple.

PC7800 is an old product that Honeywell is no longer developing. A much more up-to-date and powerful package is Mac73/78 3.0 from Cambridge Systems. Besides emulating a wide variety of Honeywell terminals, it also can emulate ADDS, DEC, Tektronics, and other terminals.

For more information, search on Cambridge Computer

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TA45961_DAL_Problem_with_Table_Locking_and_RdbVMS_(TIL07298).pdf

DAL: Problem with Table Locking and Rdb/VMS

This article has been archived and is no longer updated by Apple.
Published Date: Feb 18, 2012

Applesoft Internals: Using Applesoft ROM Subroutines (2 of 2)

The following notes, first published in The Apple Orchard (March 1980) are written for experienced 6502 machine language programmers who wish to use the Applesoft ROM subroutines. The addresses given are for an Apple II+ with an Applesoft firmware card, or Applesoft loaded into a Language Card.

Consult your Applesoft Reference manual for more information.
This article has been archived and is no longer updated by Apple.

Miscellaneous Routines

PTRGET DFE3
Read a variable name from CHRGET and find it in memory. On entry TXTPTR points to the first character of the variable name. On exit the address to the value of the variable is in VARPNT and Y,A. If PTRGET can't find a simple variable it creates one. If it can't find an array it creates one dimensioned from 0 to 10 and sets all elements equal to zero.

GETARYPT F7D9
Read a variable name from CHRGET and find it in memory. On entry TXTPTR points to the first character of the variable name. This routine leaves LOWTR pointing to the name of the variable array. If the array can't be found the result is an OUT OF DATA ERROR.

FNDLIN D61A
Searches the program for the line whose number is in LINNUM.
On exit:
C set LOWTR points to the link field of the desired line.
C clear then not found. LOWTR points to the next higher line.

DATA D995
Move TXTPTR to the end of the statement. Looks for the ":" or eol (0).

DATAN D9A3
Calculate the offset in Y from TXTPTR to the next ":" or eol (0).

REMN D9A6
Calculate the offset in Y from TXTPTR to the next eol (0).

ADDON D998
Add Y to TXTPTR.

SCRTCH D64B
The "NEW" command. Clears the program, variables, and stack.

CLEARC D66C
The "CLEAR" command. Clears the variables and stack.

STKINI D683
Clears the stack.

RESTOR D849
Sets the DATA pointer, DATPTR, to the beginning of the program.

STXTPT D697
Set TXTPTR to the beginning of the program.

BLTU D393
Block transfer makes room by moving everything forward.
On entry:
Y,A and HIGHDS = destination of high address + 1
LOWTR = lowest address to be moved
HIGHTR = highest address to be moved + 1

On exit:
LOWTR is unchanged
HIGHTR = LOWTR - $100
HIGHDS = lowest address transfered - $100

REASON D3E3
Makes sure there's enough room in memory for another variable. Checks to be sure that the address Y,A is less than FRETOP. May cause garbage collection. Causes "OUT OF MEMORY ERROR" if there's no room.

GARBAG E484
Move all currently used strings up in memory as far as possible. This maximizes the free memory area for more strings or numeric variables.

CONT D898
Moves OLDTXT and OLDLIN into TXTPTR and CURLIN.

NEWSTT D7D2
Execute a new statement. On entry TXTPTR points to the ":" preceding the statement or the zero at the end of the previous line. Use NEWSTT to restart the program with CONT. THIS ROUTINE DOES NOT RETURN.

RUN D566
Run the program in memory. THIS ROUTINE DOES NOT RETURN.

GOTO D93E
Uses LINGET and FNDLIN to update TXTPTR. GOTO assumes that the 6502 registers and A have been set up by the CHRGET that fetched the first digit.

LET DA46
Uses CHRGET to get address of the variable, "=", evaluate the formula, and store it. On entry TXTPTR points to the first character of the variable name.

High resolution graphics routines

NOTE: Regardless of which screen is being displayed, HPAG (location $E6) determines onto which screen the software draws graphics. ($20 for HGR, $40 for HGR2)

HGR2 F3D8
Initialize and clear page 2 High-Res.

HGR F3E2
Initialize and clear page 1 High-Res.

HCLR F3F2
Clear the current High-Res screen to black.

BKGND F3F6
Clear the current High-Res screen to last plotted color.

HPOSN F411
Positions the High-Res cursor without plotting. HPAG determines which page the cursor is pointed at.
On entry:
Horizontal = Y,X
Vertical = A

HPLOT F457
Call HPOSN then try to plot a dot at the High-Res cursor's position. The dot may not be plotted if plotting non-white at a complementary color X coordinate.

HLIN F53A
Draws a line from the last plotted point or line destination to the coordinate in the 6502 registers.
On entry:
Horizontal = X,A
Vertical = Y

HFIND F5CB
Convert the High-Res cursor's position to X-Y coordinates. HFIND allows the user to tell where on the screen the a shape table left the cursor.
On exit:
$E0 = horizontal lsb
$E1 = horizontal msb
$E2 = vertical

DRAW F601
Draw the shape pointed to by Y,X using the current HCOLOR starting at the current High-Res cursor position. On entry A = rotation factor.

XDRAW F65D
Draw the shape pointed to by Y,X by starting at the current High-Res cursor position inverting the existing color of the dots the shape draws over. On entry A = rotation factor.

SETHCOL F6EC
Set the High-Res color to X. X must be less than 8.

SHLOAD F775
Loads a shape table into memory from tape above MEMSIZ (HIMEM) and sets the pointer at $E8.

Error Processor Routines

ERROR D412
Checks ERRFLG and jumps to HNDLERR if ONERR is active. Otherwise it prints <cr> "?" <error message pointed to by X> "ERROR". If this is during program execution then it also prints" IN " and the CURLIN.

HANDLERR F2E9
Saves CURLIN in ERRLIN, TXTPTR in ERRPOS, X in ERRNUM, and REMSTK in ERRSTK. X contains the error code. See the Applesoft Reference Manual page 136 for the value of X for a given error.

RESUME F317
Restores CURLIN from ERRLIN and TXTPTR from ERRPOS and transfers ERRSTK into the 6502 stack pointer.

ISCNTC D858
Checks the Apple keyboard for a CTRL-C ($83). Executes the BREAK routine if there is a CTRL-C.

CHKNUM DD6A
Make sure FAC is numeric. See CHKVAL.

CHKSTR DD6C
Make sure FAC is a string. See CHKVAL.

CHKVAL DD6D
Takes the result of the most recent FAC operation and check this result for a string or numeric variable. A TYPE MISMATCH ERROR results if FAC and C don't agree.
On entry:
C set checks for strings
C clear checks for numerics.

ERRDIR E306
Causes ILLEGAL DIRECT ERROR if the program isn't running. X is modified.

ISLETC E07D
Checks A for an ASCII letter ("A" to "Z"). On exit C set if A is a letter.

PARCHK DEB2
Checks for "(", evaluates a formula, and checks for ")". Uses CHKOPN and FRMEVL then falls into CHKCLS.

CHKCLS DEB8
Checks at TXTPTR for ")". Uses SYNCHR.

CHKOPN DEBB
Checks at TXTPTR for "(". Uses SYNCHR.

CHKCOM DEBE
Checks at TXTPTR for ",". Uses SYNCHR.

SYNCHR DECO
Checks at TXTPTR for the character in A. TXTPTR is not modified. Normally exits through CHRGET. Exits with SYNTAX ERROR if they don't match.

TA45962_Applesoft_Internals_Using_Applesoft_ROM_Subroutines_of_.pdf

Published Date: Feb 18, 2012

Lisa 7/7: Form feeds during printing

This article has been archived and is no longer updated by Apple.

If the Lisa 7/7 document you wish to print is less than 1/2" from the top of the page, the Lisa will send a form feed to the printer and begin printing the document on the next page of paper. This feature replaces the dialog box in version 2.0 stating that "the paper is about to be rolled back, lift the bail...". We made this change so that Lisa 7/7 software would be able to support queued printing, which should be able to run unattended.

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Macintosh Portable: RAM Upgrade Card Issues

1) Can I use a PDS Memory Card with a third-party RAM Slot memory card? The information available in the TIL suggests that the Apple Memory Card should be removed if a PDS Memory Card is in use. If third-party cards will work, which ones do you recommend? Can you be more specific regarding the problem with the memory decode chip?

2) The Pseudo Static RAM cards are not compatible with older versions of the Macintosh Portable. Is this because of different pinouts on the new logic board or because of Pseudo Static RAM?

3) With an upgraded Macintosh Portable, will both the RAM slot and PDS memory cards work? Will Pseudo Static memory work in the upgraded system?

4) What is the maximum amount of RAM that is supported in the Macintosh Portable's RAM slot?

This article has been archived and is no longer updated by Apple.

1) PDS memory cards are compatible with third-party RAM Slot memory cards. PDS cards do not use the Apple Memory Decode Chip, so there are no compatibility problems. Any third-party card designed for the new Macintosh Portable should work. Contact the card's manufacturer for compatibility information before buying.

The only memory card affected by the memory decode chip problem is Apple's. When an Apple 1MB or 3MB PSRAM Memory Board is installed, you cannot use the PDS for RAM expansion. The Apple card will try to decode memory accesses above the 4MB boundary.

2) The pseudo static RAM of the upgraded Macintosh Portable requires a refresh line. SRAM cards designed for the original Macintosh Portable will not work with the new Macintosh Portable.

3) The Backlit Upgrade consists of a new bezel (including display) and a card that goes into the ROM slot that powers the backlit display. PDS cards and RAM from the original system will work in the upgraded system.

4) For the new Macintosh Portable, the RAM slot can support up to 3MB of PSRAM, with 1MB soldered on to the main logic board. The PDS card can support up to 7MB of RAM (provided the Apple Memory Card is not used) making for a grand total of 8MB for the system.

Published Date: Feb 18, 2012

Macintosh Processor Upgrade Card: Read Me

This article contains the Read Me file for the Macintosh Processor Upgrade Card.

This article has been archived and is no longer updated by Apple.

Important Information About Your Macintosh Processor Upgrade Card

Congratulations on purchasing a Macintosh Processor Upgrade Card. The information in this document adds to and updates the information in your Macintosh Processor Upgrade Card User's Guide and the manuals that came with your computer. Read the tips below as well as your manuals to take full advantage of the increased speed and new capabilities your computer will have after you install the Macintosh Processor Upgrade Card.

Using the Processor Upgrade Card

Once you turn on the Processor Upgrade Card, the 601 Processor Upgrade Enabler file must remain on your hard disk (it is installed on your hard disk with the upgrade card software). This file is also on the Install Me First and the Disk Tools disks that came with the upgrade card, and you can start the computer with either of those disks. If your computer will not start up, follow the instructions on reinstalling system software in the Macintosh Processor Upgrade Card User's Guide.

To turn the Processor Upgrade Card on and off, choose Control Panels from the Apple menu and double-click the 601 Processor Upgrade control panel icon to open it. Click Off to turn the card off and use the 040 processor that originally came with your Macintosh. Click On to turn the card on and use the 601 (PowerPC) processor. You must restart your computer for the change to take effect.

Memory requirements for animation

When the Processor Upgrade card is turned on, you may experience problems when watching computer animation. Increasing the amount of memory assigned to the program may help. To increase the program's memory, click the program's icon (in the Finder) to select it, and choose Get Info from the File menu. Type a bigger number in the Preferred size box.

You can also try running the animation with the card turned off, or installing more memory (RAM).

Using CloseView and the Apple Video Player

If you have a Macintosh LC630 or Quadra 630 with a Video In or TV Tuner card installed: CloseView does not work with the Apple Video Player program. To view video or TV with Apple Video Player, turn off CloseView with the CloseView control panel or by typing Command-Option-O.

Using CPU Energy Saver

If you have a Macintosh LC575: CPU Energy Saver is not compatible with the Macintosh LC575. CPU Energy Saver is located in the Apple Extras folder. Do not install this file into your System Folder because it may cause your computer to function improperly.

Using Custom Install to install the upgrade card software

Apple recommends that you use Easy Install to install the upgrade card software. If you choose Custom Install instead, some items may be installed that are incompatible with the upgrade card. Two such items are described below.

Assistant Toolbox Extension: If you have problems printing to the LaserWriter Select 310 with the Macintosh Processor Upgrade Card turned on, check for a file called Assistant Toolbox Extension in your Extensions folder (in the System Folder).Throw away this file and restart your Macintosh, then try printing again.

AutoRemounter: If you notice slower performance over a network, check in the Control Panels folder for a file named AutoRemounter. Throw away this file and restart your Macintosh.

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Published Date: Feb 18, 2012

Final Cut Pro 1.0: Using Color in the Text Tool

I am using the Titling feature and would like to have each letter in the same word a different color. I am unable to do this. Are there any workarounds?
This article has been archived and is no longer updated by Apple.
The text tool, defined as an effects generator, uses global parameters.

One parameter is allowed for each element. An element can be a word, sentence, or even a letter. Several elements (letters) can be formed together as a word to produce a multi-color word. Using multiple elements to form a word also allows the use of Key Frames to change characteristics over time. With this feature, one can create such eye-catching effects as movement, orientation, perspective, and more.

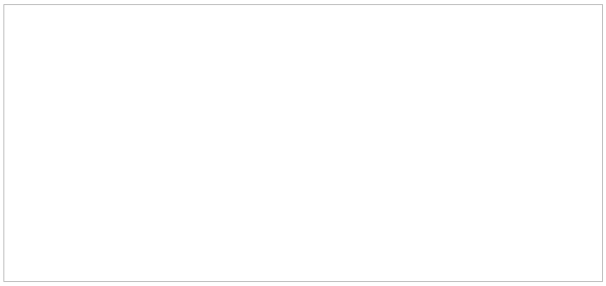
Final Cut Pro also supports Photoshop layers, which can be "flown" around a path to create motion - adding extra dynamics to a scene. In this scenario, the letters of a word could be broken up among several layers in Photoshop, then imported into Final Cut Pro to be animated.

Final Cut Pro includes the FX Builder. Using this powerful scripting tool, effects can be modified or written that support any number of parameter adjustments.

Published Date: Feb 18, 2012

Sherlock: Error When "All Search Sites" Selected

When I perform a search of the Internet, using Sherlock with all "Search Sites" enabled, I encounter difficulties.
This article has been archived and is no longer updated by Apple.
Sometimes while attempting to use Sherlock to search the Internet after turning all search sites On, your Macintosh may freeze, or you may encounter this error message:



This is probably a case of Sherlock's memory partition being too small, as the default is set at 1,024k (1 MB).

The default memory partition should be adequate for the default search sites, but if you need to search a lot of sites and expect to get many hits (300-plus), increase the memory partition in Sherlock to 2 MB by following these steps:

- Inside the System Folder, find the Apple Menu Items folder.
- Locate the Sherlock icon and select it.
- Choose Get Info from the File menu.
- Use the Show: dropdown menu to select Memory.
- In the Memory Requirements section, enter 2048 (kBytes, or 2 MB) in the Preferred Size: box.
- Close Sherlock's Info using the close box in the upper-left corner.

Published Date: Feb 18, 2012

Mac OS X Server 1.2: Quicktime Streaming Server Remote Admin Capabilities

How can I view current status and administer a QuickTime Streaming Server remotely?
This article has been archived and is no longer updated by Apple.
Note: Any reference in this article to Mac OS X Server pertains to version 1.2, which was released prior to May 2001.

You can display the QTSS server status and stats via HTTP by following these steps:

1. In NetInfoManager, locate the settings for QuickTime Streaming Server.
2. Locate the property named:

web_stats_url:

3. Give this property a value such as "privatestats" (or whatever you prefer).
4. Stop and restart the QuickTime Streaming Server.

This enables real-time status and stats to be viewed via HTTP. From a web browser (such as Microsoft Internet Explorer or Netscape Navigator), use the following URL to access this information:

```
http://yourserver.ip.com:554/privatestats
```

(substitute the IP or DNS name for "yourserver.ip.com")

To administer the QuickTime Streaming Server remotely, you can use "niutil" from a telnet session as root. For example, use the following command to replace steps 1-3, above:

niutil -createprop . /services/QuickTimeStreamingServer
web_stats_url privatestats

(this is one-long line, press [RETURN] at the end of "privatestats")

For further information on niutil, consult the man pages via the command 'man niutil'
Published Date: Feb 18, 2012

MacX: Default Color Map Is Macintosh System Palette

Article Change History

04/21/93 - UPDATED
* To include MacX 1.2 information.

When trying to plot a color bar of 256 colors, MacX shows me a full range of colors on the left side of my screen (colors 0 through 128, or so), but shows only a solid color on the right (colors 128 to 256). When printing to a Tektronix color printer, the screen dump routine returns a mirror message "130 colors found". This occurs in both rooted and rootless windows.

The color bar is complete (256 colors) on both the screen and printer when running White Pine's Exodus II and matches the color table of the host.

Why isn't MacX displaying all the colors?

This article has been archived and is no longer updated by Apple.
There are many X client applications that use the standard or default X color map. MacX uses the standard Macintosh System palette as the default color map (which it should), though this can lead to the situation you describe. The System palette has 128 colors locked in and no additional colors specified.

If you, using the X client application, request a new color map from MacX, you should get all 256 colors.

In MacX 1.2 loading the standard color map is an option in the display preferences dialog.

Published Date: Feb 18, 2012

Microsoft Works: 32-bit clean version for A/UX, System 7

Double-clicking on Microsoft Works 2.0, running under A/UX 2.0.1, causes the menu bar to appear momentarily, then closes and returns to MultiFinder.

This article has been archived and is no longer updated by Apple.

You should updated to Microsoft Works 3.0, a 32-bit clean version.

Published Date: Feb 18, 2012

AppleShare: A/UX Users Take About Two Minutes to Disconnect

On a network with many workstations running A/UX, I log in to our AppleShare server, do some work, and log off. The window on the server indicates that I'm still logged in. This problem doesn't happen with identical workstation running under Macintosh System 6.0.7.

This article has been archived and is no longer updated by Apple.

This problem happens under both A/UX 2.0 and 2.0.1. User's names are not IMMEDIATELY disconnected from the Connection User List in AppleShare, but they will disappear after about two minutes from log off of an A/UX workstation.

Published Date: Feb 18, 2012

TA45974_AUX_AppleTalk_Phase_Node_Identifier__(TIL07305).pdf

A/UX: AppleTalk Phase 2 Node Identifier (6/93)

What is required for the Phase 2 Node Identifier program to report an A/UX machine as Phase 2?

This article has been archived and is no longer updated by Apple.
The AppleTalk Phase 2 Node Identifier uses the version of the AppleTalk drivers to determine AppleTalk Phase 2 compatibility. A/UX 3.x requires AppleTalk version 57 or later to show up as AppleTalk Phase 2.

Article Change History:
17 Jun 1993 - Updated and Revised to bring article up-to-date with A/UX 3.x.

Published Date: Feb 18, 2012

MacX: Using with Motorola X Clients

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

I'm trying to have session using MacX 1.1 and MacTCP Tool 1.1 with a:
* Motorola 8640
* UNIX SVR3.2
* X11R3

My MacX application opens fine, but when I try to execute any X sessions, I get the error message:

The remote command "xclock" could not be executed using the tool "MacTCP Tool". Creation of the remote stream failed. The connection came up halfway then failed."

?sers can create a X session on the Motorola box and send it to the MacX screen via the 'setenv' command. However, the session executed and sent to the Macintosh doesn't fit on a less than 19-inch Macintosh monitor.

What configurations does the Motorola box need:
* via /usr/etc/n.rexecd?
* via /etc/hosts.equiv?

Are there compatibility issues running a MacX X11R4 server against an X11R3 client?

This article has been archived and is no longer updated by Apple.
This scenario sounds familiar. Your problem is most likely with the remote host, the "rexecd" service not functioning properly, or some restriction while executing the "rexecd" command.

We knew this was happening on some of Sun's systems. Sun implemented a "feature" in their "rexecd" code that doesn't allow a host (that isn't listed in the /etc/hosts file) to execute the "rexecd" command. The solution is to add the Macintosh IP address and host name to the Sun's /etc/hosts file.

If /etc/hosts file is not the issue, check to see if the "rexecd" service is available. Usually, the Internet Server database is kept in the /etc/servers file, in A/UX for example, an entry would look something like this:
exec TCP /usr/etc/in.rexecd

and the official Internet Service name database is kept in the /etc/services file, an entry in A/UX for example looks something like:

exec 512/TCP

The "rexecd" daemon uses a TCP protocol and listens on port number 512.

Regarding the Macintosh monitor problem, what was the X client's "geometry" specification on the command line? This display problem can happen if the "geometry" is specified to be larger than the display size of the MacX. If no "geometry" is specified, the default geometry is taken from the

application. Try to specify the "geometry" within the size of the MacX display.

We don't think there is a compatibility issue for a MacX 11R4 server running against an X11R3 client.

Published Date: Feb 18, 2012

AppleShare PC: 7.0 LaserWriter Driver Not Required

Do AppleShare PC users need to use the 7.0 LaserWriter driver? Is this a question that should be addressed to Farallon?

This article has been archived and is no longer updated by Apple.
AppleShare PC has no need for the 7.0 LaserWriter driver or its prep information (also called Laser Prep, md, or Macintosh Dictionary).

When AppleShare PC prints to a LaserWriter, it uses one of two methods, depending on how it's connected. If it's set up for Epson LQ-2500 emulation, an emulation dictionary downloads with each job. This doesn't interfere with md (if it is present) and is purged at the end of the job.

If AppleShare PC is set up for PostScript printing, no dictionaries download at all. Only data made by the MS-DOS application are used. These data pass directly to the LaserWriter without changes. These data can cause problems depending on the application's print driver requirements. We haven't yet done any testing yet but don't expect any compatibility problems.

Published Date: Feb 18, 2012

Personal LaserWriter NT: "setprintername" Character Restrictions

Using a Personal LaserWriter NT, I am trying to change the network name and type of the printer. To do this, I'm using the PostScript code:

```
-----
%!
serverdict begin 0 exitserver
statusdict begin
(Print Station:CuccaPS) setprintername
end
-----
```

This code works fine for the LaserWriter Plus and LaserWriter IINT, but not the Personal LaserWriter NT. Can the Personal LaserWriter NT change its network type?

This article has been archived and is no longer updated by Apple.
The PostScript setprintername operator was not designed for changing the LaserWriter's type. The operator should not allow any of these characters as valid string components:

: @ * = ┼

While these characters may not always cause errors on older LaserWriters, they do cause unusual behavior with the Personal LaserWriter NT. They are invalid characters because they are field separators and wildcards, as defined by the AppleTalk Name Binding Protocol (NBP).

The format of an NBP entity name (such as a LaserWriter's Printer Access Protocol server) is:

object:type@zone or Etch A Sketch:LaserWriter@Bandley3

If the ":" character were part of a LaserWriter's name, software attempting to address the LaserWriter would become confused and not know where the object's name leaves off or the type begins.

With the Personal LaserWriter NT, the setprintername operator is only able to change the object name. This forces the entire string into the object entry. Because the ":" character is invalid, the product operator must be used to obtain a valid AppleTalk name.

The LaserWriter Namer utility (shipped with each LaserWriter) prevents users from defining names with invalid characters. But not all PostScript interpreters enforce this restriction properly.

Published Date: Feb 18, 2012

Hayes InterBridge: Limits

It appears that my Hayes InterBridges can't handle lots of zones with long zone names. The InterBridges only process one packet per reply for zone information. People on the other side of the Hayes InterBridges can see only 150 zones out of 183.

This article has been archived and is no longer updated by Apple.

The 150 zone limit you've discovered is a characteristic of Hayes Phase 1 InterBridges.

	Phase 1	Phase 2
Maximum number of zones	150	250
Maximum number of networks	300	500
Current ROM version of InterBridge	1.12	2.10

Long zone names are not a problem with Hayes InterBridges as they will support zone names of any length.

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A/UX 2.0: Toolbox Shutdown Manager Routines Correction

Using A/UX 2.0, I want to run a self-written program as a stand-alone application without the Finder. When I change the "mac32" startup script to "/mac/bin/startup -f ApplicationName &" things work fine except for the logout. Because the 'ExitToShell' procedure doesn't do a logout, I tried using the Shutdown Manager routines.

The "A/UX Toolbox: Macintosh ROM Interface" documentation mentions that the A/UX Toolbox routines 'ShutDwnPower' and 'ShutDwnStart' do an exit to the user's login shell. I've tried using both routines, but they work just like normal Macintosh Toolbox routines (in other word, they shutdown and restart the machine).

This article has been archived and is no longer updated by Apple.

First of all, one minor correction: /mac/bin/startup SHOULD BE either /mac/bin/startmac or /mac/bin/startmac24

The "ShutDwnPower" and "ShutDwnStart" routines documented in the "A/UX Toolbox: Macintosh ROM Interface" are WRONG! The routines behave the same as Mac OS Shutdown Manager routines (shutdown and restart).

To Logout from user's login shell, use the AUXDispatch() trap with the A/UX_LOGOUT selector. All definitions for the AUXDispatch trap are specified in the header file /usr/include/mac/aux.h.

For more detailed information about AUXDispatch trap, please refer to page 3-15 on "A/UX Toolbox: Macintosh ROM Interface" documentation.

Published Date: Feb 18, 2012

SuperPaint: How To Use with 32-Bit QuickDraw

Can SuperPaint 2.0 work with 32-Bit QuickDraw?

This article has been archived and is no longer updated by Apple.
Follow these steps when using SuperPaint 2.0 with 32-bit QuickDraw:

1) Before launching SuperPaint, Go to the Monitors CDEV.

2) Set to four colors or grays.

3) Close the CDEV.

4) Launch SuperPaint.

5) Select the Preferences menu.

6) Turn on the preference "Use QuickDraw only for screen rendering".

7) Quit SuperPaint.

8) Go to the Monitors CDEV.

9) Set to the preferred color/gray level.

Published Date: Feb 18, 2012

DECnet: Tunneling and Network Traffic

Using PATHWORKS and DECnet tunnels, I am trying to set up a 23-location WAN. I have a star and a central VAX at the home office. I'm going to use existing 9.6Kb DECnet links because I expect to do night time downloads only.

1) What would the RTMP traffic look like over the DECnet links assuming I have around five routers in the home office? Do the half routers on each VAX exchange routing table information?

2) Is there internal tunnel maintenance traffic outside of the standard AppleTalk traffic?

3) Anything else to look at?

This article has been archived and is no longer updated by Apple.

1) With DECnet Tunneling, each VAX on each side of the tunnel is an AppleTalk half-router for routing AppleTalk traffic over DECnet. Since AppleTalk for VMS version 3.0 is a full implementation of AppleTalk Phase 2 protocol stack on VAX/VMS, the RTMP traffic will be similar to any other AppleTalk network. And because half-routers are logically a full router, they periodically broadcast and receive RTMP Data packets to and from all other routers on its directly connected networks, backbones, or the DECnet links.

2) Within the Tunnel traffic, there should not be any other traffic besides the standard AppleTalk traffic. The Tunnel is made up of DECnet logical links, so it needs all the DECnet maintenance traffic (such as circuit hello and listen traffic) to be maintained.

3) With AppleTalk for VMS 3.0, we strongly recommend that your wide-area link is at least 56KB or higher. Though you don't expect a high traffic load, we are not clear on how you will do the night time download. If your network has any delay longer than two minutes, you might have problems with AppleShare. If the ASP session timer of two minutes expires, the session terminates and you lose the server connection.

Another problem may be with NBP lookup. Users might not see the file server when opening the Chooser and selecting the AppleShare icon. Some sites have to change a resource, called GNRL, to increase the Chooser interval timer and retry timer values. You can find a complete description of these two problems in the Tech Info Library on AppleLink. Search using keywords "AppleTalk and Wide and Area".

The other thing to look into is the capability of the central VAX since it serves as a single-point hub to the other 23 nodes. Does it have enough power to provide satisfactory performance?

Since you already have DECnet links, we suggest bringing up one tunnel at a time and stress test it with typical file download. Keep adding tunnels to see if performance remains acceptable. You might find that, at some point, you will want to add resources to the central VAX and/or increase the speed of the communications link.

Published Date: Feb 18, 2012

Macintosh System 6.0.x: Don‘t Begin File Name with Period

Using System Software 6.0.7, I create a file and name it ".temp". If I select the file and try to duplicate it with the Finder "Duplicate File" command, it won't. The screen blinks then comes back. If I keep trying to duplicate the file, the Finder bombs.

This article has been archived and is no longer updated by Apple.
Apple is aware of this problem, which has to do with a patch to the "Open" trap for the Slot Manager. The Slot Manager assumes that all attempts to open a file that has a period ('.') as the first character in its name is a driver for a NuBus card.

This will always be a problem with System Software 6.0.x-based Macintosh systems. There are no workarounds that we are aware of except not using a period as the first character in a file name.

System Software 7.0 has a call that prevents this problem from happening. The call that causes the problem is "FSOpen". The new call is "OpenDF" and will be documented in Inside Macintosh Volume VI. The difference between the two calls is that FSOpen can open both files and devices; OpenDF can only open files.

This problem will still happen in System 7.0 if the old call is used. This will be the case with all existing applications and possibly new applications for System 7.0 specifically. Both calls will work under System 7.0. We recommend that developers use the new calls for their System 7.0 applications.

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A/UX: How to Assign Function Keys in X11

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How do I change the mapping of the keyboard in X11 under A/UX? I want to assign "esc-a" and "esc-d" to the function keys of the extended keyboard, because these keystrokes are cursor movements in the X client application instead of arrow keys.

This article has been archived and is no longer updated by Apple.
The command "xmodmap" let's you see the current mapping of your keys. You can also use this command to modify the mapping of various keys on the keyboard.

To obtain a display of your current settings, enter the command:

xmodmap -pk

There is a man page for xmodmap that gives you the information necessary for mapping the keys.

Published Date: Feb 18, 2012

DAL: MVS Server Questions

I have a few questions about DAL for MVS specifically relating to the MVS/TSO DAL Server:

1) What is the overhead of DAL on the Host, both disk blocks (space) and memory while running?

2) In what form or where does the Server run on the IBM Host?

3) How does DAL deal with security packages such as ACF2?

4) I'm using EDS Net to navigate through the network to the host. How do I configure a DAL application, such as one of the Query packages, to navigate through the EDS network parameters?
This article has been archived and is no longer updated by Apple.
1) To install and use DAL, you need:

* Any release of MVS that supports DB2 Version Release 3 or higher

* 52 tracks of available space on a 3380

* TSO logins with at least 2048K of memory

* Either the DB2 DSNLOAD library allocated to native TSO or these modules copied to the load library containing the DAL load modules:

* DSNACAB
* DSNACAF
* DSNALI
* DSNHLI2
* DSN3ID00.

* Appropriate hardware and software for the supported network connection.

Keep in mind that large database queries can create temporary datasets on disk, but they are erased after the query is complete.

2) DAL will run in the users TSO address space. Each user needs a TSO id.

3) We have a number of customers using DAL that have ACF2 on their systems and they coexist without any problems. ACF2 has to be set up to support the RACROUTE call. This call is standard so it is likely that the customer's ACF2 is already set up to support it.

4) We don't know how to configure DAL to work within these parameters. If EDS Net doesn't support Macintosh-to-host using one of the connections listed below, DAL probably won't work in that environment:

* Apple Coax/Twinax Card connection using Apple MacDFT.
* Apple TokenTalk Card NB connection using Apple MacDFT
* Apple Serial NB Card connection using Apple MacDFT.
* Netway 1000/2000 connection.
* Avatar MacMainFrame connection.
* DCA MacIrma connection.
* SNA*ps 3270 Gateway connection.
* Asynchronous dial-in to a protocol converter (as long as the protocol converter accepts VT100 terminal type input).

Published Date: Feb 18, 2012

DAL: How It Checks Communication Lines for Errors

I'm using a Macintosh DAL client to have sessions with a DAL server running on a VAX (asynchronous) and an IBM 3090 with a 3270 card. Does DAL implement an error free data link on top of the communications channel so that glitches in the data flow do not effect the results of a query?

This article has been archived and is no longer updated by Apple.

Data Access Language does not add error checking on top of the transport data link. That would produce unnecessary overhead. Instead, DAL uses the error checking provided by the transport methods. On asynchronous lines, it can specify parity, databits, stop bits, flow control, packet length, modem timeout, and dial attempts.

For AppleTalk connections, DAL relies on ADSP to handle errors, and for 3270 connections, DAL uses the 3270 display station protocol (LU2) or the APPC (LU6.2) protocol.

Published Date: Feb 18, 2012

MacX: "Bad STARTFONT" Statement Error Caused by Lower Case Type

Article Change History

04/20/93 - REVIEWED
* For technical accuracy.

I cannot seem to get MacX 1.0.1 to compile BDF fonts properly. MacX keeps converting the fonts into 0 byte files and complains about a "Bad STARTFONT statement".

This article has been archived and is no longer updated by Apple.
We tried compiling one of the sample BDF files under MacX 1.0.1 without any problems. The first line in the BDF file must be ALL UPPER CASE, such as "STARTFONT 2.1". Otherwise, you will get the "Bad STARTFONT statement" message.

Published Date: Feb 18, 2012

A/UX: Correction to "A/UX Programming Language and Tools" Manual

I've noticed an error in the A/UX Programming Language and Tools, Vol. 2, chapter 25, page 5, section 13. The sample doesn't work at all, and there is a bug in the first and third line.

For example, try this source code (test.c):

```
char *_Version_ =
"(c) Copyright 1986\\
Standard Software Version V.2.1";
main
{
printf ("hello world\\n");
}
```

compile it with: cc test.c
then get the version number with : version a.out
but no version number is available

Who can explain to me how to correctly use the 'version' utility, that is, how to create a string variable to be used by version utility?

This article has been archived and is no longer updated by Apple.
First of all, the example in the "A/UX Programming Language and Tools. Vol. 2, Chapter 25, Section 13, page 5" is INCORRECT. The same is also true for volume one of the manual.

The version program attempted to look for a string of the following form:

{Apple version RELEASE.LEVEL YY/MM/DD HH:MM:SS}

where the capitalized words(RELEASE, LEVEL, YY, MM, DD, HH, MM, SS) are matched by numbers. Both RELEASE and LEVEL numbers can be up to 8 digits in length, the rest (YY, MM, DD, HH, MM, and SS) must be EXACTLY 2 digits. Both "{" and "}" symbols, and "Apple version" words are also required to match. Only one SPACE is allowed before words RELEASE, YY, and HH.

If the defined character string for version does not meet any of the above matching criteria, the 'version' program will display "no version number found".

The above character string, for example, should be changed to:

```
char *_Version_ =
"(c) Copyright 1986\\
{Apple version 2.1 86/09/12 18:05:24}";
```

This has been fixed in the A/UX 3.0 documentation.

Published Date: Feb 18, 2012

TA45988_LisaProject_Largest_Integer_(TIL00732).pdf

LisaProject 3.0: Largest Integer

This article has been archived and is no longer updated by Apple.
In LisaProject, entered or calculated integers greater than 2,147,483,646 will be stored incorrectly--most likely as a negative number. Consider using multiples of hundreds or thousands of dollars whenever you suspect the cost of your project might exceed 2 billion.
Published Date: Feb 18, 2012

A/UX: Using A/UX as a Print Spooler (8/94)

I'm running A/UX on an Macintosh IIfx. I'm using "lpr" to print to a LocalTalk LaserWriter. I also have HP/Apollo workstations on the same Ethernet. I want to print to the LaserWriter from the HP. My file goes to the A/UX spool folder, but needs to be printed by A/UX. How do I print directly to the LaserWriter from another IP node?

This article has been archived and is no longer updated by Apple.
For the HP (or any other IP node) to print to a LaserWriter connected to the A/UX box, you have to edit the /etc/printcap file of the remote system to reflect the A/UX system. It should have an entry like this:

```
remote:\\
:lp=:\\
:rm=a/ux.hostname:\\
:rp=lp:\\
:sd=/usr/spool/remote:
```

The above entry brakes down as:

Line 1: Name by which the HP calls the A/UX system's printer

Line 2: Local printer designation

Line 3: Remote host name. This must also be in the host config file (/etc/hosts or equiv)

Line 4: Name of printer on the A/UX system. By default, this will be lp for a Chooser selected printer.

Line 5: Spool directory. This is a directory where remote print jobs will be spooled. Instructions on how to set this up follow.

To create the spool directory, do this:

```
(1) mkdir /usr/spool/remote
chmod 755 /usr/spool/remote
chgrp daemon /usr/spool/remote
chown daemon /usr/spool/remote
CD /usr/spool/remote
mknod pipe p
chmod 660 pipe
```

(2) Next, verify the /etc/hosts file on the HP that contains an entry which allows access to the A/UX system. It should look like:

```
134.66.20.45 aux_hostname aux_hostname.domain.com
```

The first entry is the IP address of the A/UX system. The second entry is the hostname of the A/UX system, and the final entry is the hostname and domainname of the A/UX system (optional if domain name servers are not being used).

(3) Finally, you must tell the A/UX system that it can accept print requests from the HP system. To do so, edit the /etc/hosts file on the A/UX system so that there is an entry for the HP. The format will be as shown above.

Next, add the HP's hostname to the /etc/hosts.lpd file on the A/UX system. If the A/UX box has not yet been set up for remote printing access, the /etc/hosts.lpd file will not yet exist. Create it and enter the HP hostname.

Now to invoke remote printing on the LaserWriter from the HP, use the lpr command as follows:

```
lpr -Premote filename_to_be_printed
```

Also, the newly created pipe in /usr/spool/remote MUST be owned and grouped by "daemon", otherwise, it won't be opened by the spooler.

```
chown daemon pipe; chgrp daemon pipe
```

Article Change History:
23 Aug 1994 - Reviewed and updated.
30 Aug 1992 - REVIEWED for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

TA45990_Bit_QuickDraw_Located_on_Printing_Tools_Disk_(TIL07321).pdf

32-Bit QuickDraw: Located on Printing Tools Disk

When I start up my Macintosh, I get a message that System 6.0.5 needs version 1.2 of 32-bit QuickDraw.

Where do I get this software?

This article has been archived and is no longer updated by Apple.
Version 1.2 of 32-bit QuickDraw is on the 6.0.5 Printing Tools disk inside the Apple Color folder. You can use the installer script for 32-bit QuickDraw or simply drag the icon into your System Folder.

Published Date: Feb 18, 2012

TA45991_Apple_II_Family_Driver_Not_Yet_Available_for_LaserWriter_SC_(TIL07322).pdf

Apple II Family: Driver Not Yet Available for LaserWriter SC

I want to connect my Apple IIe to the Personal LaserWriter SC. Are there printer drivers to do this?

This article has been archived and is no longer updated by Apple.
There is no Apple support for connecting either the older LaserWriter IISC nor the new Personal LaserWriter SC to any Apple II computer. Apple has made low-level driver information available to developers to create such a driver, but we don't know of any available drivers as of April 1991.

Published Date: Feb 18, 2012

Apple PC 5.25 Drive: Compatibility with Macintosh Computers

Which Macintosh computers support the Apple PC 5.25 Drive?

This article has been archived and is no longer updated by Apple.
The Apple PC 5.25 drive is supported only by the Macintosh SE and the Macintosh II, systems that were introduced without the Apple SuperDrive (formerly Apple FDHD).

Later versions of Macintosh computers have the Apple SuperDrive, which supports 3.5-inch MS-DOS diskettes--eliminating the need for the Apple PC 5.25 drive.

For customers who need to use 5.25-inch MS-DOS diskettes, we suggest looking at third-party products, such as those made by Dayna Communications.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

AppleTalk: 32 Device Limit Refers to Physical Connections

Is the AppleTalk 32 device limit referring only to physical connections (such as printers, computers, and so on) or is it the total number of logical and physical devices (such as TOPS, FileMaker, etc)?

This article has been archived and is no longer updated by Apple.

The limit of 32 devices is for physical hardware devices such as printers, computers, and so on.

Published Date: Feb 18, 2012

ImageWriter LQ: When Top Margin Increases with Each Page

I'm manually feeding a multi-page document through my ImageWriter LQ. The margins in Page Setup are set correctly at 1 inch, top and bottom. The paper size is correctly set to Letter, 8 1/2 x 11 inches.

The first page comes out fine, but all the other sheets' top margin increases by 1/2 inch.

This article has been archived and is no longer updated by Apple.
This problem is usually caused by the Manual Feed option not being selected in the Print dialog box. The printer assumes that it should not do a backfeed, and increases the top margin on each page. (Also be sure that the DIP switch 2-8 is set to Open.)

There is something else you might try: Select the Macintosh Print dialog box by holding down the Shift key while selecting Print from the File Menu. This allows you to use the Macintosh print drivers. When you select print without holding down the Shift key, you are accessing the application's print driver.

Published Date: Feb 18, 2012

Synchronous and Asynchronous Communication Defined

What is asynchronous communication and how is it different from synchronous communication?

This article has been archived and is no longer updated by Apple.

Synchronous transmission means both the sending and receiving devices are on the same frequency. This method uses precise timing for error checking.

Asynchronous transmission sends each byte of data with a start bit at the front and a stop bit at the end. Timing is variable and is not used for error checking. Asynchronous transmission is a less sophisticated way to send data, but less complex and less expensive.

Published Date: Feb 18, 2012

Using LisaTerminal in the Background

This article has been archived and is no longer updated by Apple.

Sometimes large documents take several minutes to transmit from the Lisa to the host computer, so you may set aside the LisaTerminal document to work on another document. In this other document, avoid using the options Cut, Paste, Copy from the edit menu. Until the paste has been completed, you run the risk of aborting the transmission.

Published Date: Feb 18, 2012

Macintosh System Software: Use Installer, Don‘t Drag-Copy

Is it really necessary to use the Installer application to put a new System on a Macintosh? What's wrong with just dragging over a good System Folder from another computer?

This article has been archived and is no longer updated by Apple.

Drag copying System Folders is not an acceptable method of replacing System files. You must use the Installer to get a complete and successful installation of all necessary visible and invisible System files. There are hooks and patches to the ROM that can be part of the System only if the Installer is used.

If you have a System that was installed by drag-copying, we suggest that you trash it and install a fresh System Folder using the Installer program.

Published Date: Feb 18, 2012

Macintosh Plus: Allow 30 Seconds for SCSI Devices to Start Up

I have four SCSI hard disks daisy chained to a Macintosh Plus. On startup, only some of the hard disks mount, though they all mount when hooked up individually.

I've removed all internal terminators and replaced them with external ones, disabled all INITs, and checked the SCSI device numbers, all to no avail.

This article has been archived and is no longer updated by Apple.
This is a problem cause by the relatively slow speed of Macintosh Plus computers with old-style ROMs. All SCSI devices must be in the ready state before the computer or they won't be recognized. Be sure to wait around 30 seconds after turning on your hard drives before turning on the Macintosh Plus. You also might consider upgrading your Macintosh Plus' ROM.

Also, just for the sake of consistency, standardize on one brand/type of SCSI terminator.

Published Date: Feb 18, 2012

Apple II Family: No Support for Macintosh Hard Disk 20

Is it possible to use a Macintosh Hard Disk 20 with any Apple II computer?

This article has been archived and is no longer updated by Apple.
No, there is no support for the serial Macintosh Hard Disk 20 on any of the Apple II computers. A controller card was never produced to provide this compatibility.

Published Date: Feb 18, 2012

Apple IIGS: Compatibility with Macintosh Hard Drives

Can any Macintosh SCSI external hard drive work with the Apple IIGS?

This article has been archived and is no longer updated by Apple.
If the hard drive is advertised for compatibility with the Apple IIGS (which almost all currently available hard drives are) you should have no problem using it with an Apple IIGS.

Published Date: Feb 18, 2012

LaserWriter: Page Count Cannot be Reset

Is there any way to reset the page counter on a LaserWriter I/O board? I received one that did not show zero pages and it is going into a new engine.

This article has been archived and is no longer updated by Apple.

The page count number is intended to be a permanent record showing the number of pages processed by a particular print engine. The page count is comparable to the odometer in a car showing the distance travelled.

In an effort to prevent misuse, Adobe Systems withheld the publishing of any methods for resetting the page count on PostScript printers using their code. Although there are legitimate reasons for resetting the page count, Adobe and Apple will not publish this information.

In order to properly track the page count for maintenance purposes, it is recommended that you place a sticker inside the printer which notes the date and the page count when the printer was serviced. This will help ensure that the ozone filter and other consumable items are replaced at the recommended intervals.

Published Date: Feb 18, 2012

Personal LaserWriter NT: Can‘t Support 5MB of RAM

Can the Personal LaserWriter NT support 5MB RAM or must it jump from 2MB to 8MB?

This article has been archived and is no longer updated by Apple.

The Personal LaserWriter NT only supports 2MB or 8MB because its two SIMM slots are treated as one contiguous, single slot.

Published Date: Feb 18, 2012

LaserWriter II: Minimum Paper Length is 6 Inches

I'm trying to manually feed 8.5 x 5.5-inch paper into a LaserWriter IINTX. I keep getting the jam alarm as the paper reaches the fuser. (The paper is not actually jammed but the electronic sensor thinks it is.) Is my paper too short?

This article has been archived and is no longer updated by Apple.
The minimum paper length for the LaserWriter II engine is very close to 5.5 inches. At 5.5 inches, the paper has already left the feed rollers in the transfer guide assembly and may not be suitably fed into the fuser assembly. As the fuser cannot pick up the paper, a jam alarm goes off. Our measurements suggest that six inches is the minimum length for printer paper.

Published Date: Feb 18, 2012

LisaProject 3.0: Copying and Pasting the Task Table

This article has been archived and is no longer updated by Apple.

When copying and pasting the Task Table into documents such as LisaCalc and LisaList, the late finish dates (4th column) is pasted over the top of the early finish dates (2nd column). Since you cannot select and Copy just a portion of the Task Table, you will have to correct the early finish dates manually.

Published Date: Feb 18, 2012

Macintosh Plus: Why There‘s No External Monitor Option

Why didn't Apple offer an external full-screen monitor option for the Macintosh Plus?

This article has been archived and is no longer updated by Apple.
The main reason is that the Macintosh Plus was not designed to support any expansion cards. Short of modifying the case, there was no supportable way to connect a driver board and cabling to the logic board of the Mac Plus. Additional load on the power supply would also be a concern.

Published Date: Feb 18, 2012

Macintosh Portable: Internal Hard Drive Can‘t Be Transferred

Is it possible to use the Macintosh Portable's internal hard drive in another Macintosh?

This article has been archived and is no longer updated by Apple.

No, it's not possible to mount the Macintosh Portable's hard drive in another member of the Macintosh family because it has a unique mounting bracket.

Published Date: Feb 18, 2012

LaserWriter: Turning It Off versus Leaving It On

Is it better to leave my LaserWriter on all the time or to turn it off when it's not in use?
This article has been archived and is no longer updated by Apple.
Generally speaking, any circuit will last longer if it is not continually turned on and off. Switching the power decreases the life of electrical components due to the stresses of heating and cooling.

In addition, newer LaserWriter models include energy saving modes that allow the printer to remain on, and still use very little power.

In Apple's offices, most LaserWriter printers are powered on for months at time. Some have been on for over a year with no need for increased maintenance.
Published Date: Feb 18, 2012

SCSI: Maximum Cable Length & Extenders Between Devices

What is the maximum cable length and number of SCSI cable extenders allowable between SCSI devices?
This article has been archived and is no longer updated by Apple.
The maximum distance between SCSI devices is two meters. This can be increased to six meters if there is only one SCSI device on the bus.

Typically, extender cables are 1 meter in length. So, there could be 6 extender cables between two devices, such as a computer and hard drive.

Note: Both the Peripheral Interface Cable and the Cable Extender have a straight-through pin configuration (1-1, 2-2, 3-3, and so forth), though pins 10, 12-15, 17, 35-37, 39, 40, and 42 are not connected.
Published Date: Feb 18, 2012

Macintosh: OK to Use SIMMs that Are Faster than Required

Can using SIMMs faster than what a Macintosh is officially rated for cause any problems?

This article has been archived and is no longer updated by Apple.

Using SIMMs that are faster than a computer's rating should not cause any problems. It's like arriving at the bus stop 10 minutes early--you'll just be there with time to spare but it won't make the bus arrive any earlier. In the same way, your data will be ready for the CPU faster, but the CPU won't read it until it's ready.

As long as your SIMMs are good quality and the proper resistors have been clipped, there should be no problem using faster speeds.

Published Date: Feb 18, 2012

LaserWriter II: Shortest Possible Envelope Size is 6.5 Inches

What is the shortest size envelope that I can feed into a LaserWriter II?

This article has been archived and is no longer updated by Apple.
The absolute shortest envelope size would have to be slightly longer than the distance between the transfer Corona's last feed roller and the Fuser Assembly. For the LaserWriter II engine, this distance is 6.5 inches.

Published Date: Feb 18, 2012

Personal LaserWriter: European-Size Paper Tray Availability

I want to use European-size paper (8 7/8 x 12 5/8 inches) in my Personal LaserWriter NT's cassette tray. Is this possible? I couldn't find anything in the spec sheets.

This article has been archived and is no longer updated by Apple.
Apple Service has a European paper tray in the A4 and B5 sizes. The part numbers can be found in the Service Programs binder under the Personal LaserWriter section. Determine which size you need, then contact Customer Service Administration to place an order.

Published Date: Feb 18, 2012

Apple Hard Disk: Changing The Desktop Icon

Where is the hard disk icon resource located? I want to go in and change it with ResEdit, but I can't seem to find it.
This article has been archived and is no longer updated by Apple.
Under System 6, changing the icon on any icon required a utility like ResEdit to modify. The location of the hard drive icon depended on where the manufacturer decided to put it. For example, with La Cie drives, the icon is made available to users for changing.

For Apple drives there was a custom resource in the SCSI Setup that puts the icon in the boot blocks of the drive. Changing the hard drive icon using a resource editing utility is not recommended by Apple.

With System 7 systems, changing the drive icon is as easy as copying an icon or picture into the Clipboard, opening Get Info on the drive, clicking on the icon, and pasting the icon you have in your Clipboard. You will not be able to change the icon if the drive is shared, or locked.
Published Date: Feb 18, 2012

TA46013_LisaWrite_Disappearing_Text_(TIL00735).pdf

LisaWrite: Disappearing Text

This article has been archived and is no longer updated by Apple.
On rare occasions, lines or possibly even pages of text may disappear from the screen of a LisaWrite document for no apparent reason. If the text has been cut, merely paste it back into the document. If the text hasn't been cut, open the page layout menu and select Don't Preview Pages. Your missing text should reappear after you select Save and Continue from the File Print menu.

There are also rare occasions when a line of text may not be printed at the bottom of a page. Selecting Save and Continue should correct the problem. If it doesn't, adjust the paragraph spacing in the line (with the Format menu) or insert a page mark (with the Page Layout menu), and then repeatedly choose Save and Continue until the line prints successfully.
Published Date: Feb 18, 2012

Apple II: 80 Column Card Cannot Handle Some "Color" Programs

I have an Apple IIe, an Enhanced 80 Column card, and an Apple Color Monitor 100. I have two games, Batman and Hunt for Red October, that do not display in color even though they are both advertised as able to run on the Apple II with double high-resolution color graphics.

This article has been archived and is no longer updated by Apple.
The problem is that your software is trying to write directly to the video circuitry instead of using calls to the software. The 80 column card cannot handle these kinds of requests.

There are only two possible fixes:

* Get a different type of monitor and video card

* Call the software companies and ask if they have a software patch.

Published Date: Feb 18, 2012

Appleworks GS: Is Compatible with Older Appleworks Files

Does Appleworks GS open older Appleworks files?
This article has been archived and is no longer updated by Apple.
Yes, AppleWorks GS opens older Appleworks files. You will need to use the Import function of Appleworks GS to do this.
Published Date: Feb 18, 2012

LaserWriter IISC: Use QuickDraw GX to Network (10/96)

I want to connect my LaserWriter IIsc to an AppleTalk network. Can I do this using the AppleShare Print Server?

This article has been archived and is no longer updated by Apple.

No. The LaserWriter IISC and Personal LaserWriter SC printers were designed as stand-alone SCSI printers. With the standard LaserWriter drivers installed, you cannot use either printer on an AppleTalk network. However, if you install QuickDraw GX, you can use both printers over an AppleTalk network.

Article Change History:
15 Oct 1996 - Added QuickDraw GX solution.
Published Date: Feb 18, 2012

AppleShare Server: Which Server Files Ought Be Backed Up

I want to do a full, unattended backup of my AppleShare server, but my backup software only lets me backup my Server Folder separately.

What files in the Server Folder, if any, need to be backed up on a continuous basis?
This article has been archived and is no longer updated by Apple.
AppleShare has two important sets of configuration information. The first is the Users and Groups data file, which is stored in the Preferences Folder of the system folder.

The second is folder permission information. On read and write volumes, this information is in an invisible file at the top level of the volume called "AppleShare PDS." On read only volumes, the information is stored inside "System Folder:Preferences:File Server." There is a PDF file for every volume that has been mounted while AppleShare was on.

You should back up both the Users and Groups data file, and the File Sharing folder as well.
Published Date: Feb 18, 2012

Macintosh: The Dangers of Drag-Copying System Folders

By not using the Installer program to install a Macintosh System on a hard disk, what potential problems might I run into?

Also, is there any way to tell if a Macintosh System was installed correctly or drag-copied?

This article has been archived and is no longer updated by Apple.
When a System is drag-copied onto a disk rather than installed using the Installer, the System becomes unstable. There are several symptoms:

* The System bombs often.

* The System hangs without error messages.

* Applications unexpectedly quit.

There is no way to tell which Systems have been installed using the Installer and which have not. The best thing to do is to remove a suspect System Folder and reinstall using the Installer application.

Published Date: Feb 18, 2012

Macintosh Plus: SCSI Hard Drive Recognition Problem

I have a Macintosh Plus, with an external SCSI hard drive that has worked reliably for over a year. Suddenly the Macintosh won't recognize the drive, though both the Macintosh Plus and hard drive work fine separately (for example, using the hard drive with a Macintosh SE).

This article has been archived and is no longer updated by Apple.
Most probably something has blown the IC on the hard drive's analog board that controls the SCSI reset line. Since the Macintosh Plus (and the Macintosh Portable) doesn't have SCSI termination power, this problem can only be fixed by replacing the hard drive assembly.

Published Date: Feb 18, 2012

TA46020_Macintosh_IIci_Speeding_Up_Bit_Graphics_(TIL07359).pdf

Macintosh IIci: Speeding Up 24-Bit Graphics

Which speeds up a Macintosh IIci's 24-bit graphics more: a cache card or a Macintosh Display Card 8*24 GC?

This article has been archived and is no longer updated by Apple.
By far the best choice for speeding up 24-bit images is the Macintosh Display Card 8*24 GC. Off-loading the graphics processing from the central processor speeds up screen imaging and "number crunching" (as neither is interrupting the other).

Published Date: Feb 18, 2012

TA46021_Backup_II_Problems_backing_up_a_Mb_Profile_containing_Pascal_(TIL00736).pdf

Backup II: Problems backing up a 10 Mb Profile containing Pascal

Version 1.1.1 of Backup II fixes a problem contained in previous versions.
This article has been archived and is no longer updated by Apple.
Those versions had difficulties backing up a 10 Megabyte Profile with the Pascal language installed on it.
Published Date: Feb 18, 2012

Ethernet Card: Determining a Card‘s Address

How can I determine the address of an Ethernet card? Is there a software utility that does this?
This article has been archived and is no longer updated by Apple.

Printed on Board

The network address of some Ethernet card is on a printed label on the back of the Ethernet circuit board.

EtherPeek

You can obtain the AG Group EtherPeek network monitoring application, which includes a utility called it GetMyAddress. This will also return the address of the Ethernet card.

MacTCP

Users who use MacTCP may be able to identify the Ethernet address by opening the MacTCP control panel and pressing the Option key when selecting the Ethernet Icon. For this to work you must be sure the caps lock key is NOT depressed.

Open Transport 1.1 or Later

If you are using Open Transport (version 1.1 or later), you can obtain the Ethernet address by opening the AppleTalk control panel and selecting Get Info from the File menu.

Apple LAN Utility

You can use the Apple LAN Utility to report the burned in address without being connected to a network.

Published Date: Feb 18, 2012

LaserWriter: Font Substitution Printing Problem

I have suddenly begun experiencing printing problems on my LaserWriter. When I try to print with Adobe fonts, the system responds that it is "substituting a bit mapped version, as the printer font can't be found". The LaserWriter then prints using the Courier font.

This problem happened after I did some work on my System file. I was having a font ID conflict, so I removed all but the required fonts then reinstalled the fonts one-at-a-time.

Of course, all my printer fonts are in a Printer Folder.

This article has been archived and is no longer updated by Apple.
This sounds like your PostScript fonts are not downloading. Are your fonts in the System Folder or in a folder in the System Folder? Put them at the first level of your System Folder; don't embed them in another sub-folder.

Also, be sure font substitution is off in your Page Setup dialog box.

Published Date: Feb 18, 2012

LaserWriter IINTX: Font Utility Shows When You‘re Out of Storage

I have a hard disk attached to my LaserWriter IINTX. I know that I'm using 80% of my disk space for caching and only 20% for font storage. Does this mean I only have room for 8MB of fonts on a 40MB hard disk?

This article has been archived and is no longer updated by Apple.
Your hard disk has room for only 8MB of fonts. The Font Utility application gives you a warning when the disk is getting too full. If you have several large fonts, you might not be able to get 8MB of fonts on the drive before the utility tells you you're running out of room.

Published Date: Feb 18, 2012

LaserWriter IINTX: How It Allocates Disk Space

I have a 40MB hard drive attached to a LaserWriter IINTX. Is it true that only 20% of the storage space is used for fonts while the other 80% is used for caching?

This article has been archived and is no longer updated by Apple.
A hard disk attached to a LaserWriter IINTX gets initialized with 20% of the disk space dedicated to font storage and 80% to font caching. The LaserWriter Font Utility tells you how much space is available for additional font storage.

The "diskstatus" operator gives the number of pages currently available and the maximum number of pages available (a page being 1024 characters). The operator "userdiskpercent" returns the percentage of disk space allocated for user files.

The operator "setuserdiskpercent" allows you to set the percentage of user file space on the drive. It also removes the least-recently used cached bitmaps from the hard disk until there is enough free space available.

Published Date: Feb 18, 2012

Apple IIGS: High Speed SCSI Card Not Recognizing Hard Drive

I'm using a High Speed SCSI card on my Apple IIGS. The problem is my CMS 60MB hard drive isn't being recognized by the SCSI card.

This article has been archived and is no longer updated by Apple.
Check how much RAM the Apple IIGS has: to support the High Speed SCSI card, an Apple IIGS must have a minimum of 768K.

Also, check DIP switch 8 on the CMS drive. It controls the reset line, which is pin 40. All Apple SCSI cards use the reset line for handshaking. If this pin is disconnected or turned off, the Apple IIGS won't recognize the hard drive. Be sure that switch 8 on the CMS hard drive is in the closed position.

If switch 8 is in the closed position and you still do not get recognition of the hard drive, check the SCSI switch to make sure it is not set to 7.

Published Date: Feb 18, 2012

HyperCard: RAM Cache Launching Issues

While trying to launch HyperCard 1.2.5 under System 6 with the RAM Cache ON, I only get a menu bar that says "HyperCard". The menu doesn't really work and my computer locks up. If I turn RAM Cache OFF, HyperCard launches just fine.

Removing all the INITs from the System Folder doesn't help.
This article has been archived and is no longer updated by Apple.
There is no known problem using the RAM Cache with HyperCard, so your problem is probably a corrupted HyperCard file. Try these steps:

1) Rebuild the desktop.

2) Use a new Home card.

3) If you're still having problems, replace your HyperCard application.
Published Date: Feb 18, 2012

HyperCard: Dial Command Problems with Macintosh Portable Modem

I'm having problems using the Apple Internal 2400 baud modem with the Macintosh portable. The HyperCard Phone stack's dial command just doesn't seem to work with this modem.

This article has been archived and is no longer updated by Apple.
Make sure that the 10-second pause is in the "doDial" handler. Before "put empty", the last line of code in the handler, insert these lines:

```
wait 10 sec
send return to HyperCard
```

This way the change takes place only once, and it's easier to follow the code at that point. The "return" causes the modem to drop the line, leaving you in voice mode.

The problem with the modem and the Phone stack is that HyperCard opens the serial port for three seconds. It takes the modem around two seconds to go off hook. The dial string contains a comma creating a one-second pause. This leaves hardly any time to send the phone number. The phone number is incompletely transmitted and you get disconnected.

We suggest you use the Serial XCMDs available from APDA for sending data to modems. This command set gives you complete control over the serial port, eliminating the need for the 10-second pause to get the modem to release. (You'll need to recreate the doDial handler to use the serial XCMDs.)

Published Date: Feb 18, 2012

Macintosh: Proper SCSI Termination for Powered-Off Devices

I'm using a Montage FR1 slide maker connected via the Macintosh SCSI port. My Macintosh won't boot if the FR1 is off. I don't want to leave the slide maker on all the time. What can I do?

This article has been archived and is no longer updated by Apple.

The SCSI bus requires termination power to provide clean, quality SCSI signals. When a SCSI device has its own termination power, the SCSI bus signals are corrupted when the device is off because this leaves the SCSI bus unterminated. An non-terminated SCSI bus can cause startup problems because of noise on the bus.

Sometimes, a SCSI device supplying its own termination power can remain off at startup because it has a relatively clean SCSI bus signal. But there is no guarantee that the bus signals will stay clean and uncorrupted, as it is improperly terminated in this situation.

SCSI devices that use Macintosh termination power can be off and still be properly terminated.

Published Date: Feb 18, 2012

Lisa: Format for Printer

This article has been archived and is no longer updated by Apple.
When printer format settings are made for a document, other blank documents and stationary pads may also change their printing formats to the new settings.

This can only happen to documents or stationary pads, such as the LisaWrite stationary pad, that have never had text or data entered into them. The printer format settings of non-empty documents and stationary pads will not change unless specifically set by the Format for Printer dialog box while the document is open.
Published Date: Feb 18, 2012

Macintosh: Parity Checking Not Needed By Average Users

What is the difference between a plain Macintosh IIci and a Macintosh IIci with parity?

This article has been archived and is no longer updated by Apple.
The only difference is that one machine has parity checking and the other does not. RAM parity detects single-bit errors in RAM and prevents operation with damaged data or instructions. This type of error checking detects "soft errors" and intermittent "hard errors". Most soft errors are caused by atmospheric conditions, but the reliability of current DRAM is high enough that these conditions are VERY rare. Bad RAM chips are almost always found during Macintosh startup without using parity checking.

Apple has never used ECC (Error Correction Code) schemes to detect errors in System RAM. The Macintosh IIci and Macintosh IIfx (parity models) are the first Macintosh computers to use any kind of memory error checking during normal operation.

Apple implemented parity checking as an option for the Macintosh IIci and Macintosh IIfx as a result of government requirements. Average users won't need parity checking.

For more information, search under "Parity Checking".

Published Date: Feb 18, 2012

System 6.x: Ways to Change System Memory Configuration (1/95)

I have a Macintosh IIci with 4 MB of RAM that is crashing frequently when using Microsoft Excel 2.2. I called Microsoft and they told me I needed to increase the size of my System file's memory partition under MultiFinder. How do I do this??

This article has been archived and is no longer updated by Apple.
There's only one of two memory allocation changes that Microsoft could be referring to:

1) The memory allocation for Excel

2) The memory allocation for Finder

We suggest that you try these options by using the Get Info dialog in the Finder. If neither of the above options work, you should perform a clean system install.

Article Change History:
12 Jan 1995 - Revised article, removed discontinued third-party option.

Support Information Services
Published Date: Feb 18, 2012

Apple II: LocalTalk ImageWriter Delay from BASIC (2/97)

I'm running an Apple IIGS lab (28 systems) with seven LocalTalk ImageWriters.

When using Applesoft BASIC, my computers print properly with a "PR#1" command. However, there is a 30-second delay from the time one computer finishes printing until the next system is allowed to print.

Here is a test program that I'm using:

```
10 PRINT CHR$(4);"PR#1"
20 FOR I=32 TO 126
30 PRINT CHR$(I);
40 NEXT:PRINT
50 PRINT CHR$(4);"PR#0"
```

If I run the above test program simultaneously on two Apple IIGS computers trying to print to one LocalTalk ImageWriter, the first computer to type "run" prints fine. The other computer has to wait for the LocalTalk option board to release the printer.

I have gone through the ImageWriter technical book and can't find anything that allows the LocalTalk card to release the printer Immediately after the "PR#0" command.

Is there a reset or release command that I can add to the program to eliminate this wait?

This article has been archived and is no longer updated by Apple.

You are experiencing the time it takes the ImageWriter to release after the connection to the computer is lost. Your problem is that the "PR#0" command just changes the mode of the computer; the printer still thinks the first computer should be there.

The printer has a built-in timeout that can't be changed. Something you might try is to insert an "ESC c" as line 45. This command resets the printer and might cause the printer to drop its connection before the computer does.

Article Change History:
17 Feb 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

TA46034_ImageWriter_Cant_Use_Null_Code_(TIL07374).pdf

ImageWriter: Can‘t Use Null (00) Code

Can the ImageWriter II do anything with a null (00) code?

Is there anything I can send to the ImageWriter II to simulate the old "bell" ACSII function?

This article has been archived and is no longer updated by Apple.
The ImageWriter can't do anything with a null (00) code. There is nothing you can send to the printer to simulate the "bell" ASCII function because the printer has no speaker.

Published Date: Feb 18, 2012

LaserWriter IINTX: ROM Upgrade Supports Dynamic Soft-Switching

I understand that the new LaserWriter IINTX ROM upgrade supports software switching between emulation modes and ports. Does this mean that a LaserWriter IINTX can connect simultaneously to a LocalTalk and PS/2 serial port? While the product update sheet makes this sound possible, the LaserWriter manual (Appendix F, page 133) seems to say that you must disconnect the LocalTalk connector when using the serial port.

This article has been archived and is no longer updated by Apple.
Yes, this will work. The LaserWriter should ignore the "other" port, and only listen to the active port. The soft-switching capability enable/disable the ports correctly, as will the DIP switches.

To our knowledge, there isn't any software on the market that automatically takes advantage of this feature. If you want to take advantage of this feature, you'll have to write the PostScript code (there are examples of such code in the LaserWriter Owner's Guide).

There is a consideration: The LaserWriter needs to receive the code to change modes from the system connected to the active port. This means that both an MS-DOS machine and a Macintosh need to have the code, and each will tell the LaserWriter to listen to the other computer.

All in all, a much better solution is to use a single interface for all machines. LocalTalk is your best solution, with a LocalTalk interface card installed in the MS-DOS system.

Published Date: Feb 18, 2012

LaserWriter: Maximum Printable Area is 6.75 x 13.0 Inches

Why can't I print anything larger than 8.5 x 14 inches on my LaserWriter?

This article has been archived and is no longer updated by Apple.
The maximum printable area of a LaserWriter is 6.75 x 13.0 inches when centered on an 8.5 x 14 inch page.

The LaserWriter II engine has a minimum left, right, top, and bottom margin of 0.197 inches. This gives the LaserWriter II a printable area of 8.106 x 13.606 inches. So, the only way to get a larger print area is to use a LaserWriter II series printer.

Published Date: Feb 18, 2012

GateKeeper: Using with AppleShare

I'm using GateKeeper Aid with AppleShare. When I start the server, I get the message, "GateKeeper Aid encountered FCB expansion".

Is this serious? What is FCB expansion?

This article has been archived and is no longer updated by Apple.
You have nothing to worry about. When you boot AppleShare, it makes major changes in the way the system is configured and GateKeeper notices the changes.

The FCB expansion is the File Control Block. This tells the system how many files can be open at one time.

Published Date: Feb 18, 2012

LisaTerminal: Sending PF1

This article has been archived and is no longer updated by Apple.
Pressing the PF1 key in LisaTerminal's VT100 mode causes LisaTerminal to send an ESC-P, not an ESC-1.

To send an ESC-1, hold down the tilde key (upper-left corner of the keyboard) then press the 1 key.
Published Date: Feb 18, 2012

Macintosh Portable: External Hard Drives and "Sad Mac" Errors

Are there problems with connecting an external SCSI hard drive to the Macintosh Portable? I have a Macintosh Portable with an internal 40MB drive. When I tried to connect a 45MB external drive, the Macintosh Portable refused to boot. The "Sad Mac" icon came up with the error code: 0000000F 00000002.

The hard drive is a Jasmine Direct Drive 45 that has been with a Macintosh Plus. I checked the usual things: The external hard drive was powered up and running before I powered on the Portable. There was no System Folder on the external hard drive. The drive was terminated and had a unique SCSI ID.

Am I overlooking something? Can the Portable support an external hard drive?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable can access and use any external SCSI device that a Macintosh Plus can access. There may be an issue with the SCSI driver on the hard drive and compatibility with the Portable boot ROMs, but we do not have any information on this problem.

The error message you gave above is roughly equivalent to an "ID=02" -- meaning that you can't really use it seriously to diagnose the problem. It does tell you that some piece of recently-loaded software got clobbered, but it's a guess to say whether it was due to software corruption, SCSI signal problems, incompatible drivers, or all of the above.

The best thing to do when getting this kind of error message is contact the third-party's service organization for any possible information on driver compatibility.

Published Date: Feb 18, 2012

Responder: Changing a Macintosh Network Name

Article Change History

05/14/92 - RETITLED
* For clarity.
08/25/92 - REVIEWED
* For technical accuracy.

A customer has a Macintosh set up as a workstation on an AppleShare network. When the Responder asked them to name the computer, they did that. Now they need to change the name on that computer that the Responder recognizes. We can't get Responder to allow them to rename the drive. None of the following worked:

- deleting the Responder file and copying a new one to the system.

- deleting the Responder file and then reinstalling from the system installation disks.

- starting up from a system floppy, deleting the System, Finder, and Responder files, then reinstalling the system.

This article has been archived and is no longer updated by Apple.
There is no need to throw away any files to change the network name of a Macintosh. The procedure differs, depending on the version of System software:

- With System 6, the easiest way to rename the Macintosh is to open the Chooser and type a new name in the "User Name:" field. The new name is not used until the Macintosh is restarted.

- With System 7, open the Sharing Setup control panel and change the "Macintosh Name:" field. The new name is used immediately.

With both System 6 and System 7, the name is stored in the System file in an STR resource with an ID of -16096. When starting up under System 6, if the Macintosh has no name, the Responder will ask the user to type in a name. If a name is typed in, the Responder will write the name to the resource STR ID = -16096. System 7 does not do this. The only way to name the Macintosh is via the Sharing Setup Control Panel.

Published Date: Feb 18, 2012

ImageWriter LQ: Needs Super Serial Card for Apple IIe

Can an Apple IIe with an old High Speed Serial Interface card run an ImageWriter LQ or do I need a Super Serial Card?

This article has been archived and is no longer updated by Apple.
You need the Super Serial Card to drive the ImageWriter LQ from an Apple IIe. The older High Speed Serial Interface cannot be configured properly to work with the ImageWriter LQ.

Published Date: Feb 18, 2012

ImageWriter: Cable for Apple IIe

I have an ImageWriter, part number A9M0303. Is there a way to connect it to an Apple IIe?

This article has been archived and is no longer updated by Apple.

Yes, you can connect an original ImageWriter to an Apple IIe. The cable that you do this with is A2C0352. In case you cannot get that cable through Finished Goods, the service part number is 590-0037. You will also need a Super Serial Card.

Published Date: Feb 18, 2012

Personal LaserWriter NT: Envelope Centering Problem

I am using a software utility to print envelopes on my Personal LaserWriter NT. I can't seem to get the address centered on the envelope.

This article has been archived and is no longer updated by Apple.
There is nothing that can be done to center the print on the Personal LaserWriter NT. The printer positions the paper differently than Apple's LaserWriter II series of printers. To correct the problem, contact the manufacturers of the software you are using to see if they have a upgrade for the Personal LaserWriter NT.

Published Date: Feb 18, 2012

All LaserWriters: Connecting to IBM or IBM-Compatible Computers

How do I connect an Apple Personal LaserWriter NT to an IBM compatible computer?

This article has been archived and is no longer updated by Apple.
The following cable configurations will support serial connections to the Personal LaserWriters, the original LaserWriters and the LaserWriter II family.

Use a RS-232 Null Modem cable. The DB-25 end goes into the printer, and depending on what kind of port it has, either a DB-9 or DB-25 goes into the computer.

Cable configuration for DB-9 to DB-25:

PC Printer
DB9 DB25

1 4
2 2
3 3
4 5&6
5 7
6&8 20
7 8
9 NC

PC Printer
DB25 DB25
1 1
2 3
3 2
4 5
5 4
6 8&20
7 7
8&20 6

PC Printer
DB 25 DB9 (LW Pro)
1 5
2 2
3 3
4 8
5 7
6 1&4
7 5
8&20 6

PC Printer
DB9 DB9
1&4 6
2 3
3 2
5 5
6 1&4
7 8
8 7

Article Change History:

11/18/93- Added corrected cable pinouts
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ImageWriter II: Troubleshooting "Printer is not responding"

I'm using an ImageWriter II with a Macintosh Portable. I keep getting the message. "Printer is not responding. Check the select switch", but my select switch is on.

This article has been archived and is no longer updated by Apple.

If there is nothing wrong with your ImageWriter II, there are three possible causes for this problem:

* A defective printer cable.

* A defective printer port on the Macintosh Portable.

* Incorrectly set software.

The most common of the three causes is incorrectly set software. Be sure you have selected the proper ImageWriter driver--not the AppleTalk ImageWriter--in the Chooser, and confirm that it is in the selected port, either printer or modem.

Published Date: Feb 18, 2012

LaserWriter IINTX: ROM Upgrade Ordering Information

How can I get the latest PostScript upgrade for the latest LaserWriter IINTX?
This article has been archived and is no longer updated by Apple.
The formal LaserWriter IINTX 3.0 ROM upgrade kit (Apple part number M0445LL/A) was discontinued several years ago. Although an upgrad kit is not available, the individual LaserWriter IINTX ROMs are listed on the Apple service price pages and can be ordered and installed by authorized service providers.

In order to upgrade a LaserWriter IINTX from an earlier ROM version a total of 8 new ROM's need to be purchased. The service part numbers for the ROM's are:

Service Part Number	Description
341-0711	IC, ROM,LL0, LW IINTX 3.0
341-0712	IC, ROM,HH0, LW IINTX 3.0
341-0713	IC, ROM,LL1, LW IINTX 3.0
341-0714	IC, ROM,HH1, LW IINTX 3.0
341-0715	IC, ROM,LM0, LW IINTX 3.0
341-0716	IC, ROM,HL0, LW IINTX 3.0
341-0717	IC, ROM,LM1, LW IINTX 3.0
341-0718	IC, ROM,HM1, LW IINTX 3.0

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PrintMonitor: Why=6 and Why=-120 Error Messages

My PrintMonitor is giving me the error codes of Why=6 and Why=-120. What do these mean?
This article has been archived and is no longer updated by Apple.
PrintMonitor error messages can actually be decoded if you have a list of Macintosh system errors. The "why" (or y=) portion is the system error number.

Why=-120 means "Directory Not Found". Why=-120 may be the result of a corrupt directory structure on your local hard drive. Rebuilding the Desktop may solve the problem, or you may have to backup, reformat, or restore the drive.

Why=6 means "overflow trap error" and is pretty general and not much to go on. With Why=6 it's more important to know what else was going on that may have caused a conflict (such as what applications are running and what INITs and cDEVs are on the system). You may be seeing an incompatibility, memory conflict, or just general system corruption. Trashing and reinstalling the System with the Installer usually takes care of this.
Published Date: Feb 18, 2012

PostScript: How To Print a File on a LaserWriter (5/93)

Article Change History

05/28/93 - REVISED
* To include information on Apple's LaserWriter Utility.

I have a raw PostScript file that I want to print out on a LaserWriter II, but none of my applications will open this file.

This article has been archived and is no longer updated by Apple.
Apple's LaserWriter Utility (version 7.4.1 at this writing) can print PostScript files directly by choosing "Download PostScript File..." from the Utilities menu. LaserWriter Utility should be included with all LaserWriters from Apple; if you do not have it, you can download it from AppleLink.

You can also try using PS Dump from CE Software. This utility prints PostScript files to the LaserWriter. For more information, search on "CE Software".

Published Date: Feb 18, 2012

AppleShare Server: Drawbacks to Backing Up via Drag-Copy

Instead of using a backup utility, why not just drag-copy my AppleShare file server files onto another hard disk?

This article has been archived and is no longer updated by Apple.
If you drag-copy AppleShare files from one hard drive to another, you'll lose all your access privileges. Use the AppleShare Administration disk and do a Copy Volume from the menu. Other ways are to use DiskFit from SuperMac, HFS Backup 3.0 from PCPC, or Retrospect 1.1 from Dantz Development Corp. All four of these products retain the AppleShare access privileges.

For more information, search on the above company names.

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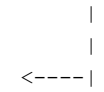
MouseText: Display for Characters "F" and "G"

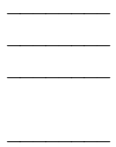
What should the MouseText ROM display for characters "F" and "G"?

This article has been archived and is no longer updated by Apple.

The "F" in MouseText is the character used to represent a carriage return, sort of like this:



The "G" displays four horizontal bars, an Apple II representation of an active (or foremost) window. It looks like this:



(this space is intentional)

You'll find a list of MouseText characters in the Apple IIe Owner's Manual (platinum), page 133.

Published Date: Feb 18, 2012

Macintosh SE: Third-Party 80ns SIMMs Can Cause Problems

I'm putting a 2MB RAM upgrade into my Macintosh SE. I started out with four 120ns 256K SIMMs. I'm putting two 80ns 1MB SIMMs into slots one and two and am putting the other two 120ns 256K SIMMs into slots three and four.

At power-on, my screen shows vertical lines spaced evenly across, about 1/4 inch apart. These lines appear right away, even while showing the "happy Mac" icon. With the lines visible, I can choose "About the Finder" and it indicates that the Macintosh SE is recognizing all 2.5MB of RAM.

Should I not be mixing 80ns and 120ns SIMMs with a standard Macintosh SE?

This article has been archived and is no longer updated by Apple.
We have had reports of third-party 80ns memory having strange effects on Macintosh SE computers. In all of the cases, the problem was defective memory modules. The first thing to do is replace the 80ns SIMMs with new ones. If the problem still continues, try using slower 1MB SIMMs.

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Macintosh: Why It Doesn‘t Use Entire Screen?

Why is there a 10-millimeter unused border around the edge of Macintosh monitors? Why doesn't the Macintosh use its entire available screen space?

This article has been archived and is no longer updated by Apple.

This is because of image resolution quality and aspect ratio concerns. The Macintosh screen has to have certain dimensions. If the projected image were to completely fill the screen, it would be slightly distorted, especially at the edge of the screen. Most computer displays have a mask around the border area to provide the largest and clearest usable area.

Published Date: Feb 18, 2012

Macintosh: SCSI Devices Cannot be Shared Between Computers

Is there any way a single SCSI device can be connected to two Macintosh computers, with a switch box for example?

This article has been archived and is no longer updated by Apple.

The SCSI protocol doesn't allow dynamic switching or interruption of the power and signal lines in the cable. For this reason alone, a switch box would create havoc in a SCSI chain -- at the minimum causing all types of data transfer errors and possibly even blowing a device. We know of no way to connect one SCSI peripheral to two computers.

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Applesoft Internals: Floating Point Math Package (1 of 2)

Applesoft's floating point package provides a 9 digit scientific package for evaluating numeric equations. It supports trigonometric functions with arguments in radians, exponents and logarithms to base e.
This article has been archived and is no longer updated by Apple.

ABBREVIATIONS

msb: most significant bit or byte
lsb: least significant bit or byte
eol: end of line token ($00)

A: the 6502 accumulator
X: the 6502 X register
Y: the 6502 Y register
Z: the zero flag of the 6502 status register
C: the carry flag of the 6502 status register

A,X is a 16 bit number where A has the msb and X the lsb.

(Y,A) is the number or string whose address is in Y and A, with the msb in Y and the lsb in A.

FAC: the floating point accumulator
ARG: the ARGument register

REAL NUMBER FORMAT

The real number format used throughout Applesoft is: the exponent is a single byte signed number (EXP) in excess of $80 form (the signed value has $80 added to it); the mantissa is 4 bytes (HO,MOH,MO,LO); the binary point is to the right of the most significant bit. Since in binary floating point notation the msb is always 1, the number's sign replaces the msb when the number is stored in memory in packed form. The sign, though, is kept in a separate byte (SGN) when only bit 7 is significant. If the exponent is zero, the number is zero, although the mantissa isn't necessarily zero.

Examples:

EXP HO MOH MO LO SGN

Packed format
-10 84 A0 00 00 00
10 84 20 00 00 00

FAC format
-10 84 A0 00 00 00 FF
10 84 A0 00 00 00 00

Arithmetic routine calling conventions for single argument functions (e.g., SGN, ABS or INT):

On entry the argument is in the FAC.
On exit the result is in the FAC.

Arithmetic routine calling conventions for two argument functions (e.g., FADD and FSUB):

On entry the first argument is in the ARG.
On entry the second argument is in the FAC.
On exit the result is in the FAC.

FLOATING POINT REGISTERS

NOTE: The TEMP locations may be used for other things when not used by the floating point math package.

.	FAC	ARG	TEMP1	TEMP2	TEMP3	RND
EXP	9D	A5	93	98	8A	C9
HO	9E	A6	94	99	8B	CA
MOH	9F	A7	95	9A	8C	CB
MO	A0	A8	96	9B	8D	CC
LO	A1	A9	97	9C	8E	CD

SGN	A2	AA	(packed format)

FLOATING POINT CONSTANTS

The following addresses point to useful numbers; they're packed and suitable for use by most of the arithimetic routines including CONUPK and MOVMF.

RND	00C9
-32768	E0FE
1	E913
SQR (1/2)	E92D
SQR (2)	E932
-1/2	E937
LN (2)	E93C
10	EA50
1000000000	ED14
1/2	EE64
LOG (2) base e	EEDB
pi/2	F063
pi*2	F06B
1/4	F070

FLOATING POINT REGISTER MOVE ROUTINES

MOVFM EAF9
Moves the number in memory Y,A points to into FAC. On exit A and Z reflect FACEXP.

MOV2F EB1E
Pack FAC and temporarily moves it into register 2. On exit A and Z reflect FACEXP.

MOV1F EB21
Pack FAC and moves it temporarily into register 1. On exit A and Z reflect FACEXP.

MOVML EB23
Pack FAC and move it into zero page area starting at X. On exit A and Z reflect FACEXP.

MOVMF EB2B
Pack FAC and move it into memory pointed to by Y,X. On exit A and Z reflect FACEXP.

MOVFA EB53
Move ARG into FAC. On exit A and Z reflect FACEXP.

MOVAF EB63
Move FAC into ARG. On exit A and Z reflect FACEXP.

CONUPK E9E3
Load ARG from memory pointed to by Y,A. On exit A and Z reflect FACEXP.

SUMMARY OF MOVES:

FAC => (Y,A) EB2B MOVMF
FAC => (0,X) EB23 MOVML
FAC => TEMP1 EB21 MOV1F
FAC => TEMP2 EB1E MOV2F
FAC => ARG EB63 MOVAF

ARG => FAC EB53 MOVFA

(Y,A) => FAC EAF9 MOVFM
(Y,A) => ARG E9E3 CONUPK

FLOATING POINT OPERATORS

The following routines require that A and Z reflect FACEXP. Even though FAC move routines set up A and Z, a LDA $9D will insure their proper values.

FMULT E97F
Multiply the FAC by the number in memory pointed to by Y,A.

FMULTT E982
Multipy FAC and ARG. On entry A and Z must reflect FACEXP.

FDIV EA66
Divide the number in memory pointed to by Y,A by FAC.

FDIVT EA69
Divide ARG by FAC. On entry A and Z must reflect FACEXP.

FADD E7BE
Add the number Y,A points to in memory to FAC.

FADDT E7C1
Add FAC and ARG. On entry A and Z must reflect FACEXP.

FSUB E7A7
Subtract FAC from the number Y,A points to in memory.

FSUBT E7AA
Subtract FAC from ARG. On entry A and Z must reflect FACEXP.
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TA46055_Lisa_Technical_Difficulty_messages_(TIL00740).pdf

Lisa 7/7: "Technical Difficulty" messages

This article has been archived and is no longer updated by Apple.

If your Lisa frequently hangs, of if it often tells you it's having "Technical Difficulty", try reinstalling the software again. If the problem persists, check to see that you are using one of these acceptable versions of the CPU and I/O ROMs:

Lisa: 2.0: D/A8 or H/A8
Lisa 2/10: F/88 or H/88

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Macintosh: How To Get Two Screen Dumps on a Single Page

Is there any way to get a Macintosh to do two screen prints on a single page?

This article has been archived and is no longer updated by Apple.

There is no way to automatically get two screen prints on the same page. Because the screen dump is a MacPaint file, you can cut and paste the two documents into one and print the resulting document.

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Macintosh SE/30: Screen Bowing Problems

My Macintosh SE/30's screen bows on the sides when there is a black rectangle displaying. This happens, for example, in Excel when I select three or more cells and highlight a whole row across the entire screen. When I deselect, the bowing stops.

I've replaced the analog board, the power supply, the video board, the CRT, and disconnected the hard drive--all to no avail. Is it possible that the system board is receiving interference from something else in the system?

This article has been archived and is no longer updated by Apple.
The problem you're describing is usually caused by one of three things:
* defective analog board,
* defective video board, or
* internal contrast setting set too high.

Even though you've already replaced these components, we suggest you recheck them (particularly the video board) for possible defects.

Though the logic board is a possible cause for this type of problem (since it maintains the video image in VRAM) it is unlikely to be causing the problem. If the first set doesn't solve the problem, however, then go ahead and replace the logic board.

Published Date: Feb 18, 2012

EMI: What You Can Do To Prevent Screen Interference

I am getting screen interference on my computer from a transformer outside my home. I have tried all sorts of surge supressors, all to no avail. Any other suggestions?

This article has been archived and is no longer updated by Apple.

Is your interference coming directly from power lines or from electromagnetic interference (EMI) in the air? If it's from power lines, you'll need a "high-end power filter" costing around $200 and up.

Your problem sounds like general electromagnetic interference. The only thing you can do is move your monitor as far away as possible from the source of interference. You can also try putting some shielding around the monitor to protect it from EMI.

Published Date: Feb 18, 2012

System 7 Chooser: Device, Name, Zone, Memory Limits

This article discusses device, name, and zone limits as displayed and controlled through the System 7 Chooser, with some additional notes on the limits of previous versions of the Chooser.

This article has been archived and is no longer updated by Apple.

The following information pertains mostly to the System 7 Chooser (use at least version 7.0 of the Chooser, preferably 7.1 or greater), with some comparative information on the System 6 Chooser:

The Chooser DA window consists of four separate sections:

1) The device type list.
2) The AppleTalk zone list (visible only if there are multiple zones).
3) The AppleTalk active/inactive controls.
4) The available devices name list.

1) The Chooser is able to display a maximum of 32 items in the Chooser device type list (Note: The System 6 limit was 16). This is the limit that is imposed by the Chooser itself, not by something interfering with the operation of the Chooser. If, for instance, you have more than 16 Chooser items in your System Folder under System 6 and only 16 show up, there is no conflict. Sixteen is simply the limit under System 6.

2) The Chooser allocates memory for the zone list dynamically, up to 32K (Note: this is the same as the System 6 Chooser). Each entry in the zone list uses 1 byte of memory for each character in the zone name, plus 1 byte. The Chooser uses this extra byte as a length byte. For example, the 7-character zone name "My Zone" uses 8 bytes of memory: 7 bytes for the characters and 1 byte for the length byte. The maximum length of a zone name is 32 characters. A 32-character zone name uses 33 bytes of memory.

   Based on this information, if every zone had a 32-character name, it would be possible to have a maximum of 992 zones listed in the Chooser (32,768 / 33 = 992.97, remove the remainder). The maximum number of zones that can be displayed in the Chooser is wholly dependent on the length of the zone names being used.

3) This one is self-explanatory; it controls whether or not AppleTalk is active (Note: this is the same as the System 6 Chooser).

4) Determining the maximum number of visible Chooser device names:

   The System 7 Chooser allocate a 32,768-byte buffer for the Chooser's list of available AppleTalk network device names (Note: the System 6 Chooser allocated a 512-byte buffer). Each name in the buffer is embedded in an AppleTalk Name Binding Protocol (NBP) packet received by the Chooser from the selected device type. The NBP packet is called a "lookup reply", and is sent in answer to the Chooser's lookup broadcast for the selected device. An example is the selection of the device type LaserWriter driver, and the displayed LaserWriter object names.

   The buffer space used by each returned AppleTalk device is the length of the NBP reply packet returned by the device to the Chooser's lookup.

   NBP LaserWriter Lookup Reply Packet Definition

Function and Tuple Count:	1 byte
NBP ID:	1 byte
Network Number:	2 bytes

Node ID:	1 byte
Socket Number:	1 byte
Enumerator:	1 byte
Object Field Length:	1 byte
Object:	length of name
Type Field Length:	1 byte
Type:	11 bytes for type "LaserWriter"
Zone Field Length:	1 byte
Zone:	1 byte for zone "*" the NBP reply default
TOTAL	22 bytes + length of the LaserWriter name

A calculation for determining the maximum number of visible LaserWriters in a zone:

Number of visible LaserWriters = trunc(32,768/(22+(sum of name lengths / Number of LaserWriters))

If the LaserWriter names are all the same length, the calculation is simplified to trunc(32,768/(22+length)). The mean calculation (sum of name lengths / Number of LaserWriters) is not necessary in this case.

(NOTE: Trunc indicates that decimal values should be ignored. That is, a result of 780.19 indicates 780 LaserWriters.)

The calculation can be used for any other type of AppleTalk device, if the type length and the mean of the device names are known.

System 7 Chooser selecting the Apple LaserWriter driver displays:

Mean Name Length	Max Number of Visible LaserWriters
32	606
30	630
25	697
20	780
15	885
10	1024
5	1213

For information on the System 6 Chooser limits, search on System 6 Chooser.

Published Date: Feb 18, 2012

System 7: System 7.0-7.1.2 Preferences, Defaults & Location

This article describes the default preference settings of System 7.0 through System 7.1.2.

You can customize your Macintosh in a variety of ways to suit your own personal style. For example, you can change ways in which information is displayed, the sounds your system makes, and how it handles file management. Your Macintosh uses a variety of Preferences files to maintain your custom settings.

There are several preference settings under System 7. System-wide preferences, such as mouse-tracking speed, are set via Control Panels, but are stored in Parameter RAM (PRAM). Preferences specific to the Finder are also set via Control Panels, but are stored in a file called Finder Preferences located in the Preferences folder, in the System Folder.

Here is some information on where each preference is stored, along with instructions for resetting both system-wide and Finder preferences.
This article has been archived and is no longer updated by Apple.

System Preferences

This table lists system-wide preferences that may affect all applications:

NOTE: Items marked with an asterisk (*) (the last items in the table) apply to the PowerBook.

PREFERENCE	LOCATION	DEFAULT
32-bit addressing	Memory Control Panel	24-bit addressing
Disk cache size	Memory Control Panel	6K
Brightness settings	Brightness Control Panel	Mid-range on the slider
Highlight color	Color Control Panel	Black
Cursor blink rate	General Control Panel	Middle setting
Menu blink count	General Control Panel	3 times
Date, time, and displayed format	General Control Panel and Alarm DA	None
Keyboard repeat rate and repeat delay	Keyboard Control Panel	For repeat: One away from Fast For delay: One away from Long
Monitor settings and location of extra monitors	Monitors Control Panel	Primary monitor only; set to Black & White
Mouse tracking and double-click speeds	Mouse Control Panel	For tracking: Very Slow For double-click: Middle setting
Beep sound	Sound Control Panel	Simple beep, though it is not highlighted
Startup disk choice	Startup Disk Control Panel	None set, uses standard volume search method
Cache settings (68040 Macintosh)	Cache Switch Control Panel	Faster (Caches Enabled)
Minutes before system sleep*	PowerBook Control Panel	8 Minutes
Minutes before	PowerBook Control Panel	4 Minutes

hard disk sleep*		
Macintosh PowerBook rest*	PowerBook Control Panel	Rest (While in the PowerBook Portable Control Panel, hold down the Option key and click Minutes Before System Sleep.)
Stay awake when plugged in*	PowerBook Control Panel	Unselected
Modem selection	PowerBook Setup Control Panel	Internal modem
Wake on ring	PowerBook Setup Control Panel	Unselected (See Portable Control Panel for internal modem.)

Except for Date and Time and the default application font all system-wide preferences may be reset by resetting PRAM.

* To reset PRAM under System 7, hold down the Command-Option-p-r keys during start up (Make sure the Caps Lock key is up!). The Macintosh restarts shortly after displaying the "Welcome to Macintosh" screen, which indicates that PRAM has been reset.

Finder Preferences

PREFERENCE	LOCATION	DEFAULT
Font used for Finder view	Views Control Panel	Geneva 9
Icon alignment settings for Finder	Views Control Panel	Straight grid - "Always snap to grid" deselected
Icon list view settings for Finder	Views Control Panel	Smallest icon; display sizes, kinds, labels, and dates; deselect "Calculate Folder Sizes" and "Show Disk Info in Header"
Trash Can warning dialog	Setting in Get Info for the Trash Can	Warn before emptying

With the exception of virtual memory, these parameters may be reset by deleting the Finder Preferences file, which is located in the Preferences folder inside the System Folder. System 7 does not allow this file to be modified so if it is on the start-up disk, you need to disable it instead. To do this, drag the Finder Preferences file out of the Preferences folder and restart the Macintosh. System 7 creates a new Finder Preferences with default values automatically. You may then delete the old Finder Preferences file.

NOTE: The Virtual Memory, File Sharing, and Window Color settings are stored with their respective Control Panel files and cannot be reset using these methods. Virtual Memory and File Sharing can be temporarily disabled, however, by pressing the Shift Key while starting the Macintosh. Hold the key down until "Extensions Of" appears in the "Welcome to Macintosh" screen.

This article was published in the "Information Alley":
Volume 1, Issue 3
Published Date: Feb 18, 2012

Lisa 7/7: Hardware Failures and Software Installation

This article has been archived and is no longer updated by Apple.
Various error numbers usually associated with hardware failures have appeared on Lisas with the 7/7 Office System. Typically, the user hasn't selected Erase when installing the 7/7 Office System. After you safely backup your documents, reinstall the software to erase the hard disk before using the system.
Published Date: Feb 18, 2012

System 7: Short File and Folder Names for MS-DOS Access

The file and folder names in the Get Info dialog box are not the same as the name shown under the directories on the Finder desktop. When I click on the name in the Get Info dialog box, the name changes. Why?

This article has been archived and is no longer updated by Apple.

```
The file or folder you're viewing is located on a file server or is being
shared under System 7.  To allow both MS-DOS computers and Macintosh
computers to access file servers, all files and folders are named twice.

Since MS-DOS limits both the length and the kinds of characters in
file and folder names, we have to change the standard Macintosh names to
shorter versions that work under MS-DOS.  Clicking on the file or folder
name in the Get Info dialog box toggles between the Macintosh and MS-DOS
versions of the name.

Examples:
 Macintosh name = System Folder    Short name=!System.Fol
 Macintosh name = Cafe 7.0F        Short name=!Cafe_7.0F
```

Published Date: Feb 18, 2012

System 7: Microsoft File Version 2.0, 2.0a Not 32-Bit Compatible

Article Change History

09/02/92 - REVIEWED
* For technical accuracy.

Is Microsoft File (versions 2.0 and 2.0a) 32-bit compatible?

This article has been archived and is no longer updated by Apple.

```
No.  It has problems running with 32-bit addressing turned on.  The
difficulty is in creating a new database structure from a copy of another
database structure.  When this occurs, the application unexpectedly quits,
listing a type 1, bus error.
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Published Date: Feb 18, 2012

System 7: Contiguous Memory with Virtual Memory in 24-bit Mode

Article Change History

08/19/92 - REVIEWED
* For technical accuracy.

What is the largest contiguous memory block available with virtual memory in 24-bit mode?

This article has been archived and is no longer updated by Apple.
In 24-bit mode using virtual memory, total RAM can be set up to 13MB, depending on the CPU and the number and placement of NuBus cards. This memory is not a contiguous block, however. The largest contiguous block will be roughly 7.5MB.

Viewing the About this Macintosh window can appear confusing because the totals for RAM used by programs may seem to add up incorrectly. A total of 16MB of RAM is addressable under System 7. Some of this is memory reserved for ROM (1MB), IO (1MB), video for the Macintosh IIci or Macintosh IIsi (1MB), and NuBus cards (1MB each). This memory is mapped starting above the 8MB mark. Any free memory in the upper 8MB of RAM (up to the 5MB possible) forms an "upper memory block."

Under System 7, system heap first loads into the bottom 8MB of memory then programs, starting with Finder, load into the upper memory block, provided there is a large enough contiguous block there to hold the program. If there is not a large enough contiguous block in the upper memory, the program will load in the lower memory block. Thus it is possible to have a lower unused block of about 7.5MB (the lower 8MB minus system heap) and an upper unused block of about 4MB (or less). Viewing About this Macintosh lists only the largest unused block of memory, not the total unused memory.

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TA46065_System_Window_Border_Colors_in_Color_Mode_(TIL07415).pdf

System 7: Window Border Colors in 16-Color Mode

Article Change History

08/17/92 - REVIEWED
* For technical accuracy.

Can I change the color of window borders through the Color control panel when my monitor is set to 16 colors?

This article has been archived and is no longer updated by Apple.
Although the Window color option appears in the Color control panel when the Monitors control panel has been set to 16 colors, the window borders will remain black and white. To display colored window borders, set the Monitor control panel to 256 colors.

Published Date: Feb 18, 2012

System 7: Ready,Set,Go! Compatibility

Article Change History

09/02/92 - CORRECTED
* Spelling of product name.

Is Ready,Set,Go! 4.5 fully compatible with System 7?

This article has been archived and is no longer updated by Apple.
Ready,Set,Go! 4.5a, which is listed as fully compatible in the "System 7.0: Compatibility With Selected Hardware and Software" booklet has some compatibility problems with printer drivers later than 5.2 (System 7 drivers are 7.0).

Non-PostScript pen lines and fills will not print and may result in the error message "Undefined error, Command-S 8. A PostScript error has been generated by the LaserWriter extension file. The document is OK but cannot be printed." PostScript pen lines and fills which are located to the far left of the Ready,Set,Go! menu work fine.

LetraSet will not be updating Ready,Set,Go! 4.5a, but will continue to support the product. They recommend Design Studio 2.0 as an upgrade.

Published Date: Feb 18, 2012

TA46067_Lisa_LisaTerminal_Problems_(TIL00742).pdf

Lisa 7/7: LisaTerminal Problems

This article has been archived and is no longer updated by Apple.

LisaTerminal doesn't have a soft break: pressing the break key drops the carrier. This was true in previous versions of the Office System as well.

Published Date: Feb 18, 2012

TDD Modems

What companies manufacture modems that can communicate with deaf or hearing-impaired TDD (Telecommunication Device for the Deaf) users?

This article has been archived and is no longer updated by Apple.
Krown Research and UltraTec make 300-baud/TDD modems. You can find their addresses and phone numbers in separate articles in the Tech Info library by searching on their company names.

These modems require a special cable to connect to the computer. They can be used with a Macintosh or Apple II system equipped with an RS-232 serial port. Use the 300-baud modem setting.

You can use MacTerminal 2.3.1 with these modems. MacTerminal 3.0 will not work with the TDD modems.

For a normal modem to communicate with a TDD Modem, change the TDD settings to ASCII and 300 baud, and set the normal modem to 300 baud and TTY.

Published Date: Feb 18, 2012

TA46069_Macintosh_IIsi_ThirdParty_Monitors_(TIL07425).pdf

Macintosh IIsi: Third-Party Monitors

What third-party monitors are compatible with the Macintosh IIsi?

This article has been archived and is no longer updated by Apple.
Most multisync monitors that are about 14" should work. There currently is no third-party two-page or portrait option available for the Macintosh IIsi's built-in video.

Here is a list of companies whose monitors work with the Macintosh IIsi's built-in video:

Mitsubishi
Relisys
Seiko
Sony
NEC MacSync
NEC Multisync
Princeton

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

Macintosh Classic: Third-Party 1/3 Height Drives

What third-party companies sell 1/3-height drives for the Macintosh Classic?

This article has been archived and is no longer updated by Apple.
Here are companies offering 1/3 height drives for the Macintosh Classic:

Mechanism Capacity
--------- --------
CMS Enhancements
MC-20 Seagate 20MB
MC-100 NEC 100MB

Microtech International
Europa 20-ic Seagate 20MB
Europa 50-ic Quantum 50MB
Europa 100-ic Quantum 100MB

MicroNet Technology
MCi-40p Conner 40MB
MCi-80p Maxtor 80MB

Optima Technology
MiniPak 401/Classic ----- 40MB
MiniPak 1301/Classic ----- 130MB
MiniPak 2001/Classic ----- 200MB

Procom Technology
Classic 20 Seagate 20MB
Classic 30 Seagate 30MB
Classic 45 Seagate 45MB
Classic 50 Quantum 50MB
Classic 100 Quantum 100MB

Storage Dimensions
MacinStor 40 Maxtor 40MB
MacinStor 80 Maxtor 80MB

Apple does not approve, test, or support these configurations.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

TA46071_Apple_II_SCSI_Card_Large_File_Transfer__(TIL07428).pdf

Apple II SCSI Card: Large File Transfer (11/96)

I am using an Apple II SCSI card to transfer files and sometimes large files become corrupted. Is there a fix for this problem?

This article has been archived and is no longer updated by Apple.

Files larger than 64K become corrupted during the transfer process when using the Apple II SCSI Card. Use the newer High Speed SCSI card drivers with the older SCSI cards.

Article Change History:
14 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

TA46072_Lisa_LisaTerminal_Parity_(TIL00743).pdf

Lisa 7/7: LisaTerminal Parity

This article has been archived and is no longer updated by Apple.
LisaTerminal occasionally changes the parity while receiving a transmission from a host computer. You can detect this change of parity by the grey boxes that appear in the place of the anticipated characters. You must cancel the transmission, reset the parity, and begin again.
Published Date: Feb 18, 2012

Backup Power Supplies

This article presents some information about backup power supplies.
This article has been archived and is no longer updated by Apple.
Here are a few evaluations done on standby power supplies, which will allow users, should a brownout or power failure occur, to shut down their systems without losing data.

An evaluation in the April 30, 1990, PC Week cited two products:

- SPS300: a 300 volt-ampere device from ITT Powersystems Corp.
- MM300SS: a 312 volt-ampere device from Sutton Designs

Both units kept the PC Week system operating for 12 minutes after a power outage.

An evaluation in the February 12, 1990 Infoworld mentioned the following products:

- 600-LS: a 600 volt-ampere device from American Power Conversion Corp.
- Linebacker 300: a 300 volt-ampere device from SL Waber, Inc.
- 650FR: a 650 volt-ampere device from Alpha Technologies, Inc.

An evaluation in the April 1989 Byte magazine discussed the following:

- VIP 800: a 800 volt-ampere device from ITT Powersystems Corp. that gave a 10-minute reprieve after a power failure.
- PC/ET: a 360 volt-ampere device from Emerson Electric

For more information, search the Web using the company names.

Note: Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.

Published Date: Feb 18, 2012

Macintosh IIci, IIfx, IIsi, LC: Memory Manager Performance

A customer reported that a Macintosh IIfx took 12-13 minutes to load and display an Adobe PhotoShop file. A Macintosh IIx took 1-2 minutes to load and display the same file. The customer was not using the black terminator, or the internal SCSI filter on the Macintosh IIfx. After the customer installed these, the Macintosh IIfx performed as expected.

This article has been archived and is no longer updated by Apple.
There is a minor problem in the Memory Manager in the ROMs of the Macintosh IIci, IIfx, IIsi, and LC. This results in performance degradation in an extremely small number of applications, and doesn't cause system crashes. This affects few applications and very few customers. It is not a new problem and it only applies if you're using System 6, System 7.0 corrects this bug.

During extensive testing and research, Apple investigated a variety of solutions to enhance the memory manager performance. One solution was software called the Memory Manager INIT (a software "patch"). Testing revealed that this patch did not enhance Memory Manager performance, and introduced risks, such as decreased performance, in some mainstream applications. We are aware of the distribution of an unofficial version of the Memory Manager INIT. This INIT was modified from Apple's experimental version, and should NOT be used. This INIT can cause data corruption, data loss and system crashes. Apple strongly urges that you throw away this INIT.

Because of the minimal impact, the Apple task force decided that it was not necessary to develop, test, and release a patch to the Memory Manager for System 6. It is important to realize the implications of patching the Memory Manager. Since it is at the heart of everything the Macintosh does, any patch would require major testing resources to cover the entire product line, large numbers of applications, and Network and Communications products.

Based on developer feedback, customer feedback, and extensive in-house testing, Apple identified very few affected applications.

If you have a customer reporting slow downs on the Macintosh IIci, IIfx, IIsi, or LC, check the following items:

1) They aren't using built-in video. The Macintosh IIci and IIsi cycle-steal. The LC does not.

2) They have a clean System folder. Large numbers of INITS cause many problems.

3) They don't have network-based problems that also cause slow downs.

4) They have a properly configured SCSI bus.

5) They generally have a configuration that works.

If the slow performance persists after checking these items, it may be due to a Memory Manager software problem. The best solution would be to upgrade to System 7.

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Macintosh: Plotter Driver Software

Plottergeist is a Macintosh Chooser-level plotter driver that supports Hewlett-Packard and Houston Instrument plotters.
This article has been archived and is no longer updated by Apple.
Plottergeist, from Palomar Software, allows the connection of a Macintosh to plotters to produce plotted output from CAD software, presentation packages, drawing and graphics programs. Compatible with all Macintosh applications, the plotter can be chosen from within a software application.

Background printing allows users to work on the Macintosh while their document is being plotted. A preview mode allows users to see their entire document before sending it to be plotted.

Arbitrary reduction and enlargement allows scaling output to fit from a standard letter-size page to a 36 by 48-inch E-size drawing. You can print smooth text in large sizes, or use the plotter's built-in fonts for fast draft work.

The package includes disk, manual and an RS-232 interface cable.

Plottergeist requires a Macintosh Plus or later. Background printing requires 2MB of RAM and MultiFinder.
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Macintosh: Connections Software from Concentrix

This article describes Connections¬ software for the Macintosh.

This article has been archived and is no longer updated by Apple.
Connections software, from Concentrix Technology, Inc. consists of applications such as personal calendaring, to-do lists, a telephone directory, call tracker, daily accomplishments journal, and text information organizer. It provides an interface to IBM PROFS electronic mail and group calendaring.

Many of the functions of PROFS calendaring and electronic mail can be done off line, including archiving, organizing, and searching e-mail messages. If the mainframe or network goes down, the user still has access to the calendar and previously read e-mail messages. Mail messages can also be created off line and sent from Connections' out basket.

Connections offers slots for additional modules that can be created with other third-party connectivity tools, such as MitemView or SQL/DAL add-ons.

Connections can be modified in HyperCard.

The address and phone number of Concentrix Technology, Inc. are in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

Macintosh LC: Screen Print to an ImageWriter

When using the Command-Shift-4 key sequence to print the screen, the ImageWriter defaults to the modem port. If you open the Chooser, reselect the printer port, and then close the Chooser, the ImageWriter still defaults to the modem port. Can you get a screen print on a Macintosh LC connected to an ImageWriter?

This article has been archived and is no longer updated by Apple.
You can get a screen print with a Macintosh LC when you leave the Chooser window open as the top window, and print to the ImageWriter using Command-Shift-4.

A better solution is to use the Command-Shift-3 key sequence to print the screen to a disk file. Then open the disk file in MacPaint, and print from there.

Published Date: Feb 18, 2012

Apple File Exchange: AppleWorks 3.0 to MS Works Translator

Is the Apple File Exchange Translator compatible with AppleWorks?
This article has been archived and is no longer updated by Apple.
The AppleWorks to Microsoft Works Translator for Apple File Exchange will operate properly with AppleWorks 2.x and earlier. It does NOT operate with AppleWorks 3.0 files.

There is a third-party solution called Cross-Works by SoftSpoken. You can find the address and phone number for SoftSpoken in a separate article in the Tech Info Library.

TIL article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

TA46081_Apple_IIe_and_IIGS_Optical_Character_Recognition_Software_(TIL07438).pdf

Apple IIe and IIGS: Optical Character Recognition Software

Is Optical Character Recognition software available for Apple II computers?

This article has been archived and is no longer updated by Apple.
WestCode Software developed INWORDS, Optical Character Recognition (OCR) software for the Apple IIe and Apple IIGS. You use the software with hand-held scanners. It scans text at up to 3000 characters per minute.

You can find the address and phone number for this company in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

Personal LaserWriter NT: Switch Settings

Users sometimes confuse the Personal LaserWriter NT switch assembly with the SCSI ID selector found on SCSI hard drives. These users change the printer mode number from zero (the default LocalTalk/PostScript setting) to another number. If the printer is set to anything other than zero or seven, the printer will disappear from the Chooser and the green ready light may begin blinking. How can users resolve this problem?
This article has been archived and is no longer updated by Apple.
To resolve this problem, reset the mode selector switch to zero, then restart the printer. When the test page prints, verify that it contains the desired printer configuration information.

The Personal LaserWriter NT has two connectors (DIN-8, DB-25) and a switch assembly that looks almost identical to the SCSI ID selector switch on external SCSI drives. The switch assembly sets the printer mode (LocalTalk/PostScript, Diablo 630 Emulation, and so on) for the printer, and has nothing to do with a SCSI ID setting.

Switch setting information:

Switch	Port	Mode Setting
0	Din-8	AppleTalk, PostScript (normal mode)
	DB-25	Serial, no input
1	Din-8	Serial (9600), (No parity), 7 data bits, 1 stop bit, XON/XOFF, PostScript Batch Mode
	DB-25	Serial 9600, No parity, 7 data bits,1 stop bit, XON/XOFF, PostScript Batch Mode
2	Din-8	Serial 9600, No parity, 8 data bits, 1 stop bit, XON/XOFF, HP Emulation
	DB-25	Serial 9600, No parity, 8 data bits, 1 stop bit, XON/XOFF, HP Emulation
3	Din-8	Serial 9600, No parity, 8 data bits, 1 stop bit, XON/XOFF, Diablo 630 Emulation
	DB-25	Serial 9600, No parity, 8 data bits, 1 stop bit, XON/XOFF, Diablo 630 Emulation
4	Din-8	Serial 1200, No parity, 7 data bits, 1 stop bit, XON/XOFF, PostScript Batch Mode
	DB-25	Serial 1200, No parity, 7 data bits, 1 stop bit, XON/XOFF, PostScript Batch Mode
5	Din-8	Serial 9600, No parity, 8 data bits, 1 stop bit, no handshake(?), PostScript Batch Mode
	DB-25	Serial 9600, No parity, 8 data bits, 1 stop bit, DTR, PostScript Batch Mode
6	Din-8	Serial 9600, No parity, 8 data bits, 1 stop bit, XON/XOFF, PostScript Binary Mode
	DB-25	Serial 9600, No parity, 8 data bits, 1 stop bit, XON/XOFF, PostScript Binary Mode
7	Din-8	AppleTalk, PostScript (normal mode)
	DB-25	No input

Notes:
- For switch positions 1 through 6, the parameters are listed in the following order: data transfer rate, parity check, number of data bits, stop bits, handshake and mode.

- PostScript Binary Mode allows the user to change in and out of the various emulation modes (like Diablo 630 and HP Emulation) while still in PostScript by using control codes. This was a limiting factor on the LaserWriter IINTX, but is available on the Personal LaserWriter.

- When the switch is set to 4 and you turn on the printer, you will get a diagnostic page instead of the normal startup page. This page shows the current parameters of each switch setting and other useful information.

- To Connect the Personal LaserWriter to an MS-DOS computer with a LocalTalk PC Card installed, use setting 0 or 7 [0 is the default setting from the factory].
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Apple II High Speed SCSI Card: CMS Hard Drive (11/96)

My computer does not recognize a CMS hard drive when using the Apple II High Speed SCSI card. How can I correct this problem?

This article has been archived and is no longer updated by Apple.

Ensure DIP switch 8 on the CMS hard drive is in the closed position. DIP switch 8 controls the reset line at pin 40. All Apple SCSI cards use the reset line for handshaking. If this pin is disconnected or turned off, the computer will not recognize the hard drive.

If your computer still doesn't recognize the CMS hard drive, check the SCSI switch to make sure it is not set to 7.

Article Change History:
14 November 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Apple IIGS: Remove AppleTalk Before Internal Test

I performed an internal test on my Apple IIGS using the Command-Control-Option-Reset key sequence. Soon after I did this, other computers were disconnected from the network. Did my Apple IIGS internal test cause the problem?

This article has been archived and is no longer updated by Apple.
Yes. When performing an internal test on an Apple IIGS that is on an AppleShare network, be sure to disconnect the network connector. Failure to do so will cause severe communication problems with other nodes, and will usually result in other computers becoming electronically disconnected from the network.

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Macintosh IIfx: StarController Incompatibility, Workaround

This article describes workarounds for the StarController compatibility problem with the Macintosh IIfx.

This article has been archived and is no longer updated by Apple.
The Macintosh IIfx, with it's new high speed serial ports, has some problems with the "Black Beauty" StarController¬ hub (PN207). If you set the serial ports on the Macintosh IIfx to "Compatible Mode" everything works fine. But in "High Speed Mode," network performance actually drops if you are going through a StarController.

The problem involves the StarController timing PAL (a socketed programmable analog logic chip) and the way AppleTalk is implemented on the Macintosh IIfx. By replacing the PAL with a GAL (gate array logic chip), you can restore StarController and Macintosh IIfx communication.

The StarController Series 300 hub, which replaces Black Beauty, works fine with the Macintosh IIfx in "High Speed Mode." If you have a Black Beauty StarController and want the PALs replaced by GALs, you can get an upgrade kit, available to the general public (U.S. ONLY).

The address and phone number for Farallon is in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

Macintosh IIfx: Logic Board Jumper Settings

A customer's Macintosh IIfx is not functioning, and I suspect that the jumper settings on the logic board have been altered. What should I check for?

This article has been archived and is no longer updated by Apple.

Jumper J103 on the Macintosh IIfx logic board disables the external 68030 RAM cache when it is disconnected. In the event that the jumper is removed, the system may not reset properly when turned on, essentially disabling the system.

As a side note, the jumper next to J103, J106, is used for debugging. This jumper is not documented because it can severely affect system performance.

Published Date: Feb 18, 2012

Data Modem 2400: Reset Parameters Before Testing

My customer is unable to establish communications with a dial-up service or another modem. The modem dials out, but as soon as the connection with the other modem is made, it hangs up. The Apple ModemTest diagnostic confirms a failure in the modem board. Since replacing the main board doesn't solve the problem, what should I do next?

This article has been archived and is no longer updated by Apple.
The Data Modem 2400 has many parameters that are configured through software. Some of the finished goods units, and some of the service stock boards, may not be configured for normal use. The current ModemTest diagnostic test will fail any modem that has parameters other than the default settings.

Reset the modem parameters to the default settings. Do this by pressing the switch on the front of the modem while turning it on, or by issuing the 'AT&F' command using a terminal emulation package. The reset procedures are documented in the owner's guide.

Published Date: Feb 18, 2012

Logo: Disk Replacement

Is it still possible to get a replacement for bad Logo disks?
This article has been archived and is no longer updated by Apple.
Yes. Logo Computer Systems, Inc. still supports Logo purchasers with replacement disks as needed. There is a charge for replacement, and you must send them the damaged disk.

If you call the Montreal number, and don't understand French, the electronic message will switch over to English if you wait a while.

Search the Tech Info Library for a separate article that gives the phone number and address for Logo Computer Systems, Inc.
Published Date: Feb 18, 2012

Macintosh Portable: Battery Recharger

This article describes battery rechargers for the Macintosh Portable.

This article has been archived and is no longer updated by Apple.
Apple Computer sells the Macintosh Portable Battery Recharger (p/n M0275). It comes with a power adapter and a cradle that holds the battery while it is recharging.

Lind Electronic Design, Inc. (LED) markets a specially designed External Battery Charger for the Macintosh Portable Rechargeable Battery. It comes in a molded plastic box with carrying handle. It measures 3.3 x 6 x 7 inches, weighs 1.6 lbs. without the spare battery, and obtains power through Apple's Power Adapter from a 115V AC wall outlet. It can also charge the battery from a 12V DC power source such as a vehicle cigarette lighter.

LED also sells a 12V DC Automobile Power Adapter that plugs into the Macintosh Portable through the Power Adapter port. The Automobile Power Adapter can operate the computer and charge its internal battery from a 12V DC power source. A regulator prevents the Power Adapter from overcharging the Macintosh Portable's internal battery. It weighs only 0.75 lbs, measures 1.9 x 2.4 x 3.3 inches, and comes equipped with a Velcro fastener strip to attach it to the side of the Macintosh Portable's case. When the Adapter is not in use, all power cords and plugs fit into the Portable case.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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TA46092_InterPoll_The_Role_of_Responder_(TIL07451).pdf

InterPoll: The Role of Responder

Article Change History

08/21/92 - EDITED
* For clarity and technical accuracy.

What is Responder?

This article has been archived and is no longer updated by Apple.
Responder is a resource placed in individual Macintoshes that identifies that computer - and any others in the network that have Responder installed - when the Inter*Poll program runs. At startup time, Responder reads the name of the user and the Macintosh name where it resides, then the versions of the system software, LaserWriter driver, and AppleTalk. Inter*Poll requests this information later to tell the system administrator the characteristics of the user's system. Inter*Poll interrogates each system, and Responder answers Inter*Poll.

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Macintosh: KeyLayout

What is KeyLayout?

This article has been archived and is no longer updated by Apple.

KeyLayout is a resource that tells the system software where keys are located on the keyboard. This is important for international systems. International systems have different keyboard layouts, but use the same physical keyboard.

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LocalTalk Interface Board from DayStar Digital

This article describes the LocalTalk Interface Board manufactured by DayStar Digital, Inc.
This article has been archived and is no longer updated by Apple.
The LT200 LocalTalk Interface Board allows IBM PC, PS/2, and Macintosh computers to coexist on a LocalTalk network. The LT200 is a card that fits into the expansion slot of a PC or PS/2. Users can plug directly into the LocalTalk network and have access to LaserWriters, Macintosh computers and other devices on the network.

The LT200 includes printer utilities that allow PCs to print to PostScript printers.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

Macintosh LC and IIsi: No Top Lid Screw in US Models

Why does Apple ship the Macintosh IIsi and LC without the screw for the top lid?

This article has been archived and is no longer updated by Apple.
The screw is not included on the US version of the Macintosh IIsi and LC because it is not required in the United States.

Published Date: Feb 18, 2012

Macintosh SE: Power Supply Connector Pin Assignments

This article is a chart of the pin assignments for the Macintosh SE power supply connector.

This article has been archived and is no longer updated by Apple.

Pin number	Signal	Color of Wire
1	Ground	Black
2	Ground	Black
3	Ground	Black
4	+5 V	Orange
5	+12 V disk	Yellow
6	-12 V	Green
7	Ground	Black
8	Ground	Black
9	+5 V	Orange
10	+12 V sweep	Red

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Macintosh II Family: NuBus Video Port Expanders

This article describes NuBus video port expanders for the Macintosh II family, manufactured by Network Technologies, Inc.

This article has been archived and is no longer updated by Apple.

Vopex-2M

The Vopex-2M video port expander allows two Macintosh II monitors to be driven from the same video port. In addition, the operating distance between the Macintosh and its monitors can be extended to 50 feet. This permits the relocation of monitors into classrooms, control rooms, factory floors and applications using video projectors. Vopex-2M has 50 MHz bandwidth and no resolution loss. The Macintosh II interface cable is included.

Vopex-8M

The Vopex-8M is a video port expander for the Macintosh II video standard and is functional with both the monochrome and color monitor. The Vopex-8M allows eight monitors to be driven by a single Macintosh II at distances up to 50 feet from the computer. It is a device for applications such as training rooms, presentations, video printers and video projectors.

The Vopex-8M connects directly to a Macintosh II video port via a 4-foot interface cable supplied by NTI. All eight output ports are individually buffered. The Vopex-8M operates with monochrome or color monitors because it precisely tracks the input signal.

It is easy to install and operates by plugging any compatible Macintosh II monitor directly into the 15-pin D output connectors. Extension cables fitted with the same 15-pin D connectors are available in lengths of 25, 35 and 50 feet.

The Vopex-8M is housed in an 8 by 2.5 by 6.2-inch package and powered by 110 VAC.

For more information, search under "Network Technologies".

Published Date: Feb 18, 2012

HyperCard 1.2.x: System Software Incompatibility

If you are using system software version 6.0.6, 6.0.7, or 7.0 you may have heard that you can't use HyperCard 1.2.2 or 1.2.5. The following discussion tells you how to recover when one of these HyperCard versions causes your computer to lock up.
This article has been archived and is no longer updated by Apple.
HyperCard generates sound when a stack uses play or beep, or makes a sound because you typed a wrong key. With system software version 6.0.6, 6.0.7, or 7.0, HyperCard 1.2.x will lock up when sound is produced for any reason. When this happens, type the Command-Period (Command-.) key sequence. If you were editing a script when the program locked up, the script window closes; if a script was executing, it is canceled.

To prevent HyperCard from causing a lock-up condition, avoid making a sound. Set your Speaker Volume to 0 from the control panel. You won't hear any sounds, but your stack will avoid this sound problem.

If you must play a sound, you can use Farallon's fplay external command (and associated resources) from Farallon's HyperSound¬ Toolkit. If you use HyperSound, substitute fplay for every occurrence of the play command or beep command.

If you don't have to use HyperCard 1.2.x with System 6.0.7 or 7.0, don't use it. If possible use HyperCard 2.0. HyperCard 1.2.x is officially not compatible with System 6.0.7 or 7.0. So you may find problems other than those described above.
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AppleTalk: System Errors and Third-Party Software

Some third-party software products cause system crashes when AppleTalk is turned off.

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If AppleTalk is turned off, you may get error codes 3, 10, 12, or 85 while using system software 6.0.5 or higher with network-aware software. Some third-party software products go out and check the network, and if AppleTalk is turned off, the system crashes.

To fix this problem, use the Chooser to make sure AppleTalk is turned on.

Published Date: Feb 18, 2012

Personal LaserWriter LS: Upgrading to 1MB RAM

This article tells you what you need to upgrade a Personal LaserWriter LS to 1MB of RAM.

This article has been archived and is no longer updated by Apple.
The standard amount of RAM in a Personal LaserWriter LS is 512K. The speed of this RAM is 100ns.

To upgrade to 1MB, you need four 256K x 4-bit 100ns RAM chips. Third-party companies supply this memory. Note that this is NOT 256K x 1-bit memory, which the Apple IIGS uses.

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Macintosh IIsi and LC: Third-Party SIMM Incompatibility

Some Macintosh IIsi and Macintosh LC customers have difficulties with third-party 2MB SIMMs installed in their systems. Reported problems include system hanging and/or system crashes sometime after a third-party 2MB SIMMs upgrade. Read the following discussion for more details.

This article has been archived and is no longer updated by Apple.
Apple investigated the problem and discovered that this occurs because some third-party 2MB SIMMs are not compatible with the Macintosh IIsi and the Macintosh LC.

You can determine whether your third-party 2MB SIMMs are compatible with a Macintosh IIsi or Macintosh LC by removing them from the system and installing known good Apple 1MB SIMMs. If the symptoms disappear, the problem was in the third-party SIMMs, and you should discontinue using them in your system.

Contact the manufacturer of the third-party SIMMs if this troubleshooting procedure determines they are incompatible.

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Laser Printers: Ozone Emissions

This article provides guidelines for reducing ozone emissions from laser printers, as well as suggestions for minimizing the effects of ozone in the workplace.
This article has been archived and is no longer updated by Apple.
Apple Computer has prepared this document to help answer questions about ozone emissions from laser printers. We have used information from the American Conference of Governmental Industrial Hygienists (ACGIH), the National Institute for Occupational Safety and Health (NIOSH), the Occupational Safety and Health Administration (OSHA), and the Underwriters Laboratory (UL). For additional assistance please contact an authorized Apple reseller or call Apple Customer Relations at 1-800-776-2333. To locate an Apple reseller in your area, call 1-800-538-9696.

Background Information

Ozone gas is emitted in detectable levels by some laser printers and photocopiers as a byproduct of the electrophotographic process. In laser printers the primary source of ozone is the corona wire which produces an electrical discharge to make the toner powder temporarily adhere to the print drum.

Ozone is produced only when the printer is printing. The current OSHA permissible exposure limit for ozone is 0.1 parts of ozone per million parts of air (ppm) averaged over an 8-hour work shift.

Manufacturers install special filters to ensure safe ozone emission levels. Laser printers that operate without a corona wire emit a negligible amount of ozone gas and do not require these filters. In the US, UL provides an ozone emission standard based on OSHA exposure limits. In Europe, the maximum permitted ozone concentration is specified by European Norm (EN).

A properly maintained laser printer that is installed in a well-ventilated area should not expose users to unsafe ozone levels. In general, filter effectiveness can diminish in direct proportion to the number of pages printed. Therefore, filters should be replaced periodically. Dust accumulating on the filter's surface can also affect its performance.

Ozone can be a mild to severe irritant (dry throat and nose, headache, and sore eyes) and at very high concentrations can have serious adverse health effects such as nausea and pulmonary congestion.

Ozone (O_3) is a highly unstable molecule that reverts quickly to oxygen (O_2). Ozone concentrations may rise to noticeable levels depending on the rate generated (amount and time) as well as the physical environment (such as room ventilation and location of workers).

Typically, ozone can be identified by its characteristic odor at concentrations below the permissible exposure limit. However, as the concentration of ozone or the duration of exposure increases, the ability of a person to smell it may decrease.

Apple's LaserWriter Printers

Apple is committed to making products that meet or exceed the industry and government health and safety guidelines of every country where we do business. All Apple laser printers are within the limits of the UL guidelines when shipped from the factory to the customer. The technology is advancing, however, and most new laser printers have no corona wire and do not emit ozone.

Of Apple's printer products, only the Color LaserWriter 12/600 PS and the Color LaserWriter 12/660 PS have corona wires. These printers have ozone filters that are designed to operate effectively for printing up to 100,000 pages. For maximum effectiveness, Apple recommends service (checking the entire ozone emission control system) and an ozone filter replacement after 50,000 pages. You can print a startup page to determine your laser printer's page count. Dusty conditions or damage to the filter may necessitate more frequent filter replacement. This maintenance check and filter replacement can be done by any authorized Apple service provider.

The laser printer works best in relative humidity between 30 and 70 percent. Lower humidity can slow the natural breakdown of ozone in the air and can reduce the filter's effectiveness.

Proper installation of your laser printer will help to keep the ozone concentrations at a safe level. Choose a well-ventilated area. In general, a correctly designed air-conditioning system provides adequate ventilation for printer use. Air circulation is especially important if there are multiple laser printers and/or photocopy machines in an area. A small, enclosed space such as a closet should not be used for printing. Placement in a common area is preferable to placement in an individual's workspace. The fan exhaust should not blow directly in anyone's face.

None of Apple's other printers emit ozone. The ImageWriter II; Color StyleWriter 1500, 2200, 2400, 2500 & Pro, and Apple StyleWriter 1200 are not laser printers and do not emit ozone. The Personal LaserWriter 300 & 320; LaserWriter 4/600 PS, 16/600 PS & 12/640 PS; and LaserWriter Select 360 do not have a corona wire and therefore do not require an ozone filter in order to meet UL safety requirements.
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StyleWriter: Clear the Ink Cartridge When Installing a New One

When installing a new ink cartridge in the StyleWriter printer, you must clear the cartridge. This process, which takes several seconds, is detailed in the StyleWriter User's Manual:

This article has been archived and is no longer updated by Apple.
Here's how to do it:

1) Turn the StyleWriter's Power Switch off.

2) Press the Ready switch (located on the left) and hold.

3) Press the Power switch (located on the right) and release both switches simultaneously.

Do all this twice. You may hear some whirring and clicking sounds as the cartridge is cleaned, but consider it a normal part of the process.

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StyleWriter: Protect Ink Cartridge during Air Transport

Low air pressure during air transport can cause ink to pump from the StyleWriter cartridge.

This article has been archived and is no longer updated by Apple.
When transporting a StyleWriter printer by air, always remove the cartridge from the printer and then protect it.

The best solution is to carry a new cartridge still in its plastic carton.

To provide minimum protection, place the opened cartridge in a sealed plastic bag.

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Macintosh LC Apple IIe Card version 1.0: Software Compatibility

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Mention in this list does not constitute an endorsement by Apple Computer, Inc. Third-party product information is provided for compatibility reasons only.

Please contact your dealer or the software developer if you have any questions. They can help you identify the newest version of a particular program or tell you how to upgrade your current version if necessary. For best results, we recommend you use the latest versions of software and hardware products with your Apple IIe Card for the Macintosh LC.

This article has been archived and is no longer updated by Apple.

Title Author
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1-2-3 Digit Multiplication, 1.0 Microcomputer Workshops
816/Paint,3.1 Baudville
Ace Reporter,1984 Mindplay
Activity Files-Bank Street Writer,1984 Scholastic
Addition Logician,1984 MECC
Agents of Infection,1986 Prentice-Hall
An Experience w/ AI,4/27/87 Scholastic
Alge-Blaster,1985 Davidson & Associates
Algebra Curr Pk Vols 1 - 6, 1985 Britannica Software-EduWare
Alice in Wonderland,1986 HRM Software
All about Circulation,1980 Micro Power and Light
Alligator Alley,1984 DLM
Alphabet Recognition,1986 Micro Power and Light
Amer. Hist, Ach. I:PreColumb-1860,1.3 Microcomputer Workshops
American Indians,1984 Right On Programs
Animal Kingdom,1986 Unicorn Software
Animal Photo Fun,1985 SRA
Animate,1986 Broderbund
Apple Access II,1.1 Apple Computer, Inc.
Apple at Work 40-col,1984 Apple Computer, Inc.
Apple at Work 80-col,1984 Apple Computer, Inc.
Apple Co-Pilot,1982 Apple Computer, Inc.
ED Classics w/ Shell Games,1984 Apple Computer, Inc.
Apple II Business Graphics,1981 Apple Computer, Inc.
Apple II Instant Pascal,1.5 Apple Computer, Inc.
Set to monochrome monitor.
Apple II Pascal,1.3 Apple Computer, Inc.
Apple II System Utilities,3.2 Apple Computer, Inc.
Apple IIe: An Introduction,1984 Apple Computer, Inc.
Apple IIe: Inside Story,1984 Apple Computer, Inc.
Apple Logo,1982 Apple Computer, Inc.
Apple Pres Getting Down to BASIC,1986 Apple Computer, Inc.
Apple SuperPILOT,1982 Apple Computer, Inc.
Apple SuperPilot Log,1982 Apple Computer, Inc.
Apple Term //,1.5 Apple Computer, Inc.
Apple Writer II,2.1 Apple Computer, Inc.
AppleWorks,3.0 Claris
AppleWorks,2.1 Apple Computer, Inc.
AppleWorks Mailing Program,1.3 International Apple Core

ASCII Express,4.30P United Software Industries
ASCII Express MouseTalk,v 1.5 United Software Industries
Audubon Wildlife Adventures,1988 Advanced Ideas
Award Maker Plus,23621/236 Baudville
Bake & Taste,1986 MindPlay
Cannot run at Fast speed.
Bank Street School Filer,1986/87 Sunburst
Bank Street Writer III,1986,1.3 Scholastic
3.5" on external UniDisk Drive
(due to copy protection).
Bank Street Writer Plus2.6 Broderbund
3.5" on external UniDisk Drive
(due to copy protection).
Bard's Tale,v1985 Electronic Arts
Basic Programming with ProDOS,1983 Apple Computer, Inc.
Biomes,1986 D.C.Heath/William K.Bradford
Blazing Paddles,04441A Baudville
Blockers & Finders:Conjecture & Proof Sunburst
BluePrint for Decision making,1985 MCE, Inc.
Body Awareness,1983 Mindscape
Body Awareness Res. Nwk. (BARN),1985 Learning Multi-Systems
Brainz-Gamz,1985 Bainum Dunbar
Brick by Brick: Level 1 & 4,1985 Hartley Courseware
Building Memory skills,1987 MCE, Inc.
Bumble Games,1.5 Learning Company (The)
Business Education Package I,1980 Micro Learningware
California Games,1987 EPYX
Calliope 128,1986 Innovision
Capitalization,06.03.86 Hartley Courseware
Car Builder,1985 Weekly Reader / Optimum Resource
Card & Party Shop,1986 Walt Disney Computer Software
Certificate Library - VOL.1,1986 Springboard
Certificate Maker,1986 Springboard
Joystick is sensitive,
works faster than on IIe.
Better to use Keyboard.
Certificates and More,1988 Mindscape
Charlie Brown's ABC'S,1984 Random House
Charlotte's Web,1987 Sunburst
Children's Writing & Pub. Center,1.1 Learning Company (The)
Choplifter/David's Midnight Magic,1981 Broderbund
Choplifter will not boot
(due to hardware specific copy
protection). David's Midnight
Magic works fine.
Chuck Yeager's Adv. Flt Trainer,1987 Electronic Arts
Circus Math,1984 MECC
Class Spreadsheet,1987 J. Weston Walch
Classmaster Grade Assistant,1988 A.U. Software
Clock Works,1.0 MECC
Clue In,1984 American Language Academy
Color Me: Computer Color Kit,1985 Mindscape
Will not boot if the Option panel
is set for Fast Mode.
Comic Strip Maker,1986 Walt Disney Computer Software
Computer Math Games: Vol 1,1982 Addison Wesley
Conquering Decimals (+,-),1.0 MECC
Conquering Decimals (x,/),1.0 MECC
Copy II Plus 8.2, 9.0 Central Point Software
Cotton Tales Intro to Word Proc.,1987 MindPlay
Cotton's First Files,1989 MindPlay
Counting Critters,1985 MECC
Course Master: Anatomy,1986 Compu-Tations Quality Software
Create a Calenda,1987 EPYX
Create with Garfield,1987 SRA

Creative Contraptions,1985 Bantam
Creature Creator,1983 Britannica Software - DesignWare
Crosscountry Calf.: School Edition,1987 Didatech Software
CrossWord Magic,4.0 Mindscape
CrossWord Magic Puzzle Disks,1987 Mindscape
CryptoCube,1983 Britannica Software - DesignWare
CSL Marks,1.8 Chancery Software, Ltd.
Curious George Goes Shopping,1989 SRA
Curious George in Outer Space,1989 SRA
Curious George visits Library SRA
Customized Number Basics,1983 Merit Audio Visual
Dazzle Draw,1.2 Broderbund
Decisions,Decisions,Colonization,1986 Tom Snyder Productions
Designasaurus,1987 Britannica Software - DesignWare
Diascriptive Language Arts Dev.,1988 Educational Activities
Dinosaur Days,1984 Teach Yourself by Computer
Dinosaur Division,1986 Continental Press / Puzzle Works
Dinosaurs,1984 Advanced Ideas
Dinosaurs Are Forever1.0,1988 Polarware
Discovery Lab,1.0 MECC
DOS 3.3 System Master,1980 Apple Computer, Inc.
DOS Programmer's Toolkit ,7/12/83 Apple Computer, Inc.
Dr. Seuss Mix-up Puzzler,1985 Mindscape
Drug Alert!,1987 Learning Well
Early Games for Young Children,1985 Springboard
Easy as ABC,1985 Springboard
Easy Graph,1984 Grolier Electronic Publishing
Easy Street,1988 Mindplay
Run at Normal speed only.
Elect. Crayon-This Land is Your Land Polarware
ESL Picture Grammar,1984 Gessler Educational Software
European Nations & Locations,1985 Britannica Software - DesignWare
Explore-A-Science - Tyrannosaurus Rex D.C. Heath / William K. Bradford
Exploring Apple Logo,1984 Apple Computer, Inc.
Exploring Heat Through Less.&Labs,1985 D.C. Heath / William K. Bradford
F-15 Strike Eagle 1.0 MicroProse
Run in fast mode to get
best performance.
Facemaker - Golden Edition 1.0,1986 Spinnaker
Factory, The,1985 Sunburst
Family Life Series 1.2,1988 Little Shaver Software
Fantavision,1987 Broderbund
Fay: That Math Woman,1983 Didatech Software
Fay: The Word Hunter,1983 Didatech Software
First Letter Fun,1.1 MECC
Fish Scales 1.0,1985 SRA
Fitness - A State of Body & Mind,1985 Marshmedia
FlashCalc,1.0 VisiCorp
Flights into Fiction:Fairy Tales,1986 Focus Media
Fraction Concepts Inc,1.1 MECC
Fraction Munchers,1.0 MECC
FrEdWriter,4.4 CUE Software
Friendly Filer,1984 Grolier Electronic Publishing
Prints fine to direct connect
printer but not with Appletalk
connected (same on IIe).
Game Show, The,1986 Advanced Ideas
Works if the clock card is
removed. Same on IIe.
Garfield Trivia Game,1989 SRA
Geography: Our Country
& Our World,1988 Scott Foresman and Co
Geo. Search - The Search Series,1981 McGraw-Hill
Geo. Search - The Search Series,1982 McGraw-Hill
Geometric preSupposer,1986 Sunburst

GEOS,1988 Berkeley Softworks
GeoWhiz,1988 Silver Burdett and Ginn
GeoWorld,1986 Tom Snyder Productions
German Grammar Computerized I 1.1,1984 Lingo Fun
Gertrude's Puzzles,1984 Learning Company (The)
Gertrude's Secrets 1.3 Learning Company (The)
Better at Fast Speed.
Giant First-Start:The Goofy Ghost,1985 Troll Associates
Gnee or Not Gnee,1985 Sunburst
Go Fish!,1987 HRM Software
Golden Spike, The,1987 National Geographic Society
Grab-a-Cab,1988 Silver Burdett and Ginn
Gradebook Plus,1990 E.M.A. Software
Grammar Examiner,1984 Britannica Software - DesignWare
Grammar Gremlins,1986 Davidson & Associates
Grammaze,1984 Scott Foresman and Co
Green Globs & Graphing Equations,1986 Sunburst
Heredity Dog,1983 HRM Software
Hinky Pinky,1985 Mindscape
Home Video Producer,1988 EPYX
Homework Helper Math,1985 Spinnaker
Homework Helper Writing,1985 Spinnaker
Homeworker,v1986 Davidson & Associates
Iggy's Gnees,1986 Sunburst
II Write Random House,v2.01 Random House
Immigrant:Irish Experience in Boston Educational Technology
Incredible Laboratory, The,1986 #1136 Sunburst
Information Focus,1987 Random House
Introductory Mechanics,1981 Conduit
Island of the Blue Dolphins,1986 Sunburst
Jenny's Journeys,1.0 MECC
John Madden Football,1988 Electronic Arts
Karateka,1984 Broderbund
Better set to Fast speed.
Kermit's Electronic Story Maker,1985 Simon and Schuster
Kids on Keys,2.0 Spinnaker
Kidwriter,1984 Spinnaker
Knowledge Master: Am. Hist. Series,1987 Academic Hallmarks
Knowledge Master Eng.Series:Eng.I,1982 Academic Hallmarks
Lang. Arts Seq: Alphabetization,1980 Milliken Publishing
Language Carnival 1,1988 DLM
Better set to Fast speed.
Learn About Animals,1989 Sunburst
Learn About Plants,1990 Sunburst
Learning Library - Vol 1,1988 Hi-Tech Expressions
Better set to Fast speed.
Letter-Go-Round,1988 Hi-Tech Expressions
Lode Runner1983 Broderbund
Logo Works: Lessons in Logo,1985 Terrapin
LogoWriter,2.03 Logo Computer Systems
Money & Time Adventures,1984 Society for Visual Education
School Library Adventures,1987 Society for Visual Education
Lunar Greenhouse,1.0 MECC
M-SS-NG L-NKS: Classics Sunburst
Magic Slate 1.4,1984 Sunburst
Magic Slate Typestyles 40/80,1987 Sunburst
Magic Spellsv2.1 Learning Company (The)
Marine Life Series: Anatomy-Shark,1986 Ventura Educational Systems
Better set to Fast speed.
Market Place,v1.0 MECC
Mastering Math Diagnostic System,1985 MECC
Mastering Math Worksheet Generator,1985 MECC
Mastering the Parts of Speech,1982 Society for Visual Education (SVE)
MasterType,2.1 Mindscape
Math Blaster!1983,1989 Davidson & Associates

Math Blaster Mystery!,1.0 Davidson & Associates
Better set to Fast speed.
Math Blaster Plus,3.7 Davidson & Associates
Math Football,1985 Gamco
Math Man,1984 Scholastic
Better set to Fast speed.
Math Masters Add/Sub,1988 SRA
Can't have memory card installed
(same on IIe).
Math Masters Mult/Div,1988 SRA
Can't have memory card installed
(same on IIe).
Math Rabbit,1.2 Learning Company (The)
Math Shop,1986 Scholastic
Mathematics Prob Solv. CW Level 8,1.0 McGraw-Hill
Mathematics Prob Solv. Level 3&7, 1.0 Addison Wesley
Mathematics Skills Levels 1 - 8 1.0 Addison Wesley
It only prints to Parallel port,
and the LC only has a serial port.
MECC Dataquest Composer,1986 MECC
MECC Dataquest:The Fifty States,1986 MECC
MECC Grade Manager,1983 MECC
Grade Manager uses some type of
copy protection that doesn't
work with the IIe card and IIe
startup software.
MECC Graph 1.1,1985 MECC
Mickey's Space Adventure,1984 Walt Disney Computer Software
Micro Gardener, The,1983 Educational Activities
Microorganism Simulator,1986 Focus Media
MicroType - The world of PAWS,1.0 SouthWestern Publishing
Microzine #10,1985 Scholastic
Microzine #16:,1986 Scholastic
Microzine JR. #2,1988 Scholastic
Microzine JR. #3,983 Scholastic
Milliken Word Processor,1984 Milliken Publishing
Run at Normal speed. Will not
boot if set to Fast speed.
Miner's Cave,1.0 MECC
Will not work with clock card
installed.
Money! Money !,1984-1986 Hartley Courseware
Money Squares3.1.5,1985 Gamco Industries
Money Works,1.1 MECC
MonkeyNews,1984 Artworx Software
Monsters and Make-Believe1.1,1987 Pelican Software
Moptown Hotel,1985 Learning Company (The)
Mouse Desk,1.5 Apple Computer, Inc.
MousePaint 1.2,1986 Apple Computer, Inc
MouseWrite,1986 Roger Wagner Publishing
Multiple Choices,1989 Mindscape
MultiScribe, 3.0 StyleWare
Muppet Word Book,1986 Sunburst
Music Construction Set,1983 Electronic Arts
Mystery Matter,1.0 MECC
Mystery Objects,1.0 MECC
Newsroom,1984 Springboard
NewsWorks IV,1989 Newsweek Data for AppleWorks.
NoteCard Maker,1985 Grolier Electronic Publishing Direct
Number Munchers,v1.0 MECC
Nutrition - A Balenced Diet,1982 EME
Odell Lake:,1980 MECC
Oh, Deer!,1983 MECC
Once Upon a Time I,1987 Compu-Teach
Operation: Frog,1984 Scholastic

The mouse has problems moving
sometimes. The pointer often
moves in the left hand corner.
Orbit II,1983 Vernier Software
Oregon Trail,1986 MECC
Other Side, The,1986 Tom Snyder Productions
Paint With Words,1.3 MECC
Patterns,1.0 MECC
Periodic Law,1987 EME
PFS: Write,1985 Scholastic
Picture It With Words,1986 Micro Learningware
Pinball Construction Set,v1984 Electronic Arts
Pinball Math,1984 Electronic Courseware Systems
PinPoint,v2.0.2 PinPoint Publishing
Planetary Guide, The,1981 Educational Images, Ltd.
Playroom, The,1.0 Broderbund
Point-To-Point,3.0 WordPerfect Corporation
Pollute - A simu. of Water Poll.,1983 DEE-Diversified Educational
Enterprises
Pond - Strategies in Prob. Solv.,1984 Sunburst
Better set to Fast speed.
Potato Factory,1983 Microcomputer Workshops / Queue
Print Magic,1987 EPYX
Print Shop Companion,? Broderbund Data for Print Shop
Print Shop, The,1986 Broderbund
Problem Solving Solutions,1.3 MECC
ProTERM,2.01 Checkmate Technology
Publish It!,1987 Timeworks
Use monochrome monitor or switch
to monochrome mode on a color
display. Also, when you create
a picture frame and IMPORT PICTURE,
as the screen loads it may appear
messed up. But if you move the
picture frame around or exit to the
Option Panel and return,the screen
will clear.
Puzzle Tanks:
A Game of Numbers & Logic,1984 Sunburst
Quest for Files: Social Studies,1987 Mindscape
Quicken,1987 Intuit
Quotient Quest,1.0 MECC
Read 'n Roll,1.0 Davidson & Associates
Rd., Wr., & Pub. - Grades 5 & 8 D.C. Heath / William K. Bradford
Reader Rabbit 1.4 Learning Company (The)
Reading & Writing Connections,12.12.86 Hartley Courseware
Report Card II,2.0e Sensible Software
Return of the Dinosaurs,1988 American Educational Computer
Rocky's Boots,4.1 Learning Company (The)
Mouse and Joystick conflict.
Same on IIe. Remove joystick to
use mouse. Otherwise, mouse will
appear erratic.
Sargon III,1983 Spinnaker
The Human Body-An Overview,1984 BrainBank
Science Software,1985 Harcourt, Brace, Jovanovich
Science Square-Off,1986 Scott Foresman and Co
Science Square-Off:Earth Science,1989 Scott Foresman and Co
Science Square-Off:Life Science,1989 Scott Foresman and Co
Science Sqr.-Off:Physical Science,1989 Scott Foresman and Co
Science Toolkit Master Module,1.0 & 2.0 Broderbund
Science Tk Mod 1: Speed and Motion,1.0 Broderbund
Science Tk Mod 2: Earthquake Lab,1.0 Broderbund
Science Tk Mod 3: Body Lab,1.0 Broderbund
Scoop Mahoney,1988 SRA

Sensible Speller,1Y Sensible Software
Seven Cities of Gold,1984 Electronic Arts
Many Video and speed problems.
Often accessing disk at the same
time as drawing the screen slows
down the program considerably.
Shakespeare,06.04.86 Hartley Courseware
Sherlock Holmes in "Another Bow",1985 Bantam
Runs slightly slower than IIe
even at Fast speed.
Signs & Symbols,1988 MCE, Inc.
Slide Shop 1.1,1988 Scholastic
Sound is distorted on the LC when
playing back a sound file.
Smart Eyes 1.0,1985 Addison Wesley
Snoopy Writer,1985 Random House
Sound Ideas: Consonants,1986 Houghton Mifflin
Sound Ideas: Vowels,1986 Houghton Mifflin
Sound Ideas: Word Attack,1987 Houghton Mifflin
Space Commander: States and Capitals Gamco
SpaceLace,1987 Great Wave Software
Speed Reader II,1983 Davidson & Associates
Spell It,1984 Davidson & Associates
Spellevator, 1.2 MECC
Spellicopter,1983 Britannica Software - DesignWare
Spelling Press,1.1 MECC
Spelling Series Toolkit,1.0 MECC
Spelling Workout,1.1 MECC
States & Traits,1984 Britannica Software - DesignWare
Stepping Stones Level I,1987 Compu-Teach
Stickybear ABC,1986 Weekly Reader / Optimum Resource
Stickybear Drawing,1986 Weekly Reader / Optimum Resource
Stickybear Math,1984 Weekly Reader / Optimum Resource
Stickybear Numbers,1987 Weekly Reader / Optimum Resource
Stickybear Reading Comprehension,1985 Weekly Reader / Optimum Resource
Stickybear Shapes,1989 Weekly Reader / Optimum Resource
Stickybear Spellgrabber,1984 Weekly Reader / Optimum Resource
Stickybear Town Builder,1984 Weekly Reader / Optimum Resource
Stickybear Typing,1986 Weekly Reader / Optimum Resource
Hangs on the Title Screen when booting.
Story Tree,1984 Scholastic
Subtraction Puzzles,1.0 MECC
Summer Games,1984 EPYX
Better set to Fast speed.
Summer Games II,1985 EPYX
Better set to Fast speed.
Super Factory,1986 Sunburst
Supercat,1984 Zephyr Services
SuperPrint!,1.2 Scholastic
Better to use Keyboard or Joystick
control as Mouse is very sensitive
(same on IIe but less apparent).
SuperPrint Graphics Pack I,1.2 Scholastic
SuperPrint II,1.0 Scholastic
Symbol-Picture Logic VOL.1 & 2,1986 CAE Software
Teacher's ToolKit, The,1987 HI TECH of Santa Cruz
Teachers' Management Program,3.2 American Language Academy
Teasers by Tobbs:Puzz.&Prob.Solv.,1982 Sunburst
Terrapin Logo Language,1985 Terrapin
The Apple at Play,1984 Apple Computer, Inc.
The Apple at Work,1986 Apple Computer, Inc.
Think Tank,1.10 Living Videotext
Those Amazing Reading Machines MECC
Three Little Pigs,1989 D.C. Heath / William K. Bradford
Must use external 3.5 UniDisk

drive (copy protected)
Ticket to Paris,1986 Blue Lion Software
Time Tunl.: Am. Hist. Series 1,1983 Focus Media
Time Tunl.: Euro. Hist. Series,1985 Focus Media
Time Tunl: The America Series,1985 Focus Media
TimeLiner,1986 Tom Snyder Productions
TimeLiner Data Disk: The Arts 1.0,1986 Tom Snyder Productions
TimeOut DeskTools II,2.1 WordPerfect Corporation
TimeOut FileMaster,2.1 WordPerfect Corporation
TimeOut Graph,2.1 WordPerfect Corporation
TimeOut QuickSpell,2.1 WordPerfect Corporation
TimeOut SideSpread,2.1 WordPerfect Corporation
TimeOut Superfonts,1987 WordPerfect Corporation
TimeOut Thesaurus,2.1 WordPerfect Corporation
TimeOut UltraMacros,2.0 WordPerfect Corporation
Tonk in the Land of Buddy-Bots,1986 Mindscape
Top Reader's Club,1989 Microgrames
Touch 'n Write,1986 Sunburst
Touch Window,? Edmark
Hardware - attaches to the
joystick port.
Type!,1986 Broderbund
Typing Tutor III w/
Letter Invaders,1984 Simon and Schuster
Typing Tutor IV,1987 Simon and Schuster
Use a B&W monitor or set to B&W mode.
U.S. Constitution Then & Now,1987 Scholastic
Ultima V-Warriors of Destiny,1988 Origin Systems
VisiCalc,1981 Personal Software, Inc.
Vocabulary Adv. II: The Labryrinth,1985 Intellectual Software
Vocabulary Word Builder,1983 American Educational Computer
Voyage of the Mimi,1985 Holt Rinehart and Winston
Use later version, copy protection
problem in this version.
Wall Street On-Line: An Investment
Simulation for the Classroom,1986 J. Weston Walch
Weather Analyst, The,1980 Climate Assessment Technology
Westward Ho!,1988 McGraw-Hill
Where in Europe Is Carmen Sandiego,1.3 Broderbund
Where in the USA Is Carmen Sandiego,1986 Broderbund
Where in the World Is Carmen Sandiego,1990 Broderbund
Where in Time is Carmen Sandiego,1989 Broderbund
Who Am I?,v1986 Focus Media
Do not set Type Ahead "On".
Will lock up program. Same as IIGS.
Who Framed Roger Rabbit,1.0 Buena Vista Software
Better set to Fast speed.
Wild West Math,1990 Microgrames
Word Attack!,1983 Davidson & Associates
Word Attack Plus-Spanish,1984 Davidson & Associates
Word Blaster,1982 Random House
Do not turn Type Ahead "On".
Will lock up game. Same as IIGS.
Word Munchers,1985 MECC
Wordbench,1988 Addison Wesley
WordPerfect,2.1e WordPerfect Corporation
Wordwise - Analogies/Astroquotes,1983 Program Design International/Queue
World Geography,1990 BOBCO
Writer Rabbit,1986 Learning Company (The)
Writer's Helper,1985 Conduit
Zoyon Patrol,1.0 MECC

Article Change History:
26 July 1993 - Company title changed from DLM to SRA (Science Research
Associates).

19 January 1993 - Updated, Beagle Brothers now WordPerfect Corporation.

Published Date: Feb 18, 2012

TA46109_Lisa_Pascal_CRUNCH_(TIL00748).pdf

Lisa Pascal: CRUNCH

This article has been archived and is no longer updated by Apple.
Page 10-6 Pascal Language Manual indicates that a file closed with CRUNCH should move the EOF mark to the last place of access. This is not the case. If this function is important to users, they may need to write their own routines, insert their own EOF character, or possibly maintain an EOF pointer, which would suggest using block I/O.
Published Date: Feb 18, 2012

Personal LaserWriter LS, StyleWriter: Software Compatibility

The following list is a compatibility report on the Personal LaserWriter LS, StyleWriter, and TrueType INIT. These are the findings as of February 26, 1991.

Even though Apple has reviewed this list, Apple makes no warranty or representation, either expressed or implied, with respect to this list, its quality, accuracy, or fitness for a particular purpose. In no event will Apple be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or inaccuracy in this list. Please contact the developer for current compatibility information.

Mention in this list does not constitute an endorsement by Apple Computer, Inc. Third-party product information is provided for compatibility reasons only.

DISCUSSION----------

4th Dimension 2.11 - No problem.
Acta 3.01 DA - No problem.
Adobe Illustrator 88 1.9.3 - TrueType problems with text in large point sizes. TrueType quality will not be very high in any point size. Adobe Illustrator 3.0 - Requires Adobe Type Manager 2.0, does not take advantage of TrueType. Prints to Personal LaserWriter LS at 72 DPI.
Adobe Photoshop 1.0 - No problem.
Adobe Type Manager 1.2 - No problem.
Adobe Type Manager 2.0 - No problem.
Aldus Freehand 2.02 - On Personal LaserWriter LS, may experience crashes when printing graphics which were created as bitmaps in another application and then pasted into Freehand through the clipboard.
The StyleWriter has the following problems: Some features do not work correctly. Lines assigned a width of 0 should print as hairlines, but are printed as 1 point lines. Some rounded rectangles do not print as smoothly as other printers.
AppleScan 1.02 - No problem.
atOnce! 1.01 - No problem.
Canvas 2.1 - No problem.
Claris CAD 1.0v5 - No problem.
Color Studio 1.0 - No problem.
Cricket Draw 1.1.1 - No problem.
Cricket Graph 1.3 - Does not display third-party TrueType fonts.
Cricket Paint 1.0 - No problem.
Cricket Presents 2.0.1 - Times Bold/Italic lines of text sometimes get cut off when printing Personal LaserWriter LS.
Delta Graph 1.5 - No problem.
Design Studio 1.01 - No problem.
Digital Darkroom 1.1a - When printing a select portion of a document to a StyleWriter from a Macintosh SE, the system will crash. Printing a Digital Darkroom document to the StyleWriter, the image is recreated eight times in miniature at the top of the page. A black line appears across the print options box of the StyleWriter driver.
Dreams 1.1 - TrueType text occasionally causes a Personal LaserWriter NT to crash. Printing rotated text to the Personal LaserWriter LS, both the rotated object and the original non-rotated object are printed.
FoxBASE+/Mac 2.01 - TrueType fonts with bitmaps installed have spacing problems when printed, and bottoms of characters are sometimes clipped.
FileMaker II 1.1v2 - No problem.

FileMaker Pro 1.0v1 - No problem.
Full Impact 2.0 - Text is dropped when printing to Personal LaserWriter LS under MultiFinder.
FullWrite Professional 1.1 - No problem.
HyperCard 2.0v2 - No problem.
Image Studio 1.7 - In landscape mode, prints strips of garbage across the page. Happens to a number of printers, including Personal LaserWriter LS and StyleWriter.
LetraStudio 1.5 - Designed only for Letraset's proprietary or Postscript fonts, will not benefit TrueType users.
MacDraft 2.0 - No problem.
MacDraw 1.9.8 - No problem.
MacDraw II 1.1v2 - No problem.
MacWrite II 1.1v1 - Type sizes greater than 127 will not display or print correctly. TrueType fonts will not display correctly in reduced view.
MacFlow 3.0.3 - No problem.
MacInTax 89 2.0 - No problem.
MacMoney 3.5 - No problem.
MacPaint 2.0 - No problem.
MacProject II 2.0v3 - No problem.
MacroMind Director 2.0 - No problem.
MacWrite 5.0.1 - No problem.
Microsoft Excel 2.2a - No problem.
Microsoft PowerPoint 2.01D - TrueType text spacing is bad enough to cause the text to be illegible on the Macintosh II family of CPUs. This problem does not occur with PowerPoint 2.01.
Microsoft Word 4.0b - When printing to the Personal LaserWriter SC or LS, TrueType output sometimes has line breaks in the wrong places, and incorrectly spaced characters.
Microsoft Works 2.0b - No problem.
MiniCad+ 2.0v6 - Double underlines print as single underline on the Personal LaserWriter LS and StyleWriter. StyleWriter drops all underlines at 40% reduction.
More 3.0 - No problem.
Nisus 2.11 - No problem.
Nisus 3.01 - No problem.
PageMaker 3.02 - No problem.
PageMaker 4.0 - No problem.
Persuasion 2.0 - No problem.
PixelPaint Professional 1.0.1 - Printing to Personal LaserWriter LS and StyleWriter often causes a crash.
Quark XPress 2.12 and 3.0 - Problems with large point sizes and reduced and enlarged view.
Quickmail 2.2.3 - Will not print in text mode to the StyleWriter.
Quicken 1.5 - No problem.
ReadySetGo 4.5 - No problem.
ReadySetShow 1.0 - No problem.
SmartForm Assistant/Designer 1.1v1 - Place rotated text on mailing labels template does not print onto every label when printing to Personal LaserWriter LS and StyleWriter.
Statview SE+ Graphics 1.03 - No problem.
Studio 1 1.0 - No problem.
Studio 8 1.1 - No problem.
SuperCard 1.5 - No problem.
SuperPaint 2.0a - When printing complicated text and graphics to the Personal LaserWriter LS, some objects do not print.
UltraPaint 1.02 - No problem.
Vellum 1.0 - No problem.
WingZ 1.1 - When "center" page setup option is selected, extra blank pages are printed out to the Personal LaserWriter SC and LS.
WordPerfect 1.0.5 - No problem.
WriteNow 2.2 - When printing to the StyleWriter, occasionally characters

overlap.

?END7505

Do I really need CD Remote DA in my System Folder?

This article has been archived and is no longer updated by Apple.
You need the CD Remote DA only if you are playing audio CDs. It is not needed for using CD-ROMs.

Published Date: Feb 18, 2012

System 7: Memory Requirements

Article Change History

09/17/92 - REVISED
* To set 2MB capabilities more realistically.

The following information provides guidelines for memory (RAM) usage with System 7.

This article has been archived and is no longer updated by Apple.
The minimum requirement to run System 7 is a 2MB system with a hard disk. User testing shows that this configuration is functionally equivalent to a 1MB configuration running system 6.0.7. But to take full advantage of System 7 and multiple and/or larger applications you will need at least 4MB of RAM.

Here is a rough guide to memory usage:

* 1MB - Use system 6 with one application.

* 2MB - Use System 7, the Finder, and one application.

* 2.5MB - Use System 7, the Finder, and one or two applications.

* 3MB to 5MB - Use System 7, the Finder, and multiple applications or one large application.

* 5MB to 8MB - Use System 7, the Finder, and multiple large applications and/or documents.

Because of System 7's built-in multitasking, users may launch a second application without quitting from the first. In a 2MB system, this will frequently produce an "Out of Memory" error message. To avoid these messages, users with 2MB Macintosh computers should quit each application before using another. This will not affect their ability to use the multitasking features of System 7, such as background printing and file copying.

System 7 consumes 500K to 1MB more memory than system software 6.0.x. Consider adding one to two megabytes of memory to a Macintosh with limited memory. Or use System 7's virtual memory feature, which is available on the Macintosh SE/30, IIx, IIcx, IIci, IIfx, and Macintosh II with optional PMMU.

Because of differences in system ROMs and video architecture, each Macintosh configuration has slightly different system memory usage under System 7. Here are the basic memory profiles of System 7 on various Macintosh computers, using basic install with file sharing and program linking turned off:

	Memory Consumed	Memory Free*
Macintosh Plus	1056K	992K
Macintosh SE	1125K	923K
Macintosh SE/30	1271K	777K
Macintosh Portable	1085K	963K
Macintosh Classic	1123K	925K
Macintosh LC	1298K	750K
Macintosh IIsi	1216K**	1085K***
Macintosh II	1275K	773K

Macintosh IIx 1268K 780K
Macintosh IIcx 1298K** 750K
Macintosh IIci 1202K 796K
Macintosh IIfx 1185K 2911K****

* Available application memory in a 2MB configuration. Any memory above 2MB is available for application use as well.
** 8-bit color video consumes an additional 280K.
*** 3MB configuration
**** 4MB configuration

Note: Macintosh file sharing consumes an additional 260K.

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Applesoft Internals: Floating Point Math Package (2 of 2)

Applesoft's floating point package provides a 9 digit scientific package for evaluating numeric equations. It supports trigonometric functions with arguments in radians, exponents and logarithms to base e.
This article has been archived and is no longer updated by Apple.

TRANSCENDENTAL OPERATORS

FPWRT EE97
Raise ARG to the FAC power. On entry A and Z must reflect the value of FACEXP.

SQR EE8D
Takes the square root of FAC

LOG E941
Log base e of FAC

EXP EF09
Raise e to the FAC power

COS EFEA
Returns the cosine of the FAC in radians.

SIN EFF1
Returns the sine of the FAC in radians.

TAN F03A
Returns the tangent of the FAC in radians.

ATN F09E
Returns the inverse-tangent of the FAC in radians.

OTHER OPERATORS

SGN EB90
Modifies the value of the FAC depending on its value on entry.
On exit:
FAC = 1 if FAC was greater than 0
FAC = 0 if FAC was equal to 0
FAC = -1 if FAC was less than 0

ABS EBAF
Absolute value of FAC. If FAC is less than 0 then FAC = -FAC.

INT EC23
Greatest integer value of FAC. Uses QINT and floats the result.

RND EFAE
Form a pseudo-random number in FAC and update RND at 00C9.

SIGN EB82
Set A according to the value of FAC.
On exit:
A = 1 if FAC is positive
A = 0 if FAC = 0
A = FF if FAC is negative

FCOMP EBB2
Compare FAC and a packed number in memory pointed to by Y,A.
On exit:
A = 1 if (Y,A) < FAC
A = 0 if (Y,A) = FAC
A = FF if (Y,A) > FAC

NEGOP EED0
FAC = -FAC

FADDH E7A0
Add 1/2 to FAC

DIV10 EA55
Divide FAC by 10. Returns positive numbers only.

MUL10 EA39
Multiply FAC by 10. Works for both positive and negative numbers.

LOWER LEVEL INTERFACE ROUTINES

FOUT ED34
FOUT creates an ASCII string in FBUFFR equivalent to the value of FAC. On exit Y,A points to the string, which ends with an ASCII null. FAC is scrambled. Use STROUT to print the number.

SNGFLT E301
SNGFLT converts the unsigned number in Y to a floating point number in FAC.

GIVAYF E2F2
GIVAYF converts the unsigned number in Y,A to a floating point number in FAC.

FLOAT EB93
FLOAT converts the signed number in A to a floating point number in FAC.

CONINT E6FB
CONINT converts FAC into a single byte integer in X and FACLO. CONINT normally exits through CHRGET unless FAC is greater than 255 or less than 0, when it exits via ILLEGAL QUANTITY ERROR.

AYINT E10C
If FAC is less than +32767 and greater than -32767, then execute QINT. Otherwise AYINT exits via ILLEGAL QUANTITY ERROR.

QINT EBF2
Quick greatest integer function. Leaves INT(FAC) in FACHO,MO,LO signed. QINT assumes that the absolute value of the FAC is less than 8388608 (2^23rd power).

GETADR E752
GETADR converts the number in FAC to a 2 byte, unsigned integer in LINNUM. When FAC is greater than 65535 or less than -65535, GETADR exits via ILLEGAL QUANTITY ERROR.

GETNUM E746
GETNUM fetches a 2 byte number, a comma and an unsigned, single byte number from TXTPTR. The first number is stored in LINNUM, while the second is returned to the X register. On entry TXTPTR points to the first character of the formula for the first number. GETNUM uses FRNUM, GETADR, CHKCOM and GETBYT.

COMBYTE E74C
COMBYTE checks for a comma, then fetches an unsigned, single byte number returned in X. On entry TXTPTR points to the comma. COMBYTE uses CHKCOM and GETBYT.

FRMEVL DD7B
FRMEVL evaluates the formula at TXTPTR using CHRGET, then leaves the result in FAC. On entry, TXTPTR points to the first character of the formula, while on exit points to the terminator. "A" does not contain the terminator. The format of the temporary result on the stack is:

The address of the operator routine.
The floating point temporary result.
The precedence of the operator.

FRMEVL, the main subroutine for the commands that use formulas, works for both strings and numbers. If the formula is a string literal, FRMEVL gobbles the opening quote, then executes STRLIT and ST2TXT.

FRMNUM DD67
FRMNUM evaluates the formula at TXTPTR, puts it in FAC, then makes sure the result is numeric. On entry TXTPTR points to the first

character of the formula. FRMNUM exits through TYPE MISMATCH ERROR if the result is a string.

FIN EC4A

FIN inputs a floating point number into FAC from CHRGET. FIN assumes the 6502 registers and A were set up by the CHRGET that fetched the first digit. FIN only operates on numeric constants, not formulas.

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QuickTime Streaming Server 2.0: Compatible File Formats

This article describes the file formats compatible with QuickTime Streaming Server 2.0.

Notes:

1. All information in this article comes from the help file distributed with QuickTime Streaming Server 2.0. The help file includes additional help topics which are not covered in the Knowledge Base.

2. This article discusses software for use only with Mac OS X Server version 1.2, released prior to May 2001.

This article has been archived and is no longer updated by Apple.

Compatible File Formats

You can stream these media files using QuickTime Streaming Server, as long as the media is hinted:

Category	Formats
Video	QuickTime
	AVI
Audio	AIFF/AIFC
	SoundDesigner II (SDII)
	System 7 Sound
	uLaw (AU)
	WAV
MIDI	Karaoke MIDI
	Standard MIDI

Media File can be compressed using these methods:

Category	Compression-Decompression Method (CODEC)
Preferred Video	Sorenson Video
	H.263
	Motion JPEG A
	H.261
Supported Video	Animation
	Cinepak
	Graphics
	Motion JPEG A
	Photo JPEG
	Video
	None
Preferred Audio	QDesign Music codec
	QUALCOMM Pure Voice
	DVI 4:1
	ALaw 2:1
	uLaw 2:1
	16-bit raw
Supported Audio	IMA 4:1
	MACE 3:1
	MACE 6:1

Published Date: Feb 18, 2012

QuickTime Streaming Server 2.0: What‘s New in Version 2.0

This article describes new features in the QuickTime Streaming Server verwsion 2.0.

Notes:

1. All information in this article comes from the help file distributed with QuickTime Streaming Server 2.0. The help file includes additional help topics which are not covered in the Knowledge Base.

2. This article discusses software for use only with Mac OS X Server version 1.2, released prior to May 2001.

This article has been archived and is no longer updated by Apple.

What's New in QuickTime Streaming Server

- Accessibility. You can stream media using RTP and RTSP over HTTP. This means users can view media through most firewalls.
- Relay support. You can replicate content for live broadcasts. With relays, you can scale streaming services to reach more viewers.
- Enhanced logging. QuickTime Streaming Server software now supports third-party analysis tools that provide consolidated server reporting.
- Authentication support. You can control access to media files using the Authentication modules that come with QuickTime Streaming Server software, or you can supply your own module.

For more information about QuickTime Streaming Server, see these web sites:

- QuickTime Streaming Server: **http://www.apple.com/macosx/server/**
- QuickTime: **http://www.apple.com/quicktime/**

Published Date: Feb 18, 2012

QuickTime Streaming Server 2.0: Use only Playlist Broadcaster 2.0

I just upgraded to QuickTime Streaming Server 2. Can I use PlaylistBroadcaster 1.02 with it?

Note: This article discusses software for use only with Mac OS X Server version 1.2, released prior to May 2001.

This article has been archived and is no longer updated by Apple.
PlaylistBroadcaster 2.0 must be used with QuickTime Streaming Server 2.0. You may lose audio or video performance if you use PlaylistBroadcaster 1.02 with QuickTime Streaming Server 2.0. However, if you are using QuickTime Streaming Server 1.02, you can use PlaylistBroadcaster 2.0.

QTSS 2 is a free update available from the Apple Software Updates Web site at http://www.apple.com/swupdates.

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System 7: Virex Compatibility

Is the Virex INIT compatible with System 7? Some customers experience printer errors when printing from a system with the Virex INIT v.3.1 loaded. The compatibility reports say it's compatible, but disabling the INIT corrects the problem.

This article has been archived and is no longer updated by Apple.

The Virex program is compatible with System 7, but the Virex INIT is not fully compatible. Note that at least version 3.5 is available, with improved compatibility. Check with Relay Technology (formely Microcom) for the latest information. Here is Relay Technology's (formely Microcom) recommended workaround:

1) Disable checking on file opening. Checking at disk insertion should work fine.

2) Put the Virex INIT in the root level of the System Folder. Create an alias for the INIT, and place it in the Control Panels folder.

Article Change History
23 July 1993 - Company title changed from Microcom to Relay Technology.
2 September 1992 - Updated, to note that at least version 3.5 of Virex is available.

Published Date: Feb 18, 2012

VST Technologies: Support and Upgrades

This article contains support links and software upgrade links for VST products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Company: **VST Technologies**
Company Web Site: http://www.vsttech.com/

Product:	VST SuperDisk Drive
Product Description:	USB disk drive for G3 PowerBook
Product Support Site:	http://www.vsttech.com/vst/knowledgebase.nsf/Default?OpenView&Start=1&Count=30&Expand=2.4.3#2.4.3
Product Updates Site:	http://www.vsttech.com/vst/drivers.nsf/Default
Technical Support	
Telephone:	978.635.8282
email:	**support@vsttech.com**
FAQ:	http://www.vsttech.com/vst/faqs.nsf/Default?OpenView&Start=1&Count=30&Expand=7#7

Product:	VST Floppy Drive
Product Description:	USB Floppy Drive
Product Support Site:	http://www.vsttech.com/vst/knowledgebase.nsf/Default?OpenView&Start=1&Count=30&Expand=4.1.1#4.1.1
Product Updates Site:	http://www.vsttech.com/vst/drivers.nsf/Default
Technical Support	
Telephone:	978.635.8282
email:	**support@vsttech.com**
FAQ:	http://www.vsttech.com/vst/faqs.nsf/Default?OpenView&Start=1&Count=30&Expand=8#8

Product:	VST Expansion Bay Zip Drive
Product Description:	Zip Drive for G3 PowerBook (Bronze Keyboard)
Product Support Site:	http://www.vsttech.com/vst/knowledgebase.nsf/Default?OpenView&Start=1&Count=30&Expand=2.5.1#2.5.1
Product Updates Site:	http://www.vsttech.com/vst/drivers.nsf/Default
Technical Support	
Telephone:	978.635.8282
email:	**support@vsttech.com**
FAQ:	http://www.vsttech.com/vst/faqs.nsf/Default?OpenView&Start=1&Count=30&Expand=10#10

Software Update Information

If you want to be notified automatically of software updates for this product, use the Version Tracker web site at:
http://www.versiontracker.com

Published Date: Feb 18, 2012

AppleShare PC 2.0.X Requires AppleTalk Phase 2

Article Change History

08/21/92 - REVIEWED
* For technical accuracy.

I am running AppleShare PC 2.0.1 and a 3Com Etherlink II Board (ThinWire) on an AST 486. When I load ABOTH, I can only see Phase 2 Zones, because our K-Boxes are filtering out Phase 2 traffic. Is there any way I can see our Phase 1 zones the same way I can on my Macintosh using the old EtherTalk Phase 1 drivers? I don't know when we plan to migrate to Phase 2.

This article has been archived and is no longer updated by Apple.
You need AppleTalk Phase 2 for AppleShare PC 2.0 environments using Ethernet or Token Ring networks. If you could attach to a LocalTalk network, then you could use Phase 1. Otherwise, upgrade your present network to Phase 2 as soon as possible.

Published Date: Feb 18, 2012

Iomega: Support and Upgrades

This article contains support links and software upgrade links for Iomega products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Company: **Iomega**
Company Web Site: http://www.iomega.com/

Product:	100 MB USB External ZIP Drive
Product Description:	USB External Zip Drive - Uses 100 MB media
Product Support Site:	http://www.iomega.com/support/zip1u.html
Product Updates Site:	http://www.iomega.com/software/
Technical Support	
Telephone:	888.446.6342
email:	http://www.iomega.com/support/nav_techemail.html
FAQ:	http://www.iomega.com/support/zip1u_faq.html

Product:	250 MB USB External ZIP Drive
Product Description:	USB External Zip Drive - Uses 100 & 250 MB media
Product Support Site:	http://www.iomega.com/support/zip2u.html
Product Updates Site:	http://www.iomega.com/software/
Technical Support	
Telephone:	888.446.6342
email:	http://www.iomega.com/support/nav_techemail.html
FAQ:	http://www.iomega.com/support/zip2u_faq.html

Software Update Information

If you want to be notified automatically of software updates for this product, use the Version Tracker web site at:
http://www.versiontracker.com

Published Date: Feb 18, 2012

Connectix: Support and Upgrades

This article contains contact information for Connectix, plus support links and software upgrade links for Connectix products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Contact Information

Connectix
2955 Campus Drive, Ste. 100
San Mateo, CA 94403

(650) 571-5100 (Main)
(970) 304-9533 (Technical Support - 8AM to 8PM PST, Monday through Friday.)
(650) 571-5195 (Technical Support fax)

(800) 950-5880 or 650-571-5100 (Customer Service and Sales)
(650) 571-0850 (Customer Service and Sales fax)

Internet:

AOL: connectix@aol.com
URL: http://www.connectix.com

Compuserve:
75300,1546
Go MACAVEN, select Section 8

America OnLine:
Command K (keyword), Connectix

Company Profile:

Software, specializing in general utilities for the Macintosh.

Apple Store Support Links and Upgrade Links

Company:	**Connectix Corporation**
Company Web Site:	http://www.connectix.com/
Product:	Virtual PC 3.0
Product Description:	Run Microsoft Windows 98 software on your Mac OS computer
Product Support Site:	http://192.245.18.244/kdb/FMPro?-db=KDB_web.fp3&-lay=Entry-format=search.htm&-view
Product Updates Site:	http://www.connectix.com/downloadcenter/
Technical Support	
Telephone:	970.304.9533
email:	http://192.245.18.244/email/email.htm

Software Update Information

If you want to be notified automatically of software updates for this product, use the Version Tracker web site at: http://www.versiontracker.com

or the AppleUpdate Web site, which also tracks international updates, at: http://AppleUpdate.com

Published Date: Feb 18, 2012

MYOB Group: Support and Upgrades

This article contains support links and software upgrade links for MYOB Group products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Company: **MYOB Group**
Company Web Site: http://www.myob.com/

Product:	Accounting Plus 9.0
Product Description:	Accounting business software
Product Support Site:	http://www.myob.com/us/service/techsupport/index.htm
Product Updates Site:	http://www.myob.com/us/downloads/downloads_mac.htm

Technical Support

Telephone: 973.586.2325 (30 Days)
FAQ: http://www.myob.com/us/service/besttips/index.htm

Software Update Information

If you want to be notified automatically of software updates for this product, use the Version Tracker web site at:
http://www.versiontracker.com

Published Date: Feb 18, 2012

TA46123_Macintosh_IIsi_Ethernet_Card_Using_Thinwire_Ethernet_(TIL07504).pdf

Macintosh IIsi: Ethernet Card Using Thin-wire Ethernet

Has the Macintosh IIsi been tested with any Ethernet cards that handle thin-wire Ethernet?

This article has been archived and is no longer updated by Apple.

Apple's EtherTalk NB card works with the Macintosh IIsi in a NuBus adapter. This card has gone through considerable testing and has a huge installed base.

Published Date: Feb 18, 2012

CD Remote DA: When It‘s Needed

Do I really need CD Remote DA in my System Folder?

This article has been archived and is no longer updated by Apple.

You need the CD Remote DA only if you are playing audio CDs. It is not needed for using CD-ROMs.

Published Date: Feb 18, 2012

TA46125_ImageWriter_II_Color_Printing_Applications_(TIL07506).pdf

ImageWriter II: Color Printing Applications

Article Change History

1/15/93 - UPDATED
* Vendor name.

Are there any drivers or programs that print color documents to a ImageWriter II with a color ribbon?

This article has been archived and is no longer updated by Apple.

Most color applications can print in color on an ImageWriter II with the standard driver. These include SuperPaint 2.0 and Cricket Draw.

Silicon Beach Software's (now Aldus Consumer Division) SuperPaint is a graphics editor for bit-mapped (paint) and object-oriented (draw) art. You can toggle between the paint and draw layers by clicking an icon.

Computer Associates International's Cricket Draw is an object-oriented drawing program that can take advantage of the graphics capabilities of PostScript printers (from the LaserWriter to the Linotronic 300). The package consists of two integrated programs: a drawing window and a PostScript language editor. The programs can be used independently or in conjunction.

To locate a vendor's address and phone numbers, use the vendor's name in a search string.

Published Date: Feb 18, 2012

Macintosh Plus: How to Get the "Propeller" Symbol

I want to generate the "propeller" character on my keyboard, but it's produced with the Control-Q key combination, and my Macintosh Plus has no Control key. Is there another way to generate that character directly on the Macintosh Plus?

This article has been archived and is no longer updated by Apple.
We checked through the character sets of all of our fonts and found that symbol only in Chicago under Control-Q. Short of re-defining a font in ResEdit or buying a font-creation product, you can type the character on another Macintosh and save the character in a document that you can transfer (by disk or modem) to your computer. Then, copy the character and paste it into your document.

Published Date: Feb 18, 2012

Commodore 64: How to Migrate Text Files to a Macintosh

I want to migrate all my Commodore 64 text files to a Macintosh. How would I do this?

This article has been archived and is no longer updated by Apple.
We have not seen any software package that does this conversion. The only way is to print the files out through a serial port on the Commodore with a cable going to the Macintosh with a communications package, like MacTerminal running on the Macintosh side.

Published Date: Feb 18, 2012

Apple II: How to Copy Software from 5.25 to 3.5-inch Disks

I want to copy Apple IIe software from 5.25-inch to 3.5-inch disks, using an Apple IIGS--and then run the programs. I get a message that the Apple IIe disk was not formatted in ProDOS. What should I do?

This article has been archived and is no longer updated by Apple.
If the program was written to run under DOS 3.3, it probably won't work under ProDOS. You can use the System Utilities Disk 3.1 to copy the information over to a 3.5-inch disk (the DOS to ProDOS conversion is handled automatically during the copy). However, if the application interacts with the operating system giving DOS 3.3 commands, it won't run. We recommend that you ask the software developer if they have a ProDOS version.

Published Date: Feb 18, 2012

Macintosh SE: Requirements for SoftPC

How do I run Soft PC and DOS applications on my Macintosh SE?

This article has been archived and is no longer updated by Apple.
To run SoftPC on a Macintosh SE, Insignia Solutions recommends:
* 2MB RAM
* a hard disk drive with at least 3MB of free space
* a 68020 or 68030 accelerator card

Published Date: Feb 18, 2012

iMovie 2.0.1 Dutch: Command-D Keyboard Shortcut Does Not Work

The Dutch version of iMovie 2.0.1 uses the Command-B keyboard shortcut instead of the usual Command-D for Don't Save.
This article has been archived and is no longer updated by Apple.

Symptom

The keyboard shortcut Command-D does not correspond to the Don't Save button in a Save dialog, which is the common keyboard command for the Don't Save button in the Dutch version of the Mac OS.

Solution

When a Save dialog box appears, use either the keyboard combination Command-B, or click Don't Save.
Published Date: Feb 18, 2012

Apple IIGS: RAM Upgrade, CAS and RAS

I am trying to upgrade an early version of the Apple IIGS and having problems with the 256K chips. Please advise me on the need for CAS and RAS and when and where they are necessary. The solder-in chips on the expansion card don't fall into the category listed in the service manual for replacement. They are NEC/Japan D41256C-15.

This article has been archived and is no longer updated by Apple.
The computer requires CAS before RAS refresh. At one time, we were describing the problem chips, but there are too many different RAM manufacturers. Run the Apple IIGS diagnostic 4.0. You must specifically choose the RAM card test to test the card. If the test comes back with "RAM out of spec," you have the wrong refresh. If the test fails, it is a straight failure. If the test passes, the RAM is the correct refresh and in working order.

Published Date: Feb 18, 2012

Mac OS X 10.0: Can‘t Save to iDisk‘s Software Folder

You cannot save a file to an iDisk's Software folder even though that option is presented in Mac OS X applications.
This article has been archived and is no longer updated by Apple.

Symptom

When saving files from Mac OS X applications, the Software folder of the iDisk is presented as an option. However, when you try to save files to the Software folder an alert with the message "Couldn't Save" appears.

Solution

Use a folder other than the iDisk Software folder. The iDisk Software folder is a read-only folder used by Apple to provide Apple software. It is not possible to save files to the Software Folder.

Published Date: Feb 18, 2012

TA46133_LaserWriter_Plus_Cant_Use_LaserWriter_IIs_Envelope_Tray_(TIL07512).pdf

LaserWriter Plus: Can‘t Use LaserWriter II‘s Envelope Tray

Will the LaserWriter II envelope cassette (P/N M0141) work on the LaserWriter Plus?

This article has been archived and is no longer updated by Apple.
No, the LaserWriter II envelope cassette tray does not work in a LaserWriter Plus.

The LaserWriter and LaserWriter Plus only supported printing envelopes one at a time through manual feed. (Check with companies like BDT who make sheet and envelope feeders for the LaserWriter. For contact information, search the Tech Info Library under "BDT".)

Published Date: Feb 18, 2012

Mac OS X: .Mac and Internet System Preferences

In order to use .Mac integrated with Mac OS X, the Internet System Preferences must be set up properly.
This article has been archived and is no longer updated by Apple.

Symptom

.Mac will not function properly if the Internet System Preferences are not set up properly.

Solution

Mac OS X contains several features that are tightly integrated with .Mac, Apple's suite of Internet services. To use services such as iDisk access from the Finder, the Internet System Preferences need to be set up properly.

Configuring the Internet System Preferences

1. Open System Preferences.
2. Click Internet to reveal that pane.
3. Click the .Mac tab to select it (unless it is already visible)
4. Enter your .Mac user name and password.

If you do not yet have a .Mac account, either full or trial, you can create one by clicking Sign Up.

Selecting your .Mac email account as your default email account

1. Click the Email tab.
2. Click the checkbox to enable the "Use iTools Email account" feature. The proper email settings are automatically entered into the appropriate boxes.

Published Date: Feb 18, 2012

AppleShare IP 6.3.3: Issues Loading Server Modules

When connecting to an AppleShare IP 6.3.3 Server, an alert box may appear with a message about loading server modules.
This article has been archived and is no longer updated by Apple.

Symptom

When connecting with Mac OS Server Admin in AppleShare IP 6.3.3, you see an alert box with this message:

> "There were problems loading the module "<module name>" so it was ignored."

Figure 1 AppleShare IP 6.3.3 alert box

Note: This alert box appears for each module, not just the ARA Server Module.

Solution

1. Use the Extensions Manager to disable the SLP Plugin extension on the AppleShare IP 6.3.3 Server.

2. Make sure that there are no duplicate serial numbers on any AppleShare IP Servers connected to the network. See technical document 60602: "**AppleShare IP 6.3: Serial Number Issues**"

Published Date: Feb 18, 2012

TA46136_MacTCP_CDEV_and_EtherTalk_(TIL07513).pdf

MacTCP CDEV and EtherTalk

I have an EtherTalk board in my Macintosh II and am using MacTCP and NCSA Telnet to talk to campus mainframes through an Ethernet backbone.

When I select Ethernet in the MacTCP CDEV, I can connect to a host through Ethernet. However, when I have EtherTalk selected, I cannot make a TCP connection to any host. Shouldn't I be able to make a connection with EtherTalk selected?

This article has been archived and is no longer updated by Apple.

```
EtherTalk in MacTCP is for sending AppleTalk packets with encapsulated TCP.
Use this choice for networks that must go through a DDP/IP router. The
Ethertalk setting creates the Datagram Delivery Packets that the router
expects.

Your network apparently has direct access to the TCP host, which lets you
use the straight packets (Ethernet choice).  The way to look at this
setting is that it's one or the other, not both.
```

Published Date: Feb 18, 2012

Thursby Software, Inc.: Support and Upgrades

This article contains support links and software upgrade links for Thursby Software products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Company: Thursby Software Inc.
dave@thursby.com
+1 817 478 5070

Product:	DAVE
Product Description:	Macintosh to Windows Peer to Peer file sharing
Support Site:	http://www.thursby.com/support/
Product Updates:	http://www.thursby.com/support/updates.html
FAQ:	http://www.thursby.com/support/faq.lasso

Software Update Information

If you want to be notified automatically of software updates for this product, or other third-party products, you can either use the Version Tracker Web site at:

http://www.versiontracker.com

or the AppleUpdate Web site, which also tracks international updates, at:

http://AppleUpdate.com

Published Date: Feb 18, 2012

WebObjects 5 Deployment: Apple Netname Server Startup Error on Windows 2000

This document describes how to correct the Apple Netname Server startup error during startup after installation of WebObjects 5.0 Deployment on Windows 2000.
This article has been archived and is no longer updated by Apple.

Symptom

After an installation of WebObjects 5.0 Deployment on Windows 2000, the System Event Log shows the following message from the Apple Netname Server: "The Apple Netname Server depends on the following nonexistent service: Apple_Mach_Daemon." Neither of these services are used by the Deployment components and should not have been installed.

Solution

This issue is expected to be corrected in a future version of the product. In the meantime follow these steps to disable the Apple Netname Service:

1. Choose the Start Menu->Settings->Control Panel->Administrative Tools->Services
2. Select the Apple Netname Server and then the menu option Action->Properties
   Note: An alert box with this message may appear: "Configuration Manager: The specified device instance handle does not correspond to a present device." Click OK to continue.
3. Change the Startup type from Automatic to Disabled.
4. Click Apply
5. Click OK.

This disables Apple Netname Services.

Published Date: Feb 18, 2012

WebObjects: WODisplayGroup Delegate Method Does Not Function

The WODisplayGroup delegate method displayGroupDidSetValue described in the WebObjects documentation does not work in a WebObjects application.
This article has been archived and is no longer updated by Apple.

Symptom

Using the WODisplayGroup delegate method displayGroupDidSetValue in a WebObjects application does not work.

Solution

None for WODisplayGroup. However, this delegate method works properly with EODisplayGroup in Enterprise Objects Frameworks (EOF).

Additional Information

Display Group Description

A display group transports values between an enterprise object and a user interface object. An EODisplayGroup is used in a desktop application with Enterprise Objects Frameworks (EOF), while a WODisplayGroup is used in a WebObjects application. The functionality of a WODisplayGroup and an EODisplayGroup are identical.

The WODisplayGroup delegate method described below informs the delegate that `aDisplayGroup` has altered a property value of anObject.

`key` identifies the property, and value is its new value.

Objective-C: (WebObjects Release 4.5 and 4.5.1)

-(void) displayGroup:(WODisplayGroup *) aDisplayGroup didSetValue: (id) value forObject: (id) anObject key: (NSString *) key

Bridged Java: (WebObjects Release 4.5 and 4.5.1)

Package: com.apple.yellow.webobjects

```
public abstract void displayGroupDidSetValue( WODisplayGroup aDisplayGroup, Object value, Object anObject, String key)
```

Pure Java: (WebObjects Release 5 and WebObjects 5.1)

Package: com.webobjects.appserver

public abstract void displayGroupDidSetValue(WODisplayGroup aDisplayGroup, Object value, Object anObject, String key)

However, this method is only implemented for EOF applications. Its counterpart in WebObjects does nothing because this delegate method relies on the implementation of EOAssociation, for which there is no equivalent in WebObjects.

Important: This method has been removed in WebObjects 5.2

Published Date: Feb 18, 2012

Macintosh IIfx: How to Troubleshoot a Monitor/48 Card Problem

We have four Macintosh IIfx systems with the same problem. Each computer is running System 6.0.5 with an Apple 4-bit video card and the Macintosh Display Card 4*8. The cards drive a Macintosh High-Res RGB monitor and a Macintosh Two-Page Display. The color monitors come up, but the Two-Page Displays don't. The same configuration using the old Two-Page Display card and the 4-bit card works fine. What's the problem?

This article has been archived and is no longer updated by Apple.
Here is a troubleshooting sequence that may help you locate the culprit:

1) Start up with a known-good System disk with no INITs installed. Some INITs cause problems with video.

2) Try swapping out the 4*8 card if you haven't already done so.

3) Using the original configuration, insert the 4*8 (the card driving the Two-Page) into a different slot. There might be a problem with the bus lines or the slot itself.

4) Swap the logic board, if the slot or bus is the problem.

Published Date: Feb 18, 2012

Labtec: Support and Upgrades

This article contains support links and software upgrade links for Labtec products sold through the Apple Store.
Important: All non-Apple products sold through the Apple Store are supported by the vendor of the product, not by Apple.
This article has been archived and is no longer updated by Apple.

Company:	Labtec Web-based email +1 702-269-3612
Product:	Labtec Icon - 730 Headphones
Product Description:	Personal headphones
Support Site:	http://www.labtec.com/index.cfm?page=service/splash&countryid=1001&languageid=1
Product Updates:	
FAQ:	http://www.labtec.com/index.cfm?page=service/listing&crid=60&crid2=63&countryid=1001&languageid=1

Software Update Information

If you want to be notified automatically of software updates for this product, or other third-party products, you can either use the Version Tracker Web site at:
http://www.versiontracker.com

or the AppleUpdate Web site, which also tracks international updates, at:
http://AppleUpdate.com

Published Date: Feb 18, 2012

Spooler Problem with PostScript Interpreter

Article Reviewed Only: 9 June 1992

When I print a multi-page document - say, 3 pages - all pages spool to the spooler as shown in the print spooler window of AppleShare 2.x. The printer initializes and prints page 1 without problem. Either of two things can happen with page 2:

* It never prints or even gets started by the spooler. Thus, the pages to print are 3 and printed pages are 1.

* The job is flushed with an error sheet stating any of the following:

undefined;OffendingCommand: ^^^^^^^^ (these are upside down on sheet),
undefined;OffendingCommand:CE6F43C216B8D
,dictfull;OffendingCommand:def,limitcheck;offending command:^^^^^^^A3
(strange foreign characters), canceled by user.

If I send only one page at a time to the spooler, everything works well, but it's not very efficient.

This article has been archived and is no longer updated by Apple.
The error messages you received are not related to memory, but to the PostScript Interpreter which resides in the printer.

In general, there appears to be an issue with how the AppleShare print server (version 2.01) is handling PostScript files. The amount of required memory on the print server when capturing one printer is 2MB. The additional memory is not used. The problem would more likely center on how the files are being handled on by the Print Server/LaserWriter. The problem is being reported from the printer.

The "OffendingCommand" is telling us that the interpreter does not understand what has been requested--that is, a Syntax Error is being reported. The "dictFull" error is a report from the PostScript dictionary resident in the printer.

The probability is that packets are getting damaged somewhere in the spooling process on the print server. When the PostScript interpreter receives these damaged packets, it returns the error message or flushes the print job. This could point to a variety of problems with the installation of the server's software.

One thing that may cause this problem involves whether your system has ever run an earlier version of the operating system (and Print Server) before System 6.0.5. If so, you may want to try trashing the ServerFolder and reinstalling the system software and print server. Important: If you do this, make sure you use the Network Products Installer disk to install the print server. The Installer that ships with print server may not work correctly with either 6.0.4 or 6.0.5, but the Network Products Installer will. You may find that you need to reformat and reload the entire hard drive to resolve this problem. Also consider moving up to System 7 and installing AppleShare 3.0.

Published Date: Feb 18, 2012

Mac OS X: How to Export a Directory to a Subnet

This document explains how to export a directory to a specific subnet using NFS. This technique restricts access to an NFS export to computers that are in a specified subnet. It can also be used to export more than one directory when exporting to clients or netgroups is not a viable option. This article has been archived and is no longer updated by Apple.

How to Export a Directory to a Subnet

1. Create a new directory inside "/" directory using NetInfoManger and name it "exports". All of the exported directories are configured from within the new directory.

2. Create a new directory for the directory you want exported inside `/exports`.

   In this document, `/Applications` is used as an example.

   □

   Figure 1 Initial `/Applications` directory

3. Create a new property in `/Applications`.

   A. Click Name Property

   B. Choose New Property from the Directory menu.

   This creates a new property called `new_property` with a value of `new_value`.

   C. Change `new_property` to `opts`

   Additional values need to be created for the opts property (done in step 4)

   D. Change `new_value` to `mapall=nobody`

4. Select opts

5. Choose New Value from the Directory menu.

6. Change the value to `network=xxx.xxx.xx.x`

   `xxx.xxx.xx.x` is your network IP address (example, 192.168.42.0)

   Important: The network value must contain a 0 in the last octet. This specifies the entire subnet.

7. Choose New Value from the Directory menu.

8. Change the value to `mask=xxx.xxx.xxx.x`

   `xxx.xxx.xxx.x` is the subnet mask (example, 255.255.255.0)

If a directory needs to be exported to more than one subnet, use `network=192.0.0.0` and `mask=255.0.0.0`. This exports the directory to the entire 192 network.

The final `/Applications` directory should look similar to figure 2.

□

Figure 2 Final `/Applications` directory

Important: You must restart the computer for any changes that are made to the exports directory in NetInfoManager to take effect.

How to Export the Same Directory to Multiple Subnets

1. Create an export for the first subnet following the steps described in How to Export a Directory to a Subnet.
2. Duplicate this directory.
3. Remove the word copy from the name of the duplicated directory.
4. Change the network= value to the new subnet value.

Repeat steps 1 through 4 as necessary to cover all subnets.

5. Restart the computer.

Published Date: Feb 18, 2012

iMovie 2.1.1 for Mac OS X: iMovie Help Pictures Appear in English only

iMovie Help is available in all languages, however the pictures appear only in English regardless of which language iMovie Help is viewed in.
This article has been archived and is no longer updated by Apple.

Symptom

In iMovie Help the text appears in the language of the operating system, however pictures and screenshots appear only in English.

Solution

Unfortunately, due to data storage limitations on the install CD, there was not enough room to include pictures in all languages. None of the graphics containing text with alternate languages are currently available. However, this does not affect the functionality of Mac OS help.

Published Date: Feb 18, 2012

Kensington Turbo Mouse: Using with System 6.0.5 Requires Patch

My Macintosh IIx (running System 6.0.5.) freezes when the system is starting up. The problem is intermittent and happens only when the mouse--a Turbo Mouse from Kensington--is plugged in. (We have swapped out the mouse and the keyboard.)

This article has been archived and is no longer updated by Apple.
The Turbo mouse has a problem with System 6.0.5. Kensington has a patch for this. For contact information, search the Tech Info Library under "Kensington".

Published Date: Feb 18, 2012

WebObjects 5: Saving an Enterprise Object with NSArray or NSMutableArray as a Custom Value Class Causes Exception

This document provides an example to workaround an issue in WebObjects 5 where saving an Enterprise Object (EO) Class that has either a NSArray or a NSMutableArray as a custom value class for the attribute in an entity creates an exception.
This article has been archived and is no longer updated by Apple.

Symptom

Using an NSArray or an NSMutableArray as a custom value class for an EOAttribute in an EOEntity with the conversion method "archiveData" causes the following exception when saving:

> "Error encountered converting value of class com.webobjects.foundation.NSMutableArray to type specified in attribute 'myAttribute' of entity 'MyEntity'."

and the conversion exception is :

> Class com.webobjects.foundation.NSMutableArray does not implement method archiveData

Solution

In WebObjects 4.0 - 4.5 there is an Objective-C category to NSObject that implemented the method "archiveData". This category is not available in WebObjects 5. To get the same function, you must create a subclass of NSMutableArray and add the conversion methods and user's implemention to that class. The example below shows how a custom class called CustomMutableArray is created which extends NSMutableArray and implements the archiving method "archiveData".

```
//
// CustomMutableArray.java
//

package com.mycompany.utilities;

import java.io.*;
import java.util.*;
import com.webobjects.foundation.*;

/**
* This class demonstrates how to create a custom value class.
* This particular class is a subclass of NSMutableArray which can be used
* within EOModeler.
*/

public class CustomMutableArray extends NSMutableArray {
    /** This helps create the ByteArrayOutputStream with a good space estimate. */
    private static final int kOverheadAdjustment = 512;

    /** This also helps create the ByteArrayOutputStream with a good space estimate. */
    private static final int kCountBytesFactor = 16;

    /** This determines, when an error occurs, if we should throw an NSForwardException or just return null.
*/
    private static final boolean kThrowOnError = true;

    /**
    * This is the factory method.  Rename as appropriate from your EOModel.
    * It uses java Serialization to turn bytes from an NSData into a reconstituted Object.
    *
    * @param data This is the NSData holding the previously serialized bytes.
    * @return The un-serialized Object.
    */

    public static Object objectWithArchiveData(NSData data) {
```

```
ByteArrayInputStream bis = new ByteArrayInputStream(data.bytes());
Object result = null;
Throwable exception = null;
try {
   ObjectInputStream ois = new ObjectInputStream(bis);
   result = ois.readObject();
} catch (IOException ioe) {
   exception = ioe;
} catch (ClassNotFoundException cnfe) {
   exception = cnfe;
}

if (exception != null) {
   if
(NSLog.debugLoggingAllowedForLevelAndGroups(NSLog.DebugLevelCritical,
NSLog.DebugGroupArchiving)) {
NSLog.debug.appendln(exception);
   }

   if (kThrowOnError) {
throw new NSForwardException(exception);
   }
}

return result;
    }

    /**
    * This is the conversion method.  Rename as appropriate from your EOModel.
    * It uses java Serialization to serialize this object into bytes within an NSData.
    *
    * @return An NSData object containing the serialized bytes of this object.
    */

    public NSData archiveData() {
ByteArrayOutputStream bos = new
ByteArrayOutputStream(kOverheadAdjustment + count() * kCountBytesFactor);
NSData result = null;
try {
   ObjectOutputStream oos = new ObjectOutputStream(bos);
   oos.writeObject(this);
   oos.flush();
   oos.close();
   result = new NSData(bos.toByteArray());
} catch (IOException ioe) {
   if
(NSLog.debugLoggingAllowedForLevelAndGroups(NSLog.DebugLevelCritical,
NSLog.DebugGroupArchiving)) {
NSLog.debug.appendln(ioe);
   }

   if (kThrowOnError) {
throw new NSForwardException(ioe);
   }
}

return result;
    }
}
```

Published Date: Feb 18, 2012

Final Cut Pro: German Manual Contains Contradictory Field Dominance Information

This document explains the proper use of field dominance. There is contradictory information in the German Final Cut Pro 2.0 manual.
This article has been archived and is no longer updated by Apple.

Symptom

The German Final Cut Pro 2.0 manual provides contradictory information about the field dominance to use for DV captured using FireWire on pages 128, 331 and 456.

Solution

- Digital Video (DV) captured using FireWire, should always have the field dominance to set to lower (even).
  Lower (even) is translated to German "gerade Zeilen".

  In the German manual pages 331 and 456 suggested to set the field dominance to upper (odd) which is "ungerade Zeilen" in German. The correct information is provided on page 128.
- The translation error is expected to be corrected in the next edition of the manual.

Published Date: Feb 18, 2012

WebObjects 5.0: Key-Value Coding Access Throws NSKeyValueCoding$UnknownKeyException

Java package access variables cannot be accessed using key-value coding (`NSKeyValueCoding`) unless Java code changes are made.
This article has been archived and is no longer updated by Apple.

Symptom

When WebObjects tries to get or set a Java package access variable with no accessor methods using key-value coding, a `NSKeyValueCoding$UnknownKeyException` is thrown. This can occur after the conversion to Java of an Objective-C class that does not implement accessor methods for all instance variables.

Solution

To access Java package access variables using key-value coding, one of the following must be done in order of preference:

- Accessor methods must be implemented.
- Package access variables must be made public.
- `KeyValueCodingProtectedAccessor` must be implemented in the package.

Implementing `KeyValueCodingProtectedAccessor` is the least preferred solution because it imposes a significant performance penalty, so this should be considered a temporary solution until one of the more preferred solutions has been implemented.

For additional details, see the NSKeyValueCoding.ValueAccessor class description at Apple's Developer Web site.

http://developer.apple.com/techpubs/webobjects/FoundationRef/Java/Classes/NSKVCValAcc.html

Published Date: Feb 18, 2012

WebObjects 5 (Windows): How to Change the Web Server after Installation

When using WebObjects 5.0, 5.1, or 5.2 on Microsoft Windows, WebObjects needs to know when the web server changes. This document explains how to change the web server after you install WebObjects.
This article has been archived and is no longer updated by Apple.
WebObjects maintains the information about the web server in two configuration files which must be updated when the web server changes.

Changing the Configuration Files

Note: The examples provided assume WebObjects is installed in C:\\APPLE

1. Stop the web server application.

2. The following steps suppose that you stopped your web server application.

3. Copy the contents of the old web server's scripts directory to the new web server's scripts directory. The script directory is normally named
"Scripts" in inetpub or "cgi-bin".

4. Copy the contents of the old web server's document root directory to the new web server's document root directory.

5. Modify `WebServerConfig.plist` in `C:\\APPLE\\Library\\Frameworks\\JavaWebObjects.framework\\Resources\\`. Change the line that sets the DocumentRoot property. This should be set to the full path of the document root.

6. In the same file, change the property `WOAdaptorURL`. It should be set to the path of the scripts directory relative to the web server root. For example, if the scripts directory is `C:\\www\\cgi-bin\\` and the root of the webserver is `C:\\www\\`, the `WOAdaptorURL` property should be set to `cgi-bin`.

7. Modify WebServerConfig.plist in `C:\\APPLE\\Library\\Configuration`. Make the same changes to the `DocumentRoot` and to the `WOAdaptorURL` properties.

Verifying the Installation

You can check the installation by accessing the WebObjects Adaptor Information Page after restarting the web server. The WebObjects Adaptor Information Page must be enabled first. The following link has the steps to enable the page:

"Setting Access to the WebObjects Adaptor Information Page"

Once the page is enabled, then you can access the WebObjects Adaptor Information Page several ways, two of which are given below.

Method using IIS

http://localhost/scripts/WebObjects.dll/WOAdaptorInfo?username+password

Method using a CGI

http://localhost/cgi-bin/WebObjects.exe/WOAdaptorInfo?username+password

Information about the latest update of WebObjects for Windows is always available in the document titled "WebObjects Current Patch List".

Related Documents

70037 WebObjects Current Patch List

Published Date: Feb 18, 2012

Knowledge Base: Recent Changes

This document contains a list of documents changed within the last seven (7) days.
This article has been archived and is no longer updated by Apple.
Coming soon.
Published Date: Feb 18, 2012

Mac OS 9: Desktop Printer Menu Extension Disabled by Multiple Users

In any version of Mac OS 9, if the Multi-User Startup system extension is installed, the Desktop Printer Menu extension is not active.
This article has been archived and is no longer updated by Apple.

Symptom

The Desktop Printer Menu extension is installed, but there is no Desktop Printer menu in the menu bar.

Solution

An implementation of the Desktop Printer menu is provided by the Limited and Panels environments. As a result, the Desktop Printer menu extension is not displayed in the Finder environment.

If you are not using the Multiple Users feature, use the Extensions Manager control panel to turn off the Multi-User Startup extension and the Desktop Printer menu will become available in the Finder.
Published Date: Feb 18, 2012

ImageWriter Family & Scribe: Connecting To An IBM PC, PS/2, AT&T

What are the cable and printer configurations that will interface an IBM PC, PS/2, AT&T 6300 or other IBM compatible to an ImageWriter I, ImageWriter 15", ImageWriter II, LQ or Scribe printer.
This article has been archived and is no longer updated by Apple.

Cabling pinouts for a custom cable:

IBM PC (use female DB-25)	ImageWriter II or ImageWriter LQ (use circular 8 connector)
5,6 (CTS, DSR)	1 (DTR)
20 (DTR)	2 (DSR)
3 (RxD-)	3 (TxD-)
7 (SG)	4,8 (SG, RxD+)
2 (TxD-)	5 (RxD-)

IBM PC (use female DB-25)	ImageWriter/15"/Scribe (use male DB-25)
3 (RxD-)	2 (TxD-)
2 (TxD-)	3 (RxD-)
5 (CTS)	4 (RTS)
7 (SG)	7 (SG)
6 (DSR)	20 (DTR)

Reference: RS232 Signal (DB-25 DTE)

1	Sig Gnd	Normally Shield or Chassis Ground
2	TXD	Transmit Data
3	RXD	Receive Data
4	RTS	Request to Send
5	CTS	Clear to Send
6	DSR	Data Set
7	GND	SIGNAL Ground
8	DCD	Data Carrier Detect
20	DTR	Data Terminal Ready
22	RI	Ring Indicate

Set printer switches to the following settings for this configuration:

- U.S. Character set
- 66 lines per page
- 8 data bits (1 stop bit, no parity)
- pica character pitch
- no LF after CR
- 9600 Baud
- Data Terminal Ready Protocol

ImageWriter I Switch Settings:

Switch 1

Position	1	2	3	4	5	6	7	8
Closed (On)	-	-	-	-	-	-	-	-
Open (Off)	X	x	x	x	X	x	x	x

Switch 2

Position	1	2	3	4

Closed (On)	x	x	-	
Open (Off)	-	-	X	

ImageWriter II Switch Settings:

Switch 1

Position	1	2	3	4	5	6	7	8
Closed (On)	-	-	-	-	-	-	-	-
Open (Off)	X	x	x	x	X	x	x	x

Switch 2

Position	1	2	3	4	5*	6*
Closed (On)	X	x	-	-		
Open (Off)	-	-	X	X		

*** NOTE:** DO NOT CHANGE SWITCH 5 AND 6.

ImageWriter LQ Switch Settings:

Switch1

Position	1	2	3	4	5	6	7	8
Closed (On)	-	-	-	-	-	-	-	-
Open (Off)	X	x	x	x	X	x	x	x

Switch2

Position	1	2	3	4	5	6	7	8
Closed (On)	X	x	-	-	-	-	-	-
Open (Off)	-	-	X	X	X	x	X	x

Switch 3: DO NOT TOUCH!

Finally, configure the serial port of the computer to match the printer configurations as above and assign the port to LPT1 by running this autoexec program:

mode COM1:96,N,8,1,P
mode LPT1:=com1

Software Drivers

These Apple printers were designed for use with Apple II and Macintosh computers, and contain many useful design features accessible only by those systems. Some of the printers have some similarity in design with printers that were designed, tested, and sold for PC users. Therefore, there is a remote possibility that PC drivers may control some of the functions on these printers. We have no knowledge which drivers may or may not work. If you wish to pursue this, some starting points:

Printer	PC Driver
ImageWriter II	Epson FX or similar driver
StyleWriter	Canon BJ-20
StyleWriter II	Canon BJ-200 (possibly also the BJ-200e)
Color StyleWriter (early models)	Canon Color BJ-600

Published Date: Feb 18, 2012

Macintosh Compact Models: "Hourglass" Effect on Screen

My Macintosh SE/30 screen displays severe "hourglassing" when there is a large, black area on the screen. I drew a black rectangle (wider than it is high) in MacDraw and then moved it around the screen. The left and right sides of the screen closest to the rectangle squeeze in towards the rectangle (hourglassing). I have replaced everything in the unit at least once. I also removed the hard disk, but that had no effect.

This article has been archived and is no longer updated by Apple.

The hourglass effect is common to all of the compact Macintosh computers. It's more pronounced on some systems than on others. To reduce (but not eliminate) the effect, turn down the internal brightness level. Try this and experiment with other compact Macintosh computers.

Published Date: Feb 18, 2012

iTunes 2 for Mac OS X: What to Do If You Experienced Data Loss During Installation

Users who have experienced data loss during iTunes 2 for Mac OS X installation have reported successful restoration of files using file recovery applications.
This article has been archived and is no longer updated by Apple.
Users who have experienced data loss during iTunes 2 for Mac OS X installation have reported successful restoration of files using file recovery applications.

If you have experienced data loss during iTunes 2.0 for Mac OS X installation, it is important that you do not perform any operations that would write data on the affected partition.

Here are two products that offer the ability to recover lost data:

- Norton Utilities for the Macintosh by Symantec Corp.
- TechTool Pro by MicroMat Computer Systems.

Both offer diagnostic software including hard drive diagnostics, data recovery, and other utilities. When using either of these products to attempt to recover your data, use the feature to recover erased files and not the feature to repair or recover volumes.

Most of these products recommend you restart your computer from a CD before attempting to recover data.

If you are a U.S. customer and require further assistance, or have additional questions, please contact AppleCare at (800) 275-2273. If you are located outside the United States, please refer to the Service and Support Guide that came with your computer or visit http://www.apple.com/support/ and choose your country from the multi-lingual support pop-up menu at the bottom of the page.

Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.

The following document can help you search for a particular vendor's address and phone number:

Document 17159: "**Locating Vendor Information**"

Published Date: Feb 18, 2012

WebObjects 5.0: WebObjects 5.0 Application May Not Update Frames Correctly

This document describes how to make sure content within frames is updated.
This article has been archived and is no longer updated by Apple.

Symptom

Frames are not updated in WebObjects 5.0 when they should be updated.

Solution

Use `setPageRefreshOnBackEnabled(false)` in your WebObjects application. In WebObjects 5.0 this keeps pages from being cached and frames will work as expected.

Additional information

WebObjects 4.5 and earlier would update frames each time an event occurred such as clicking a submission button. However, in WebObjects 5.0 the caching method is changed. This results in frames not being updated since the contextID is found and assumes that the page was reloaded or backtracked. In the case of frames, a cached page is displayed rather than generating a new page.

Published Date: Feb 18, 2012

HyperCard 1.2.5: Multi-launching From a Server

Our school's Macintosh lab has an AppleShare server. I want to set up a single copy of HyperCard (1.2.5) with several stacks on the server, so that it can be multi-launched. The HyperCard stacks and applications on the server are locked (Finder), and they do not have any problems. Is there a way to do it?

This article has been archived and is no longer updated by Apple.

HyperCard can multi-launch on the server. It works if HyperCard is either locked or in a locked folder. We experimented and got an error message by unlocking HyperCard or by putting it in a write-enabled folder. Stacks work the same way.

Published Date: Feb 18, 2012

Handspring: Support and Upgrades

This article contains support links and software upgrade links for Handspring products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Company:	Handspring http://support.handspring.com/esupport/forms/hsTSCaseNew.jsp +1 716 871 6448

Product:	Handspring Visor (all models)
Product Description:	Personal Digital Assistant
Support Site:	http://support.handspring.com/esupport/start/hsWelcome.jsp?navid=wl
Product Updates:	http://support.handspring.com/esupport/forms/hsFileList.jsp?Type=DesktopSoftware
FAQ:	http://support.handspring.com/esupport/forms/hsResolutionList.jsp?ResType=FAQ

Software Update Information

If you want to be notified automatically of software updates for this product, or other third-party products, you can either use the Version Tracker Web site at:

http://www.versiontracker.com

or the AppleUpdate Web site, which also tracks international updates, at:

http://AppleUpdate.com

Published Date: Feb 18, 2012

Procreate: Support and Upgrades

This article contains support links and software upgrade links for Procreate products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Company:	Procreate +1 613 274 0500

Product:	KPT Effects
Product Description:	a collection of filters that extends the boundaries of image editing
Support Site:	http://www.procreate.com/support/
Product Updates:	
FAQ:	

Product:	KnockOut
Product Description:	lets you preserve fine image details that were once impossible to mask precisely
Support Site:	http://www.procreate.com/support/
Product Updates:	http://www.procreate.com/go/ko_update/index.html
FAQ:	

Software Update Information

If you want to be notified automatically of software updates for this product, or other third-party products, you can either use the Version Tracker Web site at:

http://www.versiontracker.com

or the AppleUpdate Web site, which also tracks international updates, at:

http://AppleUpdate.com

Published Date: Feb 18, 2012

Apple IIc: Use Mouse Designed for Macintosh

I have a question concerning the "platinum" Apple IIc and a mouse. When I'm using the mouse, the cursor starts at the top-left corner and moves straight down to the bottom-left corner of the screen. Why?

This article has been archived and is no longer updated by Apple.

You have come across an incompatibility in mouse timing. The mouse sold for the Apple IIc works properly, and mice received from service work properly. However, mice that came from Macintosh Plus systems sometimes work and sometimes not, depending on the manufacturer.

To assure proper operation, make sure you use a mouse that was designed for use with the IIc.

Published Date: Feb 18, 2012

Apple IIe: Difficulty Starting Up when Connected to a TV Monitor

My Apple IIe won't power up its disk drive when connected to a TV monitor.

This article has been archived and is no longer updated by Apple.
If your RF modulator is the type that gets its power from the Apple IIe, the power supply could be the problem. Try unplugging one or more interface cards and see if the computer can power up with the RF modulator. If this works, try a new power supply. If it still refuses to power up, suspect a bad RF modulator.

Published Date: Feb 18, 2012

Apple IIGS: How to Mix a 3.5-inch Drive with Other Drives

I am using an Apple IIGS with a DuoDisk drive and a single 5.25-inch drive. The controller cards are in slots 5 and 6. I want to use a 3.5-inch drive along with the other drives. I installed an Apple UniDisk 3.5-inch drive with its controller in slot 4 and tried slot 7 with no success. I changed the slot settings under the Control Panel each time. How can a 3.5-inch drive be used with the described 5.25-inch drives?

This article has been archived and is no longer updated by Apple.
Try this configuration:

1) Plug the UniDisk 3.5-inch directly into the back of the computer (no controller).

2) Plug the DuoDisk into the port on the UniDisk 3.5 disk (no controller).

3) Plug the single 5.25-inch UniDisk into a controller card in slot 7.

Set the Control Panel as follows:

slot 5 smart port
slot 6 disk port
slot 7 your card
startup scan

This configuration tries first to start up from the UniDisk 5.25. If no disk is found, then it looks to drive 1 of the DuoDisk. If no disk is found, then it goes to the UniDisk 3.5.

Published Date: Feb 18, 2012

AppleScript: Scripts Do Not Recognize Disks with Accent Characters in Name

This document describes an issue where disks or files with accented characters are not recognized.
This article has been archived and is no longer updated by Apple.

Symptom

If a disk or file contains an accented character, such as é, ü, ê, or à, or a character from a double-byte language (for example, Japanese) its name string cannot be coerced into an alias.

Products Affected

- AppleScript

Solution

- Rename the file or disk removing the accented characters.
- Leave the name as is and use Choose File or Choose Folder to let the user locate the correct item.

Published Date: Feb 18, 2012

WebObjects 5.1: Cannot Connect to Annotated Version of PetStore Example

This document describes an issue when running the PetStore EJB example using WebObjects 5.1.
This article has been archived and is no longer updated by Apple.

Symptom

Following the steps in the PetStoreEJB README results in a working PetStore, however the link to the annotated version of the PetStore does not work. Clicking the link results in the message: "The requested resource (/estore/annotation/ann_overview_j2ee.jsp) is not available."

Solution

The servlet context specified in the README is incorrect. The context must have a path of "/estore", not "/petstore". The "/estore" path is hard-coded into the example, so it must be used. Make the following changes to the README:

1. For step 4 ("Prepare Tomcat"), the beginning of the server.xml file should read:

```
<!-- Java Pet store context -->
<Context path="/estore" docBase="petstore" debug="0" reloadable="true">
```

2. For step 9 ("Connect to Java Pet Store Demo"), the URL should be:

http://localhost:8080/estore

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Apple IIGS: When One Hard Drive Shows Two Icons

I have an Apple IIGS with 1.25MB RAM, a 3.5-inch floppy drive, 5.25-inch floppy drive, and an HD 20SC hard disk.

I removed all data from the HD 20SC to install System 5.0. Now, I see multiple hard-drive icons. What happened? Should I re-format the disk?

This article has been archived and is no longer updated by Apple.
Most likely, you accidentally created more that one partition. (This may also have happened if the drive was previously used on another operating system, such as the Macintosh OS.)

You need to go back to Advance Disk Utilities and select Partition. Remove all partitions, then create a new one.

Published Date: Feb 18, 2012

Macintosh Extended Keyboard: How to Program Function Keys

What are some applications that can program the function keys on the Macintosh extended keyboard?
This article has been archived and is no longer updated by Apple.
CE Software's QuicKeys is probably the most popular, but MacroMaker, included with system software prior to System 7, also programs the function keys. For contact information, search the Tech Info Library under "CE Software".

Note: This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

Published Date: Feb 18, 2012

Mac OS X Server: Use Only With English, French, German, and Japanese

This document describes the languages that can be used with Mac OS X Server (versions 10.0 and 10.1).
This article has been archived and is no longer updated by Apple.
Mac OS X Server (versions 10.0 and 10.1) can only be used in the following languages:

- English
- French
- German
- Japanese

Mac OS X Server should not be used with any other languages and updates for additional languages that may appear in the Software Update pane of System Preferences should be made inactive.
Published Date: Feb 18, 2012

WebObjects 4.5.1: Interface Builder Unexpectedly Quits When Using Mac OS X

If you install WebObjects 4.5.1 on Mac OS X, InterfaceBuilder may unexpectedly quit after you form a connection between objects.
This article has been archived and is no longer updated by Apple.

Symptom

Shortly after you form a connection, Interface Builder unexpectedly quits.

Solution

For developers not building EOF applications

If you do not plan to use Interface Builder to create EOF applications, the best workaround is to remove or disable the EOF palette. To disable it, follow these steps:

1. Quit Interface Builder if it is open.
2. Open a Terminal window, then copy and paste in these lines:

```
cd /Developer/Palettes
mv EOPalette.palette EOPalette.palette.disabled
```

3. Open Interface Builder.
4. Dismiss the alert with this message "Unable to load palette..."
5. From the menu, choose **`Tools > Palettes > Palette Preferences...`**
6. Select "EOPalette" from the list.
7. Click Remove .
8. Close the Preferences window.

If you later want to use the palette, you can follow these steps to re-enable it:

1. Quit Interface Builder if it is open.
2. Open a Terminal window, then copy and paste in these lines:

```
cd /Developer/Palettes
mv EOPalette.palette.disabled EOPalette.palette
```

3. Open Interface Builder.
4. From the menu, choose **`Tools > Palettes > Palette Preferences...`**
5. Click Add.
6. Navigate to **`/Developer/Palettes`**, choose EOPalette.palette, and click Open.
7. Close the Preferences window.

For developers building EOF applications

If you plan to use Interface Builder to create EOF applications, there is no simple workaround.

One approach is to avoid using the EOPalette functionality in Interface Builder and instead programmatically create connections, typically in your implementation of **`awakeFromNib`**.

Another approach is to do non-EOF work in Interface Builder by temporarily disabling EOPalette using the above steps, then re-enable it to

perform EOF-specific tasks. During the time the palette is enabled, Interface Builder may quit each time you create a connection (or do anything which shows the Connections inspector). If you save your work immediately after making each connection, quit and reopen Interface Builder, you can use EOPalette, although you must reopen Interface Builder quite often.

Published Date: Feb 18, 2012

LaserWriter: Blank Test Page May Be From Downloaded PostScript

My LaserWriter IINTX works normally, except that the test print page is blank. The unit prints all other pages with no problem. What does this mean?

This article has been archived and is no longer updated by Apple.
If you have downloaded any PostScript programs to the printer, the test page may have been blanked out unintentionally. If this is the case, the fact that the sheet is blank does not point to any hardware failure.

If you have not downloaded any PostScript programs the blank test page could be a sign of future I/O problems.

Published Date: Feb 18, 2012

ProDOS: How to Convert DOS 3.3 Files

I want to convert DOS ASCII and other formats into ProDOS format. Is there a disk that will convert DOS 3.3 to ProDOS?

This article has been archived and is no longer updated by Apple.

The current version of System Utilities 3.1 handles the conversion from DOS 3.3 to ProDOS automatically during a copy. This disk was included with the Apple IIe and IIc Plus.

Published Date: Feb 18, 2012

WebObjects 5: How to Configure an Oracle Stored Procedure With EOModeler

This document explains how to configure an Oracle stored procedure with EOModeler and highlights the differences going from WebObjects 4.5 to WebObjects 5.
This article has been archived and is no longer updated by Apple.

Applicable products

- WebObjects 5.1
- WebObjects 5.2

The Oracle Adaptor in WebObjects 4.5 passed stored procedure arguments by name. However, WebObjects 5 uses the JDBC API, which passes stored procedure arguments by order. The JDBC Adaptor uses the alphabetical order of the "columnName" of the arguments in the EOStoredProcedure to define the order of the arguments for the stored procedure call.

The "column" name is relevant here, not the name shown in the "Name" field of EOModeler. Use the EOModeler inspector to look at the "column" name of each parameter, or use the "Add Column" command at the bottom of EOModeler to add the "column" to the display.

The EOModeler tool can be used to reverse engineer your stored procedures. By default, EOModeler uses strings of numbers like 001 and 002 for the column names to emphasize the order. If you have an existing model file, you can use the EOModeler "New Updated Model" command to regenerate the model file.

Example 1: The stored procedure has only IN and OUT parameters.

The stored procedure expects three arguments in the following order: username(IN), password (IN), and authId (OUT).

After reverse-engineering, EOModeler automatically assigns a column name like "001" for username, "002" for password, and "003" for authId to show the order of execution for the arguments.

EOModeler displays the following:

Example 2: Your stored procedure expects a result set.

An Oracle stored procedure does not produce a result set in the usual way. Instead, it uses an Oracle-specific REF CURSOR parameter to provide access to results. The JDBC adaptor offers limited support for the Oracle REF CURSOR only as the return value for an Oracle stored function, not as an OUT parameter for an Oracle stored procedure.

To work around this issue, rewrite the Oracle stored procedure as a stored function. In Oracle, the function is created with the SQL command "CREATE FUNCTION" instead of "CREATE PROCEDURE", which is used for procedures.

In EOModeler, the Oracle stored function is modeled in the same way as any stored procedure. The external type of the returnValue parameter should be set to "REF CURSOR", even though this is not in the pop-up list of supported types -- you need to type in "REF CURSOR". Its column name should be "000" (a string of three zeroes) to indicate that it is a return value from the stored function.

Known Issues

1. EOModeler cannot reverse stored functions or stored procedures defined inside a package.

Workaround: Do not use packages. Or if you have to use packages, first define the stored procedure in your model file manually (not-reverse-engineered) using the EOModeler tool. Then, be careful to use the correct name for the stored procedure. For example, if the package name is "P" and the stored procedure name is "proc" in the database, then the external name of the stored procedure in your model file should be named "P.proc". To verify that the external name is properly:

1. Ensure EOModeler tool is set to the 'Table' mode.
2. Select 'Stored Procedures' to view all stored procedures with their internal and external names.

2. When reverse-engineering a stored function with a REF CURSOR, EOModeler sometimes adds an extra parameter with the external type PL/SQL RECORD, which causes an exception at run-time (Java.lang.NullPointerException).

Workaround:

1. Manually remove all extra OUT parameters, in particular the one of type PL/SQL RECORD.

2. Use the EOModeler Inspector to view the column named 'returnValue'.

3. Using the Inspector, add a false factory method, for example, name it 'factoryMethod') and a false conversion method (for example, name it 'convMethod'. Select 'Bytes' as the value for 'Init Arguments' using the pop-up menu.

4. Save the model file.

Example of a stored function reverse-engineered by EOModeler before any modifications:

Example of the same stored function after modifications:

EOModeler's Inspector showing the column 'returnValue' after modifications:

Published Date: Feb 18, 2012

TA46173_Scribe_Printer_Graphics_Dumps_(TIL00753).pdf

Scribe Printer: Graphics Dumps

This article has been archived and is no longer updated by Apple.

You can use two versions of the Imagewriter Toolkit to dump graphic images to the Scribe printer. The original version, written under DOS, dumps graphic images created under DOS. The new version, written under ProDOS, works with ProDOS images. If you want to use the ProDOS version to print DOS graphic images, convert your DOS files to ProDOS with the Convert utility included on the ProDOS Users Disk.

Published Date: Feb 18, 2012

Macintosh: When DAs Can‘t Be Accessed

I have a Macintosh II using System 6 that cannot run desk accessories or even access the control panels with MultiFinder running. The machine beeps once if you try to select General or other items.

This article has been archived and is no longer updated by Apple.
Under System 6, this condition is usually caused by the omission of the DA Handler file from the System Folder. Sometimes the file is there, but it is corrupted. Try replacing it by reinstalling System software.

If this situation happens while under System 7, try restarting the Mac and hold down the Shift key as it starts back up. This will keep any extensions from loading that may be conflicting with the actions you are taking. If this doesn't work, consider reinstalling the system software.

Published Date: Feb 18, 2012

Macintosh System Errors: Possible Sources

I just installed a new hard disk in my Macintosh II and am getting all sorts of system errors. The dealer who installed the hard drive insists that the problems are not hardware-based. The only software that I have been able to install is System 6.0.5.

Trying to install anything else generates system errors. (Sometimes just starting the computer and opening the System Folder generates errors.) I get errors ID =10, ID =28, ID =03, and ID =01, not to mention a "line 1111 trap error."

This article has been archived and is no longer updated by Apple.
Most system errors sound like gibberish to most of us, but if you were writing a new program for the Macintosh, the error number would tell you that you have a problem with your code. But, when you are running a compiled program and get this error, all it tells you is that the software crashed. Some errors, like 25, are "out of memory." This one does make sense. In your case, check through these possible problems:

1) This is a third-party drive that was formatted with HD Setup. You have to use a utility from the third-party manufacturer to format a third-party drive. Apple's utility is only for Apple's hard drives.

2) The hard drive is defective.

3) Some other file within the System Folder is causing the crashes: a screen dimmer, startup sound, electronic mail, or something similar.

4) The computer could have a memory problem in RAM or the logic board.

Published Date: Feb 18, 2012

iMovie: iMovie Unexpectedly Quits When Accessing iMovie Help

Third-party iMovie plug-ins may prevent iMovie Help from opening.
This article has been archived and is no longer updated by Apple.

Symptom

iMovie unexpectedly quits when attempting to open iMovie Help.

Products affected

- iMovie 2.x
- Roxio Toast prior to version 5.1.3

Solution

Roxio Toast installs a VideoCD plug-in which can be used with iMovie. Versions of the VideoCD plug-in prior to version 1.5 may cause iMovie to unexpectedly quit when accessing iMovie help.

- Update to Roxio Toast version 5.1.3 or greater.
  Toast v5.1.3 installs VideoCD v 1.5, which resolves this issue. Updates for Toast are available from Roxio's website
- Disable the VideoCD plug-in.
  You can also disable the Roxio VideoCD.

Disabling the VideoCD plug-in

1. Open /Library/Quicktime
2. Remove ToastVideoCDExport.component

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Related Documents

75287 Roxio: Support and Upgrades

Published Date: Feb 18, 2012

MacDFT, PF10 Function, and 32798 Error

I am running MacDFT on my Macintosh IIcx, with System 6.0.5. I am accessing PROFS from our mainframe. When I ran version 1.0 of MacDFT I was okay, but as soon as I upgraded to version 1.1, I began experiencing problems when I used the PF10 function. The system hangs and reports a 32798 error and that communication with the host has been lost. I did try switching settings within the program, but to no avail. We are using a coax connection.

This article has been archived and is no longer updated by Apple.
A 32798 error is a TIMEOUT_ERR, or "request timed out" and suggests a problem between the terminal and controller. We have seen similar problems when a non-IBM controller is used (Apple only supports IBM 3x74 controllers). And this type of error is much more prevalent when one is using DFT mode as compared to CUT.

MacDFT 1.0 only supported CUT mode, and MacDFT 1.1 supports either. You may be able to use MacDFT 1.1 in CUT mode to work around this problem. However, you may encounter other incompatibilities if you are not using IBM controllers.

A PF10 from the PROFs main menu is an add-on automatic reminder. This worked flawlessly for us during our testing with MacDFT 1.1.

Another possible problem area is the type of cable used. When coaxial devices are designed, we usually assume RG62/AU, but often unshielded and less-expensive cable is substituted, like RG59 or RG58. Either of these latter two cable types could cause problems.

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WebObjects 5.1: How to Find the Version of WebObjects and Other Software Installed in Mac OS X

This article provides sample Java code to extract the version of each software package installed on the Mac OS X computer without having to look for the version number of each package in the directory `/Library/Receipts`.

Note: From Mac OS 10.2 onward, this sample code onlys extract the version of WebObjects packages installed in the directory `/Library/Receipts`, not for other software packages.

This article has been archived and is no longer updated by Apple.
The sample function can be defined in any class suitable to your program.

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Sample Code

In this example, the method

```
public static NSDictionary productVersions()
```

is defined in the file Application.java in a WebObjects application project.

```
import java.io.*;
import com.webobjects.foundation.*;
import com.webobjects.appserver.*;
import com.webobjects.eocontrol.*;

public class Application extends WOApplication {

      private static NSDictionary _productVersions = null;

    public static void main(String argv[]) {
        WOApplication.main(argv, Application.class);
    }

    public Application() {
        super();
        System.out.println("Welcome to " + this.name() + "!");

        /* ** Put your application initialization code here ** */

         System.out.println("Version information:\\n" +
            formattedDictionary(productVersions()));
    }


    public static NSDictionary productVersions() {
        if ( _productVersions != null) return _productVersions;

        // Go to the /Library/Receipts directory to get the software version
        String receiptsDirString = "/Library/Receipts";
        File receiptsDir = new java.io.File(receiptsDirString);

        if (!receiptsDir.exists() || !receiptsDir.canRead())
            return NSDictionary.EmptyDictionary;

        // Extract the version information from each package Contents,
        // Resources folders and software_version file
        try {
            String packageFiles[] = receiptsDir.list();
            int length = packageFiles.length;
            NSMutableDictionary packages = new NSMutableDictionary(length);

            for (int i = 0; i < length; i++) {
                String packageName = packageFiles[i];
                String packagePath = receiptsDirString + "/" + packageName +
```

```
                    "/Contents/Resources/software_version";
                File versionFile = new File(packagePath);

                if (versionFile.exists()) {
                    StringBuffer versionString = new StringBuffer();
                    try {
                        LineNumberReader reader = new LineNumberReader(
                            new InputStreamReader(
                            new FileInputStream(versionFile)));
                        String line = reader.readLine();

                        while (line != null) {
                            versionString.append(" " + line);
                            line = reader.readLine();
                        }
                    }
                    catch (IOException e) {
                        // Flag the exception and return an empty string
                        System.out.println("Raised IOException");
                        return NSDictionary.EmptyDictionary;
                    }
                    if (versionString.length() > 1) {
                        String packageVersion = versionString.substring(1);
                        NSArray packagesForVersion =
                            (NSArray)packages.objectForKey(packageVersion);

                        if (packagesForVersion == null) {
                            packages.setObjectForKey(new NSArray(packageName),
                                packageVersion);
                        }
                        else {
                            NSMutableArray packageVersHolder =
                                new NSMutableArray(packagesForVersion);
                            packageVersHolder.addObject(packageName);
                            packages.setObjectForKey(packageVersHolder,
                                packageVersion);
                        }
                    }
                }
            }
            _productVersions = packages;
            return _productVersions;
        } catch (SecurityException e) {
            return NSDictionary.EmptyDictionary;
        }
    }

    // Make product versions dictionary more readable by alphabetizing by
    // package name and writing each package on its own line.
    public static String formattedDictionary(NSDictionary aDict) {
        String packageVersionString = aDict.toString();
        packageVersionString = packageVersionString.substring(1,
            packageVersionString.length() - 2);
        NSArray packageStrings =
            NSArray.componentsSeparatedByString(packageVersionString, "; ");
        try {
            packageStrings = packageStrings.sortedArrayUsingComparator(
                NSComparator.AscendingStringComparator);
        } catch (NSComparator.ComparisonException e) {
        }
        return packageStrings.componentsJoinedByString(";\\n");
    }
}
```

Usage

The _productVersions NSDictionary contains the following:

- The keys are the version strings for the different packages.
- The values are the packages for that version string.

Using the above code will generate the following output:

```
Version information:
{
    "DVDPlayerUpdate 3.1.1 (build 1B203)" = (DVDPlayerUpdate.pkg);
    "Epson Print Drivers 1.1 1.1 (build 4L13)" = (EpsonPrintDrivers.pkg);
    "Mac OS X 1.0 (build 5S66)" = (NetworkingUpdate.pkg);
    "Mac OS X 1.0 (build 5U6)" = (SecurityUpdateJuly2002.pkg);
```

TA46179_WebObjects_How_to_Find_the_Version_of_WebObjects_and_Other_Software_Inst

. . .

Published Date: Feb 18, 2012

iTunes 3: How to create CDs from Audible content

Learn how to convert Audible files and save them on an audio CD.
This article has been archived and is no longer updated by Apple.
iTunes 3 can play and use Audible spoken word files from Audible.com. Audible audio files are a proprietary audio format that use security technologies, including encryption, to protect purchased content. To understand how to use Audible files to burn audio CDs, it's important that you understand a number of limitations to their usage. Additional information is available by visiting to Audible's web site.

If you have a later version of iTunes, see "iTunes: How to create CDs from Audible content."

Limitations to Using Audible Audio

You can use iTunes 3 to listen to any Audible audio content, just like you would with any other audio or music file. Audible files can be organized into playlists or smart playlists. You can edit their ID3 tag information just like any other audio file. You can even provide a personal rating or an equalizer preset.

There are a few things you cannot do with Audible audio files.

- Audible audio cannot be converted to other audio formats.
- Audible audio cannot be used to create MP3 CDs.

If you try to convert an Audible file to a MP3 using the Convert Selection to MP3 command in the Advanced menu, the message "Audible files cannot be converted to other formats." appears.

If you try to burn an MP3 CD from a playlist that includes some Audible content, an alert box with this message appears: "None of the items in this playlist can be burned to CD."

You cannot burn Audible files to CD as MP3. You must burn them as AIFF or as audio CDs. Audible.com allows for a single set of audio CDs to be created from their purchased content.

Burning Audible Audio to CD

Burning Audible audio can be difficult, based on the large size of a lot of the files. Many of the audio files (like audio books) can be many hours in length. If you attempt to burn a CD from a file that is larger than the space available on the CD, an alert box with the message "One or more of the songs in this playlist will not fit on the CD." appears.

An audio CD is limited to 60 to 80 minutes of audio content. A basic recordable CD (CD-R) allows for 74 minutes of audio, but CD-R discs are available in lengths up to 80 minutes.

To burn Audible audio that is longer than one CD, you must segment the large file into parts that will fit onto multiple CDs.

Segmenting Large Audio Files

While the segment feature is not new to iTunes 3, it has not been widely used. To segment any audio file for burning, use the Start/Stop time control, located in the Song Information window for the file.

1. Select the Audible file from the playlist.
2. Choose Get Info from the File menu.

3. Click the Options tab to access the Start Time and Stop Time Fields.

Setting Start and Stop Time Fields

The Original Speeches AudioBook is 4 hours, 39 minutes and 11 seconds in length. You will need to set the Start Time and Stop Time for each CD you burn of this program, to create a complete set of CDs spanning the entire program. In this example you would need at least 4 CDs.

1. Find a natural break point in the AudioBook. Listen to audio content around the time you want to place the stop time. Ideally you want to find a natural pause such as the end of a sentence or word. Stop iTunes at this break and note the time displayed. This is the stop point for one disc and the start point for the next disc.

2. Enter the Start time. Going strictly by the time division, the first segment could be set to end after 74 minutes, or 1 hour 14 minutes.

3. Click Burn CD.

4. Insert a blank CD-R disc.
5. Click Burn CD.

6. Repeat steps 2 through 5 until the entire audio content has been saved on CDs. In the example, the second segment could be set to start at 74 minutes and end at twice that length (148 minutes), or 2 hour 28 minutes.

   The third segment could be set to start at 2 hours 28 minutes and end at 3 hours 42 minutes.

   The fourth, and final, segment could be comprised of the remaining time, starting at 3 hours 42 minutes and continuing until the end.

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AppleTalk: Modem Sharing over Network

I am looking for software that allows modem sharing over an AppleTalk network.
This article has been archived and is no longer updated by Apple.
SilverServer Software from La Cie, Ltd. allows the sharing of Hayes-compatible modems and hard disks over a LocalTalk network or telephone line. The maximums are 32 users and 224 drives per network. ou also get DiskDup+ and SilverLining utility software.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Note: This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

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Apple II AppleShare Network: Troubleshooting Freeze-Ups

I have three AppleShare networks. One has all new Apple IIGS computers, and the other two are mixed with Apple IIe systems, plus both old and new Apple IIGS computers. They all come up fine but, two or three hours later they freeze. When we restart the computers most (not always the same ones) freeze at the IIGS loading gauge. This happens only on the new IIGS models.

I have about thirty Apple networks installed. On some of them, new Apple IIGS computers froze from the beginning. Replacing their logic boards seems to fix the problem. However, on the last one, the problem just moved to another, previously "clean" computer.
This article has been archived and is no longer updated by Apple.
First, check for bad RAM, the most common cause of a system locking up during startup. This would explain why swapping logic boards cured the one case.

Second, check for bad software on server. In this case, this diagnosis is more likely, because the condition is appearing on more and more systems. Try re-installing the server, making sure you use the Network Products Installer disk.

Re-install the following:

1) System 6.0.5

2) AppleShare 2.0.1

3) AppleShare Apple II Setup 2.1.1

4) GS/OS 5.02
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.Mac Backup: "Cannot Connect to .Mac to Verify Your .Mac Membership" Alert

.Mac Backup cannot connect to verify .Mac membership if your computer is on a network that uses a proxy server.
This article has been archived and is no longer updated by Apple.

Symptom

When you open Backup, an alert box appears with a message that says the application could not connect to .Mac to verify your .Mac membership.

Solution

Move the computer you want to back up to a place where proxy severs are not required. Backup 1.0 and later cannot be used with proxy servers.

The first time you open Backup your .Mac account is verified, which is why the computer needs to be located outside of proxy servers. After your membership has been verified, you can change the backup destination to CD/DVD. The next time you open Backup, the authentication process is not required. You don't even need to be online to back up to CD/DVD.

Note: When opening Backup after the first authentication, you will see an alert box with this message: "iDisk Server is Unreachable. The iDisk server is either unavailable or unreachable. Please try again later." The options are to select "Open Network Prefs" or "OK". If you click "OK", Backup will open with CD/DVD selected as the backup location.
Published Date: Feb 18, 2012

Mac OS X Server 10.2: QuickTime Streaming Server 4.1 Availability

QuickTime Streaming Serve 4.1 is included in Mac OS X Server 10.2.
This article has been archived and is no longer updated by Apple.
QuickTime Streaming Server 4.1 has been tested with, and is included in Mac OS X Server 10.2.

The Open Source version of QuickTime Streaming Server 4.1 (Darwin Streaming Server 4.1) is available for download for Mac OS X and other platforms from the Apple Developer area of the Apple Web site: (http://developer.apple.com/darwin/projects/streaming/).

Published Date: Feb 18, 2012

Apple Remote Desktop 1.1: About Copying Invisible Files

This document describes how Apple Remote Desktop copies invisible files by when you use the Copy Hard Disk command on a Mac OS 9 volume.

This article has been archived and is no longer updated by Apple.

The Copy Hard Disk command in Apple Remote Desktop 1.1 can copy the contents of a local volume to a remote computer. However, Apple Remote Desktop does not copy invisible files and folders at the root (top) level of the hard disk. This includes the Mac OS 9 Desktop Folder, Trash, Temporary Items folder, and other invisible items. Invisible files and folders located elsewhere on the hard drive, however, can be copied using Apple Remote Desktop.

Related Documents

20990 Network Assistant 4.0.x: Copying Invisible Files

Published Date: Feb 18, 2012

Telnet Access: Using the Apple Communications Toolbox

The MacTerminal manual hints that you can use MacTerminal in a TCP/IP environment. How? Can I use MacTCP with MacTerminal, or do I need something else to work with the Apple Communications Toolbox?
This article has been archived and is no longer updated by Apple.
There are several products that provide telnet access for programs that access the Communication ToolBox. Some are Sysnet Corporation's TCPack, InterCon's Telnet Driver/Tool, and Synergy Software's VersaTerm Pro.

To locate a vendor's address and phone number, use the vendor name as a search string.

Note: This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

Published Date: Feb 18, 2012

WebObjects 4: Issues with Applications Using Enterprise Objects from Multiple Threads

Objective-C applications written for WebObjects 4.0 and WebObjests 4.5 that use the Enterprise Objects Framework from more than one thread and whose threads do not run indefinitely may on rare occasions raise exceptions, damage memory, and cause memory faults.
This article has been archived and is no longer updated by Apple.

Symptoms

- exception "enableObserverNotification called when not supressed"
- damage to a random memory location
- memory faults

These symptoms may occur very rarely, and a given application may exhibit different symptoms at different times.

Solution

1. Add to your project a file EOFThreadWorkaround.h containing the following:

```
//  EOFThreadWorkaround.h
//  Copyright (c) 2002 Apple Computer, Inc. All rights reserved.

#import <EOControl/EOControl.h>

@interface EOObserverCenter (ThreadWorkaround)

//  preventCertainExceptionsOnThreadExit -- Invoke this once, at startup, before doing any EOF operations, to work
//  around certain problems with multi-threaded EOF applications.

+ (void) preventCertainExceptionsOnThreadExit;

//  changeThreadCache -- Any thread which does EOF operations but which is NOT created with NSThread should
//  invoke this just before exiting.

+ (void) changeThreadCache;

@end
```

2. Add to your project a file **EOFThreadWorkaround.m** containing the following:

```
//  EOFThreadWorkaround.m
//  Copyright (c) 2002 Apple Computer, Inc. All rights reserved.

#import "EOFThreadWorkaround.h"

@implementation EOObserverCenter (ThreadWorkaround)

static NSConditionLock  *threadFixLock = nil;

//  Conditions for the above lock
#define CONDITION_VALID             1         // idle state
#define CONDITION_NEEDCHANGE        2   // need some other thread to change the cache for us


+ (void) _changeThreadCacheWhenNeeded;
{
     [[NSAutoreleasePool alloc] init];

     //  Loop forever, waiting for other threads to signal that they need the cache changed.
     //  When they do, query the suppress count, which gets OUR thread into the cache.
     //  Since our thread stays valid forever, this makes the cache valid, important when
     //  other threads are exiting.

     while (1)
     {
          [threadFixLock lockWhenCondition: CONDITION_NEEDCHANGE];    // wait 'til we're needed
          [EOObserverCenter observerNotificationSuppressCount];
          [threadFixLock unlockWithCondition: CONDITION_VALID];       // and tell the world we're done
     }
}

+ (void) preventCertainExceptionsOnThreadExit;
{
     static BOOL beenHere = NO;
```

```
    if (beenHere) return;                                       // do this only once
    beenHere = YES;

    //  Create the lock to let any thread communicate with the cache-fixing thread
    threadFixLock = [[NSConditionLock alloc] initWithCondition: CONDITION_VALID];

    //  Spawn the cache-fixing thread
    [NSThread detachNewThreadSelector :@selector(_changeThreadCacheWhenNeeded)  toTarget: self  withObject: nil];

    //  When any thread is about to exit, change the cache.
    [[NSNotificationCenter defaultCenter] addObserver: self
        selector:@selector(changeThreadCache)
        name:NSThreadWillExitNotification
        object: nil];
}

+ (void) changeThreadCache;
{
    //  Grab the lock so we know the other thread isn't in the middle of things
    //  Then unlock it, to make it do its change-thing
    [threadFixLock lockWhenCondition: CONDITION_VALID];             // wait 'til we can jump in
    [threadFixLock unlockWithCondition: CONDITION_NEEDCHANGE];      // and tell helper thread to do its thing

    //  Wait for it to do its thing
    //  Then unlock it without changing things
    [threadFixLock lockWhenCondition: CONDITION_VALID];             // wait for it to do its thing
    [threadFixLock unlock];
}

@end
```

3. Change your application to include the following, invoking the method only once at startup (in the main() function or in your application's initialization):

```
#import "EOFThreadWorkaround.h"
...
[EOObserverCenter preventCertainExceptionsOnThreadExit]; // one-time code to set up workaround
```

4. If your application or any third-party libraries in your application spawn any threads that use EOF but do not exit with [NSThread exit], invoke the following method just before exiting the thread.

```
[EOObserverCenter changeThreadCache]; // make sure our thread isn't in EOF's cache
```

This step is critical to working around the problem -- step 3 covers only threads that exit with [NSThread exit], but you must make sure that every thread that uses EOF is corrected. This step handles threads that do not exit with NSThread's method.

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Power Mac G4 (Mirrored Drive Doors): Only Insert Headphones into the Sound Output Port

A set of headphones is the only device that should be inserted into the sound output port on the front of the computer.
This article has been archived and is no longer updated by Apple.
Only headphones should be plugged into sound output port on the front of the computer. All other audio devices should be connected to the sound output port at the rear of the computer.

Note: If headphones are connected through audio devices, such as grounded speakers, or mixers, and these devices are connected to the headphone sound output port, you may hear fan interference through the headphones.
Published Date: Feb 18, 2012

LaserWriter IINT/IINTX: Symptoms of Badly Mounted Power Supply

On power up, the LaserWriter IINT/NTX Ready light blinks, then the Toner light comes on solid. Shortly after this, both the Ready and Toner lights go solid, and the printer fails to generate a user self-test page. Subsequent service self-tests generate only blank pages.

This article has been archived and is no longer updated by Apple.

These symptoms appear when the high-voltage power supply is incorrectly mounted with connector pins (to the DC Controller) completely missing their places. This only happens during a repair, when the high-voltage power supply is replaced.

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Mac OS X Managed Client: Computers Do Not Show Full List of Users

Workgroup Manager client computers that are set up to get their configuration from a Managed Client Server (Mac OS X Server 10.2 or later) and show a list of users, may not show all the user accounts that exist in the server's database if the preferences are not defined.
This article has been archived and is no longer updated by Apple.

Symptom

Workgroup Manager client computers that are set up to get their configuration from a Managed Client Server (Mac OS X Server 10.2 or later) and show a list of users, do not show all the user accounts that exist in the server's database.

Solution

The list of computers in Workgroup Manager must be set to "Define" for the affected group of computers. By default, Workgroup Manager only has a Guest computer list, and preferences are not defined.

1. Open Workgroup Manager.
2. Click the Computers tab.
3. Either set up a specific group of computers, or use the Guest computer setting.
4. Click the desired computer list.
5. Click the List tab.
6. Click Define.
7. Click the Access tab. You may choose to allow all groups to use the computer, or you can restrict only certain workgroups to the list.

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Sybase, Inc. Contact Information

This document contains contact information for Sybase Inc.
This article has been archived and is no longer updated by Apple.

Company:	Sybase, Inc +1 925 236 5000
Product:	Adaptive Server Enterprise (ASE) 12.5 for Mac OS X Server
Product Description:	
Support Site:	http://www.sybase.com/support
Product Updates:	http://www.sybase.com/mac
FAQ:	
Product:	Sybase Software Developer Kit - Workplace 12.5 for Mac OS X
Product Description:	
Support Site:	http://www.sybase.com/support
Product Updates:	http://www.sybase.com/mac
FAQ:	

Sales Information:

Address: Contact your local sales office or call 1-800-8SYBASE (1-800-879-2273)
Phone: 1-800-8SYBASE (1-800-879-2273)
Email: sales@sybase.com

US Address:

United States Headquarters
5000 Hacienda Drive
Dublin, CA 94568
Phone: (925)236-5000

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ProDOS: Setting the prefix before using the CONVERT Program

The ProDOS User's Disk, /USERS.DISK, contains a CONVERT Program that transfers DOS files to ProDOS disks.
This article has been archived and is no longer updated by Apple.
For these transfers, users must remember to set the ProDOS prefix (in this case, volume name) to the prefix of the disk to which they want to send files. The ProDOS prefix defaults to the prefix of the startup disk (/USERS.DISK in this case).

At the beginning of the transfer, the system checks for the correct type of disk (ProDOS or DOS 3.3) and the prefix of the ProDOS disk; if you've forgotten to change the profix, you will receive the message "No Room on Volume" (namely, /USERS.DISK).

Select option "P" from the CONVERT main menu, change the prefix, and all will be fine.

A Tip: Writing the volume name on the label of each of your ProDOS disks will help you to remember that you must provide CONVERT with the disk's prefix.
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Macintosh 400K Drive: Won‘t Work on a Apple IIGS

Can we use a Macintosh 400K drive on an Apple IIGS?

This article has been archived and is no longer updated by Apple.
No. The Macintosh 400K drive is designed to be used only on the Macintosh 128K, 512K, 512Ke, and Plus.

Published Date: Feb 18, 2012

iPod for Windows: How To Contact MUSICMATCH Technical Support

This document contains instructions for contacting MUSICMATCH.
This article has been archived and is no longer updated by Apple.
Important: The contents in this document come solely from MUSICMATCH. Apple Computer is not responsible for the contents of this document, nor does it claim any copyright on the information. All references to "we" in this document refers to MUSICMATCH.

The most current version of this document can be found at: http://wwws.musicmatch.com/faq/MISC020.htm

Note: All support offered by MUSICMATCH is available in English only.

MUSICMATCH Jukebox Technical Support by phone

Because we often need additional system configuration information emailed to us and the time involved in downloading new drivers or other files, MUSICMATCH does all technical support through email. We will be more than happy to assist through email but do not handle technical support by phone. We apologize for any inconvenience this may cause.

Regarding technical support issues, MUSICMATCH Jukebox is capable of providing detailed diagnostics regarding its installation and configuration on your PC. This information can help us better and more quickly identify the source of the problem you may be experiencing and allow us to better suggest a solution. Please resubmit your issue by doing the following (If you have already included this information, please include it again in the diagnostic report submission. This will allow us to consolidate the details regarding your issue and avoid future duplicate requests and delays.):

1. Connect to the Internet.
2. Open MUSICMATCH Jukebox.
3. Within MUSICMATCH Jukebox, click the Help menu, then Request Technical Support.
4. Under "Describe your PC System", please include the details about your system listed under "PC DESCRIPTION" below.
5. Under "Give a detailed account of the problem that you are seeing", please include answers to the QUESTIONS section at the bottom of this message.
6. Enter your email address and name into the spaces provided.
7. Place a check in each of the checkboxes under "Files", and select "Yes" under "Would you like to send this information to MUSICMATCH now?"
8. Click the OK button.

If you are unable to open MUSICMATCH Jukebox, these diagnostics are stored in separate files that you can attach to a reply to this message to provide us with much of the same information. Please attach the following files to your reply:

USERINFO.DAT
MMJBLOG.TXT
ALTLOG.TXT
MMJBREC.LOG
MMJB.RPT
MMCD.INI
MMJBLOG.SAV

These files will be found in your MUSICMATCH Jukebox installation directory if they exist (some of the files may not be present if they have not yet been created by the application). By default, the installation directory is "C:\\PROGRAM FILES\\MUSICMATCH\\MUSICMATCH JUKEBOX\\", but this path will be different if you specified a custom directory when you installed MUSICMATCH Jukebox.

If you are unable to open MUSICMATCH Jukebox, please also do the following to find out what exact version of MUSICMATCH Jukebox you are using:

- Open Windows Explorer.
- Navigate to the MUSICMATCH Jukebox directory.
- Right-click on MMJB.EXE
- Select "Properties".
- Click the "Version" tab.
- Under "Item name", click "Product Version".
- Include the number in the "Value" box with your reply (please include any three-letter extensions).

Please include the PC description details and answers to the questions listed below.

PC DESCRIPTION:
- Processor type and speed.
- Amount of RAM installed.
- Manufacturer and model of sound card.
- Any additional details you feel may be important.

QUESTIONS:
- Please include a detailed description of the trouble you are experiencing, including the following:
o A description of what you are trying to accomplish with MUSICMATCH Jukebox.
o The exact steps you are taking leading up to the problem.
o The exact point at which the trouble occurs.
o How often the problem occurs.
o The exact text of any error message you are receiving. If a "Details" button appears with the error message, please click it and include this exact text as well.
- Are you logged in to your computer as an administrator, power user, regular user, or other (please specify)?
- What applications are you running in the background or in the system tray (next to the clock in the Windows Taskbar)?
- Is this the first time you have installed MUSICMATCH Jukebox, did you install over a previous version using a setup file you downloaded from our web site, or did you use the Update Software feature inside the Options menu of MUSICMATCH Jukebox?
- If you updated from a previous version of MUSICMATCH Jukebox, did this problem first occur right after your update?
- Copy the unique tracking number at the bottom of this email and paste it into the support request form.

Again, this information can help us better and more quickly identify the source of any problem you may be experiencing and allow us to better suggest a solution.

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Power Mac G4 (Mirrored Drive Doors): Balanced or Grounded Equipment Has a Humming or Buzzing Noise

This document describes how to eliminate audio buzzing or humming noise coming from the audio sound output port.
This article has been archived and is no longer updated by Apple.

Symptom

Balanced or grounded audio equipment connected to the audio sound output port has a humming or buzzing noise.

Solution

Connect the line output of the Power Mac G4 to the input of a stereo isolation transformer, and connect the output of the transformer to the audio equipment. Isolation transformers (also known as "ground loop isolators") are typically available at professional home/car audio retailers.

Additional information

Audio Equipment

There are two types of audio equipment that have two different types of inputs and outputs. Professional equipment, which uses balanced inputs and outputs, and consumer equipment, which uses unbalanced inputs.

Unbalanced Inputs and Outputs

Most of the common audio and video equipment you own has one of two types of connectors; coax connectors, also referred to as RCA connectors, and 3.5 mm connectors, also referred to as 1/8-inch connectors. Both of these types of connectors have only two lines per channel: the wire that carries the audio signal, and the shield or ground. 3.5 mm connectors usually contain a pair of wires and one shield, thus providing left and right stereo in a single cable. However, the 3.5 mm cable still only provides one wire and shield per channel. The shield on these types of cables are shared between the left and right audio wires. These two types of connectors make up most of the audio and video connectors found on common multimedia equipment.

The Power Mac G4 (Mirrored Drive Doors) is designed to integrate with your existing multimedia equipment. As such, it uses unbalanced inputs and outputs. This means it works out of the box with most stereo equipment, televisions, VCRs, and portable speakers.

Balanced Inputs and Outputs

Professional multimedia equipment uses a different connector called an XLR connector. It consists of three wires/pins for each channel. Two wires contain an equal voltage signal, which carries the audio. The third wire contains the ground. In most cases this style connector is not used on your audio and video equipment. In addition to having the specialized XLR connector, equipment with balanced inputs and outputs work on a different signal level than consumer equipment with unbalanced lines.

The Power Mac G4 (Mirrored Drive Doors) does not use XLR connectors, nor does it provide the proper signal level for balanced equipment without additional add-on hardware.

Using the Power Macintosh with Balanced Equipment

When balanced or grounded audio equipment is connected to the sound output port on the Power Mac G4 (Mirrored Drive Doors) computer, you may hear a humming or buzzing noise. This is caused by what is known as a ground loop.

Ground loop issues are usually completely eliminated if a stereo isolation transformer is used. An isolation transformer isolates the electrical grounds of two pieces of audio equipment and only allows audio signals to pass through.

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Macintosh Nubus Cards: Effect on Power Supply

Is there a problem with putting three or more NuBus cards in a Macintosh II family system?

This article has been archived and is no longer updated by Apple.

Not inherently, but the more cards you install, the greater the drain on the power supply. If the power supply was bad, it might not show up until it was under this increased load. Some card makers don't follow Apple specifications about power draw per card. Out-of-spec cards can strain the power supply.

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iMovie: "Could not find the language resource file" Alert

If you try to open an iMovie project in Mac OS 9 using the Mac OS X version of iMovie, an alert box with an error message appears on the screen.
This article has been archived and is no longer updated by Apple.

Symptom

When you double-clicking an iMovie project file in Mac OS 9, an alert box with this message appears:

> "Could not find the language resource file, please reinstall the application."

Solution

By default, iMovie 2 for Mac OS 9 Mac OS X are both installed on the hard disk.

Since iMovie 2 for Mac OS X is more recent, the Mac OS 9 Finder tries to open the iMovie file using iMovie 2 for OS X. This version of iMovie is
not designed to work with Mac OS 9. If you try to open the file using iMovie 2 for Mac OS X this alert box appears.

To open the file in iMovie 2 using Mac OS 9, do one of the following:

- Open the iMovie 2 for Mac OS 9 application first.
- Drag the iMovie project file onto the iMovie 2 for Mac OS 9 application.
- Open the project file from within the iMovie application.

For more information about the order in which applications open under Mac OS 9, see technical document 17713, "**Finder Search Path for Applications**".

Published Date: Feb 18, 2012

32-Bit QuickDraw and Print Monitor Problem

I have a Macintosh IIx with 8MB of RAM, an 80MB hard disk, and a 24-bit video board. I am running System 6.0.4 with MultiFinder and 32-bit QuickDraw active. I am trying to print using the background printing option. When I try to print a 24-bit image, the program quits with a MultiFinder 01 error (a bus error, I believe), but not until it has already fed the print job to the print monitor. I have noticed this from Pixel Paint Professional, Microsoft Word 4.0, and other programs.

I have completely trashed my System Folder twice to no avail. However, if I disable background printing, it works fine (no MultiFinder 01 bombs). The only thing that does not seem to work properly is the memory allocation to the print monitor. No matter what I set it to, it seems to take the "recommended" amount of memory, rather the allocated amount.

Do I have a bad copy of the System disks? Would you update to System 6.0.5 solve the problem? Do I need LaserWriter 6.0.1 to print 24-bit images to the NTX (or should 6.0 work?)

This article has been archived and is no longer updated by Apple.
We recommend upgrading to 6.0.1 LaserWriter and Laser Prep, so that you are using the most current drivers. You should also have Color/Greyscale selected in the Print dialog box.

There is a possibility that you are running the Installer (we hope you are using the Installer) from damaged diskettes. If you have a known-good locked set, throw away your System Folder and use these good disks to reinstall by running the Installer.

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Power Mac G4 (Mirrored Drive Door): QuickTime Movie Has Purple or Green Tint

The Power Mac G4 (Mirrored Drive Door) computer may display incorrect colors when playing QuickTime content, and in QuickTime-based applications.
This article has been archived and is no longer updated by Apple.

Symptom

QuickTime movies have a purple or green tint to them. Applications that use QuickTime such as Final Cut Pro, DVD Studio Pro, iMovie, iDVD, and Preview also have a green or purple tint.

Solution

Download and install Mac OS X 10.2.2 or later. It is available in the Software Updates pane of System Preferences, or from Apple Software Downloads (http://www.apple.com/swupdates/).
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TA46201_AppleShare_Server_Performance_and_RAM_(TIL07543).pdf

AppleShare Server: Performance and RAM

Would the performance of a Macintosh SE/30 server improve with more RAM installed?

This article has been archived and is no longer updated by Apple.

Additional memory in the server would provide only a small increase in performance, probably less than the relative cost of the memory. In the server. Memory only allows more simultaneous users with little effect on performance.

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iTunes 3: Playback Device Compatibility

This document contains the iTunes device compatibility as of 2004-01-19.
This article has been archived and is no longer updated by Apple.

Playback Device Compatibility

MP3 players

Enjoy your MP3s on the go. It's easy with iTunes 3. Connect your MP3 player to your Mac and its icon appears in the iTunes window. Just drag tracks to it from your library or playlist, and you're ready to hit the road. iTunes 3 supports today's most popular USB and Firewire based MP3 players.

The iPod is the perfect companion to iTunes 3. Small enough to fit in the palm of your hand yet big on performance, iPod holds over 4,000 songs and syncing a CD's worth of music takes only seconds with FireWire.

MP3 Players	Manufacturer	Format
iPod	Apple	FireWire
Nomad II	Creative Labs	USB
Nomad II MG	Creative Labs	USB
Nomad II c	Creative Labs	USB
Nomad Jukebox	Creative Labs	USB
Nomad Jukebox 20GB	Creative Labs	USB
Nomad Jukebox C	Creative Labs	USB
Rio One	SONICBlue/S3	USB
Rio 500	SONICBlue/S3	USB
Rio 600	SONICBlue/S3	USB
Rio 800	SONICBlue/S3	USB
Rio 900	SONICBlue/S3	USB
psa]play 60	Nike	USB
psa]play 120	Nike	USB
SoundSpace 2	Nakamichi	USB

CD MP3 Players

iTunes has built-in support for CD MP3 players.

CD MP3 Players	Manufacturer
RioVolt SP250	SONICBlue/S3
RioVolt SP100	SONICBlue/S3
RioVolt SP90	SONICBlue/S3

FireWire and USB CD-R Compatibility

Making Custom CDs

Using iTunes 3 Mac OS X you can create (or burn) custom audio CDs which are playable in your car, portable CD player and home stereo system using iTunes. You can also make custom MP3 CDs, standard audio CDs and data CDs directly from the Finder.

Using FireWire and USB external drives

While running Mac OS X you can create CDs using many FireWire and USB external media burners. For better performance and reliability, use FireWire drives.

To see if your drive is supported, open iTunes then choose Preferences from the Edit menu. Click the Advanced icon. In the CD Burning section of the Preferences window, check to see if your drive is listed. If it is listed then your Macintosh recognizes and works with your drive and you can use it to burn CDs. For more information about identifying the firmware and mechanisms of your drive, see the Apple Knowledge Base article: How to Determine an Optical Drive's Mechanism and Firmware Version.

FireWire, USB, and USB 2.0 drives tested with iTunes

TA46203_iTunes_Playback_Device_Compatibility.pdf

Below is a list of drives and their corresponding mechanisms and firmware that support CD burning on Macintosh computers running Mac OS X. Some drives do not reliably play music or import songs into MP3 format. You may find that using the built-in CD/DVD drive or SuperDrive works better for these tasks.

Drive compatibility may vary due to manufacturers' use of multiple mechanisms or firmware versions in the same product. This compatibility list includes only those combinations tested by Apple.

Drives	Mechanism	Firmware	Type	First included with
APS Tech 8x4x32x Plus	MATSHITA CD-RW CW-7586	1.06	FireWire/USB	10.1
Buffalo CDRW-IL8432	PLEXTOR CD-R PX-W8432T	1.08	FireWire	10.1
Buffalo CRWiF-B1210	PLEXTOR CD-R PX-W1210A	1.05	FireWire	10.1
BUSLink RW1232FM	LITE-ON LTR-12101B	LS3D	FireWire	10.1
BUSLink RW2440FM	LITE-ON LTR-24102B	5S03	FireWire	10.1.2
BUSLink RW4048FM	AOPEN 40X12X48 CD-RW	1.07	FireWire	10.2.5
BUSLink RW4848FM	AOPEN 48X12X50 CD-RW	1.04	FireWire	10.2.5
BUSLink RW5252FM	AOPEN 52X24X52 CD-RW	1.04	FireWire	10.2.5
BUSLink RW5252FM	LITE-ON LTR-52246S	6S02	FireWire	10.2.3
CD Cyclone CDRevo FireWire 24x10x40x	SANYO CRD-BP1500P	6.34	FireWire	10.1
EZQuest Boa 12x10x32x	TEAC CD-W512E	2.5c	FireWire	10.1
EZQuest Boa 16x10x40x	SANYO CRD-BP1400P	5.30	FireWire	10.1
EZQuest Boa 16x10x40x	TEAC CD-W516E	1.0A	FireWire	10.1
EZQuest Boa 24x10x40x	SANYO CRD-BP1500P	6.34	FireWire	10.1
EZQuest Boa 24x10x40x	TEAC CD-W524E	1.0A	FireWire	10.1.4
EZQuest Boa 32x10x40x	SANYO CRD-BP1600P	2.4	FireWire	10.1.3
EZQuest Boa 40x12x48x	LITE-ON LTR-40125S	ZS03	FireWire	10.1.4
EZQuest Boa 40x12x48x	TEAC CD-W540E	1.0B	FireWire	10.2
EZQuest Boa 48x12x48x	LITE-ON LTR-48125W	VS01	FireWire	10.1.5
EZQuest Boa 52x24x52x	LITE-ON LTR-52246S	6S02	FireWire	10.2.3
EZQuest Boa 8x8x32x	TEAC CD-W58E	1.0A	FireWire	10.1
Fantom Drives 8x4x32x	MATSHITA CD-RW CW-7585	1.01	FireWire	10.1
Fantom Drives 8x4x32x	PLEXTOR CD-R PX-W8432T	1.05	FireWire	10.1
Formac CD-RW 40x12x48x	LITE-ON LTR-40125S	ZS03	FireWire	10.1.4

Formac CD-RW 40x12x48x	LITE-ON LTR-40125W	WS03	FireWire	10.2.3
Formac CD-RW 48x12x48x	LITE-ON LTR-48125W	VS01	FireWire	10.1.5
Formac Devideon FWD1496-3DVD-R	TOSHIBA DVD-ROM SD-R5112	1003	FireWire	10.2.8
Freecom CD-RW 8x4x32x	PHILIPS R/RW 8x4x32	2,0	FireWire/USB	10.1
Freecom Traveller CD-RW 4x4x20x	RICOH CD-R/RW RW8040A	1.13	FireWire	10.1
I-O Data CDRWD-i1210j	RICOH DVD/CDRW RW9120	1.30	FireWire/USB2	10.1.3
I-O Data CDRW-i16j	RICOH CD-R/RW RW7163A	BO08	FireWire/USB2	10.1.3
LaCie CD-RW 12x10x32x	SANYO CDBP-121032	1.02	FireWire	10.1
LaCie CD-RW 16x10x40x	HL-DT-ST CD-RW GCE-8160B	1.02	FireWire/USB	10.1.3
LaCie CD-RW 16x10x40x	PHILIPS R/RW 16x10A	B1.5	FireWire/USB2	10.2
LaCie CD-RW 16x10x40x	SANYO CDBP-161040	5.29	FireWire	10.1
LaCie CD-RW 16x10x40x	YAMAHA CRW2100	1.0H	FireWire/USB	10.1
LaCie CD-RW 24x10x40x	SANYO CRD-BP1500P	6.34	FireWire	10.1
LaCie CD-RW 24x10x40x	SANYO CDBP-241040A	6.34	FireWire/USB	10.1
LaCie CD-RW 24x10x40x	TEAC CD-W524E	1.0A	FireWire/USB	10.1.4
LaCie CD-RW 24x12x40x	MITSUMI CR-48X9TE	1.0C	FireWire/USB2	10.1.4
LaCie CD-RW 32x10x40x	SANYO CDBP-321040A	2.40	FireWire/USB	10.1.3
LaCie CD-RW 32x12x40x	MITSUMI CR-48XATE	1.0C	FireWire/USB2	10.1.4
LaCie CD-RW 40x12x48x	LITE-ON LTR-40125S	ZS03	FireWire	10.1.4
LaCie CD-RW 40x12x48x	SANYO CDBP-401248A	1.00	FireWire/USB2	10.2
LaCie CD-RW 40x12x48x	TEAC CD-W540E	1.0B	FireWire/USB2	10.2
LaCie CD-RW 48x12x48x	LITE-ON LTR-48125W	VS01	FireWire/USB2	10.1.5
LaCie CD-RW 8x4x32x	MATSHITA CD-RW CW-7586	1.06	FireWire/USB	10.1
LaCie d2 CD-RW 48x12x48x	LITE-ON LTR-48126S	2S0D	FireWire	10.2.3
LaCie d2 CD-RW 48x12x48x	MITSUMI CR-48XETE	482R	FireWire	10.2.4
LaCie d2 CD-RW 48x24x48x	LITE-ON LTR-48246S	SS02	FireWire	10.2.2
LaCie d2 CD-RW 52x24x52x	LITE-ON LTR-52246S	6S02	FireWire	10.2.3

LaCie d2 CD-RW 52x24x52x	MITSUMI CR-487ETE	0019	FireWire	10.2.4
LaCie d2 CD-RW 52x32x52x	LITE-ON LTR-52327S	QS01	FireWire	10.2.8
LaCie d2 DVD MultiDrive	MATHISTA DVD-RAM SW-9571	A106	FireWire/USB2	10.2.4
LaCie d2 DVD+/-RW	PIONEER DVD-RW DVR-106	1.06	FireWire/USB2	10.2.8
LaCie d2 DVD-RW	PIONEER DVD-RW DVR-104	1.00	FireWire/USB2	10.1.2
LaCie DVD-RW U&I	PIONEER DVD-RW DVR-103	1.44	FireWire/USB2	10.1
LaCie Pocket CDRW 16x10x40x	TEAC CD-W216E	1.0A	FireWire/USB2	10.1.4
LaCie Pocket CDRW 24x10x24x	TEAC CD-W224EA	1.0A	FireWire/USB2	10.2.1
LaCie Pocket CDRW 4x4x24x	TEAC CD-W24E	1.0A	FireWire/USB	10.1
LaCie Pocket CDRW 8x4x24x	SONY CD-RW CRX700	1.1k	FireWire/USB	10.1
LaCie Pocket CDRW 8x8x24x	MATSHITA UJDA340	1.50	FireWire/USB2	10.1.3
Logitec LCW-E48F 52x24x52x	_NEC CD-RW NR-9300A	2.12	FireWire	10.2.8
Logitec LCW-P1210BF	PLEXTOR CD-R PX-W1210A	1.05	FireWire	10.1
Logitec LCW-Y2010BFU	YAMAHA CRW2200E	1.0D	FireWire/USB	10.1.3
MacPower Cold Chisel CD-RW/DVD-Rom	LITE-ON COMBO LSC-24081	3M06	FireWire	10.2.4
MCE Lucid CDRW Drive 24x10x24x	MATSHITA UJDA360	1.00	FireWire	10.2.1
MCE Lucid-SD DVD-R/RW Drive	TOSHIBA DVD-ROM SD-R6012	1031	FireWire	10.2.8
OWC Mercury Pro CD-RW Lite-On52x24x52x	LITE-ON LTR-52246S	6S02	FireWire	10.2.3
QPS Que!Fire 12x10x32x	LITE-ON LTR-12101B	LS3D	FireWire	10.1
QPS Que!Fire 12x10x32x	PLEXTOR CD-R PX-W1210A	1.07	FireWire	10.1
QPS Que!Fire 12x10x32x	TEAC CD-W512E	2.0b	FireWire	10.1
QPS Que!Fire 16x10x40x	PLEXTOR CD-R PX-W1610A	1.00	FireWire	10.1
QPS Que!Fire 16x10x40x	SANYO CRD-BP1400P	5n31	FireWire	10.1
QPS Que!Fire 16x10x40x	TEAC CD-W516E	1.0A	FireWire	10.1
QPS Que!Fire 24x10x40x	ARTEC RW-241040	0.99	FireWire	10.1.3
QPS Que!Fire 24x10x40x	PLEXTOR CD-R PX-W2410A	1.00	FireWire	10.1.2
QPS Que!Fire 24x10x40x	SANYO CRD-BP1500P	6.34	FireWire	10.1

QPS Que!Fire 32x10x40x	SANYO CRD-BP1600P	2.4	FireWire	10.1.3
QPS Que!Fire 32x12x40x	MITSUMI CR-48XATE	1.0D	FireWire	10.1.4
QPS Que!Fire 40x12x40x	SANYO CRD-BP1700P	1.05	Firewire	10.2
QPS Que!Fire 8x4x32x	PLEXTOR CD-R PX-W8432T	1.07	FireWire	10.1
QPS Que!Fire 8x4x32x	SAMSUNG CD-R/RW SW-208B	BQ01	FireWire	10.1
Sony CRX120	SONY CD-RW CRX120	1.0j	FireWire	10.1
Sony CRX140Ei	SONY CD-RW CRX140	1.2a	FireWire	10.1
Sony CRX1600L	SONY CD-RW CRX160	1.0e	FireWire	10.1
Sony CRX1650L	SONY CD-RW CRX1611	TYS3	FireWire	10.1.2
Sony CRX75L	SONY CD-RW CRX75L	0.6a	FireWire	10.1
Sony CRX85A	SONY CD-RW CRX85A	1.0f	FireWire/USB	10.1.3
Sony Spressa CRX145	SONY CD-RW CRX145	1.0b	FireWire	10.1
TDK DED+440 DVD+/-R/RW	TDK DVDRW0404N	1.06	FireWire/USB2	10.2.8
TDK VeloCD 24x10x32x FP	TDK CDRW241032FPX	8.40	FireWire	10.2.1
TDK VeloCD 24x10x40x F	TDK CDRW241040B	57S2	FireWire	10.2.1
Teac CD-RW5120I	TEAC CD-W512E	2.5c	FireWire	10.1
Visual Frontier COHH-B1-A48	HL-DT-ST RW/DVD GCC-4320B	1.00	FireWire	10.2.4
Visual Frontier COSP-B1-C24	TEAC DW-224E	1.0A	FireWire	10.2.5
Visual Frontier RWSP-B1-C24	TEAC CD-W224EA	1.0A	FireWire	10.2.1
VST CD-R/RW FWCDRW-F	RICOH CD-R/RW RW8040A	1.30	FireWire	10.1
VST CD-R/RW FWCDRW-V	RICOH CD-R/RW RW8040A	1.30	FireWire	10.1
VST CD-R/RW FWCDRW-V16	TEAC CD-W216E	0.9A	FireWire	10.1.4
VST CD-R/RW FWCDRW-V8	TEAC CD-W28E	1.1A	FireWire	10.1
Yamaha CRW2100IX	YAMAHA CRW2100	1.0N	FireWire	10.1
Yamaha CRW2200IX	YAMAHA CRW2200E	1.0D	FireWire	10.1.3
Yamaha CRW3200IX	YAMAHA CRW3200E	1.00	FireWire/USB2	10.1.3
Yamaha CRW-F1	YAMAHA CRW-F1	1.0c	FireWire/USB	10.2.2

BUSLink RW1640FM	LITE-ON LTR-16101B	TS0N	FireWire	10.3
Iomega CD-RW 40x12x48x	LITE-ON CDRW2304FEXT-B	ZOX2	FireWire	10.3
Ratoc RCD-PN0804P CD-RW	MATSHITA CDRRW07	1.00	FireWire/USB	10.3
EZQuest Boa 4x4x32x	TEAC CD-W54E	1.0A	USB	10.1
Iomega Predator CD-RW 4x4x6x	PHILIPS ZIPCD1024EXT	P1.2, P2.0	USB2	10.1
Iomega ZIPCD650	PHILIPS ZIPCD 650	I1.1, I2,2	USB	10.1
LaCie CD-RW 4x4x8x	MITSUMI CR-4802TE	2.1D	USB	10.1
LaCie CD-RW 4x4x8x	MITSUMI CR-4804TE	3.0D	USB	10.1
QPS Que!Fire 4x4x8x	MITSUMI CR-4802TE	2.1D	USB	10.1
QPS Que!Fire 4x4x8x	MITSUMI CR-4804TE	3.0D	USB	10.1
Sony CRX10U	SONY CD-RW CRX10U	2.0b	USB	10.1
Sony Spressa CRX100	SONY CD-RW CRX100	1.0j	USB	10.1
VST Portable CD-R/RW USBCDRW-F	RICOH CD-R/RW RW8040A	1.30	USB	10.1
Iomeag Predator 40x12x40x	LITE-ON CDRW38402EXT2-B	UOS1	USB2	10.3
Iomega CD-RW 16x10x40x	LITE-ON CDRW6402EXT-B	UOSA	USB2	10.3
Iomega CD-RW 24x10x40x	LITE-ON CDRW9602EXT3-B	5OX1	USB2	10.3
Iomega CD-RW 40x12x48x	LITE-ON CDRW23042EXT3-B	ZOP1	USB2	10.3
LaCie Fusion CD-RW LC241032	PHILIPS JR/RW24	P1.1	USB2	10.3
Yamaha CRW-70	YAMAHA CRW-70	1.00	USB	10.3
MCE Xcar&#65533;t Pro 8x8x24x	MATSHITA UJDA340	1.50	Expansion Bay	10.1.3
VST 4x Exp. Bay Module	RICOH CD-R/RW RW8040A	1.30	Expansion Bay	10.1

Note: If you plan on using other CD burning software along with iTunes or for additional help please contact the your drive vendor or the vendor of the CD burning software.

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WebObjects: How to Upgrade a Deployed WebObjects Application Running in a Production Environment

This document explains how to upgrade a currently deployed WebObjects application with a new version in a production environment.

The process described in this document allows the current version to continue running and processing requests while the new version is installed and brought online. This process is valid for WebObjects 4.5.1 and all versions of WebObjects 5.

Note: This document assumes you are using JavaMonitor and wotaskd to deploy and manage production applications.

This article has been archived and is no longer updated by Apple.
Important: The steps outlined in this document do not cover the situation where the new WebObjects application needs to modify or access the same files as the current version, nor does it cover situations when there is an update to the database. If you have schema or other database changes it may not be feasible to do an in-place upgrade of your application.

Add new instances of your new application

Use the same name, but place the new application in a different path from the current application so it does not generate a name conflict.

1. In JavaMonitor, click the Applications tab

2. Click Config next to your application.

3. Change the Path variable to point to the new version of your application executable.

4. Deselect the AutoRecover option.

5. Select Update for new instances only.
Important: Do not click "Push" or "Push All" as this attempts to modify the currently running version of your application.

6. Make any other changes you feel are necessary to your environment in the other application categories (such as Application Settings).

7. Open the Detail View by clicking Detail View in the upper right corner of the page

8. Add the appropriate number of instances of your new application. Be sure you add them to the correct host if you have more than one configured.

Prepare your earlier application so it can be taken offline

1. In Detail View, of the application tool, turn AutoRecover to OFF on the earlier instances of your application.
This ensures that when you shut these instances down wotaskd won't try to automatically restart them.

2. Turn on Refuse New Sessions on your older instances.
This allows your application to continue processing any current sessions, but they will refuse to accept any new ones.

Bring the new instances online

1. In Detail View start the new instances of your application by clicking the green button to the right of each new instance

When the new instances come online they will begin processing any new requests while the old instances complete their current sessions, or time out.

2. To add a level of robustness to your deployment you should turn AutoRecover back on for your new instances. This tells wotaskd to restart your instances in case they should go offline unexpectedly.

Shut down the old instances

1. Click the Red Light next to each instance to stop it when it no longer has any active sessions.
You can see the number of active sessions per instance from the application's "Detail View".

2. Delete the old instances after they all have stopped.

If there are issues when both versions of the application run at the same time, you need to bring the new instances online after you shut down the old instances.

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AppleWorks 6: Intersheet Cell References Are Not Auto-Calculated

Spreadsheet cells in AppleWorks 6 that contain references to cells of other spreadsheet documents (intersheet cell references) are not auto-calculated. Use the Calculate Now command to ensure your spreadsheet information is up to date.
This article has been archived and is no longer updated by Apple.

Symptom

When changing a spreadsheet that contains cells referenced from another spreadsheet, the referenced cells are not updated in all spreadsheets.

Solution

Use the "Calculate Now" command when using intersheet cell references to ensure that the spreadsheet is up to date.

1. Open the AppleWorks spreadsheet containing the intersheet cell references.
2. Choose Calculate Now from the Calculate menu.

For more information about spreadsheet cell references, see "About spreadsheet cell references" in AppleWorks help, or in technical document 50343.

Related Documents

50343 AppleWorks 6: About Spreadsheet Cell References

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TA46206_AppleShare_Compatibility_with_DOS__(TIL07546).pdf

AppleShare: Compatibility with DOS 5.0

Which version of AppleShare software works with DOS 5.0?

This article has been archived and is no longer updated by Apple.
The current version of AppleShare file server software is 2.01, which is compatible with DOS 5.0.

Published Date: Feb 18, 2012

Macintosh to VAX Connectivity and Fatal Error 1020

Article Change History

02/08/93 - RETITLED
* To accurately describe the article.

I am having problems with my Macintosh Plus (System version 6.0.4) communicating with our VAX system. We are using PacerLink 5.3 for VAX access via AppleTalk (Fastpath access onto fiber-optic Ethernet backbone). My Macintosh occasionally freezes, forcing me to turn it off to reboot. Today, I got a dialog box that told me I had a Fatal Error #1020. According to the (somewhat sketchy) information I have, that should indicate an AppleTalk problem.

What specifically does that error indicate, and where should we concentrate our search for the source of the problem?

This article has been archived and is no longer updated by Apple.
If there are other users in your general area, follow these diagnostic steps:

1) Start by taking the Macintosh over to one of those network connections and see if the same problem occurs. If it does not occur there, verify the connection at the original location. If so then continue with the next suggestions.

2) Check out the software at the Macintosh end. If possible, try another user's software (or hard disk with the software on it), so you can identify whether or not you have a software problem.

If other users are not experiencing the same problem, the network is not at fault. Our guess is that it's a software problem at your machine either in Pacer (likely) or in the System software (doubtful).

Published Date: Feb 18, 2012

DVD Studio Pro: DVD-Video Disc Cannot Be a Multiformat (NTSC/PAL) Disc

This document explains why you cannot create a multiformat disc when using DVD Studio Pro.
This article has been archived and is no longer updated by Apple.
Warning: Using an incompatible video standard with your television set could damage it. You should note on the label of your completed DVD-Video which video standard was used (NTSC or PAL).

The DVD-Video specification does not allow for the creation of a multiformat DVD. You must create a separate project for each video standard.

It is possible to bring PAL video into an NTSC project and visa versa. However, if you burn a disc as NTSC and the project contains PAL formatted video, the PAL formatted video will not display on an NTSC television.

In addition, when you set a startup action, make sure the startup action is the same format as the project.

Note: The DVD-Video specification was written and is now maintained by the DVD Forum working group WG1, which comprises a number of task groups concerned with both read-only and recordable disc formats.

Related Documents

13074 Video Definitions: NTSC, PAL, SECAM

Published Date: Feb 18, 2012

WebObjects 5.2: How to Prevent a Deadlock When a Direct Action Raises an Exception

If a Direct Action loads a session, then throws an exception, the WebObjects application stops responding ("hangs") the next time that same session is accessed.
This article has been archived and is no longer updated by Apple.

Symptom

If a Direct Action loads a session, then throws an exception, the WebObjects application stops responding the next time that session is accessed. Normally, the WOException page should return. However, it appears as if the link to the Direct Action is clicked and the application never returns. The application stops responding immediately if the concurrent request handling flag is disabled, or eventually, if the concurrent request handling flag is enabled.

The client browser would time out and show the message "No instance available" instead of the exception page.

Solution

The workaround is to manually present the exception page instead of depending on WebObjects to present the default WOException page when an exception is raised.

In the WOApplication subclass, override the `handleActionRequestError` method as follows:

```
public WOResponse handleActionRequestError(WORequest aRequest, Exception exception, String reason,
WORequestHandler aHandler, String actionClassName, String actionName, Class actionClass, WOAction
actionInstance)

{
   return handleException(exception, actionInstance.context());
}
```

Published Date: Feb 18, 2012

WebObjects 5.2: Project Builder 2.1 Debugger Breakpoints Ignored

The debugging of WebObjects Java code under Project Builder does not break at breakpoints.
This article has been archived and is no longer updated by Apple.

Symptom

After setting one or more breakpoints in Project Builder, debugging the project does not result in execution breaking at any of the breakpoints. This symptom may not be limited to only WebObjects projects. This symptom occurs because Project Builder does not always default to the correct debugger.

Solution

For each WebObjects executable Java project (WebObjects application) created using an earlier Project Builder version and for each new executable WebObjects Java project, do the following:

1. Build the project.
2. Click the Project Builder Targets tab.
3. Click the Executables disclosure triangle and select the executable file to be debugged.

4. In the Targets template, choose Debug Action from the Configure pop-up menu. This is located in the Launch Configuration section towards the bottom.
5. Choose Java Debugger from the Launch using pop-up menu.

Published Date: Feb 18, 2012

AppleTalk: How to Upgrade to Phase 2 to Use PATHWORKS

We need to upgrade our AppleTalk network to Phase 2 to use PATHWORKS. Our network consists of six zones, five are separated by Shiva NetBridges, while the other is separated by Cayman GatorBoxes. From what I've read, it looks like all I need to do is set the GatorBoxes to AppleTalk rout using Phase 2 instead of Phase 1 for us to be "upgraded." This sounds a bit too easy.

What else do I need to do? Currently, the only other devices we have are Macintosh computers, LaserWriter printers, some NetSerials and NetModems, and a Netway.

This article has been archived and is no longer updated by Apple.
Easy is what Macintosh is all about! Phase 2 has to be implemented on routing devices, so the GatorBox and the Shiva NetBridges also need upgrading. Check with Shiva on their plans or procedure for upgrading the NetBridge to Phase 2. That is basically all there is to it; the computers on the network have no requirement for an upgrade to Phase 2.

Published Date: Feb 18, 2012

iMovie 3: Some Graphic Files Import as Blank (White) Clips

Graphic files in PICT format that you import into an iMovie 3 project may appear as blank, white clips in the timeline after rendering is complete.
This article has been archived and is no longer updated by Apple.

Symptom

After placing a PICT format picture into the iMovie project timeline, the photo renders and turns into a blank, white clip.

Solution

1. Use Preview, iPhoto, or another application to export or convert the PICT format picture to another format such as JPEG or TIFF.
2. Import the JPEG or TIFF image into the iMovie 3 project instead of the PICT file.

This document may be updated as more information becomes available.
Published Date: Feb 18, 2012

iPod: Learning More, Support, and Service

This document describes where to get more information and help with the iPod.
This article has been archived and is no longer updated by Apple.

Online Help

Comprehensive help for iPod is included with iTunes. Choose Help > iPod Help.

Knowledge Base

The Knowledge Base (http://kbase.info.apple.com/) contains support information for all Apple products and is constantly updated to include the latest information.

Apple Websites

Additional support and troubleshooting information is available from Apple Web pages.

iPod Page - (http://www.apple.com/ipod).

iPod Support Page - (http://www.info.apple.com/usen/ipod/)

For international support, go to (http://www.apple.com/support/) and choose your country from the pop-up menu at the bottom of the screen.

Obtaining Warranty Service

If the product appears to be damaged or does not function properly, follow the advice in the iPod manual, the onscreen help, and the online resources.

If iPod still does not function, go to (http://www.apple.com/support/) for instructions on how to obtain warranty service.

Communications regulation information

For information on communications regulations, see the file on the iPod CD.

Published Date: Feb 18, 2012

LaserWriter: How to Upgrade Drivers on an AppleTalk Network

All LaserWriter drivers must be exactly the same on an AppleTalk network in order to prevent printer reinitialization every time someone prints. On the other hand, you can use any version printer driver with any version of System 6.x.x software. So if five people were running SEs with System 6.0.4 and LaserWriter driver 6.0, and a sixth machine running under System 6.0.5 (a IIfx, for example), the sixth machine could still run LaserWriter driver 6.0. (It's less hassle to make one adjustment than five.) Right?

Is there an enhanced functionality to LaserWriter driver 6.0.1, so that to get the absolutely best results, it would be best to upgrade the 6.0.4 SEs over to LaserWriter driver 6.0.1?

This article has been archived and is no longer updated by Apple.
Yes. You are correct in your first paragraph above, and if there is a new LaserWriter/Laser Prep file introduced you should be able to upgrade to that driver with no other system upgrade, unless it was so specified.

There was an upgraded Print Monitor with the 6.x drivers. Version 1.3 was distributed with the System 6.0.5 suite of diskettes while version 1.2 was distributed with the System 6.0.4 suite of diskettes. The 1.3 version would probably contain the enhancements necessary for use with any of the current printer drivers.

Published Date: Feb 18, 2012

Xserve (Slot Load): Gigabit Ethernet Card Not Reported Correctly in Apple System Profiler

Information about the server's Gigabit Ethernet PCI card may not be reported correctly in Apple System Profiler.
This article has been archived and is no longer updated by Apple.

Symptom

Incorrect information about the server's Gigabit Ethernet PCI card appears in Apple System Profiler. Instead of Card Type, Card Name, Card Model, Apple System Profiler displays nondescriptive numbers, or the information is missing as "Not available".

Solution

This is a known issue with Apple System Profiler. It does not indicate that the Ethernet card is malfunctioning.

Published Date: Feb 18, 2012

iDisk: About .HSicon Files

This document discusses the .HSicon files that you see when connecting to an iDisk from a Windows-compatible computer, computers with a UNIX-style operating systems, or from the Terminal application in Mac OS X.
This article has been archived and is no longer updated by Apple.
Important: Do not delete the .HSicon files.

There are two .HSicon files on your iDisk. They are located at the root level and in the Public folder.

The .HSicon files show the images of an iDisk or an iDisk Public folder when connected using AFP (Apple Filing Protocol) in Mac OS 9. If you delete the .HSicon file in the Public folder, it will not have the right icon when you connect to it using AFP in Mac OS 9.
Published Date: Feb 18, 2012

Data General: Terminal Line Dropped for Macintosh

I have a Macintosh IIci with a 40MB internal CMS drive with 4MB RAM. It replaces a Data General terminal. It's connected to our terminal line (DB-25 male) using a female-to-female gender changer and an Apple IIe/ImageWriter II cable (third-party) connected through the modem port.

Thus, I use my Macintosh part-time to communicate with a Data General (Versaterm does the DG emulation). Communication works flawlessly, and everything else is fine until I shut down the Macintosh at the end of the day. When I turn on the Macintosh in the morning, the DG has disconnected the line. I have to contact our systems people and have the line reconnected. Apparently the DG is polling the lines at night and something is timing out and disconnecting them.

I disconnected the cable from the back of the Macintosh at night, and everything works fine when I reconnect it in the morning. Note: People can shut off their terminals at night without the line being disconnected. However, I don't want to unplug the cable from the Macintosh every night.

Is the Macintosh doing something out of the ordinary with the serial ports when the machine is off?

This article has been archived and is no longer updated by Apple.
We suspect the cable may have a pin jumpered in it that may be causing this problem when the mainframe polls the Macintosh in the evening. The possibility is that pins 6 and 8 (jumpered), which should go to 20 on the DG, may be pulled down signal-wise and responding as if the connection is gone. This closes the line for security at the mainframe.

When the cable is disconnected from the Macintosh, those signals are cancelled, because there is not a continuous loop inside the serial port and the mainframe can tell that. When the cable is connected, it goes through the serial port and incorrect cabling may respond as if the connection has dropped.

We suggest you verify that the cable you are using is the correct configuration and not having any extra pins jumpered inside. When the Macintosh is off, nothing happens with the serial port (no power, no activity).

We cannot tell you if there is a way to have the mainframe discontinue the polling overnight. That may be one workaround besides verification of the cable.

Published Date: Feb 18, 2012

iLife: QuickTime 6.1 Installer Is Not Included

The QuickTime 6.1 installer referenced by the iLife installer cannot be found on the iLife CD or DVD.
This article has been archived and is no longer updated by Apple.

Symptom

The iLife installer states a separate QuickTime 6.1 installation is included on the iLife discs.

Solution

QuickTime 6.1 is not included on the iLife discs. QuickTime 6.1 is available online using Software Update. Choose Apple menu > System Preferences, then choose View > Software Updates.

The latest versions of QuickTime and iLife are available in the Software Update pane of System Preferences. Updates for the applications that are part of iLife are available from the Apple Software Downloads website (http://www.apple.com/swupdates/).
Published Date: Feb 18, 2012

iPod Software 1.2.6 Update Requires Additional Steps

The instructions provided with the iPod Software 1.2.6 Updater do not include all the steps required for installation.
This article has been archived and is no longer updated by Apple.

Symptom

The iPod Software 1.2.6 Updater cannot be installed according the instructions provided with the download.

Note: The English instructions provided on the software download page have been updated to reflect the additional steps required.

Solution

Follow these steps after you have downloaded the update:

1. Double-click the file named "iPod126.dmg". The iPod Software 1.2.6 Updater volume appears in the Finder.
2. Open the iPod Software 1.2.6 Installer. In Mac OS X it is called "iPod126.pkg". In Mac OS 9 it is called "Apple SW Install".
3. Select the startup disk as the destination. The installer copies the iPod Software 1.2.6 Updater folder to the Utilities folder and quits.
4. Connect iPod to your computer.
5. Open iTunes. iTunes updates iPod automatically. If this does not happen, use the manual process below.
6. When prompted, unplug iPod from the FireWire cable, then plug it back in to complete the update process.

Manual update

You can also update iPod by opening the iPod Software 1.2.6 Updater utility. See technical document 60944, "**iPod: How to Update**" for instructions.

Published Date: Feb 18, 2012

iMovie 3: PAL Clips Cannot Be Reversed or Sped Up

You may see unexpected results if you reverse or speed up a PAL clip in iMovie 3.
This article has been archived and is no longer updated by Apple.

Symptom

Only the first few frames of a PAL clip play if you try to speed up or reverse the clip.

Solution

Update to iMovie 3.0.3 or later to prevent this issue (http://www.apple.com/imovie).

After updating, reapply any speed or direction changes in existing clips for accurate playback.

Note: This issue does not affect NTSC clips.

Published Date: Feb 18, 2012

Responder, Background, & AppleTalk: Purpose in System Folder

I am having problems with System 6.0.5 bombing. What are the functions of Responder, Background, and AppleTalk in the System folder? Are they needed? Could they be the cause of my problems?

This article has been archived and is no longer updated by Apple.

```
* You can remove Responder if you are not using Inter*Poll for network
 troubleshooting.

* Backgrounder writes temporary files for background printing under
 MultiFinder.  Do not delete this file.

* AppleTalk is a patch to the AppleTalk that is in ROM. It is needed for
 the efficient use of any network device.  Do not remove it.

If you are having bomb problems, we suggest you start up from the System
Tools diskette, trash your current System folder, and use the Installer to
re-install the System folder.
```

Published Date: Feb 18, 2012

Macintosh IIcx: Troubleshooting Startup Freezes (4/94)

I have an intermittent problem with my Macintosh IIcx. It freezes when I start it up.

The system does not have any INITs in the System Folder. I re-installed System software 6.0.5 using the Installer. The system has a Mac286 card and an Irma Link card in it with 5MB of memory. The system board, memory, and power supply have been replaced.

This article has been archived and is no longer updated by Apple.
To troubleshoot this problem follow these steps:

1) Remove the Mac286 and the Irma Link cards to isolate the problem to either the cards or the CPU.

2) Completely throw away the System Folder.

3) Re-install the System Folder from known-good, locked System diskettes.

4) If the problem persists, try swapping the keyboard, cable, and mouse.

5) Have a service provider run diagnostics to determine if there is a hardware problem.

Article Change History:
5 April 1994 - Added additional troubleshooting step, Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

TA46224_Macintosh_IIfx_Proper_Placement_of_SCSI_Terminators__(TIL07553).pdf

Macintosh IIfx: Proper Placement of SCSI Terminators (11/94)

When my Data Frame drive is the only device in the SCSI chain, my Macintosh IIfx starts up, but whenever I have another SCSI device attached, the system won't start. It doesn't matter whether the external SCSI is the drive or the scanner. The SCSI devices are all at different addresses and the external device on the end of the line has termination.

The Data Frame was checked out here on a Macintosh IIci with an external Rodime 140MB SCSI drive. I had no problems with this configuration.

This article has been archived and is no longer updated by Apple.
The only thing we are concerned with is the termination of both the internal drive and the external devices. The IIfx requires the use of the black terminator rather than the standard platinum-colored terminators of other Macintosh computers. This terminator is included with the IIfx in the finished goods box.

We would also verify that the SCSI filter is installed on the internal SCSI bus at the drive. This filter connects between the SCSI ribbon cable and the drive itself and provides some additional termination internal to the IIfx.

Article Change History:
08 Nov 1994 - Reviewed for technical accuracy, revised formatting.

Support Information Services
Published Date: Feb 18, 2012

Aristotle: "error occurred in your user folder" Message

I have an AppleShare network with 20 Apple IIGS workstations. The network has experienced numerous problems this year. Today, while exiting AppleWorks, nine systems locked up and displayed this message:

An error occurred in your user folder: see the administrator

At the same time, five networked ImageWriter II printers locked up. One system in the middle of this line had no problems. When we tried to restart the workstations, some went into BASIC, and some displayed garbage. Now, all systems are totally down.

This article has been archived and is no longer updated by Apple.
Based on the error message, the problem seems to be on the server itself. Go into the users' listing and re-establish the preferences for the users. That may help, and avoid a time-consuming backup and reinstall.

If that does not cure the problem, go back to the most recent backup and restore that data. There may be a corruption within Aristotle itself. If a backup is not available, then recreate the Users and Groups files, and stop short of re-installing Aristotle.

Finally, if the problem still persists, re-install Aristotle and re-create the users and groups.

Published Date: Feb 18, 2012

ImageWriter LQ: Printing on Entire Ribbon

I have an Apple ImageWriter LQ printer that prints only on the top portion of the black ribbon. According to the manual, the ribbon assembly should shift up and down for an even use of the black ribbon. When the printer is first turned on, the ribbon mechanism shifts down and stays there.

I discovered that when the ribbon is not in the printer, the assembly does shift. When should the shift occur with a black ribbon? What triggers the shift?

This article has been archived and is no longer updated by Apple.
The ImageWriter LQ with the 2.0 driver prints on all four bands of the ribbon on multi-page documents; it should use all bands equally. It moves up through the different bands on each page, so if you print multiple one-page documents, it may stay on the top band. Make sure that you do not turn off the printer between print jobs. This resets the ribbon to the top band.

Published Date: Feb 18, 2012

LaserWriter Plus: Double-Blinking Status Light

I'm having a problem with a LaserWriter Plus (recently upgraded) connected to an IBM. The "Busy" status light sometimes has an uncharacteristic "double blink," as opposed to the normal "single blink" when processing jobs. Also, when PostScript jobs from some applications are completed, the status light does not turn off, but instead starts to "double blink." What does a "double blinking" status light mean?

This article has been archived and is no longer updated by Apple.
The double-blinking light is normal. In certain instances, the yellow light continues to flash, indicating it is processing a job. This is most evident when you do a manual feed and insert the paper before the red jam-light comes on. Also, if an end-of-page command is not sent when printing from an MS-DOS machine, the lights continue to flash.

Published Date: Feb 18, 2012

LaserWriter: Shared by Macintosh, Apple IIe, and IBM PC

I want to connect Macintosh, Apple IIe, and IBM PC, so they can share a LaserWriter IINT. Can this be done? (No file sharing is required.)

This article has been archived and is no longer updated by Apple.
The AppleTalk LaserWriters were designed to be shared.

* Any Macintosh has AppleTalk built in.

* An Apple II needs the Apple II Workstation card and software to enable access to a networked printer.

* An IBM PC needs a LocalTalk PC Card and AppleShare PC to get onto the LocalTalk network to communicate with the LaserWriter.

Published Date: Feb 18, 2012

LaserWriter IINT: Problems Printing from WordPerfect

I have an IBM Model 60 server and two Model 70/386 workstations tied together with IBM Token-Ring hardware and cables. Server and workstations run IBM LAN Program 1.03 and LAN support program. WordPerfect 5.1 LAN version runs on the server. The workstations have devices attached to the serial ports. The server is connected to the LaserWriter IINT through a serial cable. The spooler runs on an IBM-LAN program. Our LaserWriter IINT is in standard LaserWriter mode, not Diablo mode.

Printing from WordPerfect (through the parallel port) works unevenly. After printing a while, it quits. I noticed that when I send a simple one-page document to the LaserWriter IINT, the green "working" light blinks for a couple of minutes and then goes out.

WordPerfect support told me to print a file called "ehandler.ps" (provided by WordPerfect) to the printer (from DOS). He said this would print error messages when a PostScript job did not work satisfactorily.

I sent the ehandler.ps file to the printer, and the job printed fine. Afterwards, a sheet printed that said "Error: timeout" and indicated that the command that had failed was "timeout." Although I can print one-page jobs okay, longer jobs don't print properly; they only generate an error sheet.

What do I need to set or change?

This article has been archived and is no longer updated by Apple.
We have three things for you to try:

1) Temporarily disable the spooler to see if there is a problem with the communication between it and the printer.

2) Verify the correctness of the cable. Here are the correct pinouts for both a DB-9 and DB-25 cable to the LaserWriter II.

IBM PC/AT LaserWriter
DB-9 DB-25
--- ---
(RXD) 2 ---------- 2 (TXD)
(TXD) 3 ---------- 3 (RXD)
(DTR) 4 ---------- 6 (DSR)
(SG) 5 ---------- 7 (SG)
(DSR) 6 ---------- 20 (DTR)

IBM RS-232 Serial (DTE) LaserWriter / LaserWriter Plus (DTE)
(DB-25 Female Connector) (DB-25 Male Connector)

2 ---------- 3
3 ---------- 2
5 ---------- 4
6 ---------- 20
7 ---------- 7

3) Verify that the LaserWriter's DIP switches are correctly set. They should be: 1 up and 2 down (9600 bps and PostScript).

Published Date: Feb 18, 2012

TA46229_LaserWriter_IINT_Problems_Printing_from_WordPerfect_(TIL07560).pdf

Macintosh II: Upgrade for Apple SuperDrive

Can a Macintosh II be upgraded to support an Apple SuperDrive (formerly Apple FDHD)?

This article has been archived and is no longer updated by Apple.
As noted in both "Technical Procedures for the Macintosh II" and in the Finished Goods price list, there is an upgrade for the Macintosh II to utilize the SuperDrive.

Published Date: Feb 18, 2012

Macintosh: When It Won‘t Let You Throw Files Away

I have a Macintosh Plus running System 6.0.3 and an Apple 20MB hard drive. I want to eliminate old data and old programs, but the system won't let me throw away any programs, data, or folders. The files are not locked, and the hard drive is very slow.

This article has been archived and is no longer updated by Apple.
There are a couple of things we would try.

First, rebuild the hard disk's desktop file by holding down the Command and Option keys while you start up the system. Hold both keys down until the dialog box appears asking you to confirm the desktop rebuild.

If that does not help, boot from a locked System Tools diskette and try to throw away the files, folders, and the System folder. Then, reinstall the System using the Installer. Another solution might be holding the option key down while throwing something into the trash

Once you have a re-installed the System file, do a file-by-file backup of the drive, re-initializing the drive, and then restoring the data and applications.

Published Date: Feb 18, 2012

TA46232_Macintosh_Plus_ROMs_and_SIMM_Compatibility_(TIL07563).pdf

Macintosh Plus ROMs and SIMM Compatibility

Is it true that Macintosh Plus ROMs won't work with some third-party SIMMs? I bought some 1MB NEC SIMMs and get consistent "sad Macs" when I try to start the Macintosh Plus with them installed.

This article has been archived and is no longer updated by Apple.
We don't know of any reason to upgrade ROMs for SIMM compatibility, nor of any incompatibility with the mentioned SIMMs and the Macintosh Plus. If the Macintosh bombs only with those SIMMs installed, try them in another Macintosh model to see if it is related to the Plus or if one of the SIMMs is bad.

Published Date: Feb 18, 2012

QuickDraw: Using It with an 8-bit Video Card

When and why should one use 32-bit QuickDraw? I assumed it was only for 24-bit color cards, but the Read Me in the Color folder in the 6.0.5 suite says it can also enhance 8-bit (256-color) situations.

I am using a Macintosh II with the original Macintosh Display Card 4*8, running 4 bits (16 colors), System 6.0.5, 5MB RAM, and Laser Driver/Prep 6.0.1. Would 32-bit QuickDraw help? (I presume if you use 32-bit QuickDraw, you should also use a 6.0.x-series Laser Driver/Prep.)

Do applications have to be specially written to take advantage of 32-bit QuickDraw?

Finally, with regard to the 6.0.x series Laser drivers, is there any safe, easy way to make black and white the default choice?

This article has been archived and is no longer updated by Apple.
In a Macintosh with an 8-bit video card, the only benefit is some dithering changes on 8-bit images. The use of 32-bit QuickDraw doesn't demand 6.0.x Laser drivers. The installation of 32-bit would probably not greatly improve your configuration.

Applications must be "32-bit clean" to take advantage of the capabilities of the newest 24- and 32-bit color boards. You will see applications begin to advertise that they are clean as more boards become available.

There is a modified version of the 6.0.x drivers called 6.0.1z that defaults to black and white. You might try it. For more information on 32-bit QuickDraw, see the article in the Tech Info library, titled "32-Bit QuickDraw Information".

Published Date: Feb 18, 2012

SCSI Hard Disks: Mounting Without Restarting

I want to mount Apple SCSI hard disks without restarting the system. Is there any way to do this from the System software or any of the included utilities? If not, can you suggest any other utilities that would enable mounting Apple SCSI drives without restarting?

This article has been archived and is no longer updated by Apple.

Yes, there are several shareware utilities that allow mounting of SCSI volumes without a restart. They are: SCSI Probe by Robert Polic, SCSI Info by Bob Easterday, and SCSI Tool by Paul Mercer. SCSI Probe is available online.

Published Date: Feb 18, 2012

FileMaker II: Network Problems

I am supporting an 11-node AppleShare network (2 Macintosh SEs and 9 Macintosh Plus computers). The software versions are:

* AppleShare II 2.0.1
* Finder 6.1
* System 6.0.3
* FileMaker II 1.1v2

Cabling for this network is PhoneNet wired in a passive star. Total cabling distance is less than 400 feet. All 11 workstations can log in to the file server, print, and use the InBox E-mail system. All workstations have 2.5MB of RAM.

My problem is that although nine workstations can share the same file from FileMaker II concurrently, the other two workstations are denied access to the shared FileMaker II database.

The two "denied" computers share a common cable with one other Macintosh. However, they are at the end of the leg. These are Macintosh Plus computers. I cannot get these machines to share the same database, even if they are the only machines trying to log in. What's the problem?

This article has been archived and is no longer updated by Apple.
You mention they are at the end of the leg of the star: have you tried moving one or both Plus systems to a different connector to see if that's the problem? If the problem continues at another physical location and you can log on to the server, we suggest that the problem lies with FileMaker rather than the Macintosh or the network.

Because you can access the server; and print, copy files, and so on; we assume that basic network integrity is good; and the problem lies with FileMaker itself. It appears that you are exceeding the maximum number of simultaneous users. We would suggest that you contact Claris for a solution, if our suggestions don't alter the performance of these two systems.

Published Date: Feb 18, 2012

Apple IIGS Network: "Looking for AFP fileservers" Message

I have a problem concerning a Macintosh file server and Apple IIGS lab. I installed the AppleShare File Server software and Aristotle on a Macintosh SE. Ideal Learning installed their Podium software. The installation was successful and the lab operated for two months without a problem.

During the summer, the lab was moved to another room and reconnected. After a few days, problems developed. When the Apple IIGS computers were turned on, we got the normal routine (the dots going across the top of the screen), and then, when the message "Looking for AFP fileservers" came on, the IIGS screen showed what appeared to be hex characters, and it locked up. The IIGS had to be restarted.

The file server appeared to be working without problems. I then re-installed the AppleShare File server software, and the same thing happened. Next, I re-installed the Macintosh OS, updating to System 6.0.5. The same thing happened again. I reformatted the hard disk and restored from a backup. The system worked for about a week, when the same problems developed.

There are five other labs in the school system with the identical set-up, and they are all operating without any problems.

This article has been archived and is no longer updated by Apple.
We would check the server and make sure that GS/OS has been properly installed--with the Installer--and that all the necessary files are there. After you verify that, take a look at each Apple IIGS computer.

If the problems show up on all systems in this network, take one of them to another network and see if it starts properly there. Also, check to see what is happening before the network fails. Maybe a student is trashing some crucial files within the server folder or within the GS/OS system folder on the server.

Published Date: Feb 18, 2012

Macintosh: Typesetting with TeleTypesetting‘s MicroSetter

This article has been archived and is no longer updated by Apple.

MicroSetter, from the TeleTypesetting Company, converts Macintosh documents into a form acceptable to Varityper typesetting machines. The product includes the MicroSetter desk accessory, cables, conversion software, and connectivity software.

MicroSetter can connect to both digital and non-digital Varitypers. In the case of digital Varitypers, a "ruling" option lets the user typeset rules, boxes, and graphics from MacPaint-type applications.

MicroSetter can handle documents created by Ready,Set,Go, Page Maker, Microsoft Word, MacWrite, and MacDraw. (Graphics from Quark XPress and Cricket Draw are not compatible with MicroSetter.)

The MicroSetter desk accessory is used in two ways:
- to convert a document to Varityper format,
- then to send the document to the Varityper.

The Varityper can't generate all the text and graphics that the Macintosh can. A non-digital Varityper can do text only. And a digital Varityper can't do screen fill patterns, rotated type, circles, or arcs (but with the "ruling" option can handle text, bit-mapped graphics, lines, and boxes).

Published Date: Feb 18, 2012

Macintosh: Correcting Garbled System Numerals

All the numbers in my Control Panel, on SuperClock, in the Get Info box, in About the Finder, or any other system-related window are messed up. For example, in About the Finder (About This Macintosh in System 7), you might see "Largest unused Block: 1,?22K" instead of "Largest unused Block: 1,722K", or "Total Memory: 3,89>K" instead of "Total Memory: 3,898K" My SuperClock says "6:2 PM" instead of "6:20PM."

Occasionally, a number is represented by a character. However, when I type numbers into applications like Word or Excel, the numbers are always represented correctly.
This article has been archived and is no longer updated by Apple.
There are two possible solutions worth trying. First, try resetting the parameter RAM (PRAM). PRAM could be causing some of the numbers to be misrepresented. (Search for "PRAM" in this database for how to reset PRAM. The procedure is different for System 7.x than for System 6.x.)

If the problem persists, throw away the System Folder in use and reinstall from known-good, locked, original System diskettes.

Finally, if none of these works, have the logic board checked. It may need to be replaced.
Published Date: Feb 18, 2012

TA46239_Apple_II_Function_of_Start__(TIL07573).pdf

Apple II: Function of Start 13

I have an Apple IIc Plus with a 5.25-inch drive. Do I need a file called Start 13 on my system for the drive to work properly?

This article has been archived and is no longer updated by Apple.
The file Start 13 was used early on when the Apple II went to a 16-sector disk format. Start 13 made it possible for older, 13-sector diskettes to be read. You don't need it for the Apple IIc to work with current diskettes.

Published Date: Feb 18, 2012

Macintosh SE: System Software 6.0.5 vs 6.0.2

I have 50 Macintosh SEs on an AppleShare network. The SEs shipped with System 6.0.5 software. As far as I can tell, this version of the system software does nothing for the SEs and only consumes more memory than System 6.0.2. Could I install 6.0.2 on them instead?

This article has been archived and is no longer updated by Apple.
You are basically correct; there is little advantage for those machines to run System 6.0.5. If you wish to use 6.0.2, go ahead.

Published Date: Feb 18, 2012

Macintosh: SLIP, TCP, and PPP

I use DAL and want to connect remotely from a Macintosh IIfx to a Sun workstation. I also want to have terminal emulation and file transfer. Do you know of a TCP/SLIP product that does this?

This article has been archived and is no longer updated by Apple.
SLIP is an asynchronous serial line protocol developed for running TCP/IP over serial communications lines in a point-to-point configuration. SLIP was developed to transmit IP packets over low-speed, sometimes noisy, asynchronous communications lines where error recovery and an efficient line protocol is needed. A new, serial, line protocol named "PPP" is replacing SLIP. PPP uses an even more efficient means of establishing a point-to-point IP connection.

MacTCP 1.0.2 has hooks for different third-party link-layer modules. This helps the development of interfaces to SLIP, PPP, and any other link layer, like broadband, X.25, FDDI, and so on. Apple does not provide support in MacTCP for SLIP or any other serial line protocol. These have to come from third-party developers.

Published Date: Feb 18, 2012

LaserWriter IINTX: ROM Upgrade and Font Rendering

Does the new version of PostScript on version 3.0 of the ROMs on the LaserWriter IINTX speed up Font rendering as does the new PostScript in the Personal LaserWriter IINT?

This article has been archived and is no longer updated by Apple.

The new version of PostScript for the LaserWriter IINTX does not improve font rendering in most operational modes. The major differences between the 3.0 and older ROMs are:

* Software switching from LaserJet emulation to PostScript
* Font cleanup in LaserJet emulation
* Better disk management routines
* PostScript 51.8.

Published Date: Feb 18, 2012

LaserWriter IINT: No Plans for a ROM Upgrade

Is Apple going to give the LaserWriter IINT new ROMs, so that users can have PostScript 51.8 like in the LaserWriter IINTX? Also, does the new LaserWriter IINTX ROM upgrade work in a LaserWriter IINT?

This article has been archived and is no longer updated by Apple.
No, there is no upgrade planned for the LaserWriter IINT ROMs, nor will the LaserWriter IINTX ROMs work in the LaserWriter IINT.

Published Date: Feb 18, 2012

Hard Disk 20SC: Can‘t Be Startup Device for Unenhanced Apple IIe

The Hard Disk 20SC connected to my Apple IIe is not booting. However, when I boot ProDOS 1.1.1 from the floppy drive, the system recognizes the data on the Hard Disk 20SC. The ProDOS disk shows the "slot configuration" as slot 7 being used. The drive shows that the BASIC.SYSTEM and PRODOS files are there. Is there supposed to be another file?

This article has been archived and is no longer updated by Apple.
In general, a bootable ProDOS volume needs only the PRODOS and BASIC.SYSTEM files. You can substitute a different file for BASIC.SYSTEM as long as the substitute's name ends with .SYSTEM and has a filetype of SYS. If you have only these two files, you boot to BASIC.

The most likely cause is that your Apple IIe is unenhanced. Only the enhanced Apple IIe recognizes the SCSI interface card during startup. An unenhanced Apple IIe can't start up from the device, but you can use it after starting up from some other device.

If this is the problem, get an Apple IIe Enhancement Kit (Finished Goods part number A2M2052, SRP).

Published Date: Feb 18, 2012

Macintosh System 7.01: Compatible with Plus and Later

We want to standardize systems from the Macintosh Plus computers on up. Does version 7.0.1 work okay on all models?

This article has been archived and is no longer updated by Apple.

Yes. System 7.0.1 is good for any Macintosh from the Macintosh Plus on up. You should have no problems upgrading existing installations to this version. Apple also recommends that you install the System 7 TuneUp 1.1.1.

Published Date: Feb 18, 2012

Macintosh Display Card 824 GC: HyperCard 1.2.5 Compatibility

I just got a new Macintosh Display Card 8*24 GC for my Macintosh IIfx (running System 6.0.5). I am running into a problem when trying to run HyperCard 1.2.5. If the accelerator is disabled, everything is fine. However, with the accelerator on, the outlined hand in HyperCard turns black and the system does not react when I press buttons. Only browsing is affected. When a button tool (or other tool) is selected, it seems to work okay.

I need to use a custom HyperCard 1.2.5 stack off and on during the day. Right now, I must restart the computer to disable the card to use HyperCard.

This article has been archived and is no longer updated by Apple.
An unadorned HyperCard 1.2.5 stack should work fine. Your stack may have an XCMD or XFCN that is interfering with the altered QuickDraw command set that the Macintosh Display Card 8*24 GC uses. As externals are processed by HyperCard when a stack opens, any incompatibility (not bugs, though) shows up.

We recommend that users of the Macintosh Display Card 8*24 GC upgrade to HyperCard 2.0, mainly for the sake of performance. HyperCard 2.0 uses true QuickDraw commands, which the Display Card 8*24 GC accelerates. (Earlier versions of HyperCard bypassed QuickDraw entirely.) Older stacks should work, but performance will not improve.

Published Date: Feb 18, 2012

A/UX: Macintosh IIfx Requires A/UX 2.0 or Later

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

I bought an Apple HD 80SC drive with A/UX 1.1 installed. When I connected the drive to a Macintosh IIfx (with the special IIfx terminator), I couldn't launch A/UX. However, other folders on the drive open fine. With A/UX, I get error messages:

SCSI RESET
DISC C1D0S0:SCSI TIMEOUT
GENERIC DISC C1D0S0 FATAL ERROR:LOGICAL BLOCK 0,
PHYSICAL BLOCK 1869875042
CHROOT FAILED
SASH#

This article has been archived and is no longer updated by Apple.
To run A/UX on the Macintosh IIfx, you must have A/UX 2.0 or any later version. Version 1.1 gave you this particular error message, because it doesn't know how to use the IIfx DMA SCSI scheme. If you want to use A/UX on a IIfx, you must upgrade.

Published Date: Feb 18, 2012

TA46249_Apple_II_HighSpeed_SCSI_Card_SCSI_Reset_Line__(TIL07588).pdf

Apple II High-Speed SCSI Card: SCSI Reset Line (11/96)

Does the new Apple II High-Speed SCSI Card use the SCSI Reset line as the older Rev C card? I have a series of hard drives that have the reset line is cut in the cable and need to know if they will function with the high-speed card, or will the cable have to be replaced.

This article has been archived and is no longer updated by Apple.

The Apple II High-Speed SCSI Card pin assignments are identical to the older Apple II SCSI Interface card.

The newer card still uses the SCSI Reset Line. You may need to use a special cable or, in the case of some third-party hard drives, make the appropriate DIP switch selections.

Article Change History:
15 November 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

PrintServer: Length Limit on Device/Zone Names

My Macintosh II is in a zone (Advertising/Professional Computers Zone) that is separated from the rest of our network by a bridge. The PrintServer captures the printer with no problems. I can see the PrintServer listed in the Chooser, and I can select the PrintServer, but when I try to print, it says "LaserWriter ÃPrintServer╚ could not be found..."

This article has been archived and is no longer updated by Apple.
Your zone name may be your problem.

The Chooser supports a maximum of 31 characters for a device or zone name, and your name is 34 characters. When the additional device names are appended to the data packet to make a complete address string, the string gets truncated by a lower-level AppleTalk routine. At that point, the name string doesn't match the actual address, and a search for that device fails.

Shorten the zone name to something under 30 characters. Also check device names to verify that they, too, are under 30 characters.

Published Date: Feb 18, 2012

Apple IIGS: Disk Drive Slot Assignments

This article has been archived and is no longer updated by Apple.

Depending on the operating system and the available combination of drives, the Apple IIGS can use disk drives in a number of different slot assignments. Below are some guidelines for determining the slot assignments.

Under DOS, ProDOS 1.1.1, ProDOS 1.2 (ProDOS 8), and ProDOS 16, you may use the slot number to refer to hard drives and floppy drives using an interface card. Disks may also be called by ProDOS pathnames without regard to slot locations.

The Apple IIGS SmartPort, controlled by the firmware in the IIGS, includes the internal RAM disk and ROM disk as well as any external drives connected to the SmartPort. These drives are referenced in slot 5 because the IIGS takes SmartPort to be slot 5. There are exceptions in the use of the SmartPort: it's not available under DOS or ProDOS 1.1.1.

ProDOS 1.2 (ProDOS 8) permits up to four devices connected to the SmartPort. If four drives are found on the SmartPort, the first two drives are considered to be in slot 5 (drives 1 and 2), and the last two drives are "found" in slot 2 (drives 1 and 2). If the RAM disk is active, it occupies slot 5, drive 2, and remaining drives are moved down in the sequence to slot 2, drive 1 and slot 2, drive 2, if necessary.

ProDOS 16 allows the SmartPort up to six devices, all found in slot 5; if activated (from the Control Panel), the RAM disk occupies slot 5, drive 2. If both RAM and ROM disks are both activated, the ROM disk will be found immediately after the RAM disk. If RAM and ROM disks are available and if only the ROM disk is activated (from the Control Panel), the ROM disk will be found in drive 2.

Published Date: Feb 18, 2012

TA46252_Personal_LaserWriter_NT_Using_with_Amiga__(TIL07590).pdf

Personal LaserWriter NT: Using with Amiga 2500

Are there drivers for the Amiga 2500 that let it communicate with the Personal LaserWriter NT via the computer's RS-232 port?

This article has been archived and is no longer updated by Apple.
As of October 1990, our databases show nothing about printing PostScript from an Amiga. Depending on your application software (or interfacing drivers), you have two choices:

* Connect serially to the LaserWriter and use its built-in PostScript.

* Set the LaserWriter to Diablo 630 emulation and print to it as if the LaserWriter were a "dumb" printer.

The Diablo 630 mode is a no-frills, daisy-wheel emulation, so if you have an application that doesn't mind if you strip out control codes, you'll be in business. The LaserWriter Owner's Guide has much more on this type of connection and interface capabilities.

Published Date: Feb 18, 2012

TA46253_AppleCD_SC_Fan_Deleted_in__(TIL07591).pdf

AppleCD SC: Fan Deleted in 1990

The outside of the box of my new AppleCD SC says: APPLE CD ROM/NO FAN. When did Apple stop including the fan? Why?

This article has been archived and is no longer updated by Apple.
Apple stopped including the fan in the AppleCD SC in early 1990. We had found that the fan was drawing an excess amount of dust and other airborne particles into the CD mechanism and depositing them on the optical read head. The fan turned out to be unnecessary, so it was removed completely.

Published Date: Feb 18, 2012

AppleShare 2.0: Partitioning, Zones, and Restricted Log-In

I would like to restrict the total available space of a zone to that preset by a partition. Does AppleShare 2.0 let the hardware partitioning of the server hard drive correspond to the zones of the network?

Also, could I have multiple hard drives and assign each to a particular zone? Can LaserWriters be assigned and restricted to a zone?

This article has been archived and is no longer updated by Apple.
AppleShare File Server recognizes hard-drive partitions, depending on how well-written the partitioning software is. There are probably some partitioning utilities that are not compatible with AppleShare. Contact the utility's vendor to make sure it works.

In the larger picture, you can't specify login privileges based on zone, but you can do the same thing by setting the privileges based on user ID. The login list is specified by volume, so you can give each volume a list of "good" users and by telling it to disallow "guest" log-ins. This will, in effect, do what you need.

Published Date: Feb 18, 2012

AppleShare Print Spooler: No Demand-Based Routing

I have an Apple IIGS lab that is configured with several teacher accounts, but without individual student accounts. During a particular session all the students log on with the same username, and are therefore attached to the same printer. Can the AppleShare print spooler be configured to capture input from all the GS computers and spool it to two or more ImageWriters?

This article has been archived and is no longer updated by Apple.
As of October, 1990, there was no spooler that could intelligently divert output to different printers, based on the number of jobs in each queue for each printer (nor even simply divide all output in half and send each half to a different printer). Our databases don't show a product that can do this, nor can the AppleShare Print Server do it. All of the products listed have a one-to-one spooling capability, and the user has to change the spooled device manually.

Depending on your software and user configuration, you may want to try splitting the users into two groups. Instead of having everyone log on with the same username, make two usernames and have each print to a different printer. You can put each username into a single group and set the access privileges at the group level to keep everything the same.

Published Date: Feb 18, 2012

AppleShare: Troubleshooting PrintShare Problems

We have set up an AppleShare network with PrintShare running. We have had frequent system bombs on the server. Although we made some changes, and things seem to go well for a while, system bombs recur.

In addition, we get lots of error sheets from PrintShare. Many of them have to do with "stack underflow". This situation occurs frequently on another AppleShare network, but without the crashes.

Our server is a Macintosh SE/30 with 4MB of RAM and an external 80MB hard disk running System 6.0.5, AppleShare 2.0.1, and PrintShare 2.0. We partitioned the disks with SilverLining Software (for a password-protected partition).

Our network includes three volumes on the server. The network contains about 15 workstations, three older LaserWriters (captured by the PrintServer), and three ImageWriters.

All workstations are Macintosh Plus computers. They run System 6.0.5, Laser drivers v. 5.0, the Virex INIT for virus checks, and no unusual INITs, DAs, or cDEVs.

This article has been archived and is no longer updated by Apple.
Three things come to mind. First, make sure that the LaserWriter driver used by everyone (including the server itself) is at least version 5.2. Versions 5.0 and 5.1 have some known bugs which could contribute to the problems.

Second, make sure that NO extra INITs or cDEVs are running on the server. Given the way AppleShare works, these extra INITs can cause a performance decrease and occasional system bombs. AppleShare is too time-sensitive to tolerate much interruption.

Third, everything could come down to a defective SCSI driver written to the hard drive. Make sure that you use the very latest version of SilverLining and reformat the drive. Make sure that backups are file-by-file rather than partition-by-partition, as any slight mistake in partition size may cause lots of problems during the restore operation. After formatting, re-install the File and Print Servers from diskette, rather than from the backup.

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Apple Modem 1200: Adaptor Cable for Macintosh Classic

The Apple Modem 1200 cable has DB-9 connectors on both ends. How can I connect the Apple Modem 1200 to the Macintosh Classic?

This article has been archived and is no longer updated by Apple.

There is a male Mini-DIN-8 to female DB-9 cable adapter cable. Attach the adaptor to the Classic and the original cable to the adaptor. The cable's service part number is 699-0430.

Published Date: Feb 18, 2012

TA46258_Macintosh_Portable_Fax_Modems_(TIL07597).pdf

Macintosh Portable: Fax Modems

Can the Macintosh Portable handle a fax device? If so, what equipment is required?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable supports any external fax modem that works with the Macintosh family. You might check the Tech Info Library or the Redgate Buyer's Guide Library on AppleLink for a list of vendors. Search under key words such as "fax" and "modem".

Published Date: Feb 18, 2012

Chooser: How Device Lists Are Sorted

What determines the order that items appear in the Chooser's scrolling fields?

This article has been archived and is no longer updated by Apple.

The Chooser broadcasts a signal to the entire network (or zone, if applicable) requesting that all devices of DEVICETYPE respond with their network information. The order in which those devices respond determines their order in the selection list. (A lightly-loaded network almost always returns the devices in the same order, because the devices aren't too busy to respond to the Chooser immediately.)

The order in which zone names are listed depends on the router you're using. Because this information is usual not dynamically compiled, most routers sort the list alphabetically for readability.

Published Date: Feb 18, 2012

A/UX and Macintosh Display Card 8■24 GC (4/94)

What versions of A/UX support the Macintosh Display Card 8*24 GC?

This article has been archived and is no longer updated by Apple.
The Macintosh Display Card 8*24 GC works with A/UX 2.0 through the current release as of this writing. However, acceleration cannot be enabled on the card, it will behave as an 8*24 card.

The QuickDraw acceleration features of the Macintosh Display Card 8*24 GC may or may not be supported in future releases of A/UX. Therefore, customers should not be expecting A/UX to support the card fully in the future.

Article Change History
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1 April 1994 - Reviewed for technical accuracy, updated formatting.
27 January 1993 - Reviewed for technical accuracy.
Published Date: Feb 18, 2012

AppleWorks: Boldface Commands

This article discusses how to print boldface from within AppleWorks.
This article has been archived and is no longer updated by Apple.
With Appleworks, standard boldface commands stay in force until a carriage return. To print an entire document in boldface with the standard boldface command alone, you must place the command at the beginning of each block of text that ends with a carriage return.
Published Date: Feb 18, 2012

Apple IIc Plus: Mouse Paint

Is it possible to copy the Mouse Paint drawing program from a 5.25-inch disk (p/n 680-3005-B) onto a 3.5-inch disk for the Apple IIc Plus. If so, what is the procedure?

This article has been archived and is no longer updated by Apple.

It is possible. First, copy file-by-file everything from the 5.25-inch disk to the 3.5-inch disk. Then, make sure that the name of 3.5-inch disk matches the original 5.25-inch disk.

The program expects to find itself only on disks with that particular name, and it assumes that its files are in exact places. If you don't change the name or move the files, you'll be fine.

You can use the Apple System Utilities diskette, which should come with every Apple 3.5 and 5.25 Drive accessory kit to copy the files. There are a variety of third-party disk utilities available that can also do this. Check the Redgate Buyer's Guide library on AppleLink for possible solutions.

Published Date: Feb 18, 2012

Apple Daisy Wheel Printer: Printwheels Still Available

I have an Apple Daisy Wheel Printer, and I need a new printwheel--
preferably Prestige Elite.

This article has been archived and is no longer updated by Apple.
Apple still sells printwheels:

Apple Finished Goods
Part Number Description

A2M0081 Printwheel, Boldface (6/pack)
A2M0079 Printwheel, Courier 10 (pack/6)
A2M0080 Printwheel, Gothic (pack/6)
A2M0078 Printwheel, Prestige Elite (pack/6)

To help you help identify compatible printwheels, keep in mind that the
Apple Daisy Wheel Printer is identical to a Qume Sprint-5.

Published Date: Feb 18, 2012

DuoDisk Drive: How to Use It with Apple IIGS

I want to connect a DuoDisk Drive to an Apple IIGS. How is this done, and how will it affect my 3.5-inch drive and 5.25-inch drives?

This article has been archived and is no longer updated by Apple.
The DuoDisk usually acts like two Apple 5.25-inch drives. There are a couple of compatibility issues, however:

* If you plan to attach the DuoDisk to the SmartPort on the back of the Apple IIGS, and it is going to be the last device in the chain, then you need to make sure the DuoDisk's analog board has a particular modification. If it lacks this modification, you can do it yourself. Details can be found in both "Tech Procedures for the DuoDisk" and the Product Notices section of the "Apple Service Programs" binder.

* If you have a newer IIGS, with rev 03 ROMs and 1MB of RAM installed on the logic board, you CANNOT attach the DuoDisk to the SmartPort at all: you must use a DuoDisk interface card, just as if the IIGS were an Apple IIe instead. You can buy this through Service (part number 661-92131).

If you meet these two considerations, the DuoDisk will not affect your other attached disk drives.

Published Date: Feb 18, 2012

Finder: "file could not be written and was skipped" Message

When copying a file from one disk to another, I got the message:

This file could not be written and was skipped

The original file seems to open and work fine.

This article has been archived and is no longer updated by Apple.
Here are two possible reasons for this:

This error indicates that your destination volume has a problem with it. If it is a floppy, reformat it. If it is a hard disk, run a good disk utility against it to discover the problem. Then take appropriate action.

The problem could also lie within the file or application. Examples such as a damaged or copy-protected file or application may also cause this message to occur. Make sure you are using a clean copy. You may want recopy from the original source to make the file is undamaged.

Published Date: Feb 18, 2012

TA46266_Personal_LaserWriter_NT_MB_SIMMs_(TIL07604).pdf

Personal LaserWriter NT: 4MB SIMMs

Are the 4MB SIMMs for the Personal LaserWriter NT the same as those in the general market?

This article has been archived and is no longer updated by Apple.
The requirements for the 4MB SIMMs are the same as for standard Macintosh II SIMMs, but they must be rated at 100ns or faster. They must also fit in a significantly smaller space than is allowed by the Macintosh II family. This eliminates 4MB SIMMs made from lots of 1MB DRAM chips.

A number of vendors advertise compatible 4MB SIMMs. Just check the ads in your favorite Macintosh-oriented magazine, or check with an Authorized Apple Dealer.

Published Date: Feb 18, 2012

HyperCard: Script for Printing Individual Cards

I have created a stack of 200 cards with HyperCard version 1.2.5. I want to print out cards 1, 5, 10, 15, and 20 without printing the whole stack. What script would do this?

This article has been archived and is no longer updated by Apple.
In a button, put the following script:

```
on mouseUp
set lockscreen to TRUE
put the short name of this card into ThisCard
go to card 1
doMenu "Print Card"
go to card 5
doMenu "Print Card"
go to card 10
doMenu "Print Card"
go to card 15
doMenu "Print Card"
go to card 20
doMenu "Print Card"
go to card ThisCard
end mouseUp
```

Published Date: Feb 18, 2012

Macintosh IIcx: Mouse Failure and Memory

Article Reviewed Only: 10 July 1992

I have a Macintosh IIcx with memory expanded to 8MB (four 80ns and four 120ns chips). When I put the 120ns in bank A and the 80ns in bank B, I got an error chime on startup. I swapped the two banks and was able to use the system. Now, I am finding that when I do memory-intensive operations, my mouse freezes. My debugger points to the memory as the problem.

Is my configuration correct--four 80ns 1MB SIMMs in bank A and four 120ns 1MB SIMMs in bank B? Does the speed of the SIMMs determine which bank they go into? Might I have a flawed SIMM? Is the mouse freezing a symptom of reaching the memory limit (that 8MB may still not be enough for my purposes)?

This article has been archived and is no longer updated by Apple.
You wouldn't normally experience a problem using these SIMMs in the IIcx. All of them are at least as fast as the specifications require, and you're not mixing them within a bank (which, technically, is supposed to work, but often does not).

It sounds more like you have a defective SIMM, probably one of the 120ns. The self-test does not check the RAM as extensively as our diagnostics check it. It will try to make sure the lower addresses are good, which are the SIMMs in bank A, so the operating system will work correctly. Because it erred with the 120ns SIMMs in bank A, I would suspect those SIMMs first.

Mouse-freezing can be caused by a variety of things. Basically, mouse movement is controlled by the operating system, completely aside from all other system events. All mouse movements are posted to an event queue, as are almost all other events, and then the events are processed in order of their occurrence. If a mouse freezes, then the event queue is not being processed. This means the operating system is hung within an event, because the operating system is either within an event or getting the next event.

One such event that causes the system to hang is faulty RAM refreshing or memory I/O, but the most common is disk I/O. In this case, however, we think you're dealing with a RAM problem.

Published Date: Feb 18, 2012

80-Column Text Cards: Apple II & II Plus Compatibility (11/96)

Does the Extended 80-column card work in the Apple II or Apple II Plus? If not, is there any way to upgrade an Apple II or Apple II Plus to 80-Column?

This article has been archived and is no longer updated by Apple.

The 80-Column Card and Extended 80-Column Card work only in the Apple IIe; they cannot be used in any other computer.

Our databases do not show an 80-column interface for the Apple II or Apple II Plus. There were once several on the market, but the demand for this type of card has almost disappeared. You might still be able to find these 80-column cards through some of the computer remarketing companies, or where use computer equipment is sold.

An alternative is to purchase an Apple IIe or Apple IIGS computer. You need to to contact computer remarketing companies, or look where use computer equipment is sold.

Article Change History:
14 Nov 1996 - Reviewed for technical accuracy, revised formatting.
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Macintosh: Internal Hard Drives Not Always Interchangeable

I have a Macintosh IIci with an 80MB drive. I also have a Macintosh IIsi with a 40MB drive. I want the 80MB in the IIsi and the 40MB in the IIci. Can I swap these drives? How about swapping drives between a Macintosh SE and a Macintosh IIsi?

This article has been archived and is no longer updated by Apple.
No. In one direction (IIci to IIsi), the hard drive is too large. In the other direction (IIsi to IIci), there's no way to mount the hard drive in the box. Your best bet is to get an external drive for the Macintosh IIsi.

There are also physical size and mounting bracket problems with swapping drives between a Macintosh SE and a Macintosh IIsi.

Published Date: Feb 18, 2012

TA46272_Apple_IIe_Memory_and_the_Power_Supply_(TIL07612).pdf

Apple IIe: Memory and the Power Supply

I was about to install additional memory in my Apple IIe when a friend told me that any memory over 128K would cause my transformer to burn out prematurely. He advised me replace it with a more durable model. Is there any truth to this?

This article has been archived and is no longer updated by Apple.
Memory, by itself, is not going to cause the Apple IIe power supply a problem. You should be able to install as many memory boards as the computer supports.

Some third-party power-supply manufacturers say that a fully-loaded Apple IIe (one with every interface slot filled) draws too much power and that you should install a higher-capacity power supply. However, we have not found that to be the case. Instances of supposed excessive power drain can usually be attributed to a damaged logic board, power supply, or interface card. A fully functional unit should not need a power supply upgrade.

Published Date: Feb 18, 2012

TA46273_Apple_IIGS_and_Integer_BASIC_(TIL07614).pdf

Apple IIGS and Integer BASIC

I am trying to run old Apple II programs written in Integer BASIC on an Apple IIGS (original Woz version with 256K of RAM). I can list the programs with the CAT command, but can't run them.

This article has been archived and is no longer updated by Apple.
The Apple IIGS can run Integer BASIC programs, but only under DOS 3.3, not under ProDOS. ProDOS is not compatible with Integer BASIC (though it is compatible with Applesoft BASIC).

To run your programs, first start up from a known-good DOS 3.3 System Master (or other DOS 3.3 startup disk that loads Integer BASIC in RAM).

Published Date: Feb 18, 2012

ImageWriter II: How to Set Line Length from an Apple IIGS

Is there a way, when writing a BASIC program on the Apple IIGS, to send a command string to an ImageWriter II printer (like Control-i 40N) to limit the number of characters that the ImageWriter prints on a line?

This article has been archived and is no longer updated by Apple.
You cannot set that limit within the ImageWriter, but you can set it within the IIGS's serial port firmware. In fact, it's the command you cited above. The ImageWriter prints until it physically reaches the end of the platen. So, if you need a guaranteed way to force a premature carriage return, set the serial port's firmware.

Published Date: Feb 18, 2012

ImageWriter II: Worn Spring Affects Print Quality

I have seen numerous ImageWriter II printers with this problem: once or twice in a page (during test print) the printing gets very light for a word or two, and then goes back to normal. Sometimes ribbon quality is blamed, but other times a new ribbon changes nothing.

I had one on which I changed the wire and gears that drive the ribbon, and it still did it. Moving the carriage back and forth by hand and holding the ribbon-advance knob with light pressure shows that sometimes the knob stops spinning briefly, as if the wire were sliding on the pulley. However, everything looks physically okay.

This article has been archived and is no longer updated by Apple.

The most common cause for the ribbon to stop spinning intermittently is a worn spring: the spring that maintains constant tension on the nylon wire that drives the ribbon-drive gear assembly. If the spring is worn, the constantly-varying tension within the ribbon cartridge (transmitted to the gear assembly), causes the nylon wire to slip.

Try replacing either the Ribbon Wire/Spring assembly (service part number 935-0001) or the spring only (available as a part of the Miscellaneous Hardware Kit, part number 076-0317).

Published Date: Feb 18, 2012

LaserWriter and IBM PS/2: False "out of paper" Message

I have tried connecting an IBM PS/2 to a LaserWriter IINT. After following the directions in the manual (with the corrected "8" instead of "7") I got an error message on the PS/2--"printer out of paper"--although there was some in the paper tray. Where is the problem?

This article has been archived and is no longer updated by Apple.
The MS-DOS COM drivers scan for a particular signal on the RS-232 port for the paper-out condition. Given that, you're probably experiencing some type of cable problem. Most likely, you're missing a jumper on the PS/2 side. Check the DSR or CTS pins.

Also, the LaserWriter IINTX revised manual has about 25 pages of comprehensive details on connecting LaserWriters to IBM-compatibles. Check that for further troubleshooting.

Published Date: Feb 18, 2012

Macintosh IIci: Configuring for Speed with Display Card 824 GC

What is the fastest configuration for a Macintosh IIci using the Macintosh Display Card 8*24 GC and a RasterOps ColorBoard 264 with an Apple Portrait Display Monitor in 2-bit black and white and the Apple 13-inch RGB monitor in 24-bit color? I have the Portrait Display Monitor on the 8*24 GC and the RGB monitor on the RasterOps card. Should I be using the IIci's internal video circuitry?

This article has been archived and is no longer updated by Apple.
There are three considerations here:

* You always have better performance using a NuBus video card than using the IIci's built-in video.

* The Macintosh Display Card 8*24 GC speeds up all QuickDraw processing, as long as it's active and as long as the "other" video board lets it. Check with RasterOps to see what their card does.

* You get more for your money when you put the greater pixel-depth monitor on the faster card, probably the Macintosh Display Card 8*24 GC.

Published Date: Feb 18, 2012

LocalTalk PC Card: How To Free Memory To Print

We installed a LocalTalk PC card on a 386 AT clone with 1MB RAM. We use this PC to download stock quotations. The company uses Macintosh SE/30 and IIci systems for everything else. We want the 386 AT to print its stock data to the LaserWriter IINT.

When we try this, we get a message saying we don't have enough memory. We are running MS-DOS, LocalTalk PC software, and the program for the financial service. How can we print reports to the LaserWriter?
This article has been archived and is no longer updated by Apple.
There are several ways to minimize the RAM allocations in an MS-DOS machine, which may free up enough space to run all of the applications at once. You may try reducing the number of buffers allocated to DOS, for instance.

If you configure AppleShare PC for print services only, you can expect it to take up 62K to 90K of base RAM. Because AppleShare PC must reside in the 0K to 640K range, you may free enough RAM for everything, if you can configure other portions of the operating system to run in the 640K to 1MB range.

We advise you to minimize existing RAM allocations first and re-install AppleShare PC with the minimum services. Then, if that doesn't work, start moving applications into higher memory.
Published Date: Feb 18, 2012

Macintosh IIfx and 800K Drives

Is it true that the Macintosh IIfx logic board does not recognize the 800K floppy drive?

This article has been archived and is no longer updated by Apple.
The Macintosh IIfx recognizes both the 800K floppy drive and the SuperDrive. The logic board contains a SWIM chip, as opposed to an IWM, which recognizes and uses both drives. Our lab has a IIfx with both an 800K drive and a SuperDrive installed, and we have no problems using both drives.

Published Date: Feb 18, 2012

Macintosh Portable: High-Pitched Sound at Startup

When I try to start up my Macintosh Portable, I get a high-pitched sound through the speaker. The first time, I replaced the logic board. After a while, the sound came back.

This article has been archived and is no longer updated by Apple.
If the Portable has any peripherals (excluding anything plugged into the serial ports), check them. A failing device may be causing portions of the logic board to fail.

If the Portable has no extra peripherals, check the keyboard for either cracks or flexing. These may put it in contact with the case.

Published Date: Feb 18, 2012

TA46281_Macintosh_K_No_ROM_Exchange_(TIL07627).pdf

Macintosh 128K: No ROM Exchange

I have an old Macintosh 128K. I bought an 800K drive and a RAM upgrade. Can I exchange my old 64K ROMs for the new 128K ROMs?

This article has been archived and is no longer updated by Apple.
The change in policy regarding our ROMs was made to prevent the sale of individual ROMs for any purpose. The biggest reason was to protect Apple's intellectual property rights. The new policy cannot be worked around, regardless of the reason for the purchase.

With a 128k Macintosh, you can upgrade to a 512, 512 Enhanced, or a Macintosh Plus logic board.

Published Date: Feb 18, 2012

TA46282_Macintosh_IIsi_Upgrading_Memory_to_MB_(TIL07628).pdf

Macintosh IIsi: Upgrading Memory to 5MB

What Apple part number is needed to upgrade the Macintosh IIsi memory to 5MB or 10MB?

This article has been archived and is no longer updated by Apple.
The Macintosh IIsi can be upgraded to 5MB of RAM by using the same memory upgrade kit as used for the Macintosh IIci. Ask for Finished Goods part number M5952LL/A.

Published Date: Feb 18, 2012

AppleShare Network: Auto-Logon Problem

I have one and sometimes two Macintosh computers on my AppleShare network that have been giving me some problems. When these systems are turned on in the morning, they automatically ask for a password, so they can log on to the net. Some mornings, however, they come up and bypass the logon screen and start up without even going to the server.

To remedy this, I go to the Chooser, select AppleShare, and redefine what it is that I want saved for the next time the machine starts. Then, it works fine for quite a while. The network is okay, because there are machines before and after these machines on the net. I have rebuilt the system (6.0.3), re-installed AppleShare numerous times, and so on.

This article has been archived and is no longer updated by Apple.
Automatic logon to an AppleShare server is done through two pieces of software: The AppleShare file itself (the RDEV that appears in the Chooser and is also an INIT) and the AppleShare Prep file, which stores the auto-logon information (volume name, password, and so on).

If the machines fail to log on (but AppleShare is active) you can manually mount the volumes without rebooting--then the most likely problem is that the RDEV can't find the AppleShare Prep file during startup. This could be due to either corrupt System software or a corrupt directory structure. Because you've already rebuilt the System, it's probably the latter.

Run Disk First Aid against the hard drive. This does minor repairs on the directory. You may also want to rebuild the Desktop. A definite cure would be to back up and reformat the hard drives, but you will probably be able to solve your problem without resorting to this.

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Macintosh: Using the Alarm Clock

This article has been archived and is no longer updated by Apple.

To see the clock, choose Alarm Clock from the Apple Menu. A single box displaying the time will appear on screen. Clicking on the flag to the right of the time will bring up two more boxes under the time display. The bottom box contains icons for the alarm, date, and time; the middle box contains the setting for the icon selected in the bottom box.

To set the alarm, date, or time:

1. Choose Alarm Clock from the Apple Menu.

2. Click on the flag to the right of the time display. The setting and icon boxes appear.

3. Click in the bottom box on the icon for the setting you want to change.

4. Click in the middle box. Scroll arrows appear.

5. Click in the middle box on the setting you want to change. To change the setting, click on the scroll arrows or type the new settting.

6. Set the clock by clicking on another icon or clicking on the Close box in the upper left corner of the time display.

When you select the alarm icon, an on/off switch icon shows up on the left of the alarm setting in the middle box. Small lines radiate from the alarm icon in the bottom box when the alarm is on. When the alarm goes off, the speaker beeps once and the Apple menu flashes.

When the Apple on the Menu bar is flashing, it means that the alarm has gone off. To turn off the alarm, choose the Alarm Clock from the Apple menu; if the clock is on screen, get to the clock's icon box and click on the date or time icon.

Published Date: Feb 18, 2012

Macintosh: Setting the Serial Port Baud Rate

How do I set a device to a different baud rate on a Macintosh serial port?

This article has been archived and is no longer updated by Apple.

The ability to set the baud rate for the Macintosh serial port lies with the application and/or serial port driver you're using. In most instances, the baud rate is predetermined and cannot be changed. The most notable exception is modem communication, where you can set baud from within the application. There is no default (or built-in) method for setting baud.

We would suggest contacting the driver's publisher for this type of information, because it varies from driver to driver.

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Apple MIDI Manager: Compatibility & Availability

Does Apple sell a software program called MIDI Manager?
This article has been archived and is no longer updated by Apple.
The Apple MIDI Manager is a developer's tool, not a stand-alone application or utility. It is available as part of the downloadable file MIDI Management 2.0.2 available from online services.

The following files are included in MIDI Management Tools 2.0.2:

- Apple MIDI Driver 2.0.2
- MIDI Manager 2.0.2
- PatchBay Help
- PatchBay 2.0.1
- PatchBay DA 2.0.1
- Serial Switch 1.1

The Apple MIDI Manager version 2.0.2 is compatible with System 7.5 but is not supported by Apple because it is considered a development tool.

Note: Neither QuickTime 2.0 or 2.1 have MIDI Manager built-in, but they do have MIDI capability.

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TA46289_System_x_Disk_Distribution_(TIL07635).pdf

System 6.0.x: Disk Distribution

Are there sets of four 800K disks of System Software 6.0.7 for people without 1.4 MB SuperDrives?

This article has been archived and is no longer updated by Apple.

Yes. You can still obtain System 6.0.x on 800K disks through any authorized dealer. Macintosh System Software 6.0.8 is the latest version of System 6.0.x, and it is available on either 800K or 1.4 MB (high-density) floppy disks. Remember that the files on these disks are organized in a special manner. You cannot simply take the two high-density disks containing 6.0.8 and spread the files randomly to four 800K disks. This will not work. You must have the System Software version 6.0.8 disks that are intended for the 800K format. These are labeled "System Tools," "Printing Tools," "Utilities 1" and "Utilities 2."

Published Date: Feb 18, 2012

Macintosh: Network Fax Modems (9/93)

Is there a network fax modem for the Macintosh?

This article has been archived and is no longer updated by Apple.
There are three products that may serve your needs.
These include:

* Xecom's QuadPort Network Modem family
* Ricoh's DX-1
* Microsoft's FaxGate

QuadPort Network Modem Family from Xecom

These are four channel NuBus data and fax/data modem server products for the Macintosh II family.

The QuadPort Network server product line provides centralized, high-density, telecommunications resources inside a Macintosh II computer. Users can share as many as 24 modems or fax/data modems in AppleTalk, EtherTalk, or TokenTalk network environments.

DX-1 from Ricoh

Ricoh's DX-1 lets Macintosh and many laptop computers communicate with local and remote Group 3 fax machines. Under it, a local fax machine can serve as a computer printer and scanner.

When DX-1 software runs from a computer on a network, users can transmit faxes from computer to computer on the network, without the use of fax boards or fax modems. It can serve as a fax traffic director at a hub unit, automatically saving received documents to disk or switching them to a local fax for printing or storage in fax memory.

FaxGate from Microsoft

With FaxGate and BackFax, a single fax modem and phone line can serve the fax needs of all users on a Microsoft Mail or QuickMail network. Memos prepared with either LAN-based mail system can be routed to recipients at fax machines around the world in addition to, or instead of, recipients on the local network.

Note: BackFax software is no longer available. Fax Pro for Macintosh from Delrina Technologies replaces BackFax.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
19 June 1992 - Reviewed for technical accuracy.
21 October 1992 Revised to say that FaxGate software is supported by Microsoft, not Solutions, Inc.
2 September 1993 - Added note that BackFax isn't available.

Published Date: Feb 18, 2012

Macintosh: How to Access Novell Servers

Can I use a Macintosh as a server within our Novell system? Would it permit mail both within the Novell and external to other AppleTalk nodes? Would MS-DOS computers encounter problems sending or receiving this type of mail? Would I need any special changes or hardware, other than a Macintosh as a server?

This article has been archived and is no longer updated by Apple.

You can do this type of configuration, but with a different server: you need a Novell server with the Macintosh computers getting access from it (as opposed to a Macintosh server).

Novell sells a connectivity solution called "NetWare for the Mac" that lets a Macintosh access a Novell server in much the same way as Macintosh computers access an AppleShare server. There are some limitations, such as requiring Ethernet cabling at the server end, but it is a good solution.

For further information, search the Tech Info Library under "NetWare" and "Macintosh" to get the relevant articles. There is a three-part article that fully explains the configurations, along with related material.

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TA46293_Access_II_Printing_Files_(TIL00764).pdf

Access II: Printing Files

This article has been archived and is no longer updated by Apple.

Access II cannot send files directly to a printer. You may, however, (1) record the file to disk and then print it off-line, or (2) print the recording file without going off-line by choosing 'Print a file' from the Utilities menu of Access II.

Published Date: Feb 18, 2012

Macintosh Portable and LCD Overhead Projection

What LCD overhead projectors are available for the Macintosh Portable?

This article has been archived and is no longer updated by Apple.
You may want to consider Sayett Technology's Datashow HR/MP high-resolution LCD system. You can project graphic screen images from a Macintosh Portable, Plus, or SE. The display contrast of 20:1 puts out bright, clear, projected images with a display resolution of 512x342 pixels for the Macintosh Plus, SE, and SE/30; and 640x400 for the Macintosh Portable.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

ImageWriter II: Bent Carrier Shaft Problem

The carrier-shaft bushing on the left and right of the printhead assembly were broken on our ImageWriter II; we replaced both items. Now, the left side is too snug when the right side is adjusted properly, and the right side has too much of a gap when the left side is adjusted properly.

This article has been archived and is no longer updated by Apple.

Other than playing around with more shim kits, you probably are looking at a bent carrier shaft. If the shaft is straight, then you should be able to adjust the printer with the shim kits; all but the very worst gap problems can be solved this way.

Published Date: Feb 18, 2012

AppleShare PC: Incompatible with Windows 3.0

I am using Microsoft Word under Windows 3.0. When I try to print to the AppleShare Print Server, I get the error:

Undefined; Offending Command:PS-Adobe_2.0

and the print job cancels.

This article has been archived and is no longer updated by Apple.
AppleShare PC and Windows 3.0 are incompatible and, unfortunately, there is no known workaround. You may be able to intermittently gain access to either print or file services with this configuration, but it is not stable.

On a side note, Farallon has since taken over the LocalTalk PC Card from Apple and has introduced new software for the card that is compatible with more PC programs than ever before. This may be a solution. Search under "Farallon" for the phone number and address of this third party company.

Published Date: Feb 18, 2012

AppleShare Print Server: Storing Outline Fonts

I have a Macintosh II and a Macintosh IIcx. From them, I print to a Linotype RIP30 and a LaserWriter IINTX. I put numerous outline fonts in the System folder of each Macintosh to give each full-font capability.

Is there a way to store all of the outline fonts at the server, instead of on each Macintosh? If there isn't, could I attach a hard drive to the LaserWriter II? Could I also attach a hard drive to the RIP30?

This article has been archived and is no longer updated by Apple.
Although it seems reasonable at first glance, you cannot install fonts on the Print Server for everyone to use.

The Print Server acts more like a "dumb" printer than anything else. That is, it looks like an Apple printer with LocalTalk functions only. It knows nothing of any special capabilities the printer may have, beyond what the LaserWriter or ImageWriter drivers tell it. Because of this, the Print Server doesn't have the ability to store any PostScript fonts.

You can install a hard drive on the LaserWriter IINTX to get the same effect. As for the Linotype printer, see your Linotype-Hell representative.

Article Change History:
23 July 1993 - Company title updated from Linotype to Linotype-Hell.
Published Date: Feb 18, 2012

PrintMonitor: "found an internal problem" Error

When I try to print from any of several applications the PrintMonitor becomes active and returns the following error message

PrintMonitor found an internal problem Where=-6; Why=-37

Without the PrintMonitor running, the system prints fine. LaserWriter and Laser Prep are installed from 6.0.5 with AppleShare V2.01.

This article has been archived and is no longer updated by Apple.
That type of error suggests that PrintMonitor has found an incorrect filename (or variable name) during execution. There are several things that could cause it. Here are some things to try:

* Start the system. Throw away the Spool Folder that's in the System Folder. Restart the system, and rebuild the Desktop (hold down the Option and Command keys all the way through the startup process, and OK the dialog box that appears).

* Recopy ONLY the PrintMonitor application from the Printing Tools diskette.

* After backing up your installed fonts and desk accessories, trash the System file from the hard drive, and run the Installer to put a new operating system on the machine. It's important that the System be trashed. The Installer will not necessarily remove a corrupted resource, so you may have the same problems after installing.

Published Date: Feb 18, 2012

System 6.0.5: Can‘t print in MultiFinder

My Macintosh IIcx prints in Finder to a LaserWriter IINTX, but doesn't print in MultiFinder. Instead, I get the dialog message

a printmonitor error has occurred

I have checked cabling, reformatted the hard drive, and reinstalled System 6.0.5 (thinking I might have a virus problem). Nothing worked.

This article has been archived and is no longer updated by Apple.
Because everything seems to work fine in the Finder, the hardware and most of the software is probably good. There are two more System resources that are pulled in when printing in the background under MultiFinder: Backgrounder and PrintMonitor. You may be experiencing a version incompatibility between these files. This is likely if you've recently upgraded your operating system.

We suggest replacing both of these files from a known-good 6.0.5 Printing Tools diskette. You can drag-copy them, but make sure you've booted your hard drive in Finder-only first. If you have a Spool folder in your System folder, throw that away too.

If that fails, try trashing and reinstalling the complete operating system using the Installer.

Published Date: Feb 18, 2012

PrintMonitor: Manual Feed and Flashing

I recently installed System 6.0.5 and Finder 6.1.5. Now, when I print on my LaserWriter IINTX, the PrintMonitor flashes. I have to select it and then click OK to proceed. With System 6.0.3, selecting Print did the whole thing without my having to select PrintMonitor.

This article has been archived and is no longer updated by Apple.
It sounds as if you have Manual Feed selected. Try again with Automatic Feed selected instead. If you have any doubts about the system upgrade, rerun the Installer to re-create the system files.

Published Date: Feb 18, 2012

Macintosh: How To Change "Number Of Copies" Default

Here's how to change the Print Manager's "Number of Copies" value from its default of 1.
This article has been archived and is no longer updated by Apple.
Note: ResEdit is a resource editor available from APDA, the Apple Programmer's and Developer's Association.

1. Use ResEdit to open the LaserWriter or ImageWriter file in your System Folder.
2. Change the "Copies:" field in DITL resource -8191. Change the number from1 to whatever number you like.
3. Save the change when you quit ResEdit.

Published Date: Feb 18, 2012

Personal LaserWriter NT: Spurious Paper-Out Light

I'm having a problem with a Personal LaserWriter NT. At power-up, with nothing connected to the printer, all three LEDs come on briefly, then they go out, and the paper-out LED starts flashing.

The manual indicates this means the printer is waiting for manual-feed paper, but obviously it shouldn't be. The engine test prints a normal test sheet.

This article has been archived and is no longer updated by Apple.
It sounds like the I/O board needs replacing, especially if you can get a good engine self-test out of the printer. We recommend replacing the board for test purposes.

Published Date: Feb 18, 2012

LaserWriter IINTX: 3.0 ROM Upgrade

What is the availability of the 3.0 ROM Upgrade for the LaserWriter IINTX? If so, when will it be available, and what does it do for you when installed?

This article has been archived and is no longer updated by Apple.
Here's a rundown of the LaserWriter IINTX ROM 3.0 capabilities:

There is a new version of LaserWriter IINTX ROMs being rolled into production in late May 1991. These ROMs contain an updated version of PostScript. PostScript version 51.8 has the following enhancements:

* Full support of software switching between emulations and ports. You can switch into and out of an emulation mode via software.

* Improved support of multiple SCSI disks. You can connect as many as eight SCSI hard disks to the LaserWriter IINTX SCSI port. Up to 80 percent of the hard disk with the lowest SCSI ID is used for font caching, with the remainder of that disk and all of any other connected hard disks used for downloaded fonts. Each hard disk is now formatted as a separate volume. Thus, you can move a disk (other than the startup disk) between systems without having to reformat.

* Improved HP LaserJet+ emulation. Four characters have been added that were left out of the original implementation of HP LaserJet+ emulation.

* Improved default settings for HP LaserJet+ bit map printing. Previously, bitmaps in HP LaserJet+ mode were interpreted at 7-bit, thereby ignoring a significant bit. The new ROMs default to 8-bit serial communications.

These new ROMs are found in any LaserWriter IINTX with a part number ending in 6004/A. Apple's Finished Goods part number for the LaserWriter IINTX Upgrade Kit is M0445LL/A.

Published Date: Feb 18, 2012

TA46305_Apple_IIGS_Compatible_LaserWriter_Printers_(TIL07652).pdf

Apple IIGS: Compatible LaserWriter Printers

Which LaserWriters work with the Apple IIGS?

This article has been archived and is no longer updated by Apple.
As of GS/OS 5.0.4, the Apple IIGS supports LaserWriters that are available via the network and based on PostScript.

The Apple IIGS doesn't support LaserWriters that use SCSI or serial connections and are based on QuickDraw.

Published Date: Feb 18, 2012

LaserWriter: How Pages-per-Minute Is Calculated

The LaserWriter IISC specs indicate a speed of eight pages per minute. I am getting only five pages in about 4.5 minutes. The text is all one font and one size. Font sizes in multiples of four are installed in the system as suggested in the manual.

This article has been archived and is no longer updated by Apple.
The specifications for all printers on the market are based on ideal conditions. In the case of Apple's laser printers, the assumption is that a page has already been downloaded and imaged by the I/O board. In other words, eight copies of a one-page document print in one minute, if you start the clock when the first page is picked out of the paper tray. An eight-page document prints slower, as each page must be downloaded and imaged before being put on paper.

Published Date: Feb 18, 2012

Macintosh Display Card 8■24 GC: Acceleration Questions

1) Will the Macintosh Display Card 8*24 GC accelerate the internal video circuitry on the Macintosh IIci?

2) Will the Macintosh Display Card 8*24 GC accelerate the Macintosh II Portrait Display Video Card?

This article has been archived and is no longer updated by Apple.

1) Question: Will the Macintosh Display Card 8*24 GC accelerate the internal video circuitry on the Macintosh IIci?

Answer: No. The Macintosh Display Card 8*24 GC accelerates only NuBus video cards that use frame buffering for video images. This works even better if the other video card supports NuBus slave mode. The Macintosh IIci's video circuitry does not use NuBus, nor does it support frame buffering. It will not be accelerated, except possibly in some very complex, pixel-deep images. This would be due to the Display Card 8*24 GC's processor and modified 32-bit QuickDraw. It probably would go unnoticed.

2) Question: Will the Macintosh Display Card 8*24 GC accelerate the Macintosh II Portrait Display Video Card?

Answers: The Display Card 8*24 GC accelerates the Portrait Display Card, but the increased performance would be at the low end of the spectrum (5 versus 30 times increase). This is because the Portrait Display does not support the NuBus slave mode.

Article Change History:
29 Nov 1995 - Updated format. Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Macintosh: "Resource Map is Bad" Message

While starting up my Macintosh SE, I saw the message "Resource Map is Bad." What does this mean? (Startup continued without further problems.)

This article has been archived and is no longer updated by Apple.
The resource map is a template that interprets the resource forks in any file into something intelligent. The Macintosh OS generates ID bombs (between -192 and -199) if it finds a serious problem in the resource fork.

We suspect that the message was generated by another application or utility. If it happened only once, don't be alarmed. However, we suggest running a file verification utility against the hard drive and possibly backing it up (just in case).

Published Date: Feb 18, 2012

PostScript: Common Causes of Errors

I tried to send an ASCII PostScript file (originally created under an IBM-PC application) to the LaserWriter. I get a PostScript error when I try to print documents with tables and formulas. The error that appeared on the screen is:

%%[Error:undefined;Offending Command:F0]%%

I can print text-only files okay. What's the problem? What do you recommend for troubleshooting PostScript errors?
This article has been archived and is no longer updated by Apple.
PostScript errors are usually generated by one of three things: a corrupt document, a bad printer driver, or a slight incompatibility between the version of PostScript in the printer and what the application thinks is there. Because you can print text without a problem, we suspect the latter of the three, particularly if you're printing to the original LaserWriter. To verify this, you may want to try to print to a newer printer, like a LaserWriter IINT.

If you're interested in getting deeper into Postscript troubleshooting, get some of the reference manuals on the subject. Adobe has books on the subject, as do other publishers. For more information, search on "Adobe" AND "3rd".
Published Date: Feb 18, 2012

Macintosh: Products for Making Slides

Are there products that produce a slide directly (internally) from a computer's screen image?

This article has been archived and is no longer updated by Apple.
There are several products available for the Macintosh that generate slides from screen images. Look into any of these:

* Still Light from American Liquid Light
* PhotoMetric SlideMaker from General Parametrics Corp.
* Bravo Computer Slide Maker (BCSM) from Polaroid Corp.
* SlideWriter from Agfa Compugraphic Division

For vendor contact information, search the Technical Info library under the company name.

Still Light from American Liquid Light

Still Light is a digital film recorder that captures images and generates boardroom-quality 35mm slides, negatives, transparencies, or instant prints.

Drawing on up to 16.5 million colors, Still Light accepts PICT or PICT II files from popular Macintosh applications. Because of its batch processing capability, it can produce up to 36 images, unattended, without having to load the software where the files were created.

Still Light's standard features include the Still Light video graphics card, software, adapter cables, film recorder, 35mm camera back with autowinder, instant film back for 3.25x4.25-inch print film, Polaroid Instant Film Processor and slide-mounting accessories. Optional features include a 4x5-inch film back, 8x10-inch film back, and 35mm motion picture back.

PhotoMetric SlideMaker from General Parametrics Corp.

The PhotoMetric SlideMaker is a desktop film recorder for the production of boardroom-quality 35mm slides. Features include: 4K addressability; full-color online preview; automatic text kerning for typeset quality; shaded (gradated) backgrounds; and automatic film loading, advancing, and exposure calibration.

Users can automatically shoot a single image, a series of images, or multiple copies of one or more images with no adjustments or exposure settings. A wide variety of popular film types are supported.

Bravo Computer Slide Maker (BCSM) from Polaroid Corp.

The Polaroid Bravo Computer Slide Maker (BCSM) is a digital film recorder capable of creating images with addressable resolutions of up to 8,000 lines. It has a palette of up to 16.7 million colors and produces both instant and conventionally processed boardroom-quality 35mm slides. Image resolution is software selectable.

The BCSM accepts Polaroid High Contrast PolaChrome instant color, Polaroid Presentation Chrome conventional, and other ISO 100 35mm slide films.

SlideWriter from Agfa Compugraphic Division

SlideWriter is a high-quality 35mm slide maker for business presentations, graphic design, image recording, and so on. Features include very

high-resolution 35mm slides (2,048 or 4,096 pixels per scan line),
virtually unlimited colors selectable from a palette of 16 million colors,
and fast recording.

Published Date: Feb 18, 2012

AppleShare Network: WDEF Infection and Remedy

Our office has an AppleShare network with about 12 Macintosh nodes of varying configuration. The workstations are constantly going catatonic for about a minute at a time. They seem to be looking out onto the network for something (there's a network activity indicator under the Apple when this occurs), but all work is being done locally.

Almost any action can bring on the behavior. We're using a combination of LocalTalk and PhoneNet. Does this possibly sound like a problem with termination in the network cabling? I've used Inter*Poll to test performance, but can't locate any particular black hole on the net.

This article has been archived and is no longer updated by Apple.
It sounds more like you're dealing with the WDEF virus. The virus tries to infect a mounted AppleShare volume but, because AppleShare doesn't use the Desktop file, everything comes to a halt while WDEF figures out what to do.

We suggest running a good anti-virus utility on all your Macintosh systems except the file server. Symantec's SAM version 1.5 or higher will catch WDEF. You will want to eradicate the virus from your server (you'll have to start up with a floppy), but you don't want to install an anti-virus INIT on it, so that it runs all the time. You really wouldn't be keeping the server clean, just slowing it down.

You can remove WDEF without an anti-virus utility by simply rebuilding the Desktops on every Macintosh on the network. But be aware that you probably have several infected floppy disks around, just waiting to reinfect your hard drives. Also, if you work at home, you should check those computers for infection.

Published Date: Feb 18, 2012

System 6.0.7: When It‘s Needed on Pre-LC Macintosh Models

I just got a copy of System 6.0.7. I know it is for the Macintosh Classic, LC, and IIsi, but does Apple recommend it for the Macintosh IIfx and the other Macintosh computers?

This article has been archived and is no longer updated by Apple.
System 6.0.7 is compatible with all Macintosh computers from the Macintosh Plus on up. The only time it is required on the older computers is if you're using an Extended Keyboard II (the one that comes with the Macintosh LC).

Published Date: Feb 18, 2012

MultiFinder: Why System Memory Fluctuates

Why does the amount of memory used by the System constantly change under MultiFinder or System 7? In the "About This Macintosh..." window, the System size and Largest Unused Block size fluctuate.

This article has been archived and is no longer updated by Apple.
This happens because of the event-driven operating system. As various events occur, the System may need to load or unload resources through RAM to take care of them. Because events happen all the time--even when the Macintosh seems to be idle--RAM allocation varies all the time.

You see this fluctuation under System 7 or MultiFinder and not under just the Finder (pre-System 7) because of the dynamic RAM allocation. Under Finder, all RAM allocation is fixed, whereas in MultiFinder and System 7 a given application or resource can request or free up RAM.

Article Change History:
13 Sep 1995 - Reviewed for technical accuracy.
09 Sep 1992 - Revised with additional information.

Support Information Services
Published Date: Feb 18, 2012

TA46316_Macintosh_WDEF_Symptoms_(TIL07668).pdf

Macintosh: WDEF Symptoms

I'm having the following problems under System Software 6.0.7:

* Repeated restarts when doing things (moving folders, files, and so on) on the desktop

* Flashing warning box with no text in the box

* System bomb with the error message "Address Error"

This article has been archived and is no longer updated by Apple.
There aren't any known problems with System 6.0.7, and especially none like that. We suspect that you're dealing with either a defective logic board or possibly a virus. I would suggest checking for the virus first, as the symptoms are similar to WDEF's infection of a Macintosh IIfx.

Published Date: Feb 18, 2012

LaserWriter IINT: Serial Connection to Xenix

I have a Macintosh IIcx and a LaserWriter IINT. I also have a Xenix network of four Sperry workstations. I am using a program called SCO Lyrix. This program has drivers that enable it to print to a PostScript printer. I want to print from one of these workstations to the LaserWriter IINT occasionally. Can I do this with the LaserWriter set for serial communication? What cable would I need to do this (or what are the pin-outs for such a cable)?

This article has been archived and is no longer updated by Apple.
This can be done serially; for a broad overview of the process, refer to Appendix of the LaserWriter Owner's Guide. Also check the Tech Info Library; search under "ibm" and "laserwriter".

There are two things to be aware after you get the other information. The first is that the manual is incorrect in stating that the LaserWriter requires 7 data bits; it should be 8.

Second, the easiest cable to make for this connection is as follows:

DB-25 LaserWriter
1 - 1
2 - 3
3 - 2
7 - 7

If you need hardware handshaking, add:

6 - 20

Published Date: Feb 18, 2012

MousePaint: Printing

MousePaint was designed as a black and white program, not a color program. While MousePaint will output to the Scribe in color, the quality is poor. The current version of MousePaint prints directly to Apple dot matrix printers only.
This article has been archived and is no longer updated by Apple.
For printing to third party printers such as Epson or Okidata, here are some indirect methods.

NOTE: All procedures reviewed here use the ProDOS /USERS.DISK that comes with the ProDOS supplied with Disk II's or with the ProDOS User's Kit.

1. Using an intelligent graphics interface: Grappler, Pkaso, or other.

    A. Save the picture by selecting the "Put a copy in..." command from the MousePaint File menu. This will create a standard binary picture file on a ProDOS-formatted data disk.

    B. Leave Paint.

    C. Start up Applesoft BASIC using the ProDOS /USERS.DISK. BASIC is an option on the main ProDOS menu.

    D. Now you must instruct your Apple to load the graphcs image and to tell the interface to dump it to the printer. Most graphics interfaces come with examples of programs that do this. Enter and save one of these on your ProDOS data disk.

Sales Tip: Enter the programs for the intelligent interfaces you support. Make sure they run under ProDOS and give them to your customers.

2. Using a "snapshot" interface.

Some cards, e.g., the "PRINT IT" interface, will print the screen when a button is pressed. Because you would print the Paint palette if you did a MousePaint screen dump, you should save the graphic as above and start up BASIC from the ProDOS /USERS.DISK. Then give these direct commands to your Apple:

```
HGR:POKE -16302,0
BLOAD picturename, A$2000
```

Then press the interface's button to dump the picture.

3. Making your Apple do the work.

This works if you have a graphics printing program that works with your printer, e.g., Printographer, Zoom Grafix, Apple LOGO Tool Kit and so on. Most of these programs run under DOS 3.3.

    A. Follow the instructions above to store a binary file on your ProDOS data disk.

    B. Start up the ProDOS /USERS.DISK.

    C. Now you must convert the binary file over to DOS 3.3 format using the CONVERT option on the ProDOS menu. Follow the instructions in the ProDOS manual for doing this conversion. (See our article on using the ProDOS CONVERT program for more information).

    D. After the file is converted to DOS 3.3, it may be loaded and dumped by your DOS 3.3 graphics program.

Of course, once these programs are published under ProDOS, you will not need to convert the binary file before using the graphics program.

To dump graphics, Apple IIc users can also employ the Imagewriter Tool Kit, Revision B, which works under ProDOS.
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Macintosh IIfx: Screen Blank during Memory Test

When I run tests on the Macintosh IIfx, the screen goes blank when it reaches the memory test. The unit then remains blank for ten minutes.

This article has been archived and is no longer updated by Apple.

The screen goes black during the test. The amount of time the unit remains dark depends on the amount of RAM. This doesn't sound like a problem. You might try another, similarly-configured Macintosh IIfx to see the differences.

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MacDraw II: Correcting Sluggish Object Moves

Periodically, when I select the object and move the mouse to the desired location, MacDraw II takes several seconds to snap the object to the new location.

The problem exists even when the computer is not connected to a network. I have re-installed MacDraw II version 2.0 and also re-installed the System.

This article has been archived and is no longer updated by Apple.

We haven't heard of this problem, but here are some diagnostic steps that may help:

1) Make sure no background processes are the cause. Remove INITs (screen dimmers, clocks, Sound Master, and the like).

2) Re-install the System software.

3) Try the same procedure on another system.

4) Check with Claris to see if they know of this situation.

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Macintosh: Troubleshooting ID=15 Segment Loader Error

I have frequent system errors on a Macintosh II with internal CMS hard disk running Quark Xpress 3.0, Illustrator 1.9.x, and Aldus Freehand. The most frequent and consistent error is a System Error ID=15 (Segment Loader Error). It most frequently occurs when launching Quark Xpress by double-clicking a Quark document, although it has happened while opening documents from Illustrator and Freehand. Most of the time, launching the application using the "Open" command seems to work okay.

This article has been archived and is no longer updated by Apple.

It sounds like a software problem. What other files are in the System Folder? Try removing any added INITs (screen dimmers, sounds, mail, menu clocks, and the like). It may be that their software is fine, but when you combine this particular version of the system software with this particular version of Xpress you get a bomb. Make sure you are using a simple System Folder and the current versions of all the software.

Whenever you are troubleshooting a problem, always try to eliminate as many variables as possible. This would include eliminating third party hardware as well as any INITs or third party software that could affect the system folder.

Also, check with the software manufacturers for information on latest revisions, what version of the system should be used with what version of the application, and incompatibilities.

If problems continue after all software situations have been explored, look at hardware, particularly memory or memory management. The problem could be with RAM or the logic board.

Published Date: Feb 18, 2012

LaserWriter IINTX: "offending command:font downloader" Message

I have a Macintosh IIcx with System 6.0.2 on a network with a LaserWriter IINTX. The NTX has an Apple SCSI hard disk. This configuration worked fine with 5.2 LaserWriter drivers and the 4.0 font downloader. However, when I load the 6.0 drivers, it downloads only the Times font and displays the PostScript error:

Invalid printer, offending command:font downloader

Now, with 5.2 drivers re-installed, it continues to mess up.

This article has been archived and is no longer updated by Apple.
This may or may not be the cause of your particular problem, but System 6.0.2 is not compatible with the Macintosh IIcx. The minimum software version is System 6.0.3, and we recommend running the System 6.0.5.

This problem sounds most like system software and/or driver corruption. We suggest you do the following things:

1) Run the Find File desk accessory ensure you don't have multiple System Folders on your hard drive

2) Regardless of how many System Folders you have, throw them all away after saving copies of any third-party INITs or CDEVs that you haven't backed up.

3) Use the Installer to install new System software and LaserWriter drivers onto the hard drive. Make sure the operating system version is at least 6.0.3.

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Apple Licenses MS-DOS Connectivity Products To Farallon

Apple has entered into an agreement with Farallon Computing, Inc., granting them a non-exclusive, worldwide license to use, modify, create, develop, and market products from the AppleShare PC software and the LocalTalk PC Card.
This article has been archived and is no longer updated by Apple.
As a result of this agreement with Farallon, Apple has:

* Removed the AppleShare PC and LocalTalk PC products from its Finished Goods price lists in mid-March

* Transitioned to Farallon on April 1 the sales, service, and support for these products SOLD BY Farallon.

You should not have any difficulty distinguishing Apple's software and card from Farallon's, since products sold by Apple are stamped with an Apple logo, and products sold by Farallon have Farallon's trademark.

Farallon has renamed these products this way:

Apple Product	Farallon Product
AppleShare PC software	PhoneNET Talk software
LocalTalk PC Card	PhoneNET Card PC * LocalTalk Card

APPLE WILL CONTINUE TO PROVIDE SERVICE AND SUPPORT (INCLUDING MEDIA EXCHANGE) FOR APPLESHARE PC AND LOCALTALK PC PRODUCTS SOLD BY APPLE PRIOR TO APRIL 1, 1991. Service Providers should continue to service and support these products through Apple.

For more information, search on "Farallon".

Published Date: Feb 18, 2012

Apple Scanner: Clarification to Page 121 of the Owner‘s Guide

I'm having trouble scanning according to the directions on page 120 and 121 in the Apple Scanner Owner's Guide. While the directions are clear on how to define two separate areas, it seems I can only select one composition for the whole page.

For example, following the instructions, I select the first area and choose the halftone composition. Then, using the Scan Area tool, I choose the second area and select the line art composition. If I click back on the first area, the composition is at line art, not halftone. If I click it back to halftone and go to the second area, the second area switches to halftone.

Does this feature really work using the AppleScan software? What am I doing wrong?

This article has been archived and is no longer updated by Apple.

We set up the Apple Scanner and followed the directions on page 121. We got two images--one half-tone and one line art--on the screen at the same time. Be sure to select the arrow tool so that things get reset before selecting the scan area tool the second time. Then select the scan area tool and line art before scanning the document.

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HyperCard: How To Do ASCII Character Sorting

I want to create a list in HyperCard that contains foreign characters (meaning characters with accent marks, and so on). I can't seem to get HyperCard to sort the characters correctly. Doesn't HyperCard use a standard ASCII table to sort characters?

This article has been archived and is no longer updated by Apple.
HyperCard sorts text using the assigned ASCII values for each character. This means that ascending sorts put text symbols first, followed by numerals, then alphabetic characters last. A sort command that will work for you is:

"sort ascending text by expression"

where "expression" is any expression.

Published Date: Feb 18, 2012

Macintosh: Problems with Large Startup Screens

Is there a startup screen size limit? I've created a 1MB startup screen for my Macintosh, but my system keeps hanging at startup.

This article has been archived and is no longer updated by Apple.

There is no set startup screen limit, but you may be running out of RAM. Your limiting factors are available RAM and heap size. You need to have enough RAM to load your System file, Finder, any INITs or CDEVs, and any RAM cache that might be set in your control panel.

Another possibility could be your system heap needing resizing to accommodate such a large startup screen. Apple does not support changing the heap size, but there are several third-party utilities that do this.

For more information, search on "CE Software".

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Macintosh: Startup Screen Color Shifts Caused by CLUT Matching

When the startup screen on my Macintosh appears, it is first dark and then seems to lighten in tone. Why is this happening?

This article has been archived and is no longer updated by Apple.
The changes to the display of your startup screen are caused by the color look-up table (CLUT). The Macintosh has many color combinations available. For example, on an 8-bit system, there is a choice of 256 colors out of 16 million possibilities. The computer stores a color look-up table for a startup screen graphic, and what you're noticing is the time it takes the Macintosh to match the graphic to the CLUT. During this matching, there is also a shift in the intensity of colors displayed in the graphic.

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Apple Tape Backup: Workaround to Exact Size Volume Limitation

I'm unable to do a volume restore to a different size drive using the Apple Tape Backup 2.0.1. Is there any workaround to the exact size requirement of Apple's backup software?

This article has been archived and is no longer updated by Apple.
The Apple Tape Backup does insist on restoring to a volume that's the exact size of the original.

There is a way around this (it works only if your backup is a volume backup). An INIT called Tape Disk comes with Tape Backup 2.0.1. Install this INIT into your System Folder and restart. Your tape will show up on the Desktop--just like a drive icon. You then simply drag over any files you want to the hard disk.

Published Date: Feb 18, 2012

ImageWriter and Dot Matrix Printers: Setting Page Lengths

This article has been archived and is no longer updated by Apple.
You can set custom page lengths for the Imagwriter and Dot Matrix printers by sending a string of continuous text to the printer. This string sets the number of printed lines per page and the number of lines between the current BOF (bottom of form) and the following TOF (top of form). The commands that need to be entered are as follows:

COMMAND STRING DECIMAL EQUIVALENT FUNCTION

control]A@ 29 65 64 Set TOF

@@ 64 64
At this point you would enter the command @@ for each printed line of text, less two. For example, to set a length of 44 lines, you would enter the string @@ 42 times with no spaces.

C@ 67 64 Set BOF

@@ 64 64
At this point you would enter the command @@ for each line between the current BOF and the next TOF. For example, if you need to skip 10 lines to bring you to the next TOF, then you would enter the string @@ 10 times.

A@control^ 65 64 30 Set TOF
Next Page

A program to produce these strings will ensure the needed accuracy in the character string. Once the page length has been set, it will remain in effect until the printer power is turned off. If you need more information, refer to the Imagewriter and Dot Matrix Printer Reference Manuals under the headings of Setting Page Length and Vertical Tabbing.
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HyperCard IIGS: Release Information

When is Apple going to release HyperCard for the Apple IIGS?

This article has been archived and is no longer updated by Apple.
Apple announced HyperCard¿ IIGS¿ for the Apple IIGS¿ personal computer in December 1990. The program was made available in February 1991 through authorized Apple dealers in mid-February 1991. The program comes with nine ready-to-use stacks.

HyperCard IIGS has the full functionality of Macintosh HyperCard version 1.2.5--plus enhancements to improve performance and take advantage of the color capabilities built into the Apple IIGS. Users can also access the many stacks that already exist for the Macintosh, once developers convert them for the Apple IIGS.

To use HyperCard IIGS, you need an Apple IIGS with at least 1.5MB of RAM (2MB is recommended), system software 5.0.4 or later, one 800K disk drive, and a hard-disk drive (or connection to a network). HyperCard IIGS is sold only as a stand-alone kit with six program disks and three manuals.

Published Date: Feb 18, 2012

WingZ and System 6.0.5: Fix for Compatibility Problem

My Macintosh IIfx hangs when I run Wingz. Are you aware of any compatibility issues with System 6.0.5?

This article has been archived and is no longer updated by Apple.
Informix has an upgrade to Wingz version 1.1 that cures the problem with System 6.0.5. Contact them regarding this upgrade.

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AppleShare PC: No Support for DEC Ethernet Card

I have a DOS clone with a DEC DEPCA-AA Ethernet card. Does AppleShare PC support this card, or will I have to get a different card.

This article has been archived and is no longer updated by Apple.
The DEC DEPCA-AA Ethernet card is not inherently supported by AppleShare PC. The list of supported Ethernet cards in the Technical Info library states that the 3Com EtherLink II and its MicroChannel-equivalent card are the only supported Ethernet cards.

However, since "Farallon" took over both AppleShare PC as well as the LocalTalk PC Card from Apple in April 1991, you should contact them for the most current information since they have updated the software to support more DOS programs as well as other hardware.

Published Date: Feb 18, 2012

Disk First Aid and MFS Volumes

I'm trying to run Disk First Aid version 1.4.2 from a bootable floppy. When I run the program to analyze my hard disk it says "This is not an HFS disk" (and I think it is).

I'm doing this because Symantec said to run Disk First Aid before trying to defragment and optimize my hard disk before running "Disk TuneUp" on SUM II.

This article has been archived and is no longer updated by Apple.

We have seen this error only when trying to run Disk First Aid on an MFS-formatted volume. You can verify that the volume is HFS by looking at the left side of the two lines below the volume information when your disk window is open. There will be a pixel on the left side indicating that the volume is an HFS volume. The absence of a pixel means you have an MFS volume or you are running System 7.

If the volume is HFS, use a more current version of Disk First Aid--version 1.4.3 or above.

Published Date: Feb 18, 2012

Applesoft Internals: String Utilities

Applesoft strings have two parts: the descriptor and the ASCII string. Your string descriptor contains the length of the string along with the address of the strings first character.

Refer to page 137 of the Applesoft Reference Manual for additional information on the string components.
This article has been archived and is no longer updated by Apple.
During most Applesoft routines the descriptor is left in memory, while a two byte pointer to the descriptor is kept in the FAC. The pointer is the address of the descriptor; therefore, the actual string could be anywhere in memory. The statement 10 A$ = "HI" leaves a descriptor pointing to the program text.

STRINI ---- E3D5
STRINI obtains space for creating a string whose descriptor is pointed to by FACMO/FACLO; it also creates a descriptor for it in DSCTMP. On entry A = length of the string, while FACMO/FACLO point to the string descriptor.

STRINI uses GETSPA to force garbage collection when there isn't sufficient room; GETSPA exits with an "OUT OF MEMORY ERROR" when garbage collection free up enough room. GETSPA moves FRESPC and FRETOP down, making room to store the string. STRINI returns with the descriptor of the new string in DSCTMP and the original pointer in DSCPNT.

STRSPA ---- E3DD
STRSPA obtains space for the creation of a string A bytes long, then creates a descriptor for it in DSCTMP. STRSPA uses GETSPA to force garbage collection when there isn't enough room. If garbage collection is unable to make sufficient room, GETSPA exits with an "OUT OF MEMORY" error. GETSPA moves FRESPC and FRETOP down enough to store the string, then returns A unchanged with the new descriptor in DCSTMP.

GETSPT ---- DA7B
GETSPT moves the descriptor pointed to by FACMO/FACLO into the memory pointed to by FORPNT. GETSPT also moves the string's text up to FRETOP if it isn't in the program's text. GETSPT frees up the string if it was a temporary string. GETSPT uses GETSPA to initiate garbage collection, or alternatively "OUT OF MEMORY" error when the garbage collection dosen't free up sufficient room.

MOVINS ---- E5D4
Moves the string whose descriptor is pointed to by STRNG1 to memory pointed to by FRESPA.

MOVSTR ---- E5E2
MOVSTR moves the string pointed to by Y,X with a length of A to memory pointed to by FRESPA.

STRTXT ---- DE81
Build a temporary descriptor for a string literal of which the first character is pointed to by TXTPTR plus C and which ends with a quote. FACMO,FACLO points to the resulting temporary descriptor. Skip leading quotes before calling STRLIT. On exit, STRNG2 points to the character after the string literal.

STRLIT ---- E3E7
Build a temporary descriptor for a string literal of which the first character is pointed to by Y,A and which ends with a quote. FACMO,FACLO points to the resulting temporary descriptor. Skip leading quotes before calling STRLIT. On exit, STRNG2 points to the character after the string literal.

STRLT2 ---- E3ED
Take a string literal of which the first character is pointed to by Y,A and build a temporary descriptor for it pointed to by FACMO,FACLO. Save in CHARAC and ENDCHR the characters other than zero that terminate the string. Skip leading quotes before calling STRLIT2. On exit, STRNG2 points to the character after the string literal.

PUTNEW ---- E42A
Move the descriptor in DSCTMP to a temporary descriptor, put a pointer to the descriptor in FACMO,FACLO, and flag the result as a string.

GETSPA ---- E452

Get A bytes of memory below HIMEM for a string. GETSPA forces garbage collection to make room in memory when necessary and exits with an "OUT OF MEMORY ERROR" if garbage collection can't make enough room. GETSPA moves FRESPC and FRETOP down enough to store the string. On entry, A equals the number of characters. GETSPA returns with A unchanged and pointer to the space in FRESPC, FRETOP, and Y,X.

FRESTR ---- E5FD
Make sure that the last FAC result was a string and free up the temporary string result. Check the descriptor for a temporary status allocated by PUTNEW. On exit, the address of the string is in INDEX and Y,X. The length of the string is in A. Uses FRETMP.

FREFAC ---- E600
Free up the temporary string pointed to by FACMO,FACLO. Check the descriptor for a temporary status allocated by PUTNEW. On exit the address of the string is in INDEX and Y,X. The length of the string is in A. Uses FRETMP.

FRETMP ---- E604
Free up a temporary string. On entry the pointer to the descriptor is in Y,A. Checks the descriptor for a temporary status allocated by PUTNEW. If so, the temporary is freed up by updating TEMPPT. If a temp is freed up, a further check tests the string's location for the lowest in memory. If so, that area of memory is freed up by updating FRETOP. On exit the address of the string is in INDEX and Y,X. The length of the string is in A.

FRETMS ---- E635
Free the temporary descriptor without freeing up the string. On entry Y,A point to the descriptor to be freed. On exit Z is set if anything was freed.
Published Date: Feb 18, 2012

System 6.0.5: Troubleshooting Mouse Problem

Article Reviewed Only: 10 July 1992

The pointer freezes in the left corner of the screen when I start my Macintosh IIcx under System 6.0.5. If I start with System 6.0.3, the problem goes away.

This article has been archived and is no longer updated by Apple.
One problem with System 6.0.5 is that, if the connection is somewhat shaky, the system does not recognize the mouse after startup. If you run pre-6.0.5 System software, you can start the machine without the mouse, wait for it to complete the boot process, and then plug the mouse in. The system will recognize the mouse immediately.

We suggest that you try these diagnostic steps:

1) Verify the mouse connection to the keyboard or back of the machine.

2) Start the machine with the mouse plugged into the connector not currently in use.

3) If there is no difference, try throwing away the currently-installed System folder and reinstall a new copy, using the Installer.

Published Date: Feb 18, 2012

PrintServer and AppleShare 2.01

I am rebuilding an AppleShare network from scratch. I am upgrading many of the files that we had previously used. The file server seems to be working okay but there are a few problems. I have rebuilt with System 6.0.5 (we had previously used 6.0.3), AppleShare 2.01, and Printserver 2.0. The network is running on a Macintosh SE with 2.5MB RAM.

The network starts okay, but has crashed several times. I think most of these crashes are due to system incompatibilities or memory problems in the workstations. The workstations are mostly Macintosh SEs with 1MB. I expected some of the applications (like PixelPaint and Studio/8) to bomb, because of memory, but these have also caused the file server to crash. One user caused a crash by typing a new password. I thought this was due to system incompatibility (he's running 6.0.3 at present), but the documentation for 6.0.5 says it works fine in a network with other systems (specifically 6.0.2, 6.0.3, and 6.0.4).

The biggest problem I am having is with the PrintServer. I installed it, but when I load it and try to connect to a network printer, it times out. (I have tried both printers on the network with the same results. I have also re-installed PrintServer from another set of diskettes.) Then, when you choose to quit the application it bombs the system.

Do you know of any incompatibilities among System 6.0.5, AppleShare 2.01, and PrintServer 2.0? Are there any upgrades I might need? How about the RAM cache, now set for 1MB? Also, does AppleShare get upset with the file server running 6.0.5 and workstations running an earlier version?

This article has been archived and is no longer updated by Apple.
We don't know of any incompatibilities with the system software and application versions you have listed. In fact, we run similar configurations with no difficulty.

The RAM cache is not changeable by the administrator on an AppleShare server. Rather, AppleShare dynamically allocates RAM to meet its needs. Don't change anything in the RAM cache.

We have two concerns with your configuration:

* Are all your users running the same version of the LaserWriter drivers?

* Was the System software installed using the Installer -- not drag copied?

It is very important that you run the Installer, because this is the only way to get the proper ROM patches loaded into the individual computer's System file.

With your Print Server, you mention that when you load it and try to "connect to a network printer", I have to assume that you are capturing a printer for print spooling services. If that is correct, and it times out, you may want to look at using the 6.0.1 LaserWriter and Laser Prep files as this timeout problem was addressed in those drivers. If you do use these drivers, make sure that all users upgrade and that there are no older drivers present in the network.

Published Date: Feb 18, 2012

3270 Dial-In for the Macintosh: Use MacTerminal

Can my Macintosh dial in remotely to an IBM 3708 and get 3270 terminal emulation? Is there a Macintosh equivalent to FTTerm, a DOS product that does this on the IBM?

This article has been archived and is no longer updated by Apple.

3270 emulation is available from the Macintosh side with MacTerminal. This is Apple's data communications product and should work just fine in this environment. You will need to verify with the network administrator that there is the capability in the host for remote dial-in support. If so, have it set up on the host and you should be in business.

Published Date: Feb 18, 2012

AppleShare File Server: When You Can‘t Throw Away Files

When I'm logged on as the Administrator of my AppleShare server, the system locks up and bombs whenever I try to throw away folders with duplicate data in them. If I go to the file server and start up with an AppleShare Admin Disk, I can throw these folders away.

This article has been archived and is no longer updated by Apple.
The locking up and bombing problem while throwing away folders could be caused by a couple of things. Try these steps:

1. Rebuild the desktop by holding down the Command and Option keys while the system is starting up from a floppy disk.

2. If the problem persists, reinstall the System and AppleShare software, as there may be some pointers to the Desktop and Finder that could be corrupted. This would explain why files can be thrown away when booted from a floppy.

Published Date: Feb 18, 2012

3Com INIT and AppleTalk System File

I have encountered a problem involving 3Com's 3+Mail, the 3+File, and the AppleTalk system file. It seems that 3Com or something is modifying the AppleTalk file so that the Macintosh bombs (usually ID 3). Throwing out the AppleTalk system file prevents the system crash, and my Macintosh seems to run just fine without the file.

What creates this file? What does it do? Why do I need it?

This article has been archived and is no longer updated by Apple.

```
The file contains AppleTalk protocol updates.  AppleTalk is found in ROM,
but when an update is made to AppleTalk, these changes get put in a system
file. This could happen if you're doing a number of system-related
installations:  3Com, EtherTalk, System, etc.

The 3Com INIT is, unfortunately, not "smart" enough to say "I'm not on,
EtherNet, so don't load yet."   If you forget to disable the 3Com INIT and
you boot with LocalTalk selected, you will get a bomb and have to boot from
another disk to start up.
```

Published Date: Feb 18, 2012

AppleTalk: Where To Find Protocol Information

Is there a technical reference that outlines or specifies the series of AppleTalk-related calls to logon to an AppleShare server? I would like to query the server for some user and password information.

This article has been archived and is no longer updated by Apple.

"Inside AppleTalk", published by Addison-Wesley, has all of the AppleTalk protocols and the other information you need.

For more information, search on "Addison-Wesley".

Published Date: Feb 18, 2012

Macintosh: Advanced Cut & Paste Tips for Multiplan & MS-BASIC

This article has been archived and is no longer updated by Apple.

A limited number of fonts are available in Multiplan; it does, though it have several print options, including (a) printing with or without coordinates, (b) printing with or without cells, and (c) printing in condensed or draft form. If you wish, you can vary the font used in Multiplan by moving the text into a MacWrite document:

1. Simply cut or copy the desired cells.
2. Quit and eject Multiplan.
3. Without rebooting, insert the MacWrite disk.
4. Start up an application.
5. Paste in your model.
6. Customize the type style of the text as you wish.

MacPaint also accepts graphics created in MS-BASIC. To move such a document into MacPaint:

1. Enlarge the MS-BASIC output window to its full extent.
2. Run your graphics program.
3. Key in SHIFT-COMMAND-3. This dumps the screen to disk.
4. Open and modify the resulting Screen file in MacPaint.
5. Move the MacPaint document to MacWrite.

Though the MS-BASIC editor only uses the clipboard for single lines, MS-BASIC programs can write many lines of text to the Clipboard. At present, MS-BASIC does not write graphics to the Clipboard, but it does have text-only access to the Clipboard's facilities through the device name CLIP:. Here is a pair of programs to demonstrate the use of CLIP:; note that the programs do file I/O with text created by the program.

```
10 REM Writes to Clipboard 10 REM Gets data from Clipboard
20 Open "CLIP:" for output as #1 20 Open "CLIP:" for input as #1
30 For i=1 to 10 30 While not EOF (1)
40 Write#1: ,"Hi, I'm Macintosh!" 40 Input #1,A$
50 Next i 50 Print A$
60 Close #1 60 Wend
70 Close #1
```

You can also use MS-BASIC to manipulate Multiplan data. The working solution elaborates upon the Clipboard example shown above. See Appendix H of the MS-BASIC manual for more details.

Published Date: Feb 18, 2012

AppleWriter II: Transferring Files to a PC

I want to transfer my ProDOS-based AppleWriter II files to WordStar 5.1 on my PC. Can AppleWriter II save files in an ASCII text format? If it does, can I use a standard communications package on my Apple IIe and PC and just run a cable between the two serial ports to transfer the data?

This article has been archived and is no longer updated by Apple.

AppleWriter II saves files in ASCII format automatically. You can simply transfer your data to the PC using a serial cable and communications program.

Published Date: Feb 18, 2012

AppleShare Print Server: Using with Linotronic Printers

Is it possible to use the AppleShare Print Server on a mixed network of printers, including Linotronic l300s, Linotronic 100s, and LaserWriters?

This article has been archived and is no longer updated by Apple.
There should be no problem with the LaserWriters, but the AppleShare Print Server doesn't support any of the Linotronic imagesetters, including spooling.

Check with Linotronic to see if they can recommend a spooler for you.

For more information, search on "Linotronic".

Published Date: Feb 18, 2012

Macintosh Manager: Access to Hybrid CD Error

This article describes an error that occurs when you try to add Enhanced CDs to the list of approved CDs in Macintosh Manager Admin.
This article has been archived and is no longer updated by Apple.

Symptom

Enhanced (or hybrid) CDs (those that have both audio and data partitions) cannot be added to the list of approved CDs in Macintosh Manager Admin. An alert box appears with a message that says Audio CDs cannot be added.

Solution

Set up the client to allow access to all CDs.
Published Date: Feb 18, 2012

AppleShare: Using with CD-ROM Drive

We have a CD-ROM drive that is connected to our file server as a server volume. There are times when we would like to use other CDs while the server is still running. Is there any way we can do this without having to shut down the server?

This article has been archived and is no longer updated by Apple.

Apple recommends you upgrade to AppleShare 3.0.x, AppleShare 4.0.x, AppleShare 4.1, or AppleShare Pro (AWS 95). These versions of AppleShare have the feature of Continuous Parallel Data Structure (PDS) maintenance. This allows mounting and unmounting removable media (like CD-ROMs) while the server is running.

Published Date: Feb 18, 2012

AppleCD SC: Operating Temperature Without a Fan

A customer is concerned about the compact disks getting a bit warm to the touch now that the fan is disconnected. Is this normal? And if so, how warm can the player get?

This article has been archived and is no longer updated by Apple.

It is true that the temperature of the unit rises without the cooling fan. Apple did a considerable amount of testing and found that the temperature remained lower than the 120+F needed to warp a CD. With the fan removed pay close attention to the unit's ventilation. DO NOT stack anything on top of the unit.

Published Date: Feb 18, 2012

AppleShare IP 6.3/Apple Remote Access Personal Server 3.5: Server Stops Responding ("Hangs") When ARAP Client Disconnects

On an AppleShare IP 6.3 server with an internal modem running Apple Remote Access Personal Server 3.5, the server may stop responding when the client disconnects.
This article has been archived and is no longer updated by Apple.

Symptom

On an AppleShare IP 6.3 server with an internal modem running Apple Remote Access Personal Server 3.5, the server may stop responding when the client disconnects. This happens most often when the client connects via ARAP (Apple Remote Access Protocol), though it can also occur via PPP. It does not occur with an external modem.

Solution

Use an external modem on the server.
Published Date: Feb 18, 2012

MacWorkStation: TCP/IP Support Now Available

I want to use MacWorkStation on a Sun connected with MacTCP. Will MacWorkStation support this?
This article has been archived and is no longer updated by Apple.
TCP/IP support for MacWorkStation is available with a TLPM called telnet*PM from Ramsay Consulting. The program can be ordered through APDA.

For more information in the Tech Info library, search on "Ramsay" or "APDA"
Published Date: Feb 18, 2012

Macintosh: Microsoft BASIC program merging

This article has been archived and is no longer updated by Apple.

When merging MS-BASIC programs with the MERGE command (see p. 119, MS-BASIC manual), care must be taken with the program to be merged with the program in memory: make sure that you have saved IN ASCII FORMAT the program to be merged. Make sure also that the line numbers of both programs do not overlap or repeat, because the MERGE function overwrites the lines in memory with lines from the disk file that have matching line numbers. To avoid the problem, renumber the program in memory with the RENUMB command described on p. 154 of the MS-BASIC manual.

Published Date: Feb 18, 2012

DEC LQPO2 Daisy Wheel Printer: Pinouts for Macintosh

I'm trying to hook up a Digital LQP02 serial daisywheel printer to a Macintosh SE.

The pin-outs are:

LQP02 Digital Macintosh SE

Pin # Pin #
1 shield 1 HSKO
2 Tx data 2 HSKi
3 Rx data 3 TxD-
6 Data Set Ready 4 GND
7 Signal ground 5 RXD-
20 DTR 6 TxD+
7 GPi
8 RxD+

Which pins goes to which connection?

I understand that the grounds go together. What about the shield? Do I really need it? The Tx goes to Rx, but the + and - TxD, RxD on the Macintosh side was a little confusing.

This article has been archived and is no longer updated by Apple.

Use the negative TxD and RxD on the Macintosh side. Also, use the shield.

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Macintosh: Large Amounts of Clip Art

I'd like to have a single file with all my clip art in it so that I can quickly find and copy pictures to the Scrapbook. What program would be best at doing this?

This article has been archived and is no longer updated by Apple.
There is no single right answer to your question. What application you should use depends on the file format of your graphics.

If you are using PostScript clip art, you'll need an application that works in PostScript, such as Adobe Illustrator or Aldus Freehand. If you are going to work with PICT documents, you'll need an application such as MacDraw II. If you are going to work with bit-mapped graphics, a program such as SuperPaint or MacPaint will suffice.

You may want to look for a program that is an art catalogger. These are generally used by people in the Graphics and Design section of desktop publishing who have large amounts of clip art that is commonly used.

Probably the best suggestion is to contact the company whose program you are using, and ask them what catalogger works best with their software or the respective type of clip art or graphic. An example would be to contact Adobe if you are using Illustrator, or Aldus if you are using Freehand.

Published Date: Feb 18, 2012

Apple III: Switch Settings for Apple DMP

What are the switch settings for connecting an Apple III with a UPIC to an Apple DMP?

This article has been archived and is no longer updated by Apple.
Here is the recommended configuration:

DMP
SW1 1 off
2 off
3 off
4 off
5 off
6 off
7 off
8 off

SW2 1 off
2 off
3 XX (not used)
4 XX
5 off
6 on
7 on
8 off

UPIC with cable 590-0036.

Driver configuration block - Printer Driver

0 1 2 3 4
0E 00 00 00 00

Set the auto linefeed switch on the UPIC to AUTO.

Published Date: Feb 18, 2012

Hard Drives: Sticking At Startup

I have an older Macintosh LC with an external 40 megabyte (MB) hard drive. Sometimes when I switch the external drive on, it will not start spinning. Tapping the side of the hard drive seems to break something loose inside, and the drive then starts spinning. The drive may work fine for a while, but the problem generally occurs again. Is there something wrong with my hard drive?

This article has been archived and is no longer updated by Apple.

This is one of the most common hard drive failures. When a hard drive spins down, the read/write heads land on the platters. Hard drive manufacturers place some lubricant on the platters so that the heads don't scratch the platter surfaces when the drive is switched on again. Sometimes the lubricant actually functions as an adhesive and sticks the read/write heads to the platter. If the spindle motor can't overcome this adhesion, the hard drive will not spin up. The hard drive industry refers to this condition "stiction." A twist or a bump may free the heads temporarily, but the condition usually recurs. If you have a hard drive exhibiting these symptoms, back up any data that may not have been backed up, because the hard drive is not reliable. The repair is usually a drive replacement.

This is an industry-wide problem. Hard drive manufacturers are exploring alternate forms of lubrication and read/write head placement methods.

Published Date: Feb 18, 2012

AppleFax Modem: When Wrong Size Letter Is Sent

I have an AppleFax modem that always sends European letter-size faxes instead of regular letter-size.

I have re-done the setup three times, step-by-step, with no luck. Could this be a ROM problem?

This article has been archived and is no longer updated by Apple.
It is possible that there is a ROM problem with your AppleFax Modem. There was a ROM upgrade for the AppleFax and you should order it.

If that still does not cure the problem and all your settings have been checked and verified, the logic board probably is the cause of the problem.

Published Date: Feb 18, 2012

Apple SuperDrive: Requires System 6.0.3 or Later (10/94)

I am using DOS mounter and an Apple SuperDrive (formerly Apple FDHD) attached to a Macintosh SE. When I insert a 720K or 1.44MB DOS disk, the disk doesn't mount. Using Apple File Exchange doesn't help.

Is there a specific Apple System version necessary to operate the SuperDrive?

This article has been archived and is no longer updated by Apple.
For the best use of the SuperDrive, we recommend System software 6.0.3 or later.

Article Change History:
27 Oct 1994 - Reviewed for technical accuracy, revised formatting.

Support Information Services
Published Date: Feb 18, 2012

Apple IIGS: 03 ROM Upgrade Not Needed by Older Machines

Is there a new revision or ROM upgrade available for the Apple IIGS?

This article has been archived and is no longer updated by Apple.
The current version of the Apple IIGS ROM is 03. We have not offered an upgrade for ROM 01 owners. Most of the changes that came out in version 03 are for the 1MB logic board, hence the new ROM would be of little help to older Apple IIGS owners.

Published Date: Feb 18, 2012

Macintosh: Disk Recovery

This article has been archived and is no longer updated by Apple.

At the outset, we recommend that you and your customers practice that time-honored tradition of backing up important files. Recently, however, we have gotten suggestions on reviving damaged Macintosh application disks and retrieving files from damaged data disks. Since there are many ways to blow up disk directories, though, these methods are not 100% effective.

Method one: Rebuild the desktop file.

1. If the disk is bootable (i.e. has a system folder on it), put the bad disk into the internal drive while the Macintosh is turned off.
2. Hold down the OPTION and COMMAND keys and turn the Macintosh on.
3. While the Macintosh boots, hold down the OPTION and COMMAND keys until the disk icon appears.
4. If the disk is a data disk (i.e. no system folder on it) then boot the system with a good disk. When the data disk is inserted into the drive hold down the OPTION and COMMAND keys as above.

This method sometimes requires several attempts, and while it restores data files, file folders are lost on Finders prior to 4.1; they must be re-created, and the documents must be placed back into them manually. If the Finder is version 4.1 or greater then the folders lose their names and must be manually renamed.

Method two: Recovering files.

1. Boot the Macintosh with a good copy of the application needed to read the data files you wish to recover.
2. Create a new document in that application with a double click on the application's icon.
3. Once the document, usually called "Untitled", has opened, close it.
4. Select Open on the File menu.
5. Insert the bad disk.
6. Select Open again and try to read files off of the bad disk.
7. Save the files to a good disk.

This method also works faster if you use a second drive for reading data files.

Method three: Replacing System Files.

This method has been known to work with disks that fail to boot and exhibit a "Sad Macintosh" with the address 0F0064. First attempt Method one above. If that doesn't work, boot from a good disk and then insert the bad one. If the bad one appears on the desktop, then throw away the bad disk's System Files and replace them with new ones from the good disk.

Published Date: Feb 18, 2012

AppleShare File Server: Making Files Undeletable

Is there any way to make a file undeletable on an AppleShare file server? I'm aware of the lock attribute, but I need something that a workstation user could not change easily.

This article has been archived and is no longer updated by Apple.
There are a couple of commercial file protection programs that would allow you to lock files and make them undeletable.

For more information, check the Redgate Buyers Guide library on AppleLink.

Published Date: Feb 18, 2012

Apple HD SC Setup: Checks for Bad Blocks And More

Does the Apple HD SC Setup program re-map the hard disk to set aside bad or unusable sectors like a low-level format, or does it simply set up blocks and mark them all as available?

What other hard drive issues can it address?
This article has been archived and is no longer updated by Apple.
Yes, Apple HD SC Setup does spare bad blocks. If too many bad blocks are found, a message that the hard drive needs to be serviced is displayed. Since you were apparently able to format the drive successfully, we can assume that the problems are not due to bad blocks.

The drive could be have other errors though. For instance, it could be having trouble positioning its head on the platters.

In very rare cases a third party formatter used on a Apple drive can damage it so that Apple HD SC Setup will no longer recognize it. The hardware is usually OK but the driver is severely corrupted. This was an issue with older version of Apple HD SC Setup and should not occur with the version shipping with System 7.5.

If you can prevent the driver from loading at start up. You can usually get Apple HD SC Setup to recognize and reformat the drive. To prevent the driver from loading, wait till the Mac has booted before turning on the drive. For internal drives, try holding down CMD-OPT-SHT-DELETE until the Mac has booted. (Note: This does not work on most Quadra, PowerBook, or LC series computers.

A good rule to follow is to format all SCSI devices with the same formatting software. This avoids possible SCSI driver conflicts.

With System 7.5, all 68040 based and higher Macintosh computers need to have SCSI Manager 4.3 compatible drivers.

You can also do a "Get Info" on problematic drive. In the Get Info window, next to where is says 'Where:' you will see "Hard Disk Name, SCSI 0" or "HardDiskName, SCSI 0 (a)" if it is an Apple HD SC Setup formatted drive. If any other information/characters are there, then it has a third party driver.

For related information on Apple's Drive Setup program, please see the following Tech Info Library article:

Article 24764: "**Drive Setup: Checking For Bad Blocks**"
Published Date: Feb 18, 2012

Macintosh IIci: Built-In Video Slows Performance Slightly

Does the Macintosh IIci's built-in video port support all Apple monitors?

Does using built-in video, instead of a separate video card, slow the performance of the Macintosh IIci?

This article has been archived and is no longer updated by Apple.
The Macintosh IIci's built-in video port supports the Apple High Resolution Monochrome, the Apple High Resolution RGB, and the Apple Portrait monitor. It does not support Apple's 2-page monitor.

Using the built-in video port instead of a card requires the computer to use its system memory for screen drawing, resulting in a loss of some performance. This can be minimized by using at least 5MB of RAM with the 1MB bank being located in bank A for video use.

Published Date: Feb 18, 2012

TA46366_Apple_IIGS_Using_on_AppleTalk_Phase_II_Network_(TIL07735).pdf

Apple IIGS: Using on AppleTalk Phase II Network

I'm running an Apple IIGS, with GS/OS 5.02, on an AppleTalk LAN with a "II bootblocked" AppleShare server.

Can I upgrade this network to AppleTalk Phase II? I assume that if I do, my Apple IIGS computers will boot from a server in their own zone. What if I want to have two servers in one physical zone? Where will the Apple IIGS computers boot from?

This article has been archived and is no longer updated by Apple.
AppleTalk Phase II has no effect on LocalTalk. The enhancements that Phase II provides are only for EtherNet and Token Ring

There was an upgrade to the boot blocks for loading GS/OS on the server. This is included with GS/OS 5.02 on a new Apple II setup disk.

The Apple IIGS will boot from the first server it finds.

Published Date: Feb 18, 2012

AppleShare & Apple IIGS: "Cannot Load Descriptor File" Error

I have a problem trying to install an Apple IIGS workstation on an AppleShare network.

On my Macintosh SE/30 file server, I've installed System 6.0.5, AppleShare, and Apple II network software. On my Apple IIGS, I made an "AppleShare on 3.5" startup disk, started it up, logged on, and installed Network Server Startup on the file server. After starting the Apple IIGS up from the network and setting the startup application to the Finder, I got the error message, "CANNOT LOAD DESCRIPTOR FILE $0001." I've re-installed everything and the problem persists.

This article has been archived and is no longer updated by Apple.
This sounds like an AppleShare server access privileges problem. Set the System Icons privileges to see files and folders for everyone and make sure that this change is made for all enclosed folders.

Published Date: Feb 18, 2012

ImageWriter II: Switch Settings for Use with a Apple IIe

What are the proper settings for using an Apple IIe with a Super Serial Card to an ImageWriter II?

This article has been archived and is no longer updated by Apple.

```
The settings should be:

Super Serial Card
SW1  1  off
    2  off
    3  off
    4  on
    5  off
    6  on
    7  on

SW2  1  on
    2  off
    3  off
    4  off
    5  on
    6  off
    7  off

Jumper  block pointed toward terminal.

ImageWriter II
SW1  1  off
    2  off
    3  off
    4  off
    5  off
    6  on
    7  off
    8  off

SW2  1  on
    2  on
    3  off
    4  off

Cable:  590-0335 or 590-0556
```

Published Date: Feb 18, 2012

AppleShare: Installing on Systems that Require System 6.0.4

I recently purchased a Macintosh IIci as an AppleShare file server. My version of AppleShare File Server (2.0.1) is on an 800K diskette and cannot be used because it does not have System Software 6.0.4 on it. Is my only alternative copying the applications to a 1.4MB diskette that has System 6.0.4 on it?

This article has been archived and is no longer updated by Apple.
In order for you to install AppleShare or some of our other networking and communications software on our newer computers, use the Network Products Installer diskette. This disk contains the latest System software and installer scripts as a pre-boot for the actual installer diskette. Just boot from the NPI disk, launch the particular Installer script, and the Installer will prompt you for the appropriate diskette.

The NPI diskette is currently shipping with all new systems that require System 6.0.4 or higher.

Published Date: Feb 18, 2012

Isolation Transformer: How It Protects You from Shock

How does the isolation transformer protect a service technician from getting shocked?
This article has been archived and is no longer updated by Apple.
The isolation transformer protects against a ground that's been reversed with a hot lead: for example, a normally grounded monitor frame that's been switched to hot. If you were to touch the frame and a true ground, you would be severely electrocuted.

The isolation transformer creates a floating source for the voltage that ties the voltage coming from the transformer to earth ground. This prevents you from getting between the power source and ground to complete a circuit.
Published Date: Feb 18, 2012

ADB Devices: Don‘t Connect/Disconnect while Computer Is On

I usually run my AppleShare servers without attached keyboards. When a keyboard is needed, I simply connect it. Recently, I've noticed that if the keyboard is plugged in after the machine is booted, the keyboard doesn't work. This problem seems to happen with newer machines and/or the newer versions of the system software.

This article has been archived and is no longer updated by Apple.

The Apple Desktop Bus (ADB) was never intended to allow power-on configuration changes. This is a dangerous practice, as the ADB fuse is a soldered component on the logic board: if the fuse blows from connecting or disconnecting keyboards (or mice, trackballs, etc.) -- the logic board will need to be replaced. The owner's manuals have always made this clear.

Published Date: Feb 18, 2012

LaserWriter IINTX: Trouble Initializing Attached Hard Drive

My LaserWriter IINTX is connected to an Apple 40SC Hard drive. My hard drive's SCSI ID is set to 5 and is properly terminated. When I attempt to to initialize the hard disk using the LaserWriter Font Utility, the initialize button is always greyed out.

This article has been archived and is no longer updated by Apple.
Be sure that you have:

* Connected the drive to the 50-pin SCSI connector instead of the DB-25 port serial connector on the I/O board.

* Not connected your computer to the same SCSI bus as the printer and the hard drive.

* Let the drive become ready before turning on the LaserWriter IINTX.

If all the above are correct, you may have a bad LaserWriter IINTX controller or hard drive mechanism.

Published Date: Feb 18, 2012

LaserWriter: Timeout Error Messages Printing Long Documents

When I try to print out long documents on my LaserWriter, I get a timeout error message. Someone suggested that I change the default values of my timeouts with a PostScript program. Where can I get such a program? What else can I do with it? Is one program better than another?

This article has been archived and is no longer updated by Apple.
The new LaserWriter drivers (6.0.1 and later) are better at handling longer print jobs. If you are using older drivers, upgrade to the 6.0.1 versions as a first step.

The PostScript "program" you refer to is not an off-the-shelf commercial product. It's a PostScript code sequence that changes the default value of the timeout clock. We recommend looking at the PostScript Language Reference manual, published by Addison-Wesley. This book explains using PostScript commands to alter the timeout.

We recommend against sending PostScript commands to the LaserWriter, as it is quite possible to change the LaserWriter's parameters in such a way as to make the LaserWriter permanently inaccessible.

For more information, search on "Addison-Wesley".

Published Date: Feb 18, 2012

AppleShare File Server: Cannot Be Bypassed at Startup

Is there any way to prevent an AppleShare file server from starting up AppleShare that doesn't require using a separate system disk? Is there an option key sequence, for instance?

This article has been archived and is no longer updated by Apple.
There is no hot key you can use to bypass AppleShare at startup. Using a separate system disk is the only way to prevent AppleShare from loading.

Published Date: Feb 18, 2012

Macintosh: "Sad Macintosh" Error Code Meaning

This article lists and explains the error codes that accompany the "sad Macintosh" icon that appears on the screen when a Macintosh computer does not start up.

This article has been archived and is no longer updated by Apple.

Products Affected

The "sad Macintosh" icon and its associated error codes exist only in older Macintosh computers. Newer models, such as those with Universal Serial Bus (USB) or Open Firmware, use a different mechanism for reporting such failures. For more information on newer systems, please see the following articles:

Article 58183: "**Power-On Self-Test Beep Definition - Part 1**"
Article 58442: "**Power-On Self-Test Beep Definition - Part 2**"
Article 95036: "**Power Mac G4: Power-On Self Test**"

Overview

The particular error code that appears with the "sad Macintosh" is not as important as **when** it occurs. If the Macintosh can start up from a different system disk then the fault is probably with the system software on the other disk. System faults are usually identified when you get a "happy Macintosh" face and the "Welcome to Macintosh" screen before the "sad Macintosh."

If the "sad Macintosh" appears immediately when you turn on the computer, that usually suggests an issue with the logic board or memory. Try starting up from a floppy disk before assuming it is a hardware fault.

Sad Mac Error Codes Description

On the Original ROMs (Macintosh 128K 512kK 512kK, Plus):

When you press the interrupt button on the side of your Macintosh when starting up, a sad Mac icon on the screen with '0F000D' and some bits cycling under the icon indicating it is performing a memory test.

This numeric code is in two parts:

- The first two characters are the class code. The class code tells what part of the diagnostic program found the error.
- The second four are the sub code. The sub class code tells what the error was. In the case of a bad RAM chip, the sub class identifies the bad chip (this was very helpful to homegrown upgraders).

Class Code	Sub Code
1=ROM test failed	Meaningless
2=Memory test--bus subtest	identifies bad chips
3=Memory test--byte write	identifies bad chips
4=Memory test--Mod3 test	identifies bad chips
5=Memory test--address uniqueness	identifies bad chips

Single Chip Identification		
Data Bit	**Location**	**Sub Code Bits**
0	F5	0001
1	F6	0002
2	F7	0004
3	F8	0008
4	F9	0010
5	F10	0020
6	F11	0040
7	F12	0080
8	G5	0100
9	G6	0200
10	G7	0400

11	G8	0800
12	G9	1000
13	G10	2000
14	G11	4000
15	G12	8000

Class Code	Sub Code	Sub Code Meaning
F=Exception	0001	Bus error
	0002	Address error
	0003	Illegal Instruction
	0004	Zero divide
	0005	Check instruction
	0006	Traps instruction
	0007	Privilege violation
	0008	Trace
	0009	Line 1010
	000A	Line 1111
	000B	Other exception
	000C	Nothing
	000D	NMI (normal indication)
	0064	Couldn't read System File into memory

Macintosh SE and Macintosh II ROMs

The "sad Macintosh" error codes for Macintosh SE and Macintosh II computers were changed to incorporate additional power for testing and to support the 32-bit world. Generally, the same codes are used for 68000 exceptions as the Macintosh but they are displayed differently.

Traditional

The traditional Macintosh error codes are displayed in hexadecimal notation like this: 0F0003

Where F indicates an exception occurred, and 3 indicates an illegal instruction occurred. On the Macintosh SE and Macintosh II, the display would appear:

0000000F
00000003

Power On

The power-on error codes have the following format:

XXXXYYYY
ZZZZZZZZ

Where XXXX is internal test manager state information (ignore this), YYYY contains codes that indicate either an exception code, or the test number for a power on test failure. The *ZZZZZZZZ* code contains additional failure information to help track down the fault.

YYYY Error Codes	
Error Code	**Meaning**
$0001	The ROM checksum test failed. Ignore the Z field.

$0002	The first small chunk of RAM to be tested failed. The Z field indicates which RAM Bit(s) failed. This small chunk of RAM is always in Bank B. Using $AABBCCDD as a guide: AA=8 bit mask for bits 31-24 BB=8 bit mask for bits 23-16 CC=8 bit mask for bits 15-8 DD=8 bit mask for bits 7-0
$0003	The RAM test failed while testing bank B, after passing the chunk tested for code $0002. The Z field indicates which bits failed as in code $0002.
$0004	The RAM test failed while testing bank A. The Z field indicates which bits failed as in code $0002.
$0005	The RAM External addressing test failed. The Z field indicates a failed address line.
$0006	Unable to properly address the VIA1 chip. The Z field is not applicable.
$0007	Unable to properly address the VIA2 chip (Macintosh II only). The Z field is not applicable.
$0008	Unable to properly access the Front Desk Bus. The Z field is not applicable.
$0009	Unable to properly access the MMU. The Z field is not applicable.
$000A	Unable to properly access NuBus. The Z field is not applicable.
$000B	Unable to properly access the SCSI Chip. The Z field is not applicable.
$000C	Unable to properly access the IWM chip. The Z field is not applicable.
$000D	Unable to properly access the SCC Chip. The Z field is not applicable.
$000E	Failed Data Bus test. The Z field indicated the bad bit(s) as a 32-bit mask for bits 0-31. This may indicate either a bad SIMM or data bus failure.
$000F	Reserved for Macintosh compatibility.
$FFxx	A 680xx exception occurred during power on testing. The xx indicates the exception: $01 Bus Error $02 Address Error $03 Illegal Instruction Error $04 Zero Divide $05 Check Instruction $06 cpTrapCC, Trap CC, Trap V $07 Privilege violation $08 Trace $09 Line A $0A Line F $0B unassigned $0C CP protocol violation $0D Format exception $0E Spurious interrupt $0F Trap 015 exception $10 Interrupt Level 1 $11 Interrupt Level 2 $12 Interrupt Level 3 $13 Interrupt Level 4 $14 Interrupt Level 5 $15 Interrupt Level 6 $16 Interrupt Level 7 $17 FPCP bra or set on unordered condition $18 FPCP inexact result $19 FPCP divide by zero $1A FPCP underflow $1B FPCP operand error $1C FPCP overflow $1D FPCP signalling NAN $1E PMMU configuration $1F PMMU illegal operation $20 PMMU access level violation

Macintosh Portable ROMs

The startup code in the Macintosh Portable contains a series of startup tests that are run to ensure that the fundamental operations of the computer are working properly. If any of those tests fail, a "sad Macintosh" icon appears on the screen with a code below that describes what failure occurred. Here is a typical example of a Sad Mac display with an error code below it:

SAD MAC CODE

05460203 = (D7.L)
000OB6DB = (D6.L)

The two codes are actually the contents of the two CPU data registers D6 and D7. The upper word (upper 4 hexadecimal digits, in this case 0546) of D7 contains miscellaneous flags that are used by the start-up test routines and are unimportant to just about everybody except a few test engineers within Apple. The lower word of D7 is the major error code. The major error code identifies the general area the test routines were in when a failure occurred. D6 is the minor error and usually contains additional information about the failure, something like a failed bit mask.

SAD MAC CODE BROKEN DOWN

Test Flags Major Error

0546 0203

Minor Error Minor Error

0000 B6DB

The major error is further broken into the upper byte that contains the number of any 68000 exception that occurred ($00 meaning that no exception occurred), and the lower byte that usually contains the test that was being run at the time of failure. If an unexpected exception occurred during a particular test, then the exception number is logically ORed into the major error code. This way both the exception that occurred as well as the test that was running can be decoded from the major error code:

SAD MAC CODE FURTHER BROKEN DOWN

68000 Exception Test Code

02 03

In this example, the code says that an address error exception ($0200) occurred during the RAM test for Bank A ($03); $0200 ORed with $03 = $0203.

Major Error Codes

Below is a brief description of the various test codes that might appear in the major error code:

Important: Some of these codes may mean slightly different things in Macintosh models other than the Macintosh Portable. These descriptions describe specifically how they are used in the Macintosh Portable.

Major Error Codes	
Error Code	**Meaning**
$01	ROM test failed. Minor error code is $FFFF, which means nothing.
$02	RAM test failed. Minor error code indicates which RAM bits failed.
$05	RAM external addressing test failed. Minor error code indicates a failed address line.
$06	Unable to properly access the VIA 1 chip during VIA initialization. Minor error code not applicable.
$08	Data bus test at location eight bytes off of top of memory failed. Minor error code indicates the bad bits as a 16bit mask for bits1500. This may indicate either a bad RAM chip or data bus failure.
$0B	Unable to properly access the SCSI chip. Minor error code not applicable.
$0C	Unable to properly access the IWM (or SWIM) chip. Minor error code not applicable.
$0D	Not applicable to Macintosh Portable. Unable to properly access the SCC chip. Minor error code not applicable.
$0E	Data bus test at location $0 failed. Minor error code indicates the bad bits as a 16bit mask for bits 1500. This may indicate either a bad RAM chip or data bus failure.
$10	Video RAM test failed. Minor error code indicates which RAM bits failed.

$11	Video RAM addressing test failed. Minor error code contains the following: upper word = failed address (16-bit) msb of lower word = data written lsb of lower word = data read Data value written also indicates which address line is being actively tested.
$12	Deleted
$13	Deleted
$14	Power Manager processor was unable to turn on all the power to the board. This may have been due to a communication error with the Power Manager. If so, the minor error code contains a Power Manager error code, explained in the next section.
$15	Power Manager failed its self-test. Minor error code contains the following: msw = error status of transmission to power manager. lsw = Power Manager self-test results (0 means it passed, non-zero means it failed)
$16	A failure occurred while trying to size and configure the RAM. Minor error code not applicable.

Minor Error Codes; Power Manager Processor Failures

If a communication breakdown occurs during communication with the Power Manager, the following error codes appear somewhere in the minor error code (usually in the lower half of the code, but not always):

Minor Error Codes	
Error Code	**Meaning**
$CD38	Power Manager was never ready to start handshake.
$CD37	Timed out waiting for reply to initial handshake.
$CD36	During a send, Power Manager did not start a handshake.
$CD35	During a send, Power Manager did not finish a handshake.
$CD34	During a receive, Power Manager did not start a handshake.
$CD33	During a receive, Power Manager did not finish a handshake.

Diagnostic Code Summary

Below is a summarized version of the Sad Mac error codes:

Diagnostic Code Summary	
Test Codes	**Meaning**
$01	ROM checksum test.
$02	RAM test.
$05	RAM addressing test.
$06	VIA 1 chip access.
$08	Data bus test at top of memory.
$0B	SCSI chip access.
$0C	IWM (or SWIM) chip access.
$0D	No applicable to Macintosh Portable; SCC chip access.
$0E	Data bus test at location $0.
$10	Video RAM test.
$11	Video RAM addressing test.
$14	Power Manager board power on.
$15	Power Manager self-test.
$16	RAM sizing.

Power Manager Communication Error Codes	
Error Code	**Meaning**
$CD38	Initial handshake.
$CD37	No reply to initial handshake.
$CD36	During send, no start of a handshake.
$CD35	During a send, no finish of a handshake.
$CD34	During a receive, no start of a handshake.
$CD33	During a receive, no finish of a handshake.

CPU Exception Codes (as used by the startup tests)	
Error Code	**Meaning**
$0100	Bus error exception code.
$0200	Address error exception code.
$0300	Illegal error exception code.
$0400	Zero divide error exception code.
$0500	Check inst error exception code.
$0600	cpTrapcc,Trapcc,TrapV exception code.
$0700	Privilege violation exception code.
$0800	Trace exception code.
$0900	Line A exception code.
$0A00	Line F exception code.
$0B00	Unassigned exception code.
$0C00	CP protocol violation.
$0D00	Format exception.
$0E00	Spurious interrupt exception code.
$0F00	Trap inst exception code.
$1000	Interrupt level 1.
$1100	Interrupt level 2.
$1200	Interrupt level 3.
$1300	Interrupt level 4.
$1400	Interrupt level 5.
$1500	Interrupt level 6.
$1600	Interrupt level 7.

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Apple High-Resolution Monitors: Using with Overhead Projectors

The barely visible, thin horizontal lines present on most Apple High-Resolution Monitor screens are causing problems for my LCD overhead projector. Are there any ways to reduce these practically invisible lines?

This article has been archived and is no longer updated by Apple.
The horizontal line you're talking about is the Color Grid Stabilizing Wire; removing or altering it in any way would make your monitor much more fuzzy. Most overhead projectors don't go through the monitor, so the stabilizing wire shouldn't be a factor. If your projector does go through the monitor, you may want to replace it with one that connects directly to a video interface card instead.

Check the Redgate Buyer's Guide library here on AppleLink for possible sources.

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Macintosh: Generic Pinouts for 9600 Baud V.32/V.42 Modems

What are the generic pinouts for connecting a Macintosh to a high-speed 9600 baud V.32/V.42 modem?

This article has been archived and is no longer updated by Apple.

Here are the generic pinouts:

Modem	Macintosh
1-7	4-8
2	3
3	5
5	2
4	1

These pinouts apply to all "V" series modems and all Macintosh computers. Older Macintosh computers have slightly different serial ports than the later machines and may not support the fastest possible Macintosh-to-modem speeds.

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Macintosh: Third-Party Hard Disk Partitioning

Can I create 10 or more partitions on a third-party 600MB hard drive and have them all available on the Macintosh desktop at the same time?

This article has been archived and is no longer updated by Apple.

Since you have a third-party drive, you'll need to use a third-party hard disk utility. This utility should be provided by the manufacturer of the drive. If not, a program called SilverLining from La Cie works well.

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TA46383_Macintosh_MacPaint_Fill_(TIL00776).pdf

Macintosh MacPaint: Fill

This article has been archived and is no longer updated by Apple.
Normally the MacPaint bucket allows for a single filling of a bounded area of a shape. If you wish to try various fills to see which looks best, select Undo on the Edit Menu after each fill.

The May 1984 Version 1.3 of MacPaint has a new Fill command on the Edit Menu. To use it, lasso an object and select Fill. The active fill pattern at the bottom of the palette will fill the entire object. There are no limitations on the number of times an object may be filled. The bucket still has its original limitations.

Often there is the need to put one outline shape on top of another and to have both shapes filled with the same pattern. This helps you to position objects and text, providing a "stop" every eight fatbits. The smallest square that may be created while the grid is active is nine by nine fatbits. Unlike the grid in LisaDraw, this grid is invisible and nonadjustable.
Published Date: Feb 18, 2012

Macintosh Portable: Battery Charger Is Universal

Will an American-bought Macintosh Portable battery charger work in Japan?

This article has been archived and is no longer updated by Apple.
The charger is universal. No transformer or new charger is needed.

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TA46385_Macintosh_Portable_Modifying_for_Use_by_the_Handicapped_(TIL07764).pdf

Macintosh Portable: Modifying for Use by the Handicapped

Can the Macintosh Portable's display screen be detached? A customer wants to detach the display and mount it on a swing arm of a wheelchair, with the rest of the Portable under the wheelchair.

Is this possible?

This article has been archived and is no longer updated by Apple.
It is possible to remove the screen from the Macintosh Portable, but you'll need a special monitor extension cable that Apple does not manufacture.

Also, Aura Systems makes a product called ScuzzyGraph that allows connection of monochrome and color monitors to the Macintosh Portable and other members of the Macintosh family.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Laser Printers: Third-Party 600 DPI AppleTalk-compatible

Do you know of any 600 dpi (or better), AppleTalk-compatible, multi-user laser printers that can handle 35-45 lb. paper stock?

This article has been archived and is no longer updated by Apple.
Both QMS, Inc. and Linotype-Hell make these printers.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Article Change History:
23 July 1993 - Company title changed from Linotype to Linotype-Hell.
Published Date: Feb 18, 2012

Macintosh: Mysterious Bombs May Be SCSI or RAM

I have a problem with my Macintosh bombing frequently at startup. My system also bombs at other times, such as when booting or quitting a program, but generally, most bombs occur at startup.

When opening DBase Mac, I get a message that the program has been corrupted. Open the program again and it runs fine. I get a variety of system errors such as ID-04, ID-01 and ID-25.

QuarkXPress 2.12 freezes on the screen while opening, yet an exact copy of QuarkXPress will install and run just fine on another Macintosh. Also, PageMaker 4.0 bombs when trying to "Place" a document or a graphic, as does Excel 2.2 when opening or closing.

I am using all standard Apple equipment, including an 80MB Quantum hard drive with a corrected EPROM and 5MB of RAM.

I have installed System 6.0.5 from the original Installer disks and have removed all INITs.

I have run Macintosh SE/30 diagnostics on the computer and Apple HD diagnostics on the hard drive--and all tests pass.

This article has been archived and is no longer updated by Apple.
Even though your system has passed its diagnostics, you could still be experiencing a RAM or SCSI problem.

RAM problems can show up after warm-up. For example, a marginal SIMM's speed may be fine when cool but slow down after warming up. All SIMMs do this to a certain extent, but you may have a SIMM that crosses the Macintosh SE/30's tolerance threshold when warm. The only fix for this is to replace the offending SIMM or SIMMs. A similar problem could be happening within the memory manager's circuitry on the logic board, the only possible fix being a complete logic board replacement.

More likely, this is a SCSI problem, particularly if you have external SCSI devices attached. We have seen this problem most often when there are external SCSI devices attached but not turned on. All SCSI devices must be powered on before starting the Macintosh and they must be left on until the Macintosh is turned off. Doing otherwise can introduce garbage onto the SCSI data line. Improper termination of the SCSI chain will also cause this problem.

If your SCSI chain is found to be the source of your problem, be aware that your hard drive's format may be corrupted (the garbage on the SCSI chain having corrupted the format). You'll need to reformat your hard drive with either all the external SCSI devices removed or powered on.

Published Date: Feb 18, 2012

Macintosh: Cut from MacWrite and Paste to MicroSoft BASIC

Can I turn MacWrite files into MS-BASIC code?

This article has been archived and is no longer updated by Apple.

MacWrite files of MS-BASIC code can be turned into a program.

1. Leave MacWrite and open a new MS-BASIC document.
2. Type the MERGE command with the syntax, MERGE "volumename:filename", where
   "volumename" is the name shown under the disk's icon on the desktop and
   "filename" is the name you gave your MacWrite file.

See page 119 of the MS-BASIC manual for information about MERGE.

Note that if you stored text in more than one MacWrite document, you should repeat the command until you have MERGED the remainder of your files into the new BASIC program. The program will be named with the name of the last file you merged into it.

Published Date: Feb 18, 2012

Apple III: Connecting to an ImageWriter I

How do I connect an Apple III to an ImageWriter I?

This article has been archived and is no longer updated by Apple.
Connect cables 590-0037 and 590-0166 to the RS-232 serial port. Either the printer driver or the RS-232 driver may be used.

Driver Configuration Block - Printer Driver

0 1 2 3 4
0E 00 00 00 00

Driver Configuration Block - RS-232 Driver

0 1 2 3 4 5 6 7 8 9 A B
0E 00 00 00 00 00 13 11 DF 84 50 80

For ImageWriter I:

590-0037 Pinouts 590-0166 Pinouts

DB-25 Male DB-25 Male DB-25 Male DB-25 Female
1 1 1 1
2 2 2 3
3 3 3 2
4 4 4 and 5 8
5 5 6 20
6 6 7 7
7 7 8 4 and 5
8 8 20 6
20 20

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Apple Scanner: Using with a Macintosh IIfx

Article Change History

12/22/92 - UPDATED
* To include Scanner driver 2.0 information.

Is there any trick for getting an Apple Scanner to work with a Macintosh IIfx? I keep getting a "scanner not found" message. The Macintosh IIfx terminator is installed in the scanner's second SCSI port.

Do I need a second terminator when using with a Macintosh IIfx? Does it need to be an fx-type?

This article has been archived and is no longer updated by Apple.
The Macintosh IIfx is very picky about its termination. At no time should there be more than two terminators in the entire SCSI chain -- one on each end, or in the case of only one internal SCSI hard drive, a single terminator installed internally. All terminators used with the Macintosh IIfx must either true IIfx-compatible or "augmented" by the IIfx SCSI Filter (used only with internal hard drives).

In addition, older Apple Scanners had some additional capacitors installed on the logic board, which may garble the SCSI signals when connected to faster Macintosh computers. Install the Scanner driver version 2.0 to correct this problem.

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AppleShare: Requires Dedicated Server

If I had enough RAM, would it be possible to run AppleShare file and print servers on my Macintosh in the background under MultiFinder? I know that the instructions state that I need a dedicated machine, but I only need to use a few other programs.

This article has been archived and is no longer updated by Apple.
Unfortunately, there is no way to make either the AppleShare File Server or Print Server run in the background under MultiFinder The "administrative" portions of these systems can run concurrently under the server software, but that is not the same as running in the background The actual code that drives the server software actually modifies the operation of the System to such an extent that most applications would be incompatible with it.

Published Date: Feb 18, 2012

Apple IIGS: How To Make a GS/OS 5.0.2 Diskette

I am tying to get my Apple IIGS to print AppleWorks 3.0 files on a LaserWriter over LocalTalk or local ImageWriter.

I started out with an AppleWorks 2.0 disk that worked just fine on my Apple IIGS (ROM v1.0). I copied the disk, then replaced my AppleWorks 2.0 files with AppleWorks 3.0 files. When I chose Chooser, the Apple IIGS went into what looked like machine language or Pascal code. ▌then tried using the old AppleWorks 2.0 disk and it did the same thing. I tried to configure a AppleWorks 3.0 disk with GS/OS 5.02 but I can't figure out what files are necessary to do this. ?

This article has been archived and is no longer updated by Apple.

Your problems are caused by the setup differences between GS/OS 4.0 and 5.0.2. Here are the steps to make a bootable GS/OS 5.0.2 diskette that can print to a LaserWriter and/or ImageWriter:

1) Boot GS/OS 5.0.2; format a blank 800K diskette and called it "Startup".

2) Run the Installer program from the SYSTEM.TOOLS diskette, and install the option "AppleShare on 3.5" onto the Startup diskette.

3) Still within Installer, "Remove" the option called "AppleShare" from the Startup diskette.

4) Using Installer, install the LaserWriter and LocalTalk ImageWriter options onto the Startup diskette.

Hint: try to have two 3.5" drives--if you don't it may take you up to one hour to do the above with only one floppy drive.

This will get you a bootable diskette that contains the absolute minimum operating system and the necessary printer drivers. From a hardware standpoint, make sure that slot 1 in the Apple IIGS control panel is set to "AppleTalk" and that you set AppleWorks to print to slot 1 -- the older Apple IIGS had a different control panel setting.

Note: you may not be able to fit both the operating system and AppleWorks onto a single diskette.

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AppleShare Print Server: Printing Too Many Copies Problem

Every time we send 15 or more pages to the AppleShare Print Spooler, the server automatically doubles or triples the total number of pages printed.

This problem happens no matter what kind of Macintosh we're using or what kind of document we are printing.

This article has been archived and is no longer updated by Apple.
This problem is most likely occurring because the AppleShare Print Server is losing AppleTalk signal packets. In the middle of a print job, the server can sometimes "lose" its connection with the LaserWriter. When this happens, the server automatically resends the entire print job.

There are a couple of things you can do to alleviate this problem. First, be sure you're using at least LaserWriter driver 6.0.1. This version has optimized "answer-back" code for the LaserWriter that continually says "I'm here" to the print server during printing (which is what tells the server to maintain its connection). If your LaserWriter isn't doing that often enough you'll lose the connection.

Next, check for any devices that may be causing an excessive amount of network noise. The most time-consuming (but most reliable) way to do this is to make your network as small as possible (two or three devices). Then test for noise, adding devices until the problem is found. Using a network utility like Inter*Poll can help locate noisy devices. If you're using any routers in your network, try disconnecting them--the extra time required to route data packets may be contributing to the problem.

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TA46394_Apple_II_Family_Cycle_Speeds_(TIL07777).pdf

Apple II Family: Cycle Speeds

What are the cycle speeds for the Apple II family?

This article has been archived and is no longer updated by Apple.
Apple IIGS: 2.6 MHz
Apple IIc Plus: 4 MHz
all other Apple II models: 1 MHz.

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AppleWorks: Third Party Printers Form Feed Issue

This article discusses a form feed issue with some third party printers.
This article has been archived and is no longer updated by Apple.
At times, AppleWorks' Top-of-Form command does not work properly with some third party printers, including the Juki printer. If your printer seems to ignore AppleWorks' Top-of-Form command, follow this procedure:

1. Check the printer's Top-of-Page and Lines-Per-Inch settings.
2. Change AppleWorks' "Accepts Top of Page" to NO.
3. Turn off the printer.
4. Align the top of the form on the printer.
5. Turn on printer.
6. Proceed as usual.

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Ethernet: Mixing Cards from Several Manufacturers

I'm planning to network several dozen Macintosh IIcx computers for use in a color pre-press operation. Can I mix and match third-party Ethernet cards within the internet without compatibility problems?

This article has been archived and is no longer updated by Apple.

We are not aware of any problems mixing Ethernet cards in an internet. There should be no problems unless one of the cards is unstable.

Published Date: Feb 18, 2012

TA46398_HyperCard_Delete_Card_Command_(TIL07785).pdf

HyperCard: Delete Card Command

How do I delete a card from a HyperCard stack without being in that card?

This article has been archived and is no longer updated by Apple.
To delete a card, even from a script, that card must be the active card.

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Macintosh: Troubleshooting a "System Error ID=01" Message

My setup is a:

- Macintosh IIci; 80MB hard disk; 8MB RAM
- Radius TP color display
- Scanner
- External HD
- Tape Backup
- System Software 6.0.4

When I attempt to start up from the internal hard disk, a "System Error ID=01" message appears and the system will not start up. The system will start up from a disk copy of the System. Reinstalling the System to the internal HD has not worked.

This article has been archived and is no longer updated by Apple.
ID=01 is a bus error.

First, use Find File or a similar tool to verify that there is only one System file on the hard drive. Next, remove all non-Apple files from the System folder and restart. If this does not fix the problem, you may have a hardware problem. Try a different hard drive first, and then try a different logic board.

The other thing that could be causing the problem is the video card for your Radius display. Try replacing the Radius with an Apple video card and monitor.

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Macintosh IIfx Terminators: Compatible with Macintosh Family

Can the special external terminator supplied with the Macintosh IIfx be used on other Macintosh computer SCSI chains?

This article has been archived and is no longer updated by Apple.

Yes, you can use the new black terminators on other Macintosh SCSI devices.

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Apple IIGS: Troubleshooting SCSI Problems

My Apple IIGS, with a High Speed SCSI Card installed, gets an error code #8002 when copying between SCSI hard drives. What does this error code mean?

This article has been archived and is no longer updated by Apple.
Error code #8002 isn't part of the generic GS/OS 5.0.2 operating system. This suggests the error code is coming from the SCSI driver.

Most problems with the High Speed SCSI card come from improper installation of the SCSI drivers. Specifically, people often don't install the new drivers that come with the card using the original GS/OS SCSI drivers instead.

Here are some troubleshooting steps to try:

1) Create a new boot diskette that contains GS/OS 5.0.2 and the new SCSI drivers (the drivers are installed via the Installer program located on the High Speed SCSI Card Utility diskette).

2) Try to copy between SCSI devices after booting with this diskette.

3) If you can copy successfully, then reinstall the GS/OS onto your hard drive. Remember to reinstall the new SCSI drivers before rebooting from the hard drive.

Depending on the current state of the operating system already on the hard drive, you may have to trash the existing System and Icons folder.

Published Date: Feb 18, 2012

Why the Macintosh Has No Parity Checking

This article has been archived and is no longer updated by Apple.

Here's why Macintosh systems don't implement parity checking:

- Reliability. RAM is typically the most reliable component in our systems.

- Simplicity. Parity checking requires additional hardware overhead, which lowers reliability.

- Low chip count. The systems for which parity checking was originally designed required more chips for the same amount of RAM. RAM chips used in these older system were far less reliable than the chips used today.

- The Macintosh does a full read/write RAM test every time it is switched on. This test is a sufficient diagnostic.

Published Date: Feb 18, 2012

ImageWriter LQ: Accessories Needed for Handling Envelopes

I need help in handling the sheet feeder--expansion bin--envelope attachment setup for an ImageWriter LQ.

1) If I want to have the envelope attachment in place at all times and also want to use the cut sheet feeder, must I also have an expansion bin?

2) For the above setup (envelope attachment plus one expansion bin), is the correct DIP switch configuration the one described as "Two Bins Plus Envelope"?

This article has been archived and is no longer updated by Apple.
1) In order for you to have the envelope attachment in place on the ImageWriter LQ, you'll need to have an expansion bin to hold the paper.

2) Yes, you are correct. The DIP switch setting for "Two Bins Plus Envelope" is the setting you should use.

Published Date: Feb 18, 2012

LaserWriter: Sharing Access Over Ethernet

I have an AppleShare network running over Ethernet. Can I share my LaserWriter IINT with everyone else on the network if it's connected to one of the workstations rather than the server?

This article has been archived and is no longer updated by Apple.
Since the LaserWriter is a LocalTalk device, you can put it anywhere in the loop. But you will need to have some kind of router installed on the network to change the LocalTalk protocols to Ethernet protocols.

There are a couple of ways to do this:

* With a hardware router, such as the Kinetics Fastpath. This device would actually be a separate node on the network.

* With the Apple Internet Router. This is software that is installed on a single Macintosh that can connect to both types of networks. In your case, the most logical place to put it would be on the server, but that is not a strict requirement. The router runs in the background, but if you install it on a workstation, and that machine somehow is turned off (in a system crash, for example) then everyone will lose access to the LaserWriter.

For more information, search on "ROUTER AND ETHERNET"

Published Date: Feb 18, 2012

LaserWriter Plus: Running Out of Memory Problem

On my LaserWriter Plus, I'm printing a lot of non-LaserWriter fonts and graphics. I often get the error message that printing exceeds printer memory. How can I fix this?

This article has been archived and is no longer updated by Apple.
The LaserWriter Plus comes with 1.5MB of RAM. Since the LaserWriter Plus cannot be expanded with more on-board RAM, your only recourse is to purchase (or upgrade) to a higher-end LaserWriter. The LaserWriter IINT has 2MB of RAM, and the LaserWriter IINTX has up to 12MB of RAM.

Published Date: Feb 18, 2012

TA46406_Personal_LaserWriter_Using_Overseas_(TIL07796).pdf

Personal LaserWriter: Using Overseas

Is a step-down transformer required for using a Personal LaserWriter overseas? It appears that it does because on the back of the printer it states 100-115v at 50-60 Hertz. Also, why does the printer specification sheet give both US/Japan and European/Australian power requirements?

This article has been archived and is no longer updated by Apple.
As with our other LaserWriter printers, there are voltage-specific versions available. There are actually two different Personal LaserWriters versions: one for the US/Japan market and the other for the European/Australian market.

You do need a step-down transformer if you take a Personal LaserWriter overseas, just as you would for any LaserWriter or LaserWriter II.

Published Date: Feb 18, 2012

PrintMonitor: Troubleshooting "Quit Unexpectedly (3)"

When printing to a LaserWriter in MultiFinder with Background Printing on, the PrintMonitor will either "Quit Unexpectedly(3)" or just not print.

The files I'm trying to print remain in the Spool Folder with the PrintMonitor appearing every 10 seconds to announce that it has "Quit Unexpectedly(3)". This keeps happening until PrintMonitor is removed from the System folder or the spool files are removed from the Spool folder.

Also, the PrintMonitor "Quits Unexpectedly(3)" when I double click on it.
This article has been archived and is no longer updated by Apple.
Note: This issue is System 6 specific.

Most often, applications unexpectedly quit because they ask for more memory than has been allocated to them, the Memory Manager says "no", and the application has no idea what to do next.

PrintMonitor, even though it looks like a standalone application, does not use the RAM allocated to it during the background printing process. Instead, PrintMonitor uses some of the RAM allocated to the Finder. If the Finder (in the background) is maintaining a lot of items, such as open windows, mounted file server volumes, and so on, there may not be enough RAM left over for PrintMonitor to work. Try allocating more memory to Finder, such as 320K (the default is 160K).

Another possible problem is a corrupted Backgrounder file, the INIT that handles the background task management. Since PrintMonitor is appearing periodically to check the Spool Folder, it's probable that Backgrounder is fine and you're seeing only a memory limitation.

And finally, there may be an INIT that is conflicting with PrintMonitor's operation. Removing all non-essential INITs and testing will tell you if that's the problem.
Published Date: Feb 18, 2012

AppleShare Print Server: Capture and Release Questions

I have some questions on AppleShare Print Server:

A) If a printer is "captured" for print service, can another user, who is not set up with the "captured" LaserWriter spooler in the Chooser, print to that printer directly or is that printer unavailable?

B) It is not clear to me from reading the manual if the captured printer is always releaseable. What are the parameters for releasing a printer?

C) We currently have five LaserWriters that we plan to capture for print service. In the next two months we plan to add two more printers. How will we be able to capture those printers for service on the network? Will we have to buy another AppleShare Print Server? If so, can we run two print servers on the same file server? How is this best accomplished?

This article has been archived and is no longer updated by Apple.
Here are the answers to your A) If you select Printing, Spooling, and Bypass in the Options dialog box, the captured printer can be printed or spooled to directly. Both options will be available to all users in their Choosers.

B) A captured printer can always be released. To release a printer from the spooler:
1. choose Setup from the File menu
Printer Types box
3. select the particular printer you want to release
4. click the Release button.

C) The AppleShare print server can capture from one to five printers, depending on the amount of RAM available to the print server application. To capture more than 5 printers you will need a second print server system.

Published Date: Feb 18, 2012

Super Serial Card: Using Serial Multiplexer (12/96)

This article discusses using the Super Serial Card with a Serial Multiplexer.

This article has been archived and is no longer updated by Apple.

To reduce costs, many schools install a Serial Multiplexer to allow many Apples to share an Imagewriter. The multiplexer scans each computer by sampling a signal called "Data Set Ready" or DSR from the Super Serial Card in each IIe.

The nature of the SSC causes a modem nullifier to map this signal to DTR, "Data Terminal Ready." Normally this signal is not turned off by the computer since other equipment, like a modem, requires this signal to remain on. In this configuration the Serial Multiplexer stops scanning and hangs if the signal is not dropped. A simple POKE in BASIC releases the line.

The general form is: POKE 49050+256*Slot,1

Example

Most systems have the SSC in slot 1, so the command is:

POKE 49306,0

Article Change History:
16 Dec 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Macintosh IIci: Audio Port Electrical Specifications

What is the impedance for the audio port of a Macintosh IIci?

This article has been archived and is no longer updated by Apple.
According to the Apple Macintosh Family Hardware Reference manual:

"The external sound jack is at standard line level (approximately 1.5 volts peak-to-peak) and its source impedance is approximately 47 ohms. The jack is capable of driving a headphone load of 8 to 600 ohms, or the input to almost any audio amplifier or amplified speakers. It will not adequately drive a directly connected external speaker. The sound jack is short-circuit protected."

Published Date: Feb 18, 2012

Macintosh Scrapbook: Copying Between Different Computers

I want to put the Scrapbook file from one Macintosh in the System folder of another Macintosh. Will this cause any problems?

This article has been archived and is no longer updated by Apple.
We don't see any problems copying the Scrapbook between Macintoshes. The only time when there may be a problem is when the one computer is using a much older version of the System software. Then you will need to copy the contents of the clipboard out or update the older version of the System software.

Published Date: Feb 18, 2012

Apple II Plus: Relocation/Configuration Error (2/97)

What is the meaning of a relocation/configuration error on the Apple II Plus when running ProDOS?

This article has been archived and is no longer updated by Apple.

ProDOS requires 64K of RAM to run. The error you are getting means that you have only 48K of RAM.

Article Change History:
17 Feb 1997 - Reviewed for technical accuracy, revised formatting.
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SCSI: Using SCSI ID Address #0

Can you clarify an issue concerning SCSI addresses? The Macintosh is always address #7. Internal hard drives are always address #0. For a Macintosh that doesn't have an internal hard drive, can its external drive use address #0? Is #0 reserved by the system? Is there some special significance associated with the #0 address?

This article has been archived and is no longer updated by Apple.

The SCSI address #0 is a special address, but it is not absolutely reserved for system use. Not taking the Startup Device cDEV into account, if the Macintosh sees a storage device attached to it that has a SCSI ID of 0, then it will wait for that device to come up to speed to see if it is bootable. If it is bootable, the system will start up from that device. There is no other special significance attached to the #0 ID, so you can set an external device to it if you like.

Published Date: Feb 18, 2012

Apple Tape Backup: Recovering Lost Data

I backed up my system using Apple Tape Backup then accidentally backed up another smaller system on the same tape. Is there any way to recover the remaining data from the first backup?

This article has been archived and is no longer updated by Apple.
Since the volume information of the tape is stored at the beginning of the tape, the original contents of the tape would have been lost when a new directory was written on the tape. Something you might try is to use the INIT Tape Disk that comes with the Tape Backup 40SC software. Mount the cartridge as a streaming device on the desktop, then attempt to use a recovery utility, such as SUM, to recover the lost files.

Published Date: Feb 18, 2012

Apple Internet Router: One Zone Per LocalTalk Port

The beta version of the Internet Router supported four zones on two physical LocalTalk ports. According the documentation for the Internet Router version 2.0, and from several articles in the AppleLink Technical Info Library, it appears that one zone per physical LocalTalk Port is the new limit. Is this correct? If so, are there any solutions or workarounds?

This article has been archived and is no longer updated by Apple.
Yes, that function was not implemented in the released version of the Apple Internet Router. To our knowledge the only way you can have more zones than physical ports is to add another interface card with a port on it.

Published Date: Feb 18, 2012

HyperCard: Hanging Up The Phone

When you use HyperCard's dial command with a modem, HyperCard doesn't hang up the phone right away if the line is busy. This is because the dial command simply sends a string to the modem and doesn't check whether the line is busy.
This article has been archived and is no longer updated by Apple.
You can create a button that hangs up the modem. The basic format of the dial command is:

dial phonenumber with modem modemCommands

If you specify 'with modem,' HyperCard sends the information out the modem port. The modemCommands are commands you can send to the modem, such as the Hayes command set with which Apple modems are compatible.

To tell HyperCard to dial the number

9,555-1212

you'd use the dial command

dial "9,555-1212" with modem "ATS0=0DT"

which would send the string ATS0=0DT9,555-1212 out the modem port. If your modem understands the Hayes command set, it dials the phone. Because Hypercard is not looking at the modem port, it ignores any "busy" signal sent by the modem.

To make the modem hang up, you need a button that sends a character to the modem. This button script hangs up the phone if it gets a busy signal:

```
on MouseUp
dial "n" with modem " "
-- n can be any number. The space in quotes is there because the
-- default for the 'with modem' command is ATS0=0DT.
end MouseUp
```

Published Date: Feb 18, 2012

LaserWriter: Shrinking Image Problem

I have a LaserWriter Plus that shrinks any image that I print. After I replaced the scanner, the problem went away for a while. Now the shrinking problem is back again. I'm curious as to whether the problem was caused by just the scanner or something else.

This article has been archived and is no longer updated by Apple.
It may be that either the motor, the DC Power Supply/motor driver PCB, or the DC Controller is causing this problem. On more than one occasion the power supply has been the culprit.

Published Date: Feb 18, 2012

Macintosh: SIMM Thickness Tolerances

What are the upper and lower limits for Macintosh SIMMs? I know the official size is 1.27mm, but how much tolerance is there?
This article has been archived and is no longer updated by Apple.
The 1.27mm thickness is Apple's specification. Thicker SIMM PCBs can bend the retaining springs out. This isn't a problem as long as thinner SIMMs are never inserted into the same sockets.

If thinner than 1.27mm SIMMs are used, the chance increases of having weak or impaired connections.

The main point to remember is that Apple's sockets are for 1.27mm SIMMs. If you buy SIMMs from Apple, you can be sure they're OK. If you buy from a third party, be sure to ask for SIMMs with the right thickness.

Published Date: Feb 18, 2012

TA46419_SoundEdit_Incompatible_with_System__(TIL07814).pdf

SoundEdit 1.0: Incompatible with System 6.0.5

Are there any incompatibilities with Farallon's SoundEdit 1.0?

This article has been archived and is no longer updated by Apple.
SoundEdit 1.0 is not compatible with System version 6.0.5.

Published Date: Feb 18, 2012

ImageWriter II: Troubleshooting Garbled Printing

The printing on my ImageWriter II has become garbled garbage. It's missing the page breaks and prints onto other pages. This happens after about 6 or 7 pages have printed. I've tried cleaning the platen and replacing main circuit board.

This article has been archived and is no longer updated by Apple.

This sounds like a handshake problem in communication between the computer and the printer. It could be caused by a number of glitches, among them a bad driver, bad cable, or printing software.

Try to recreate the problem using:

- a different computer with the same application and file
- a different printer
- a different printer cable

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Macintosh Memory Allocation: "Application Has Unexpectedly Quit"

I keep getting out of memory error messages when performing tasks in an application. I also get "Application has unexpectedly quit" error messages.
This article has been archived and is no longer updated by Apple.
This kind of error is usually caused by an application, INIT (Extension), or CDEV trying to grab more memory than it has been allocated.

Here are some fixes, depending on what's causing the problem:

* Allocate more memory to the application. Under System 6 Finder, applications could grab a lot more memory. Some manufacturers don't set the partition high enough to do certain operations in their programs. To increase the RAM allocation, change the "Application Memory Size" box in the Get Info dialog box for the application.

* Replace the application with a new copy. It may be that the application is corrupted.

* Allocate more memory to PrintMonitor. If you're seeing the error most often when printing, and you have background printing turned, try allocating more RAM to PrintMonitor first. Then increase RAM for the application.

* Reduce the number of INITs (Extensions) and CDEVs running on the system. Remove all INITs (Extensions) that aren't a fundamental part of the system software or application. Some INITs use a large amount of memory.

* Try reinstalling the system software. Damaged or corrupted system files can cause this error as well.

* If running System 6, an alternate (unsupported) solution is to increase the amount of RAM allocated to the system heap using CE Software's HeapFixer.

Note: Altering the system heap can cause other, more unpredictable errors. Also note that if running System 7, the system heap is adjusted dynamically, and HeapFixer isn't necessary.

For more information, contact CE Software. (To locate a vendor's address and phone numbers, use the vendor name as a search string.)

* This would also be a good time to check for viruses. They can contribute to unusual system behavior.
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Macintosh LC: VRAM Memory Map Correction

The memory map in the "Macintosh LC Computer Developer Note" shows the VRAM space as $FC 0000-$FF FFFF. This gives 256K of memory. How does the 512K VRAM SIMM map into this smaller area?

This article has been archived and is no longer updated by Apple.
The "Macintosh LC Computer Developer Note" is wrong.

The memory spaced used by VRAM is in the following ranges:

24-bit mode	32-bit mode
$F4 0000 to $FB FFFF	$50F4 0000 to $50FB FFFF

With the 512K VRAM SIMM installed, the entire range from $F4 0000 to $FB FFFF (24-bit mode) or $50F4 0000 to $50FB FFFF (32-bit mode) is used. ($FB FFFF minus $F4 0000 is $07 FFFF, which equals 512K.)

With the 256K VRAM SIMM installed, the range from $F4 0000 to $F7 FFFF (24-bit mode) or $50F4 0000 to $50F7 FFFF (32-bit mode) is used; $FB FFFF minus $F7 0000 is $03 FFFF, which equals 128K.

Note: The range from $F8 0000 to $FB FFFF (24-bit mode) or $50F8 0000 to $50FB FFFF (32-bit mode) maps to the range from $F4 0000 to $F7 FFFF (24-bit mode) or $50F4 0000 to $50F7 FFFF (32-bit mode). In other words, if a change is made to $F8 0000, the same change will be made to $F4 0000. The reverse holds true as well: a change to $F4 0000 will reflect in $F8 0000.

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Macintosh: Double lines in MacWrite

This article has been archived and is no longer updated by Apple.

Double lines, which are often used to set off a heading or divide segments in a bulletin, can easily be created in MacWrite. To do so: hold down the command key while pressing the letter U to toggle on the underline operation, or choose Underline from the Style menu. Next, hold down the Shift key while pressing the hyphen/line key (to the left of the = key); you should see a double line move across the screen.

Creating the same effect under a word or a group of figures in a column can only be approximated. First, enter the double line for two or three spaces. Then enter your figures with the Underline option toggle on to get a single underline, and then follow with a double line for two or three more spaces.

This suggestion was reprinted from the Open Window column in the December 1984 issue of MacWorld.

Published Date: Feb 18, 2012

LaserWriter IINT: Possible Reasons for Slow Printing

I'm trying to print a MORE document with a SuperPaint picture. The last page of the document prints fine on a LaserWriter, but takes a long time on a LaserWriter IINT.

Is there a problem with the LaserWriter IINT?

This article has been archived and is no longer updated by Apple.
There are several possible causes for slow printing on a LaserWriter IINT:

* There are too many fonts downloaded to the LaserWriter IINT's memory.

* There is an Apple II printing to the LaserWriter IINT. An Apple II slows down the LaserWriter IINT by downloading an ImageWriter emulator.

* There is a network problem causing the LaserWriter IINT to retry. Use Inter*Poll and send several thousand packets to the printer to see how many packets come back with errors. Too many errors suggests a bad cable or printer I/O board.

Published Date: Feb 18, 2012

Apple IIe: Getting Screen Output to Printer

I'm using an Apple IIe with a Super Serial Card with an ImageWriter II. I want everything that appears on my computer screen (input and output) to go to my printer. Is this possible?

This article has been archived and is no longer updated by Apple.
You cannot get both the input and output redirected to your printer unless you're using an application that specifically allows this. Another option is to write a BASIC program that echoes the screen input the printer.

Published Date: Feb 18, 2012

Apple Scanner: Purpose of ADB Port

Why does the Apple Scanner have an ADB port? Is the scanner networkable?

This article has been archived and is no longer updated by Apple.

As of April 1991, the ADB port on the Apple Scanner has no function. The port is there for possible future expansion which we are unable to discuss at this time.

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Macintosh: Meaning of the Desktop DB & Desktop DF Files

Why do I have these files on my Macintosh?:

Desktop DB
* Desktop DF
This article has been archived and is no longer updated by Apple.
The Desktop DB/Desktop DF files are invisible files that are not normally seen by users. The files were original created by the Desktop Manager of AppleShare 2.0 running under System 6.0.x to maintain information in addition to the Finder's Desktop file at that time. There were designed to be more high performance databases to support faster access to information for AppleShare servers.

Under System 7, functions of the Desktop Manager were incorporated into the Finder along with File Sharing support. The limits of the resource manager were being overextended by the old style resource-based Desktop file. The Finder database file was redesigned as a file storing information in the data fork in a faster and more efficient form.

The primary information stored in the Finder's Desktop DB/Desktop DF files is the mapping of icon display information for application and their associated files. This includes application signatures (creators) and associated file types. This information is used by the Finder to determine what application to launch when a file is double-clicked and to ascertain whether a file can be opened by a drag'n'drop action onto an application.

Other files with their own icon information also have their icon mappings stored in this database. Several flags associated with every file, such as whether the file is an alias or stationery file, whether the file name is locked from change, and whether the file is visible or not are maintained in the database. Other information stored in these files includes Comments from Finder Get Info windows, position information of icons within Finder container windows, and the positioning of the Finder windows.

These are the files that are rebuilt by holding down the Command and Option keys during Finder startup.

More details about the Finder database can be found in Inside Macintosh:Macintosh Toolbox Essentials, chapter 7, Using the Finder Interface.
Published Date: Feb 18, 2012

Apple IIGS: Control Panel Appearing at Startup

When I start up my Apple IIGS, the Control Panel appears. Why is this happening?

This article has been archived and is no longer updated by Apple.

The problem of the super Control Panel coming up at startup is usually caused by one of four things:

* a bad joystick
* the option key being held down during startup
* a bad keyboard
* a bad logic board

Published Date: Feb 18, 2012

LisaDraw, MacDraw, MacPaint: White letters on a black background

This article has been archived and is no longer updated by Apple.

Need to put white letters on a black background? Well, just do the following.

MacPaint:

1. Select the text option from the pallet; select the font of your choice, then Outline or Shadow from the Style menu and type in your text.

2. Select the Paint Can from the pallet, then a shade of black. Move the pointer (now a small paint can) off to the side of your text and double click.

The Paint Can fills in the region around your text in black, leaving your typed characters white.

MacDraw or LisaDraw:

1. Type in your line, then change your letters to Outline or Shadow, with a fill of none.

2. Draw a box, circle, etc., over the top of your text.

3. While your box is still selected, select Send to Back from the Arrangement menu, then choose a fill of black.

The end result gives you white letters on a black background.

Published Date: Feb 18, 2012

Macintosh: Internal vs External SCSI Hard Drive Speeds

Is there any overall speed difference between internal and external SCSI drives?

This article has been archived and is no longer updated by Apple.

Assuming the comparison is between two identical drives, there is no speed difference between internal or external connections. The SCSI signals are handled the same either way.

Published Date: Feb 18, 2012

LaserWriter: Amperage Fluctuations Caused by Fuser

My understanding is that an idle LaserWriter uses around 1.5 amps. I've measured my LaserWriter and it sometimes draws as much as six amps. Is this normal?

This article has been archived and is no longer updated by Apple.
What you're probably picking up is the fuser turning on and off. The fuser comes on about every 20 seconds and causes a jump in the amount of amps used by the LaserWriter. This is not unusual and is nothing to worry about.

Published Date: Feb 18, 2012

Macintosh SE: SuperDrive Upgrade Availability (Discontinued)

I have an old Macintosh SE and want to upgrade its drive to an Apple SuperDrive (formerly Apple FDHD). Can I do this?

This article has been archived and is no longer updated by Apple.
The part you are looking for is M6052, Macintosh SE Apple SuperDrive Upgrade Kit. The kit includes the SuperDrive ROM kit, SuperDrive, and system software.

This upgrade has been discontinued.

Article Change History:
15 Sep 1995 - Revised to show discontinued upgrade.

Support Information Services
Published Date: Feb 18, 2012

Macintosh SE: Difference Between Logic Boards

There are different versions of the Macintosh SE's logic board. What are the differences between them?

This article has been archived and is no longer updated by Apple.

The boards have different ROMs and IWM chips. One logic board supports the Apple SuperDrive (formerly Apple FDHD) and the other doesn't.

Published Date: Feb 18, 2012

TA46434_Macintosh_SE_Video_Flashes_are_Normal_(TIL07835).pdf

Macintosh SE/30: Video Flashes are Normal

The video display of my Macintosh SE/30 has horizontal lines flashing from left to right. Is this normal?

This article has been archived and is no longer updated by Apple.
Up to a point, this is a normal part of the Macintosh SE/30's video display. If the flashing is very noticeable you might want to have the analog board or the video board checked out. Also, you might try turning the brightness down a bit.

Published Date: Feb 18, 2012

Macintosh Portable: Replacement Part for Weak Plastic Handle

The plastic handle (630-5071) and the display housing assembly (652-0605) on my Macintosh Portable are very weak and keep breaking. Are there any solutions to this problem?

This article has been archived and is no longer updated by Apple.
Some Macintosh Portable computers manufactured before July 1990 have weak plastic handles. A replacement handle is available. Contact your authorized Apple dealer for more information.

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TA46436_ELF_VDTs_Health_and_Safety_Apples_Official_Policy_(TIL07837).pdf

ELF, VDTs, Health and Safety: Apple‘s Official Policy

What is Apple's policy regarding VDTs, electromagnetic emissions, and health?
This article has been archived and is no longer updated by Apple.
Apple Computer, Inc.
Corporate Statement on Video Display Health Issues
May 29, 1990

Apple's Corporate Position

Apple Computer is committed to making products safe. That's why we meet or exceed every safety standard, not because we have to, but because we want to. Based on the prevailing opinion of the scientific community, Apple believes that computer monitors are safe. However, with any scientific issue there is a diversity of opinion. We are open-minded to new scientific evidence and in fact encourage research in this area.

Apple's Monitoring Activity

Apple's products are constantly tested and compared against existing and proposed international standards. We continuously follow scientific developments in the field of computer health and safety. Members of Apple's Environmental Health and Safety group as well as representatives within Product Development, Product Marketing and Engineering Services keep track of new findings.

Apple is also a board member of the Center for Office Technology (contact is O. Bruce Dickerson 212-560-1298), a clearing house for more information related to health issues and office automation equipment. In addition, Apple is currently setting up a program to sponsor dedicated academic research in the low-frequency radiation field.

Scientific Opinion

The low level of intensity of the fields emitted from VDTs is not considered harmful by the American Medical Association, the American College of Obstetricians and Gynecologists, the National Institute for Occupational Safety and Health and the World Health Organization, among others.

Recently, the issue of the possible effects of prolonged exposure to extremely low frequency electromagneitc emissions has been raised. The U.S. Environmental Protection Agency has said (see New York Times 5/23/90) that the evidence on the issue is so far inconclusive. The EPA's office of health and environmental assessment has suggested further study on the ELF issue. Apple also supports additional research so that we can continue to act responsibly, ensuring the health and safety of our customers and employees.

Question and Answers

* What is Apple's position on the VDT-emission health issue?

Apple is committed to making products as safe as can be. Based on the prevailing opinion of the scientific community Apple believes that televisions and computers are safe. However with any scientific issue there is a diversity of opinion. We are open-minded to new scientific evidence and in fact encourage it.

* What are the health concerns regarding VDTs?

A number of studies link intensive computer use to health problems such as musculoskeletal disorders, eyestrain, fatigue, and headaches. These problems are well understood and medical experts have suggested effective methods for preventing them.

There is also a growing public concern throughout the world about potential health risks related to the low-frequency electromagnetic fields emitted by VDTs and other electric products, which all operate at the AC line frequency of 50 and 60 Hz such as electric blankets, televisions, and power lines.

Although most scientists and computer experts maintain that low-frequency electromagnetic emissions are harmless, others assert that not enough is known to say with certainty that they are safe. Most everyone agrees that more research is necessary before any conclusions can be made.

* What are the government regulations for VDT emissions?

X-ray emissions are strictly regulated by international law. In the US, this law is administered by the FDA's Dept. of Health and Human Services. All Apple displays are designed and tested to emit well below the level permitted.

Radio frequency emissions can interfere with radio and TV transmissions and are also regulated internationally. In the US, limits are mandated by the Federal Communications Commission.

In Sweden government-industry cooperatives have set limits for VLF radiation from VDTs. These limits do not appear to be based on data from

health studies, but rather are based on general, achievable guidelines for reducing emissions.

No government regulations exist in any country limiting ELF emissions.

* What is Apple doing to follow and participate in research in the VDT health field?

Apple's products are constantly tested and compared against existing and proposed international standards.

We continuously follow scientific developments in the field of VDT health and safety. Members of Apple's Environmental Health and Safety group as well as representatives within Product Development, Product Marketing and Engineering Services keep track of new findings.

Apple is a board member of the Center for Office Technology, a clearinghouse for information related to health issues and office automation equipment.

In addition, Apple is currently setting up a program to sponsor dedicated academic research in the low-frequency emissions field.

* How does Apple respond to increasing government legislative activity concerning VDT's?

We welcome government's inquiry into the safety of VDT's, and support the adoption of standards once generally agreed upon limits and a testing methodology emerge from research.

Product Issues

* Will Apple take steps to lower VLF and ELF emissions in its products?

Based on the prevailing opinion of the scientific community, we do not believe it is necessary to lower the ELF emissions of our computer monitors. In fact, scientific research so far has not been able to establish guidelines for emission levels. However Apple is closely following the issue so that we may continue to ensure the health and safety of our customers and employees.

* How might this radiation be reduced?

Currently emissions can be reduced through a combination of circuit board design, component selection, field cancellation coils, metallic shielding and surface coatings.

* Will you comment on IBM's announcement to lower emissions in its monitors?

IBM announced it will offer monitors which feature reduced VLF emissions. (See Wall Street Journal 11/22/89) They have clearly positioned these products as a response to market demand, rather than to health and safety concern. IBM's products are not currently shielded for ELF radiation.

* What are the levels of ELF and VLF emissions by Apple's VDTs?

Apple feels that it would be inappropriate to make these figures public because there is currently no standardized testing methodology or established guidelines by which to make comparisons.

* What is Apple's comment on the MacWorld article?

Regarding the Article: The MacWorld article calls for industry to address the VDT emission issue. Apple encourages further research on low-frequency emissions.

* Regarding the Measurements:

We do not believe it is appropriate to comment on the measurements of the Macintosh monitors that were published in the July 1990 issue because there is currently no standardized testing methodology or established guidelines by which to make comparisons.

* Regarding the Health Conclusions:

With any scientific issue there is a diversity of opinion. The MacWorld article excluded a large body of studies that discount a link between VDT use and a biological effect--for example: The University of Calgary, Alberta, Canada, 1989 Epidemilogical Study on VDT Use and Spontaneous Abortion Risk; The University of Toronto,1989 Rodent Reproductive Study; the Institute of Research for the Health and Safety of Workers, Montreal, Quebec 1984 Survey on VDTs and Pregnancy; and the 1985 Finnish Case Reference Study - Birth Defects and Exposure to VDTs During Pregnancy. The specific studies referenced by MacWorld raise valid questions but do not conclude a health risk for the computer user. We encourage futher scientific research.

Background on VDT Radiation

* What is radiation?

Are there different kinds? Radiation involves a transfer of energy by waves or particles. There are two types of radiation. Ionizing radiation, such as X-rays, has proven to be damaging to living cells. Non-ionizing radiation is far less potent, and includes visible light, radio waves, and low frequency electromagnetic emissions.

* What kind of radiation do VDTs emit?

Like television sets, VDTs may emit X-rays (ionizing radiation) at or near naturally occuring background levels. VDTs also give off non-ionizing radiation in the form of infrared light (heat), visible light, radio waves, and low frequency electromagnetic emissions. Apple's displays do not give off ultraviolet or microwave radiation in appreciable levels.

* What is ELF and VLF radiation?

Low-frequency radiation, a form of non-ionizing radiation, is generally divided into two groups: very low frequency (VLF) and extremely low frequency (ELF). VLF radiation falls into the frequency bandwidth between 30 and 150kHz, while ELF radiation refers to frequencies below 30 kHz. The intensity level of this radiation emitted by VDTs is comparable to that emitted by household electrical appliances.

* Is VLF or ELF radiation dangerous?

The prevailing opinion of the scientific community is that exposure to low frequency emissions does not pose a significant health risk. Available data indicate the human body absorbs only a minimal amount of radiation below 200 kHz. The low level of intensity of the fields emitted from VDTs is not considered harmful by the American Medical Association, the American College of Obstetricians and Gynecologists, the National Institute for Occupational Safety and Health (NIOSH) and the World Health Organization, among others.

However, with any scientific issue there is a diversity of opinion. There are several studies which suggest that long-term exposure to pulsed ELF fields (such as those emitted by VDTs) can result in biological changes to cells.

Because valid questions have been raised, Apple encourages further research on low frequency radiation. In fact, we are currently setting up a program to sponsor dedicated academic research in the low-frequency radiation field. We intend to continue monitoring the results of this research so that we can act responsibly to ensure the health and safety of our customers and employees.
Published Date: Feb 18, 2012

AppleShare: Server Startup with External Drives Attached

The Macintosh that I'm using as an AppleShare server has an internal hard disk and two external volumes. In case of a power failure, I have the server set restart automatically. The problem is that the Macintosh checks for the external SCSI drives before the drives are ready.

Is there a way to make the server wait 30-60 seconds before checking for SCSI devices?

This article has been archived and is no longer updated by Apple.
There is no way to have the server wait before it looks for available drives. The server waits for Drive 0 to be ready, though. By the time Drive 0 is ready and loaded, the other drives should be ready to mount.

Published Date: Feb 18, 2012

Macintosh: Definition of System Heap

What is a "system heap"?

This article has been archived and is no longer updated by Apple.
The system heap is a special area of RAM set aside for things like fonts and DAs. The heap zone is used mostly by operating system data structures. The heap zone is an area in memory that may be allocated in relocatable and non-relocatable pieces, called heap blocks or heap pieces. The heap zone usually begins at $B00 and extends to $CAFF, but you should not count on those addresses being correct.

If you ever see an error message with the number -108, it probably means you need more space in your system heap. Increasing its size will help you if you have many fonts and DAs.

Published Date: Feb 18, 2012

Apple Writer IIe: Converting DOS files to ProDOS

This article describes how to convert Apple Writer IIe DOS files to ProDOS.
This article has been archived and is no longer updated by Apple.
To convert Apple Writer IIe DOS files to ProDOS, first print your files to disk:

1. Insert your destination diskette into the drive.

2. Press "p" while holding down the Control key.

3. Type in PD8 Return.

4. Press control P again, then press NP to begin printing to your disk.

5. Enter your file name when prompted. Don't forget to type the disk drive and slot number if necessary.

Note: You type PD8 because there is no slot 8 in an Apple IIe. This alerts Apple Writer to print to a disk and ask you for a file name.

Now convert your file from DOS to ProDOS using the Apple IIc Utilities disk (part number 680-3234) or the CONVERT program on the the ProDOS User's disk (part number 680-0224).
Published Date: Feb 18, 2012

TA46440_System_Improving_Performance_on_the_Macintosh_IIsi_and_IIci_(TIL07840).pdf

System 7: Improving Performance on the Macintosh IIsi and IIci

Why do the Macintosh IIsi and IIci seem so slow with 256 colors or shades of gray? I am running System 7.

This article has been archived and is no longer updated by Apple.
This is due to the video RAM in the 1MB RAM bank A (soldered on the logic board on the Macintosh IIsi). Using 256 colors makes this bank of RAM very busy (the more colors the busier). Consequently, access to anything else in this part of memory is slow.

Macintosh IIsi

On the Macintosh IIsi, adjust the RAM cache to at least 384K. As a result, bank A is all video RAM, RAM cache, and RAM used by the System. This makes the performance with 256 colors almost as good as with black and white. Setting the RAM cache higher than 384K does not help much. This will also work with the Macintosh IIci if you have four 256K SIMMs in RAM bank A.

Macintosh IIci

On a Macintosh IIci, if Bank A is not filled with 256K SIMMs (instead, it is filled with 512K, 1MB, 2MB, 4MB or 16MB SIMMs) it is harder to keep applications from sharing that RAM bank which is busy. You can try to boost the RAM cache to approximately the size of the memory in RAM bank A minus 600K and get similar results, but this takes memory away from your applications.

Published Date: Feb 18, 2012

System 7: Desktop Manager and Switching Between System 6 & 7

I need to switch between System 6.0.x and System 7.x because I use some applications that are incompatible with System 7.x. Is there a way to avoid rebuilding the Desktop file every time I switch System files?

This article has been archived and is no longer updated by Apple.

```
Yes, you can use the Desktop Manager INIT (v2.0.1) to switch between
System 6 and System 7 without rebuilding the Desktop file.  You can find
the Desktop Manager INIT on the AppleShare Administration disk in the
System Folder.  The Desktop Manager Engineer confirmed that it is safe to
use.  Just put the INIT in your System 6 System Folder.  DO NOT put
the INIT in your System 7.x System Folder.

NOTE: The Desktop Manager INIT is not available to everyone.  It is
licensed only to users who have AppleShare 2.0.1. You can find the Desktop
Manager 2.0.1 INIT on the AppleShare Server disk inside the System Folder.

Article Change History:
24 September 1993 - Revised article, clarifying where to obtain the Desktop
                    Manager 2.0.1 INIT.
```

Published Date: Feb 18, 2012

System 7: Disk Format Can‘t Be Done in Background

Within System 7, can I start formatting a disk and then switch to a program that is already running?

This article has been archived and is no longer updated by Apple.

No. Although some Finder operations, such as copy, work in the background, format does not run as a background task. It is timing dependent and needs to keep control of the system.

Published Date: Feb 18, 2012

System 7: Temporarily Disabling Virtual Mem. at Startup

Is there a way to turn off System 7.x Virtual Memory at startup without disabling the system extensions?
This article has been archived and is no longer updated by Apple.
Yes, holding down the Command key at startup will disable Virtual Memory but still load system extensions. When you restart the system, Virtual Memory will be turned on again.

If you check the Memory control panel after booting with the Command key held down, it will show Virtual Memory On and also show how much memory will be available on restart.
Published Date: Feb 18, 2012

System 7: 24-bit Addressing with More than 8MB of RAM

Article Change History

08/21/92 - REVIEWED
* For technical accuracy; edited.

How does the Macintosh operating system handle more than 8MB of physical RAM when it is not using 32-bit addressing?

This article has been archived and is no longer updated by Apple.

When a Macintosh is running in 24-bit mode (that is, when System 7's 32-bit Addressing is turned off or the Macintosh is running System 6.0.x) any physical memory over 8MB is allocated to the System, provided the Macintosh can see the memory in the first place, but it's not actually used. Even though the hardware can see all of the physical RAM, 24-bit addressing allows the use of only 8MB. You may see a large System allocation when checking "About this Macintosh" or "About the Finder" and think something is wrong, when in fact this is the way it should work.

System 7's 32-bit Addressing allows up to 1GB of total memory (including both physical and virtual memory).

Published Date: Feb 18, 2012

System 7: Defaults for Labels Control Panel Colors

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

How can I reset the colors of my Labels settings to the original defaults?

This article has been archived and is no longer updated by Apple.

To reset the colors, either remove the existing System file and reinstall System 7, or manually reset the values.

To manually reset the values, open the Labels control panel, click on the color bars displayed on the left, and set the default values as follows:

Color for "Essential"
Hue: 4223
Saturation: 64884
Brightness: 65535
Red: 65535
Green 25738
Blue 652

Color for "Hot"
Hue: 108
Saturation: 63573
Brightness: 56683
Red: 56683
Green 2242
Blue 1698

Color for "In Progress"
Hue: 59733
Saturation: 63286
Brightness: 62167
Red: 62167
Green 2134
Blue 34028

Color for "Cool"
Hue: 35756
Saturation: 64907
Brightness: 60159
Red: 577
Green 43860
Blue 60159

Color for "Personal"
Hue: 43690
Saturation: 65535
Brightness: 54272
Red: 0
Green 0
Blue 54272

Color for "Project 1"
Hue: 23764
Saturation: 65535
Brightness: 25775
Red: 0

```
Green         25775
Blue           4528

Color for "Project 2"
Hue:           5332
Saturation:   61619
Brightness:   22016
Red:          22016
Green         11421
Blue           1316
```

Published Date: Feb 18, 2012

System 7: LaserWriter Driver and Adobe Font Downloader

Article Change History

09/17/92 - UPDATED
* With contact information.

I receive the error message "Couldn't open the printer driver" when trying to use Adobe's Font Downloader under System 7. How do I fix this?

This article has been archived and is no longer updated by Apple.

Font Downloader expects the LaserWriter driver to be in the System Folder, while System 7 normally installs it in the Extensions folder. Simply move the LaserWriter icon from the Extensions folder into the System Folder to correct this problem. System 7 will still be able to locate the LaserWriter driver without a problem.

For the most current information on Adobe Font Downloader, including upgrades that may change this situation, contact Adobe directly. To locate Adobe's address and phone number, use the vendor name as a search string.

Published Date: Feb 18, 2012

AppleWorks: No Bi-directional Printing on a DWP or Sprint 11

You cannot print a file bi-directionally on an Apple Daisy Wheel or Qume Sprint 11 printer from any version of Appleworks.
This article has been archived and is no longer updated by Apple.
OA-H does cause these printers to print bi-directionally, but only what's on the screen, not the entire file. To print the entire file, you must use OA-P, which cancels bi-directional printing.
Published Date: Feb 18, 2012

System 7: Installing Adobe Font Library

This article gives instructions for installing the Adobe Font Library on a Macintosh running System 7.

This article has been archived and is no longer updated by Apple.

```
*  To install bitmap (screen) fonts, simply drag the font suitcase to the
   System Folder icon and System 7 will automatically install them in the
   System file.  System 7 does not require Font/DA Mover to install bitmap
   fonts.

*  To install outline (printer) fonts, simply drag the font icons (not the
   folder containing them) to the System Folder.  System 7 will
   automatically install them in the Extensions Folder.

NOTE: If you are using a version of Adobe Type Manager prior to 2.03, you
must move outline fonts from the Extensions Folder to the System Folder to
work properly. If you are using 2.03 or later, ATM should work properly
with outline fonts inside the Extensions folder - but make sure to
completely remove older versions of ATM before installing the updated
version.
```

Published Date: Feb 18, 2012

TA46449_System_What_Happens_to_Your_Old_Fonts_(TIL07851).pdf

System 7: What Happens to Your Old Fonts

Article Change History

09/02/92 - REVIEWED
* For technical accuracy; edited.

What happens to the fonts already installed in my System 6.0.x System when I upgrade to System 7?

This article has been archived and is no longer updated by Apple.

Bitmapped fonts already installed in the System file will remain there.

PostScript fonts located in the System Folder will remain there. PostScript fonts installed after an upgrade to System 7 (by dragging them over the System Folder icon) are placed in the Extensions folder.

Published Date: Feb 18, 2012

System 7: How to Install and Run Adobe TypeAlign

Article Change History

09/02/92 - REVISED
* To be more clear and with version information.

When I access TypeAlign, I get the error message "TypeAlign can't run until you have rebooted with the TypeAlign Startup in your System Folder". Is there a special way to install this program under System 7?

This article has been archived and is no longer updated by Apple.

Installing Adobe TypeAlign under System 7 is similar to installing it under previous versions of the Macintosh operating system. Here are the steps:

1) Drag the TypeAlign, TypeAlign Startup, and TypeAlign Help icons from the master floppy disk to your System Folder.

2) When "Some of these items need to be stored in special places... Put them where they belong?" dialog appears, click OK. The system will place TypeAlign in the Apple Menu Items Folder, TypeAlign Help in the System Folder, and the TypeAlign Startup in the Extensions Folder.

3) In order for TypeAlign to run properly, move the TypeAlign Startup icon from the Extensions Folder to the root level of the System Folder.

Note that at least TypeAlign version 1.0.5 is available. Contact Adobe for the most recent version information.

Published Date: Feb 18, 2012

System 7: Adobe Type Manager 2.0 and 32-bit Addressing

I'm using Adobe Type Manager 2.0 and 32-bit addressing under System 7. The system crashes whenever I select a font menu. What is the workaround?

This article has been archived and is no longer updated by Apple.

The workaround is to disable 32-bit addressing. Adobe Type Manager 2.0 is compatible with 24-bit addressing, but incompatible with 32-bit addressing under System 7. Upgrade to a more recent version of ATM (at least 2.03), for 32-bit addressing to work properly.

Published Date: Feb 18, 2012

System 7: TypeAlign "Font Not Available" Error

Article Change History

09/02/92 - UPDATED
* To provide contact and version information.

The error message, "Outline Font Not Available" appears when I enter text into TypeAlign running under System 7. What causes this?

This article has been archived and is no longer updated by Apple.

```
This can be caused by two things:

* The outline (printer) fonts may be in the wrong location.  Open the
 System Folder and verify that the outline fonts are there.  If not,
 locate them and move them to the System Folder.

* If you are using TrueType versions of Helvetica, Courier, Times, and
 Symbol, TypeAlign will be unable to find an Adobe Type 1 version.
 TypeAlign currently does not support TrueType.  Either remove the
 TrueType version of the font or use an Adobe Type 1 font instead.

For fullest compatibility, you should be using at least 1.0.5 of Adobe
TypeAlign. Contact Adobe for the latest information; search for Adobe for
contact information.
```

Published Date: Feb 18, 2012

System 7: DataDesk Keyboard Compatibility

This article gives compatibility information for DataDesk keyboards used with System 7.
This article has been archived and is no longer updated by Apple.
Some older DataDesk Macintosh 101 keyboards do not allow you to disable extensions under System 7 by holding down the Shift key during startup. There is no known workaround for this problem, short of temporarily replacing the DataDesk keyboard with an Apple keyboard.

Specific compatibility issues:

* Macintosh 101 Keyboard (Macintosh Plus) Version 1.0
Incompatible INIT - Currently won't recognize any keys pressed during startup. Requires an upgrade to use extended part of the keyboard.

* Macintosh 101 keyboard (ADB) Version 1.0
No INIT is needed - Won't recognize any keys pressed during startup.
This keyboard is likely to be at least three years old.

* Macintosh 101 Keyboard (ADB or Macintosh Plus) Version 1.1
Compatible with System 7.

* Macintosh 101e Keyboard (ADB or Macintosh Plus)
Compatible with System 7.

* Macintosh Switchboard (ADB or Macintosh Plus)
Compatible with System 7.

For further information, contact DataDesk. The address and phone number is in a separate article in the Tech Info Library.
Published Date: Feb 18, 2012

System 7: Initialize Drive if Disk First Aid Can‘t Repair

Article Change History

08/24/92 - REVIEWED
* For technical accuracy.

What should I do if Apple's "Disk First Aid" utility reports that it is unable to repair a disk's directory?

This article has been archived and is no longer updated by Apple.

If the Macintosh has been started up with the System 7 "Disk Tools" floppy disk and Disk First Aid cannot repair a hard drive's directory, the drive must be reinitialized with an appropriate formatting utility. Apple hard drives are initialized with Apple's HD SC Setup utility. Third-party hard drives require System 7-compatible initializing/formatting software supplied by the vendor.

IMPORTANT: Before initializing the drive, make at least one backup of the drive using System 7-compatible backup software, otherwise you will lose everything on the drive.

Published Date: Feb 18, 2012

HyperCard: Importing and Exporting Text, and Where To Get Info

Here is a button script that imports text data into HyperCard. The data source is a text file with the following format:

data<tab>data<tab>.....data<tab>data<carriage return>
data<tab>data<tab>.....data<tab>data<carriage return>
data<tab>data<tab>.....data<tab>data<carriage return>
This article has been archived and is no longer updated by Apple.
This script reads data and puts it into a field in the card where the button is. It moves to the next field when it encounters a tab, and makes a new card after a carriage return. This script requires that the number of fields in your card equals the number of data items you want to import.

```
on mouseUp
ask "Import text from what file?" -- Ask user for name of source file.
if it is empty then exit mouseUp
put it into fileName -- "put" and "open" open the text file for reading.
open file fileName
repeat -- Data is imported in the "repeat" loops.
doMenu "New Card" -- Make a new card.
repeat with i = 1 to the number of fields - 1
read from file fileName until tab -- Read text from the file until Tab
-- character is encountered.
put empty into last char of it -- Remove Tab.
put it into field i
end repeat
read from file fileName until return
if it is empty then -- end of file
if i = 1 then doMenu "Delete Card"
close file fileName
exit mouseUp
end if
put empty into last char of it -- remove Return.
put it into field (i + 1)
end repeat
end mouseUp
```

When the first tab is encountered, the tab is removed from the string and the data is placed in field one. This is done until the next to last field, because we have to look for a carriage return at the end of the last field. We then read in data until a carriage return occurs, and the data is placed into the last field of the card.

This script has been used to import data files 500K and larger into HyperCard. It may have to be changed to work with a specific data file or format.

You can also EXPORT text from HyperCard fields into a text file. You can tab delimit the fields, or use any character you want:

```
on mouseUp
ask "Export text to what file?" -- Ask user for name of source file.
if it is empty then exit mouseUp
put it into fileName -- "put" and "open" open the text file for reading.
open file fileName
repeat with i = 1 to the number of cards -- go through all the cards
go to card i
repeat with j = 1 to the number of fields - 1
write field j to file fileName -- get the field and write it out
write tab to file fileName -- put a tab after it,
-- or any character you want
end repeat
write field (j + 1) to file fileName -- write the last field
write return to file fileName -- and a carriage return
end repeat
close file fileName
end mouseUp
```

This would export the data you had just imported with the first script.

NOTE: This second script has NOT been extensively tested.

ANOTHER NOTE: This is NOT the only way to import & export data: use it as a guide for your own scripts. These examples were chosen because tab-delimited data is a common format. HyperCard offers a large amount of flexibility in reading data in and out, and it would be impossible to describe all the different methods in this article. There are various sources of information regarding the HyperTalk scripting language.

For more information:

- HyperCard's Help stack (look for "ask", "put", "open", "write", "repeat", and "doMenu")
This part of HyperCard is often overlooked. The built-in help has descriptions of the HyperTalk commands available to you, and is on-line.

- "HyperCard Script Language Guide" (APDA)
This is the definitive guide to the HyperTalk scripting language. It contains descriptions to all the HyperTalk commands available, and also discusses the HyperCard environment.

- Danny Goodman's "The Complete HyperCard Handbook" (Bantam)
This was the first book available as a reference for HyperCard, and covers the tools available in HyperCard, as well as how to use the scripting abilities. It also has example scripts.

- Additional third-party books.
You should be able to find various other books on HyperCard at a local computer bookstore.

- The User Groups Icon on AppleLink.
This icon is a meeting place for Apple dealers and user groups to exchange information relating to Apple products.There is also a HyperCard folder, devoted to questions and answers and public domain and shareware utilities and stacks for HyperCard.
Published Date: Feb 18, 2012

System 7: Using Personal LaserWriter SC and LaserWriter IISC

I've installed System 7, and now I can't print to my LaserWriter IISC. The installer did not replace my old LaserWriter SC driver. I keep getting print errors when I use the driver that came with the printer. How do I fix this?

This article has been archived and is no longer updated by Apple.
The LaserWriter IISC printer software is not compatible with any version of System 7. You might be able to print using the LaserWriter IISC print driver if background printing is turned off, but this is not recommended. To permanently fix this problem, you need to use the Personal LaserWriter SC printer driver from the Printing disk to print to this printer.

Copy the Personal LaserWriter SC driver from the System 7 Printing disk to the Extensions folder on your startup volume. Select the Personal LaserWriter SC icon in the Chooser.

You can use the Personal LaserWriter SC driver with both the Personal LaserWriter SC and the LaserWriter IISC. This is true for versions prior to System 7 as well.

Article Change History:
24 Aug 92 - Incorporated similar articles and clarified that the Personal LaserWriter SC driver is the same as the LaserWriter IISC driver.
11 Jul 94 - Clarified that the LaserWriter IISC driver is not system 7 compatible.

Support Information Services
Published Date: Feb 18, 2012

System 7: CD Technology Drive and CD Setup

Article Change History

09/02/92 - UPDATED
* To give contact information.

I have a CD-ROM drive from CD Technology, Inc. After I load System 7 on my Macintosh IIfx, and run the installer on the Macintosh CD Setup disk as instructed in the Group Upgrade Guide, I cannot connect the CD-ROM drive. How can I connect the CD Technology ROM drive?

This article has been archived and is no longer updated by Apple.

```
The CD Technology CD-ROM drive uses the system access modules on the System
7 CD Setup disk, but not the driver.  After running the installer, delete
the Apple CD-ROM and Apple CD Remote from the Extensions folder.  Install
the CD Technology driver version 1.32 (or later) in the System Folder.

NOTE: CD Technology version 1.32 causes system errors on 68000-based
systems, but works correctly on 68020- and 68030-based systems.

Contact CD Technology, Inc. for the most recent information on their
product; search on CD Technology for contact information.
```

Published Date: Feb 18, 2012

System 7: Cannot Be Installed on a 1MB Macintosh

Article Change History

08/17/92 - REVIEWED
* For technical accuracy.

Can I install System 7 on a Macintosh system with one megabyte of RAM?

This article has been archived and is no longer updated by Apple.

No. The System 7 Installer will not run on a one megabyte Macintosh. It will give an error message stating the machine does not have enough memory to run System 7.

Published Date: Feb 18, 2012

Macintosh System Software 6.0.7: Troubleshooting (1 of 2)

This article outlines the steps for troubleshooting system software version 6.0.7. Perform these operations in the order presented here.
This article has been archived and is no longer updated by Apple.

WDEF Virus

The number one known problem is the WDEF virus. In version 6.0.5 and earlier versions of the system software, the WDEF virus might exist without creating major problems. This is not true in version 6.0.7. The presence of the WDEF virus can cause problems from the moment the computer is turned on. The most common results are the three error messages - "Bus Error," "Address Error," and "Coprocessor not Installed." Floppy disk copy procedures are known to suffer in particular, but the difficulties can appear at any time without any warning.

Solution:
Use Disinfectant 2.4 (or later) or SAM 2.0.5 (or later) to detect and remove the WDEF virus. Disinfectant is available from various online services. SAM is available from Symantec. Other anti-virus applications may also assist in detection and removal.

Incompatible Applications

Incompatible applications cause the next most common problem. Older versions of applications are often incompatible. Some of the most commonly reported incompatibilities have been with Microsoft Works 2.00a and MacWrite 5.0x. Fully compatible versions of these two programs are Microsoft Works 2.00e and MacWrite II 1.1v2.

An application that causes things to go wrong may not be the application that is currently running; it may be an application that ran previously. An application might corrupt some portion of memory and then never reference that area of memory during the remainder of its running time. However, an application launched later (possibly, an application that tested as compatible) may make a reference to the corrupted memory created by the earlier application. The result is a system error, most likely one of the three previously mentioned - "Bus Error," "Address Error," or "Coprocessor not Installed."

Solution:
Check with the publisher of any software package you are wondering about concerning compatibility with the 6.0.7 environment.

INITS and CDevs

The next possibility is closely related to applications. INITs and cdevs can be considered mini-applications. INITs are programs that run at startup and continue to run during the entire time that the Macintosh is on. Some cdevs can have a split personality. First, a cdev can exist only as a Control Panel item; but second, a cdev can also contain an INIT that may not be visible to the user.

Other cdevs that do not contain an INIT will not affect the operation of the system unless they are chosen from the Control Panel. This form of cdev can be thought of as a mini-program. If it isn't chosen by the user, it isn't run.

INITs and cdevs that contain INITs, are a different matter. They can affect a system from the early part of the startup process. If there are any incompatibilities with these items, a system can display error dialogs at any time. Then again, depending on what has been done since the Macintosh was started up, they may never cause any problem.

Solution:
Remove all INITs and cdevs that were not installed by Apple's System Software Installer program. Then test the Macintosh to see if the previous difficulties have gone away.

If the difficulties have gone away, and you must have the use of INITs and cdevs, reinstall one INIT or cdev at a time and then test for difficulties after each installation. Repeat this sequence until after the installation of one of the INITs or cdevs difficulties begin appearing. Then take one step back and remove the last installed INIT or cdev. Check with the publisher of that removed item to see if a later and compatible version is available. If it isn't, you will need to find a way to achieve those functions in a different manner until the publisher can provide an update.

Third-Party SIMMs

Some third-party SIMMs do not meet Apple's specifications. There are two SIMM issues listed here.

1) The PC board on which the RAM chips are mounted is too thin to provide proper contact to both sides of the SIMM socket. The results are system error dialogs. There appears to be a very small sample of boards that are affected by this issue.

2) The timing of the PAL chip on some SIMMs has proven to be out of specification. The 2MB SIMMs appear to be the most common offenders. Timing issues can also result in system error dialogs. Third-party vendors have been informed of the considerations involved with timing.

Solution:
To determine if the SIMMs are at fault, replace the third-party SIMMs with Apple SIMMs and run tests to see if the previous problems continue. If the Apple SIMMs resolve the appearance of system error dialogs, replace the SIMMs.

Hard Disk Drivers

Hard disk driver software can have trouble performing correctly when installed in certain ways, or if the driver software is out of date. This is a problem with either Apple HD SC hard disks or various third-party hard disks. Before reinstalling system software, try this step, which is not as involved as doing a system software reinstallation.

Solution: Procedure for Apple Hard Disks
Use the Apple HD SC Setup that ships with 6.0.7 (or later) to update the river on the hard disk. The version of this hard disk driver is at least 2.0.3. Use the Drive button to select the hard disk that will be the startup disk. Press the Update button to update the hard disk driver software on the hard disk.

Solution: Procedure for Third-Party Hard Disks
Some third-party hard disk drivers which are installed with an "Installer" type of program may have difficulties if the installer was launched from a System 6.0.5 (or earlier) environment.

Usually this means that the third-party installer was shipped on a floppy disk which has System 6.0.5 (or earlier) on the disk. The installer disk is used to boot for the installation. In this way, the hard disk driver is installed from 6.0.5 (or earlier) into 6.0.7. Sometimes a Macintosh system which has been in place for a while is updated to version 6.0.7. The third-party hard disk drivers were in place prior to the 6.0.7 update.

In either case, follow these steps to resolve the problem:

1) Create a third-party hard disk installer disk with System 6.0.7 (not 6.0.5) on it. Make a new installer disk or update the installer disk to version 6.0.7.

2) Boot from the third-party hard disk installer with 6.0.7 on it.

3) Launch the third-party hard disk installer.

4) Update the third-party hard disk's driver. (Most installers have an Update selection.)

5) Restart and test for previous difficulties.

If you have worked through all of the procedures described in this document and you still have problems, you need to reinstall System Software 6.0.7. Search for the second part of this article on System 6.0.7 Troubleshooting for advice on reinstalling the system software.

For information on downloading the latest version of Disinfectant refer to:
TIL aritcle 30487: "**Disinfectant: Macintosh Anit-Viral Utility**"

The Tech Info Library article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
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Macintosh System Software 6.0.7: Troubleshooting (2 of 2)

If the difficulties persist after you work through the four steps outlined in part 1 of this article, review the installation of the system software. This document (part 2 of the article) gives the proper procedures for reinstalling system software 6.0.7.
This article has been archived and is no longer updated by Apple.
Do not use Minimum Install. The Minimum Install option of the System Software Installer is meant for creating bootable floppy disks and may not contain all the resources you need for a complete system.

You may install using the "Easy Install" option or by customizing which system resources are written to your disk. Below is the first of two custom installation procedures.

1) Start up from the Installer floppy disk. (800K=System Tools; 1.4MB=System Startup).

2) Remove from the System Folder any items that you wish to save, and that weren't installed with Apple's Installer.

3) Drag the System Folder to the Trash.

4) Empty the Trash.

5) Launch the Installer. Now you have the choice to do an Easy Install, or to customize your installation. This will be more involved, but may be the best approach. To do this, click on the Customize button. This will present a scrolling text field. Here are the choices you must make:

- AppleShare (workstation software)
- Software for AppleTalk Responder
- 32-Bit QuickDraw
- Printer
- Model of Macintosh

You will want AppleShare if you are using AppleShare file servers. The network administrator may want you to have AppleTalk Responder. Some applications (usually graphic programs) require 32-Bit QuickDraw. You will need to know which printer to use. In the case of the ImageWriter, you need to know whether it is an AppleTalk network printer or a locally attached printer. And finally, you will need to know which model of Macintosh you are using.

Shift-click on each of the choices in the scrolling text field.

6) Make sure you see the disk displayed on which you want to install the system software, and click the Install button.

The following steps are for the second custom installation method. Use this procedure with understanding and caution. This solution is not verified, however it solved difficulties with 6.0.7 at certain sites. This is more involved than the last procedure, and requires more patience when trying this sequence. Certain rules appear to be violated, but for good reasons.

1) Start up from the Installer floppy disk. (800K=System Tools; 1.4MB=System Startup)

2) Remove from the System Folder any items that you wish to save, and you didn't install with Apple's Installer.

3) Drag the System Folder to the Trash.

4) Here is where the rules are bent. Empty the Trash and drag a copy of the System Folder from the Installer floppy disk onto the hard drive. BUT don't stop here! Now continue with step 5 of the first custom installation sequence.

There are no guarantees with this procedure. But it is worth the time if you continue to have difficulties.

If you still have difficulties after attempting all of these procedures, make backups of all important files. Then reformat the hard drive and reinstall system software 6.0.7. On Apple hard disks be sure to use Apple HD SC Setup v2.0.3 or later to reformat (reinitialize). For third-party hard disks, use their formatting or installation software.

If you continue to have problems, ask your service provider to check for hardware problems.
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Macintosh System Software 6.0.7: Compatibility Report (6/95)

The following is a list of third-party software applications that Apple tested with system software 6.0.7. This list should be used as a snapshot of compatibility as of the day of 6.0.7 introduction.

This article has been archived and is no longer updated by Apple.
This report does not cover all Macintosh application software, it covers only those applications that Apple reviewed. For more detailed information on compatibility of an application and system software 6.0.7, contact the developer or publisher of that product.

Apple did not test every feature of the application. Instead, each application was run through a series of common functions: launch, open a simple document, open DAs, cut/paste, and print).

This report reflects compatibility information on the version number of the application listed, and in some instances does not reflect the most currently available version of a particular application. This list is not intended as an endorsement nor advertisement of any product. This list is meant to provide you with the most current information regarding compatibility of system 6.0.7.

Note:
Testing was done on the Macintosh Classic, Macintosh LC, Macintosh IIsi, Macintosh Plus, Macintosh SE, Macintosh SE/30, Macintosh IIcx, Macintosh IIx, Macintosh IIci, Macintosh IIfx, and Macintosh Portable personal computers using system software 6.0.7 . Ratings for all applications indicate performance of the application running on released CPUs and released system software.

The following products passed our compatibility tests. If any additional comments were needed, then they are mentioned in the "COMMENTS" field.

APPLICATION VERSION DEVELOPER COMMENTS
---------- ------- --------- --------
4th Dimension 2.0.11 ACI US, Inc.
Adobe Illustrator 1.9.3 Adobe
AutoCAD v10c4a AutoDesk Requires an FPU.
Canvas 2.1 Deneba Systems
Claris CAD 1.0v4 Claris
ConcertWare+ 4.05 Great Wave Software
ConcertWare+ MIDI 5.1 Great Wave Software
Cricket ColorPaint 1.0 Computer Associates
Cricket Draw 1.1.1 Computer Associates
Cricket Graph 1.3 Computer Associates
Cricket Paint 1.0 Computer Associates
Cricket Presents 2.0 Computer Associates
Crystal Quest 2.2c Greene Inc.
Design Studio 1.0 Letraset Corp.
Digital Darkroom Aldus Consumer Division
Dreams 1.1 Innovative Data Design
EcoDisk 1989 Educorp
FileMaker II 1.1v2 Claris
Freehand 2.0.2 Aldus
FullWrite Professional 1.1 Borland International
Full Impact 1.1 Borland International
Galaxy 1.0.2 Opcode
Guide 2.01 Owl International
HyperCard 2.0 Claris
HyperSound 2.0.2 Farallon Computing
Mac3D 2.1 Challenger Software
MacDraw II 1.1v2 Claris
MacPaint 2.0 Claris
MacProject II 2.0v1 Claris
MacroMind Director 2.0 MacroMedia
MacTerminal 2.3.1 Apple
MacTerminal 3.0 Apple
MacWrite II 1.1v1 Claris
Mathematica 1.2 Wolfram Research
Microsoft Excel 2.2a Microsoft
Microsoft Mail 2.0 Microsoft
Microsoft Word 4.0b Microsoft

Microsoft Works 2.0b Microsoft
More II 2.0.1 Symantec
More II 3.02 Symantec
PageMaker 3.0.2 Aldus
PageMaker 4.0 Aldus
Persuasion 2.0 Aldus
PhotoMac 1.1 Avalon Development Group
PixelPaint Professional 1.0 SuperMac Requires an FPU.
PixelPaint 2.0 SuperMac Requires an FPU.
PowerPoint 2.0.2 Microsoft
QuarkXpress 2.12 Quark
Reader Rabbit 2.2 The Learning Company
ReadySetGo 4.5 Letraset
Sound Designer II 1.21 DigiDesign
Sound Designer Universal 1.3 DigiDesign
Sound Edit 2.0.2 Farallon Computing
SoundMaster 1.6 Bruce Tomlin - Shareware
Statview II 1.02 Abacus Concepts
Statview SE 1.03 Abacus Concepts
Studio/1 1.0 Electronic Arts
Studio/8 1.1 Electronic Arts Requires an FPU.
Super 3D (bw) 2.1 Aldus Consumer Division
Super 3D (color) 2.1 Aldus Consumer Division Requires an FPU.
SuperCard 1.0 Aldus Consumer Division
SuperPaint 2.0 Aldus Consumer Division
Swivel 3D (bw) 1.1L Paracomp
Swivel 3D (color) 1.1S Paracomp Requires an FPU.
THINK C 4.0 Think Technologies
Trapeze 2.1 Data Tailor
Turbosynth 2.0 DigiDesign
VersaCAD II 2.1.2 VersaCad Corp. Requires an FPU.
VersaCAD SE 2.1.1 VersaCad Corp.
VersaTerm Pro 3.1.1 Synergy
Vision 1.1 Opcode
Wingz 1.1 Informix

Article Change History:
06 Jun 1995 - Reviewed for technical accuracy.
10 Feb 1995 - Formatting updated and removed unnecessary keyword.
15 Mar 1993 - Updated vendor names.

Support Information Services
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AppleShare File Server: Allowing Apple II Network Startup

This article tells how to set up your AppleShare File Server software so that Apple IIGS and Apple IIe systems can start up over the network.

An earlier version of this article appeared in the June 1990 "TechBeat" and in the "Apple II Tech Bulletin" for February-March 1990. Since then, new versions of the Apple IIGS and Macintosh operating systems have been released, requiring updated documentation.

This article has been archived and is no longer updated by Apple.
Assuming the hardware is already set up, the installation process should take from one to two hours. This article assumes you are installing AppleShare on a newer Macintosh running System 6.0.7. Note: If you are installing on one of the older Macintosh computers, for example an SE/30, System 6.0.5 would be an acceptable replacement for System 6.0.7.

This article also applies to those with existing AppleShare File Servers. Where necessary, we will explain what material to skip over.

Besides Macintosh system software, you need the AppleShare File Server software (version 2.0.1), Apple part number M0548/B. Finally, you need Apple IIGS System Software Update Version 5.0, Apple part number A0013LL/A. (This version is now shipping with version 5.0.4 in the box.)

Note that IIGS System 5.0.4 is a three-disk set. The third disk, a Macintosh disk called "Apple II Setup", is essential. You will need to buy at least one IIGS System 5.0 Software Update, because this third disk does not ship with new IIGS systems. Table 1 lists the disks required. You also need one blank 800K disk.

Note: For future reference, if a new version of IIGS system software is released, use the complete three-disk set from that system instead of version 5.0.4.

Table 1: Required Disks

Disk Name Format Comment

System Startup 6.0.7 Mac 1.44MB
System Additions 6.0.7 Mac 1.44MB
Network Products Installer 6.0.7 Mac 1.44MB

AppleShare File Server 2.0.1 Installer Mac 800K Part of A'Share 2.0.1.
AppleShare File Server 2.0.1 Admin Mac 800K Part of A'Share 2.0.1.
Apple II Setup 2.0.1 Mac 800K Part of A'Share 2.0.1.
-->Obsolete disk!

/System.Disk ProDOS 800K Part of IIGS System 5.0.4.
/System.Tools ProDOS 800K Part of IIGS System 5.0.4.
Apple II Setup 2.1.3 Mac 800K Part of IIGS System 5.0.4.
-->New version.

1. Setting up the AppleShare File Server

Follow these steps to set up the AppleShare File Server:

1) If you have an existing server, start up from the Network Products Installer disk and install "Apple II Setup (v2.0.1)". (Others should skip to the next paragraph.)

2) When the Installer prompts you for the "Apple II Setup" disk, insert the Apple II Setup version 2.1.3 disk that came with IIGS System Software 5.0.4.

Do not insert the obsolete Apple II Setup disk that comes in the box with AppleShare 2.0.1. For those with an existing file server, proceed to Section 2, "Preparing AppleShare for Apple II Users".

If you haven't set up your server yet, here is how to do it:

1) Boot the Macintosh with the System Startup disk

2) Launch HDSC Setup and initialize the hard disk. When giving the hard disk a name, use a short name that fits ProDOS conventions. The name must begin with a letter (A to Z) and contain nothing but letters, numerals and periods. No spaces. Lower case is permitted. For this example, we will name the server volume "A2".

3) After the hard disk has been initialized, quit HDSC Setup and launch the Installer. Click "Easy Install".

4) When the installation is complete, quit the Installer.

5) Double-click on the hard disk icon and open the System Folder.

6) Drag "Easy Access," and any printer drivers you don't need, to the Trash. You can also delete MultiFinder. If you won't be doing any printing from the file server, you can throw away Backgrounder and PrintMonitor.

7) When you are done, select "Empty Trash" from the Special menu and close all open windows. Then select "Shut Down" from the Special menu.

With the cleanup out of the way, it's time to install the software:

1) After the Macintosh ejects the System Startup disk, restart from the Network Products Installer disk.

2) Launch the Installer and select "AppleShare File Server (v2.0.1)" and holding down the Shift key, select "Apple II Setup (v2.0.1)".

3) Click Install. The Installer will prompt you for the "AppleShare File Server" disk (that's the AppleShare Installer disk), and shortly thereafter, the "AppleShare Administration" disk.

4) When it prompts you for the "Apple II Setup" disk, insert the Apple II Setup version 2.1.3 disk that came with IIGS System Software 5.0.4.

Important: Do not insert the obsolete Apple II Setup disk that comes in the box with AppleShare 2.0.1

5) When the Installer is finished, quit and restart the Macintosh, letting it start up from the hard drive.

6) The hard drive isn't an AppleShare File Server yet, so you must set it up. Open the System Folder on the hard drive and double-click "AppleShare Admin".

7) When asked if you want to "Prepare volume 'A2' for use with AppleShare?", click OK. You'll be asked to give the file server a name, for example, "Apple II Forever".

8) Next, the system will prompt you for a Users and Groups file. Open the Server Folder and click "New". Create users and groups according to your needs and preferences, starting with the Administrator.

9) When you are done, select "Save Users and Groups as ╔" from the File menu and save the Users and Groups in the Server folder.

2. Preparing AppleShare for Apple II Users

Here's how to prepare AppleShare for Apple II Users:

1) If you haven't done so, get into the AppleShare Admin program. (There is no need to shut down your server to do this.)

2) Under the Server menu select "Server Info" and click on the check box marked "Apple II Features".

3) Click "Save". Quit the AppleShare Admin program.

4) If you were updating an existing file server, shut down the server and restart. Others can merely select "Restart" from the Special menu to restart the Macintosh. It will come up as an AppleShare File Server.

If you want the file server to support network startup only for Apple IIe users, the server is now ready to start them up over the network, once you set the access privileges on the volume. Users must be able to "See Files, See Folders" to start up.

To set the access privileges, follow these steps:

1) Get into AppleShare Admin and select "Volume List" from the Volume menu.

2) Double-click the server volume.

3) Set the access to "See Files, See Folders" and apply the changes to all enclosed folders -- unless you have an existing file server, in which case you will probably need to assign access by folder.

Apple IIe users need "See Files, See Folders" access to the top level of the server startup volume. Whether you set these changes for the Administrator only, all users, or just the particular groups, depends on how you have planned your server.

If you want IIGS users to be able to start up over the network, you should continue with the next section, which tells you how to install IIGS system software onto the server, over the network. This step is required only if the IIGS users will be starting up over the network. If the IIGS workstations have hard drives, you should set them up to start up GS/OS on their hard drives, and install AppleShare. This way, they can mount server volumes on the desktop, just like Macintosh users.

3. Installing IIGS System Software over the Network

Make sure you have the AppleShare File Server and the Apple IIGS connected via LocalTalk or similar network cabling. The IIGS should have a minimum of 1MB of RAM and one Apple 3.5 Drive. (You'll save time if you equip the IIGS with two Apple 3.5 Drives.)

When you turn on the IIGS, hold down the Control Open-Apple Escape keys to get into the text Control Panel. If you have defined a RAM disk, make sure you leave the system with at least 1MB of memory. Under Slots, ensure that the Startup Slot is set to 5, and that Slot 5 is set to "SmartPort" and Slot 7 to "AppleTalk" or "Built-In AppleTalk". Slot 1 should be set to "Your Card", or on a ROM 03 IIGS to "Built-In AppleTalk". Exit from the Control Panel and turn off the computer.

Be sure you have the original (unmodified) System.Disk and System.Tools diskettes. Lock both diskettes to prevent accidental deleting of critical files. You will also need one blank 800K disk to use as an AppleShare startup disk. Follow these steps:

1) Insert the System.Disk and power on the IIGS.

2) When the Finder desktop appears, insert the blank disk and initialize it. Call it "AppleShare".

3) Launch the Installer from System.Tools. If you have two drives, eject the System.Disk. If you have one drive, eject the System.Tools disk.

4) Insert the blank "AppleShare" disk you just initialized and click the "Disk" button until its name appears.

5) Select the installer script entitled "AppleShare on 3.5 Disk" and click Install. Before installing, the system will display an alert message explaining not to install this on your only copy of the system disk. Click "Perform This Update" to continue. Some disk swapping will be required.

6) When the installation is complete, make sure the AppleShare startup disk you just created is in drive 1, and restart. To save time, you can hold down the Control Open-Apple Reset keys rather than quitting to the Finder and doing a Shutdown.

7) When the Finder desktop is on the screen, use the mouse to select the graphic Control Panel under the Apple menu. If it isn't already highlighted, click on AppleShare.

8) Select the file server and connect using the Administrator name and password. Then select the AppleShare File Server volume and mount it. Close the graphic Control Panel.

9) Run the Installer on System.Tools. Click the "Disk" button until the file server name appears -- in our example, "A2".

Here is how to install some files over the network onto the file server volume:

1) Select the following scripts: Server Network Startup, Server Quick Logoff and optional scripts.

For optional scripts, select anything that IIGS systems staring over the network will require. For instance, if you need access to a network printer, like a LaserWriter or an AppleTalk ImageWriter, install those scripts.

2) Select the optional scripts you need by holding down the Open Apple key when you click on them.

Caution: do not try to install "Latest System Files" or "Latest System Files (No Finder)", or IIGS users will not be able to start up over the network. Note: There was an error in the original version of this article that indicated you should install the "Latest System Files (No Finder)" script. It was corrected in a subsequent issue of "TechBeat."

When you click "Install", the system installs the IIGS system software over the network. To show network activities, double arrows at the top left of the screen will flash. The installation may take some time.

3) Before you run off to grab a coffee, wait for the alert message telling you to "install this update only on a file server's startup volume". Click "Perform This Update" to continue.

4) When the installation is complete, hold down the Control Open-Apple Escape keys to enter the text Control Panel.

5) Under Slots, set the startup slot to 7. The next time you start up the IIGS, it will be over the network. First, however, you have to set up the server for IIGS users. See section 4 below.

4. Setting up the File Server for IIGS Users

Follow these steps:

1) Leaving the file server running, get into the AppleShare Admin program.

2) Use the Shift-click method to highlight all the IIGS users you want to start up over the network.

3) Select "Set Startup" under the Apple II menu.

4) To have IIGS users start up into the Finder, select "Finder" under the System folder. You can also select a default network printer if one is available, and if you installed the drivers for them in section 3. Note that any printers to be selected must be powered up and visible over the network.

For Apple IIe users, you can set the startup application to be any ProDOS 8 application (file type SYS). Apple IIe systems that will start up over the network must be equipped with AppleShare Workstation cards and 128K of RAM. They must also be enhanced. (If you will be running Aristotle Admin, you'll need an Apple II Memory Expansion card with at least 256K of RAM. IIGS users who want to run Aristotle Admin need to define a RAM disk with 256K of RAM.) IIGS users can also start up to any ProDOS 8, ProDOS-16, or GS/OS application.

When you have finished setting up the startup information for your Apple II users, all that remains is setting the access privileges:

1) Under the "Volumes" menu, select "Volume List", double-click on the server volume, and a dialog box will be displayed.

2) Set the access privileges so that everyone can "See Files, See Folders", and apply changes to all enclosed folders, unless you have an existing server.

In such a case, you should not apply changes to enclosed folders, as there may be folders you do not want IIGS users to have access to. IIGS users need "See Files, See Folders" access to the top level of the server startup volume, the System Folder, and all folders within it. They will also need the same access to the Icons folder, which holds IIGS Finder icons. Users may experience errors if they don't have sufficient access for various operations. If you find some IIGS software that needs write access to a particular folder, you should lock that folder so that adventurous users can't throw it away.

3) When you are finished setting up access privileges, quit from the AppleShare Admin program.

5. Booting over the Network

You should now be able to start up over the network with a IIGS or a IIe. A IIGS starting up over the network displays several different screens during the startup process. You can verify you installed the correct version of the Apple II Setup on your file server by watching the "Starting up over

the network" screen. It should say "2.1.3 GS.OS" at the top right if you used version 2.1.3, which comes with IIGS System 5.0.4.

After a few moments, the system prompts the user for a user name or allow guest access, if it is enabled. Be sure to test server logon as a normal user, and not just as the Administrator. That way you can uncover any access privilege problems. If you ever see an error message, take note of any error codes and compare them to the list in the back of the "ProDOS Technical Reference Manual" or in the "Apple IIGS GS/OS Reference." Two of the most common errors are listed in the Appendix at the end of this article. You'll find that most errors are easily explainable unless you mixed up software versions during installation.

You have now completed the installation of software to allow IIGS and IIe users to start up over the network.

Appendix: Common Errors

Cannot load file Start.GS.OS
Error = $0046
This is the message you get if you failed to follow Step 3 correctly. It is a ProDOS file system error $46, which means "Path not found". The GS/OS files the system requires to start up could not be found on the file server. If you have multiple file-server volumes, verify you installed the IIGS System Software over the network onto the server startup volume.

Unable to load descriptors
Error was $004E
This message denotes an access privileges problem. It is a ProDOS file system $4E error. This means the user had insufficient access privileges to complete the required operation, or, possibly, the file was locked. Most likely, you haven't given the user who experienced the error "See Files, See Folders" access to the top level of the server startup volume, the System folder, and all folders within it.

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Macintosh LC, IIe Card: "Printer Port already in use" Message

Why do I get a "Printer Port is already in use" message when starting up the Apple IIe Card application program?

This article has been archived and is no longer updated by Apple.
This message comes up when the Macintosh is trying to use the Printer Port for a LocalTalk (network) connection and the Apple IIe card is trying to use the port for serial data. This resulting conflict causes the "Printer Port is already in use" message.

If you are connected to a LocalTalk network in the Printer Port, use the "Network Printer" icon and not the "Printer Port" icon in the Slots menu. See the manual for information on selecting the network printer.

If you are connected to a serial printer in the Macintosh printer port, return to the Macintosh Chooser and select "AppleTalk Inactive". This removes the conflict, and the port-in-use message will no longer appear when you start the IIe application.

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Apple IIe Card: ProDOS 1.9. Corrects AppleWorks Date Errors

When I'm running the Apple IIe Card, AppleWorks does not seem to access the clock correctly: the date is wrong.

This article has been archived and is no longer updated by Apple.
Update the version of ProDOS on your AppleWorks disk to version 1.9. This version of ProDOS is shipping on the Apple II System Utilities version 3.2.

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TA46466_Apple_IIe_Card_Joystick_Support_(TIL07875).pdf

Apple IIe Card: Joystick Support

Does the Apple IIe Card support 16-pin joysticks or annunciators?

This article has been archived and is no longer updated by Apple.
No, the card supports only the 9-pin joystick/paddle connector.

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Apple IIe Card: Memory Card Only Supports 1 MB

With the Apple IIe Card, can the memory card support more than 1MB?

This article has been archived and is no longer updated by Apple.
To avoid compatibility problems, the memory card supports only 1MB, even if the Macintosh LC has more memory.

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Apple IIe Card: No Support for Parallel Printers

Can you print to parallel printers with the Apple IIe Card?

This article has been archived and is no longer updated by Apple.
No, the card supports only the ImageWriter and LaserWriter printers.

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Apple IIe Card: Troubleshooting Apple IIe Applications

If an Apple IIe application doesn't seem to work properly on the Apple IIe Card, see the troubleshooting procedures in this article.

This article has been archived and is no longer updated by Apple.

Changing General Option Panel Settings:
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* If text is hard to read, use monochrome monitor or switch to monochrome mode on a color display. Text is hard to read, because of the higher resolution of Mac monitor.

* If an application won't boot, when set to Fast speed, run at it at Normal speed.

* If an application seems slow, run it at Fast speed to get best performance.

* On some applications, do not turn Type Ahead "On". Program will lock up when you start to type.

* On some applications, if the Auxiliary Memory is turned on, the Memory Expansion card is ignored, even if it is installed in a slot. Do not turn on Auxilliary Memory, unless the application asks for it.

How to Change Slot Settings in the Option Panel

Change them one at a time in the following order:

1) If the application won't boot, the program seems to hang, or garbage appears on screen, remove the clock card.

2) If the application won't boot, the program seems to hang, or garbage appears on screen, remove the memory card.

3) If the application won't boot, the program seems to hang, or garbage appears on screen, remove all unnecessary cards.

4) If the application is still not working, study the configuration of the Apple IIe that the program is currently running on. Then, set up the Apple IIe Card's slots so that they are the same as those in the actual Apple IIe.

5) Some applications can only print directly to an ImageWriter with the printer icon only in slots 1 and 2.

6) Some applications can only print directly to ImageWriter with printer icon only in slot 1.

Changing SmartPort Settings in the Option Panel

Due to copy protection, some 3.5-inch application disks must be booted from the external UniDisk Drive (white 3.5-inch drive). Make the external drive, slot 5 drive 1.

Hardware Configurations
---
1) Some programs have mouse and joystick conflict. This also happens on the Apple IIe computer. To use the mouse, remove the joystick. Otherwise, the mouse will appear erratic.

2) With some programs, it is better to use the keyboard or joystick control, because the mouse is very sensitive. (The same thing happens

less apparently on the Apple IIe.)

3) Some programs must use two 5.25-inch disk drives. This is not a problem; you just need two 5.25-inch disk drives (the Apple 5.25-inch Drive, which is the only Grey drive).

Problems That Cannot Be Overcome
---

* An application tries to access Apple-IIe-specific hardware (due to copy protection or poor code). Generally, these programs won't work on the Apple IIGS either.

* An application does not print to a serial printer, only a parallel printer, and there is no parallel port on the LC. (Possibly a serial-to-parallel converter would work, but we did not test this).

* If the application uses special cards that are not available in the Slot Settings, the program will not work.

In general, rules that apply to an Apple IIe application running on the IIe are still in effect on the Apple IIe Card. If the application requires the KeyCaps to be down, the KeyCaps must be down. If DOS 3.3 must first be loaded, DOS 3.3 must be loaded first.

Article Change History:
03 Aug 1995 - Corrected minor typo.

Support Information Services

Published Date: Feb 18, 2012

ImageWriter II: Carriage Motor Makes a Loud Humming Noise

This article has been archived and is no longer updated by Apple.

BEFORE YOU START: Familiarize yourself with the ImageWriter II Technical Procedures. Be sure to follow proper ESD procedures.

PROBLEM: The carriage motor makes a loud "humming" noise when the carriage moves to the left side of the printer upon power up. This sometimes occurs after the printer has been taken apart and reassembled.

CURE: Check to make sure the ground strap from the CPU board to the Driver PCB is NOT routed around the right side of the motor mount. If the ground strap gets between the motor mount and the carriage assembly, the left carriage position sensor never detects the carriage, consequently the motor stays on as the printer tries to complete the power up sequence. The ground strap should be positioned between the motor mount and the left side of the case. If the ground strap is routed correctly see the General Troubleshooting Procedures for the ImageWriter II.

Published Date: Feb 18, 2012

TA46471_Apple_IIGS_System_Fan__(TIL07890).pdf

Apple IIGS: System Fan (2/97)

Why does the Apple IIGS need a fan?

This article has been archived and is no longer updated by Apple.

If your Apple IIGS has three or more expansion cards, they can cause a noticeable buildup of heat inside the computer. The Apple IIGS System Fan maintains the proper internal case temperature under these conditions, prolonging the life of your computer's components.

This fan is not compatible with the Apple IIGS Upgrade for Apple IIe computers.

Article Change History:
17 Feb 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Super Serial Card: Description (12/96)

This article describes the Super Serial Interface Card.

This article has been archived and is no longer updated by Apple.

Overview

The Apple II Super Serial Card provides a configurable RS 232 interface, allowing an Apple II, Apple II Plus, or Apple IIe computer to exchange data with other computers, modems, printers, terminals, and accessories employing a bidirectional RS-232-C interface in serial format (one bit at a time).

The Super Serial Card features an on-board switch allowing the operation of a printer, modem, or other serial device. This switch also eliminates the need for special connection cables such as modem eliminators.

System Requirements

To use the Apple II Super Serial Card, you need:
* an Apple II, Apple II Plus, or Apple IIe computer system with an available expansion slot; and
* a printer, modem, or other serial device.

Technical Specifications
---
* Single Level: EIA RS-232-C
* Connector Type: DB-25 socket
* On-Board ROM: 2K x 8 bit (2316 or equivalent)
* ACIA: S6551 or equivalent
* Baud Rate Selection: via on-board DIP switches (default) or via software commands
* Data word format: 1 start bit, 1 or 2 stop bits, 7 or 8 data bits; odd, even, or no parity
* Available baud rates: 50, 79, 110, 134.6, 150, 300, 600, 1200, 1800, 2400, 3400, 9600, 19200
* RS-232-C Signals Supported: RTS (Request to Send), CTS (Clear to Send), DTR (Data Terminal Ready), DSR (Data Set Ready), DCD (Data Carrier Detect), RXD (Receive Data), TXD (Transmit Data), (SG) Signal Ground.

Internal Cable Pinout
---
10 Pin Connector	25 Pin Connector	Signal Name
pin 1	pin 1	Frame Ground
pin 2	pin 2	Transmit Data
pin 3	pin 3	Receive Data
pin 4	pin 4	Request to Send (RTS)
pin 5	pin 5	Clear to Send (CTS)
pin 6	pin 6	Data Set Ready (DSR)
pin 7	pin 19	Secondary CTS
pin 8	pin 7	Signal Ground
pin 9	pin 20	Data Terminal Ready
pin 10	pin 8	Data Carrier Detect

Pin Explanation

FRAME GROUND: Provides electrical connection to give both devices connected a common frame ground. Usually tied to Signal Ground inside the cabinet of one of the devices.

TRANSMIT DATA: This pin conveys serial data sent from the Super Serial card. This is one of the pins that may need to be crossed over if the peripheral device is a DTE. The MODEM/TERM plug can perform this crossover.

RECEIVE DATA: This pin receives serial data sent from the device the Super Serial card connects the computer to. This is one of the pins that may need to be crossed over if the peripheral device is a DTE. The MODEM/TERM plug can perform this crossover.

REQUEST TO SEND (RTS): This signal is used by the computer to ask the peripheral device if it is ready to receive computer data. Often a device such as a printer will ignore this signal (will not have a pin connected to it) because the signals primary use is to control half duplex modems.

CLEAR TO SEND (CTS): This pin receives the peripheral's ready to receive data response to an RTS from the computer. Again this pin is used most often by modems.

DATA SET READY (DSR): This pin receives the signal generated by the peripheral that indicates that the peripheral is turned on and ready to communicate. This is one of the pins that may need to be crossed over if the peripheral device is a DTE. The MODEM/TERM plug can perform this crossover.

SECONDARY CTS: Some modems can transmit and receive on two channels (that is two separate communications on the same line). The Secondary CTS pin would be used to receive the peripheral's ready to receive data response to an RTS for the second channel from the computer.

SIGNAL GROUND: When this pin is connected between two RS232 devices it provides a common electrical level that the devices can reference the RS232 signals to.

DATA TERMINAL READY: This pin becomes active when the computer and SSC are ready to go on line. This is one of the pins that may need to be crossed over if the peripheral device is a DTE. The MODEM/TERM plug can perform this crossover. Also this pin can be used for flow control protocol handshaking.

DATA CARRIER DETECT: This pin receives the signal generated by a modem when it senses a carrier on the telephone line. The SSC would then respond by telling the computer that data was going to be coming from the modem.

Jumper Block

The jumper block has two positions, Terminal and Modem. The jumper block eliminates the need for special connection cables such as modem eliminators.

Switches

The fourteen switches, split into two banks named SW1 and SW2, are diagonally opposite the slot contacts. Holding the card so that the switches are at the top left, the two banks are arranged like this:

SW1 1 2 3 4 5 6 7 SW2 1 2 3 4 5 6 7
ON ON
OFF OFF

The markings SW1, SW2, ON, and OFF may not appear exactly as shown. If the lever on a switch is pointing towards the top of the card, the switch's contact is closed and the switch is ON. Use a sharp but soft point, like a pencil point, to move the levers.

Switch 1
1 2 3 4
Baud Rate:
50 On On On Off
75 On On Off On
110 On On Off Off
135 On Off On On
150 On Off On Off
300 On Off Off On
600 On Off Off Off
1200 Off On On On
1800 Off On On Off

2400 Off On Off On
3600 Off On Off Off
4800 Off Off On On
7200 Off Off On Off
9600 Off Off Off On
19200 Off Off Off Off

Switch 2
5 6
Auto linefeed after CR:
Enabled On
Disabled Off
Passage of interrupts from ACIA to CPU:
Enabled On
Disabled Off

Mode Switches

The setting of the Mode switches (SW1 5 and 6) determines the function of the remaining switches in one of two modes, Communications mode or Printer Mode. Printer Mode includes two modes for printer PROM emulation.

Switch 1
5 6
Mode:
Communications On On
Printer Off On
SIC P8 Emulation On Off
SIC P8A Emulation Off Off

Communications Mode

The remaining switches have the following functions:

Switches SW1-7 and SW2-7
SW1 7 SW2 7
Protocol:
RS-232C On Off

Switches SW2-1, SW2-2, SW2-3, SW2-4
SW2 1 2 3 4
Data format:
8 data/1 stop On On
7 data/1 stop On Off
8 data/2 stop Off On
7 data/2 stop Off Off

Parity:
None N/A On
Odd On Off
Even Off Off

Printer and Printer PROM Emulation Mode

The remaining switches have the following functions:

Switches SW1-7 and SW2-7
SW1 7 SW2 7
Protocol:
Normal Clear to Send (RS-232C) On Off
Secondary Clear to Send Off On

Switches SW2-1, SW2-2, SW2-3, SW2-4
SW2 1 2 3 4
Data format:
8 data/1 stop On
8 data/2 stop Off
Delay after carriage return:
32 milliseconds On
None Off
Line Width (Printer mode has no parity):
40 On On
72 On Off
80 On Off
132 Off Off

Important Information

There is a problem with using the Super Serial Card (SSC) terminal firmware at 1200 baud on an unenhanced IIe. The IIe 80-column card can't keep up with the data stream and eventually loses characters. Avoid this problem with faster, more sophisticated programs that can handle interrupts, such as Access II or third party terminal software. The proper terminal software also will allow use of the Extended Text Card with a modem at 1200 baud.

Article Change History:
16 Dec 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

X Windows for A/UX: Where To Get "xmh" (9/94)

Article Last Reviewed: 13 September 1994

Where I can get a copy of xmh? It is part of the MIT X11R4 Windows distribution, but I have noticed that this item is absent from Apple's X Windows for A/UX product.

This article has been archived and is no longer updated by Apple.
As you may have noticed from the "Getting started with X Window System for A/UX" documentation, only the "display server" and "xstdcmap" client applications are from X11R4. Other client applications, such as the programmer libraries and the X toolkit, are still from X11R3. Since "xmh" is from X11R4 client applications, it is not included in our current release of X Window System for A/UX.

Apple's "X Window System 2.1 for A/UX" product includes xman, but not xmh.
xmh requires the "mh" mail handling tools that are not included in either
X11 or A/UX.

To locate xmh, connect to ftp.uu.net on the internet.

Article Change History:
13 Sep 1994 - Reviewed. Updated ftp server address.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

A/UX 2.0: AT&T LP Spooler and Macintosh IIfx IOP Problem

On a Macintosh IIfx the "cancel" command under the AT&T Line Printer spooler system can't gracefully shut off the child process of "lpsched". Therefore, the remaining entries in the printer queue can't be printed. Eventually, this hangs the printer port (on a direct connected ImageWriter II). The problem only happens on the Macintosh IIfx. We suspect the problem is on the A/UX 2.0 Macintosh IIfx IOP serial driver tty settings.

This article has been archived and is no longer updated by Apple.

As a workaround, the "Macintosh IIfx Serial Switch" Macintosh OS CDEV seems to work for A/UX 2.0, which lets Macintosh IIfx serial ports be set to be Macintosh IIfx IOP-"compatible" for applications that use printer or modem ports that don't operate properly.

Published Date: Feb 18, 2012

Apple IIc (Platinum): Mouse Moved from Slot 4 to Slot 7

When the latest ("platinum") version of the Apple IIc was released, the main circuit board was changed to accommodate the new Memory Expansion Card. The firmware was also changed: the logical location for the mouse was moved from slot 4 (where the memory card image now resides) to slot 7.

This article has been archived and is no longer updated by Apple.

This causes problems when customers run the sample BASIC program in Appendix A of the AppleMouse II User's Manual. To make the program work correctly with the newest Apple IIc, change all occurrences of [slot] 4 to [slot] 7.

Published Date: Feb 18, 2012

Macintosh Portable: Set Internal SCSI Drive to ID "0"

Why does the Macintosh Portable internal hard drive need to be set to SCSI address "0"?

This article has been archived and is no longer updated by Apple.
If the Macintosh Portable internal hard drive is set to a SCSI address other than "0", the Portable CDEV does not operate properly. The hard drive starts up, but the Portable CDEV does not display the "Minutes Until Automatic Sleep" option for the hard drive, and the function is disabled. This is like starting up the Macintosh Portable with no internal hard drive.

Jumpers E1, E2, and E3 on the Conner drives are used to set the SCSI address. They use a binary counting system with E1 the least significant bit. No jumpers across E1, E2, and E3 (the factory setting) sets the drive to SCSI address "0", which is the standard Conner SCSI ID system.

Published Date: Feb 18, 2012

Macintosh: Tempest Information

A customer needs to modify our mouse devices to Tempest standards. Where can I get information on Tempest standards?
This article has been archived and is no longer updated by Apple.
Tempest is a term used to describe the modifications that must be made to a computer for it to pass strict government data security tests.

For information about Macintosh and Tempest standards, contact Apple's Washington, D.C. office at 703-264-5100.
Published Date: Feb 18, 2012

DRAM: General Information

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

1) What information is stored in DRAM?

2) What happens to the information in DRAM when the Macintosh is turned off?

3) Is DRAM volatile?

This article has been archived and is no longer updated by Apple.

1) DRAM is the memory used by the Macintosh to temporarily hold the information or data that the user is working on until it is saved to a hard disk, floppy disk, or another storage medium.

2) Once power is no longer supplied to RAM, the contents is lost. If a user is working on a Macintosh and turns the system off without saving the work, what was in DRAM during the work session will be lost. The data lost is the data that the user was working on before the power was removed.

3) Yes, DRAM is volatile. That's the nature of DRAM (Dynamic Random Access Memory); it needs to be constantly powered with electricity to remember its contents. The same applies to SRAM (Static Random Access Memory); however, SRAM does not need to be refreshed the way DRAM does, and this provides data retention for extended periods, which is why this type of RAM is used in Macintosh Portable computers.

Published Date: Feb 18, 2012

TA46481_LisaCalc_Problems_with_rounding_(TIL00791).pdf

LisaCalc: Problems with rounding

This article has been archived and is no longer updated by Apple.
In cell A2, enter the formula INT(A1*100)/100; in cell A1, enter the value 1.17. You would expect the result in A2 to be 1.17; however, due to difficulties in converting decimal to binary and back, the result returned is 1.16. If the intent of the above expression is to round to two decimal places, then use ROUND(A1,2) or ROUND(INT(A1*100)/100,2). To compare the two cells to see if they are equal, use IF(A2-A1<.0001,EQUAL,NOTEQUAL).
Published Date: Feb 18, 2012

Apple Ethernet NB Card: Power Consumption

How much current does the Apple Ethernet NB Card draw?

This article has been archived and is no longer updated by Apple.

The Apple Ethernet NB Card draws 3.96 watts at 5 volts. The recommended wattage limit for each NuBus slot is 13.9 watts.

The overall power-draw audit of the Ethernet NB Card (including power consumed by an external AAUI transceiver) is 1.165A.

AAUI cabling should not exceed 1.5m.

Published Date: Feb 18, 2012

Apple IIe: Brother EM-701 Typewriter Interface

This article has been archived and is no longer updated by Apple.

Here's how to interface a Brother EM-701 typewriter to an Apple IIe with a Super Serial Card. This information was supplied by Merlin's Computers, Covina, California.

Brother EM-701 Switch Settings

SW-1-1 ON
1-2 OFF
1-3 ON
1-4 OFF
1-5 OFF
1-6 OFF
1-7 OFF
1-8 ON

SW-2-1 OFF
2-2 OFF These set the typewriter to 9600 baud.
2-3 OFF
2-4 OFF

SW-2 Controls the baud rate of the typewriter. If the typewriter is set to 8-bit transmission, the typewriter will need a different print wheel because of the $ and %. The characters don't appear in the 8-bit form or have problems printing.

Super Serial Card

(The Super Serial Card needs to have the jumper block pointing toward 'Terminal').

SW-1-1 OFF
1-2 OFF
1-3 OFF
1-4 ON
1-5 ON
1-6 ON
1-7 ON

SW-2-1 ON
2-2 OFF
2-3 OFF
2-4 OFF
2-5 ON
2-6 ON
2-7 OFF

Apple Computer, Inc., is not responsible for the content of this article.

Merlin's Computers

Published Date: Feb 18, 2012

Macintosh IIfx: 4MB SIMM Configuration (11/94)

I have a Macintosh IIfx with 4MB of RAM and a Macintosh Display Card 8*24 GC installed. When I add the 8*24 GC CDEV to the System Folder and try to start up the system, it hangs at the "Welcome to Macintosh" message. When I remove the 8*24 GC CDEV from the System Folder, the system starts up and operates normally. (This does not happen with a Macintosh IIfx with 8MB of RAM installed.)

This article has been archived and is no longer updated by Apple.
This problem is peculiar to the Macintosh IIfx with 4MB of RAM installed. Apple states that, when using only 4MB of RAM in the Macintosh IIfx, the SIMMs MUST BE installed in bank A. Although the Macintosh IIfx may work normally in some configurations with the SIMMs installed in bank B; in others, it doesn't.

To eliminate the problems you are experiencing with the Macintosh IIfx, make sure the RAM SIMMs are in bank A.

Article Change History:
08 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

StyleWriter: HyperCard 2.X Card Printing Problem/Fix (12/94)

Vertical lines do not align perfectly when printing to a StyleWriter from HyperCard 2.X using the "Print Card" option. This problems does not happen with horizontal lines or when using the "Print Stack" option.

Is this a known problem?

This article has been archived and is no longer updated by Apple.
Yes, StyleWriter output has vertical-line registration problems when using the "Print Card" option in HyperCard 2.X.

Claris is aware of the issue and is investigating it. The registration problem is caused by the HyperCard printing code, not by the StyleWriter.

The registration problem can be avoided by using the "Mark Card" option:

1) Go to the card you want to print.

2) Display the "message box".

3) Type "Mark Card" into the message box and press either the Return or Enter key. Note that more than one card can be marked at a time.

4) Select "Print Stack" from the "File" menu.

5) Select the "Marked Cards" option.

6) Click the "Print" button.

7) Type "unMark Card" in the message box and press either the Return or Enter key. This unmarks the card so it doesn't printed the next time this procedure is used.

Article Change History:
05 Dec 1994 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

StyleWriter: How to Avoid Paper Jams

Have there been any reported paper-jamming problems with the StyleWriter printers?

This article has been archived and is no longer updated by Apple.
We haven't received any reports of paper-jamming problems with the StyleWriter printers.

The StyleWriter has a detachable cut-sheet feeder that easily connects to the printer. When the sheet feeder is connected properly, the product performs flawlessly. When attaching the sheet feeder, ensure that the sheet feeder is locked in place and that the paper support is installed; it's also important to press the release button on the sheet feeder to snap the paper panel forward for proper positioning. The sheet feeder holds up to 50 sheets of 20-pound paper and automatically feeds the paper while printing.

The StyleWriter can be used without the sheet feeder with front or rear manual feed. The front and rear manual-feed options simplify the printing of single-sheet paper, envelopes, labels, and transparencies.

Paper-Feed Features
---
* Detachable cut-sheet feeder accurately feeds up to 50 sheets automatically.
* Rear manual-feed slot is ideal for printing materials like envelopes, labels, transparencies, and heavy paper.
* Front manual-feed slot provides easy access for standard paper.

Published Date: Feb 18, 2012

System 7: Using Retrospect 1.3 with File Sharing Active

My computer stop responding after requesting either Restore or Retrieve in Retrospect 1.3 with file sharing turned on.

This article has been archived and is no longer updated by Apple.
This is caused by a corrupted desktop file following a backup with Retrospect 1.3. Here's how to solve this issue:

1) Rebuild the Macintosh's desktop file by holding the Command and Option keys down while restarting the computer.

2) Install either System 7 Tune-Up (if using System 7.0 or System 7.0.1) System 7.1

Contact Dantz Development for the latest information about Retrospect versions and updates; search on Dantz for contact information.
Published Date: Feb 18, 2012

System 7: Memory Errors in PrintMonitor

Article Change History

09/17/92 - UPDATED
* With information about System 7 Tune-Up.
05/11/92 - REVIEWED
* For accuracy.

When trying to print in the background, PrintMonitor delivered the following message: "Not enough memory to print. PrintMonitor will try to print again when more memory is available." The document was saved in the PrintMonitor queue and never printed.

I've encountered this problem on Macintosh II and Macintosh SE computers with 2MB to 8MB of RAM installed. I turned off virtual memory. I printed from various applications, including the Finder.

This article has been archived and is no longer updated by Apple.

In low-memory situations this is a valid error message; for instance, if PrintMonitor needs more memory allocated to it, or if there is not enough available RAM to launch PrintMonitor. But if the suggested memory size for PrintMonitor is adequate, and there is plenty of RAM for PrintMonitor to expand, this error message indicates there is a problem with the PrintMonitor application.

When trying to print in the background under System 7, a "Not enough memory" error might indicate a damaged PrintMonitor application. When this occurs, install a new copy of PrintMonitor from the Install 1 disk. Either install this file using the Installer program, or simply drag it over. The waiting print jobs will print as soon as you install the new PrintMonitor.

You may also want to run Disk First Aid, but this isn't always necessary. To avoid this kind of damage to PrintMonitor in the future, upgrade your system software with the System 7 Tune-Up. Revised LaserWriter drivers in the Tune-Up prevent PrintMonitor from getting damaged as it occasionally did before. The current version of System 7 Tune-Up is 1.1.1.

Published Date: Feb 18, 2012

System 7: Intercharacter Spacing, Kerning in 6.x and 7.0

Is there any difference between intercharacter spacing and kerning pairs in system software 7.0 and 6.x? What is the difference between bitmap and TrueType spacing?

This article has been archived and is no longer updated by Apple.

```
Spacing and Kerning
-------------------
Apple didn't change spacing with the bitmap characters in System 7, but
matched each bitmapped character width in 6.x to the corresponding
character in 7.0.  New bitmap characters created just for System 7 will
have spacing differences.

Apple didn't changed the kerning pairs either.  Many applications allow you
to change kerning.

Bitmap and TrueType Spacing Differences
---------------------------------------
Bitmaps use integer widths, while outline fonts (TrueType) use fractional
widths.  Fractional widths allow exact size adjustments for intercharacter
spacing as well as kerning.  Integer widths limit these adjustments to
whole sizes.  This is one of the main advantages of TrueType.
```

Published Date: Feb 18, 2012

System 7: Reserved Fonts are Invisible

I was moving fonts between my System 6 and System 7 Macintosh computers. I didn't see some of the basic fonts, like Geneva 9 or Chicago 12, on my System 7 Macintosh. When I moved the same suitcases back to System 6, I saw them with no problem using Font/DA Mover. Why?

This article has been archived and is no longer updated by Apple.

In System 7.0, reserved fonts such as Geneva 9 or Chicago 12 are made invisible by the Finder. This prevents novice users from removing these fonts from the System suitcase, which would cause crashes. Reserved fonts are invisible in both System font suitcases and regular font suitcases under System 7.

Reserved fonts include:

* Geneva 9
* Geneva 12
* Chicago 12
* Monaco 9

Although this prevents serious damage to system files, it is confusing to users who moved the fonts using Font/DA Mover under System 6.

Font/DA Mover can view and copy these fonts. Remember that Font/DA Mover version 4.1 is necessary to use suitcases that contain TrueType fonts.

Published Date: Feb 18, 2012

System 7: Problem with Stationery‘s "Save In" Option

Article Change History

08/19/92 - REVIEWED
* For technical accuracy.

The Finder seems to restart itself or crash occasionally when I try to save a copy of a stationery document. This happens when I double-click the document in the Finder and attempt to save the copy to a floppy disk.

This article has been archived and is no longer updated by Apple.

There is a known problem with the Save In option of stationery documents created from older "stationery-unaware" applications.

The problem occurs after you double-click on a stationery document, choose Save In, and then insert a floppy disk. When you choose to save the document on the floppy disk, you will either get an error or the system will return to the Finder without saving the document.

The problem does not occur when you mount a floppy disk before you open the stationery document.

Published Date: Feb 18, 2012

GS BASIC: Features and Editing Commands

This article discusses GS BASIC features and editing commands.
This article has been archived and is no longer updated by Apple.

ToolBox Primitives

GS BASIC includes primitives (built-in, low-level commands) that let the user interact with the ToolBox routines. Whereas most other ToolBox routines are implemented in external libraries that need to be explicitly called up, these commands -- Eventdef, Menudef, and Taskpoll -- are included in GS BASIC itself because they bind the ToolBox and BASIC line numbers.

Eventdef

The structure of Macintosh-like programs, as implemented by the Apple II GS and its ToolBox routines, requires that programs be event-driven. This means that the heart of a program is a main loop that constantly monitors what events -- mouse clicks, keyboard presses, window update events, network activity, and so on -- have taken place. Eventdef associates BASIC line numbers with these events: whenever one of these events occurs, GS BASIC starts running the instructions specified in a table set up by the programmer and maintained by Eventdef.

Menudef

One of the places a mouse click can occur is in the menu bar. When this happens, a menu is displayed, letting the user select a menu item. The user specifies that a certain function is to be performed. Like Eventdef, Menudef associates BASIC line numbers with menu items, so that when a menu item is selected, GS BASIC can easily determine what statements to run, and run them.

Taskpoll

Programs shouldn't start fielding events and responding to them until all the ToolBox libraries are loaded and the tables that Menudef and Eventdef maintain are initialized. The Taskpoll command lets the programmer turn off the interrupting feature of GS BASIC and turn them on when ready for them.

Procedures and Functions

The most convenient structure of of any program is a procedure, function, or subroutine. In most BASICs, including Applesoft, subroutines are implemented in a very straightforward fashion. GS BASIC provides a more powerful way to specify and call procedures.

Applesoft lets programmers call subroutines with the GOSUB xxx command, where xxx is the line number to which control branches. Statements are then executed until a RETURN command is executed, at which time the program returns to the line that called the subroutines, and continues from there.

GS BASIC allows programmers to define specific procedures that are called with the PROC command. The PROC command performs the same functions as Applesoft's GOSUB, and lets the programmer pass local parameters as well.

GS BASIC has a more powerful line editor than Applesoft's. Access it by typing EDIT linnum[-linnum]

Editing Commands

CONTROL-D	delete character to the left of cursor; moves line to left
CONTROL-F	delete character under the cursor; moves line left
CONTROL-X	delete entire line
CONTROL-Y	delete line to left and under cursor
CONTROL-E	toggle insert mode
RETURN	accept entire line (even characters to right of cursor)
DELETE	same as CONTROL-D

GS BASIC Commands

_ (underscore)	ERRLIN	LOG(	SCALB(
ABS(	ERROR	LOG1(	SCALE(
AND	ERRTOOL	LOG2(	SECONDS@
ANU(	ERRTXT$(	LOGB%(	SET
APPEND	EVENTDEF	MENUDEF	SGN(
AS	EXCEPTION	MID$(	SHOWDIGITS
ASC(	EXEC	MOD	SIN(
ASSIGN	EXEVENT@(	NEGATE(	SPACE$(
ATN(	EXFN	NEW	SPC(

AUTO	EXP(	NEXT	SQR(
AUXID@	EXP1(	NORMAL	SRC
BASIC@(	EXP2(	NOT	STEP
BDF	FILE(	NOTRACE	STOP
BREAK	FILTYP(	OFF	STR$(
BTN(	FILTYP=	ON	SUB$(
CALL	FIX(	OPEN	SWAP
CALL%	FN	OR	TAB(
CAT	FOR	OPUTPUT	TAN(
CATALOG	FRE	OUTREC	TASKPOLL
CHAIN	FREMEM(	PDL(	TASKREC%(
CHR$(	GET	PEEK(	TASKREC@(
CLEAR	GOSUB	PERFORM	TEN(
CLOSE	GOTO	PFX$(	TEXT
COMPI(	GRAF	PI	TEXTPORT
CONT	HEX$(	POKE	THEN
CONV(	HLIST	PREFIX	TIME$
CONV@(	HOME	PREFIX$	TIME(
CONV#(	HPOS	PRINT	TIMER
CONV$(	IF	PROC	TO
CONV%(	IMAGE	PROGNAM$	TRACE
CONV&(	INDENT	PUT	TXT
COPY	INIT	QUIT	TYPE
COS(	INPUT	R.STACK%(	TYP(
CREATE	INSTR(	R.STACK@(	UBOUND(
DATA	INT(	R.STACK&(	UCASE$(
DATE$	INVERSE	RANDOMIZE	UIR(
DATE(	INVOKE	READ	UNLOCK
DEF	JOYX(	REC(	UNTIL
DEL	JOYY(	RELATION(	UPDATE
DELETE	KBD	REM	USING
DIM	LEFT$(	REMDR	VAL(
DIR	LEN(	RENAME	VAR(
DIV	LET	REP$(	VAR$(
DO	LIBFIND	RESTORE	VARPTR(
EDIT	LIBRARY	RESUME	VARPTR$(
ELSE	LIST	RETURN	VOLUMES
END	LISTTAB	RIGHT$(	VPOS
EOF	LOAD	RND(	WHILE
EOFMARK(	LOCAL	ROUND(	WRITE
ERASE	LOCATE	RUN	XOR
ERR	LOCK	SAVE	

Toolbox Definition Files (TDFs)

QuickDraw	ADB	Desk	Dialog
QuickDraw	Font	Intmath	LineEdit
List	Loader	Locater	Memory
Menu	MiscTool	NoteSyn	Print

Menu	Scheduler	Scrap	StdFile
Text	Window	Control	

Built-in Constants and Reserved Variables

PI	to 20 digits
LISTTAB	number of spaces between line number and first statement
INDENT	controls indenting of FOR...NEXT and WHILE...UNTIL loops
OUTREC	maximum line length
VPOS	vertical cursor position
HPOS	horizontal cursor position
FRE	amount of memory available
SHOWDIGITS	specifies the number of digits to display for REAL numbers
KBD	holds value of last key pressed
ERR	contains error number
ERRLIN	contains line where error occurred

Variable Specifications

Real:	(+ or - 1.7E38) (less than 1.5E-45 equals 0)
Double real:	(+ or - 1.7E308) (less than 5.0E-324 equals 0)
Integer:	(%) (2 bytes) (-32768 to 32767)
Double integer:	(@) (4 bytes) (-2147483648 to 2147483647)
Long integer:	(&) (8 bytes) (-9223372036854775808 to 9223372036854775807)
String:	($) 255 characters
Arrays:	(!)

Published Date: Feb 18, 2012

System 7: CloseView‘s Command Keys

I was trying to open a folder in System 7, when suddenly a big black box appeared around my pointer. I can make it go away if I turn off extensions at startup (by holding down the Shift key), but I don't understand what's going on.
This article has been archived and is no longer updated by Apple.
You have inadvertently activated CloseView, a utility designed to aid the visually impaired. To turn off CloseView, type Command-Option-O. To learn how to use CloseView, refer to the Macintosh User's Guide.

When using CloseView, notice that its shortcut keystrokes are very similar to shortcut keystrokes built into the new Finder. When trying to open the folder, you may have inadvertently used the keystroke to activate CloseView. In general, the slight differences between the Finder and CloseView commands may cause confusion.

For example:

```
Finder:     Command-O                Opens window
CloseView:  Command-Option-O         Turn on/off CloseView

Finder:     Command-X                Cut
CloseView:  Command-Option-X         Turn on/off magnification

Finder:     Command-UpArrow          Go to next higher level
CloseView:  Command-Option-UpArrow   Increase magnification
                                    level

Finder:     Command-DownArrow        Go to next lower level
                                    (open icon)

CloseView:  Command-Option-DownArrow  Decrease magnification level
```

It is unlikely that a novice or casual user would stumble across CloseView, because it is never installed by the System 7 Installer (not even by Easy Install). In fact, if a pre-System 7 version of CloseView was in the System Folder, the System 7 Installer deletes it. To install CloseView, drag it into the Control Panels folder or the System Folder.

CloseView was designed for the visually impaired who may not be able to see their keyboard. A mis-keyed command could cause them a great deal of confusion.

CloseView does not display zoom effects when windows open or close. For many people, the zoom effects are useful for visual orientation, showing what the computer is activating or putting away. Without the zoom effects, items just appear and disappear from the screen.

Note: CloseView is written as a single word, not as Close View.
Published Date: Feb 18, 2012

System 7: Finder Doesn‘t Allow Renaming Fonts

I'm using System 7, and I'm trying to rename some fonts in the Finder, but it won't let me. I can rename any of my sounds, but none of my fonts.
This article has been archived and is no longer updated by Apple.
You can't change the names of bitmap or TrueType fonts in the System 7 Finder.

There are a few legitimate reasons why end users would want to rename their fonts, but allowing that freedom in the Finder would cause most users considerable confusion. Specifically, if a font name changes, you have to manually update all instances of that font in documents. For instance, if you changed "Palatino" to "MyFont," you would have to open any documents that used "Palatino," select the text, and choose "MyFont" from the font menu. Likewise, transferring files with renamed fonts between Macintosh computers would generate many problems. Therefore, System 7 does not allow changing font names in the Finder.

Utilities such as ResEdit and many font design applications can change the names of fonts.

Warning: The instructions in this article refer to using ResEdit. Apple Computer, Inc., is not liable for any damage done to your software through the use of ResEdit to alter software.
Published Date: Feb 18, 2012

System 7: LaserJet IIP Printing Issue

My Hewlett-Packard LaserJet IIP doesn't print since I installed System 7.
This article has been archived and is no longer updated by Apple.
To use the Hewlett-Packard driver version 1.3, turn off background printing and don't use TrueType fonts. With background printing off and TrueType fonts present, the error "cannot find LaserPrep file" sometimes appears.

Hewlett-Packard is aware of this issue, please contact them for current update information.
Published Date: Feb 18, 2012

System 7: Adobe Illustrator 3.0.1 Incompatible with TrueType

In Adobe Illustrator, the characters I type appear either as vertical lines or not at all.

This article has been archived and is no longer updated by Apple.

The latest version of Adobe Illustrator 3.0.1 does not allow use with TrueType fonts. The only solution is to remove the TrueType fonts from the system.

Published Date: Feb 18, 2012

Macintosh Plus: Effects of Extreme Cold

What are the long-term effects of storing a Macintosh Plus in extreme cold (-40 degrees) for an extended period?

This article has been archived and is no longer updated by Apple.
Here are the operational and non-operational (storage) condition specifications for the Macintosh Plus:

Temperature

Degrees Degrees
Fahrenheit Celsius
--- ---
Operating 50 to 104 10 to 40
Storing -40 to 122 -40 to 50

Humidity

All conditions: 5% to 90% relative humidity

Altitude
---
0 to 4615 meters
0 to 15,000 feet

If you expect the Macintosh Plus to be at -40 (F or C) for a long period, especially if there are occasional dips significantly below -40 degrees, you may encounter some, all, or none of these conditions:

- Possible thermal stress of the electrolytic capacitors to the extent that they crack, leak, or fail when thawed.

- Possible thermal stress of the fiberglass/epoxy resin of the circuit boards, leading to hairline fractures of the printed circuit board.

- Possible thermal stress of the CRT, leading to hairline fractures of the glass.

- Possible thermal stress of the cables inside the Macintosh Plus, leading to hairline fractures of the insulation or conductor.

- Possible thermal stress of the junctions inside the integrated circuits caused by the variation in thermal expansion of the plastic case and the metal wires.

Any of these scenarios can lead to failure of one or more parts of the system. We recommend that you keep the Macintosh Plus in a closet or in some other heated living quarters. If this is not an option, after removing the system from this extreme temperature, allow the Macintosh Plus to return to a normal operating temperature slowly, possibly over a period of days. By allowing the components to warm gradually, if there hasn't been any irreversible damage, the system should be fine.

If the capacitors have cracked, you may notice some fluid dripping down the left side of the case or some discoloration in this area. In that case, or if the system behaves erratically or you hear crackling or popping on startup, shut down the system immediately and take it to your authorized service center for examination.

Published Date: Feb 18, 2012

AppleShare PC: "Needs Version 3.1 or Later of DOS" Message

When loading AppleShare PC to an IBM PC, a customer is getting this error message: "needs version 3.1 or later of DOS". The customer tried DOS versions 4.0 and 5.0 and got the same message.

This article has been archived and is no longer updated by Apple.
The problem is associated with the REDIR subdirectory file located in the AppleShare PC DIR. In all probability, your customer is using an AppleShare PC version older than 2.X, which works effectively only with DOS versions through the 3.X series. Your customer needs to upgrade to the more current Farallon version of the AppleShare PC software.

This error message also has been reported by customers when they haven't properly followed the directions for loading files for DOS 5.0. The customer should pay close attention to the instructions regarding "expanding" (see the DOS 5.0 User's Manual, page 28).

Published Date: Feb 18, 2012

MacX25: Multiple Workstation Support

How many workstations does the MacPAD software (shipped with MacX25) support?

This article has been archived and is no longer updated by Apple.

If each workstation uses only one virtual circuit, 64 workstations can access the MacX25 server simultaneously. However, applications can be written so that multiple circuits can be accessed by one workstation; therefore, the number of workstations that can be supported depends on how the application is written.

Published Date: Feb 18, 2012

TA46523_Lisa_Line_Frequency_(TIL00797).pdf

Lisa: Line Frequency

This article has been archived and is no longer updated by Apple.

The Lisa hardware manual wrongly states that the line frequency should be 60 Hz +/- 2. The actual number is 50-60 Hz +/- 2, which covers most reasonable power sources. This is true of all Lisa 2s.

Published Date: Feb 18, 2012

Personal LaserWriter: How To Determine Page Count

Can you determine the page count on the Personal LaserWriter LS?

This article has been archived and is no longer updated by Apple.
There is no way to determine the actual number of pages that have been printed on a Personal LaserWriter LS and Personal LaserWriter SC controller board or print engine. The Personal LaserWriter NT controller board stores the number of pages that the controller board has printed, but not the number of pages the engine has printed.

With the Personal LaserWriter NT, the customer can keep track of the page count using the controller board (user test print). If the controller board is never changed, the page count should be accurate. If the board is repaired or replaced, the page count will change, and it is the customer's responsibility to monitor the printer's page count. Since the Personal LaserWriter LS and Personal LaserWriter SC do not have the controller count capability, the customer needs to keep track of the page count. To assist customers with this task, Apple offers the Repair Log Label (part number 826-0481).

Published Date: Feb 18, 2012

GS BASIC: General Description

This article gives a general overview of GS BASIC and the differences between it and Applesoft BASIC.

This article has been archived and is no longer updated by Apple.

GS BASIC vs Applesoft BASIC

Unlike Applesoft BASIC, GS BASIC gives programmers access to all of the new features of the Apple IIGS: Super hi-res graphics, the Ensoniq sound chip, expanded memory, the new Tools, and other enhanced ROM facilities.

GS BASIC is an entirely RAM-based language. It does not rely on Applesoft, nor is it related to it in any way except that they are both BASIC languages. In fact, because of advanced features like access to all of GS RAM, more powerful I/O instructions, and access of external routines, GS BASIC is not 100% compatible with Applesoft. The number of commands is increased from 120 to over 200 (see List of GS BASIC Commands), many Applesoft BASIC commands do different things in GS BASIC, and some Applesoft commands do not appear in GS BASIC at all (PR#, IN#, and HGR for example). Applesoft and GS BASIC files are stored differently on disk, and are not interchangeable. Finally, GS BASIC is designed to run under ProDOS 16, whereas Applesoft can run only under ProDOS 8. Otherwise, GS BASIC would not be able to take advantage of the GS's powerful new features.

GS BASIC gives the programmer twice the number of variable types that Applesoft has. In addition to Integer, Real, and String types, GS BASIC provides Double Real, Double Integer, and Long Integer.

GS BASIC is not as fast as Applesoft. Applesoft runs the following program in 4 seconds, while GS BASIC takes 43 seconds:

```
10 FOR i = 1 TO 10000
60 NEXT i
```

With longer programs, the difference is less. This program takes Applesoft 48 seconds and GS BASIC 217 seconds:

```
10 FOR i = 1 TO 10000
20 a=i-i
30 a=i+i
40 a=i/i
50 a=i*i
60 NEXT i
```

Access to External Routines

One of GS BASIC's main advantages is its powerful library and external routine facilities. Provided with GA BASIC are many ToolBox Definition Routines (TDFs) that let programmers call the GS's ToolBox routines (QuickDraw II, Menu Manager, Window Manager, Sound Manager, and so on). These routines are setup with the LIBRARY command, and called with the CALL and EXFN commands.

Programmers can also define and call their own library routines. These are loaded with the INVOKE command, and called with the PERFORM and EXFN commands.

Display Format

GS BASIC offers improved formatting of listings. Users can specify how much space appears between a line number and the first statement, and how far to indent when listing program statements within a FOR...NEXT or DO...WHILE...UNTIL loop. See the List of Built-in Constants and Reserved Variables.

Sound

Sound is created through Sound Manager routines.

Built-in Constants and Variables

GS BASIC includes pi calculated to 20 digits. Also, GS BASIC stores many system parameters in reserved variables. Much of the system's status can be determined and changed by examining and setting these variables. For example, the cursor's screen position is stored in the variables VPOS and HPOS. You can move the cursor simply by assigning new values to these variables.

Labels

GOTO, GOSUB, and ON xxx commands can point to labels instead of line numbers, making programs much easier to follow.

Instead of: 1234 GOSUB 50: REM Read a character from the modem

the programmer can type: 1234 GOSUB READ_MODEM

Looping

GS BASIC includes three looping structures not in Applesoft:

IF...THEN...ELSE
FOR...NEXT...STEP
DO...WHILE...UNTIL

These structures, common in other languages such as Pascal and Fortran, give the programmer greater flexibility in program control. In addition, the IF...THEN structure has multi-line capabilities. This means that all statements that appear between the IF and the THEN do not have to appear on the same line.

PRINT USING and INPUT USING
PRINT USING and INPUT USING have long been a features of BASICs other than Applesoft. GS BASIC implements them with a vengeance, making them nearly as powerful as FORTRAN format statements. A programmer has many ways to specify how to print data to a screen and read it from a keyboard or other device.

When defining a USING statement, a programmer can specify it in many ways. The first way is to specify the format on the same line, right after the USING statement. The second way is to assign the formatting string to a variable (such as FMT$), and then enter that variable after the USING statement. This allows the programmer to use the same formatting in many PRINT statements. Or, if the programmer doesn't want to use variable space to store a formatting string, he can use the IMAGE command to define it. The programmer can then simply refer to the line on which it appears in the PRINT USING statement. All of these options apply to INPUT USING as well.

PRINT and and INPUT USING don't merely have to work with the text screen. With optional device extensions, a programmer can PRINT or INPUT to or from a file, or PRINT to a printer or even the Super-Hi-res graphics screen.

Finally, GS BASIC offers many formatting commands that are to be placed in the formatting strings. These are divided into three groups: String Spec, Literal Spec, and Numeric Spec. Numeric Spec is further divided into three sub-sections: FIXSPEC, SCISPEC, and ENGRSPEC. The SCALE command can be used to accurately reposition a decimal point in a floating point number.
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Macintosh Portable: Caps Lock Function and System Sleep

The Macintosh Portable loses the Caps Lock key function when reactivated from the "sleep" mode.

This article has been archived and is no longer updated by Apple.
In the following situation, the Caps Lock key function is lost:

1) The Caps Lock key is pressed and locked in the down position.
2) The Macintosh Portable is put into the "sleep" mode.
3) The Macintosh Portable is reactivated by pressing a key.

Even though the Caps Lock key is still locked in the down position, the system reverts to lowercase. This happens because the "Caps Lock flag" stored in the register is temporary and is lost during the sleep mode.

To reinstate Caps Lock after reactivating the Macintosh Portable from the "sleep" mode, press the Caps Lock key twice: once to unlock it and a second time to reset it.

This applies to both the original Macintosh Portable and the revised Macintosh Portable with the backlit screen. No "fix" is expected. This problem does not exist with the PowerBooks.

Published Date: Feb 18, 2012

System 7: Importing and Saving Documents with Excel 3.0

Excel 3.0 does not seem to be saving changes under System 7.

This article has been archived and is no longer updated by Apple.

Under System 7, if you open an Excel 2.2 document or text file with Excel 3.0, then Save, the Save dialog box opens automatically to the folder where the Excel application resides. According to Microsoft, this is a feature because the file is "new" (converted). The original document, in a different folder, is not overwritten.

If you later open the original document, you might think your changes were never saved.

Here are two workarounds:

- Before saving, navigate back to the original folder and replace the old file.

- Keep Excel 3.0 and your Excel documents in the same folder.

Published Date: Feb 18, 2012

TA46537_System_Page_Size_in_Page_Preview_(TIL07983).pdf

System 7: Page Size in Page Preview

Article Change History

09/17/92 - REVISED
* To take out version numbers of applications.

Under System 7, with the LaserWriter Driver, if I select one of the custom paper sizes such as "Envelope - Edge Feed" and then switch over to Page Preview (if the application has Page Preview), I see a letter-size paper, not an envelope size paper. Why is this?

This article has been archived and is no longer updated by Apple.

Most applications ignore the resource that holds the information about the selected custom paper size. FileMaker Pro shows an envelope when you select this option. Currently, Microsoft Word, Excel, 4th Dimension, and other applications do not.

Published Date: Feb 18, 2012

System 7: Don‘t Unmount a Floppy Disk from a Desk Accessory

Article Change History

08/25/92 - REVIEWED
* For technical accuracy; edited.

Under System 7, whenever I use a desk accessory to unmount (but not eject) a floppy disk, my system crashes.

This article has been archived and is no longer updated by Apple.

```
A third party incompatiblity causes this.  This involves only those few
desk accessories (DiskTop is one) that have an unmount feature.  The only
workaround is to avoid unmounting disks from within desk accessories.
There's no problem with simply ejecting floppy disks (leaving their icons
visible on the desktop).
```

Published Date: Feb 18, 2012

TA46539_System_Installer_on_Printing_Tools_Disk_is_for_System__(TIL07985).pdf

System 7: Installer on Printing Tools Disk is for System 6

Article Change History

09/14/92 - REVIEWED
* For technical accuracy.

I removed my printer drivers from the Extensions folder and deleted them. When I reinstalled the system software, the Printing disk displayed this message: "The selected disk 'Hard Disk' does not require a printer update." However, when I chose Customize and "Software for LaserWriter" it installed the proper driver. Is the Installer confused?

This article has been archived and is no longer updated by Apple.

If the PrintMonitor is in the Extensions folder, the Installer on the Printing disk will indicate that you don't need to update. The Installer on the Install 1 disk will allow you to install a specific driver using Customize. Remove the PrintMonitor to do an Easy Install.

There's a good reason for this. The Installer on the Printing Tools disk is for System 6. The preferred method is to use Customize from the Installer on the Install 1 disk.

Published Date: Feb 18, 2012

System 7: Problem Printing AP Newswire Maps

Article Change History

09/21/92 - REVIEWED
* For technical accuracy.

I installed system software 7.0 on one Macintosh in a network. I then updated the printer drivers of the other Macintosh computers, which are running system software 6.0.3, to the system 7.0 printer drivers. All the computers are getting PostScript Errors "Error: Limit Check, offending command: Closed Path" when printing from MacDraw II version 1.1. The documents are maps in MacDraw II that come from the AP Newswire via Satellite.

This article has been archived and is no longer updated by Apple.

Once you have eliminated all system-related software conflicts, we suspect System 7 drivers and Postscript are creating this conflict.

According to Claris Tech support, this is a known issue with AP Newswire maps. The objects in these documents have too many vertices. They must be simplified by removing vertex points using MacDraw II. The System 7 LaserWriter drivers are less tolerant of this problem than the System 6 drivers.

Workarounds:

* Do not print these documents running System 7 or the System 7 printer drivers, or

* Simplify them with MacDraw II.

Published Date: Feb 18, 2012

TA46541_System_Virtual_Memory_Page_Size_(TIL07988).pdf

System 7: Virtual Memory Page Size

Article Change History

08/17/92 - REVIEWED
* For technical accuracy.

What is the page size for virtual memory and the largest swap of memory at one time?

This article has been archived and is no longer updated by Apple.

The page size is 4K for virtual memory. In other words, with virtual memory turned on, System 7 will read and write memory to disk in 4K chunks.

The largest amount of RAM swapped to or from disk at one time is one megabytes.

Published Date: Feb 18, 2012

System 7: When the Finder Loses Its Colors

My colors sometimes disappear in the Finder. Especially my desktop patterns, labels, and window frame colors. Also, my general control panel colors sometimes switch to black and white. Why is this?
This article has been archived and is no longer updated by Apple.
When an application, INIT or control panel "takes away" colors from the Finder, the Finder tries to replace the colors. Unfortunately, the Finder is not "intelligent" about this. A "used" color is no longer available to the Finder. This is very noticeable in 4-bit mode, 16 colors. When the Finder doesn't have enough choices, it often defaults to black and white
until the colors are "given back."

Restarting the computer is one of the actions that restores the colors. It may also be necessary to restore the
label colors to their original values. Search on label colors for more information.
Published Date: Feb 18, 2012

Macintosh Mouse: Mouse/Cursor Tracking

This article has been archived and is no longer updated by Apple.
There is a way to detect if the mouse was moved and how far it was moved. The mouse location call provides the current coordinates of the mouse position. If two successive calls to mouse location yield different results, then the mouse has moved, and (given the previous and present coordinates) the distance traveled can be calculated. If you wish to know the total distance the mouse traveled between calls to mouse location, then you should use the mouse odometer. The fact that the mouse moves is not considered an event, so it is up to the programmer to determine the mouse's location and distance traveled. Also note that the only thing that happens to a cursor as it travels around the screen (without any mouse clicks) is that the cursor changes according the area it is in--e.g., it becomes an I-beam over text, a cross in a spreadsheet, and an arrow most other times. It should also be noted that these cursor changes are under program control and are not automatic.

Here is a small program that uses some of the cursor/mouse tracking routines. These routines automatically keep the cursor on the screen--i.e., if the cursor is already at the left edge of the screen and you move the mouse further left, the cursor stays on the screen. This program is similar to the Hendrix program on the MacMaster 2 disk in that it makes noise.

```
PROGRAM VOL;
USES
{$U-}
{$U QD/QuickDraw } QuickDraw,
{$U QD/QDSupport } QDSupport,
{$U QD/Hardware } Hardware;
{$U+}

VAR heapBuf: ARRAY[0..10000] OF INTEGER;{must keep array under 32K
byte limit}
ABS,ORD:PIXELS;
event: KeyEvent;

FUNCTION HeapFull(hz: QDPtr; bytesNeeded: INTEGER): INTEGER;
{ This function will be called if the heapZone runs out of space }
BEGIN
WRITELN('The heap is full. The program must now terminate! ');
Halt;
END;

BEGIN {MAIN PROGRAM}
{----- Initialization - Generic to all applications using QuickDraw
-----}
QDInit(@heapBuf, @heapBuf[10000], @HeapFull); { Must do this once at
beginning }

INITCURSOR;
SHOWCURSOR;
REPEAT
MOUSELOCATION(ABS,ORD);
SETVOLUME((ABS DIV 120)+1);
NOISE(ORD *(8000 DIV 360)+80 );
UNTIL KEYBDEVENT(FALSE,FALSE,EVENT);
HIDECURSOR;
SILENCE
END.
```

Published Date: Feb 18, 2012

System 7: Three-D Desktop Background Patterns

Article Change History

09/11/92 - REVISED
* For clarity.

How do I get those neat background patterns that I see advertised with System 7?

This article has been archived and is no longer updated by Apple.

If you install System 7 over another system, you won't see the new patterns. This is because System 7 saves the old patterns over the new desktop patterns when you install over the old system. Install System 7 on a clean drive (a drive from which you have removed the System Folder) to see the new patterns.

For larger images and patterns, look for shareware or commercial utilities like Wallpaper which provide this capability.

Published Date: Feb 18, 2012

System 7: How Apple PostScript Printers Handle TrueType

With what Apple PostScript printers will TrueType work?
This article has been archived and is no longer updated by Apple.
First, a little history on TrueType and PostScript:

The TrueType format places all PostScript devices into one of three class categories depending on the device and its TrueType capabilities. The three classes are:

1) Class A devices are those with a TrueType scaler embedded in the PostScript device (the ROM.) For example, the LaserWriter IIf/IIg, LaserWriter Pro 600/630, and the LaserWriter Select 360 all fall into this category.

2) Class B devices are those that depend on the TrueType scaler to be downloaded to the device separately from the font itself. Most third-party 680x0 PostScript printers and the LaserWriter Pro 810 fall into this category.

3) Class C devices do not have TrueType available in any form.

Here's how TrueType works with Apple LaserWriter Printers:

LaserWriter
The original LaserWriter, containing a 68000 microprocessor, can't print TrueType. The TrueType rasterizer CANNOT be downloaded to the original LaserWriter which has ROM version 1.0 (PostScript version 23.0). Thus, it CANNOT print TrueType fonts. The TrueType rasterizer can only be downloaded to LaserWriters with PostScript version 38.0 or ABOVE. PostScript version 38.0 or 47.0 ROMs are LaserWriter Plus ROMs which can be installed on an original LaserWriter, making it a LaserWriter Plus.

In terms of which LaserWriter driver to use, version 6.1 or greater is required to print TrueType.

LaserWriter Plus
The LaserWriter Plus, also 68000-based, does not download the scaler code, but TrueType will work. It converts TrueType code to encrypted Type 3 instructions (better known as unhinted Type 1) before delivering it to the printer. Performance is slow due to memory management constraints in that version of ROM. Memory constraints affect performance when converting and downloading large numbers of TrueType fonts.

LaserWriter IINT
The LaserWriter IINT, also 68000-based, downloads the scaler code and TrueType does work. The performance and handling of multiple fonts is faster than the previous printers but slower than the LaserWriter IINTX.

LaserWriter IINTX and IINTX-J (Kanji version)
The LaserWriter IINTX and IINTX-J, which contain a 68020 microprocessor, download the scaler code and TrueType does work. Performance and handling with multiple fonts is faster than with the earlier printers. How much faster depends on the RAM available size.

Personal LaserWriter NTR
The TrueType Scaler is in ROM for optimum TrueType font performance.

LaserWriter IIf & IIg
The TrueType Scaler is in ROM for optimum TrueType font performance.

LaserWriter Select 310
The LaserWriter Select 310 downloads the scaler code and TrueType does work.

LaserWriter Pro 600 & 630
The TrueType Scaler is in ROM for optimum TrueType font performance.

LaserWriter Select 360
The TrueType Scaler is in ROM for optimum TrueType font performance.

LaserWriter Pro 810
The LaserWriter Pro 810 supports TrueType using the downloaded scaler.
Published Date: Feb 18, 2012

TA46546_System_When_LaserWriter_Driver_Doesnt_Appear_in_Chooser_(TIL07992).pdf

System 7: When LaserWriter Driver Doesn‘t Appear in Chooser

Article Change History

09/11/92 - REVISED
* With more information.

I can't select the LaserWriter icon in the Chooser. What's the problem?

This article has been archived and is no longer updated by Apple.

```
You probably have a damaged driver.  Only the LaserWriter (PostScript)
driver is affected. To fix this, reinstall the driver. Make sure you
reinstall the correct version, from your original disks.
```

Published Date: Feb 18, 2012

System 7: TrueType and the Original LaserWriter

Article Change History

05/13/93 - REVISED
* For technical accuracy

When I try to print to an original LaserWriter using the TrueType fonts under System 7.0, I get a PostScript error, but Adobe Fonts print fine.

This article has been archived and is no longer updated by Apple.

The bottom line is that the TrueType rasterizer CANNOT be downloaded to the original LaserWriter which has ROM version 1.0 (PostScript version 23.0). Thus, it CANNOT print TrueType fonts. The TrueType rasterizer can only be downloaded to LaserWriters with PostScript version 38.0 or ABOVE. PostScript version 38.0 or 47.0 ROMs are LaserWriter Plus ROMs which can be installed on an original LaserWriter, making it a LaserWriter Plus.

In terms of which LaserWriter driver to use, version 6.1 or greater is required to print TrueType.

Published Date: Feb 18, 2012

System 7: Lost Microsoft Word Custom Icons Fix

Under System 7, whenever I save a Microsoft Word file with a custom icon, the icon becomes the generic document icon. Also, the comments in the Get Info box disappear.
This article has been archived and is no longer updated by Apple.
Microsoft Word is one of the few programs that completely rewrites an existing document when it saves, rather than updating the original. This deletes the custom icon and the Get Info comments from the file. But the file is still marked to use a custom icon, and the Finder deals with this by assigning it the generic document icon.

To fix the icon, use ResEdit or another resource utility to reset the "Use custom icon" bit to off. Pasting in a custom icon will not fix the problem; you will get the error message "The command could not be completed because an error of type -39 occurred."

Here is a workaround for Word files saved in normal format (this doesn't work for Word text files):

1) In Microsoft Word, choose Commands from the Edit menu.
2) Choose Fast Save Enabled, and click Add.
3) Save the change, replacing the current Word Settings.
4) Cancel out of the Commands window.
5) Under MS Word's Edit Menu, make sure Fast Save Enabled has a check next to it.
6) You should now be able to change the document without losing the custom icon.

Warning: The use of ResEdit is not recommended for anyone unfamiliar with its use. Irreparable damage to your software is possible, always work from a backup. If you are unfamiliar with its use, do not use it.
Published Date: Feb 18, 2012

System 7: When Finder Icons Seem to be Stacked On One Another

Article Change History

09/10/92 - REVIEWED
* For technical accuracy.

I use file sharing to make a folder available to a co-worker. When I open the folder and view by icon, I see only one document because all the icons in the folder are stacked on top of each other.

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This is not a bug, and there is no difference in the way Finder handles icons for file sharing. With the "Always snap to grid" feature turned on in the Views control panel, it is possible for icons to share the same place on the grid. This feature allows more items to fit in a window. If you prefer not to stack icons, you can turn off the "snap to grid" feature.

Here's how to "unstack" the icons:

1) Choose "by Icon" or "by Small Icon" from the View menu.

2) Hold down the Option key while choosing Clean Up by Name from the Special menu.

We were able to duplicate icon stacking when we dropped the documents one-by-one into an open folder at approximately the same location with snap to grid turned on. The result was the same with either straight or staggered grid. Icon stacking does not happen when moving documents to closed folders.

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System 7: Switching Among Keyboard Maps

I installed multiple keyboard maps into the System file to allow switching between languages like English and Spanish.

Here are two ways I switch maps:
- Open the Keyboard control panel and select it from a list, or
- Press a Command-Option-Spacebar sequence to "rotate" between the maps.

The issue is some applications use the Command-Option-Spacebar sequence for other operations. If I use this sequence to perform the application's command, the command is performed as expected, but the operating system also "rotates" the keyboard maps. Is there a workaround?
This article has been archived and is no longer updated by Apple.
This key sequence is a reserved part of the operating system which should not be used by an application. Applications may also use this key sequence for other operations but there will be conflicts if multiple keyboard maps are present.

Here are three workarounds:
- Don't install more than one keyboard map into the System if you can avoid it. System 7.5 installs all keyboard maps as a default. You can remove those you will not be using by opening up the System suitcase and dragging them to the trash.

- After using the key sequence, open the Keyboard CDEV and change the map with the mouse.

- Use the mouse to perform the application's command, rather than the key sequence.

A checkbox will be added to the Keyboard Control Panel to disable this feature in System Update 1.0 for System 7.5.
Published Date: Feb 18, 2012

Daisy Wheel Printer: Problem with random marks in printed output

This article has been archived and is no longer updated by Apple.
When random ticks, accents and so on show up in the printed output of a daisy wheel printer, there are two probable causes:

1. The printwheel is bad. If the spokes of a printwheel were either poorly manufactured or subsequently bent, then the hammer may strike two spokes at a time. If the same letters are always printing poorly, then it is likely that the printwheel is at fault.

2. The stepper motor and the hub where the printwheel mounts are out of sync. To check this, print vertical lines using the vertical bar character and horizontal lines using the underscore character. If the characters are not vertical or horizontal and the lines are broken, then the alignment is off.

Published Date: Feb 18, 2012

System 7: Disk Space for Minimal and System-Specific Installs

What is the difference in disk space required for a Minimal Install ("Minimal Install for...") and a System Specific Install ("System Software for...")?
This article has been archived and is no longer updated by Apple.
We installed system software 7.0 on several Macintosh computers to answer this question. For the minimal installs, we chose Customize and then "Minimal Install for..." For the system specific installs, we chose Customize and then installed software configurations for the specific Macintosh.

System software requires about 1593K, averaging Minimal Installs and Full Installs together.

A minimal install placed the following items in the System Folder of a Macintosh SE/30:

Name	Type	Size
Apple Menu Items	(folder)	--
Control Panels (alias)	(file)	2K
Control Panels	(folder)	--
Finder	(file)	356K
System	(file)	756K

There are no Extension or Preference folders. The system builds them at startup. The only font that you can see is the Geneva (Italic) 9 used for alias filenames.

Here is a table of differences in disk space needed for Minimal Installs and System Specific Installs (SSI):

Computer	SSI	Minimal	Difference
Macintosh Plus	2496	975	1521
Macintosh SE	2499	974	1525
Macintosh Classic	2508	974	1534
Macintosh SE/30	2737	1116	1621
Macintosh LC	2670	1049	1621
Macintosh Portable	2541	971	1570
Macintosh II	2737	1116	1621
Macintosh IIx	2737	1116	1621
Macintosh IIsi	2669	1049	1621
Macintosh IIcx	2737	1116	1621
Macintosh IIci	2666	1045	1621
Macintosh IIfx	2671	1050	1621

Published Date: Feb 18, 2012

System 7: Compatibility of E-Machines Products

What are the System 7-compatible versions of the E-Machines monitor driver software?
This article has been archived and is no longer updated by Apple.
Here are the versions of E-Machines monitor driver software required for System 7:

* For the 8-bit cards: version 3.0.2 or later.
* For the 24-bit accelerated cards: version 3.2 or later.

The only known compatibility issue is with E-Machines' 17-inch Big Picture monitor. After you choose Shutdown, it displays a restart screen.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

System 7: MacPlot Driver Configuration

I cannot print to my Hewlett Packard plotter from MacDraw Pro. Why?
This article has been archived and is no longer updated by Apple.
The MacPlot driver for the Hewlett Packard plotter must be configured in a particular way under System 7. According to Microspot's technical support, this is the setup:

1. Put the driver in the Extensions folder.
2. Select the plotter in the Chooser.
3. Pull the driver out of the Extensions folder to the top level of the System Folder.
4. Configure the plotter through the Configure Application.
5. Put the driver back into the Extensions folder.
6. Make an alias of the driver and place it at the top level of the System Folder.

The driver is bundled with MacDraw Pro and is also sold separately by Microspot. If the driver was bundled with a Claris product, please call Claris for technical support instead of Microspot.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"

Published Date: Feb 18, 2012

System 7: Purpose of Cerulean Data File

I do not know if I installed system software 7.0 correctly. What is this Cerulean Data file on the Install 2 disk, and why didn't the Installer put it on my hard disk?

This article has been archived and is no longer updated by Apple.

The System file is so large that it can't fit on a single 800K floppy disk. To distribute it on 800K floppy disks, many of the resources that are part of the System file are in the Cerulean Data file. The Installer combines the System and Cerulean Data files into a single System file on your hard disk. The Installer displays the message, "Building file: System" when it is joining the files on the hard disk.

The resources stored in the Cerulean Data file include icons, desktop patterns, instructions for displaying menus, dialog boxes and alert messages, and other code to make the system work. Because the Installer adds all of these items to the System file, you don't need a copy of the Cerulean Data file on your hard disk.

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System 7: Compatibility Checker Stack and Newer Applications

I just got the latest version of an application that the developer assures me is System 7-compatible. But when I ran the Compatibility Checker, it flagged the application as incompatible and told me I needed an update. What's going on?
This article has been archived and is no longer updated by Apple.
The Compatibility Checker version 1.0 was compiled from information sent to Apple by developers before the release of System 7. Since then, many developers have released newer versions of their software. Because the Compatibility Checker looks at specific version numbers of applications, it cannot recognize the newer versions, and flags them as incompatible.

If you have questions, contact the application developer for a definitive answer, including compatibility regarding file sharing, 32-bit addressing, and virtual memory.

Note: Even when application developers state explicitly that their products are System 7-compatible, there is no guarantee that those applications are problem-free; issues still may occur when other variables are brought in such as third party INITs and cdevs, also known as system extensions and control panel devices.

Compatibility Checker 1.1, which updates the original, has 165 new records, as well as updated product compatibility information and corrected phone numbers. It also offers compatibility information on third-party drivers. But with new versions of applications coming out constantly, the same situation may be encountered as with the original version.
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System 7: Role of Font/DA Mover 4.1

In the System 7 Group Upgrade Kit, there's a copy of Font/DA Mover 4.1, but no instructions for using it. The only reference to it is on page 64 of the "Group Upgrade Guide," which says that it isn't compatible with System 7. Why did Apple include it on the CD?
This article has been archived and is no longer updated by Apple.

Using with System 7

Font/DA Mover 4.1 is **compatible** with System 7, although you do not need to use Font/DA Mover to manipulate fonts in the System file and other suitcases directly in the Finder. However, the Font/DA Mover 4.1 is necessary to use with System 7 if you want to manipulate/add/delete fonts **within** a specific application such as MusicProse or Finale! by Coda Music.

It is also possible to use Font/DA Mover with System 7 to recover fonts from a damaged System file, but Apple does not recommend or support this use of the Font/DA Mover.

Using with System 6

Font/DA Mover 4.1, along with the TrueType extension, is included on the System 7 CD-ROM so customers can use TrueType fonts on Macintosh computers running System 6. Font/DA Mover 4.1 allows System 6 users to manipulate TrueType fonts (view, copy, and remove) in their System file and other suitcases, in addition to bitmap fonts and desk accessories. It is otherwise identical to earlier versions of Font/DA Mover.

The TrueType extension (INIT) allows System 6 users to create, display and print documents that use TrueType fonts. It's fully compatible with system software 6.0.7 and 6.0.8. It may also work with version 6.0.5, but Apple hasn't fully tested it, and doesn't support this use of it.
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System 7: Restoring From HD Backup

How do I restore a backup of my hard disk that I made with HD Backup if I've installed System 7? I heard that HD Backup is incompatible with System 7.
This article has been archived and is no longer updated by Apple.
HD Backup is incompatible with System 7, but there are a number of workarounds if you need to restore an HD Backup set of data onto a volume.

Workaround One
You can start up from a volume that has System 6 on it, such as a second hard disk or floppy disk. This works even if you have only a single floppy drive and no extra hard disk (although you'll be swapping floppy disks a lot). To start from the other drive, insert a System 6 floppy disk before startup, or choose the other hard disk using the Startup Disk control panel.

Workaround Two
Another workaround is to pull individual files from floppy disks in the backup set onto the hard disk. This works best if there are a few files that need to be restored, but not the entire backup set. You may have difficulty if HD Backup split large files across multiple floppy disks.

Workaround Three
The most drastic workaround is to reinstall System 6 on the hard disk and then run HD Backup. Note that this may be a problematic procedure in itself, and the details of that procedure aren't covered in this article. Specifically, most new Macintosh models require System 7 to operate and would not be able to move back down to System 6.
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Lisa/Macintosh XL: RS-232 and RS-422 Pinouts for Serial Port B

This article has been archived and is no longer updated by Apple.
The signals available on Serial Port B of the Lisa are shown in Figure 3-9, page 3-24 of the Lisa Hardware Manual (for RS-232) and on page 3 of Macintosh Technical Notes #10 (for RS-422). This data is combined here.

Pin No.	RS-232 Name	RS-422 Name	Notes
1	Ground	Ground	
2	Transmit data	TxD-	
3	Receive data	RxD-	
4	Request to send		
6	Data set ready	HSK/DSR	TRxCB or CTSB
7	Ground	Ground	
19		AppleTalk receive data	RxD+
20	Data terminal ready	TxD+/DTR	Connected to DTRB

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System 7: Precautions When Installing Over System 6

Be careful when installing System 7 over any version of System 6, especially versions earlier than 6.0.5. This article tells you the steps to take and the precautions to observe when installing System 7 over System 6.
This article has been archived and is no longer updated by Apple.

Step One

Be sure to search the entire hard disk for multiple system folders, and remove all but the main System Folder.

Use the Find File DA in System 6 to find multiple system folders. Note that you may have to do this a number of times. If there are multiple system folders, Throw away any extras and empty the Trash.

Important Note: Altering a System Folder by renaming it and removing the Finder does not work with versions earlier than 6.0.5; the Macintosh may crash or hang on startup.

Step Two

Run the Compatibility Checker.

Step Three

There are two ways to proceed in this step:

Install System 7 over System 6. To do this, simply start up from the Install 1 disk and run the Installer program.

Alternatively, trash the remaining System and Finder files, rename the System Folder, and install System 7. Use this procedure if you've had problems installing over System 6. The Installer won't move any of the System 6 files into the new System Folder. You can manually move some files from the old System Folder, such as INITs, cdevs, fonts, and application Preference files or folders. Unknown or untested software may conflict.
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System 7: Using the "Before You Install" Stack

The menus don't seem to work in the Before You Install HyperCard stack. I get messages telling me to click on an arrow when I make a selection.
This article has been archived and is no longer updated by Apple.
The stack named "Before You Install" demonstrates the features of System 7 in a HyperCard window that greatly resembles the real system, but is only a demonstration program. Items that you would normally select with the mouse such as menus, icons, or windows, are just pictures, and are not actually interactive. If you try to use the mouse to select any items on screen, you get the following message: "This example desktop is for System 7 demonstration only. To move ahead in any topic, click the forward arrow, below."

The program displays the current topic at the lower left of the HyperCard window. On the lower right are buttons to help navigate through the stack (left and right arrows, Contents and/or Topics). If you can't see these items at the bottom of the window, it may be that the window is too low on your screen. You can't reposition this HyperCard window when it doesn't have a title bar.

To reposition the window, quit HyperCard (type Command-Q), and again launch the Before You Install stack. The title bar, "Before You Install System 7," should now appear at the top of the window. Use the mouse to reposition the window properly so that you can see "Contents" (the topic name) and the Quit button at the bottom of the window.

One other thing you may find is that Before You Install has no close box or button, only a Quit button. Since it is possible to have more than one HyperCard stack open with HyperCard versions later than 2.0, quitting will close all open HyperCard stacks.

The sample applications mentioned in Before You Install, such as MemoWriter and Let's Draw, are fictional and are not included with System 7 or HyperCard.
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Disk II: Controller Card Pinouts

What are the pinouts for the Disk II controller card?

This article has been archived and is no longer updated by Apple.
The pinouts for the Disk II controller card are:

Pin #	Description
1,3,5,7	Gnd
2	Stepper Motor Phase 0
4	Stepper Motor Phase 1
6	Stepper Motor Phase 2
8	Stepper Motor Phase 3
9	-12 volts
10	Write Request
11,12	Vcc (+5 volts)
13,15,17,19	+12 volts
14	Drive Enable (motor on)
16	Read Data
18	Write Data
20	Write Protect

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Apple 5.25 Drive: Controller Card Pinouts

What are the pinouts for the Apple 5.25 Drive controller card?

This article has been archived and is no longer updated by Apple.
The pinouts for the Apple 5.25 Drive controller card are:

Pin #	Description
1,2,3	Gnd
4	n/a
5	-12 volts
6	+5 volts
7,8	+12 volts
9	Drive 2 Select
10	Write Protect Input
11	Stepper Motor Phase 0
12	Stepper Motor Phase 1
13	Stepper Motor Phase 2
14	Stepper Motor Phase 3
15	Write Request
16	n/a
17	Drive 1 Select
18	Read Data
19	Write Data

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LisaTerminal: Maximum length of phone number

This article has been archived and is no longer updated by Apple.

The LisaTerminal manual states that the phone number must not exceed 40 characters; however, when you enter a number, only the first 24 characters are displayed. Only the first 24 characters are dialed when the dial menu is used. The practical limit, therefore, is 24 digits, not 40.

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A/UX: No Yellow Pages for Non-Privileged Accounts

The Yellow Pages appears to be broken, at least on a non-privileged account. When I try to log in, login fails with several error messages written to the screen. These are quickly erased before returning to the login screen.
This article has been archived and is no longer updated by Apple.
The situation is that non-privileged accounts cannot log in. Root can still log in. This isn't a Yellow Pages issue; it's a disk space issue.

The default file system for A/UX is a Berkeley file system. The Berkeley file system reserves a percentage of the disk for use exclusively by root. The default "high water mark" is 10 percent, although you can adjust this with the tunefs command.

If the unused space on the file system is less than the high water mark, non-privileged users cannot log in. This is to prevent situations where you cannot do anything because the disk is too full. Root can still login and remove files to enable other logins.
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Printing: Background Printing Is Normally Slower

Documents printed with non-TrueType screen fonts under background printing take several minutes per page on the Personal LaserWriter LS. Why?

This article has been archived and is no longer updated by Apple.

This is normal. The advantage of background printing is that it lets you work on a task while a document is printing. Printing in the background means that printing must share the processor with some other process instead of taking all the processing speed. Therefore, it is slower. What you see is normal.

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DAL 1.2: Simultaneous Users Require Unique UICs

Only one user can use DAL at a time. When someone else tries to connect, the message "could not find ADSP server" appears. We are using AppleTalk for VMS 3.0 and DAL 1.2.

This article has been archived and is no longer updated by Apple.

Give each user an individual account. Without a unique UIC, the second connect attempt fails.

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DAL: When RDB Locks Entire Database

When I use DAL to insert data into RDB, the whole system locks until the user doing the insert does a commit. It should only lock the current record, not the entire database.
This article has been archived and is no longer updated by Apple.
When using DAL with RDB, each user should have a distinct VMS account, including unique UICs and login directories. With a DBMS like Oracle, which has its own user account validation system with the DBMS, you don't need distinct VMS accounts.

However, RDB relies on VMS to let it know who is using which record. If RDB can't distinguish between the different accounts, it can't tell which record is being updated, so it locks all records opened by the current user. Because, in this case, everyone is effectively the same user, all records are locked for everyone until the commit is complete.

This issue was addressed in RDB 4.0 and DAL 1.3.
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LisaTerminal 7/7: Configuring Preferences to Use a Modem

This article has been archived and is no longer updated by Apple.

To use a modem from LisaTerminal 7/7, use Preferences to make the device connection a Serial Cable rather than a Modem. If you fail to do this, the system will constantly set LisaTerminal communications to Off-Line.

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AppleWorks 1.1: Scribe Printer Indentation Issues

When I print from AppleWorks 1.1 to my Scribe printer the second paragraph always prints with the wrong indentation. Why does this happen?
This article has been archived and is no longer updated by Apple.
When you print an AppleWorks 1.1 file using the Scribe printer, the first paragraph always prints with an indentation of 5 spaces, as it should. If, however, the second paragraph prints without the proper indentation, check to see whether justification is set to FULL JUSTIFY. If not, set the justification to FULL JUSTIFY and then try again.

This problem has been corrected in later versions of AppleWorks.
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DAL and MVS/TSO Server: Troubleshooting Tips

If the login sequence seems to work, but attempts to open tables and retrieve data fails, try these troubleshooting steps.
This article has been archived and is no longer updated by Apple.
From the Begin prompt with the DAL Tester or DAL Debugger, enter the command:

```
describe DBMS;
printall;
go
```

If DB2 isn't listed as a choice, then something is wrong with the DAL installation on the host. If DB2 is listed as an available DBMS, then try to open it with:

```
open DB2 DBMS;
go
```

If the DBMS opens successfully, then try:

```
describe databases;
printall;
go
```

A list of available subsystem IDs should appear. If nothing comes back, then the environment file is emplty or inaccessible.

Next, open the desired database and see what's in it with:

```
open db2 database '_____';
describe tables;
printall;
go
```

If the only tables listed are not correct, or if a -551 error is returned, see Appendix B of the "Data Access Language Server Installation and Operating Guide for MVS/TSO." Appendix B describes how to set up views for DAL users to access the DB2 tables.
Published Date: Feb 18, 2012

DAL 1.2: DB-2 Query With Sum Statement Crashes Server

This DB2 query crashes the DAL server on the mainframe:

select column1, sum(column2) from table group by column1;

Without the sum statement, the query works without any problems. The same query works fine in native DB2 SQL.
This article has been archived and is no longer updated by Apple.
This is a known bug in DAL 1.2. It's fixed in DAL 1.3.

A sum fails in DAL 1.2 if the column to be summed is of type 9 (VARCHAR) with nulls allowed. It doesn't matter if there actually are nulls in the table or not.
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Workshop 2.0 and Earlier: How To Get a Screen Dump

Is there a way to do a screen dump when using Workshop?
This article has been archived and is no longer updated by Apple.
The only way to get a screen dump from anywhere in the Workshop is through the debugger commands PR and PS.

This set of commands only supports a parallel dot matrix printer. Keep in mind also that the editor will allow printing of a document in the window.

PRnm
n=which port
m=UL

Note: Version 3.0 and later support both serial and parallel printers:
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DAL: Userbreak Function

Page 191 of the "DAL Programming Guide" talks about a user break function. Is it part of the standard DAL distribution?

Userbreak is referred to as a "provided function," but it is not in the library. Where can I get it?
This article has been archived and is no longer updated by Apple.
The example in the book is a program fragment. Userbreak is a user-written function.
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DAL 1.1: Large Amounts of Data Kill Processes

I have a DAL application that sends large amounts of data down the network and often kills the DAL server process, while it's running.
This article has been archived and is no longer updated by Apple.
That's a known problem with DAL 1.1. This is fixed in version 1.2.
Published Date: Feb 18, 2012

DAL: Insert Command Blocks Other Users

I am using DAL, using the same account name as other users in my group. When one user does an insert, no one else can do anything (no selects, for example) until that person finishes the insert and does a commit.

This article has been archived and is no longer updated by Apple.

Because all of the users are using the same account name, the system freezes until someone finished the insert command. To ensure data integrity, DAL locks the database until the command is completed. The only solution is to provide each user with a unique account.

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AppleWorks 2.0: New way to create Mail Merge documents

AppleWorks 2.0 lets you merge database records with word processor documents to create mail merge documents using a new print option which can be imbedded in a word processor file.
This article has been archived and is no longer updated by Apple.
Follow these steps:

1. From the database, create a table style report.

2. The records appear on the clipboard in the order of the last sort in the table style report. Open your word processor document.

3. In your word processor document, place the cursor where the mail merge category should go. Press the Open-Apple-O keys to bring up the printer options, then select "MM". A list of Mail Merge catagories appears.

4. Select a database category. Answer the question regarding whether a line should be deleted if the category is blank.

5. Repeat steps 3 and 4 until all the categories you want are placed in the document.

Mail Merge places the database category in the document with a provision for appending one space at the end of the merged entry. A caret also appears in front of the category name. AppleWorks marks this caret as a mail merge printing option; place the cursor on this caret and the prompt line reads "Mail Merge".

6. Press Open-Apple-P to print the word processor document.

7. If there is mail merge data in the document, AppleWorks will ask you if you want to print the document with the categories merged, or un-merged (as you see it on the screen.)

8. If there isn't mail merge data on the clipboard, AppleWorks tells you. Be further aware that only during printing does AppleWorks report an error if the word processor document has a category name that AppleWorks cannot find on the clipboard.
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DAL: Double Byte Characters Not Supported

Does DAL support Double Byte characters?
This article has been archived and is no longer updated by Apple.
No.
Published Date: Feb 18, 2012

DAL: How to Sort by Month and Year

I am using DAL and want to order a selection by the month and year, not necessarily by date. DAL only orders things by the full date, not month and year.

This article has been archived and is no longer updated by Apple.

The DBMS is the one actually doing the ordering (sorting). The SQL statement can only request ORDER BY against a column name -- not a portion of a column. Your only option is to retrieve the data, parse it yourself for the desired portions, and sort on those in your Macintosh application.

Published Date: Feb 18, 2012

MacDFT: File Transfer AID

The installation instructions for MacDFT refer to a "file transfer AID" that has be enabled. I can't find this in any of the configuration options for MacDFT.

This article has been archived and is no longer updated by Apple.

The "file transfer AID" is found on a 3174 controller and needs to be enabled for you to do file transfer. To enable this, set option 125, bit 6 to 1.

Published Date: Feb 18, 2012

MacDFT: When the CDEV Does Not Appear

I am trying to configure MacDFT, but the CDEV does not appear in the Control Panel.
This article has been archived and is no longer updated by Apple.
The CDEV appears only if one of the three supported hardware platforms is installed in the machine.
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System 7: Troubleshooting Compatibility Checker Problems

This article tells what to do if the Compatibility Checker will not launch, or if it fails before completing the check. Also included is a table with the correct versions of HyperCard to use with various system software versions.
This article has been archived and is no longer updated by Apple.

Procedures for System Software 6.0.5 or Later

- System 6.0.5 requires HyperCard 1.2.5 or higher; make sure you have the right version.

- Start from the System 7 Disk Tools disk and run Disk First Aid, then try Compatibility Checker again.

- Copy the HyperCard application and Home stack from the System 7 HyperCard disk and the Compatibility Checker stack from the "Before You Install" disk to your hard drive. Now try running the Compatibility Checker from the hard drive.

- If the Compatibility Checker still won't launch, there may be a problem with the current System 6 software. Start up with the System 6 System Tools disk or the version 6.0.7 System Startup disk and install the operating system with Installer.

- Back up your hard disk, start from the Install 1 disk and install System 7 first. After the installation is complete, restart the computer with the shift key down to temporarily disable all system extensions.

Procedures for System Software 6.0.4 or Earlier

- Make sure you are using the correct version of HyperCard. See the Operating System/HyperCard Requirements section of this article to find the HyperCard version you need.

- You must upgrade to System 7 before using the Compatibility Checker if:

* You don't have the correct version of HyperCard on your hard disk and can't locate it on a floppy disk.

* You are using a version of the system software earlier than 4.1.

There are more instructions for this procedure on page 11 of the "How to Install System 7" manual, included with System 7. After the installation, restart the computer while pressing the shift key to temporarily disable all system extensions.

Operating System/HyperCard Requirements

System Version	Recommended HyperCard Versions
7.0	2.1 or later
6.0.5 - 6.0.7	1.2.5, 2.0 or later
6.0.4	1.2.5
4.1 - 6.0.3	1.2.2
Prior to 4.1	n/a

For information about Compatibility Checker error messages, search under "System 7" and "Compatibility Checker".
Published Date: Feb 18, 2012

System 7.x: Compatibility Checker Error Messages

This article tells you what to do when the Compatibility Checker displays these error messages.
This article has been archived and is no longer updated by Apple.
Since the Compatibility Checker was made into an application with version 2.0, which comes with System Software 7.1, and it's newer version 7.1.1, which comes with System 7 Pro, you no longer receive HyperCard error messages.

If you are using the HyperCard based Compatibility Checker that comes with System 7.0, the following information lists common error messages.

Error: "New file format requires a new version of HyperCard."

After you convert the Compatibility Checker stack to HyperCard 2.0 format, you **cannot** run it under earlier versions of HyperCard. This converted stack needs system software 6.0.5 or later, and HyperCard 2.0 or later. If you do not have the required software, follow these steps:

1. Copy the HyperCard application and Home stack from the System 7 "HyperCard" disk, and the Compatibility Checker from the "Before You Install" disk to your hard disk.
2. Start the Macintosh with the System 7 "Disk Tools" disk.
3. Double click on the Compatibility Checker. Because the Compatibility Checker can check for compatible INITs and CDEVs only in the System Folder of the startup disk, it won't check the System Folder on your hard disk. But you can still check the applications on your hard disk.

Error: "This stack has not been converted. It must be converted before it can be modified."

Manually copy the Compatibility Checker stack to the hard disk before launching it.

Error: "You need an additional 193K of space on 'Before You Install System 7:Compatibility Checker 1.0' to use Compatibility Checker"

The Compatibility Checker displays this message when running from an unlocked floppy disk. The only option is to quit, lock the floppy disk, and try again.

Published Date: Feb 18, 2012

System 7: Corrupted Suitcase and/or System File

I have a corrupted suitcase and/or System file. How can I retrieve my fonts or sounds?
This article has been archived and is no longer updated by Apple.
Unfortunately, we have no recommended fix. While we don't recommend it, as a last resort you may want to take the following steps:

1. Start from the Disk Tools disk.
2. Open the System Folder on your hard disk.
3. Rename your System file.
4. Throw the Finder in the Trash.
5. Empty the Trash.
6. Reinstall system software 7.0.
7. Restart from the hard disk.
8. Open the renamed System file with Font/DA mover 4.1, holding down the Option key.
9. Resave the fonts and sounds into new suitcases.
10. One by one, open up the fonts in System 7 by double-clicking on the suitcase, and then open the document inside that suitcase. Do not use Font/DA mover 4.1 to do this. A bad font or sound will either cause a system crash or it won't open. Do not reinstall the corrupted font or sound in the System Folder. Use the original provided by the vendor.

Published Date: Feb 18, 2012

LisaCalc 7/7: The NPV function is different

This article has been archived and is no longer updated by Apple.
The NPV function has changed in the 7/7 version of LisaCalc. In the old version (2.0), the first value of the cashflow was counted as the payment for the first period and was thus discounted (annuity due). The formula looked like this:

v1/(1+discount)^1 + v2/(1+discount)^2 + ...vn/(1+discount)^p

where v is the value of your cash flow, discount is the discount percentage, n is the number of the payment, and p is the number of the period.

In the new LisaCalc 7/7, the first value of the cashflow is not counted as the first period and not discounted (annuity arrears). The formula looks like this:

v1/(1+discount)^0 + v2/(1+discount)^1 + ... vn/(1+discount)^p

It's just another way of looking at the same function. Both are equally correct.
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System 7: MS Mail "Send Note" Window Doesn‘t Close

My MS Mail "Send Note" window does not close when I click the close box. I have MS Mail, Suitcase II, and DAL extensions loaded.
This article has been archived and is no longer updated by Apple.
To correct this problem, change the loading order of the extensions, so that DAL loads after MS Mail and Suitcase II. Another alternative would be to remove the DAL extension from the System Folder, if it's not needed.

This may no longer be a problem with DAL 1.3 or greater, System 7 w/Tune-up, and/or MS Mail 3.0.
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System 7: Error Type -192 Appears when Removing Fonts

While trying to remove fonts from the System suitcase, a dialog box appears saying that the system is preparing to move them. It also shows the number of fonts. Then this error message appears: "The command could not be completed because a type -192 error occurred."

This article has been archived and is no longer updated by Apple.

This error message is being generated because you have a SAM (Symantec Anti Virus for the Macintosh) version earlier than 3.0 installed. This version of SAM recognizes that the System file is being altered, but doesn't know why. To resolve the situation, upgrade to a newer version of antivirus software.

Published Date: Feb 18, 2012

System 7: GemStart 030 Accelerator Control Panel Upgrade

I have a Macintosh Plus with a GemStart 030 Accelerator installed. When I open the Users & Groups control panel and then open a user icon, the window freezes. I cannot move, make changes to, or close the window, but I can access the menu bar.

Also, whenever I get a system error, I see only the upper portion of the dialog box. The lower portion isn't visible.
This article has been archived and is no longer updated by Apple.
The GemStart 030 Accelerator control panel version 1.3.3 is neither System 7 nor AppleTalk Phase 2 compatible and, therefore, may cause file-sharing and printing difficulties. To prevent this from occurring, try turning off the GemStart "Copy ROM into RAM" option.

There are two workarounds:

- MicroMac Technology, Inc. reports that GemStart version 2.03 or later is fully compatible with version 7.0 and AppleTalk Phase 2. Update the control panel with this version, which is a free upgrade.
- Until you get the update, remove the GemStart control panel from the Control Panels folder and restart the computer.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

System 7: SideKick 2.0 Is Not Being Updated for System 7

SideKick 2.0 crashes with a bus error when I try to open a name in the address book.
This article has been archived and is no longer updated by Apple.
When running SideKick, turn off 32-bit addressing, and this feature will work.

Note that Borland International Technical Support said that SideKick 2.0 (which is not being updated) should not be used with any system software later than version 6.0.3. Otherwise, data could be lost or the computer may crash. The information can be exported to a text file and used with other programs.

For details, contact Borland Technical Support.
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System 7: Compatibility Checker 1.0 Thinks Numeric HD Name Is ID

Compatibility Checker 1.0 does not run properly on a hard drive that has only numeric characters as the volume name.
This article has been archived and is no longer updated by Apple.
This is a known issue. This is a HyperCard limitation and cannot be fixed through Compatibility Checker itself. The program thinks that the numeric string, used as a hard-drive name, is a HyperCard button ID rather than a volume name.

The workaround is to rename the hard drive with a non-numeric name before running the Compatibility Checker.
Published Date: Feb 18, 2012

System 7: Purpose of Notification Manager

Sometimes a diamond appears next to an application in the Application menu that is running in the background. What does the diamond signify?
This article has been archived and is no longer updated by Apple.
The diamond next to a running application in the Application menu indicates that the program has a message or an alert to display. The Notification Manager lets processes running in the background notify the user of messages or alerts without disrupting the process running in the foreground.

An example of an application that uses the Notification Manager is PrintMonitor. Rather than PrintMonitor taking control of the screen and becoming the active application, PrintMonitor alternates its icon with the Apple icon in the menu bar when it requires the user's attention. In addition, a small diamond is placed next to the application name in the Application menu.

The Notification Manager provides three alert levels:

- **Polite:** A blinking icon appears in the menu bar.
- **Audible:** The system beeps once.
- **Alert Box:** A dialog appears that the user must acknowledge.

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Apple IIe Card: Software Version 2.0.x Features & Changes 5/94

This article describes the new features and benefits of the Apple IIe Card Version 2.0.x software.

This article has been archived and is no longer updated by Apple.
Version 2.0.x software has added many new features to the Apple IIe Card for the Macintosh LC. Here are the highlights:

The Macintosh LC IIe Card works in:
* Macintosh LC, LC II, LC III, LC 520
* Performa 400, 405, 410, 430, 450, 460, 466, 467, 550
* Macintosh Color Classic
* any future model that has an LC slot or LC-compatible slot.

To use the Apple IIe Card on a Macintosh LC II, Macintosh LC III, or Performa 400 series running System 7.1 or System 7.1P, you need version 2.2.1 of the Apple IIe Card software. You should upgrade to version 2.2.1 ONLY if you are using your Macintosh LC II with System 7.1. You can use the Apple IIe Card software version 2.2 with the original Macintosh LC, but it's not required.

System 7 Compatibility

Version 2.0 of the Apple IIe Card software is not compatible with System 7.0. Version 2.1 is compatible with both System 6.0.8 and System 7.0.1. The Macintosh LC II requires version 2.1 of the Apple IIe Card software. Apple recommends that users use 2.1 only if they need System 7 or Macintosh LC II compatibility.

Hard Disk Support

* Apple IIe files and programs can be stored on the Macintosh hard disk.
* Apple IIe ProDOS files and disks can be seen and manipulated on the Macintosh desktop.
* Apple IIe files and programs can be opened by double-clicking their icons.
* Apple IIe files can be moved, copied, renamed, and trashed in the usual Macintosh ways.

File Server Support

If a Macintosh LC has an Apple IIe Card installed, you can connect to file servers that contain Apple IIe files and programs.
* When connected to a file server over a network, you can use AppleShare Workstation software to connect to the file server.
* Starting up from a file server (sometimes called "network booting") is much faster than it was using the original Apple IIe.

MultiFinder Support

You can run the Apple IIe Card simultaneously with Macintosh programs, switching between them without quitting either.

Option Panel Changes

The Option Panel works in the same way. However, many improvements have been incorporated:
* When the Option Panel is open, the menu bar can be used to access desk accessories and, if running MultiFinder, to switch to other programs.
* The Option Panel is in a movable window.
* A new combination keystroke can be assigned to open the Option Panel (in addition to using Control-X-Esc).
* The Auxiliary Slot Memory Card option in the General Controls panel has been removed. To expand the amount of memory, use the Memory Expansion Card.

* There are two new ways to limit access to the Apple IIe Prefs file:
- The Get Info command in the Macintosh Finder can be used to lock the file to prevent any changes.
- The file can be hidden by dragging it to the System Folder to prevent anyone from accidentally trashing it.
* The General Controls panel has been rearranged.
* The Mouse panel has two additional options to make the mouse even more sensitive to your movements.

Card and Slot Changes
---
* An AppleShare Card has been added.
* A Printer Card has been added. Use this card to connect the printer to your computer either directly or over a network.
* The Network Printer Card has been removed.
* The Printer Port and the Modem Port cards both have been renamed Serial Cards. (Note that these two Serial Cards should not be used for printers; use the Printer Card instead.)
* The Serial Cards have special settings for both Apple modems.

Enhanced Printer Support

You can print to most Macintosh-compatible printers--whether the printer is connected directly or on a network. Also, you can set up and select Apple IIe printers using simple Macintosh methods.

Printing Changes

Once the cards, slots, and printing software have been set up, Apple IIe files are printed in much the same way as with the original software. However, the setup method has changed significantly. In the earlier version of the Apple IIe Card software, the Network Printing Card or a Super Serial Card was used. In version 2.0, the Printer Card and a Macintosh desk accessory called Chooser are used. Specific printing changes include:
* The Network Printing Card has been removed from the Option Panel.
* The Printer Card should be used for all printers, whether the printer is connected to your computer directly or over a network. The Super Serial Cards should not be used for printers.
* Regardless of the printer, when using the Printer Card, the Apple IIe program should treat the printer as if it is an ImageWriter II.
* The new printing system supports all Apple printers.
* The Macintosh Chooser desk accessory is used to select the printer.

Saving and Printing Apple IIe Screens
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* Several menu commands can be used in the Option Panel to save, copy, print, and display Apple IIe screens.

Support Information Services
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System 7: Installing AppleShare without Installing File Sharing

Article Change History

09/14/92 - REVIEWED
* For technical accuracy.

Can I install AppleShare software on my Macintosh without installing the File Sharing software at the same time?

This article has been archived and is no longer updated by Apple.
To install AppleShare software without installing the File Sharing software, use the Installer's "Customize" option and select either "System Software for Any Macintosh" or "System Software for [your particular Macintosh model]."

Using the Installer's "Easy" option installs both AppleShare and File Sharing software.

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Lisa Pascal: Problem Reading Directly Into Real Arrays

This article has been archived and is no longer updated by Apple.
In versions 1.2 and 2.0 of the Lisa Workshop, there was a problem with reading directly into a real array:

READLN(FILE,STUFF[2])

where FILE is a file and STUFF is a real array. The problem is fixed in version 3.0.
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System 7: Installing on Macintosh Portable RAM Disk

Can I use the RAM Disk on my Macintosh Portable to install System 7?
This article has been archived and is no longer updated by Apple.
Yes. The Macintosh Portable lets you create and use a RAM disk. You can install System 7 on a RAM Disk for faster performance and less hard disk access, which can extend the life of the battery.

To create a RAM disk on the Macintosh Portable:

1. Select the Portable control panel from the Control Panels folder.
2. Click the box next to "RAM Disk Size" and select the size. If the size you want is not listed, select "other" from the menu and choose the desired size. Note that a minimal System 7 install for a Macintosh Portable is about 971K. A dialog box appears telling you that the new RAM disk will be created when the system is restarted.
3. After closing the control panel, select Restart from the Special menu.

To make the RAM disk the Startup disk with a System Folder:

1. Run the Installer program as you would with any other volume.
2. When the installation process is finished, open the Control Panels folder and choose the Startup Device control panel.
3. Click the RAM disk to use as your startup volume.
4. After closing the control panel, select Restart from the Special menu.

Concerned about losing the information on a RAM disk? There are only two ways to erase a RAM disk on the Macintosh Portable:

- Remove all files from the RAM disk and select "none" from the "RAM Disk Size" pop-up menu in the Portable control panel.
- Remove both batteries from the Macintosh Portable.

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Macintosh: How to Slow It Down

I am trying to use a Macintosh SE/30 running SoftPC, so I can download from a DOS device directly into the SE/30 through a port. My problem is that the SE/30 is going so fast that it is not reading the information I am trying to dump. Is there some way I can slow it down?

This article has been archived and is no longer updated by Apple.

If you're using System 6, try launching MultiFinder and running one or more applications in the background. This should slow down processing somewhat. In System 7, just launch some applications. Turning on file sharing will also slow down processing.

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AppleShare File Server: Forcing Applications to Run Concurrently

I tried to install a program on my AppleShare server to run concurrently. I followed the instructions (which basically were to copy it to the server folder and then restart) but cannot get it to show up on the file menu. The program is Netway 3287, which routes CMS printing to the LaserWriter Any hints?

This article has been archived and is no longer updated by Apple.
It's possible to force an application to run concurrently with the AppleShare File Server, but if the application isn't already set up that way, you may run into problems. Contact CMS for the details. For contact information, search the Tech Info Library under "CMS".

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AppleTalk: Internet Router Phase I vs Phase II Fix

We are running an AppleTalk Phase I network with six zones connected through a Banyan Vines server to an Ethernet network with a single zone. One AppleTalk zone is connected through a Hayes Interbridge to another AppleTalk network in another location. The issue is that the AppleTalk Internet router won't cross the Hayes Internet bridge to the AppleTalk network at the remote site. My goal is to run Microsoft QuickMail with Banyan's Quick Mail through the Hayes Internet bridge to my remote site. If the Internet Router is not compatible with the Hayes internet bridge, then I must find something else.

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You probably have an AppleTalk Phase I versus Phase II issue. Most Hayes Interbridges are Phase I devices, while an unaltered Internet Router is Phase II. An "upgrade utility"--an INIT--comes with the Internet Router. Once installed in the System Folder of the router CPU, the INIT lets the Router pass Phase I packets. As a short-term workaround, you can install this to get up and running.

Due to the complexity of the network, we advise upgrading all devices to AppleTalk Phase II. With the zones and routers you mentioned, the Phase II protocols will be more efficient. Usually, this upgrade can be done through software. The Interbridge is the exception: it requires a ROM upgrade.

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ProDOS: Conflict between Versions Backup II

I backed up my hard disk with Backup II version 1.01, and the drive went down (total loss of data). While trying to restore from the backup I get through 13 of 34 disks, and then I get a DATE/TIME STAMP DO NOT MATCH error. I have looked for the date and time stamp bytes on the disks to no avail.

Can I fix Backup II to not look for a DATE/TIME STAMP? Which bytes should I look for on the bad disks? I have looked at the information on the disks in question and the data is there.

This article has been archived and is no longer updated by Apple.
The actual problem may be with your versions of ProDOS and Backup II. Specifically, versions of Backup II before 1.1.1 are not compatible with any ProDOS version greater than 1.1.1. If your Backup II and ProDOS are incompatible, you have two options:

* Use Backup II v1.1.1, which will read your backup disks
* Downgrade ProDOS to 1.1.1.

The Date/Time stamps for a ProDOS volume reside in bytes $1C-$1F of block 2. Matching these against previous volumes may solve the problem.

To help you find block 2, here is a good formula for converting ProDOS blocks to DOS 3.3 sectors:

Block = (8 * Track) + SectorOffset	
Sector:	0 1 2 3 4 5 6 7 8 9 A B C D E F
SectorOffset:	0 7 6 6 5 5 4 4 3 3 2 2 1 1 0 7
Half of Block	1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 2

It looks like the bytes you need are on Track 0, Sector 11 (first half of block).
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TA46607_Macintosh_Classic_Classic_II_Screen_Brightness_Adjustment_(TIL08099).pdf

Macintosh Classic, Classic II: Screen Brightness Adjustment

I saw that the Macintosh Classic and Classic II's screen brightness is adjusted via System software. If I use System 6.0.3 in my Classic or Classic II, how can I control the screen brightness?

This article has been archived and is no longer updated by Apple.
The Macintosh Classic is incompatible with any System Software version earlier than 6.0.7. Even if there were a way to use the Brightness CDEV with System 6.0.3, the Classic would not start up. The Macintosh Classic II needs to use System 7.01 in order to function correctly.

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TA46608_LisaWrite_Landscape_Printing_(TIL00810).pdf

LisaWrite 2.0: Landscape Printing

This article has been archived and is no longer updated by Apple.
There is a problem printing in Landscape mode in LisaWrite 2.0. Missing and partly formed characters are printed in the upper right portion of a write document printed 'while you wait'. (Versions 3.0 and 3.1 of Lisa 7/7 don't give you the option of printing 'while you wait', so the problem doesn't occur with these versions.)

The workaround is to print 'while you work'.
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Macintosh Classic: Internal Drive Questions

1) What is the drive seek time of the Macintosh Classic?

2) What is the initial interleaving?

3) Can dealers install third-party drives without voiding the computer's warranty?

4) Who makes the drives, and does Apple have multiple sources?

This article has been archived and is no longer updated by Apple.

1) Question: What is the drive seek time of the Macintosh Classic?

Answer: The seek time for all Apple 1/3-height drives is 25 milliseconds.

2) Question: What is the initial interleaving?

Answer: The interleaving is based on how fast the circuits can keep up with the data flow. The Classic has an interleave ratio 1:1.

3) Question: Can dealers install third-party drives without voiding the computer's warranty?

Answer: As long as you make no modifications to the Classic (the dealer must use Apple's mounting scheme, not drill new holes, and the like) then yes.

4) Question: Who makes the drives, and does Apple have multiple sources?

Answer: Apple cannot comment on drive vendors; vendors may change from model to model. The guarantee is, however, that any hard drive will have an average access time of 25 milliseconds.

Article Change History:
29 Nov 1995 - Updated format.
16 Oct 1992 - Corrected the interleave ratio.

Support Information Services
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Macintosh: Error 51 "Unserviceable Slot Interrupt"

What is error ID=51? I get a system bomb when I try to log on to my Ethernet network.
This article has been archived and is no longer updated by Apple.
That error is: "Unserviceable slot interrupt."

In general, this type of error is caused by a corrupt operating system, Ethernet driver, or a software incompatibility between any of these and INITs or CDEVs.

Try removing and re-installing the operating system and Ethernet drivers. If that fails to solve the problem, try removing all unnecessary third-party INITs and CDEVs. If the system works at this point, re-install them one at a time and restart each time to find the culprit.
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Apple IIGS: $8002 Error

I've been getting the "$8002 error" when I drag anything over to my second partition under GS/OS 5.0.2. After pulling out other cards, I'm left with my high-speed SCSI card and my Applied Engineering memory expansion board. This is on an older GS "01" board.

This article has been archived and is no longer updated by Apple.
There are two possibilities.

The first, less likely, possibility is that there is a soft error somewhere on your hard drive, and it's preventing GS/OS (actually, the SCSI driver) from the reading some necessary information from the second partition. If re-installing GS/OS and the High-Speed SCSI drivers doesn't solve the problem, you probably will have to reformat the hard drive.

The second is slightly more likely: Some Applied Engineering cards use the DMA channel to move information. The IIGS has only one DMA channel, and the High-Speed SCSI card may be fighting the AE card for access to the channel.

Here are two things to try: Either turn off the DMA access on the High-Speed SCSI (DIP switch 1) or remove the AE card completely from the system and then test. I believe that Applied Engineering has an update for some of their memory cards to deal with this situation. If you find that this is the problem, try contacting them for a possible fix.

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Apple IIGS: System Disk "Tutorial" Folder Is Not Functional

How can I access the Tutorial that I see on the Apple IIGS System disk?

This article has been archived and is no longer updated by Apple.
That folder is for show. It (and the folders and files within it) is there only to illustrate how folders work. Remove it if you want. Note: the "GS/OS System Disk Owner's Guide" does not mention the Tutorial folder.

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Macintosh II: Upgrade Kits (Discontinued)

I want to upgrade my Macintosh II to a Macintosh IIx. What is the correct upgrade part number? Also, when upgrading to a 1.4MB internal drive, must I install a new ROM kit at the same time? Or is the kit included with the IIx upgrade?

This article has been archived and is no longer updated by Apple.
Apple has discontinued the Macintosh IIx Logic Board Upgrade Kit.

As of June 1992, the only logic board upgrade offered for the Macintosh II is the Macintosh IIfx Logic Board Upgrade Kit, Finished Goods part number M0375LL/A.

Once you have upgraded, you needn't buy a complete FDHD (SuperDrive) Upgrade Kit. You need only the internal drive (Finished Goods part number M0247). The FDHD/SuperDrive upgrade has been discontinued.

Article Change History:
15 Sep 1995 - Revised to show discontinued upgrade.

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Macintosh Plus, SE, and Classic: Speed Comparisons

A Macintosh SE seems noticeably faster than a Macintosh Plus. Yet, their spec sheets show the same processor and MHz speeds.

Macintosh SE Spec Sheet
Processor: MC68000, 32-bit internal architecture, 7.8336 MHz clock frequency

Macintosh Plus Spec Sheet
Processor: MC68000
1. 32-bit architecture
2. 8 (7.8336) MHz frequency

Macintosh Classic Spec Sheet
- Microprocessor: 8 MHz MC68000 CPU
- Internal architecture: 32-bit

Is MHz a reliable measure of apparent speed? How does the Classic compare with each of them?

This article has been archived and is no longer updated by Apple.
The clock speed of the computer is not always the overriding factor in performance. For example, a hideously-complicated program can takes an hour to draw a picture, but a better-written program can do it in ten minutes. Here, it depends on how compact the code is, not the processor speed.

The clock speeds are identical, but the software burned into ROM is different, causing the three systems to run at slightly different speeds.

The Macintosh SE is possibly 15 percent faster than the Plus, and the SE/30 is four times faster. In any event, the Classic is faster than the Plus by a maximum of 25 percent. That assumes that you're doing only those functions that have been optimized in the Classic. Usually, you'll see a slight increase in performance, and in some you'll see no difference. It all depends on what you're doing.

There are hundreds of things that influence performance. At the bit level, all three machines process a single processor instruction in exactly the same time. Things like processor caching will decrease the time it takes for that instruction to be loaded from memory, so performance increases a little there. Taking from the example above, if a routine is more compact, then it will do its job in fewer instructions. This means the system does the function faster. All this goes into determining the phrase, "...up to 25 percent faster than the Macintosh Plus."

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Macintosh 12-Inch RGB Display: Compatible Systems

I have a problem driving the Macintosh 12-Inch RGB Display with an 8-bit video card in a Macintosh IIcx.
This article has been archived and is no longer updated by Apple.
Not all Macintosh video sources support the Macintosh 12-Inch RGB Display. The following Apple video outputs support this monitor:

- Macintosh Display Card 4*8 and Macintosh Display Card 8*24
- Macintosh IIci built-in video
- Macintosh IIsi built-in video
- Macintosh LC built-in video
- Macintosh LC II built-in video

Notes:
All previous video cards do not work with the Macintosh 12-Inch RGB Display. At the time these cards were developed, the timing for the Macintosh 12-inch RGB Display was not known and, therefore, does not support the proper video signaling.

The Macintosh Display Card 8*24 GC does not work with the Macintosh 12-Inch RGB Display. The card is designed for high-end systems, and the Macintosh 12-Inch RGB Display is for inexpensive systems.
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AppleShare Print Server: Correcting False Usernames

We are using AppleShare Print Server as a server for both IBM and Macintosh computers.
But, there are occasions when an IBM user prints, and the statistics for that print job don't appear. That is, the username comes up as "Untitled", and the number of pages isn't correct. What's going on? We are using Apple and DayStar Digital cards in the IBMs. Neither card seems to make a difference.

We tried turning the server off and printing a job from the PC and then one from the Macintosh. Here's what we got: We tried using both Microsoft Word and WordPerfect (on the PC) and WriteNow and MS Word (on the Macintosh). The dialog box we got alternated between "Waiting for LaserWriter", "preparing data", and "printing" until it actually started printing the Macintosh document. There was no mention of the user or document that we were waiting for. So, it appears that the drivers are not doing what they should be.

Another server problem is that there have been occasions when a person prints a paper (on a Macintosh) and the title and username are not correct, but seem to be substituted from a previous job. For example, user "James" prints document "Thesis", and the cover sheet is correct. Then user "Sue" prints document "Junk" and the cover sheet (and name on the server log) is "James". We have replaced the server software already, and this has fixed the problem for a few days, but then it re-appears.

This article has been archived and is no longer updated by Apple.
Both of these problems could be related to a single cause. Following the steps below may solve both problems:

1) "Uncapture" any captured printers.

2) Restart the server with a diskette (if this server is also an AppleShare File Server, use the Admin diskette).

3) Inside the ServerFolder, locate the captured printers' folders and trash them. Their names will be in the format:

Q_<printername>_*

where * could be a zone name.

4) Restart the server again from diskette, rebuilding the Desktop on the hard drive.

5) If this is an AppleShare File Server, run the Admin program from the floppy to re-prepare the hard drive and quit immediately.

6) Restart as usual, and recapture the printers.

This should solve any type of directory problems the server may be having, and force the Print Server to create new spool folders.

Published Date: Feb 18, 2012

TA46617_Macintosh_SCSI_Interleave_Factor_(TIL08110).pdf

Macintosh: SCSI Interleave Factor

What is the SCSI interleave factor for the Macintosh Classic, LC, and IIsi?

This article has been archived and is no longer updated by Apple.
The interleave factor for the Classic, LC and IIsi are all 1:1 because of improved SCSI circuitry.

Published Date: Feb 18, 2012

TA46618_Macintosh_TwoPage_Display_and_Builtin_Video_(TIL08111).pdf

Macintosh: Two-Page Display and Built-in Video

Why doesn't the built-in video of the Macintosh IIci, IIsi, and Macintosh LC support the Apple Two-Page Display? Couldn't you just allocate more RAM to video?

This article has been archived and is no longer updated by Apple.
With the Two-Page Display and built-in video, the issue was not the amount of RAM needed to drive the display, but the amount of "cycle stealing" that would occur. The degree of performance degradation for the microprocessor was unacceptable, so Apple removed the option entirely.

Published Date: Feb 18, 2012

Macintosh XL: Unwanted Shutdown

My Macintosh XL intermittently dims its screen and shuts off. While the screen dims, the HD still runs. The dim effect is not a normal tube shut-down. Rather, it is the XL dimming the screen just as it does when you normally choose Shut Down from the Finder's Special menu.

The problem is not application-specific and does not seem to follow any type of schedule. It seems random.

This article has been archived and is no longer updated by Apple.
As the intermittent shutdown procedure is the same as a forced-shutdown (via the menu), and that procedure is stored in software rather than firmware, you are looking at a software or software-related cause. On the hardware side, you could have damaged RAM or motherboard, but it's not very likely. You would see many more problems than this if you had a failing component.

We suspect either MacWorks Plus, system software, or (possibly) an INIT or CDEV. Something is either corrupted or conflicting with another piece of software.

Try reloading MacWorks Plus and reinstalling the operating system.

Published Date: Feb 18, 2012

Lisa Workshop: Transfer Program

This article has been archived and is no longer updated by Apple.

In Transfer, there is a Break key for a hard break: it disconnects you. The easiest way to get around it is to send an XOFF from the keyboard or imbedded in your file (you would have to write a program to put it there). The file is then sent without filtering.

Published Date: Feb 18, 2012

Personal LaserWriter LS: Missing Excel Page Setup Options

When printing from Excel 2.2 or 3.0, some of the Page Setup options are dimmed and not accessible. Do I have a problem with my Personal LaserWriter LS driver?

This article has been archived and is no longer updated by Apple.

No. Microsoft Technical Support has verified that certain options under Page Setup are not accessible when printing from Excel 2.2 or 3.0 to the Personal LaserWriter LS. The inaccessible options include 75% and 50% under the Size option and the Precision Bitmap Alignment option under Printer Effects. There is no workaround at present.

Microsoft Word and Microsoft Works take full advantage of all of the Personal LaserWriter LS options.

Published Date: Feb 18, 2012

Macintosh: Advantages of System 6.0.5 for Some Products

Not all Macintosh users will upgrade to System Software 7.0, choosing instead to use System Software 6.0.x. For those users, this article describes the advantages of using System Software version 6.0.5 with some Apple products, including some that are compatible with System Software 7.0.

This article has been archived and is no longer updated by Apple.
The Macintosh IIfx and some display cards require system software version 6.0.5 or later. Additionally, system software 6.0.5 may be appropriate for other Macintosh systems in the installed base. System software 6.0.5 transparently coexists in networked environments with Macintosh system software versions 6.0.2, 6.0.3, and 6.0.4.

The following products require system software 6.0.5 or later:
* Macintosh IIfx
* Macintosh Display Card 8*24 and Macintosh Display Card 8*24 GC
* Third-party software or hardware products that say "Requires 6.0.5 or later" on the box.

Apple recommends 6.0.5 (or later) for the following products:
* Macintosh Portable
* Macintosh IIci
* 32-Bit QuickDraw

Here is a brief description of the changes made in system software 6.0.5 to better support these Apple products.

* Macintosh Portable
System 6.0.5 fixes two problems associated with the Macintosh Portable.
1) A communications problem occurs when the Macintosh Portable is connected to serial devices.
Symptom - The Macintosh Portable loses track of printers and modems after coming out of Sleep mode.
2) A power-consumption problem is encountered when the Macintosh Portable is shut down while connected to AppleTalk.
Symptom - The battery discharges quickly when shut down under these conditions.

* Macintosh IIci
System 6.0.5 addresses two compatibility problems.
1) Control-break characters received through the serial port cause a system crash.
2) 32-Bit QuickDraw version 1.2 is unable to use zero-width characters. Music programs and accented characters use zero-width characters extensively.

* 32-Bit QuickDraw
System 6.0.5 increases performance and offers additional dithering capabilities as well as support for variable-resolution PICT images. (Font information is stored in PICT images.)

For more information about System 7, search the Tech Info Library using the search string "System 7:@"

Published Date: Feb 18, 2012

MacWorks: Starting Up From a Hard Disk

This article has been archived and is no longer updated by Apple.
There are several versions of MacWorks, each with a different start-up procedure. The two later versions let you access the built-in 10-megabyte hard disk (in a Macintosh XL) or a 5- or 10-megabyte ProFile connected to the built-in parallel port of a Lisa 2.

MacWorks: 682-0103-A

After the Macintosh XL starts up from this original version of MacWorks, the system can run almost any Macintosh application residing on diskette. But this version cannot access a hard disk.

MacWorks: 682-0103-B

MacWorks Revision B can access Macintosh software and files on diskette, as well as on a hard disk installed with the MacWorks Hard Disk Install program. Once you install MacWorks, you can access the hard disk by starting up from MacWorks XL and then inserting the System Diskette.

MacWorks XL: 682-0103-C and MacWorks: 682-0103-C

MacWorks Revision C is not an official release and could damage documents and data stored on the hard disk. If you use this or earlier versions of MacWorks, be sure to upgrade to MacWorks XL Revision D, available from Sun Remarketing, P. O. Box 4059, Logan, Utah 84321.

MacWorks XL: 682-0103-D

MacWorks XL lets you to start up from the hard disk. It also lets you use additional Macintosh software, such as Jazz and XL/Serve by Infosphere. This version supports AppleTalk and the LaserWriter. This version is identified by the product number on the diskettes and by the display "MACWORKS XL 3.0 COPYRIGHT 1985 - APPLE COMPUTER" that appears on the screen during startup.

MacWorks XL enables you to start up off the hard disk directly if:

1. You've previously used the accompanying hard disk install program to install MacWorks on the hard disk, and

2. The hard disk is being used exclusively for Macintosh software.

If the hard disk contains both Lisa and Macintosh software, you must first start up from MacWorks XL, but even this procedure is faster than with previous versions. Hold down the option key and start up the Macintosh XL if you want to start up with software from the microdisk drive.

The Hard Disk Install program that comes with MacWorks Versions B and D lets you initialize the hard disk to either 1) run exclusively Macintosh software, or 2) to run both Macintosh and Lisa software. To share the hard disk with Lisa software, you must first partition the hard disk with Lisa Office System software (selecting Share during the Lisa software install procedure); you must then use the Hard Disk Install program to initialize the Macintosh portion of the hard disk.

If you use BOTH 1) the built-in parallel port connected to a hard disk, or the built-in hard disk after it's been formatted exclusively for Macintosh software, AND 2) a Parallel Interface Card connected to a hard disk formatted for Lisa software, then you'll have to select the hard disk you want the system to start up from. The system will automatically start up from the hard disk last used, provided you haven't unplugged the system or

changed the Preference settings. To start up from the other hard disk:

1. Press the On-Off button.
2. Wait for the memory board test.
3. Hold down the Apple key while pressing a number key as listed below:

To start up from:	press these keys:
Internal hard disk:	Apple 1
Built-in parallel port:	Apple 3
Interface card:	
slot one, lower port	Apple 4
slot one, upper port	Apple 5
slot two, lower port	Apple 6
slot two, upper port	Apple 7
slot three, lower port	Apple 8
slot three, upper port	Apple 9

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Macintosh: Mac Handwriter for Kanji Input

This article describes the Macintosh input device marketed by Communication Intelligence Corporation.
This article has been archived and is no longer updated by Apple.
Communication Intelligence Corporation offers a product that lets Macintosh computers read handwritten Chinese and Japanese characters. Currently this product is not distributed in the U.S.

The Mac Handwriter lets computer users give commands or data to Apple's Macintosh computers by writing characters on a small pad. This eliminates the need for a keyboard.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.
Published Date: Feb 18, 2012

Monitors: Magnetic Shielding Products

This article lists companies that offer magnetic monitor shields.
This article has been archived and is no longer updated by Apple.
Here's a list of companies that sell shields that allow the use of monitors side by side without causing interference:

* Ad-Vance Magnetics, Inc.
* Amuneal Manufacturing
* Bomco
* Cut Craft, Inc.
* Eagle Magnetic Company
* Magnetic Shield Company

You can find the addresses and phone numbers of these companies in separate articles in the Tech Info Library.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

Macintosh: DiskTwin for Disk Duplexing

This article is about DiskTwin, a product sold by Golden Triangle Computers, Inc.

This article has been archived and is no longer updated by Apple.
DiskTwin is a Macintosh software package that works with a NuBus card and a second SCSI bus, to make a copy of the contents of a primary hard drive onto a secondary hard drive. Technically, this operation is known as disk duplexing.

Disk duplexing is a technology widely used in the mainframe and minicomputer world and in large microcomputer networks to ensure continuous operation where users cannot afford to lose any data or experience down time.

Here are the steps required to use DiskTwin:

1) Drop the DiskTwin control panel device (CDEV) into your System Folder.

2) Place the DiskTwin NuBus card in your Macintosh.

3) Attach a drive of the same kind as your primary disk onto the DiskTwin card. For example, if you have an Apple Quantum 80 internal, connect an Apple Quantum 80 external to the DiskTwin card.

4) Restart your computer, and select the drive you want to copy. The twin is invisible to the Macintosh desktop so it can't be used accidentally.

When you do need it, you can immediately mount the twin onto the desktop from the DiskTwin control panel.

DiskTwin runs continuously, creating a copy of your primary disk as often as you save to disk. DiskTwin won't slow your system. When your hard disk fails, mount the twin and you're back in business. Should the Macintosh SCSI hardware fail, your DiskTwin SCSI port remains operational.

You can find the address and phone number for Golden Triangle Computers, Inc. in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

System 7: Third-Party Drives and Virtual Memory

We update the hard disk drivers for Apple drives if the user is to make use of virtual memory. Do users of third-party hard disks need to update their drivers?

This article has been archived and is no longer updated by Apple.

Not necessarily. The update corrects something in Apple's SCSI drive. Third-party drives don't need the update unless their manufacturer says they do.

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System 7: Disk Drive Activity Light

When running System 7 without virtual memory and during periods of no user activity, the disk drive becomes active for a few seconds. What causes the disk drive light to flash?

This article has been archived and is no longer updated by Apple.

The light flashes because the Finder is busy updating. If you'd like this not to happen, turn the file system cache up, and the Finder won't need to update as often.

The disk drive light will also flash when File Sharing is turned on and other people are accessing the disk.

Published Date: Feb 18, 2012

System 7: No Need for HeapFixer and HeapTool Utilities

How has memory management changed in System 7 relative to system heap and INITs? Specifically, will utilities like HeapFixer and HeapTool still be necessary for people who are running a lot of INITs?

This article has been archived and is no longer updated by Apple.

HeapFixer and HeapTool don't do anything in System 7. The system has changed such that these utilities won't be needed. The function HeapFixer and HeapTool perform is done by the new boot code in System 7. The system heap will now dynamically grow as extensions allocate more space.

HeapFixer had value with system software version 6.0.X because INITS would add to the system heap, and the heap filled up. Looking at the system bar in the About box and adjusting the size so that enough space is left over won't work any more.

The system software indicator in System 7 includes a lot more than just the system heap, so it can't be used as an indicator of how much space is currently available. And since the system heap is dynamic in System 7, even during startup, any adjustments made by the HeapFixer and HeapTool utilities will just be overridden by the system.

Published Date: Feb 18, 2012

System 7: Use of Virtual and Physical Memory

When using System 7, why can systems that are not 32-bit compatible access 13 megabytes of virtual memory, but only 8 MB of physical memory?

This article has been archived and is no longer updated by Apple.

The memory map in a 24-bit system only allows for 8 MB of RAM, 6 MB NuBus, and 2 MB ROM and I/O. Virtual memory will use the allocated memory of a NuBus card that is not in use. If you were to put more physical RAM in a Macintosh II running in 24-bit mode, the system would use only 8 MB, and the rest would be ignored.

Published Date: Feb 18, 2012

System 7: Rarely Need to Initialize HD Before Installing

Do I need to reinitialize my hard disk before installing System 7?
This article has been archived and is no longer updated by Apple.
In most cases, there is no need to reinitialize any hard disk on which you plan to run System 7.0, unless the disk has been damaged in some way.

If you are using a third party hard drive, you should contact the manufacturer to get the suitable driver to update the SCSI driver before installing System 7.

Also, if your Apple drive was updated with an older version of Apple HD SC Setup, your partition size will be smaller, so if you then, update your drivers again with a more recent version of HD SC Setup, you will be told you do not have enough room. If you run into this situation, you will need to reinitialize your hard drive and then install System 7.

If you are planning to run Virtual Memory, use HD SC Setup version 7.0 to update the SCSI driver. This requires that you start up from the Disk Tools floppy disk, choose the target drive, and click on Update. This process takes a second or two to complete, and does not require any reformatting, or reinitializing, of your hard drive.

Note: Be sure to back up your hard drive before you initialize your drive. It is also a good idea to back up before you update to System 7.
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System 7: Group Upgrade and Compatibility on Novell NetWare

Why does the System 7 group upgrade fail when using Novell NetWare server version 3.11?
This article has been archived and is no longer updated by Apple.
Version 1.1 of the Migration Guide corrects the Novell NetWare upgrade station issue. With version 1.0 of the Migration Guide, you can't use Novell NetWare servers (both version 2.15 and 386, now called version 3.11) as upgrade stations when performing System 7 group upgrades.

The behavior occurs only when the creation time of the System 7 files ends in an odd-numbered second. This is due to the way MS-DOS and the Novell server keep time. They understand only even-numbered seconds. In the released version of System 7, all files have creation times with even-numbered seconds.

Versions of Novell NetWare for the Mac that are compatible with System 7 are:

- Novell NetWare 286 Server, NetWare for the Mac version 2.0 is partially compatible. Version 2.2 is fully compatible.
- Novell NetWare 386 Server, NetWare for the Mac version 3.0.1 or 3.0.1.1.

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TA46633_Lisa_SHIFTOPTION_(TIL00814).pdf

Lisa 7/7: SHIFT-OPTION-7

This article has been archived and is no longer updated by Apple.
The Lisa Office System Manual for 7/7 documents a procedure to get screen dumps to disk. When this SHIFT-OPTION-7 keystroke procedure is performed, the diskette drive makes the noise of a diskette access. Yet, after this access, there doesn't seem to be anything other than missing blocks on the diskette. And even though the workshop can recognize the file that the disk access created, this file is of little use without some software that is unavailable to the casual user. The tried and true SHIFT-OPTION-4 screen dump is still the best procedure for most users.
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SCSI Termination and External Hard Drives

I am having some problems with my Apple 160MB hard drive. I have a Macintosh IIci, two monitors, an internal HD, and a SCSI cable (which is about four feet long with one SCSI extender) with a SCSI terminator attached.

When the system is set up without the external 160MB drive, it works fine. But when I attach the drive, the Macintosh IIci won't start up. I've replaced terminators and swapped some SCSI cables. However, if I put an Apple 40MB hard drive in place of the 160MB drive, it works.

This article has been archived and is no longer updated by Apple.
SCSI termination problems are difficult to diagnose. Besides the suggestions below, there are a number of other articles that may be of help by searching under "SCSI" and "termination".

1) Make sure the external drive is turned on before the Macintosh is.

2) Make sure the SCSI ID on the external drive is not set to zero. It should be between 1 and 6.

3) Try the 160MB drive on another machine, preferably without an internal hard disk. If it has problems it could be the cable or the hard disk.

4) Swap the cable and the terminator if neccesary.

Published Date: Feb 18, 2012

AppleTalk Printing: Apple IIe Workstation Card Slot

I want to connect a Macintosh II and an Apple IIe to an ImageWriter II over AppleTalk.

A Workstation card was installed in the Apple IIe, the necessary LocalTalk cables were used, SW-4 was switched for AppleTalk, and AppleTalk was selected in the Chooser. This did not work.

I then installed AppleShare into the Macintosh II. The Macintosh now prints, but the Apple IIe does not. Instead, it gives the message "No boot server -- trying other slots".

What am I doing wrong?

This article has been archived and is no longer updated by Apple.
The Workstation card must be installed in a higher-numbered slot than the disk interface card, otherwise the Apple IIe will try to start up over the network.

* If you WANT the Apple IIe to start up over the network, you must also install the Apple II Setup on the Macintosh II file server. This is a separate disk (AppleShare File Server Apple II Setup Disk). You would also need to copy Chooser.II to the server.

* If you DON'T want the Apple IIe to start up from the server, but rather to print to the ImageWriter II, then move the workstation card to a lower-numbered slot than the disk interface card and boot your workstation disk and run Chooser.II.

One other problem might be that you are running Chooser.II, getting a connection, and then inserting your application disk and restarting. This doesn't work. You have to run Chooser.II from the application disk or launch the application by pathname after running Chooser.II from the workstation disk.

Published Date: Feb 18, 2012

EtherTalk: Troubleshooting Slow Performance

I have an EtherTalk card that seems to be running very slow on my Macintosh. My EtherTalk software is version 2.01. Can you help?
This article has been archived and is no longer updated by Apple.
The version that you are using should be fine, although there are newer versions available that may improve your computer's EtherTalk performance.

Make sure the network is properly terminated. Also, try running a network performance utility program to track the network's performance. This will show if an unusual number of packets are getting damaged or lost.

Check software, network (termination, topology, and so forth), and the card as well.
Published Date: Feb 18, 2012

AppleShare Print Server: "Stack underflow" Is PostScript Error

Are there any conflicts between AppleShare Print Server v2.01 and Microsoft Excel for Macintosh v2.2?

I am having difficulty printing Excel spreadsheets to a captured LaserWriter. I get no error messages at the workstation, but I get an error page with a message about a 'Stack underflow' error and the job doesn't print. If I print the document several times (half dozen or so) the job finally prints.

This article has been archived and is no longer updated by Apple.
"Stack underflow" is a PostScript error. Adobe's description of the error is: "An attempt has been made to remove an object from the operand stack when it is empty. This usually occurs because some operator did not have all of its required operands on the stack."

There is no way a user can cause this error. The more likely problem is a software incompatibility. Excel 2.2 and AppleShare Print Server 2.01 have no known problems. To see if the problem is actually related to the Print Server, try a bypass print. If the same document works consistently when printing directly, assume there is a conflict with Print Server and something else.

The problem could be related to the System file on the server. Reinstall System 6.0.5 on the server then use the Network Products Installer disk to reinstall AppleShare and Print Server. This process ensures that no resources in the System file get downgraded in the installation process.

Published Date: Feb 18, 2012

Apple‘s Bar Code Format

I am trying to read the bar codes on the boxes of Apple products. What format does Apple use, and what software must be used to reliably read the bar codes?

This article has been archived and is no longer updated by Apple.

The bar code standard that Apple uses is code 39, a very common code. Apple's bar code software is proprietary, developed for internal use only, and will not be released to anyone.

Published Date: Feb 18, 2012

AppleShare: IBM Software Can‘t be Fully Copy-Protected

Is it true that IBM software on AppleShare server cannot be fully copy protected?

I am running an AppleShare file server (v2.01) containing a number of IBM software items. These application files have been marked as "copy protected" using the AppleShare administrator. Logging in from a Macintosh and examining the files with MacTools shows them to have the "protected" bit set. They cannot be dragged to a local Macintosh hard disk; if I try, I get the message "Cannot be duplicated or copied".

However, these items can be copied by IBM users, using normal command-line copy commands! As far as I can determine, there is no way to prevent piracy of any IBM software placed on the AppleShare server.

This article has been archived and is no longer updated by Apple.
AppleShare's copy protection feature was put in as an aid for Macintosh users, and it built on an old feature of the Macintosh file system. MS-DOS is not even aware of our copy protection bits, so there is no way to get a COPY command to respect this level of protection without being extremely intrusive into the operating system (and causing a good chance of incompatibilities with future operating system releases).

We don't know of a way to keep DOS users from copying applications from the server while still having access to run the program.

One solution is to distribute applications to the individual users who need them and use the file server only for data.

Published Date: Feb 18, 2012

Apple Serial Numbers are Mostly Random Digits

I'm trying to track down the Macintosh model that these model and serial numbers apply to:

M5525 Macintosh IIfx? sn F3026MEAC40
M5780 Macintosh IIci? sn F1031DBY740

This article has been archived and is no longer updated by Apple.

It is sometimes impossible to tell what the factory configuration was by the model number printed (or stamped) onto the unit. The model number designates a "family" of computers and has only one absolute requirement: the first letter (M = Macintosh, A = Apple II, etc.). The other digits are essentially random.

That last 5-6 digits in the serial number usually end with the model numer, for example, F1234HYD34M5000. The M5000 is the model number.

In some specific cases you can figure it out, though: there was only one Macintosh 128K, for instance. In your case, however, we can't determine what the initial configuration was (which would enable us to discover the Finished Goods part numbers, eventually).

Published Date: Feb 18, 2012

Shiva NetSerial: Capable of NetComm "Hunt Group"

I have an AppleTalk network (40 workstations, two servers, bridge, and so forth). I need to add 10 shareable serial ports to bridge into an existing Wang system.

Ideally, I would like to find some device like a comm-port server; something with up to ten ports that would manage the allocation of the ports. I have considered using ten Shiva NetSerials, but I do not like the "trial and error" method of finding an available NetSerial.

Does anyone make a device like this? Apparently there is something like this in the Novell world, where a PC is dedicated to be a comm server, and manages all shared-port access. Any ideas?
This article has been archived and is no longer updated by Apple.
From your description, it sounds as if you desire a network communication "hunt group"-type service; if the first communication server is busy, it will hunt automatically for the next available communication server.

You can do this right now with the Shiva NetSerials. Simply use the Chooser to choose all of NetSerials you wish to have in your "hunt group" and your call will be routed through whichever NetSerial is available. Because the NetSerial is an independent (after initial configuration) network device, you will not need to dedicate a computer to manage it.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

Apple II and II+: Problems with keypresses on the keypad

This article has been archived and is no longer updated by Apple.

A keypress on the numeric keypad is only retained as long as the key is held down. Whenthe key is let up, the keyboard returns to its previous state (with the keythat was last pressed on the keyboard at location $C000). This causes manystrange problems, like having to hit the key longer to have it recognized.

There is no way to correct this on the current keypad because of the limitations of the keyboard encoder chip.

Published Date: Feb 18, 2012

Apple IIGS: Troubleshooting "Out of RAM 04" Message

How much memory does an Apple IIGS need to run System v5.0.2?

I was told 768K, but when I tried to boot a system disk on an Apple IIGS with an expansion board installed, and with the entire first bank populated (top line of card full, top jumper not connected, bottom one connected), I got an "out of RAM" 04 message on the Apple IIGS.

I want to run GS/OS 5.0.2 over the net from a server, but if it can't even boot standalone, what do I need to run the net? Is 768K enough? Isn't that what I have? (256 + 512 (logic + add on))

This article has been archived and is no longer updated by Apple.
GS/OS should boot on a standalone Apple IIGS with 512K of RAM. If network services are going to be used, 768K is required.

Check to see if you have a RAM disk created in the Control Panel. Perhaps the RAM on the logic board or the memory expansion card is faulty; try running diagnostics. The card could be misidentifying the amount of RAM (because the jumpers aren't read correctly by the card even though they are set correctly).

Published Date: Feb 18, 2012

LaserWriter IINTX: Q & A on Storing Fonts on Hard Drive

I'm using a 20MB SCSI hard drive with my LaserWriter IINTX. There didn't seem to be any problems, and the Laser Installer software recognized the hard drive as being online to the LaserWriter IINTX.

Then I installed all my Laser fonts to the hard disk, but when I ran the Laser Installer software, it did not recognize any of the fonts installed to the hard disk. It did not even recognize that a hard disk was connected (although the Laser did start up with the hard drive attached, and the drive-active light was on).

The software only gave a readout of the internal laser fonts -- not those installed on the hard disk.

1) How do I ensure that the hard drive is correctly connected and available as a font resource?

2) Can I install screen fonts on the hard drive, or only printer fonts?

3) Do I remove all printer (and screen) fonts from the System Folder on my Macintosh after they are installed to the LaserWriter IINTX hard disk?

4) My hard drive crashed, and my System Folder was corrupted while I was installing screen fonts to the system file using Font/DA Mover. What might have caused this? Is there a limit to the number of screen fonts that I can have installed to the system file? Is there a limit to the number of items that I can have in any folder?

5) Where do I get more complete information on the installation and support of this environment?

This article has been archived and is no longer updated by Apple.
It sounds like the problem was either with what fonts were installed or the process you used to install them.

1) When you run the LaserWriter Font Utility, if the drive is recognized and does format, then the drive is connected properly and operational.

2) No, you can't install screen fonts.

3) You will need the screen fonts on the workstation. Downloadable fonts on the workstation are unnecessary, but do not harm anything.

4) There is no theoretical limit to the number of screen fonts you could install in your System file, but you would eventually run out of RAM or disk space. The limit of files per folder is 64,000.

5) The LaserWriter IINTX manual shows how to make the connections properly and format the disk. If these processes work, the drive is operational.

Published Date: Feb 18, 2012

LaserWriter IINT: Memory Allocation

I have a LaserWriter IINT with 2MB of memory. I would like to download additional fonts.

What is the memory allocation for the fonts and what is taken up for the buffer out of the 2MB? When I download three additional fonts, a "not enough memory" message appears.

What can I do to download more fonts?

This article has been archived and is no longer updated by Apple.
Of the 2MB of RAM in a LaserWriter IINT, 616K is used for fonts. Of this amount, approximately 500K is available for downloading additional fonts.

Although there is no memory upgrade for the LaserWriter IINT, you can upgrade it to a LaserWriter IINTX, which can be expanded to 12MB. You can also use the fonts "dynamically" -- which means they are simply placed in the System Folder and the fonts are removed and downloaded dynamically by the operating system.

Published Date: Feb 18, 2012

Lisa: Error 38 is "No Boot File on Disk"

When I try to boot a MacWorks disk on my Lisa, I get an error code 38.

This error is placed under an icon with a check in it. It only accesses the floppy for a brief moment and then gives the error code. It then prompts me to continue or to choose a startup device (STARTUP FROM...). When I continue, the above occurs again, over and over. If I choose a startup device, it gives me the option of the floppy only -- not the HD.

What's going on?

This article has been archived and is no longer updated by Apple.
Error 38 is "No Boot File on Disk." It sounds like the MacWorks disk was erased. If the disk was good to begin with, you have a hardware problem with the floppy drive.

Published Date: Feb 18, 2012

"Macintosh: Error -39 ""End Of File"" Meaning

I am getting a -39 error when I try to open a document. What does the error mean and what might be the problem?

This article has been archived and is no longer updated by Apple.

The -39 error is an "End Of File" error. The most likely cause of the error is a corrupt data file. The only real fix is to restore the data file from a backup or recreate it if there isn't a good backup available.

Published Date: Feb 18, 2012

Apple FORTRAN: Scientific Notation

This article has been archived and is no longer updated by Apple.
To input numbers in scientific notation on the Apple FORTRAN system with both the E and F format specifications, follow this example:

```
10 FORMAT ( E10.2 )
READ (A, 10)
```

When you specify an input field as E10.2, FORTRAN sets aside a field of 10 places, and will put the decimal two places in from the right unless the input string has an explicit decimal point in it.

Another intresting result occurs if you enter the number in scientific notation. FORTRAN reads in the number up to the E and then starts reading the exponent using the next format specification in the FORMAT statement. The example above would use the E10.2 spec for both the mantissa and the exponent.

The string 1.0E1 would be read as 1 times ten raised to ten to the tenth power.
10
10
1 * 10 = 1 followed by 10000000000 zeros.

This, of course, causes an overflow error.

You can get around this problem either by specifying a decimal in the exponent or by padding the input field with spaces. The following example has the entered string in brackets to indicate the extra spaces.

You enter	Fortran interprets
>1.0E1<	10000000.00
>1 E1 <	1.00
>1.0E1.0<	1.00
>1.0E1 <	1.00

Published Date: Feb 18, 2012

Apple II: Wrong Version of Setup Causes Aristotle Problems

I'm having a problem in setting up a lab network using a Macintosh SE/30 as a server, with a combination of Apple IIGS and Apple IIe workstations. I am also using Apple II Setup v2.0.1.

I get the following error message when I try to log on to Aristotle as Administrator from an Apple IIGS: "an error occurred loading the file /volumename/System/System.Setup/Cdev.Init".

When I try using a different startup application (such as BASIC.SYSTEM), I get this message: "Bad OS ver 0011" I'm using version 5.0.2 to install Server Network Startup, and Server Quick Logoff.

Also, I've been getting a System Error when setting up a Macintosh SE/30 as a server and installing System 6.0.3 from the Install menu of the File Server installation disk. Reinstalling System 6.0.5 seems to cure this, however.

This article has been archived and is no longer updated by Apple.
The problem you are seeing with Aristotle is a result of using the wrong version of the Apple II Setup. You have to use Apple II Setup v2.1 or 2.1.1, not v2.0.1, when setting up the software.

As for the problem of installing 6.0.3 from the File Server installation disk, it could be that there is something corrupted in the installation scripts for that version. Nothing you described is a wrong procedure.

Published Date: Feb 18, 2012

AppleShare: Server Maintenance and Backup Questions

What is the best and safest way to operate a file server? AppleShare 2.0 and an Internet router on a Macintosh IIfx.

When I need to install software on the server, I need access to the Server Folder. I have to shut down the server and start up a floppy. This presents a problem, because the Internet router is running -- which disconnects my users from printer access. I know I could move the Router to another unit, but it seems more appropriate to have it on a dedicated unit.

Also, I need to have the database users log off of the databases in order to do a clean backup, so perhaps an automatic backup software package would be better so it could run at night. Also, the backup software selected must be compatible with AppleShare's concurrent software philosophy.

Other than installing software through a remote node, I don't know of any way of installing software on an AppleShare server short of bringing the server down to do it. Secondly, it seems impossible to back up a database that is in use on a server.

This article has been archived and is no longer updated by Apple.
You are correct in your assumptions of the way the system works. To install the software on the server you must bring the system down, which will cause the router to go down. The best time to do network maintenance and upgrades on a large network or on a network that cannot be brought down is at night or on the weekend.

If you back up a database file that is opened, you will not get a proper backup. Any files that are open will not be saved. It is best to do this after hours, also.

There are many backup programs that start at a specified time. That should be the best solution.

Published Date: Feb 18, 2012

AppleTalk PC Card: Code Versions and Compatibility

I want to add some AT&T PCs to my AppleTalk network. I have some old AppleTalk PC cards available (part number M2313). They print all right, but I am worried about conflicts with newer versions of the LaserWriter drivers, etc.

The versions on the PC side are:

* AppleTalk PC DA 1.0
* AppleTalk PC Print driver 1.0
* AppleTalk PC Driver 2.0

Are there newer versions than these, and if so, how can I obtain them on an IBM format disk?
This article has been archived and is no longer updated by Apple.
The cards are the same even though the part numbers are different. The issue is what's bundled with the card. Originally, the card had a utility to handle printing. Then the utility was removed from the package and the card was shipped alone. Then the card was shipped with AppleShare PC, so it has a different finished goods part number. It should be alright to use a more current version of the print driver.

The AppleTalk PC card is now referred to as the LocalTalk PC Card. For more information on this card, please contact Farallon.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

TA46653_Apple_II_Workstation_Card_Magic_Slate_Printing_Issue__(TIL08163).pdf

Apple II Workstation Card: Magic Slate Printing Issue (11/96)

When attempting to print from Magic Slate v2.0 using an Apple IIe and a Workstaton Card connected to an ImageWriter II , using AppleTalk, we get the message "includeProcSet IWEm 1 1" on the printout. Is there a fix for this problem?

This article has been archived and is no longer updated by Apple.

Magic Slate thinks it is talking to a LaserWriter instead of an ImageWriter II. Because the Apple II Workstation card emulates a Super Serial Card, you should select that interface in the Magic Slate program.

Also, on an Apple IIe, you always have to run Chooser.II before you run an application and without powering off the computer, see below.

1) Launch your Apple II workstation disk.

2) Choose your printer.

3) Quit Chooser.II, but DO NOT power off.

4) Launch Magic Slate by ProDOS pathname. For example, -/volumename/application name.

5) Configure Magic Slate to print to an ImageWriter at the slot that contains the workstation card.

If this doesn't work, perhaps Magic Slate is not flexible in the slot location or is clearing the Chooser.II info on launch.

Article Change History:
18 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Macintosh: Troubleshooting ID=10 Trap Error Bombs

I am repeatedly getting the system bomb "ID=10" on my Macintosh. What does it mean?
This article has been archived and is no longer updated by Apple.
ID=10 is a line 1111 trap error caused by software difficulties. The first thing to do is:

1. Remove all extensions (INITs) and control panels from the System Folder and restart.
2. If you're no longer getting ID bombs, replace the extensions and control panels, one at a time, until you get the error again. The last one put in is likely the cause of the crashes.

If you are still getting the crashes after removing everything, remove the entire System Folder and reinstall a new copy form your System disks using the Installer. If you still get the bombs at this point, determine whether this always happens when using a particular application. If so, replace that application. Also, verify that your application is the most current version available and fully compatible with your Macintosh model.
Published Date: Feb 18, 2012

Apple Video Cards that Support Two-Page Monitor (11/94)

With what Apple video cards support the Two-Page Display monitor?

This article has been archived and is no longer updated by Apple.
The Macintosh Display Card 4*8, Macintosh Display Card 8*24, and Macintosh Display Card 8*24 GC all support the Two Page Display. These cards use the DB15-to-DB25 cable (part number 590-0615).

Article Change History:
28 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

AppleShare: Slow Startups with CD-ROMs on Network

I have a CD-ROM as a volume on my AppleShare network. I normally shut down the server on Friday afternoons and restart it on Monday morning, leaving it on all week. When I first turn on the server and get the message: "Checking volume 'CD-ROM 4.0' this may take a few minutes", it normally takes anywhere from 15 to 30 minutes for the server to come up. Lately I have seen that message for over two hours and have had to give up and restart the server without the CD-ROM. All the time the message is on the screen, the CD-ROM is being accessed, so the Server isn't locking up.

This article has been archived and is no longer updated by Apple.
The newest version of CD-ROM drivers (3.0.2) speed up access to CD-ROM drives from AppleShare File Servers. Actually, the newer drivers don't let AppleShare do all of the prepping beforehand, and will provide that information on demand at a later time.

Published Date: Feb 18, 2012

LaserWriter II: Printing from DecNet Terminal Server

I'm looking for a product that will allow a DecNet Terminal Server to print to an Apple LaserWriter II.

This article has been archived and is no longer updated by Apple.
If you want to print from a DEC VAX supporting PostScript or from Macintoshes on LocalTalk to a LaserWriter connected to a terminal server port, the following paragraphs may give you some ideas:

Attaching a LaserWriter to a DEC terminal server port is similar to attaching it to the serial port on the VAX. Normally, some steps have to be done by the VAX systems manager to define the terminal server port to be used by the queue manager.

On the Macintosh, you need a cable, with the appropriate pinouts, connecting the LaserWriter to the terminal server port. You have to set the LaserWriter communications settings, such as parity and baud rate, to the same settings as those on the terminal server port. Some installations get by with only 3-pin wiring: transmit, receive, and ground. However, you will lose data when the printer is turned off. You need full modem control port on the terminal server to support all XON/XOFF features.

On the DEC hosts, normally a virtual port is defined for the printer. A command is issued to map the virtual port to the physical port on the terminal server. The physical port on the terminal server should be set as: Accessing mode, Break disabled, Autobaud disabled, and Broadcast disabled. A print queue is then initialized with LATSYM as the name of the processor. PostScript software should be run on the VAX to support PostScript printer queuing. All DEC hosts on the Ethernet with the print queue defined through the terminal server can print to this LaserWriter.

Only the LaserWriter IINTX can be connected to both the serial port and the LocalTalk port and be switchable between them via soft switches. To allow Macintoshes on LocalTalk to print to the LaserWriter on a VAX queue, you may want to look into PacerPrint from Pacer Software.

Published Date: Feb 18, 2012

Desktop Manager: Use Only on an AppleShare Server

I have heard about a file called Desktop Manager, which supposedly speeds up Desktop maintenance over a network and is included with AppleShare in System 6.0 and later. I have also heard that it can be used on any Macintosh, even a single system.

Can this file be used on a single Macintosh to update the Desktop file faster? I don't have AppleShare. Can this file be distributed as a single file with proof of Macintosh ownership? Or can this file be found elsewhere?

This article has been archived and is no longer updated by Apple.
We recommend using the Desktop Manager only on an AppleShare server; we do not recommend its use in any other manner.

The Desktop Manager that comes with the AppleShare File Server software is not to be distributed freely. It is part of the AppleShare File Server software and is covered by the same software licensing agreement that applies to the AppleShare File Server software.

The Desktop Manager contains an INIT that allows the server to handle directory information faster and more efficiently. This file/INIT appears to work properly with most Macintosh system configurations. The Desktop Manager causes problems with the AppleCD SC and has not been officially tested for compatibility with other software.

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Macintosh 128K and 512K: SCSI Hard Drives

Can I connect a hard drive to a Macintosh 512K?

This article has been archived and is no longer updated by Apple.
To our knowledge, there is no plug-and-play hard drive for the Macintosh 512K or 128K currently still being manufactured. The Apple HD20, a non-SCSI drive which does work with the 128K and 512K Macintoshes, was made obsolete by the evolution of SCSI devices which brought about Apple's line of SCSI hard drives around the beginning of 1986. SCSI drives require a SCSI port, which is not included with a Macintosh 128, 512K or 512K Enhanced Macintosh. It was first included with the Macintosh Plus. SCSI drives transfer data many times quicker than non-SCSI drives.

In summary, you either need to find a used HD20 non-SCSI drive, or have a SCSI port installed, which would be a third-party product. Dove is one company that makes add-on SCSI ports.

WARNING: Improper installation of these kits may damage the Macintosh logic board beyond service exchangeability.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

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Softcard III: BDOS Errors

This article has been archived and is no longer updated by Apple.
Sometimes, as a program runs, it drops out with a message BDOS ERROR BREAK IN (various numbers). After this, either the program proceeds after a return or the entire machine is locked up. This happens at infreqent intervals on many other Apple IIIs and other Softcards.

It may seem that the problem is hardware-related, but in fact BDOS ERRORS are usually caused by the CP/M software when it attempts to access a device that is not ready or not on line. In the most common situation, the program tries to read a non-existent disk drive; this reports a BDOS ERROR ON xx: SELECT. Typing a RETURN should return you to the system prompt, and typing an 'R' will retry the last command. The BDOS ERROR BREAK message example above is from MBASIC and refers to the fact that the program attempted to access a device that is not ready or on line; the number in the message is the line number of the MBASIC statement which tried the read. To avoid this message, use the ON ERROR GOTO statement to branch to statements that display instructions to ready the device or put it on line.
Published Date: Feb 18, 2012

Macintosh Plus: No SuperDrive Support

Does the Apple SuperDrive work with the Macintosh Plus?

This article has been archived and is no longer updated by Apple.
The Macintosh Plus does not support SuperDrive. We are aware of no third-party sol;ution. At this date, the closest Macintosh to the Plus that supports the SuperDrive is the Macintosh SE.

Published Date: Feb 18, 2012

Macintosh Display Card 8■24 GC: Supported Monitors

What monitors are compatible with the Macintosh Display Card 8*24 GC?

This article has been archived and is no longer updated by Apple.

The Macintosh Display Card 8*24 GC (along with the Macintosh Display Card 4*8 and 8*24) with the appropriate cable, supports any display, whether from Apple or from another vendor, that meets one of the following specifications:

Display	Resolution	Bandwidth	Vertical (Hz)	Horizontal (KHz)
Apple 21-in. Color Display	1152 x 870	100	75	68.7
Apple Multiple Scan 20	Variable	Variable	Variable	Variable
Apple Two-Page Monitor	1152 x 870	100	75	68.7
Apple Multiple Scan 17	Variable	Variable	Variable	Variable
Apple 16-in. Color Display	832 x 624	57.63	75	50
Apple Portrait Display	640 x 870	57.2832	75	68.9
Apple Multiple Scan 15	Variable	Variable	Variable	Variable
AudioVision 14 Display	640 x 480	30.24	66.7	35.0
Apple 14-in. Color Display	640 x 480	30.24	66.7	35.0
Apple Color Plus Display	640 x 480	30.24	66.7	35.0
Performa Display	640 x 480	30.24	66.7	35.0
Performa Plus Display	640 x 480	30.24	66.7	35.0
AppleColor High Res RGB	640 x 480	30.24	66.7	35.0
AppleColor High Res Mono	640 x 480	30.24	66.7	35.0

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Apple IIGS: Using with a MicroNet Hard Drive

I'm having a problem getting an Apple IIGS to talk to a MicroNet SCSI 30MB HD. I have an Apple High-Speed SCSI card, MicroNet HD, and a 1MB Apple IIGS. I also have v2.0 of the High-Speed SCSI Card Utilities.

Although my Apple II SCSI Utilities see the HD, I can't get GS/OS (v5.0.2) to see the drive.

This article has been archived and is no longer updated by Apple.
Assuming the hard drive is compatible with the Apple IIGS (check with MicroNet) here's what you need to do:

Make a new bootable System Tools disk, using the Installer from the SCSI utilities disk, and specifically install the SCSI driver from the new utilities disk that came with the SCSI card. This makes the disk realize there is a SCSI device attached. As the system starts up, it looks for SCSI devices and if it finds one that should be readable but is not, it will then ask if you want to initialize.

Make sure the slot the SCSI card is installed in is properly set in the Control Panel. (That slot should say "your card".)

Published Date: Feb 18, 2012

LaserWriter: Driver Versions and Macintosh System Versions

I'm told that LaserWriter Driver 6.0 is associated with System 6.0.4. LaserWriter Driver 6.0.1 comes with System 6.0.5.

Can you use LaserWriter Driver 6.0.1 with System 6.0.4? If not, why? What about using LaserWriter Driver 6.0 with System 6.0.5?

If one Macintosh on an AppleTalk network is running LaserWriter Driver 6.0 and another is running Driver 6.0.1, will the LaserWriter be re-initialized each time one Macintosh goes to print after the other has just printed? (For instance, if one Macintosh was using Driver 5.2 and another was using Driver 6.x.x.)

This article has been archived and is no longer updated by Apple.
The LaserWriter will reinitialize if it sees someone trying to print with a different version of LaserWriter and Laser Prep, regardless of the size of the difference in version numbers.

The drivers are not truly "associated" with a particular system release, they just happen to be distributed with that release. You can use 6.0.1 LaserWriter and LaserWriter Prep with System 6.0.2 if you like, just as you can use version 5.2 LaserWriter and LaserWriter Prep with System 6.0.5.

Use the suggested print driver that is best for the software, and standardize the whole network on that version to avoid loss of time due to reinitialization of the printers.

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Macintosh LC: Apple IIe Card Enables Network Printing

If I connect several Macintosh LC computers via LocalTalk connector kits and have a couple of ImageWriter printers attached, will the software recognize the printer location when using the Apple IIe emulation card?

Specifically, most standalone software for the Apple IIe looks for slot 1 to print. If I use the LocalTalk option card in the ImageWriter and connect up via LocalTalk, will it recognize the placement of the printers? Will I be able to print using the Apple IIe Card and Apple IIe software under this scenario?

This article has been archived and is no longer updated by Apple.
When using the Apple IIe card in the Macintosh LC, you can print to serial devices using PR#1, and print to LaserWriters and ImageWriters on a LocalTalk network.

Published Date: Feb 18, 2012

Macintosh: How To Tell if You Have a Coprocessor Installed

How can I tell if my Macintosh has a coprocessor installed?

This article has been archived and is no longer updated by Apple.
If you want to know if you have an adapter (with a coprocessor) installed in your Macintosh without checking the computer physically, you need to use a software utility: nothing in the Macintosh operating system gives you this information.

There are several shareware CDEVs that report system configuration, as well as many disk and file utilities, such as SUM II and MacTest. Also, some applications (Microsoft Excel is one) report the presence of a coprocessor.

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AppleShare: Installing on Macintosh IIfx/IIci

I'm about to install AppleShare on a Macintosh IIfx. I've heard that AppleShare requires some 'patches' for the Macintosh IIfx. Is that true?

This article has been archived and is no longer updated by Apple.
There's only one hitch to installing AppleShare on a Macintosh IIfx or Macintosh IIci: You need to use the Network Products Installer diskette to perform the actual installation, rather than the Installer that comes with AppleShare.

The operating system version on the AppleShare Installer diskette is too low to run on the Macintosh IIfx; the Installer on the NPI diskette is 6.0.5 (which will run), and it includes the necessary scripts to install AppleShare File Server, Print Server, Internet Router, EtherTalk, and TokenTalk.

You will still need to have the original File/Print Server (or whichever) diskettes handy, as the NPI has only the scripts, not the actual programs.

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Macintosh: Troubleshooting Error -42 "tmfoErr"

My Macintosh keeps getting the "Error in printing this document -42". I'm using background printing under MultiFinder printing a Microsoft Works document. My Macintosh is running System 6.0.8.
This article has been archived and is no longer updated by Apple.
Error -42 is tmfoErr, or a "too many files open" error. You might have reached the default maximum number of files that can be open at any one time.

During our testing of Microsoft Excel, when we reached the maximum number of open files allowed on our system (40), we couldn't create a print job nor open any other files. We got a variety of error messages: Print Monitor error, "file is damaged" error, or a Print Manager error, and "Error Printing on LaserWriter (driver version) you are using". Other programs that we tried to open trapped the system error and reported it differently.

Many programs open numerous files when launching, so you might want to investigate what you have open at the time of the error if this scenario fits.

If you are **not** encountering the maximum number of open files limit, you might have a directory fault. Try running Disk First Aid (or a similar program), or reinitialize and reinstall the software on the hard disk to see if this corrects the situation.
Published Date: Feb 18, 2012

Softcard III: Using CP/M with a Profile

This article has been archived and is no longer updated by Apple.
The Softcard III Installation manual recommends on page 83 that a user allocate 3200 SOS BLOCKS into two CP/M volumes (each 1600 blocks) when setting up ProFile. This will give the user approximately 792K in each CP/M volume. These blocks are on the ProFile and in no way effect the size of the transient program area (TPA). The TPA is fixed by the implementor (Apple) and cannot be changed. The size of the TPA is defined as the memory range from 0100H to the bottom of the BDOS (0CC00H), which works out to 50.75K (51,960 Bytes). Note that the TPA includes the area of memory used by the CCP (2K). Application programs may overwrite the CCP and use the 2K of memory, but must exit back to the CP/M system via a Warm Boot (which reloads the CCP).

Remember that SOS device drivers reside outside of the CP/M environment and therefore have no effect on the size of CP/M. CP/M takes up 56K in the Apple III because of the amount of BIOS code required to interface to device drivers.

Use 2060 blocks for each CP/M volume on the ProFile. This works out to 1 Meg of user space (exlcuding directory) for each volume. We highly recommend that you use the updated version of the CP/M Boot & BIOS code, version 2.21.
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GIFF-to-PICT Conversion: Reduced Resolution Is Lost Lookup Table

Why is it that when you convert a 256 color GIFF-formatted graphics file to a PICT file, the image quality is worse (the color mapping is off)?

I've been downloading graphic GIFF files from a variety of public bulletin boards and on-line information services. I want to import these graphic images into Macintosh programs that support PICT files, using such Macintosh programs as PICTureThis and Giffer to convert GIFF files to PICT files.

Invariably, the converted PICT image is worse in image quality than the original GIFF image that is displayed on the Macintosh screen using Giffer. It appears that the colors used in the original GIFF image don't completely map to the colors displayed in the PICT image.
This article has been archived and is no longer updated by Apple.
It may be that the color lookup table is being lost. The GIFF file has its own custom lookup table that is either not being converted to the PICT file, or the program used to display the PICT file is not using the custom lookup table.

Contact the vendors of the utilities you are using to see if they know of a workaround.
Published Date: Feb 18, 2012

AppleWorks GS: How to Print Foreign Characters

On an Apple IIGS, why can't I print foreign characters from AppleWorks GS to a LaserWriter?
This article has been archived and is no longer updated by Apple.
The Chooser II application in ProDOS supports only the standard character set. It doesn't print foreign characters displayed on the screen. With AppleWorks GS, anything other than Draft will print as a bitmapped version of what is displayed on the screen. This allows you to print foreign characters.

The only other option is to get an application that supports foreign languages. For more information, search on "Claris".

TIL article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

Macintosh IIci Built-in Video: RAM Should Be Installed in Bank A

My Macintosh IIci won't start up when a monochrome monitor is attached to the on-board video port. At first I thought it was a memory problem, so I replaced all four 256K SIMMs -- that didn't help.

Then I found that if I unplug the monitor it starts up fine. I have installed the Macintosh II video card and it works fine.

Will the Macintosh IIci internal video port work with only 1MB of RAM installed?

This article has been archived and is no longer updated by Apple.
The Macintosh IIci's built-in video will function with only 1MB of RAM, provided that the RAM is located in Bank A. You will only be able to select monochrome display in the Monitors CDEV. If the RAM is in Bank B, then the Macintosh IIci ignores the video port entirely.

Published Date: Feb 18, 2012

Macintosh IIfx Upgrade: Some Symptoms of Bad RAM

I upgraded my Macintosh II to a Macintosh IIfx by purchasing the Macintosh IIfx logic board upgrade and two 4MB Macintosh IIfx memory upgrades.

This is actually the second logic board that I've ordered. The first was returned to Apple because it had the multichime error sound when first turned on with the full 8MB of RAM. However, it worked properly with only 4MB installed.

The second logic board has a similar problem. If 8MB of RAM is installed, the unit acts strangely. Here are some symptoms:

* The desktop is extremely slow to update at startup, particularly when it tries to read the hard drive.

* When an icon is moved, multiple remnants of the icon are left behind on the desktop.

* Inserting a locked, known good floppy disk into the drive causes a dialog "Disk is damaged and can't be used". Reinserting the same disk into a Macintosh IIci or Macintosh SE results in normal response.

* The system has trouble launching programs and eventually crashes with a system error = 03 or 10 error.

* Disks that were not write-protected were permanently damaged and could not be repaired with Norton Utilities for the Mac. When opened on any other system, the disk would indicate that it had used space, but no icons appeared.

* Disks inserted would often be missing several icons. When those same disks are inserted into other systems or this system running 4MB, all icons appear.

The interesting thing is that if the machine is reduced to 4MB of RAM populated in bank A, it works just fine. It doesn't matter which RAM chips are placed in Bank A -- as long as Bank B is empty, the system is normal.

This article has been archived and is no longer updated by Apple.
We have heard of this problem before. It turned out to be bad RAM causing the crashes and erratic behavior. Replace the memory in the back bank with four new SIMMs of a different brand.

Published Date: Feb 18, 2012

Macintosh Volume Drag-Copy: Why Installer May Be Needed

If I completely drag-copy an entire mass-storage volume, including the System Folder, to another volume, do I still need to use the Installer to rewrite the System on the target volume?

This article has been archived and is no longer updated by Apple.

Various Macintosh models have slightly different ROM codes. The Installer determines which model it is installing to, and installs the appropriate ROM patches for each model.

If you have already run the Installer on a volume and you want to transfer that System to another volume that will be used on the same or similar computer, it should be alright.

Also, if you do a customized install, and choose "System Software for any Macintosh", it should be alright using that volume on different Macintosh models.

Published Date: Feb 18, 2012

LaserWriter IINTX: LaserJet Compatibility and Bitmapped Fonts

I have a Macintosh/DOS cluster running under TOPS with a LaserWriter IINTX as a common printer. The TOPS system is the latest versions. The LaserWriter IINTX is being set up as a LaserJet Plus as described in the manual.

The output from the DOS software is ragged and poorly defined. The resolution looks like it came from a dot-matrix printer (72 dpi).

If the software output is printed to a direct HP LaserJet, the quality of the output is just what I want (300 dpi).

My questions:

1) How fully does the LaserWriter IINTX emulate the LaserJet Plus? Is the compatibility only 80-85%, or will the LaserWriter IINTX fully become a LaserJet?

2) Is there a limit to the number of times the printer can be reset (resetting from a LaserWriter mode to a LaserJet mode)?

This article has been archived and is no longer updated by Apple.

1) Adobe Systems has performed tests comparing LaserWriter IINTX and LaserJet Plus. Their finding is that a LaserWriter IINTX in LaserJet Plus emulation mode is generally faster than a LaserJet Plus, and is more than 95% compatible. The newer ROMs in the LaserWriter IINTX will increase compatibility even more.

The LaserWriter IINTX in LaserJet emulation does not fully support LaserJet bitmapped fonts, but does support PostScript fonts. This may explain your problems with the "jagged" output, if you're using LaserJet bitmapped fonts.

2) The minimum number of "switches" is 100,000, if all performed via software. We don't have the number for the DIP switches, as there are too many variables to take into account.

Published Date: Feb 18, 2012

Macintosh IIci: Does Not Use VRAM

Is 512K VRAM available on the Macintosh IIci?

This article has been archived and is no longer updated by Apple.
The Macintosh IIci does not use VRAM (video RAM), nor can be expanded with VRAM. The computer uses main system RAM from Bank A of the logic board.

If there is at least 2MB of RAM on the logic board, you will be able to access the maximum pixel depth for the attached monitor: for a High-Resolution RGB Monitor set to 256 colors, that amounts to 384K of RAM taken for video.

Published Date: Feb 18, 2012

HyperCard: How To Hide Its Title Bar on External Monitor

I am doing a presentation and want to hide HyperCard's title bar so it doesn't appear that I am in HyperCard.
This article has been archived and is no longer updated by Apple.
When HyperCard is run on a Macintosh with a display larger than nine inches (basically, any Macintosh with an external monitor), a title bar normally appears at the top of the HyperCard window. It's possible to make this title bar invisible (on a color system), and it's also possible to eliminate it entirely.

* Making the Window Title Bar Invisible

Making the title bar invisible is the safer method, because the changes you make can easily be undone. And although the title bar is invisible, it's still there and can be dragged. However, this method works only in color, and in color you lose HyperCard's visual effects.

Here's how to set the Desktop, and the window title bar and its components, to the same color -- making the title bar invisible:

1. Put the cdev called Kolor (Kolor is available on bulletin boards) in your System Folder.

2. Open the Control Panel, then click on the cdev named General.

3. Click on the dark blue color where it says "Desktop Pattern."

4. Color in the box above the word "Desktop" so it is solid blue.

5. Double click on the dark blue color. A window will appear with a color wheel. Write down the values in the Red, Green, and Blue fields.

6. Click on the cdev Kolor.

7. In the window title bar section, click on the "Title text" square. This will bring up the color wheel again.

8. Change the values in the Red, Green, and Blue fields to match the numbers you wrote down in step 5.

9. Repeat steps 7 and 8 for the "Lines/boxes," "Border," and "Title bar" squares.

Your title bars now appear to be invisible when shown against the Desktop Pattern.

* Eliminating the Window Title Bar

Eliminating the title bar actually changes the window structure. It has nothing to do with color, so it has effect on large-screen monochrome systems as well as color systems. This procedure changes HyperCard itself, so back up HyperCard first. The information here is given for versions through 1.2 of HyperCard.

1. Use a file editor such as Fedit Plus to open the HyperCard application.

2. Do a search for one of the following hexadecimal strings:

HyperCard 1.01: 05A0 2F3C 0004
HyperCard 1.1: 05DC 2F3C 0004
HyperCard 1.2: 0638 2F3C 0004

which should occur only once in the HyperCard file.

3. Change the last character of this string from 4 to 2.

4. Save the change and exit the file editor.

5. When you run HyperCard, the window will no longer show the title bar.

If you need to restore the window title bar, use the file editor to change the 2 back to 4. The parameter that was changed is passed to the Toolbox Window Manager call NewWindow. The value 4 tells NewWindow to draw a document window (with title bar) without a grow box. The value 2 tells NewWindow to draw a plain box without a menu title bar.

Published Date: Feb 18, 2012

TA46679_Personal_LaserWriter_NT_ROM_and_PostScript_Versions_(TIL08191).pdf

Personal LaserWriter NT: ROM and PostScript Versions

What ROM versions are in the Apple Personal LaserWriter NT?

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter NT has Postscript version 51.8 included on the ROMs. The ROMs themselves are version 1.0.

Published Date: Feb 18, 2012

Apple Scanner: Troubleshooting SCSI Problems

When using an Apple Scanner with my Macintosh SE/30, I keep getting a message about not being able to find any device attached to the SCSI port. I checked the SCSI number to make sure we did not have any conflicts, made sure there was a terminator attached properly, checked the cable itself, and reinstalled the AppleScan software. The serial port is working fine.

The hard drive in the Macintosh SE/30 doesn't always start up the first time the computer is turned on. My dealer said that the hard drive may be the cause of the problem, and that I may need to replace a chip on the I/O board.

This article has been archived and is no longer updated by Apple.
This type of problem is usually a SCSI termination problem that originates in the drive or the scanner. The problem could be with the hard drive, but not with the PROM that needs replacing. (Note: This service program is for replacement of a chip of the drive, not the drive itself.)

First try moving the terminator to another location. If the terminator is on the end of your cable, move it to the scanner's empty SCSI port. If it's on the empty port, move it to the end of the cable. If this doesn't do anything, try removing the terminator completely.

Next, check the scanner to confirm that its internal terminators have been removed. Finally, try using a different hard drive.

Published Date: Feb 18, 2012

LaserWriter IINTX: Can Use Some Macintosh SIMMs

Can I use Macintosh IIfx 4MB SIMMs in a LaserWriter IINTX?

This article has been archived and is no longer updated by Apple.
The LaserWriter IINTX accepts only 256K and 1MB SIMMs. Macintosh IIfx 1MB SIMM modules can be used in the LaserWriter IINTX, but not the other way around.

Published Date: Feb 18, 2012

Macintosh: SIMM Speed Configurations

Can I mix and match SIMM speeds when upgrading memory on my Macintosh?

This article has been archived and is no longer updated by Apple.

As a general rule, SIMM speeds should match within a bank, can be different between banks, and all must be compatible for the specific Macintosh model. In other words, as long as all the SIMMs in Bank A match in speed, all the SIMMs in Bank B match, and all the SIMMs in the system meet the refresh speed specification, you should have no problem.

Published Date: Feb 18, 2012

AppleShare: Troubleshooting Auto Log-On Problems

All the computers on my AppleShare network have been configured for Auto Log-On. Now suddenly, everyone needs to log on manually.

This article has been archived and is no longer updated by Apple.
It is possible that your AppleShare Prep file is corrupt or lost. Try throwing away your AppleShare Prep and rechoosing your printers and the servers. Also, check for a conflicting INIT loading before AppleShare or if there is more than one System on your startup drive.

Published Date: Feb 18, 2012

AppleShare Print Spooler: Ways to Speed Performance

?

I'm currently running an AppleShare Print Spooler on a Macintosh Plus with an external HD20. Would the speed and throughput of the spooler be increased if I upgraded it to a faster Macintosh or if I added more memory to my Macintosh Plus?

This article has been archived and is no longer updated by Apple.
Anything EXCEPT memory would increase the performance of your spooler. RAM performance improvements are incremental, but usually not enough to justify the cost of the RAM. This depends on how many utilities you may have running on your server, but if you're running a stripped-down server, you don't really need more memory.

Here are the items that will most improve the performance of your server:
* Cabling type (using Ethernet instead of LocalTalk)
* Getting a faster computer
* Getting a faster hard drive

We can't really provide any hard statistics on performance because there are far too many variables and that change from moment to moment during network use.

Published Date: Feb 18, 2012

TA46685_Pascal_II_Program_control_and_CTRLA_(TIL00820).pdf

Pascal II: Program control and CTRL-A

You can't switch the 40 column halves of the Pascal display screen from program control.
This article has been archived and is no longer updated by Apple.
To flip the bit that does that (ususally by pressing CTRL-A) you will have to POKE the BIOS, which can be dangerous.
Published Date: Feb 18, 2012

TA46686_Apple_IIe_Utility_for_Partitioning_Hard_Drives_(TIL08200).pdf

Apple IIe: Utility for Partitioning Hard Drives

I want to add a high-speed SCSI card and a 85MB hard drive to my Apple IIe. Is there a ProDOS utility that can partition such a large drive?

This article has been archived and is no longer updated by Apple.
The utilities disk that comes with the high-speed SCSI card can handle the partitioning. The only problem is that the Apple IIe can only see two partitions of 32MB each. So, only 64MB of the disk will be used; the rest of the space will be inaccessible.

The only other option is to search for a third party solution.

Published Date: Feb 18, 2012

Apple IIGS: 25-Inch Monitor Not Recommended

Is there a way to hook-up an Apple IIGS to a 25-inch monitor?

This article has been archived and is no longer updated by Apple.
Because the Apple IIGS only supports up to 640 x 200 pixel resolution (with no optional video cards available) we don't recommend adding a large screen monitor.

All you would accomplish in any case is magnifying the screen -- no desktop space would be added. Also, the enlarged screen would look grainy.

Published Date: Feb 18, 2012

TA46688_Apple_III_Connecting_an_Epson_Parallel_Printer_(TIL08204).pdf

Apple III: Connecting an Epson Parallel Printer

I have an Apple III. Is there a port on it that I can use to hook up an Epson Parallel Printer? If not, what do I need to do to connect the printer?

This article has been archived and is no longer updated by Apple.
No, the Apple III does not have a built-in parallel port.

Instead, you need the Universal Parallel Interface Card 661-91007 and cable 590-0036. The driver is a printer driver with the following configuration block:

0 1 2 3 4
0E 00 00 00 00

Published Date: Feb 18, 2012

TA46690_Apple_DMP_Card_How_to_Identify__(TIL08208).pdf

Apple DMP Card: How to Identify (2/97)

Apple DMP Card: How to Identify (2/97)

This article describes how to identify the DMP card, how to find the Apple part number and it use.

This article has been archived and is no longer updated by Apple.

The Module Identification manual can be used to match the card with its photograph. The Module Identification manual will also have the part's service part number: 661-XXXX.

The card was used for connecting the Apple DMP (parallel printer) to an Apple II family computer.

Article Change History:
12 Feb 1997 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

PostScript: Where To Get a Complete Set of Commands

Where can I get a complete set of PostScript commands?

This article has been archived and is no longer updated by Apple.
Addison/Wesley publishes a book entitled "PostScript Language Reference Manual." This book is available at bookstores, or from Apple's Programmers and Developers Association.

For more information, search under: "APDA"

Adobe also has reference manuals available as well.

Published Date: Feb 18, 2012

TA46692_Apple_Color_Plotter_Compatibility_(TIL00821).pdf

Apple Color Plotter: Compatibility

This article has been archived and is no longer updated by Apple.
The Apple Color Plotter is not compatible with the HP 7470. The Apple Plotter is based on the Yokogawa Electric Works (YEW) PL-1000.
Published Date: Feb 18, 2012

TA46693_ImageWriter_I_Not_AppleTalkCompatible_(TIL08211).pdf

ImageWriter I: Not AppleTalk-Compatible

Is the ImageWriter I printer AppleTalk compatible? If so, what is the interface card?

This article has been archived and is no longer updated by Apple.
The ImageWriter I is NOT AppleTalk compatible. The only possible way we know that you might be able to make the printer available on a network might be using something like a Shiva NetSerial device.

Published Date: Feb 18, 2012

TA46694_Macintosh_LC_Security_Connector_(TIL08212).pdf

Macintosh LC: Security Connector

The new Macintosh LC seems to have a different type of molded-in security "hole".

Previous Macintosh computers had a hole that would accommodate a clip-in metal eye through which a cable could be run and padlocked to a table. The Macintosh LC has a different kind of security connector, a "slot".

Is the security slot on the Macintosh LC the same as that on keyboards, and will the same gadgets that I now use for the keyboard still work?

This article has been archived and is no longer updated by Apple.
The security connector on the Macintosh LC is best described as an underpass where the security cable would pass under a small bridge of plastic on the underside of the case.

It does not use the plug-in connector as does the Macintosh Plus keyboard.

Published Date: Feb 18, 2012

Macintosh XL: Connecting to a LaserWriter (10/94)

How do I connect a LaserWriter to my Macintosh XL?

This article has been archived and is no longer updated by Apple.
The Macintosh XL has AppleTalk built into the ROM so you can print to the LaserWriter as you would from a Macintosh 512k. You need a DB-25 LocalTalk cable to connect to the Macintosh XL's serial port.

Once you have the cabling connected between the Macintosh XL and the LaserWriter, make sure the LaserWriters mode switch is set for "AppleTalk", use the Control Panel to make AppleTalk active, and then use Chooser to select the LaserWriter.

Here are the pinouts needed to make an adapter from a Macintosh AppleTalk Connection Module (DB-9) to a Macintosh XL connector (DB-25).

Macintosh DB-9 Female	Macintosh XL DB-25 Male	Signal Mnemonic
8	19	RXD+
4	20	TXD+
9	3	RXD-
5	2	TXD-
SHIELD	SHIELD	GND

A word of caution is necessary. Because there are signal losses in cables longer than 18 inches, the AppleTalk Connection Module cable is supposed to be no longer than 18 inches, and the modules are constructed with an 18-inch cable already on them. There is a risk in connecting an adapter from the module to the Macintosh XL because the extra cable in the adapter might create signal losses that result in erratic operation of the Macintosh XL node. To minimize this risk, make the adapter's wiring as short as possible.

CAUTION! To avoid FCC Class B signal violation, this cable should be fully shielded, as the data is at a very high rate and is not attenuated by the connection boxes normally used in AppleTalk.

Article Change History:
17 Oct 1994 - Reviewed for technical accuracy, combined similar articles.

Support Information Services

Published Date: Feb 18, 2012

Personal LaserWriter NT: Counter Keeps Resetting to Zero Problem

I have a Personal LaserWriter NT, and for some reason it does not count the pages printed, (that is, the first page out of the printer is always '0') -- and, for some reason, the printer cannot be renamed.

This article has been archived and is no longer updated by Apple.
It sounds like the I/O board itself is having some trouble in firmware (ROM). Have an authorized Apple technician swap the controller board into another Personal LaserWriter to see if the problem follows the controller board. If so, you may need to have it replaced.

Published Date: Feb 18, 2012

AppleShare: Internal Bridging Support

?

Does AppleShare support internal bridging in the server (I want to use AppleTalk and EtherTalk), or must I only use EtherTalk and then use an Ethergate to convert back to LocalTalk?

This article has been archived and is no longer updated by Apple.
AppleShare itself does not inherently support internal bridging. If you wish to use a software bridge, the Apple Internet Router will bridge between the two physical media and run in the background of an AppleShare server.

Published Date: Feb 18, 2012

LaserWriter IINTX: Attached Drives Must Give Capacity Info

Can a SyQuest removable media SCSI drive be used as a SCSI device on the LaserWriter IINTX?

This article has been archived and is no longer updated by Apple.
The only limiting factor, and this holds true for all SCSI drives when attached to the LaserWriter IINTX, is that the drive must relay information on its capacity back to the LaserWriter. This information allows the LaserWriter controller to determine how much disk space is available for caching and storage and reports this info back to the LaserWriter Font Utility.

You'll need to get clarification from the drive manufacturer most likely.

Published Date: Feb 18, 2012

TA46699_Apple_IIGS_System_Error_File_Map_Destroyed_(TIL08218).pdf

Apple IIGS: System Error 0027 -- "File Map Destroyed"

I get a "system error 0027" on my Apple IIGS when I try to launch a certain game. What does it mean?

This article has been archived and is no longer updated by Apple.

Error $0027 in GS/OS means "File Map Destroyed." If you're seeing this error only when launching a certain program, and all other software works correctly, we would guess the diskette or file is damaged or corrupted. If the software is on a hard drive, you can try reinstalling it.

If the problem persists, consider formatting and possibly replacing the hard drive.

Published Date: Feb 18, 2012

TA46700_Apple_Modems_CCITT_Compatibility_(TIL08219).pdf

Apple Modems: CCITT Compatibility

Are both Apple modems CCITT compatible?

This article has been archived and is no longer updated by Apple.
The 2400 baud modem is CCITT V.22A/B, CCITT V.22bis compatible. The personal modem is not.

CCITT is the International Telephone and Telegraph Consultative Committee.

Published Date: Feb 18, 2012

X.25 Protocol: Using It With InterBridges

This article has been archived and is no longer updated by Apple.

The Question

Suppose you want to connect to a network based on the X.25 protocol. You may want to connect an InterBridge to their backbone zone, then connect the InterBridge via one of its modem ports to one of the ports on an X.25 pad located in the WHTC complex. The connection is to tie into another AppleTalk network that has been connected in a similar fashion at some other point in the X.25 network. Your concerns are:

- how to initiate the connection between two InterBridges across the X.25 bridge.

- the amount and size of packet traffic generated by two InterBridges polling each other's existence across the X.25 bridge.

Making the Connection

To initiate the communication between bridges, just turn on the InterBridge. It then polls the nearest bridge and updates its internal table of zones available on the net from the adjacent InterBridge. It also passes its zone address number and name to the other bridge. If a bridge is turned off, it will rebuild the zone table at power on. After a delay in rebuilding the table, it maintains the table on its own. Applications such as the Chooser and InBox, which communicate over AppleTalk, can request the zone information from the InterBridge. Bridges periodically update their tables and will, upon receiving a new zone address or a packet referencing an unnamed zone address with a name, will update the table to reflect the new zone address and zone name.

There is one consideration that may cause some applications not to function with this network. Because InterBridges use ZIP, which is "best effort" protocol, checking for timeouts or proper data handling must be handled by the application. Some applications, notably AlisaTalk running on a VAX, will time-out if delays are very long across the network. You are then at the mercy of whatever traffic and traffic problems might exist on the X.25 net.

Packet Traffic

During the first 30 seconds of polling time, approximately 5-6 packets are transferred between InterBridges. These packets are in ZIP (Zone Information Protocol). The first will be a ZIP bringup packet that will be delivered out each of the connected ports. This is followed by a ZIP GetZoneList or GetMyZone packet. The GetZoneList packet is replied with a GetZoneList Reply packet. The new InterBridge might send a ZIP Query for information on packets whose addresses are not yet in its Zone Information Table (ZIT). This also will be replied and will be in the form of a ZIP reply packet.

The packets range in size: 8 bytes for a ZIP GetZoneList, 45 bytes for a ZIP bringup, 13 bytes plus 32 bytes for each zonename for a ZIP reply packet, and for a GetZoneList Reply there would be 9 bytes and 32 bytes for each zone name.

The first group of bytes contain the LAP (Link Access Protocol) header, the DDP Datagram Delivery Protocol) header, and the ZIP (Zone Information Protocol) header. This will be true for takedown, bringup, query, and reply packets. The ZIP GetzoneList and GetZoneList Reply packets use ATP (AppleTalk Transaction Protocol) header and user bytes. These transactions take place with each connected port.

There are two AppleTalk ports and two Serial ports on the InterBridge. After

the initial polling, one packet each 10 seconds is transmitted to maintain the connection while idling.

Published Date: Feb 18, 2012

Macintosh Display Card 48: Color Problems

I have a Macintosh with a two page monochrome monitor and a Macintosh Display Card 4*8 video card.

When the control panel has the card set to black-and-white, the monitor drops pixels at random. When the card is set for four shades or 16 shades it works fine.

Is this normal, or should I replace the card?

This article has been archived and is no longer updated by Apple.
That is most definitely NOT the normal function of that video card -- we would recommend replacing it, as the video memory is probably damaged. In fact, you may be able to see slight discolorations (when the monitor is in color mode) in the upper-left corner of the screen because of RAM failure. Even if you don't see the discolorations, we would advise replacing the video card anyway.

Published Date: Feb 18, 2012

Macintosh 512e: Not Enough Memory For HP Laserjet

I want to interface my Macintosh 512e with an HP Laserjet II. Is there a cable I can use?

This article has been archived and is no longer updated by Apple.
We suspect that this can't be done due to memory constraints -- the drivers necessary to run the Laserjet require more than the 512e's 512K of RAM.

We would recommend that you contact the printer manufacturers for further information and a possible workaround for the memory issue.

For more information, search under: "Hewlett-Packard"

Published Date: Feb 18, 2012

Macintosh SE: SCSI Port Same World-Wide

I purchased a Macintosh SE in France, but it originally came from Ireland. Here in the United States I am considering purchasing an internal or external hard drive.

Are there any special problems I should know about?

This article has been archived and is no longer updated by Apple.
No. The specifications for the Macintosh SE's SCSI port (both internal and external) are the same world-wide; it's only the power supply/analog boards that cause the confusion. You should be able to purchase any internal or external SCSI device and attach it to the Macintosh SE without a problem.

Published Date: Feb 18, 2012

AppleShare: Permissions Not Copied Together with Folders

I need to copy a subset of a folder hierarchy from one volume on an AppleShare server to another volume on the same server. A straight copy-via-drag did not preserve the AppleShare attributes having to do with access permissions.

What would you recommend I do to accomplish this copy without having to go into each folder copied and reset the AppleShare attributes afterwards? If it can't be done with a standard Apple product or procedure, is there a third-party package or utility that would allow me to do this in one step, short of dumping the folder tree out on a backup and then a subsequent restore?

This article has been archived and is no longer updated by Apple.
Currently, as of December 1991, there really isn't a clean way of preserving access privileges for this type of copy operation.

The privileges are not stored with the files or folders, which complicates the issue. Until a better way comes along, you're going to have to manually reset them after copying.

Published Date: Feb 18, 2012

Macintosh Classic: Can Use Extended ADB Keyboard

Is there any problem using an older extended keyboard with a Macintosh Classic?

This article has been archived and is no longer updated by Apple.
There is no problem with using the other Macintosh ADB keyboards with the Macintosh Classic.

Published Date: Feb 18, 2012

Macintosh Classic: Should Have Internal SCSI Terminator

I recently set up a Macintosh Classic single floppy with an external SCSI hard drive, but could not get the hard drive to boot. When I ran SCSI Probe on that Macintosh it tells me "bus not terminated".

Is the SCSI bus not terminated on the motherboard of the single drive Classic? If not, can I get a terminator that can fit on to the motherboard's SCSI port?

This article has been archived and is no longer updated by Apple.
The Macintosh Classic is (or should be) self-terminated internally, through the use of an internal SCSI Terminator. This is similar to the Macintosh IIfx Internal SCSI Terminator, and plugs into the internal SCSI port on the Classic's logic board. If you're missing the terminator, or you need to replace it, the service part number is 630-0408.

Published Date: Feb 18, 2012

TA46708_Apple_III_Keyboard_layout_(TIL00823).pdf

Apple III: Keyboard layout

This article has been archived and is no longer updated by Apple.
Applications in development often require a particular keyboard layout. There are some problems during the creation of this file because the standard drivers manual doesn't provide enough information about the internal organization of a keyboard layout file. The easiest way to change the layout is to modify an existing keyboard file. The file is laid out in the order of the table on page 136-137 of the Apple III Standard Device Drivers manual. For example, the first eight bytes of the SHOLES layout are:

31 21 32 21 32 40 32 00
1 ! 2 ! 2 @ 2 NUL

The four values, as presented in the table in the manual, are in the order:
Alone, SHIFT, CONTROL, Both.
Published Date: Feb 18, 2012

Apple IIe: How to Transfer files to a PC

I want to transfer files between an Apple IIe and an IBM PC. Can I "print" out of my Super Serial card into the RS-232 port of the PC? What cable should I use?

This article has been archived and is no longer updated by Apple.
Connect your two computers with a RS-232 null modem cable, and use a terminal emulation package on the PC to capture the file. When you tell the Apple IIe to print, the PC needs to be in the file-receive mode.

Published Date: Feb 18, 2012

Apple IIGS: Contiguous RAM Depends on Memory Board

If RAM is added to the Apple IIGS in slot(s) 1-7 instead of the expansion slot -- with an Apple memory card, for instance -- will it be contiguous RAM?

This article has been archived and is no longer updated by Apple.
It depends on the memory board used. The Apple II Memory Expansion card will not be used as contiguous RAM, but can be used as a RAM disk (in fact, both GS/OS and ProDOS automatically make it a RAM disk at startup).

Some other manufacturers make memory boards that reside in an "other" slot and maps to contiguous RAM space.

Published Date: Feb 18, 2012

Apple IIGS: "Visit Monitor" and "Memory Peeker" are Ghost DAs

While setting up an Apple IIGS, I discovered that when I access the control panel through command-option-esc, not only do I get "Control Panel" and "Alternate Display", but I also get "Visit Monitor" and "Memory Peeker".

This article has been archived and is no longer updated by Apple.
These two Classic Desk Accessories are, basically, undocumented and unsupported -- in other words they are "ghost DAs", attempts at programmer's aids that were originally intended to be full-blown tools, but now just "hang out" in the ROMs.

You can manually bring these CDAs up by issuing a '#' command in the Monitor on any Apple IIGS.

(NOTE: These extra CDAs will go away, all by themselves, in a few days.)

Published Date: Feb 18, 2012

Macintosh IIsi: Needs RGB-NTSC Converter For NTSC Video

Does the Macintosh IIsi video port support interlaced video devices, or do I need to add a Macintosh Display Card 4*8 with a video converter? I need an inexpensive solution for a simple VCR connection.

This article has been archived and is no longer updated by Apple.
The Macintosh IIsi does NOT support interlaced video devices. You will need to attach an RGB-NTSC converter to the video port, or to an installed video interface.

For more information, search under "Macintosh IIsi" and "NTSC".

Published Date: Feb 18, 2012

Macintosh Portable: Use Portable INIT 1.3 with Modem (9/94)

I can't get a modem to work with the Macintosh Portable. I have tried two different modems and verified that they work when plugged into another Macintosh model running the same software.

This article has been archived and is no longer updated by Apple.
The Macintosh Portable INIT version 1.3 helps with these types of problems.

You might also want to reset the power manager by depressing the reset button and the programmer's switch at the same time.

These articles can help you locate software updates mentioned here:

* Where To Find Apple Software Updates
Lists online services for "free" Apple software updates

* Obtaining Apple Product Support in the USA
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
19 Sep 1994 - Revised locating a binary attachment.
02 Feb 1993 - Updated to explain how to locate binary attachment.

Support Information Services
Published Date: Feb 18, 2012

Laser Fonts: Corrupted Font Problems

I'm experiencing an intermittent problem when using the font "Times 12".

It sometimes does not use the whole line. No characters are lost; it simply prints the rest of the line on the next line.

Some documents do work, others don't. Generally if I take a file that does not work and either change the font style or size, it prints correctly. I tried re-installing the fonts with no success. I've taken the "bad" file and printed it on another computer and laser printer and it works!

This article has been archived and is no longer updated by Apple.
This type of problem is usually caused by a corrupt font installed in the System; we would recommend at least replacing the font with Font/DA Mover, if not trashing and reinstalling the operating system with Installer.

If the problem persists, try reloading the application from diskette.

Published Date: Feb 18, 2012

TA46716_Macintosh_IIsi_Logic_Board_ROM_Slot_is_for_Upgrades_(TIL08239).pdf

Macintosh IIsi: Logic Board ROM Slot is for Upgrades

Some Macintosh IIsi computers have a slot and a board next to the NuBus/030 expansion slot. I can't find any information about the slot in the manuals or recent magazines.

This article has been archived and is no longer updated by Apple.
The ROM SIMM slot is for upgrading Macintosh IIsi ROMs. There are actually two versions of the logic board being shipped as of December 1990: One type has the ROM surface-mounted to the logic board; the other does not have this ROM at all (only a space for it) but does have the SIMM installed.

The rule-of-thumb for the ROM SIMM: If a board has it, don't remove it; if it doesn't, don't put one in.

Published Date: Feb 18, 2012

Apple FORTRAN: Complex Numbers and Character String Functions

This article has been archived and is no longer updated by Apple.
In learning FORTRAN, you sometimes have to simulate complex number functions without actually using CMPLX(A,B) (which takes the real number A and the imaginary number B and returns the complex number result) or AIMAG(A) (which returns the imaginary part of the complex number A). REAL Fortran77 brings an easy solution: use character strings and simple arithmetic, treating the real and imaginary parts of the complex numbers separately. Alas, the designers of Apple FORTRAN chose not to include the character string functions and procedures.

The following hints at a solution; an end-user wanted to print character strings in the graphics page using WSTRING(string), which also wasn't implimented.

The small assembly language function below returns the ascii value of the nth character of a string. Frustrated Apple FORTRAN programmers will find this useful.

For the complex function other such routines might need to be written; a length-of-string and an index function would be very helpful.

```
;
; Function CHAR1 (string,N)
;
; returns ASCII value of Nth character in string
;
; William B. Judd, TRI, 10/27/83
;
;_____

.macro pop
pla
sta
.macro push
lda

.func char1,2 ; two parameters

return .equ 0
string .equ 2
n .equ 4
junk .equ 6

pop return ; save return address
pop junk ; discard stack bias
pop junk
pop n ; get n address
pop string ; get string address

lda #0 ; push msb of return value
pha
tay
lda (n),y ; get index value
tay
dey ; reduce offset
lda (string),y ; get nth char
pha ; push value

push return
rts
```

```
.end

$EXT integer function char1 2
$uses turtlegraphics
$uses applestuff
c
c to test char1 function
c

program test
character*10 a
a = 'ABCDEFGHIJK'
call inittu
do 10 i=1,10
k = char1(a,i)
10 call wchar (char(k))

c *** hard halt
20 goto 20
end
```

Published Date: Feb 18, 2012

Macintosh Portable: What Monitors can be Attached

What monitors can be connected to the Macintosh Portable's monitor port?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable needs a monitor adapter to connect a monitor to its video port. Various third party adapters are available.

For more information, search under "Portable" and "video".

Published Date: Feb 18, 2012

TA46720_Apple_Printers_How_To_Print_KanjiTalk_Documents_(TIL08244).pdf

Apple Printers: How To Print KanjiTalk Documents

Article Change History

09/16/92 - UPDATED
* To include information on locating Kanji resellers.

If I'm using Kanji Talk and a Japanese word processing package, such as Kanji Word, do I need to make any special modifications to print to a LaserWriter?

This article has been archived and is no longer updated by Apple.
You'll need an Apple LaserWriter IINTX-J, a Kanji-compatible LaserWriter, which is available in Japan as well as a limited but growing number of resellers in the United States. You can call 1-800-882-8856 to find a reseller in your area.

You can also use Kanji TrueType or ATM-J with any QuickDraw printer, such as a StyleWriter or Personal LaserWriter LS.

Published Date: Feb 18, 2012

TA46721_Apple_IIGS_Memory_Requirements_for_an_AppleShare_Network_(TIL08245).pdf

Apple IIGS: Memory Requirements for an AppleShare Network

?I have Apple IIGS computers (ROM version 01, 512K RAM) on an AppleShare network. When I try to logon to the server from a workstation, I get garbage on the screen that looks like:
2.1(GS/OS)
00/1179: 00 00 BRK00
A=0201 X=01E0 Y=000E S01E2 D=0000 P=01
B=00 K=00 m=0c Q=9E L=1 m=0 x=0 e=0

This occurs about half way through the login process (thermometer bar half way across).

The settings are correct according to the manual (Slot 1 = Your card, Slot 7 = AppleTalk, Startup Slot = 7). My RAM disk is set for 256 Minimum, 256 maximum its only possible setting).

The one Apple IIGS that logs on without a problem has ROM version 3 and 1MB of RAM.

This article has been archived and is no longer updated by Apple.
Your Apple IIGS computers don't have enough memory: they require 768k to run. Check your memory expansion cards and verify that they don't have more than eight chips on the cards.

Published Date: Feb 18, 2012

ImageWriter II: Problems Feeding Form Paper

My ImageWriter II's four-page form paper is falling out of the sprockets when feeding. I tried cleaning the platen and the bottom guide.
This article has been archived and is no longer updated by Apple.
Assuming you're not using both the friction and manual feed settings simultaneously, there's really only one adjustment you can make: Reset the clear plastic paper guide that mounts on the ribbon carriage assembly.

The rule of thumb is: Loosen the paper guide and put your four-part form **and** one additional piece of paper through the printer. Press the paper guide up to the mass of paper--not too tight--and tighten the guide's screws. This gives the proper clearance for the four-part form plus a slight amount for margin-of-error. You may also have to run your forms with the paper bail up (not riding the platen).
Published Date: Feb 18, 2012

TA46723_Apple_IIGS_Daisy_Chaining_DuoDisks_(TIL08247).pdf

Apple IIGS: Daisy Chaining DuoDisks

My Apple IIGS has a 3.5-inch drive plugged in to the internal port. Can I daisy-chain a DuoDisk off the 3.5-inch drive or does the DuoDisk need its own separate controller in slot 6?

This article has been archived and is no longer updated by Apple.
Older Apple IIGS computers (ROM 01), you can connect the DuoDisk directly to the SmartPort or to a drive attached to the SmartPort.

Newer Apple IIGS computers (ROM 03) need a DuoDisk interface card.

Published Date: Feb 18, 2012

Macintosh Portable: Number of Times Battery can be Discharged

How many times can a Macintosh Portable's battery be completely discharged before it no longer holds a charge?

This article has been archived and is no longer updated by Apple.

Just one complete discharge of the Macintosh Portable's lead acid battery can damage the battery's cells to the point where it could no longer hold a charge.

Published Date: Feb 18, 2012

Macintosh: Error -61 "Write Permissions Error"

Using a Macintosh IIsi and System 6.0.7, I keep getting an error -61 when playing sound in the Control Panel, especially when recording and saving sound files.

This article has been archived and is no longer updated by Apple.
A -61 error is a "Write Permissions Error" where the Macintosh System is keeping the active application from making changes to a file or directory structure. If the problem is occurring in the Control Panel, this suggests a locked file somewhere in the System Folder (basically, no System file should ever be locked) or a corrupt Desktop.

If all of the System files are unlocked and the problem persists, we recommend trashing and reinstalling the System Folder using the Installer on your system disks.

Published Date: Feb 18, 2012

RPS REBUILD: File Access Structure

In the following situations, the FAS (File Access Structure) was set up incorrectly for the rebuild.
This article has been archived and is no longer updated by Apple.
1. At an error -1406 (Index file is damaged), the RPS Damage Report showed Index corrupted as TRUE.

The RPS REBUILD gave error -1520 (No duplicate key allowed). The key was set up as No duplicates allowed. Therefore the file was inaccessible and couldn't be repaired.

2. A file with 13 records was set up the same way as the damaged file (making sure there were no duplicate keys). The RPS REBUILD gave the same error.

To correct the problem, you would have to Consult the FAS in the program that created the file.
Published Date: Feb 18, 2012

Apple SuperDrive: Troubleshooting Upgrade Problems

I have a Macintosh II system with two 800K drives. I installed a SuperDrive but the SuperDrive would not recognize 1.4 MB disks. When a high-density disk was inserted in the new drive, the computer said that it was unreadable and wanted to initialize it which failed.

I tried a different SuperDrive, but I get the same results. Which steps did I miss?
This article has been archived and is no longer updated by Apple.
The FDHD Upgrade Kit included the 1.4 MB FDHD SuperDrive, four ROM replacement chips to replace the older ROM version four chip set, and one SWIM chip to replace the IWM chip. All five chips must be replaced to recognize the SuperDrive. After upgrading the ROMs and SWIM, install System 6.0.2 or higher to support the SuperDrive.

The Macintosh IIx logic board supports the SuperDrive and does not require an upgrade.

The ROM part numbers are:

- 342-0639
- 342-0640
- 342-0641
- 342-0642

Note: This upgrade has been discontinued.
Published Date: Feb 18, 2012

Display Card 824: How to output NTSC without a converter

Can the Macintosh Display Card 8*24 be used to display images from the Macintosh on a video display or a TV without an NTSC converter?

This article has been archived and is no longer updated by Apple.
The Display Cards 8*24 and 8*24 GC do not use software for switching to the NTSC interlaced mode. To put the Display Card 8*24 into the NTSC mode, a properly configured cable is all that is required. Most NTSC devices use an RCA-type phono-connector, so this diagram uses that as a reference point.

Adjust the phono-connector side to whatever type of connector is used. "Tip" is the pin in the center of the connector (the signal); the sleeve is flanged around the outer edges of the connector (the chassis ground).

Card Connector RCA-Type Phono-Connector
---------- ----------
4 MON.ID1 (sense0) --|
7 MON.ID2 (sense1) --|
11 C&VSYNC.GND --------|

5 GRN.VID ----------> Tip (signal)
Shell CHASSIS.GND ----------> Sleeve (ground)

By grounding pin 4 and pin 7 to pin 11, the video cards are told that an interlaced (NTSC) monitor is attached. The actual black and white video signal is on pin 5 and connects to the center (Tip) of the phono-plug. The shell of the card connector connects to the sleeve of the phono-plug.

To acquire a color NTSC signal from any Apple Macintosh display card, an RGB-to-NTSC converter is required.

For more information, search under "NTSC video encoding".

Published Date: Feb 18, 2012

System 7: Background Printing and PageMaker

I want to use background printing with PageMaker 4.0. PageMaker normally uses the Aldus drivers, which don't use PrintMonitor. Is there a way I can do this?
This article has been archived and is no longer updated by Apple.
You can use the Apple LaserWriter driver by holding down the Option key,selecting Print from the menu, and then clicking the Print button. This uses the Apple driver instead of the APD. The next dialog will be the standard Apple LaserWriter 7.0 Page Setup dialog followed by the Apple LaserWriter 7.0 print dialog. If background printing has been turned on in the Chooser, it should work, but may not. Aldus Technical Support provided this information.

There are other reasons for selecting the Apple driver instead of the Aldus driver. Apple drivers will print PICT files better, whereas the APD prints TIFF and PostScript better.

Version 4.2 of PageMaker is System 7 savvy. The Aldus print drivers can take advantage of background printing unlike the prior versions.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

Apple Serial Printers: Shiva NetSerial Compatibility (5/97)

Do all Apple serial printers work the Shiva NetSerial?

This article has been archived and is no longer updated by Apple.

According to Shiva Technical Support, all Apple serial printers, with the exception of the Personal LaserWriter LS, work with the Shiva NetSerial. Printer drivers that address the serial port directly, like the Personal LaserWriter LS, do not work with a NetSerial.

As of this date, the current NetSerial ROM is version 1.35, and the driver is version 3.6.4.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Published Date: Feb 18, 2012

ProDOS: Problems using the CONVERT program in 80 columns

The CONVERT program malfunctions if it is executed when the 80 column display is active. The top lines are scrambled and ProDOS date and prefix aren't displayed.
This article has been archived and is no longer updated by Apple.
Here are two possible workarounds:

1. Exit from the 80-column card firmware with ESC-CTRL-Q, then execute CONVERT.
2. Enable 40-column display with ESC-4, then execute CONVERT.

In both cases you restore the 40-column screen, and the program works correctly.

This situation occurs in the following configuration:

1. ProDOS Developer's Disk V 1.0 C
2. ProDOS system file dtd 01.11.83
3. Convert program version 1.1, dated 01.11.83
4. System configuration: Apple IIe and Extended 80-column card.

Published Date: Feb 18, 2012

SOS: Error messages

This article has been archived and is no longer updated by Apple.
Here are some Pascal III I/O errors reported (in Volume 2 of the programmer's manual) as SOS errors and which cannot be found in the SOS Apple Technical Communications Manual. The remarks are general and made without knowing the circumstances, applications or languages involved.

36: Device not available = SOS error $24
Error $24 means that a device like a printer is not on-line, although a driver that will return this error is not known.

44: Invalid byte count = SOS error $2C
Error $2C means that a SOS call from an application didn't have the appropriate parameter list for the call.

45: Invalid block number = SOS error $2D
Error $2D means that the application is asking for a block past the end of the disk. This has occurred with System Utilities. There the problem is that some program, perhaps Apple Writer, changes the directory or index blocks on the disk so that the file points off the end.
Published Date: Feb 18, 2012

Daisy Wheel Printer Repair

Where can I get a daisy wheel printer repaired?

This article has been archived and is no longer updated by Apple.

Pacific Business Data Systems will repair almost any daisy wheel printer.

You can find the address and phone number for this company in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

Applesoft: Using Extended 80-column card

Supplied with the Extended 80-column text card supplement, the ERRATA sheet tells programmers not to use the INPUT and GET statements in Applesoft when using the 80-column card. In fact, the Applesoft INPUT statement will work fine with the 80-column card.

This article has been archived and is no longer updated by Apple.

The GET statement will not put the cursor where it belongs on the screen. This is because GET does not use the monitor routines the way the 80-column card should be used.

Published Date: Feb 18, 2012

AppleWriter: AppleWorks Upgrade

How can I upgrade AppleWriter software to AppleWorks?
This article has been archived and is no longer updated by Apple.
AppleWriter users can upgrade to AppleWorks 3.0 by contacting Claris Corporation Customer Relations. Additionally, customers who already own ANY version of AppleWorks may upgrade to AppleWorks GS.

You can find the address and phone number for Claris Corporation in a separate article in the Tech Info Library. Search under "Claris".

TIL article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

TA46741_Apple_II_Sources_of_Used_Equipment_(TIL08281).pdf

Apple II: Sources of Used Equipment

I want to purchase discontinued Apple II equipment. Where can I find it?

This article has been archived and is no longer updated by Apple.
Preowned Electronics has a large selection of used Apple II equipment.

Sun Remarketing is another source as well.

You can find the address and phone number for these companies in a separate article on the Tech Info Library. Search under the name you want to find.

Published Date: Feb 18, 2012

Macintosh II: Personal Vision Frame Grabber from Orange Micro

This article describes a product called Personal Vision, available from Orange Micro.

This article has been archived and is no longer updated by Apple.
Personal Vision is a frame grabber and video digitizer card that is also capable of importing live video directly into a window on a Macintosh II.

The address and phone number for Orange Micro is in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

TA46743_Macintosh_Video_Digitizers_(TIL08286).pdf

Macintosh: Video Digitizers

This article describes two video digitizers available for the Macintosh.

This article has been archived and is no longer updated by Apple.

MacVision 2.0

MacVision 2.0 Video digitizer, from Koala Technologies, offers 256 shades of gray and 640 x 480 resolution. It runs on a 512K or later Macintosh.

MacVision allows a user to put digitized pictures and graphics into a Macintosh, or take video images from a VCR or laserdisc player.

Here are the features of MacVision:
* Accepts any video source
* Images both flat and three-dimensional objects
* Ten different scanning techniques
* Compatible with all major software
* Works as both a desk accessory and a desktop application

ComputerEyes

ComputerEyes Video digitizer, from Digital Vision, Inc., runs on a 512KE or later Macintosh, and requires 1MB of RAM.

ComputerEyes is a hardware and software system that digitizes images from any standard video source (video camera, VCR, videodisc, and others). Under software control, the system scans the video signal and captures images into the graphics memory of the computer. It then displays images on the screen, and allows modification with several image-manipulation options. Images are saved to disk for use with other graphics programs.

The ComputerEyes system software supports the graphics capabilities of all Macintosh computers. On a Macintosh II, images display with 256 grays for a near-photographic image. On other Macintosh systems, images display with several options of dither patterns to maximize image quality for all types of images.

Captured images may be saved to disk in a number of formats independent of the computer's display capabilities. Formats supported by ComputerEyes include MacPaint, PICT, gray-scale, and bit-mapped TIFF and Encapsulated PostScript.

With these file formats, ComputerEyes images can be imported to graphics programs, desktop publishing programs, image databases, drawing or painting programs, authoring systems, and animation programs for image display or printing.

Contact Information

You can find the addresses and phone numbers for Digital Vision and Koala Technologies in separate articles in the Tech Info Library.

Published Date: Feb 18, 2012

CP/M: Cursor addressing

Below is a table for the Cursor commands required when using CP/M 2.21 on the Apple III.
This article has been archived and is no longer updated by Apple.
Note: All of the commands are offset by 128 decimal. This prevents CP/M BDOS from interpreting control codes (Tab for example) in the cursor command sequences.

Command	AIII Dec	AIII Hex	CP/M Dec	CP/M Hex
Turn Screen ON	15	0F	143	8F
Turn Screen OFF	14	0E	142	8E
Normal Video (White on Black)	17	11	45	91
Inverse Video (Black on White)	18	12	146	92
Lead-in, Cursor Addressing	26	A	154	9A
Horizontal (X-Axis) Offset	0	0	128	80
Vertical (Y-Axis) Offset	0	0	128	80
Clear Screen (& Home Cursor)	28	1C	156	9C
Clear to End of Screen (From Cursor)	29	1D	157	9D
Clear to End of Line (From Cursor)	31	1E	159	9E
Clear line	30	1E	158	9E
Setup - Initialize Screen to 80x24	16 03	10 03	144 03	90 03
Home Cursor (Do Not Clear)	2	0C	140	8C

Note: The Setup command; this places the console in 80x24 text format if it is not already there.

For additional information on the subject, refer to the Standard Device Drivers Manual supplied with the Apple III.
Published Date: Feb 18, 2012

AppleTalk Internet Router: How To Install with System 7

How do I install Internet Router 2.0 on a Macintosh running System 7?
This article has been archived and is no longer updated by Apple.
Important Note: Internet Router 2.0 is not compatible with System Software 7.1. Computers running System Software 7.1 require the Apple Internet Router 3.0 Basic Connectivity Package.

If you are running a system software version prior to 7.1, then there are two ways to correctly install the AppleTalk Internet Router (AIR) 2.0 Macintosh running System 7.

The best and easiest way to install the AIR 2.0 on a System 7 Macintosh is to use the latest Network Software Installer (NSI) disk. To do this, run the Installer and select the "Customize" option. Select the "AppleTalk Router (v 2.0) for System 7" option and install. The installer will ask for the AIR 2.0 disk and properly install the software.

The second method is to manually install the files from the AIR 2.0 disk. Here is the installation procedure as found on page 100 of the "System 7 Group Upgrade Guide":

Step One

Install System 7 along with EtherTalk or TokenTalk.

Step Two

Insert the AppleTalk Internet Router 2.0 disk.

Step Three

Open the System file on the router disk. The System window lists desk accessories and fonts.

Step Four

Drag the Router desk accessory to the System Folder icon on your System 7 hard disk. A dialog asks "Put this desk accessory into the Apple Menu Items folder?"

Step Five

Click OK.

Step Six

Close the System window.

Step Seven

From the AppleTalk Internet Router 2.0 disk's System Folder, drag the following files to your System Folder:

- LocalTalk (Modem)
- LocalTalk (Built-in)
- Router

A dialog asks, "Put these items into the places they belong?"

Step Eight

Click OK.

Step Nine

Restart your Macintosh computer.
Published Date: Feb 18, 2012

Macintosh Classic and Macintosh SE: Memory Map

What is the memory map of the Macintosh Classic and Macintosh SE?

This article has been archived and is no longer updated by Apple.
The Macintosh Classic and the Macintosh SE share the same memory map; here it is:

Range:	Used for:
$00 0000 - $3F FFFF	RAM
$40 0000 - $43 FFFF	ROM
$44 0000 - $57 FFFF	No device assigned
$58 0000 - $5F FFFF	SCSI
$60 0000 - $8F FFFF	No device assigned
$90 0000 - $9F FFFF	SCC read
$A0 0000 - $A9 FFFF	No device assigned
$AA 0000 - $AF FFFF	Expansion enable
$B0 0000 - $BF FFFF	SCC write
$C0 0000 - $CF FFFF	No device assigned
$D0 0000 - $DF FFFF	IWM
$E0 0000 - $E7 FFFF	No device assigned
$E8 0000 - $EF FFFF	VIA
$F0 0000 - $FF FFFF	No device assigned

Published Date: Feb 18, 2012

EtherTalk NB Card: System 7 and Compatibility Issues

Is the EtherTalk NB Card, Rev K, required for System 7 users or does it not matter?

This article has been archived and is no longer updated by Apple.
System 7 does not pose any compatibility issues for EtherTalk cards. Here is a list of the Apple EtherTalk NB and Ethernet NB Cards that are compatible with the various Macintosh II class systems:

* Macintosh II or Macintosh IIx:

EtherTalk NB Card (M0410LL/A), Rev. J, K, L, or M
Ethernet NB Card (M0417LL/A)

* Macintosh IIcx, Macintosh IIsi, or Macintosh IIci:

EtherTalk NB Card (M0410LL/A), Rev. K, L, or M
(Rev L or M on Macintosh IIci with on-board video)
Ethernet NB Card (M0417LL/A)

* Macintosh IIfx:

EtherTalk NB Card (M0410LL/A), Rev. K, L, or M (Rev J WON"T work)
Ethernet NB Card (M0417LL/A)

Note: There is a remaining bug that affects Macintosh IIci owners who use the EtherTalk revision K card. Ethernet performance is adversely affected when a user starts up the Macintosh IIci in 2-bit (4 colors) or more, using on-board video. To workaround this problem, the user can use a revision L or M card, or not use on-board video (i.e. use a video card), or use only black-and-white video.

Published Date: Feb 18, 2012

AppleShare PC: How to Run Microsoft Mail on a UngermannBass LAN

What is the most reliable setup for running and printing Microsoft Mail over AppleTalk from an IBM that is also on a UngermannBass LAN?

This article has been archived and is no longer updated by Apple.
Here's what we suggest for a setup:

NOTE: There are two lines below that have a character known as the "at symbol", which is above the number 2 on most standard keyboards. When you see "<at symbol>" listed in the code below, you type in the actual symbol, not the string "<at symbol>." AppleLink does not allow use of that character in an article.

* PS/2 80
* 4MB RAM
* DOS 3.3, Windows 3.0
* an UngermannBass Card
* DayStar AppleTalk card
* AppleShare PC 2.01 software
* Microsoft Mail for DOS software.

Here's what happens when under Windows (with the UngermannBass network drivers and Windows already loaded):

1) Program Manager calls Mail.PIF

2) Mail.PIF calls MSMAIL.BAT

3) MSMAIL.BAT loads AppleShare PC software

4) MSMAIL.BAT starts Microsoft Mail for PC.

5) When exiting Microsoft Mail, MSMAIL.BAT unloads the AppleShare PC drivers.

A key thing you'll need to duplicate this setup is the MSMAIL.BAT file. Here it is:

```
echo off
D:\\ASPC\\LSL > nul
if errorlevel 1 goto aspc_err
D:\\ASPC\\DSTARLT /NAME=DSTARLT > nul
if errorlevel 1 goto aspc_err
D:\\ASPC\\ATALK > nul
if errorlevel 1 goto aspc_err
D:\\ASPC\\PAP_WS > nul
if errorlevel 1 goto aspc_err
d:\\aspc\\compat > nul
REM *** Memory usage for the above programs is approximately 75K bytes.
goto skip_aspc
:aspc_err
echo *** A fatal error has occurred while loading AppleShare PC. ***
pause *ASPC*
:skip_aspc
d:
cd\\msmail2
mail
d:\\aspc\\anet remove all
```

Here are some autoexec.bat, config.sys, and Mail.PIF files:

config.sys
device=C:\\himem.sys
device=C:\\dasddrvr.sys
shell=c:\\command.com /P /E:768
DEVICE=BRIDGE_B.DRV /PS80:1B
device=c:\\mouse.sys /Y
device=C:\\WIN3\\smartdrv.sys 2048 512
device=c:\\LANMAN\\NETPROG\\NETCICOM.DRV
files=30
BUFFERS=10
stacks=0,0
break=ON
lastdrive = z

autoexec.bat
C:\\WIN3\\AD-DOS.COM
<at symbol>echo off
set TEMP=C:\\temp
prompt pg
PATH
C:\\EXCEL3;d:\\bat;c:\\;c:\\dos;c:\\win3;c:\\winword;D:\\ASPC;c:\\excel;d:\\designer;c:
\\
p
hon;c:\\lanman\\netprog
if exist %TEMP%\\~???????.tmp erase %TEMP%\\~???????.tmp
net start workstation
goto skip
:bad_pw
echo Please re-enter your password
:skip
net logon t7697 *
net view \\\\pdosrv1
if errorlevel 1 goto bad_pw
call c:\\accessw\\startei.bat
win

MS Mail Icon calls Mail.PIF. Mail.PIF has the following settings:
Program Filename: MSMAIL.BAT
Window Title: Mail
Optional Parameters:
Start-up Directory: D:\\MSMAIL2
Memory Requirements: KB Required 128 KB Desired 640
Display Usage: Full Screen
Execution:
Close Window on Exit: (checked)
Advanced options...
all set to default values

The above is a simple PIF that calls MSMAIL.BAT MSMAIL.BAT follows...

<at symbol>echo off
D:\\ASPC\\LSL > nul
if errorlevel 1 goto aspc_err
D:\\ASPC\\DSTARLT /NAME=DSTARLT > nul
if errorlevel 1 goto aspc_err
D:\\ASPC\\ATALK > nul
if errorlevel 1 goto aspc_err
D:\\ASPC\\PAP_WS > nul
if errorlevel 1 goto aspc_err
d:\\aspc\\compat > nul
REM *** Memory usage for the above programs is approximately 75K bytes.
goto skip_aspc

```
:aspc_err
echo *** A fatal error has occurred while loading AppleShare PC. ***
pause *ASPC*
:skip_aspc
d:
cd\\msmail2
mail
d:\\aspc\\anet remove all
```

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A/UX: No Support for AT&T‘s Remote File System (RFS)

Any way to support RFS (AT&T's Remote File System) from Mac OS or A/UX?
This article has been archived and is no longer updated by Apple.
Neither the versions of A/UX are based on SYS V.2.2 (5.2.2) nor Mac OS support RFS.
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VideoSync: How To Use with System 7

VideoSync hangs under System 7 when I launch Monitors Control Panel and select "Options" button (with or without Option key down). When I remove VideoSync things seem to work fine.
This article has been archived and is no longer updated by Apple.
VideoSync is an extension of the Monitors Control Panel. VideoSync needs to be in the same folder as the Monitors Control Panel for the VideoSync controls to show in the Options section of the Monitors Control Panel.

VideoSync stores information in its resource fork. VideoSync expects itself to be at the root level of the System Folder.

For VideoSync to work properly, it needs to be in the same folder as the Monitors Control Panel and be at the root level of the System Folder. With System 6, this isn't a problem, in fact it is the only way it will work. With System 7, you need to be a little more creative. The Monitors Control Panel doesn't resolve aliases, so an alias for VideoSync in the Control Panels folder doesn't work.

One solution is to put a copy of VideoSync in the Control Panels folder and at the root level of the System Folder. This isn't good since the VideoSync INIT is loaded twice at startup.

The best solution is to put VideoSync and the Monitors Control Panel at the root level of the System Folder and put an alias of the Monitors Control Panel in the Control Panels folder (for convenience). Then restart your Macintosh.

Those using the 8*24 GC software will have to remove it.

For information on the VideoSyncII extension please see TIL article number 26110: VideoSyncII

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Applesoft Internals: Index to Routines (1 of 2)

The following lists combine all the routines in the INTERNALS series of Apple Tech Notes. This list is arranged alphabetically by the name of the routine.

Note: See Part 2 for a numeric listing.
This article has been archived and is no longer updated by Apple.

ALPHABETIC LIST			
Name	Address	Name	Address
ABS	EBAF	HLIN	F53A
ADDON	D998	HPLOT	F457
ARG	A5-AA	HPOSN	F411
ATN	F09E	INCHR	D553
AYINT	E10C	INLIN	D52C
BKGND	F3F6	INLIN+2	D52E
BLTU	D393	INPRT	ED19
CHKCLS	DEB8	INT	EC23
CHKCOM	DEBE	ISCNTC	D858
CHKNUM	DD6A	ISLETC	E07D
CHKOPN	DEBB	LET	DA46
CHKSTR	DD6C	LINGET	DA0C
CHKVAL	DD6D	LINPRT	ED24
CHRGET	00B1	LOG	E941
CHRGOT	00B7	MOV1F	EB21
CLEARC	D66C	MOV2F	EB1E
COMBYTE	E74C	MOVAF	EB63
CONINT	E6FB	MOVFA	EB53
CONT	D898	MOVFM	EAF9
CONUPK	E9E3	MOVINS	E5D4
COS	EFEA	MOVMF	EB2B
CRDO	DAFB	MOVML	EB23
DATA	D995	MOVSTR	E5E2
DATAN	D9A3	MUL10	EA39
DIV10	EA55	NEGOP	EED0
DRAW	F601	NEWSTT	D7D2
ERRDIR	E306	OUTDO	DB5C
ERROR	D412	OUTQST	B5A
EXP	EF09	OUTSPC	DB57
FAC	9D-A2	PARCHK	DEB2
FADD	E7BE	PLOTFNS	F1EC
FADDH	E7A0	PRNTFAC	ED2E
FADDT	E7C1	PTRGET	DFE3
FCOMP	EBB2	PUTNEW	E42A
FDIV	EA66	QINT	EBF2
FIDVT	EA69	REASON	D3E3
FIN	EC4A	REMN	D9A6
FLOAT	EB93	RESTOR	D849
FMULT	E97F	RESUME	F317
FMULTT	E982	RND	C9-CD
FNDLIN	D61A	RND	EFAE
FOUT	ED34	RUN	D566
FPWRT	EE97	SCRTCH	D64B
FREFAC	E600	SETHCOL	F6EC
FRESTR	E5FD	SGN	EB90
FRETMP	E604	SHLOAD	F775
FRETMS	E635	SIGN	EB82
FRMEVL	DD7B	SIN	EFF1
FRMNUM	DD67	SNGFLT	E301
FSUB	E7A7	SQR	EE8D
FSUBT	E7AA	STKINI	D683
GARBAG	E484	STRINI	E3D5
GDBUFS	D539	STRLIT	E3E7
GETADR	E752	STRLT2	E3ED

GETARYPT	F7D9	STROUT	DB3A
GETBYT	E6F8	STRPRT	DB3D
GETNUM	E746	STRSPA	SE3DD
GETSPA	E452	STRTXT	DE81
GETSPT	DA7B	STXTPT	D697
GIVAYF	E2F2	SYNCHR	DEC0
GGOTO	D93E	TAN	TF03A
GTBYTC	E6F5	TEMP1	93-97
HANDLERR	F2E9	TEMP2	98-9C
HCLR	F3F2	TEMP3	8A-8E
HFIND	F5CB	XDRAW	F65D
HFNS	F6B9		
HGR	F3E2		
HGR2	F3D8		

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ImageWriter Manual Errata: Producing slashed & unslashed zeroes

This article has been archived and is no longer updated by Apple.

Page 42 of the Imagewriter User's Manual, Part 1, has reversed the commands for producing slashed and unslashed zeros. The correct commands are:

Code Decimal Hex Effect

ESC-Z 27 90 $1B $5A Unslashed
CTRL-@ CTRL-A 0 1 $00 $01

To print unslashed zeros, send: CHR$(27);CHR$(90);CHR$(0);CHR$(1).

ESCAPE D 27 68 $1B $44 Slashed
CTRL-@ CTRL-A 0 1 $00 $01

To print slashed zeros, send: CHR$(27);CHR$(68);CHR$(0);CHR$(1).

Once the Imagewriter has received your instructions, it will continue to follow them until the printer is turned off. Therefore, you may use a word processor or other application program to print slashed or unslashed zeros after setting up the Imagewriter appropriately.

If Applesoft sends codes directly to the printer, zeros may be printed as you desire, but other side effects, such as double line spacing, may occur.

The sample program below sends the appropriate codes to the Imagewriter through a small machine language routine. This bypasses Applesoft's setting the high bit which may cause the Imagewriter to interpret information incorrectly.

```
10 POKE 768,169 : POKE 769,0 : POKE 770,32 : POKE 771,237 : POKE
772,253 : POKE 773,96
20 D$ = CHR$(4)
30 PRINT D$;"PR#1"
40 PRINT "LINE ONE - 0000 - NO SLASHES"
50 REM SEND CODES TO SLASH ZEROS
60 PRINT CHR$(27);"D"; : POKE 769,0 : CALL 768 : POKE 769,1 : CALL 768
70 PRINT "LINE TWO - 0000 - SLASHES"
80 REM SEND CODES TO UNSLASH ZEROS
90 PRINT CHR$(27);"Z"; : POKE 769,0 : CALL 768 : POKE 769,1 : CALL 768
100 PRINT "LINE THREE - 0000 - NO SLASHES"
110 PRINT D$;"PR#0"
120 END
```

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Desktop Macintosh Computers: How Much Mass (Weight) Can They Support?

I would like to know how much mass (weight) I can place on top of my Macintosh. How heavy a monitor can the cases of desktop Macintosh computers support?

This article has been archived and is no longer updated by Apple.

Two issues usually dictate what you put on top of the computer: stability and ergonomics. For instance a tall, heavy monitor placed on a computer with a small footprint, such as a Macintosh IIci or Macintosh LC, would be less stable than the same monitor placed on a Macintosh II. Also, if the monitor is perched too high relative to the angle of sight, the issue of ergonomics may become a factor. The best approach is to experiment with different placements of a computer and monitor.

Macintosh Model	Max Supportable Mass	
	kg	pounds
Macintosh 630 Series	22.7	50.0
Macintosh Duo Dock	22.7	50.0
Macintosh Duo Dock II	38.6	85.0
Macintosh Duo Dock Plus	38.6	85.0
Macintosh II/IIx/IIfx	25.0	55.0
Macintosh IIcx/IIci	15.9	35.0
Macintosh IIsi	15.9	35.0
Macintosh IIvx/IIvi	22.7	50.0
Macintosh LC, LC II, LC III	22.7	50.0
Macintosh LC 475	15.9	35.0
Macintosh Performa 400 through 430	22.7	50.0
Macintosh Performa 450 through 476	15.9	35.0
Macintosh Performa 600/600CD	22.7	50.0
Macintosh Performa 630 Series	22.7	50.0
Macintosh Performa 6100 Series	22.7	50.0
Macintosh Performa 6200/6300 Series	22.7	50.0
Macintosh Quadra 605	15.9	35.0
Macintosh Quadra 610	22.7	50.0
Macintosh Quadra 650	22.7	50.0
Macintosh Quadra 660AV	22.7	50.0
Macintosh Quadra 700	15.9	35.0
Power Macintosh 4400	22.7	50.0
Power Macintosh 6100	22.7	50.0
Power Macintosh 7100	22.7	50.0
Power Macintosh 7200	31.8	70.0
Power Macintosh 7300	31.8	70.0
Power Macintosh 7500	31.8	70.0
Power Macintosh 7600	31.8	70.0
Power Macintosh G3 Desktop	31.8	70.0

NOTE: Tower and minitower computers--such as the Power Macintosh 9600, 8600, G3 Minitower and Performa 6400 and 6500 series computers--are not designed to support a monitor.

Monitor Model	Mass	
	kg	pounds
Apple AudioVision 14 Display	15.0	33.0
Apple Basic Color Monitor	11.5	25.3
Apple Color Plus 14-inch Display	11.5	25.3
Apple ColorSync 17-inch Display	22.2	49.0
Apple ColorSync 20-inch Display	30.6	67.4

Apple High Resolution Monochrome Display	7.7	17.0
Apple High Resolution RGB Display	15.4	34.0
Apple Multiple Scan 14 Display	13.2	29.0
Apple Multiple Scan 15 Display	14.1	31.0
Apple Multiple Scan 15AV Display	13.6	30.0
Apple Multiple Scan 17 Display	22.7	50.0
Apple Multiple Scan 20 Display	29.9	66.0
Apple Multiple Scan 720 Display	17.0	37.5
Apple Multiple Scan 1705 Display	20.5	45.2
Apple Studio Display 15" LCD (w/desktop stand)	5.4	12.0
Apple Studio Display 15" LCD (w/picture-frame stand)	3.5	7.7
Apple Two-Page Monochrome Monitor	27.2	60
AppleVision 750 Display	22.2	49.0
AppleVision 750AV Display	27.2	60.0
AppleVision 850 Display	30.6	67.4
AppleVision 850AV Display	35.4	78.0
AppleVision 1710 Display	22.2	49.0
AppleVision 1710AV Display	27.2	60.0
Macintosh 12-inch Monochrome Display	7.3	16.0
Macintosh 12-inch RGB Display	10.9	24.0
Macintosh 16-inch Color Display	21.3	47.0
Macintosh 21-inch Color Display	36.1	79.6
Macintosh Color Display	11.3	25.0
Macintosh Portrait Display	15.9	35.0
Performa Display	11.3	25.0
Performa Plus Display	11.3	25.0
Studio 17 CRT	20.8	45.9
Studio 21 CRT	35	77

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A/UX 2.0 and 2.0.1: "f77 open()" Problem Workaround

The f77 open() BUG is a long-standing problem in the f77 I/O runtime library (libI77.a), and I have seen this problem in other f77 implementations based on UNIX System V. The reason this problem hasn't been fixed is because it doesn't show up in the Fortran Compiler Validation Suite, the principle test suite for f77.

This article has been archived and is no longer updated by Apple.

Here are two files, named err.o and open.o, you can use while waiting for a version of A/UX that doesn't have this problem. You can either include these files when linking f77 programs, or these files can replace the f77 I/O runtime library files. (Replacing the files makes them a permanent part of the f77 system.)

To include the files in an f77 link, simply add their names to the list of files being linked together by the f77 command. For example:

```
f77 -o test test.f err.o open.o
```

To replace these files into the f77 I/O runtime library, enter the following command (you must be super-user to do this):

```
ar rv /usr/lib/libI77.a err.o open.o
```

Once you replace the files in the library, any f77 programs you link will be fixed automatically.

This has been fixed in A/UX 3.0.

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A/UX: 14-Character Filename Limit in SVFS

The filenames on my A/UX partition are limited to 14 characters. If the filename has more than 14 characters it is truncated to just 14.

How can I change this, so that the system lets me use a filename with more than 14 characters?
This article has been archived and is no longer updated by Apple.
In A/UX, there is a 14-character limit in a filename in any SVFS (System V File System) partition. These files must be in an A/UX SVFS partition. However, UFS (Berkeley Fast File System) does not have this limit; it can be up to 255 characters long.

Copy your files to an UFS file system and rename them with a longer filename. Or, convert a SVFS into an UFS by following these steps:

1. Back up all SVFS files.
2. Create a new UFS partition.
3. Copy the files to the new UFS partition.
4. Rename the files to longer filenames in the UFS partition.

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A/UX 2.0.1: Correction to CD-ROM Installation Instructions

I've just received the complete A/UX 2.0.1 package and I've found some minors problems installing it.

Just as I did with A/UX 2.0, here's what I'm doing:

1) Initialize and partition the disk with Apple HD Setup.

2) Install Macintosh System 6.0.7 on the Macintosh partition.

3) Copy the contents of the disks "A/UX Startup" and "A/UX Startup Utilities" onto the Macintosh partition.

4) Launch A/UX Install from the disk "Floppy Launch".

5) Insert the disk "Floppy Root" at prompt.

6) Answer the questions and then reboot.

7) Launch the application "Read disk".

8) At this point I can't find the disk "Kernel Archive". The shipping list doesn't mention this disk. Then, I searched in the installation documentation (which is an A/UX 2.0 version and it indicates that I have to launch "Read disk".

9) Finally, I launch A/UX Startup and the installation is complete.

So, my questions are:

*⏄What is "Read disk" for, since I don't need this application to install A/UX 2.0.1?

* Why doesn't the documentation contain an addendum to indicate the change in the installation procedure?

This article has been archived and is no longer updated by Apple.

There is problem when installing a complete A/UX 2.0.1 from CD-ROM by following the installation instructions in the A/UX 2.0 Installation Guide.

When installing a complete A/UX 2.0.1 from a CD-ROM, ignore steps 17 through 20, and double-click A/UX Startup instead. The "Kernel Archive" disk is not included in A/UX 2.0.1, and the "read disk" is no longer needed for installing A/UX 2.0.1

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A/UX 2.0 and 2.0.1: adduser Problem

Is there a bug in /etc/adduser, specifically in /usr/lib/addusersub A/UX 2.0?

This article has been archived and is no longer updated by Apple.

Yes there is a problem with the adduser in both A/UX 2.0 and A/UX 2.0.1.

When adding users in interactive mode the first available UID>=1000 is used. But if an entry in the /etc/passwd has a UID>=1000 and the password field is empty (for example, tom::1007:50:Tom van Peer,ois,,:/users/tom:/bin/ksh), this UID is used for the new user.

This has been fixed in A/UX 3.0.

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Unix Shell Scripts for Remote Printing

Do you have any information regarding Unix shell scripts for printing from SystemV to SystemV or from SystemV to BSD and vice versa?

This article has been archived and is no longer updated by Apple.

Thank's to Gilles Allain for sending us UNIX scripts that print from SystemV to SystemV or from SystemV to BSD and vice versa. These scripts have been written by Alsys (ADA from A/UX) which is allowing us to freely distribute them.

```
#!/bin/sh
#########################################################################
#               /usr/spool/lp/model/remote4BSD                          #
#                                                                       #
#       Alsys lp interface for remote printer on 4.xBSD host            #
#       Copyright (C) Alsys, 1987. All rights reserved.                 #
#                                                                       #
# Options recognized:                                                   #
#       nb | -nb        do not output banner page (to save paper)       #
# Other options are passed to remote 4.xBSD lp                          #
#########################################################################

#########################################################################
# Installation instructions for printing on remote 4.xBSD host "Xyz":   #
# - make sure Xyz is correctly reachable by local system's lp:          #
#   - Xyz's /etc/hosts.equiv file must have an entry for local system   #
#   - A user named lp must exist on Xyz                                 #
#   - Xyz's lpr command must recognize the "-h" option                  #
# - create a dummy device file remotelp (needed for scheduler's sake):  #
#       ln /dev/null /dev/remotelp                                      #
# - install this model for "printer" Xyz:                               #
#       /usr/lib/lpadmin -v/dev/remotelp -pXyz -mremote4BSD             #
#########################################################################

# Save the arguments to the model

# Define remote system from "printer" name
remote=`basename $0`
reqid=$1
user=$2
title=$3
copies=$4
tempfile=./request/$remote/$reqid

# Handle disable and cancel traps.

trap "echo '\\nCANCELLED!!';rm -f $tempfile;exit 1" 15

# Determine which options have been invoked

banner="yes"
remoteopts=""

for i in $5
do
       case "$i" in
       -nb | nb) # Do not print banner page
                banner="";;
       *)       # other options passed to remote 4.xBSD lpr
                remoteopts=$remoteopts" "$i;;
       esac
done

# Assume that the rest of the arguments are files
```

```
shift; shift; shift; shift; shift
files="$*"

# Redirect output to temporary file

exec > $tempfile

if [ -n "$banner" ]
then
       # Print the header

       x1="  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX
A/UX  A/UX  A/UX  A/UX"
       x2="A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX
A/UX  A/UX  A/UX"
       echo "$x1\\n$x2\\n$x1\\n$x2\\n"
       echo "\\t\\t" `uname -a` "\\n\\n"
       banner "$user"
       echo "\\n"
       banner @`hostname`
       echo '\\n'
       user=`grep "^$user:" /etc/passwd | line | cut -d: -f5`
       if [ -n "$user" ]
       then
               echo "User: $user\\n"
       else
               echo "\\n"
       fi
       echo "Request id: $reqid    Remote printer: $remote\\n"
       date
       echo "\\n"
       if [ -n "$title" ]
       then
               banner "$title"
       fi
       echo "\\r\\c"
fi

# Print the spooled files

i=1
while [ $i -le $copies ]
do
       for file in $files
       do
               cat "$file" 2>&1
               echo "\\r\\c"
       done
       i=`expr $i + 1`
done

# Stop redirection

exec > /dev/null

# Send to remote 4.xBSD system print spooler (without remote banner)

if cat $tempfile | /usr/bin/remsh $remote lpr -h $remoteopts
then
       status=0
else
       status=$?
       disable -r"can't access $remote host" $remote
fi
```

```
# Remove temporary file
rm $tempfile

exit $status

-----


#!/bin/sh
#########################################################################
#               /usr/spool/lp/model/remoteSysV                          #
#                                                                       #
#       Alsys lp interface for remote printer on System V host          #
#       Copyright (C) Alsys, 1987. All rights reserved.                 #
#                                                                       #
# Options recognized:                                                   #
#       nb | -nb        do not output banner page (to save paper)       #
# Other options are passed to remote System V lp                        #
#########################################################################

#########################################################################
# Installation instructions for printing on remote System V host "Xyz": #
# - make sure Xyz is correctly reachable by local system's lp:          #
#   - Xyz's /etc/hosts.equiv file must have an entry for local system   #
#   - A user named lp must exist on Xyz                                 #
#   - Xyz's default lp interface model must recognize the "-nb" option  #
# - create a dummy device file remotelp (needed for scheduler's sake):  #
#       ln /dev/null /dev/remotelp                                      #
# - install this model for "printer" Xyz:                               #
#       /usr/lib/lpadmin -v/dev/remotelp -pXyz -mremoteSysV             #
#########################################################################

# Save the arguments to the model

# Define remote system from "printer" name
remote=`basename $0`
reqid=$1
user=$2
title=$3
copies=$4
tempfile=./request/$remote/$reqid

# Handle disable and cancel traps.

trap "echo '\\nCANCELLED!!';rm -f $tempfile;exit 1" 15

# Determine which options have been invoked

banner="yes"
remoteopts=""

for i in $5
do
       case "$i" in
       -nb | nb) # Do not print banner page
                banner="";;
       *)       # other options passed to remote SysV lp
                remoteopts=$remoteopts" -o"$i;;
       esac
done

# Assume that the rest of the arguments are files

shift; shift; shift; shift; shift
```

```
files="$*"

# Redirect output to temporary file

exec > $tempfile

if [ -n "$banner" ]
then
       # Print the header

       x1="  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX
A/UX  A/UX  A/UX  A/UX"
       x2="A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX
A/UX  A/UX  A/UX"
       echo "$x1\\n$x2\\n$x1\\n$x2\\n"
       echo "\\t\\t" `uname -a` "\\n\\n"
       banner "$user"
       echo "\\n"
       banner @`hostname`
       echo '\\n'
       user=`grep "^$user:" /etc/passwd | line | cut -d: -f5`
       if [ -n "$user" ]
       then
               echo "User: $user\\n"
       else
               echo "\\n"
       fi
       echo "Request id: $reqid    Remote printer: $remote\\n"
       date
       echo "\\n"
       if [ -n "$title" ]
       then
               banner "$title"
       fi
       echo "\\r\\c"
fi

# Print the spooled files

i=1
while [ $i -le $copies ]
do
       for file in $files
       do
               cat "$file" 2>&1
               echo "\\r\\c"
       done
       i=`expr $i + 1`
done

# Stop redirection

exec > /dev/null

# Send to remote SysV system print spooler (without remote banner)

if cat $tempfile | /usr/bin/remsh $remote lp -onb $remoteopts
then
       status=0
else
       status=$?
       disable -r"can't access $remote host" $remote
fi

# Remove temporary file
```

```
rm $tempfile

exit $status

-----


#!/bin/sh
##########################################################################
#                       /usr/local/lib/rsys5lpf                          #
#                                                                        #
#       Alsys "if" lpr input filter for remote printer on SystemV host   #
#       Copyright (C) Alsys, 1988. All rights reserved.                  #
##########################################################################

##########################################################################
# - to be used with a printcap entry of the type:                        #
#       # Remote printer on SystemV host Xyz.                            #
#       Xyz|Xyz|remote printer on Xyz:\\                                  #
#               :lp=/dev/null:if=/usr/local/lib/rsys5lpf:\\               #
#               :af=Xyz:sd=/usr/spool/lpd/Xyz:tr=:                       #
# - kludge needed for this to work: "af" file name must be same as       #
#   remote system hostname (Xyz). Printer name may be different.         #
##########################################################################

# A lpr if filter is invoked with the following arguments:
#       filter [-c] -wWIDTH -lLENGTH -iINDENT -n LOGIN -h HOST ACCOUNTING_FILE
# %%% WARNING: this may vary slightly from one version of lpr to the other;
%%%
# %%% check for your system and modify parameter setup below as appropriate
%%%

# Kludge optional -c argument (-l lpr option)
#    into sort of -h option (suppress banner page)
if [ "$1" = "-c" ]
then
       banner=""
       shift
else
       banner="yes"
fi

# Setup print job parameters from appropriate filter arguments
remote=$8       # kludge: define remote host name from "accounting file" name!
local=$7        # local host name
user=$5         # job owner's login name
userttys=`who | awk '/^'$user'/ {ORS=" ";print $2}'`    # job owner's tty(s)

printfile=/usr/spool/lpd/$remote/pf${$}$remote
messfile=/usr/spool/lpd/$remote/mf${$}$remote

# Handle interrupt traps
trap "echo '\\nCANCELLED!!';rm -f $printfile $messfile;exit 1"  2 15

# Redirect errors to temporary file
exec 2> $messfile

# Redirect output to temporary file
exec > $printfile

if [ -n "$banner" ]
then
       # Print the header
       x1="  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX
A/UX  A/UX  A/UX  A/UX"
```

```
        x2="A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX  A/UX
A/UX  A/UX  A/UX"
        echo "$x1\\n$x2\\n$x1\\n$x2\\n"
        echo "\\t\\t\\t" `uname -nrvm` "\\n\\n"
        banner "$user"
        echo "\\n"
        banner @$local
        echo '\\n'
        name=`grep "^$user:" /etc/passwd | line | cut -d: -f5`
        if [ -n "$name" ]
        then
                echo "User: $name\\n"
        else
                echo "\\n"
        fi
        echo "Remote printer: $remote\\n"
        date
        echo "\\n"
        echo "\\f\\r\\c"
fi

# "Print" the spooled file to temporary file
cat 2>&1

# Stop output redirection
exec >&2
echo "\\nlpr: $remote: \\c"

# Send to remote SysV system print spooler (without remote banner)
# %%% this supposes that remote spooler's default lp interface model    %%%
# %%% recognizes "-nb" option for banner suppression (modify if needed) %%%
if cat $printfile | /usr/bin/remsh $remote lp -onb
then
        status=0
else
        status=2
        echo "lpr: can't access $remote host"
fi

# Send message to job owner's tty(s)
for usertty in $userttys
do
        cat $messfile > /dev/$usertty
done

# Remove temporary files
rm -f $printfile $messfile

exit $status
```

Article Change History:
07 Sep 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

MacX 1.1: Command-B Copy Problem

I'm using MacX 1.1 with an HP 9000 via MacTCP. Using a Macintosh IIci, Macintosh IIcx, and Macintosh IIx, here is the setup:

* System 6.0.5
* MacX application, memory size 5000K
* 8MB RAM

When I do a Command-B copy in MacX to the clipboard, the graphic pastes to the clipboard only for the Macintosh IIci--the Macintosh IIcx and the Macintosh IIx produce a white box in the clipboard.

Any ideas on what may be causing this problem? Is the processing speed of the Macintosh IIcx and the Macintosh IIx too slow on the network to handle the copy? I'm not copying a large or complex graphic from the HP 9000.

This article has been archived and is no longer updated by Apple.
We haven't seen this problem before. We have a Macintosh IIcx running Macintosh OS 6.0.7 and MacX 1.1. For us, Command-B for copying selected area works properly. We don't see any processing speed slowdowns on Command-B Copy on our Macintosh IIcx either. There is, however, a release note on MacX 1.1 that states:

MacX requires the presence of 32-bit QuickDraw to support one feature: the conversion of color PICTs to X11 selections. If you do install 32-bit QuickDraw on your machine (or have a machine at least as new as a Macintosh IIci), you will have this capability--MacX will offer to convert clipboard contents to color PIXMAP and COLORMAP style. If MacX can't find the 32-bit QuickDraw features, MacX will only offer to convert to BITMAP.

Note that 32-bit QuickDraw also adds some performance enhancement and bug fixes on machines older than Macintosh IIci. Also note that 32-bit QuickDraw is built into System 7.0 and later for all machines that support Color QuickDraw.

Is 32-bit QuickDraw installed on your Macintosh IIcx or Macintosh IIx?

Since Command-B was not described very clearly, here are steps to follow:

1) In MacX, do "Command-B" or select "Copy Screen to Clipboard" from the Window menu. The mouse pointer becomes '+' sign.

2) Select whatever area of screen you want. The selected area (graph or text) will be copied to the Clipboard.

Published Date: Feb 18, 2012

A/UX: Missing Toolbox ROM Routines (9/94)

Using A/UX 3.0, I can't compile my programs because four routines aren't found by the linker.

Here's a sample program that demonstrates missing routines:

----------ttt.c----------

```
#include <printing.h>
#include <osutils.h>

main()
{
int rom,machine;

GetDateTime();
Environs (&rom, &machine);
PrStlInit();
PrDlgMain();
}
```

----------Makefile----------

```
# makefile for testing ttt.c

CFLAGS = -O -I /usr/include/mac -B /usr/lib/big/
LDFLAGS = /usr/lib/low.o -lmac_s -lat -lld -lmr -lc_s /lib/crtn.o \\
/usr/lib/low.ld

SRC = ttt.o

ttt: $(SRC)
ld /usr/lib/maccrt0.o /lib/crt2.o -o ttt $(SRC) \\
$(LDFLAGS)
```

----------StdOut/StdErr----------

```
$ make
cc -O -I /usr/include/mac -B /usr/lib/big/ -c ttt.c
ld /usr/lib/maccrt0.o /lib/crt2.o -o ttt ttt.o \\
/usr/lib/low.o -lmac_s -lat -lld -lmr -lc_s /lib/crtn.o
/usr/lib/low.ld
undefined first referenced
symbol in file
GetDateTime ttt.o
Environs ttt.o
PrStlInit ttt.o
PrDlgMain ttt.o
ld fatal: Symbol referencing errors. No output written to ttt
Make: *** Error: Update of ttt terminated with exit code 13
Make: [line 10 in /home/dumais/Makefile]
```

I've found alternate ways of getting the time and the machine type, but I can't find a solution for the printing routines.

Where are these routines implemented in A/UX? I have searched the /usr/lib/libmac.a and /usr/lib/libmac_s.a libraries for the missing routines.

This article has been archived and is no longer updated by Apple.
In A/UX 2.0, 2.0.1, and 3.0 we have verified this problem. The above A/UX Toolbox ROM routines are not included in any of the Macintosh libraries and aren't supported by A/UX.

Article Change History:
08 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

Apple Writer IIe: Using "Connect Keyboard to Printer" w/the SSC

This article describes how to use the "Connect Keyboard to Printer" option in Apple Writer IIe.
This article has been archived and is no longer updated by Apple.
If you plan to use the "Connect Keyboard to Printer" option in Apple Writer IIe with the Super Serial Card, be sure to refer first to page 138 of the manual ("Connecting the Keyboard to the Printer").

Take note especially of the warning about the Super Serial Card and of the fact that you must type CTRL-I T SPACE E RETURN in order to avoid the occurance of unwanted tabs in your printed text.
Published Date: Feb 18, 2012

Macintosh: Printing From Mac OS Through A/UX Spooler

Can I use an A/UX spooler (Berkeley or System V) to spool AppleTalk printing? For instance, if I am running under the Mac OS and want to print to a LaserWriter, can I access a spooler on A/UX (as A/UX can do for other UNIX systems)?
This article has been archived and is no longer updated by Apple.
The Columbia AppleTalk Package for UNIX (CAP) from Columbia University does what you want. The CAP package includes CAP libraries and utility programs such as:

look: finds and reports AppleTalk entities on the network.

looks: finds "LaserWriters" on the network and returns their status.

papif: spools jobs from UNIX to a LaserWriter over AppleTalk

lsrv/lwsrv/iwsrv: receives jobs from Macintosh by pretending to be a LaserWriter or AppleTalk ImageWriter.

AUFS: stands for AppleTalk Filing Protocol UNIX File Server. It is the server implementation of AFP running on UNIX corresponding to Apple's AppleShare server for the Macintosh. AUFS is not AppleShare, however. AUFS requires that the AppleShare workstation software be installed on the client Macintosh.

For more information about CAP and Kinetic Internet Protocol (KIP), including where to get them, see the following Tech Info Library article:

Article 3142: "**UNIX: KIP And CAP Information**"
Published Date: Feb 18, 2012

A/UX 2.0.1: No Toolbox Change from A/UX 2.0

I need a list of all Macintosh OS managers not supported under A/UX 2.0.1.

This article has been archived and is no longer updated by Apple.

```
According to A/UX Engineering, there are NO changes in the support of A/UX
Toolbox from A/UX 2.0 to 2.0.1.  Therefore, the ROM library support
information in "A/UX 2.0 Toolbox: Macintosh ROM Interface" documentation is
still accurate.

The following are ROM libraries NOT supported by A/UX 2.0 Toolbox:
* Apple Desktop Bus
* Deferred Task Manager
* SCSI Manager

The following are PARTIALLY supported by A/UX 2.0:
* AppleTalk Manager
* Event Manager, Operating System
* File Manager
* Gestalt facility
* Script Manager
* Segment Loader
* Serial Driver
* Slot Manager
* Sound Manager
* Utility, Operating System
* Vertical Retrace Manager

The following are supported, but the FUNCTIONALITY is not identical:
* Event Manager, Toolbox
* Floating-Point Arithmetic and Transcendental Functions Packages
* Shutdown Manager
* System Error Handler
* Time Manager

For more detailed information, refer to Chapter 5 of Inside A/UX Macintosh
in A/UX Toolbox: Macintosh ROM Interface documentation.
```

Published Date: Feb 18, 2012

A/UX: TextEditor Issue

I just found a new small bug in A/UX. This bug appears when using TextEditor with an extended keyboard. If you hit the HELP key, an alert appears on the screen. In this alert you can read:

Unable to open the help file "MPW.Help".
#OS error -43 (Error message file not available)

This article has been archived and is no longer updated by Apple.
The behavior you describe has been verified. It is a TextEditor bug on both A/UX 2.0 and 3.0.
Published Date: Feb 18, 2012

A/UX 2.0 "kohrnerstone" Benchmark?

Are there any benchmarks for a Macintosh IIfx with A/UX 2.0.X running the Kohrnerstone or similar benchmarks that take into account I/O speed?

This article has been archived and is no longer updated by Apple.

Here are the results of benchmarks compiled with the standard compilers (C, Fortran) included in the A/UX package.

	Macintosh IIci	Macintosh IIcx	Macintosh IIfx	
mips	3,02	2,00	5,30	(Joy Mips)
dhrynr	3332,00	2105,00	5630,00	(dhrystone no register)
dhryr	3545,00	2228,00	5828,00	(dhrystone register)
dhrynro	5529,00	3494,00	10270,00	(no register with -o option)
dhryro	5571,00	3507,00	10101,00	(register with -o option)
Kwhets	928,00	595,00	1347,00	(whetstone single precision)
Kwhetd	858,00	540,00	1381,00	(whetstone double precision)
linpackrsKflops	164,00	103,00	264,00	(linpackrs, single precision,with optimisation,rolled):264 Kflops)
linpackusKflops	173,00	110,00	284,00	(linpackus, single precision,with optimisation,unroll):264 Kflops)
linpackrdKflops	152,00	95,00	246,00	(linpackrd, double precision,with optimisation,rolled):264 Kflops)
linpackudKflops	159,00	99,00	257,00	(linpackud, double precision,with optimisation,unroll):264 Kflops)

Published Date: Feb 18, 2012

Informix: Compatible A/UX Products

Is Fourgen's 4-GL product compatible with A/UX?
This article has been archived and is no longer updated by Apple.
According to Informix, their current version of Informix-4GL v4.0 works under A/UX 2.0. Other Informix products that also work under A/UX 2.0 include:

- Informix-SQL v4.0
- Informix-ESQL/C v4.0
- C-ISAM v4.0
- OnLine v4.0

Published Date: Feb 18, 2012

A/UX: Manual Pages of launch(1) are Wrong

I am using launch to start Macintosh Applications from a motif menu in a rooted MacX, mwm window. I am having difficulty with this due to differences between the manual pages and the /mac/bin/launch executable. Specifically, under both A/UX 2.0 and 2.0.1, the manual page for launch[1] gives the options of:

```
launch -p[it] filename document...
```

Commando gives the same options. The usage provided by the command is:

usage: `launch [-padr] appName [docName ...]`

Is this a bug?
This article has been archived and is no longer updated by Apple.
There is a conflict with the usage of launch(1) between the manual page and the launch program itself. The usage of manual pages of launch(1) are wrong. This is resolved in A/UX 3.0
Published Date: Feb 18, 2012

A/UX: Powerfail Feature Not Supported

I want to use the powerfail calls in A/UX 2.0. I want to use the /etc/powerfail script to clean up when someone pulls the plug on a computer (or hits the reset programmer's switch).

Can the /etc/powerfail script be used this way? Will the system have enough time to execute these commands?
This article has been archived and is no longer updated by Apple.
The /etc/powerfail does not work under A/UX because the Macintosh hardware does not have enough backup battery power.
Published Date: Feb 18, 2012

Apple II 5.25 Drive: Using It With Other Disk Controller Cards

This article has been archived and is no longer updated by Apple.

New Apple II 5.25 drives can be connected to controller cards other than the ones specifically designed for those drives.

- an Apple 5.25 drive can be daisy-chained to a UniDisk, either 5.25 or 3.5.

- an Apple 5.25 drive can be connected to a DuoDisk controller card.

- an Apple 5.25 drive can be connected to a Disk II controller card, if you first use Quark's adaptor to make the Apple 5.25 drive's cable fit the Disk II controller card.

Published Date: Feb 18, 2012

Sony GDM-1901-12 Monitor: Incompatible with Macintosh

Can I connect a Sony GDM-1901 (from Masscom) monitor to my Macintosh?

This article has been archived and is no longer updated by Apple.

Sony's tech support has stated that no version of the GDM-1901 will work on any Macintosh.

The GDM-1901 was an OEM product from Sony to a variety of vendors. It is now an obsolete product. When these were manufactured each vendor specified their requirements for timing to Sony; thus, each vendor's version of the GDM-1901 is specific to that vendor's computer system. To find out more about a particular vendor's version, contact Sony's monitor tech support at 408-944-4181.

For more information, search under: "Sony"

Published Date: Feb 18, 2012

Macintosh LC: Jumpers are for Apple IIe Card

What are the three jumpers for on the logic board of the Macintosh LC? I believe one is for the Apple IIe card, but I'd like to know what the other two do.

This article has been archived and is no longer updated by Apple.
Installation of a jumper connection on the third set of jumper pins (the ones closest to the "CPE" silk screen marking on the logic board) locks out the Control Panel of the Apple IIe card. The other two sets of jumper pins are reserved by Apple and should never be connected. These jumpers also exist on the Macintosh LC II and Performa 405 logic boards, however the silk screen reads "J17".

When the jumper is installed on the logic board, users will continue to have access to the following Apple IIe Option Panel buttons:

- Quit IIe
- Eject Disk
- Restart IIe
- Return

However, users will not have access to any of the panels used to change Option Panel settings.

Article Change History:
21 June 1994 - Updated to include information on LC II and Performa 405.

Support Information Services
Published Date: Feb 18, 2012

System 7: No Need to Install the Communications Toolbox

Do I still need to install the Communications Toolbox with System 7?
This article has been archived and is no longer updated by Apple.
With System 7.0, you no longer need to install the Communications Toolbox. Everything that previously needed to be manually installed into the System under the 6.0.x is now included with System 7.0.

Also, there is no longer a Communications Folder. All tools are placed in the Extensions Folder instead. If you are upgrading from System 6.0.x to System 7.0, move the tools to the Extensions Folder and delete the Communications Folder.

The System 6.0.x version of the Communications Toolbox is 1.0; only minor changes were made for System 7.0, and that version is labeled 1.0.1. As long as you have the latest version of System 7.0 you'll have the latest version of the Communications Toolbox.
Published Date: Feb 18, 2012

Macintosh Portable: Screen Dimming with System 7.0 on Network

Article Change History

07/29/92 - REVIEWED
* For technical accuracy.

I cannot get my Macintosh Portable to dim its screen under System Software 7.0. No matter what the Macintosh Portable Control Panel settings are, the screen never dims. The hard drive does spin down at the appropriate time, however.

This article has been archived and is no longer updated by Apple.
The reason the screen does not dim is because dimming of the screen will disable your AppleTalk connection, so the decision was made for Macintosh Portable computers connected to a LocalTalk network that the screen will not dim even if the "sleep" timers expire.

If you are not connected to a LocalTalk network, make AppleTalk inactive, and the screen will dim as you would normally expect. Of course, based on the above information, if you are connected to a LocalTalk network you do not want the screen to dim.

Published Date: Feb 18, 2012

System 7: Edition Manager Edition Files

I have a question about how edition files are handled. I experienced the following with both Excel and Resolve:

1. Open a spreadsheet.
2. Make some columns of data.
3. Publish them on my local hard disk.
4. Close the spreadsheet, saving changes so the edition file remains.
5. Move the edition file to a different place on the hard disk. When I open, modify, and close the spreadsheet, the edition file is properly updated (just to see that the spreadsheet can follow the edition).
6. Close the spreadsheet, mount a file server, and copy the edition file to the file server, deleting the edition file on my local hard drive after the copy is complete.
7. Open the spreadsheet.

At this point, the application creates a new edition file in the location that the local edition file was last placed, ignoring the edition file on the file server.

Is this behavior application-specific, or is System 7.0 doing this? Am I doing something wrong?
This article has been archived and is no longer updated by Apple.
When an application opens a document, it registers every publisher contained within that document with the Edition Manager. If the Edition Manager cannot find the edition, it creates an empty edition in the last known location, and informs the application that it needs to write to this new file.

Therefore, this is standard behavior enforced by the Edition Manager, and applications using the Edition Manager will most likely conform to this behavior.

For more information, consult "Inside Macintosh", volume VI, pp 4-19.
Published Date: Feb 18, 2012

HD SC Setup: Multiple Macintosh Partitions

Is it possible to use HD SC Setup to partition Apple drives for two different versions of Mac OS? Does Apple support multiple Macintosh operating systems on a partitioned hard disk?
This article has been archived and is no longer updated by Apple.
Yes, you can partition one hard disk into multiple partitions having different versions of Mac OS. However, the HD SC Setup will allow only one of the partitions to be a Mac OS partition. This does not mean that Apple doesn't support multiple Macintosh OS partitions on the same hard disk. Third-party utilities allow multiple Macintosh partitions and we have never heard of difficulties with them.

In most cases the typical Macintosh user will equate the terms volume and hard drive. If a hard drive has been partitioned into multiple Macintosh volumes then it is important to distinguish between the terms. Each partition will look like a volume to the operating system. Apple does not recommend putting more than one System Folder on a volume. If one hard drive contains multiple partitions then there is no reason why each partition couldn't have a System Folder on it. This would be no different than having multiple hard drives attached, each with a System Folder on it.

Third-party products can do this. Be aware that many third-party drive software developers are either revising or have already revised their software for System 7.0 compatibility. Be sure you use a version that the developer explicitly states support for System 7.0 and newer.
Published Date: Feb 18, 2012

HyperCard IIGS: Script for Setting TextColor

What is the HyperCard IIGS script to highlight text on a card field to a certain color?

This article has been archived and is no longer updated by Apple.
Field properties (as listed and documented in the HyperTalk Beginners Guide) include frameColor and textColor. FrameColor cannot be changed using a script.

TextColor can be changed to one of the sixteen current colors in the colorSet. Here is the script:

set the textColor of card field field1 to n

where n is a number from 1 to 16. The highlight color is always black; the text within the highlight becomes the compliment of the textColor.

Note: Be careful about being misled by the actions of the "color" section of the "field info" dialog where the highlight color is the same as the textColor and the text within the highlight becomes white.

Published Date: Feb 18, 2012

Works-to-Works 2.0: Available From Microsoft

I am trying to use Apple File Exchange (AFE) and the Microsoft Works-to-Works Transporter to convert Appleworks 3.0 data to Macintosh Microsoft Works via AppleShare. AFE only recognizes the Appleworks data as ProDOS files on a ProDOS floppy disk. AFE treats these files as Macintosh data when it appears on the file server.

Is there a way to bring up the ProDOS-to-Mac menu under AFE?

This article has been archived and is no longer updated by Apple.
Works-to-Works Transporter 2.0 will convert Appleworks 3.0 files to Microsoft Works files. You can get a copy of the utility from Microsoft by calling them and requesting Works-to-Works Transporter 2.0.

For more information, search on "Microsoft".

Published Date: Feb 18, 2012

DaynaFile: Use Driver Version 2.8 with Macintosh IIfx

I connected a DaynaFile floppy drive to the Macintosh IIfx. Everytime I insert a disk into the drive, the drive reads it and then the system locks up.

Any ideas?

This article has been archived and is no longer updated by Apple.

Dayna's Tech Support group told us that version 2.8 of the driver is required to use the DaynaFile on the Macintosh IIfx. Customers can get a copy of the driver by contacting Dayna directly.

For more information, search under: "Dayna"

Published Date: Feb 18, 2012

Apple III: NPL III

This article has been archived and is no longer updated by Apple.
When you direct reports from NPL III to a DMP connected via device-name .DMP and NPL seems to refuse this name after the C>DISK:, you must revise the driver file of CONSOLE:, SILENTYPE:, PRINTER:, and DISK:.

NPL III is written in Pascal. Pascal scans the drives when it boots and assigns unit numbers depending on the type and order in which they are loaded. Assuming you are using the diskettes, delete the .PRINTER driver from the driver file and add your .DMP driver. Rename .DMP to .PRINTER.

If you are using Catalyst, you'll have to arrange the drivers so that the Pascal Filer's 'Volumes' command shows .DMP as Unit #6.
Published Date: Feb 18, 2012

StyleWriter: Use Of Power Converter Suggested Overseas

Is a power adapter or transformer necessary to use the StyleWriter in Europe and the Soviet Union? This is to convert 110/60 to 220/50.

This article has been archived and is no longer updated by Apple.
While it is possible to run the StyleWriter on 220V/50Hz with the aid of a power converter (see the AppleLink Tech Info Article "Using Apple Equipment Overseas"), the cleanest solution would be to purchase an Apple AC Adapter (transformer) appropriate to the local power conditions.

Transformers of all kinds can be ordered by any Authorized Service Provider. The current service price list shows transformers available for the following areas:

USA 699-2050
Japan J699-2050
UK B699-2050
Australia X699-2050
Europe Z699-2050

If you don't have time for a local service provider to order the transformer, it can be purchased from an Apple dealer at your destination.

Published Date: Feb 18, 2012

LaserWriter: How To Determine PostScript Version, ROM Revision

Is there a way to determine the version of the PostScript driver on an Apple LaserWriter? Is there a way to determine the disk driver version on the Hard Drive? Is special software is used to determine either of the above?
This article has been archived and is no longer updated by Apple.
To determine the PostScript version and ROM revision levels on a LaserWriter, use the code below in a PostScript dump utility.

Caution: If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place a laser printer into a condition requiring service.

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
/Helvetica findfont
15 scalefont
setfont
/str 40 string def
72 700 moveto
(LaserWriter Name:  ) show
statusdict begin str printername show
72 675 moveto
(PostScript version:  ) show
statusdict begin version show
72 650 moveto
(ROM revision level:  ) show
statusdict begin revision str cvs show
showpage
%
% End PostScript Code
%=========================================================
```

The output will look something like:

```
LaserWriter Name: xxxxxxxx
PostScript version: xx.x
ROM revision level: x
```

Determining the version of a disk driver is different for each manufacturer. As far as we know, there is no package that will return the information on any drive.
Published Date: Feb 18, 2012

Personal LaserWriter LS: Total Effective RAM

I understand that with the standard 256K RAM, the Personal LaserWriter LS will effectively appear to have 1.5MB. With the addition of the 1MB upgrade, does one get an effective 2.5MB RAM?

This article has been archived and is no longer updated by Apple.
The compression/decompression scheme allows the Personal LaserWriter LS to image documents that would not normally fit in 512K of RAM. The amount of compression depends on the image, and is not really predictable. Apple's testing showed that the only pages that could not fit in the standard RAM (U.S. Letter paper) were graphics containing patterns that don't lend themselves to effective compression. It was somewhat easier to overflow RAM when printing on legal sized paper.

With the additional RAM installed (making the total 1MB), Testing was unable to find a document that the printer would not image.

Published Date: Feb 18, 2012

LaserWriter Driver: Missing BoundingBox Parameters

Why doesn't Apple software put values in the PostScript EPS file for the BoundingBox parameter? How can I get values inserted there if they cannot be generated? I need this information for output to DEC PostScript printers.

Sample output:

```
%=========================================================
% Begin PostScript Code
%
%!PS-Adobe-2.0
%%Title: Clone of Contacts
%%Creator: PrintMonitor
%%CreationDate: Wednesday, May 8, 1991
%%Pages: (atend)
%%BoundingBox: ? ? ? ?
%%PageBoundingBox: 30 31 582 761
%
% End PostScript Code
%=========================================================
```

Caution: If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.
This article has been archived and is no longer updated by Apple.

The %%BoundingBox comment is a PostScript document structuring convention (DSC) used mainly for Encapsulated PostScript Files (EPSF). Its primary purpose is to inform an application importing the EPSF of the actual page mark boundaries. This allows the application to properly prepare for, and clip, the imported image.
BoundingBox coordinates are determined by computing the smallest rectangle that would enclose the sum of all pages in a job. This rectangle's coordinates are based on PostScript's default user space: origin at the lower left, with X increasing to the right and Y increasing to the top.

As an example, consider a two-page document. Given the following enclosing coordinates of page 1 and 2, the BoundingBox is the rectangle that completely encloses the sum of both pages:

	Lower Left		Upper Right	
	X	Y	X	Y
Page 1	95	102	500	700
Page 2	120	225	557	600
	---	---	---	---
BoundingBox	95	102	557	700

The LaserWriter driver doesn't include the BoundingBox coordinates because it doesn't know what they would be at the time the BoundingBox comment must be generated We would have to run through the entire print job once to compute the BoundingBox, and then a second time to actually print the document. That would be very slow. What you see instead is that BoundingBox is sent with its question mark arguments, but PageBoundingBox is computed for the first page and sent with the job. Since PageBoundingBox only applies to a single page, its values can be computed for the first page as it is generated. It has little real value in the context of a large (multi-page) document, but it is still included, mainly for historical reasons. We've supplied it since the early versions of the LaserWriter driver.

The only way to create usable BoundingBox numbers would be to supply those that enclose the largest possible rectangle. This would ensure that nothing is ever clipped by the receiving program. The outside borders of any page can be defined by the following BoundingBox:

Lower Left		Upper Right	
X	Y	X	Y
0	0	612	792

Therefore, supplying these numbers as the BoundingBox would be valid for any printable page or job. Unfortunately there is no simple way to substitute these numbers for the question marks currently used. If the print job were dumped to a disk file, it could be edited to include the numbers, but this seems like it would

be very annoying for multiple print jobs.

It seems unlikely that the BoundingBox comment is absolutely required for DEC laser printers, so it would help to know that the information was needed for a spooler or some printer host software. PostScript itself doesn't generally use the BoundingBox comment. As mentioned earlier, it is used so that importing software can know what to expect, and sometimes for spooling software.

It's important to note that our LaserWriter driver performs many PostScript operations that are not compatible with the EPSF format. This is not in any way abnormal for a print driver, but the result of importing a complete LaserWriter job in another document would produce very unpredictable results. The files generated by the LaserWriter driver are not EPSF compliant.

Published Date: Feb 18, 2012

Shiva EtherGate: Supports Remote TCP/IP

Does Shiva's EtherGate support TCP/IP over remote networks? I've included a text-based diagram below of the configuration.

TCP/IP-->Ethernet ---->EtherGate --->modem--modem-->EtherGate--->Ethernet-->TCP/IP
This article has been archived and is no longer updated by Apple.
Shiva Tech Support states that the above configuration should work. If you are using dynamic address, the local and remote devices have to be in the same zone. If you are using static address, it does not matter.
Published Date: Feb 18, 2012

TA46786_MacDFT_Upgrade_for_System_Status_(TIL08335).pdf

MacDFT: Upgrade for System 7 Status

What is the status on the MacDFT upgrade for System 7?

This article has been archived and is no longer updated by Apple.

MacDFT will not be upgraded for System 7. The replacement product, SNA*ps, was announced at the end of June 1991. Search under SNA*ps for more details

Published Date: Feb 18, 2012

Ethernet: Minimum Packet Lengths and Cisco Routers

What is the minimum length of an Ethernet packet? Since AppleTalk frequently uses small packets for NBP, ZIP, and so forth, does it pad packets to this "minimum" length? Are there any known interoperability issues with cisco routers, AppleTalk, and minimum length packets?
This article has been archived and is no longer updated by Apple.
The IEEE 802.3 standard specifies that the minimum length of an Ethernet packet is 60 bytes. If the total length of a packet is less than 60 bytes, pad bytes must be added after the data to bring the packet size up to 60 bytes.

An additional four-byte cyclic-redundancy check (CRC) is appended to the end of the packet and is checked by the receiver to determine whether an error occurred.

Traffic less than 64 bytes in length (60 byte packet plus a four-byte CRC) is considered an error by Cisco routers and is ignored.
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TA46789_ImageWriter_Guide_to_Apple_II_Errata_(TIL00834).pdf

ImageWriter: Guide to Apple II Errata

This article has been archived and is no longer updated by Apple.

Page 21 of the Imagewriter User's Manual, Guide to the Apple II, has an error.
The end of line 340 of the program listing is

```
PRINT CHR$ B$;
```

it should be:

```
PRINT B$;
```

Published Date: Feb 18, 2012

Pers. LaserWriter: Problems Caused by Too-Small Margins (12/94)

I want to print legal size documents on a Personal LaserWriter LS. The left and right margins are cutting into the text. The margins are set up at 0.265 left and right.

Is this because of the limited memory? Will a memory upgrade fix this problem?

This article has been archived and is no longer updated by Apple.
The problem you've reported exists in both the Personal LaserWriter LS and Personal LaserWriter SC drivers. A memory upgrade will not address the problem.

According to the Personal LaserWriter specifications, the imageable area left and right margins of 0.25 inch should be the same for both US Letter and US Legal sized documents.

Article Change History:
05 Dec 1994 - Reviewed for technical accuracy.

Support Information Services
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InBox: Using with Macintosh System Software 7.0

Can I use InBox with the file sharing capabilities of Macintosh System 7?
This article has been archived and is no longer updated by Apple.
The following is from Sun Select (formerly Sitka Corporation):

Sun Select Tech Note 1404: InBox and Apple's System 7.0

Sun Select- 5/22/91

InBox and Apple's System 7.0 InBox for Macintosh and InBox Plus for Macintosh provide full messaging, routing and administrative functionality under Apple System 7.0. Follow the instructions below to install and use InBox under System 7.0.

Upgrading an InBox Client from System 6 to System 7.0

1) If InBox is installed as a Desk Accessory, use the Font/DA Mover to remove the InBox DA.

2) Use the Apple Installer to upgrade to System 7.0.

3) If the Apple Installer moved the InBox INIT to the Control Panels Folder, drag it back to the root level of the System Folder.

4) Drag the InBox Preferences file from the Preferences Folder to the root level of the System Folder.

5) If you wish to access InBox from the Apple Menu, drag the InBox application into the Apple Menu Items Folder. Do not install the InBox DA into the Apple Menu Items Folder. The InBox DA should not be used on System 7.0 machines.

Note: The InBox INIT must reside at the root level of the System Folder. You can double-click on it to access the Control Panel settings. If you wish to access it from the Control Panels Folder itself, you can make an Alias for it, and drag the Alias to the Control Panels Folder.

Upgrading an InBox Mail Server Message Center from System 6 to System 7.0

* No special procedures are required. The InBox Server INIT will be moved to the Control Panels Folder.

Upgrading an InBox File Server Message Center from System 6 to System 7.0

* No special procedures are required.

Installing an InBox Client on a Macintosh under System 7.0

* No special procedures are required. If you wish to access InBox from the Apple Menu, make sure you install InBox into the System Folder. Then drag the InBox application into the Apple Menu Items Folder. Do not install the InBox DA into the Apple Menu Items Folder. The InBox DA should not be used on System 7.0 machines.

Note: The InBox INIT must reside at the root level of the System Folder. It can be double-clicked on to access the Control Panel settings. If you wish to access it from the Control Panels Folder itself, you can make an Alias for it, and drag the Alias to the Control Panels Folder.

Installing an InBox Mail Server Message Center on a Macintosh under System 7.0

* After using the InBox Administrator to create a Mail Server Message Center on a machine running System 7.0, you must drag the InBox Server INIT from the root of the System Folder to the Control Panels Folder, in order to access the Server INIT from the Control Panel.

Installing an InBox File Server Message Center on a Macintosh under System 7.0

* Copy the InBox Administrator to the hard drive of the Message Center Macintosh launch it from there. Do not launch the Administrator from a floppy disk when creating a File Server Message Center under System 7.0.

Note: To Create a File Server Message Center over the network under System 7.0 (those wishing to create a File Server Message Center on an AppleShare Server might wish to do this), launch the InBox Administrator from an AppleShare Client Macintosh. When you attempt to open the remote volume in the Administrator, you will get the following message: "That name is already used by a folder." Click OK. The remote volume will still be selected in the list box. Click once inside the text box, enter the name of the Message Center, and click the SAVE button.

The System 7.0 Compatibility Checker: If you run the System 7.0 Compatibility Checker on an InBox Client, the InBox INIT will be placed in a folder called "May Not Work with System 7.0". If you run the System 7.0 Compatibility Checker on an InBox Mail Server Message Center, the InBox Server INIT will be placed in this folder as well.

TA46791_InBox_Using_with_Macintosh_System_Software__(TIL08341).pdf

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System 7: Novell‘s Notify Extension is Incompatible

The Notify extension from Novell is incompatible with System 7.x.
This article has been archived and is no longer updated by Apple.
The Notify extension version 2.1 from Novell causes severe performance degradation on Macintosh systems running System 7.x. These performance problems extend beyond network performance slowdowns and include actions as simple as opening your hard drive. You should use the latest release of the Notify INIT which is version 3.0.

Below is an excerpt from the Read Me regarding the release:

> NOTIFY v 3.0
>
> This version of the Notify INIT addresses several issues. It includes the fix for a problem with Notify loading on a System 6.x Macintosh with over 8 MB of RAM. It resolves several performance issues when running System 7. And the frequency at which it polls the Netware server for messages has been decreased, which resolves some performance problems on large networks.

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StyleWriter: Screen Dimmers May Cause Lost Characters

The StyleWriter printed output occasionally is missing characters. How do I fix this?

This article has been archived and is no longer updated by Apple.

Start up from a floppy and print some directories. Also use TeachText to print out the Read Me files on the startup disk. If these files print with no problem, check for screen savers or timeout INITs

Screen dimmers that timeout when the machine is processing a job for the StyleWriter can interfere with the print job transmission and processing to create these intermittent lost characters.

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System 7: Features and Benefits

This article describes the features and benefits of System 7, and the upgrade offers available.
This article has been archived and is no longer updated by Apple.
System 7 works on all Macintosh computers from the Macintosh Plus on. System 7 is compatible with most of the more than 4,000 Macintosh applications currently shipping, and has inspired many new products.

Benefits

Customers who upgrade to System 7 will receive the immediate benefits of new features such as TrueType¬ font technology, Virtual Memory, File Sharing, System 7 Finder¿, Multitasking, Balloon Help¬ and 32-Bit Addressing.

TrueType

System 7 offers all Macintosh users high-quality text at any size on any Macintosh screen and on the printed page with TrueType, Apple's outline font technology. TrueType is compatible with most existing applications and bitmap fonts and provides users with smooth type quality on the screen and on any output device such as PostScript¿ and non-PostScript printers, imagesetters, and film recorders.

Finder and Balloon Help

The System 7 Finder, also known as the user's desktop, has been simplified so that customers can quickly locate and use their information. All aspects of the Finder--including fonts, desk accessories, control panels and even the System--can be opened by double-clicking on them. In addition, the new System 7 Finder facilitates system management and set-up: files, folders, and applications can now be added to the Apple Menu; users can have outline views of all files and folders; and fonts, system extensions, and control panels, can easily be installed by dragging them to the System Folder.

System 7 also provides Macintosh users with an interactive System-wide Help system. Apple's Balloon Help is non-modal, allowing users to get help while continuing to work. When customers turn on Balloon Help and point to any object on the screen, a balloon appears that describes the object they are pointing to and how to use it. Macintosh software application developers are also incorporating Balloon Help into new releases of their programs. This feature will enable users to learn applications more quickly by providing an easily accessible reference to more features.

Finder and File Sharing

The new Find capability offers users fast and easy access to their files. The user can select Find, then type a word or phrase, and the system searches the disk for files whose names include the word or phrase. Find also offers more advanced options so users can perform more detailed searches. For example, users can find all files that they worked on today or files that were labeled with a specific color.

File sharing allows any user to share designated items (files, folders, and even whole volumes of information) with any other user over the network, without a dedicated file server. File sharing follows Apple File Protocol (AFP) standards, which means that any System 7 user can share files with any Macintosh System 6 user, and--by using third-party products-- with DOS and Windows users. File Sharing includes a complete security model that lets users provide levels of access and password protection.

Aliases allow all Macintosh users to organize their systems the way they prefer and makes it easier to access information. An alias, usually about 2K in size, of a file, folder, application, or volume (even a file server), acts as a pointer to the original object. With aliases, users can have access to documents, folders, and applications from more than one location. For example, a user may work with a particular word processor each day and would like to have it on the desktop but also organized within an applications folder. With aliases, users can do both without taking up much additional space on the hard disk.

Aliases and file sharing work in combination to provide more capabilities. For example, Macintosh users can carry an "office on a disk" by making an alias of their hard disk, placing it on a floppy disk, and when the user goes to any system on a network (across the hall, downstairs, or anywhere else) the user has access to the hard disk by double-clicking on the alias and typing a password.

Memory and Multitasking: Virtual Memory and 32-Bit Addressing

Multitasking is a standard part of Macintosh System 7, allowing users to work on several tasks concurrently. For example, a user can recalculate a spreadsheet, print a file, sort a database, and upload a file to a network while continuing to work on a word processor document. System 7's Virtual Memory expands the Macintosh's memory through software so that Macintosh users can run more and larger applications. Virtual Memory uses the hard disk as an extension to RAM, providing users with more memory when it's needed. In addition, 32-bit addressing allows users to install and access more than 8MB of RAM. The additional memory users can access will provide additional power for large applications and tasks such as animation, computer-aided design, and scientific visualization.

Publish and Subscribe

In 1984, the Apple Macintosh introduced the concept of "copy and paste," allowing users to share graphics and text among different files within

different applications. With System 7, Apple has taken "copy and paste" one step further with dynamic document links known as "publish and subscribe." Publish and Subscribe enables users to link any two documents--regardless of the application--to automatically update the information. This capability of System 7 even works over a network.

Apple Events

Apple events is the underlying messaging language that applications use for communication with other applications. It provides the foundation for applications to seamlessly work together sharing information and features on the same machine or over a network. Through new applications that support Apple events, users will be able to use features of a variety of applications while working in one application. For example, an accounting package can pass inventory data to a spreadsheet, instruct the spreadsheet to graph the data, and retrieve the graph for display in its own report.

Data Access Manager

The Data Access Manager, which ships as a standard component of System 7, provides Macintosh applications with the underlying technology that enables data access from remote host computers, regardless of the host computer, the connecting networks, or the database software.

Upgrade Path

System 7 offers all existing Macintosh users an upgrade path. Apple's design goals required that System 7 run on all Macintosh computers from the Macintosh Plus, Portable, and Classic on up to the latest, most powerful models. In addition, Apple has developed a suite of tools for customers that make the transition to System 7 as easy as possible.

Before You Install

Apple developed a HyperCard¿ stack called Before You Install, to give users a better understanding of System 7 and system compatibility. Before You Install features two sections of information: What's New in System 7, and Compatibility Checker. What's New in System 7 helps customers find out more about System 7 and explore some of the new features before upgrading. The Compatibility Checker provides customers with an automated tool for checking application, desk accessory, and control panel compatibility before moving to System 7. The Compatibility Checker, available in the United States, includes information on over 650 products. A printed Compatibility Guide is also available.

Network Install

As part of the System 7 Group Upgrade Kit, Apple includes a network-install version of the software. Users will be able to upgrade multiple systems over a network with the Macintosh one-button install. This process will alleviate the network administrator's task of manually upgrading many systems in sequence.

Upgrade Kits

System 7 works with all Macintosh computers--from the Macintosh Plus, Portable, and Classic on up--with 2MB of RAM (though 4MB is recommended) and a hard disk. System 7 is available to users in two versions: the System 7 Personal Upgrade Kit, and the System 7 Group Upgrade Kit.

The Personal Upgrade Kit includes ten floppy disks containing System 7 software, the Before You Install stack, and HyperCard version 2.1. The kit contains 90 days of upgrade phone support, new user manuals, and the System 7 Compatibility Guide.

The Group Upgrade Kit includes everything that is in the Personal Upgrade Kit, plus a System 7 CD-ROM, 180 days of upgrade phone support, site license, and Group Upgrade Guide. The System 7 CD-ROM includes a System 7 configuration that can be installed over a network, an array of utilities, and on-line documentation. The Group Upgrade Guide offers network administrators a resource for upgrading small and large groups of users in varied network environments.

Trademarks

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TA46796_Apple_III_RETURN_and_ENTER_(TIL00835).pdf

Apple III: RETURN and ENTER

This article has been archived and is no longer updated by Apple.
In order to differentiate being the RETURN and ENTER keys on an Apple III, you need to redefine the keyboard layout table to command the console driver to return two bytes with every request for a character. While we cannot obtain a document of the format of the keyboard part of the driver, the diagram on page 165 in conjunction with the diagram on page 135 of the Standard Device Drivers manual shows what information is returned in the two byte mode. The ENTER key will return $0D just like RETURN but the second byte will have bit 7 set.

Beware that after enabling the double byte read from Business BASIC, an invokable module is required for text. Two GET statements won't work.
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System 7: File Sharing Activates AppleTalk Automatically

Does AppleTalk need to be active before I start file sharing?
This article has been archived and is no longer updated by Apple.
If you start file sharing when AppleTalk is not active, AppleTalk will be activated automatically.
Published Date: Feb 18, 2012

System 7: Creating Groups for File Sharing

How do I create Groups for file sharing?
This article has been archived and is no longer updated by Apple.
Whenever more than one user needs access to a particular folder on your system, you can create a group. The group contains the names of all the users who belong to it. Each user can be a member of as many groups as desired. Once the group is created, access permission can be controlled at the group level.

After creating all the individual users, create a group to which they all belong. Here's how to create a group:

1. Open the Users & Groups control panel.
2. Choose New Group from the File menu. A new double-headed icon appears, ready to have a name typed in to replace the default name "New Group". Type in whatever you want to name the group.
3. To include each user you want in the new group, drag the user's icon onto the group icon. Note that even though the user is added to the group, the user's icon stays in the Users & Groups window as well.
4. Open the group icon to see who is in the group. To remove a user from a group, drag the user's icon out of the group and throw it away.
5. When you open the user icon after a user has been added to a group, the names of the groups to which that user belongs appear in the user's Groups box.

   Remember that anyone who walks up to your system can change file sharing passwords and permissions. You may want to consider getting a System 7 compatible password locking screen saver.

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System 7: What is Disk Cache?

What is disk cache?
This article has been archived and is no longer updated by Apple.
Disk cache is a static area in RAM set aside to help the Macintosh work more quickly and efficiently.

When a program asks for data from the disk (such as a part of a document), many times the next piece of data the program will need (such as the next part of the document) can be anticipated. Therefore, instead of transferring from disk to memory only the amount of data you are immediately working with, the system puts a larger amount (the size-of-disk-cache) of data into memory. This way, instead of spending the time to search for data on the disk again, the next piece of information will already be available. Disk cache works better on non-fragmented disks.

It may seem that the size-of-disk-cache should be configured to be quite large so that the need to search on the disk is greatly reduced. But this is not so because the memory allocated to disk cache cannot be used for opening more applications or documents. Thus, giving disk cache a huge amount of memory only makes that unavailable for use as RAM; it will not result in an increase in performance.

If the total memory of your system software appears to be very large under "About this Macintosh..." you should consider decreasing the memory allotted to disk cache. Open the Memory control panel and click the down arrow in the Disk Cache box.

This article was published in the Information Alley on 19 April 1996.
Published Date: Feb 18, 2012

System 7: Notes on File Sharing

Here is some information you need to know when you use System 7's Sharing option from the File menu to share a folder.
This article has been archived and is no longer updated by Apple.
Even after you have configured your Sharing Setup control panel, no one, not even the Guest account, can gain access to your system until you have configured folders or disks to be shared. File sharing won't happen until you give access to something to be shared--either folder or disk.

The appearance of a shared folder changes. When a folder has been configured to be shared, there will be network cables pictured at the bottom of the folder. When another user is using the folder, faces appear on the folder.

Once a folder has been shared, no folder above it in the disk hierarchy, or the disk itself, can be shared. If you try to do this, a dialog box will tell you the item could not be shared.

For example, if you share a folder on a hard disk, and then try to share the hard disk, the system will complain. You must turn off sharing on the folder before the system will allow you to mark the entire disk for sharing.

However, the opposite is not true. If folder A contains folder B, and folder A is shared, you may still share folder B. This enables you to set different permissions on folder B from those on folder A.
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System 7: Permission Decisions for File Sharing

Once you have configured disks or folders for file sharing, you need to make decisions on file access permissions.
This article has been archived and is no longer updated by Apple.
First decide who is allowed to share on your system.

The center section of the Sharing dialog box determines the permissions of the files and folders within the folder or disk you are sharing.

There are three categories of users to define and specify permissions for:

- Owner is defined, by default, as the owner of the system as configured in the Sharing Setup control panel. The Owner name is a pop-up menu containing all of the users you have defined on your system. Defining someone else as the owner of a shared item will allow them to change all permissions pertaining to that folder or disk. You should change the owner of a folder or disk with care.
- The User/Group box allows either a user or a group to have the specified permissions set in the three check boxes.
- The Everyone category covers those users who are not defined in the Owner or User/Group category. This includes the user named Guest. By default, the Guest may log on to any system on the network without a password.

Therefore, for maximum security, always set the Everyone permission settings to off.

If the item you are sharing is a folder inside an already shared folder, you will have a "Same as enclosing folder" check box. Clicking this check box copies the same privileges of the enclosing folder to the currently selected folder.

- Once permissions are set, you can click "Make all enclosed folders like this one" to make the same privileges to all folders beneath the folder on which you are setting permissions.

Second, decide what those users and groups can share.

For each of the three categories -- Owner, User/Group, and Everyone -- you must decide what permissions you wish to grant.

- The permission See Folders indicates that users will have the icons of folders visible when they log on to your system. If this box is not checked, the corresponding user will not see any folders inside the shared item.
- The permission See Files is the same as See Folders, but pertains to files. Without this box checked the corresponding user category will not see any files. Users who can see a file can also copy it.
- When checked, the permission Make Changes allows the corresponding user to alter or throw away files and folders. Otherwise, the user will be able to open the file for viewing but not save any changes.

Once you have checked the permission boxes to reflect how you want your system configured, close the box in order for the changes to take place. Dialog boxes will appear, confirming your changes. Click OK to save your changes, or Cancel to disregard them.

Important: If you do not change any permissions when you select an item for sharing, the default configuration is to have the folder or disk open for view, change, and removal by anyone on your network.
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System 7: Controlling Whether Users Can Change Their Passwords

How do I allow users to change their file-sharing passwords? Can I prevent them from changing their passwords?
This article has been archived and is no longer updated by Apple.

1. Open the Users & Groups Control Panel.
2. Open the User's icon. A dialog box appears.
   - To allow the user to change his or her own password, click the checkbox marked Allow User to Change Password such that an X appears there.
   - To prevent the user from changing the password, click the checkbox marked Allow User to Change Password such that no X appears there.
3. Close the dialog box, saving your changes.

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System 7: Disabling A User‘s Access to Your System

How do I disable a user's ability to connect to my system?
This article has been archived and is no longer updated by Apple.

1. Open the Users & Groups Control Panel.
2. Open the user's icon. A dialog box appears.
3. Remove the X from the Allow User to Connect check box.
4. Close the dialog box, saving your changes.

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System 7: Virtual Memory and Disk Cache Contrasted

What is the difference between virtual memory and disk cache?
This article has been archived and is no longer updated by Apple.
Virtual memory uses disk space as if it were RAM, to increase the amount of memory the system believes it can use for running applications.

Disk cache tries to make the system run more efficiently with the memory available.

For more details, see the separate Tech Info Library articles on these subjects.
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System 7: TrueType Large Text Sizes

When using TrueType, is there a limit to how large text size may be?

This article has been archived and is no longer updated by Apple.

One of the benefits of TrueType is that characters can now be generated at any point size up to 32,000 points. However, almost all applications currently limit text size to 127 points. Also, some limit the number of size selections possible. Some applications do their own scaling for sizes above 60 points.

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Macintosh: Calculating the Draw Rate

This article has been archived and is no longer updated by Apple.

Apple is often asked about the "draw rate" of Macintosh computers. If the question is "how many pixels per second?" the answer is "it varies." This is explained below. If the question is "how many vectors per second?" the answer is "the Macintosh doesn't use vector processing."

This article explains how graphic images are produced on both the Macintosh and on vector graphics terminals, and shows why there's no constant "draw rate" for the Macintosh.

Vector Graphics vs Bit-mapping

Vector graphic (line drawing) systems evolved from the basic plotter design that was first used for displaying computer graphics. To conserve memory (remember when memory was expensive?), only two points are stored for each line. The display image is calculated, during a screen refresh, by image generating hardware. Entire images can be stored on a mainframe or mass storage device and off-loaded to a terminal for processing.

The Macintosh uses a different technology, bit-mapping, which deals with an array of pixels mapped into RAM. A new image is displayed as fast as the bit-map RAM is updated; there is no need to calculate vectors. Storing the pixel information requires a great deal of memory. A monochrome image requires one bit per pixel; a color pixel requires several bits to specify its color (pixel mapping). Because a display like that of the Macintosh II contains 307,200 pixels (640 x 480), a minimum of 37.5 Kbytes is needed for a monochrome display. The same display using 8 bits per color pixel would need about 300 Kbytes.

Bit-mapped images, once stored, are updated at the speed of the vertical refresh rate, which is 66.67Hz on the Macintosh II video card. This means a full screen of video information (307,200 pixels) is displayed 1/66.67 times per second 14.5ms and a horizontal line (480 pixels) takes only 1/35,000 of a second .0285714ms (35KHz scan rate). (The actual number of pixels is slightly more as there are black borders where the beam is off.)

Calculating the Draw Rate

To calculate the time it takes to draw a given line, you must define where and when on a system the drawing of the line occurs. On a vector graphic system, the vectors are calculated (by a graphics generator) and sent to an image processor (video circuitry) for calculation of lines. Eventually they are converted by video circuitry to a display.

On a Macintosh, the "graphics generator" consists of the CPU and QuickDraw routines. The image is stored in video memory as a pixel map that is displayed by the video card circuitry. No further modeling is needed at the video card.

In both cases, to determine the time required to draw a line, a starting point and end point are needed. A number of other events can influence the timings and that will not accurately describe a working situation. This is not to imply that the two methods, pixel mapping and vector graphics, can or should be compared in this manner -- they're two different technologies. The benefit of pixel mapping lies in the finer control of each pixel for color or even video (analog) image processing at high speeds -- something not available through vector graphics processing.

Kinds of Graphics Generators

A graphics generator is a dedicated processor (or host) that calculates and

stores graphics information in some format, not necessarily similar to what will be displayed. A video processor is the circuitry that examines and converts graphics data into signals for the actual display. The examined data on vector graphics systems needs an added function of the video processor for the purpose of calculating the points between the end points as well as outputting the display signals.

Some of the possible methods (there are endless permutations) of generating graphics on a CRT:

- A graphics generator (dedicated or computer system) mixed with live video sources and even stored video sources with output to a display monitor and possibly a transmission and/or recording device.

- A standalone graphics system connected directly to a monitor.

- A host computer connected to a monitor. Usually, update times limit the practicality of using graphics terminals to alphanumeric or vector displays.

- A host computer connected to a graphics terminal that has its own processor to handle the graphics calculations.

- A host computer connected to a graphics controller that is connected to a monitor. The display information is fed to the controller for channeling to the needed device.

One of the options being used with small non-graphics dedicated computers is to place a graphics generator on a controller card with a video processor. The purpose of this is to free up the system CPU from the graphics handling tasks that it shares with the various system tasks.

The Macintosh II uses a host computer to graphics controller configuration with the storage of the RGB pixel information directly on the controller/video card. Other pixel maps can be created in the main memory of the Macintosh as well. This is useful for fast updates of the video card's pixel map. All logical maps or QuickDraw records are stored in main memory. This refers to the calculated pixels that are then transferred to the video card memory for updating of the display pixel map.

The Bottom Line

Now, to face the question of how long it takes to draw a given line. Because a Macintosh actually displays pixels, not lines, the question can't be answered with a simple number. The display times as noted above the display are themselves updated as fast as the Macintosh II CPU, running at 16Mhz, can calculate the line. This is still not display time, since it has to be combined with the time to transfer the calculated bits to the video card. The transfer time is not much of an issue when lines are the question, because very little information needs to be transferred. NuBus, the connection between the Macintosh II CPU board and the video card, can transfer 2.7 MBytes per second. Because a line in monochrome video mode might have 67 dots to the inch, only 67 bits need to be transferred. This doesn't take into account transfer protocol information and size of the data path on the NuBus.

The question then narrows down to "how long does it take QuickDraw to calculate a 1-inch line?" When you consider the other processes that must go on during an application:
- memory management
- vertical blanking interrupt processes
- interrupts from external devices
- the location of the line and its relation to other graphic entities
you begin to see why there is no single definition of the time it takes to draw a given line.

For More Information

The Raster Graphics Handbook, Conrac Division, Conrac Corporation
The AppleLink article "Macintosh II: Video Signals and Pinouts"

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System 7: File Sharing Security

With System 7, guest access is automatically granted when File Sharing is activated.
This article has been archived and is no longer updated by Apple.
If guest access is not your wish, you must take actioin to limit access to shared items.

1) To eliminate anonymous access:
Deactivate "Guest Access"

2) To grant access to specific individuals:
Use the "User and Group" Functions

3) In all cases, when designating shared items:
Immediately configure permissions for "owner," "group," and "everyone."

Please note: An "item" is at minimum a folder and at maximum a volume (which may consist of an entire hard drive).
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System 7: Program Linking and InterApplication Communication

When do I need to turn on Program Linking? Is Program Linking necessary to send AppleEvents between programs?
This article has been archived and is no longer updated by Apple.
With AppleEvents, there are two possible configurations to take into account. The two communicating applications can be on the same computer, or they can be on different computers.

If the two applications are on the same computer, they simply use AppleEvents to communicate, with no other setup needed.

However, if the two programs are on different computers, permissions must be put in place to regulate the other system's ability to communicate with the programs on your system. When others are actively linking to your programs, your system may be slower to respond than usual.

You must turn on Program Linking to enable the InterApplication Communications (IAC) features of applications that are System 7-compatible. Program Linking is the switch that lets applications communicate with each other by sharing commands and data over AppleTalk networks. It provides security measures that prevent unauthorized use of programs and data from remote computers. To activate IAC, permission must be granted at System and Application levels.

How to Turn On Program Linking

To respond to events from remote computers, you must explicitly let network users link to your computer. To do this, follow these steps:

1) Open the Control Panel folder.
2) Open the Sharing Setup Control Panel.
3) Enter your name, password, and your computer's name.
4) Click the Start button for Program Linking.

The Sharing Setup Control Panel then states "Program Linking is on. Click Stop to prevent other users from accessing shared programs." To prevent other computers from initiating sessions, click Stop underneath Program Linking.

Selecting Specific Applications

Here's how to select specific applications:

1) Select an application from the Finder.
2) Choose Sharing from the File menu.
3) Click the Allow Remote Program Linking checkbox.

What Else You Must Do

In addition to letting remote users initiate conversations between applications via Program Linking, you must:

* Permit physical access to their programs and data by enabling File sharing from the Sharing Setup Control Panel
* Choose which other users to interact with via the Users and Groups Control Panel.

To establish access for other users and guests, follow these steps:

1) Open the Users & Groups icon in the Control Panels folder.
2) To specify a particular new user, choose New User from the File menu.
3) Type the user's name and password.
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System 7: Program Linking versus Publish and Subscribe

How does publish and subscribe differ from program linking?
This article has been archived and is no longer updated by Apple.
Publish-and-subscribe uses a transition file called the edition file. In program linking, the two programs talk directly to each other.

You probably would publish a report generated from a database, but not the cells of the database. For example, a word processor gets the top ten salespeople from a database.

Publish and subscribe, by which a change in one document effects a change in another document, has some of the flavor of program linking. However, it is important to note the differences, and corresponding strengths, of each feature.

The publish and subscribe feature is good for allowing programs (and their documents) to share data, while program linking using AppleEvents allows programs to communicate with each other--not only to send and receive data, but also to provide services to and request services from the other program.

Publish and subscribe are used when:

- you would otherwise copy and paste the same data;
- the data involved will probably not be changed by the users who subscribe to it;
- the data is likely to be widely distributed--as in a large writing project;
- one document needs data from several other documents.

Applications use AppleEvents to:

- get data from another program if the details of the request change slightly each time;
- get another program to manipulate and return a set of data;
- configure and control a variety of programs.

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System 7: Program Linking versus File Sharing

How is program linking different from file sharing?
This article has been archived and is no longer updated by Apple.
File sharing and program linking both provide the ability to manipulate files, but program linking is a more comprehensive approach to the task.

File sharing strengths are based on the accessibility of files to others on your network. File sharing can make folders, hard disks, and CD-ROMs available to others. Users manipulate the files as if the files were local to their systems.

Program linking, on the other hand, is an automated programming effort in which applications are working with and manipulating other applications.

In configuring program linking, one element is similar to file sharing. To make a program available for linking, you choose Sharing from the File menu. There is never a conflict between the two because you may share only disks or folders, and you may link only application programs.
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NetWare for Macintosh 3.0

On February 11, 1991, at NetWorld in Boston, Novell, Inc. announced NetWare for Macintosh 3.0, a complete AppleTalk protocol-suite implementation that fully integrates Macintosh desktop systems into the NetWare v.3.11 network computing environments (formerly named NetWare 386 v.3.x).

Apple does not endorse or recommend any third-party products mentioned in this article, which was first published in AppleGram, May 1991. This article has been archived and is no longer updated by Apple.

NetWare for Macintosh 3.0

NetWare for Macintosh 3.0 provides file and print services to Macintosh clients in a NetWare environment using the AFP and PAP, AppleTalk protocols. This means Macintosh users connect to a NetWare v.3.11 server in the same way as they connect to any other AppleShare file server--by logging in and selecting volumes through the Chooser. Printing to a PostScript printer connected to the Novell server is also done in the familiar Macintosh way.

NetWare for Macintosh 3.0 provides Network Administrators easy and complete solutions for integrating Macintosh systems into NetWare v.3.11 environments. The implementation of the full AppleTalk stack as a set of NetWare Loadable Modules (NLMs) provides the architecture necessary for integrating Macintosh with other Novell services, such as NetWare Communications.

Macintosh Integrates Into Multivendor Networking Environments

NetWare for Macintosh 3.0 is an important milestone for Macintosh users in multivendor networking environments. Macintosh users can now share resources with DOS, Windows, OS/2 and UNIX desktops when in an advanced networking environment. NetWare for Macintosh 3.0 also offers enhanced security, fault tolerance, and high performance to all client desktops. Macintosh users in this large network environment will find accessing these remote network resources as easy as accessing their local file servers and printers.

Macintosh Administration Capabilities

Additional features of NetWare for Macintosh 3.0 include:

- Macintosh client software that allows any Macintosh user on the network to control NetWare capabilities such as setting rights, assigning trustees, managing print queues and sending messages to other networked users
- Macintosh client software that allows designated Macintosh users to perform administrative tasks such as adding or deleting users and groups, assigning passwords, and setting file attributes
- Support for AppleTalk Phase 1 and Phase 2

AppleTalk Routing

NetWare for Macintosh v.3.0 includes an AppleTalk Router as one of its core technologies. That means that users can share AppleTalk resources on different AppleTalk networks that are connected by the server.

NetWare for Macintosh 3.0

AppleShare products are the ideal solutions in environments that are primarily Macintosh and where the network services required are primarily file and printer sharing. NetWare for Macintosh uses the same AppleTalk protocols and user interface model as Apple's AppleShare products. Using Apple's model, Novell is able to integrate many of the advantages of AppleShare into a more advanced networking environment where multivendor connectivity, enhanced security, fault tolerance, and high performance are critical user requirements.

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System 7: Running the Compatibility Checker

How do I run the System 7 Compatibility Checker and how does it work?
This article has been archived and is no longer updated by Apple.
The Compatibility Checker is a HyperCard stack that checks the programs on your system against a database of applications contained within the stack. It then reports the compatibility status as provided by developers. Note that if your software is brand new, the Compatibility Checker may flag it as incompatible simply because it doesn't recognize the new version number. Also, check that you have version 1.1 of Compatibility Checker, which adds much new software to the list and updates existing information.

Here's how to use it:

Step One
Open the Before You Install stack.

Step Two
Click Compatibility Checker.

Step Three
Click the Set Up button.

Step Four
Select the disk(s) to check.

Step Five
Click the Start Checking button.

The stack starts checking: first for viruses, then for applications, INITs, cdevs, rdevs, and DAs. Depending on the number of items, this may take a while. The stack displays progress on a bar chart.

Step Six
Once the check is complete, you are given a choice of moving any potentially incompatible items out of your System Folder. Click the Move Items button if you want the Compatibility Checker to move the items for you. Click the Don't Move Items button if you prefer to move them yourself.

Step Seven
The program provides a report, which lists all of the items checked and their compatibility status.

Step Eight
Click the Print Report button to print the report, or the Save Report button to save the report to disk.

Step Nine
Click the Quit button to exit the stack.
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System 7: Activating Finder Windows

I've noticed that directory windows sometimes become active when I release the mouse. Is this a new feature of System 7?
This article has been archived and is no longer updated by Apple.
Yes. This is an enhanced feature of System 7. It prevents active windows from getting in your way while you are moving icons.

To make a window active, simply click the window. If you click an icon, the window activates when you release the mouse button. If you click elsewhere in the window (not an icon), the window activates when you press the mouse button.

This is different from System 6, in which windows are always activated on mouse-down.

This allows you to move an icon from an inactive window to another window without having the inactive window become active and possibly cover other items on your desktop.

Moving an icon from an inactive window to another inactive window leaves the currently-active window active. This way you can move an icon from an inactive window to an inactive window without making either active. Also, if you want to move a window without making it active, hold down the Command key and drag the window (by clicking in the title bar).
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System 7: Locating the Original of an Alias

How can I find the original of an alias?
This article has been archived and is no longer updated by Apple.
The Finder can show you both the original and its pathname. Follow these steps:

1. Select the alias.
2. Choose Get Info from the File menu. The path to the original is listed after the heading "Original" in the Info window.
3. Click the Find Original button. A Finder window containing the selected original opens.

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System 7: Findable Attributes

Can I use the Finder's Find command to search for files by attributes?
This article has been archived and is no longer updated by Apple.
Yes. The Find command seeks out the file you want to locate and selects it based on a variety of file attributes, allowing you to refine your searches to be as specific as you want. For example, you can find all the files created between May 21 and July 27 that are larger than 15K.

You can search for files by:

- Name
- Size
- Kind
- Label
- Date Created
- Date Modified
- Version
- Comments
- Lock

You can find files using any or all of the criteria above, singly or in combination. (**Warning:** rebuilding the desktop removes all comments on a drive.) If you want to search using multiple attributes, just do your first search, checking the "all at once" box. Then, with all the selected files still highlighted, do another search for your secondary attribute. You may do this until you narrow the search down to the desired level.

The Search pop-up menu near the center of the dialog box lets you search on any currently mounted disk or server.

The choices available in a pop-up menu depend on the contents of the pop-up menu(s) to its left.
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System 7: Customized Installation

How do I do a customized installation of System 7?
This article has been archived and is no longer updated by Apple.
You may want to custom install:

- To limit the installation of certain features (for example, File Sharing)
- To minimize the amount of disk space the system occupies.

The following instructions are for an installation from floppy disk. (Installation from CD-ROM is similar, except that you don't have to swap disks.)

Step One
Restart your Macintosh with the Install 1 disk in the floppy drive.

Step Two
Open the Installer application on the Install 1 disk.

Step Three
Click OK to proceed past the welcome box.

Step Four
Verify that the disk named on the Installer screen is the drive on which you want the software to be installed. Click Switch Disk if you want to install on a different drive.

Step Five
Click the Customize button.

The custom installation screen appears, showing the parts of the system software and a choice of standard or minimal system files for each model of Macintosh.

Step Six
Scroll through the list of items and Shift-click the ones you want to install. As you select items, their names appear in the lower-left portion of the dialog box.

Step Seven
Click Install to install this software configuration onto the selected disk.

The Installer will decide which disks are required, and then prompt you to insert them as needed.

Step Eight
Click Quit when you see a message indicating that the installation was successful.

Step Nine
Click Restart in the dialog box that appears when you quit the Installer.

Note: When installing on an external hard drive that might be used on another system, it's best to choose the "For any Macintosh" option.
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System 7: Keyboard Navigation

Article Change History

08/24/92 - REVIEWED
* For technical accuracy.

System 7 provides shortcuts to navigate around your files. This article tells how to use these techniques.

This article has been archived and is no longer updated by Apple.
Here's where you can use navigation shortcuts:

* In Finder windows

* In the Chooser

* In the list displayed in a directory dialog box

* On the desktop

Typing any alphabetic character moves the selection to the first item whose name begins with that character, or the next closest successive character in the alphabet.

For example, if you type the character "s", your selected icon may be the System Folder, if no other files or folders come before the word System in alphabetical order.

The speed at which you type in the characters is important. If there are several files beginning with the character "s", you can type more of the name to select the desired icon. If you type too slowly, though, the system will think you want an icon beginning with a letter other than "s".

Pressing the Tab key moves the selection to the next icon in alphabetical order. Pressing Shift-Tab moves the selection to the previous icon in alphabetical order.

Finally, the arrow keys select the next icon in the direction of the arrow.

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TA46818_System_Using_Multiple_Applications_(TIL08374).pdf

System 7: Using Multiple Applications

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

In addition to the ways System 6 allowed use of multiple applications, System 7 provides two more methods.

This article has been archived and is no longer updated by Apple.
To switch from one application to another:

* Click one of the application's windows. (If the application you want is the Finder, click anywhere on the desktop.)

* Select an application from the Application menu (right end of the menu bar).

To start additional applications:

* Drag a document icon onto the icon of the application (new feature).

* Select the application from the Apple menu (new feature).

* Double-click the application's icon (or its alias).

* Select the application and choose Open from the File menu in the Finder.

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TA46819_System_Popup_Title_Bars_(TIL08375).pdf

System 7: Pop-up Title Bars

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

In the Finder, pop-up menus provide another shortcut for quickly moving around your desktop.

This article has been archived and is no longer updated by Apple.
To access the pop-up menu of the active window, simultaneously:
- hold down the Command key,
- put the pointer over the name at the top of the window, and
- press the mouse button.

The pop-up menu not only shows you the path of the active window, but if you choose a folder from the pop-up menu, the system makes that window active. If the window is not already open, it opens and is made active.

To simultaneously choose a new window to open and to close the currently active window, hold down the Option key as well as the Command key.

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TA46820_System_Zoom_Box_Improvements_(TIL08377).pdf

System 7: Zoom Box Improvements

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

The Zoom box works a little differently under System 7.

This article has been archived and is no longer updated by Apple.
When the Zoom box of a Finder window is clicked, the window shrinks to the minimum size necessary to show the window's entire contents (unless the contents are too big to fit on the screen).

Clicking the Zoom box again returns the window to its original size.

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System 7: How to Use Control Panels

This article explains how to use control panels in System 7 to customize your system.
This article has been archived and is no longer updated by Apple.
In System 7, control panels open as though they were applications. Just double-click their icons, and you have access to the control panel you want.

An alias for the Control Panels folder is in the Apple Menu Items folder, making the control panels even easier to use. The alias in the Apple menu also provides interface compatibility for System 6.0.x users. You can have more than one Control Panel open at the same time.

To install a new control panel, simply drag its icon onto the System Folder icon. It will automatically be put into the Control Panels folder. (You can move control panels directly to the Control Panels folder yourself, of course.) Control panels can be put anywhere for quick access: on the desktop, in a folder, in the Apple menu, and so on. But if a control panel has INIT code that needs to be loaded at startup, it must be in the System Folder or the Control Panels folder.

Some functions that once were adjustable only with ResEdit, can now be modified by control panels. The settings you can adjust in the control panels include, but are not limited to:

- Font and type size used by the Finder for icon names
- Icon size and attributes listed in list views
- Icon layout in icon views
- Memory control
- Pattern and colors of the desktop
- Date, time, and display of time
- Speaker volume and alert sound
- Relative distance the pointer moves on screen when you move the mouse
- Relative positions of multiple monitors
- Number of colors or shades of gray displayed
- Disk drive to be used for startup (startup volume)
- Label names and colors available for icons
- Special aids for using the keyboard and mouse
- File sharing setup and program-to-program connections
(available to Macintosh computers on a network)
- Remote user access

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System 7: Removing Fonts and Sounds

Article Change History

08/25/92 - REVIEWED
* For technical accuracy; edited.

A new feature of System 7 allows you to remove fonts and sounds by dragging the resource icon out of the open System file. This article details how to do this.

This article has been archived and is no longer updated by Apple.
Fonts and sounds are removed by dragging them out of the System file.

1) Quit all programs that are currently open. You'll get an error message if you try to remove a font or sound when any programs (other than the Finder) are open.

2) Open the System file. This may take a few moments if the file is large.

3) Select the icon of the font or sound you want to remove.

4) Drag the icon out of the System file window. To discard the font or sound, drag it into the trash. To save it for future use, drag it anywhere outside of the System file.

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System 7: System Sounds

How do I recognize a sound file? How do I play a sound when it is installed in the System Folder?
This article has been archived and is no longer updated by Apple.
Sounds are identified by their unique icons. Under System 7, you can play a sound by double-clicking the sound file, whether it is inside the System file or loose on the disk.

Sounds installed in the System file must be sound resources, in particular, resources with the type "snd". (You can check the resource type by using ResEdit.) If you are able to drag a sound file into the System file, then it is in the proper format. There are several third-party sources for sound resource conversion applications.

To change the system alert sound:

1) Open the Sound control panel. This is usually located in the Control Panels folder within the System Folder, or accessed via the Control Panels menu item in the Apple menu.

2) Click the name of the sound you want. The sound is played.

3) Adjust the volume, if desired. The alert sound is played to demonstrate what it sounds like at the new volume.

Warning: The instructions in this article refer to using ResEdit. Apple Computer, Inc., is not liable for any damage done to your software through the use of ResEdit to alter software.
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System 7: Changes to the System File

In System 6.0.x, you had to use the Font/DA Mover to open the System file. In System 7, the System file behaves as an ordinary folder that can be opened from the Finder.
This article has been archived and is no longer updated by Apple.
To open the System file, double-click it. When open, the System file displays all of the fonts, keyboard layouts, and sounds installed in it -- as though it were a folder. While fonts and sounds are actually resources, they are treated as though they were simply files within a folder. (Because resources are special files, aliases cannot be substituted for them.)

You can double-click any font to see a sample of that font. You can double-click any sound to hear the sound.

Many of the functions that used to be contained in the System file have been moved to specific control panels. Modifying such things as icon layout no longer requires manipulation of the System file with ResEdit or other tools.
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TA46825_System_Edition_Files_(TIL08384).pdf

System 7: Edition Files

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

This article discusses operations performed with edition files.

This article has been archived and is no longer updated by Apple.
You, the user, make the choice of when a publisher will update its edition file. Generally, the two choices are to update the edition either:

- automatically when the file containing the publisher is saved, or

- manually when the Send Edition Now button is pressed from the Publisher Options dialog.

Different applications may have different options. Links between publishers and their edition files are effective until they are specifically canceled. If an edition file is thrown away without canceling the link, a new edition file will be created when the document containing the publisher is saved.

You cannot directly change the edition files, though you can open them to examine their contents. When you open an edition, the contents of the file are displayed and you get a dialog box asking if you want to open the publisher, presumably to make changes.

You also make the choice of when a subscriber will receive edition updates. Again, there are generally two options; a subscriber may update:

- automatically when the file containing the subscriber is opened, or

- manually when the Get Edition Now button is pressed from the Subscriber Options dialog.

If you cancel a subscriber, the current information will remain, but it will no longer be updated. If a subscriber's linked edition file has been removed, a warning dialog is issued.

The System software keeps track of which edition files are linked to which publishers and subscribers, in the same way it keeps track of alias files. If an edition file is moved, the system updates its pathname. Making a copy of an edition file does not copy its linkages, however.

Publishing is different from program linking. Publishers update an intermediate file, and subscribers update from that intermediate file. In program linking, an application sends commands (AppleEvents) directly to another application; there is no intermediary.

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System 7: Using Stationery

Article Change History

08/18/92 - REVISED
* Combined two articles into this one.

What is stationery? How can I use it? Does it work with all applications?

This article has been archived and is no longer updated by Apple.
Stationery is a System 7 feature with which you create "template" documents. For example, if you have a memo form that you use frequently, you can create a stationery document that gives you a fresh version of the memo every time you open it.

Stationery works with all applications. Some applications are stationery-aware. That is, you can specify whether a document should be treated as stationery when you first save the document using the "Save As..." command. Although other applications are not stationery-aware, there is another way to create a stationery document.

How to Create a Stationery Document

Follow these steps:

1) Create your template document in your application. For example, you might have a document that has "From:" "To:" and "About:" lines.

2) Save the document to your disk.

3) Switch back to the Finder (desktop).

4) Select the document's icon.

5) Choose Get Info from the File Menu.

6) Click the box marked "Stationery" in the Get Info window.

7) Close the Get Info window.

When you open the stationery document, you get a copy of the document for your use.

A stationery pad can be opened like any other document -- by double-clicking its icon, by selecting it and then opening it from the File menu, or by opening it from within an application.

When a stationery pad is opened for an application that supports this feature, a new file with the title "Untitled" is created. This file is a copy of the stationery pad, containing all the formats and information of the original. You make changes to the "Untitled" document, naming it when you save the new document. The new document is saved as a regular document -- not as a stationery pad -- unless you specify otherwise.

For applications not yet supporting the stationery option, you name the new document when you open the stationery pad. Double-click the icon of the stationery pad you want to open. A dialog box appears asking you to name the document. Type a name for the new document. After saving the document, you can then proceed to make the desired changes.

You can make changes in a stationery pad by turning off the "Stationery

pad" attribute through the Info box, making the desired changes, then turning the attribute back on.

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System 7: How to Customize the Puzzle

Article Change History

08/25/92 - REVIEWED
* For accuracy.

Can I customize the color Puzzle in System 7's Apple menu?

This article has been archived and is no longer updated by Apple.
Yes. Start by making a duplicate of the Puzzle, so that after making a custom Puzzle, you'll still have the original.

1) Put a graphic, one that is about the same size as the Puzzle itself, on the Clipboard.

Some possible sources:

* a HyperCard or MacPaint bitmap

* a screen dump or other PICT copied using System 7's new TeachText program.

2) Open the Puzzle, and choose Paste from the Edit menu. The graphic is copied from the Clipboard into the Puzzle, and scrambled.
(To see the graphic unscrambled, choose Show Clipboard from the Finder's Edit menu.)

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System 7: Starting Filenames with Space Character

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

Earlier versions of Macintosh system software didn't allow filenames to begin with a space character, but System 7 does allow this.

This article has been archived and is no longer updated by Apple.
If you begin a filename with a space character, then use "View by Name", that file will appear at the top of the list. This is a good way to force important files to the top of the alphabetical list.

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RS-232: Applefile III and QuickFile III

This article has been archived and is no longer updated by Apple.
Applefile will not recognize an .RS232 driver configured as a character read-write device ($63). If .RS232 is changed to a write only device ($41), Applefile recognizes it and shows it under the printers available. If an RS-232 device is a write only device, the handshaking, XON/XOFF or ETX/ACK, will still function. XON/XOFF and ETX/ACK are not data per se and will be treated as handshaking. Therefore, a driver will still be found if it is configured as a write only device such as a printer, since the driver does not have to READ the printer. These same modifications will allow QuickFile III to use the .RS232 driver.
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Mac OS: Changing Sequence of Apple Menu Items

I have installed so many desk accessories in my Macintosh system that my Apple menu is longer than my monitor is high. Further, some of the menu items I use most often are near the bottom of the list, and scrolling to them is annoying. Is there a way to force a few of my menu items to the top of the alphabetical list--without renaming them?

This article has been archived and is no longer updated by Apple.

There is an easy way to force a few of your menu items to the top of the alphabetical list without renaming them.

For example, if you change "Scrapbook" to " Scrapbook" (with a leading space), then it appears in the Apple menu ahead of "AppleCD Audio Player" and "Chooser".

In the Finder, open your System Folder, then your Apple Menu Items folder, and change the names of the menu items as you would any other filenames.

You might also want to experiment by putting various punctuation symbols at the beginning of the items in your Apple menu to see how this affects the sequence. If the menu is cluttered, make an empty folder named simply with a row of hyphens, or any other character, and use it as a divider with leading spaces to position it appropriately between, folder aliases and application aliases in your menu.

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LattisNet System 3000

This article describes the LattisNet System 3000, manufactured by SynOptics

This article has been archived and is no longer updated by Apple.

SynOptics' Network Utility Architecture defines local area networks as utilities, and combines three elements: connectivity, internetworking and network management. Physical layer connectivity includes access methods such as Ethernet, Token Ring and Fiber Distributed Data Interface (FDDI). Internetworking, used in larger networks, refers to bridges and routers. Network management systems keep complex networks running reliably and efficiently.

The LattisNet System 3000 provides integrated LAN data Communications, internetworking and network management functions within a single network utility. Modular components satisfy a variety of network needs.

System 3000 concentrators provide a common platform to support the Network Utility Architecture. The Model 3000 Premises Concentrator and the Model 3030 Department Concentrator hold the modular components that provide basic connectivity, integrated bridging, and network management utility functions.

A modular backplane supports IEEE 802.3-compatible Ethernet at 10 megabits per second (MB/s) and IEEE 802.5 Token Ring at 4MB/s and 16MB/s. System 3000 concentrators offer increased LattisNet module and port density to support more nodes with less equipment.

System 3000 host modules offer network connectivity. Ethernet host modules provide media flexibility by offering twisted pair and FOIRL fiber optic interconnections. Token Ring host modules operate over twisted pair wire. Auto-partitioning functions disable port connections under specific Ethernet fault conditions to ensure network integrity. Front-panel LEDs indicate link status, partitioning, and network management activity. System 3000 Token Ring ring-in/ring-out modules connect to other Token Ring-compatible devices to create larger LANs. Ethernet retiming modules help satisfy the IEEE 802.3 repeater function.

The bridge hardware and bridge management software provide integrated modular local bridging capabilities. LattisNet Ethernet local bridge modules have attachment unit interface (AUI) and fiber optic connector options to interconnect network segments and form single, transparent LattisNet networks. LattisNet local bridges filter operator-defined data packets and include a Spanning Tree Algorithm function which provides a redundant network path for rapid recovery from bridge or link failures.

The network management capabilities include planning, data monitoring, problem determination and fault isolation from a centralized console. Network management modules offer AUI and fiber optic connector options. Real-time network information is displayed graphically as a network hierarchy with Expanded Views of individual concentrators. A report generator captures and stores specific data on request. LattisNet Network Management permits individual port partitioning. It also allows the network manager to set module- and port-level activity and fault thresholds based on media access control (MAC)-level parameters and statistics.

LattisNet products implement IEEE 802.3-compatible Ethernet over twisted-pair wire and fiber optic cable. They also support both IEEE 802.5 Token Ring and 802.5-compatible networks over twisted-pair wire.

You can find the phone number and address for SynOptics in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

Network Guidelines

This article offers some guidelines for getting the best service from a network.

This article has been archived and is no longer updated by Apple.

- All devices on Ethernet need to be using the Phase II EtherTalk driver.

- Be sure that computers using Ethernet have EtherTalk cards, revision L or later.

- If you are using Ethernet, don't crimp or tightly wrap the cables. This degrades network performance.

- Install Responder in the System Folder of any Macintosh running 6.0.x. (Responder is built into System 7.)

- All Macintosh IIfx computers must have the Macintosh IIfx Serial Switch INIT in the System Folder. Set the Serial Switch to compatible mode to work with dial-up-connection applications and the old Star Controller model.

- Be sure all System 7 users have the same version, and no versions older than Beta 4. Inter*Poll can help find out what versions are in your network group.

- Don't daisy-chain any devices. This creates a heavy load on the network that often exceeds the capacity of the specifications.

- All spoolers must be on the same network (not just zone) as the LaserWriter they spool to.

- Use Inter*Poll to observe the workgroup use and traffic patterns on the network.

- Check the types of software used on the network. A beta-test environment can degrade network service.

Published Date: Feb 18, 2012

System 7: EtherPort Driver Compatibility

Article Change History

12/10/92 - UPDATED
* To give current version information.

I need a list of System 7 compatible drivers for EtherPort Ethernet cards available.

This article has been archived and is no longer updated by Apple.
Shiva no longer supports Etherport products. Eagle Technology supports these products.

Here's a list of the compatible driver versions:

Product	Current Version	Minimum Needed for System 7
EtherPort II (Nubus card 7-8 inches long)	4.2	4.2
EtherPort 2.6 (Older Nubus Card 12 inches long. Not 32-bit compatible)	2.6	2.6
EtherPort SE	2.6	2.6
EtherPort SE30	4.2	4.2
EtherPort SI	4.2	4.2
EtherPort LC	4.2	4.2

No company supports the EtherPort SC (SCSI unit).

Published Date: Feb 18, 2012

Applesoft Internals: Index to Routines (2 of 2)

The following lists combine all the routines in the INTERNALS series of Apple Tech Notes. This list is arranged order of increasing address.

Note: See Part 1 for an alphabetical listing.
This article has been archived and is no longer updated by Apple.

NUMERIC LIST

Address	Name	Address	Name
00B1	CHRGET	E600	FREFAC
00B7	CHRGOT	E604	FRETMP
8A-8E	TEMP3	E635	FRETMS
98-9C	TEMP2	E6F5	GTBYTC
9D-A2	FAC	E6F8	GETBYT
A5-AA	ARG	E6FB	CONINT
C9-CD	RND	E746	GETNUM
D393	BLTU	E74C	COMBYTE
D3E3	REASON	E752	GETADR
D412	ERROR	E7A0	FADDH
D52C	INLIN	E7A7	FSUB
D52E	INLIN+2	E7AA	FSUBT
D539	GDBUFS	E7BE	FADD
D553	INCHR	E7C1	FADDT
D566	RUN	E941	LOG
D61A	FNDLIN	E97F	FMULT
D64B	SCRTCH	E982	FMULTT
D66C	CLEARC	E9E3	CONUPK
D683	TKINI	EA39	MUL10
D697	STXTPT	EA55	DIV10
D7D2	NEWSTT	EA66	FDIV
D849	RESTOR	EA69	FIDVT
D858	ISCNTC	EAF9	MOVFM
D898	CONT	EB1E	MOV2F
D93E	GOTO	EB21	MOV1F
D995	DATA	EB23	MOVML
D998	ADDON	EB2B	MOVMF
D9A3	DATAN	EB53	MOVFA
D9A6	REMN	EB63	MOVAF
DA0C	LINGET	EB82	SIGN
DA46	LET	EB90	SGN
DA7B	GETSPT	EB93	FLOAT
DAFB	CRDO	EBAF	ABS
DB3A	STROUT	EBB2	FCOMP
DB3D	STRPRT	EBF2	QINT
DB57	DOUTSPC	EC23	INT
DB5A	OUTQST	EC4A	FIN
DB5C	OUTDO	ED19	INPRT
DD67	FRMNUM	ED24	LINPRT
DD6A	CHKNUM	ED2E	PRNTFAC
DD6C	CHKSTR	ED34	FOUT
DD6D	CHKVAL	EE8D	SQR
DD7B	FRMEVL	EE97	FPWRT
DE81	STRTXT	EED0	NEGOP
DEB2	PARCHK	EF09	EXP
DEB8	CHKCLS	EFAE	RND
DEBB	CHKOPN	EFEA	COS
DEBE	CHKCOM	EFF1	SIN
DEC0	SYNCHR	F03A	TAN
DFE3	PTRGET	F09E	ATN
E07D	ISLETC	F1EC	PLOTFNS
E10C	AYINT	F2E9	HANDLERR
E2F2	GIVAYF	F317	RESUME
E301	SNGFLT	F3D8	HGR2
E306	ERRDIR	F3E2	HGR

E3D5	STRINI	F3F2	HCLR
E3DD	STRSPA	F3F6	BKGND
E3E7	STRLIT	F411	HPOSN
E3ED	STRLT2	F457	HPLOT
E42A	PUTNEW	F53A	HLIN
E452	GETSPA	F5CB	HFIND
E484	GARBAG	F601	DRAW
E5D4	MOVINS	F65D	XDRAW
E5E2	MOVSTR	F6B9	HFNS
E5FD	FREST	F6EC	SETHCOL
		F775	SHLOAD
		F7D9	GETARYPT
		93-97	TEMP1

Published Date: Feb 18, 2012

MacTerminal and LisaTerminal: Line feeds after carriage returns

This article has been archived and is no longer updated by Apple.

It is the job of the sending device to provide line feeds after carriage returns if necessary. For example, when you're using your Macintosh to send text to another Macintosh, you must select New Line (a Terminal Settings option from the Settings menu); otherwise, the user on the other end will receive all the incoming text overwritten on one line.

In LisaTerminal, set Auto New Line to "on" to SEND a line feed after a carriage return. Auto New Line is an option in the Computer Compatibility box located in the Setup menu.

Published Date: Feb 18, 2012

TA46836_Visual_Almanac_LaserDisc_Product_(TIL08401).pdf

Visual Almanac LaserDisc Product

This article describes the Visual Almanac, a product available from Optical Data Corporation.

This article has been archived and is no longer updated by Apple.
The Visual Almanac is an interactive multimedia kit that combines a videodisc with the Macintosh computer running HyperCard.

It features three segments:
- a collection of 7,500 moving and still images and sounds
- a composition workspace for manipulating text, images, and sounds
- 14 student activities in science, the arts, social studies, and mathematics

The package contains a 2-sided LaserDisc, a CD-ROM disc, a cable to connect the Macintosh to several different popular LaserDisc players, and documentation.

Call Optical Data Corporation for an order form. You can find the phone number and address in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

TA46837_AppleWorks_Users_Group_NAUG_(TIL08402).pdf

AppleWorks Users Group: (NAUG)

This article gives information about the National AppleWorks Users Group (NAUG).
This article has been archived and is no longer updated by Apple.
NAUG is an international user group that provides members with AppleWorks information through a monthly newsletter, plus technical support through a network of support volunteers. They publish the AppleWorks Forum and maintain a public-domain library.

You can subscribe and become a member of NAUG by calling their number, which is listed in a separate article in the Tech Info Library.

TIL article#17159: "**Locating Vendor Information**", can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

TA46838_National_AppleWorks_Users_Group_NAUG_(TIL08404).pdf

National AppleWorks Users Group (NAUG)

National AppleWorks Users Group (NAUG)

This article has been archived and is no longer updated by Apple.
P.O. Box 87453
Canton, MI 48187

313-454-1115

313-454-1965 Fax

Company Profile:
Specializing in AppleWorks information.

Published Date: Feb 18, 2012

System 6.0.6: Don‘t Use It

How come I shouldn't use System 6.0.6 on ANY Macintosh? And why should I use System 6.0.7 only on newer Macintosh computers?

This article has been archived and is no longer updated by Apple.
System 6.0.6 has compatibility problems with the new Macintosh computers. System 6.0.6 was pulled from production and replaced by System 6.0.7. There are a few versions of System 6.0.6 floating around that were sent out before the software was pulled from production.

You should use System 6.0.5 (or System 7) on most Macintosh computers made before the Macintosh Classic, Macintosh LC, and Macintosh IIsi. System 6.0.7 has features in it that only benefit newer Macintosh computers. This does not mean that you can't use System 6.0.7 on older products, it just means that it is not the recommended system.

Published Date: Feb 18, 2012

Display Card 824 GC: Compatibility With Other Video Cards

How do I use a Macintosh Display Card 8*24 GC in conjunction with a third-party video card? Specifically, I'm trying to use a RasterOps Video ColorBoard 364 with the Macintosh Display Card 8*24 GC. With both cards in a Macintosh, only one card works -- depending on which slots I've put the cards in. The card that's in the slot closest to the power supply is the one that's recognized, while the other card doesn't work at all.

RasterOps says that the Macintosh Display Card 8*24 GC might not be releasing control of the bus to other graphics cards. Is this what's happening?

This article has been archived and is no longer updated by Apple.
The card nearest the power supply becomes the "bus master". If your Macintosh Display Card 8*24 GC is in the bus master slot, it will take control of the bus and prevent another card with a processor on it to run.

If your third-party card is in the bus master slot, the third-party card may or may not release control of the bus, depending on its design.

Essentially, you can have only one accelerator card running at a time. If you turn the acceleration of the Macintosh Display Card 8*24 GC off, you should be able to use both video cards.

Published Date: Feb 18, 2012

TA46841_AUX_Programmers_Tools_and_X_Windows_(TIL08409).pdf

A/UX 2.0: Programmer‘s Tools and X Windows

1) What is the minimum-sized A/UX partition? (Can A/UX be totally installed on a SyQuest Drive?)

2) What do the Programmer's Tools include?

3) Is the X Window package included with the Programmer's Tools?

4) Can X Windows applications be created with the X Window package, or is another programming tool necessary?

This article has been archived and is no longer updated by Apple.

```
1) The partition that contains the complete A/UX is 70+ MB.  If you are
  willing to remove utilities, you can get it down to 50+ MB.

2) The Programmer's Tool Kit includes the standard AT&T set of utilities.

3) X Windows is sold separately.

4) Yes.  It includes libraries for X11R3.
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Published Date: Feb 18, 2012

AppleShare Workstation: Use Installer that Comes With Computer

When I use the AppleShare Workstation Installer 2.0 to prep a Macintosh IIcx workstation using the Macintosh II option (only that option was offered), my computer doesn't restart. I had to totIJlly reinstall the System with the Installer along with Installer's AppleShare workstation option.

This article has been archived and is no longer updated by Apple. AppleShare software has not been updated in over 2 years. The installer scripts that come with AppleShare do not work properly with computers that have been introduced since that time. New computers come with their own installers that install both the AppleShare workstation and server.

Published Date: Feb 18, 2012

AppleShare: Finder Copying Causes ID=1 Errors

When I do a Finder copy of files onto my AppleShare server folders, why do I get an ID=1 error?

This article has been archived and is no longer updated by Apple.
This is because you're putting information onto your server without AppleShare being "aware" that you've done this. When you put information on the hard drive of the server with AppleShare off, the AppleShare PDS file doesn't update correctly.

You need to run the AppleShare Admin program and verify the volume to update the PDS file. A way to prevent this is to copy files to your server over the network. This updates the PDS file as your files are copied.

Published Date: Feb 18, 2012

AppleCD SC: How To Use with AppleShare

How do I use an AppleCD SC Drive on an AppleShare Network?

This article has been archived and is no longer updated by Apple.
Here are the steps:

1) Install the AppleCD SC driver on the AppleShare Admin diskette and the file server volume.

2) Start up from the AppleShare Admin diskette and use the "Prepare volume for use with AppleShare" command.

The name of the CD-ROM will appear and AppleShare will create a parallel directory structure for the CD. That's all it takes.

Published Date: Feb 18, 2012

AppleShare: Problems Installing with System 6.0.5

I'm trying to set up an AppleShare file server on a Macintosh SE/30 with System 6.0.5. I used the Installer on the AppleShare File Server Installation disk, choosing only the AppleShare installation (in other words, not using the Macintosh System installation option). So far so good.

However, when I attempt to load files from the Server Administration disk, I get the message that the System file on that disk is not a recent enough version (it was System 6.0.3).

This article has been archived and is no longer updated by Apple.
You need to run the Installer from a System 6.0.5 disk and create a new floppy using the option to install minimum system files for the Macintosh SE/30. After you create that startup disk, drag the AppleShare Admin program onto that floppy. You'll then be able to start up from the floppy and run the AppleShare Admin program.

Published Date: Feb 18, 2012

Apple IIGS: How To Start Up from Floppy Disk Using Aristotle

I'm using Apple IIGS computers with a menu management program and a Macintosh file server. The menu management program is set as the startup application. I'm not using a network startup or "boot disk" and I don't want to. Here's my setup:

Slot 1 AppleTalk
Slot 7 AppleTalk
Startup AppleTalk

I don't want to reconfigure my Control Panel just to be able to start up from a floppy disk. But with my current settings, if I press Control-Open-Apple-Reset, the floppy drives don't do anything.

I need a way to start up from a floppy without changing any of my Control Panel settings. Can I create a program in BASIC and put it in my menu management program? Would this BASIC program, when selected, cause my Apple IIGS to start up from the floppy drive?

This article has been archived and is no longer updated by Apple.
There are two ways to do what you want:

First Method
---
1) Interrupt the boot process by pressing Control-Reset while the system is booting. This will give you the "]" prompt.

2) Type "PR#6" to tell the computer to start up from the controller card in slot 6. (If you're starting up from a 3.5-inch floppy disk, use 5 instead.)

Second Method

To do the same thing through Aristotle, simply create a BASIC program with the following line:

```
10 PR#6
```

Save this program and set it up as an Aristotle menu item. The problem here is that you must start up all the way into Aristotle before you'll get back to the ability to boot from a local drive. Control-Reset will give you the ability to boot from a local drive much sooner.

Published Date: Feb 18, 2012

Macintosh: Desktop Manager

I have more than 1000 files on my Macintosh hard drive and am running System 6.0.5. I have an ongoing problem with fragmentation and am constantly optimizing, formatting, or reinstalling all data on my hard drive. I've read that the Desktop file was designed back in the 400K floppy days. Should I put "Desktop Manager" in my System Folder (from the AppleShare disk)?

This article has been archived and is no longer updated by Apple.

The Desktop file is capable of managing 64,000 files. The Finder really bogs down if you have more than 800 files per folder level. The Desktop Manager is not needed for only 1000-2000 files. On the other hand, it won't hurt to have it and it might increase the reliability and even make some functions more efficient.

Published Date: Feb 18, 2012

Macintosh: Dayna Drive for Transferring MS-DOS Files

I want to transfer MS-DOS files from 5.25-inch disks to my Macintosh. Is there any way of connecting an external 5.25-inch disk drive to a Macintosh SE/30?

This article has been archived and is no longer updated by Apple.

Yes. Dayna Communications makes a drive called the Dayna File that connects through the SCSI port.

For more information, search the Redgate Buyer's Guide icon under "Dayna".

Published Date: Feb 18, 2012

EtherTalk 2.0.2: Where to Find ENET Driver

Where can I find an EtherTalk 2.0.2 driver?

This article has been archived and is no longer updated by Apple.
The .ENET driver resource file installs as part of the System file when the EtherTalk driver is installed using the Network Products Installer disk that is shipped with all new computers.

Remember, there are two different drivers: one is the actual EtherTalk driver, which you can see in the System Folder; the other is the .ENET driver, which you cannot see.

If you have an older version, 2.0.2 can be acquired from AppleLink or any Apple Authorized Dealer.

Published Date: Feb 18, 2012

TA46850_Monitor_II_Phosphor_(TIL00842).pdf

Monitor II: Phosphor

This article has been archived and is no longer updated by Apple.
The decay time for the P-31 phosphor is 70 microseconds from 100% to 10%.
That correlates to about a 77 microseconds decay time to 0%.
This knowledge may be useful to, for example, research labs conducting
visual perception experiments that include extremely rapid presentation
of visual stimuli.

Published Date: Feb 18, 2012

EtherTalk: How To Install for AppleTalk Phase 2 Compatibility

Where can I find a copy of the EtherTalk Interface driver that's compatible with AppleTalk Phase 2?

This article has been archived and is no longer updated by Apple.
You need to run the Network Product Installer disk and tell it you want to install EtherTalk. When it asks for the disk, insert the EtherNet Installer Disk 2.0.1. This will install the AppleTalk Phase 2 drivers.

Published Date: Feb 18, 2012

Macintosh IIfx: NuBus/SCSI Speed

I'm a little confused about SCSI data transfer. Several sources say that the speed of the SCSI port on a Macintosh IIfx is between 1.4MB and 4.0MB per second. I know that synchronous mode is needed to obtain the higher rates, but if a drive is only rated at 13 kilobytes per second with an access time of 11.9 milliseconds, how do I get rates of 2 or 3 megabytes per second?

Also, if the NuBus slots are rated at 10MB per second, wouldn't I gain by using these slots?

This article has been archived and is no longer updated by Apple.
It's not the access time of the drive that matters, but rather the sustained transfer rate. Any SCSI hard drive that can sustain transfer rates above 1.25MBps will operate faster on a Macintosh IIfx compared to any other Macintosh system. None of Apple's present drives take advantage of this potential.

If a SCSI card was designed to operate with NuBus it would limited to 10MB per second, which is faster than the Macintosh IIfx's 3MB per second spec, but much faster that any of our other drives, at this point.

Published Date: Feb 18, 2012

TA46853_Apple_IIGS_System_Software_after_Requires_K_RAM_(TIL08424).pdf

Apple IIGS: System Software after 4.0 Requires 512K RAM

I have a 256K Apple IIGS. What's the latest Apple IIGS system software version for a 256K Apple IIGS without a memory expansion card?

When I try to load System 4.0 through 5.0.2, I get a "RAM Disk Too Large" error message. When I go into the Control Panel, RAM disk is set to 0K, 84K RAM in use, and 171K free. Why is this?

This article has been archived and is no longer updated by Apple.
Apple IIGS system software after version 4.x requires at least 512K of RAM. Without at least this much you'll be limited to version 3.x or earlier of system software.

We strongly suggest that you upgrade to at least 512K of memory, even if you're only going to use the earlier system software.

Published Date: Feb 18, 2012

ImageWriter LQ: Resetting ASCII Escape Codes

I'm using an ImageWriter LQ with a Macintosh IIsi. I want to reset the ImageWriter LQ to print 8 1/2-inch pages at 10 cpi character setting.

My document is from a program called Pacershare on a DEC VAX. I thought I had inserted the correct ASCII escape codes (from the ImageWriter LQ owner's manual) as the first commands in the document. The ImageWriter LQ does not respond to these codes, and prints only in the default 12 cpi, 11-inch page length. Any suggestions?

This article has been archived and is no longer updated by Apple.
All escape codes are overruled by the ImageWriter LQ driver. Your desired page description must be set up in the application program's Page Setup.

Published Date: Feb 18, 2012

LaserWriter: Be Sure To Use Labels Rated for Laser Printing

I'm using a LaserWriter II to print 50 sheets of standard Avery labels at a time. I'm concerned that so many labels will begin to stick to the printer's drum. Avery, the label manufacturer, claims there will be no problems. Are there any problems printing this quantity of labels on a LaserWriter?

This article has been archived and is no longer updated by Apple.
If the labels are rated for use in Laser printers or copiers, there shouldn't be problems with that quantity. We strongly suggest that you use manual feed input and the face-up output tray.

Published Date: Feb 18, 2012

Macintosh LC: Maximum Video Depth

What is the maximum video depth the Macintosh LC's built-in video supports?

This article has been archived and is no longer updated by Apple.
The Macintosh LC's built-in video supports a maximum video depth determined by two variables:

- The size of the monitor connected to the Macintosh LC, and

- The amount of video RAM installed in the Macintosh LC.

If the Macintosh LC has 256K of video RAM installed, then the bit depth for the Macintosh 12-inch RGB display will be 8 bits per pixel, and for the 13-inch High Resolution RGB Monitor, the depth will be 4 bits per pixel.

If the Macintosh LC has 512K of video RAM installed, then the bit depth for the Macintosh 12-inch RGB display will be 16 bits per pixel, and for the 13-inch High Resolution RGB Monitor, the depth will be 8 bits per pixel.

Four bits per pixel will give you 16 colors or shades of gray on the screen at one time. Eight bits will give you 256 colors or shades of gray. Sixteen bits will give you thousands of colors.

It's possible to achieve 24 bits per pixel on the Macintosh LC through third-party Macintosh LC PDS video cards.

Published Date: Feb 18, 2012

Macintosh LC: Using with Third-Party Color Monitors

Article Change History

10/28/92 - REVIEWED
* For technical accuracy.

I want to get more than the 256 colors on a Macintosh LC. Will the optional 512K VRAM SIMM that provides 32,000 colors on an Apple 12-inch RGB monitor be any benefit to a third-party monitor?

Is it true that a third-party monitor won't be "plug and play" on a Macintosh LC without an additional video card?

This article has been archived and is no longer updated by Apple.
Yes, the expansion option will benefit other monitors. The amount of pixel depth will depend on the size of the monitor. For a 12-inch monitor, there will be 32,000 colors; a 13-inch monitor will have 256 colors.

Third-party compatibility depends on the monitor. If the monitor matches scan rates and resolution, it should work. Ask the manufacturer for compatibility information.

Published Date: Feb 18, 2012

TA46858_SCSI_Finding_Information_on_How_to_Write_Formatters_Drivers_(TIL00843).pdf

SCSI: Finding Information on How to Write Formatters & Drivers

This article has been archived and is no longer updated by Apple.

Here is where to find documentation on writing SCSI drivers and disk formatters:

- SCSI Development Package
- SCSI Manager chapter, Inside Macintosh Volume IV
- American National Standard Committee's draft proposal for the SCSI standard
- Tech Notes #159, #134, #113, #94
- Technical documentation on the specific hard disk

Published Date: Feb 18, 2012

Macintosh LC: Expansion Board Not Necessary for RAM Upgrade

My Macintosh LC Owner's Manual says that the Macintosh LC comes with 2MB of RAM on the motherboard that can be upgraded by adding another board AND THEN adding SIMMs to this additional board.

It certainly looks like I can put two or more 1MB SIMMs right onto what looks like two SIMM slots on the system board. To the left of these slots is a big chip. Is that the 2MB of RAM is this a ROM chip? If it's a ROM chip, are those four little chips to the left of that the RAM?

This article has been archived and is no longer updated by Apple.
The Macintosh LC doesn't need a memory expansion card. If the manual states that, it is incorrect. Simply adding two SIMMs will upgrade the memory.

Macintosh LC RAM is on four chips on the other side of the ROM SIMM socket. These RAM chips are labeled "DRAM".

To see the possible memory chips and configurations for the LC, search under "DRAM Specifications".

Published Date: Feb 18, 2012

ImageWriter LQ: Troubleshooting Color Ribbon Problems

When I print a multi-page, multi-color color document on an ImageWriter LQ, each page prints in one color only. Each subsequent page prints in a different color.

This article has been archived and is no longer updated by Apple.

Your printer is behaving as though it has a solid black ribbon. When a black ribbon is installed, the ribbon moves one line every page to distribute the wear on the printer ribbon.

The switch that tells the printer whether the ribbon is black or color may be broken. Check the operation of this switch manually, then have an Authorized Reseller check it with an Ohmmeter.

Published Date: Feb 18, 2012

Macintosh IIsi: Has No Video Convolution Filter

Does the Macintosh IIsi built-in video provide a convolution filter like the Macintosh Display Card 8*24 GC does?

This article has been archived and is no longer updated by Apple.
Only the Macintosh Display Card 8*24 GC and the Macintosh Quadra computers provide a convolution filter for the video signal. It is not available on any other product.

A convolution filter is used to stabilize flicker rate on monitors.

Published Date: Feb 18, 2012

Macintosh Plus, SE, Classic: 1MB SIMMs Only

I know that System 7 allows a Macintosh II-class system or a Macintosh SE/30 to access more than 8MB of physical DRAM, and the use of higher-density SIMMs. Is the same true for the Macintosh Plus and Macintosh SE? Can I now put in four 4MB SIMMs and have 16MB of RAM in my Macintosh Plus, Macintosh SE, or Macintosh Classic?

This article has been archived and is no longer updated by Apple.

Neither the microprocessor nor the system software determines the type of SIMMs the system can use. This depends on the electrical design and the Memory Manager. The Macintosh Plus, Macintosh Classic, and Macintosh SE have address lines that support only 1MB SIMMs.

Published Date: Feb 18, 2012

TA46863_Macintosh_II_Family_Monitor_Noise_at_Startup_is_Normal_(TIL08434).pdf

Macintosh II Family: Monitor Noise at Startup is Normal

Many Macintosh II monitors make a loud noise when powering up. The high-resolution monochrome and color models seem to make this noise consistently. Is there a problem with these monitors, or is this just a characteristic of the monitor?

This article has been archived and is no longer updated by Apple.
The sound that you hear is the degausing coil being activated on power-up. Color monitors are subject to impurities from other magnetic fields. This is countered by putting a neutralizing field around the front of the CRT on power-up or by pressing the degausing coil button on the back of the monitor.

The sound is simply the coil energizing and is in no way a sign of current or future problems.

Published Date: Feb 18, 2012

EtherTalk: When To Use the Network CDEV

I just upgraded my Macintosh to System 6.0.7 and suddenly my Network 2.0 System file no longer works. Where can I find another copy of Network 2.0?

This article has been archived and is no longer updated by Apple.
When you install the EtherTalk or other alternative network driver, the Network CDEV is installed. The CDEV is not necessary unless you are on a network other than LocalTalk. If you are on a non-LocalTalk network, running the Network Products Installer to install EtherTalk will also install the CDEV.

Published Date: Feb 18, 2012

AppleTalk: One Damaged Macintosh Can Crash a Network

If a broken but turned-on Macintosh is attached to a network, can it cause the network to crash? For example, if a screen is flickering or intermittently goes out, can that Macintosh cause a network bomb or cause other computers on the network to crash?

This article has been archived and is no longer updated by Apple.
In addition to a bad LocalTalk box or cable, it's possible for a damaged Macintosh to send out enough interference on a network to cause the network to crash. It wouldn't cause other systems to crash, though.

Published Date: Feb 18, 2012

TA46866_PATHWORKS_for_Macintosh_Using_the_Installer_and_System__(TIL08437).pdf

PATHWORKS for Macintosh: Using the Installer and System 6.0.7

How do I put System 6.0.7 on the PATHWORKS install disk?

This article has been archived and is no longer updated by Apple.
The PATHWORKS for Macintosh Installer Disk is just like a normal System Software 6.0.7 bootable diskette. The disk has AppleShare Workstation software so you can have access to a VAXshare file server. All the PATHWORKS for Macintosh programs are located a the VAXshare file server. The PATHWORKS Installer Disk will work if your Macintosh is connected to the Digital network through LocalTalk and a router, or through an Apple EtherTalk NB card (EtherTalk software must be installed on this Installer Disk for this use).

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TA46867_PATHWORKS_for_Macintosh_Sources_of_Support_(TIL08438).pdf

PATHWORKS for Macintosh: Sources of Support

Who supports PATHWORKS, Apple or DEC?
This article has been archived and is no longer updated by Apple.
PATHWORKS for Macintosh is supported by Digital Equipment Corporation.
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Apple High Resolution RGB Monitor: Technical Q&A

I have some technical questions about the Apple 13-inch High-Resolution RGB monitor:

1) What is the pixel size?

2) What's the pixel interleave?

3) How much time does it take to turn pixels on and off?

4) What's the wavelength range from blue to red?

5) What's the maximum brightness of the screen?

6) Can the Macintosh hardware handle programming to command video cards to display objects on the desktop (circles, squares, and so on, with different colors?)

This article has been archived and is no longer updated by Apple.

1) Pixel size (also known as "dot pitch" or "grill pitch") is 0.25mm.

2) There are no specifications on pixel interleave. If the request is for the sequence of placing pixels on the screen, then the following discussion should assist in understanding how the monitor works.

Video cards that drive the AppleColor High Resolution RGB Monitor use an approximation of the RS343 display signal. (RS video standards are set by the Electronic Industries Association.) The RS343 display standard is essentially a monochrome video signal combined with a composite sync signal (horizontal and vertical scan control) with timings that produce a non-interlace, or progressive, scan. This means that the horizontal and vertical scan rates are timed to cause the display electron guns to produce even progressively horizontal scans. This is by comparison to the interlaced video standards. The importance of the RS343 standard is its provision for a timing and voltage level signal that allows the display and generation of high resolution video.

While the Macintosh II version of the RS343 signal varies somewhat, it essentially follows the guidelines necessary for connection to RS343 display devices. The major differences are:

- the separate TTL level composite sync signal found on pin 3
- the separate video lines used to produce RGB color
- a vertical scan rate of 66.67Hz to reduce screen flicker
- a voltage white level of 1 volt for its red and blue signals and 1.3 volts on its green signal

RS343 provides for a 60hz signal but has been changed to 66.67Hz on the Macintosh II Video Card, to prevent the screen flicker visible at 60Hz.

3) The pixel clock frequency is 30.24 MHz. The only other specification that would appear to relate to this issue is phosphor persistence, which is rated by phosphor vendors as medium-short.

4) Due to contractual agreements, this information is not available.

5) Luminance level is 20 footlamberts with the brightness control in the center detent position. With the brightness control in the full-open position, the luminance level is 25 footlamberts.

6) The Macintosh firmware (the Macintosh Toolbox) has QuickDraw routines to handle the creation of the desired objects. Typically, the video cards are not "commanded" to display objects. Video cards will display the information that is placed in the video buffer. QuickDraw is used to place the information in that video buffer. The only possible exception is when a graphics coprocessor card is placed in the Macintosh. However, the Macintosh interface to these specialized video cards is still through QuickDraw. Although, now QuickDraw is being executed by the graphics coprocessor, not by the system's primary CPU.

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Apple IIe: Stopping the blink of the cursor

This article discusses how to stop the blinking cursor on the Apple IIe.
This article has been archived and is no longer updated by Apple.
There are two ways to stop the blinking cursor on the IIe.

1. If you have an 80-column card, do a PR#3 and then an ESC 4. This uses the 80-column firmware but in 40-column mode.

2. If there is no 80-column card installed on your system, do a POKE 49162,0:PRINT CHR$(4)"PR#3". This has the same effect.

In the 80-column firmware, the cursor is an inverse blank. This effectively removes the flashing cursor.
Published Date: Feb 18, 2012

PostScript: How To Create PostScript Text Files

I want to output PostScript files from my Macintosh to a VAX. I plan to use a conversion utility to interpret the PostScript file and translate it into SIXEL graphic data for output to a laser printer.

How do I get the Macintosh to create this PostScript text file?

This article has been archived and is no longer updated by Apple.
Here's how to print a PostScript image "to disk" rather than to a printer:

First, use the Chooser to select a LaserWriter. Then, choose Print... from the File menu.

Under System 7, click "PostScript File" instead of "Printer" in the Destination option of the Print dialog, and click Okay.

Under System 6, click Okay, then immediately hold down the Command key and press either:

* The "K" key (to dump a PostScript image with LaserPrep), or

* The "F" key (to dump PostScript without LaserPrep).

Hold the keys down until you see the Print Status dialog box.

A text file will appear containing the PostScript text.

Published Date: Feb 18, 2012

Apple IIGS: How To Print from BASIC or Pascal over AppleTalk

Using an Apple IIGS, how do I print from Applesoft BASIC or Pascal to an AppleTalk ImageWriter or to a LaserWriter running ImageWriter emulation?

This article has been archived and is no longer updated by Apple.
It is similar to printing through a serial connection, except that Chooser II has to be on the boot disk the first time and a printer must be chosen.

1) Boot from disk with chooser II

2) Run Chooser and select Printer.

3) To print from BASIC, use PR#1 on a new 1MB Apple IIGS; use PR#7 on an older Apple IIGS.

Published Date: Feb 18, 2012

ProDOS: Converting Files from 5.25-inch Disks to Macintosh

I'm trying to transfer files from 5.25-inch ProDOS disk to Macintosh SE 3.5-inch disks using a 5.25 drive with a Macintosh SE Bus Controller Card.

This works fine with IBM disks, but AFE won't read ProDOS disks (or even give me the option select to select a ProDOS driver).
This article has been archived and is no longer updated by Apple.
The Apple PC 5.25 Drive for the Macintosh SE can see MS-DOS files, but not ProDOS files.

Use the utilities on the Apple II to do a file copy from a 5.25-inch to 3.5-inch, then open the file in the Macintosh SE and convert it using Apple File Exchange with your Apple SuperDrive (formerly Apple FDHD).
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LaserWriter IISC: Can‘t Have Two Computers Using Its SCSI Ports

Can I connect two Macintosh computers to the two SCSI ports on a LaserWriter IISC? Can I hook up any SCSI device to these ports (scanners, hard drives)?

This article has been archived and is no longer updated by Apple.
Having two Macintosh computers connected via the SCSI port to one LaserWriter isn't an Apple-supported configuration. If something gets damaged as a result of a connection like this, it will void your warranty.

You can connect other peripheral SCSI devices, such as hard drives or scanners, but not other computers.

Published Date: Feb 18, 2012

AppleShare: Dealing With "No Valid Startup Volume Found" Message

I've been using a Macintosh AppleShare File Server for about six months with no problems. Suddenly, when it was restarted after a power failure, I got a message that I needed to run AppleShare Admin again.

I ran the Admin program, then after restart, I got the error message "No valid startup volume found".

This article has been archived and is no longer updated by Apple.
Here are the steps you should take:

1) Do a file-by-file backup of your volume. Keep in mind that a file-by-file backup will not retain access privileges, so you'll have to recreate them if you need to restore from this backup.

2) Since the volume is not available to the application, you will have to re-prepare the volume for use with AppleShare and recreate the parallel directory structure (PDS). You will lose access privileges doing this -- but you'll lose no data. This should get you back to a functioning server.

3) If the problem persists, reinitialize your volume, prepare for use with AppleShare, and restore all your files from the backup you did before starting.

Published Date: Feb 18, 2012

Macintosh: Troubleshooting "Non-Apple Disk Error"

My Macintosh keeps giving me a "Non-Apple Disk Error" when I insert a floppy disk, and asks me if I want to reformat the disk.

This article has been archived and is no longer updated by Apple.
If it occurs only with one or two diskettes, there may be a problem with those disks and not the drive. If this problem only occurs when using disks of a certain brand or density, consider trying another brand of diskette. If a given diskette produces the same error in another computer, then almost certainly the problem is with that disk.

However, if this happens no matter what disk you insert - even master application disks - the problem most likely is with the disk drive itself.

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Macintosh: Using IBM SCSI Drives

Is there a difference between Apple SCSI and everyone else's SCSI? What are the differences between IBM SCSI and Apple SCSI, particularly with hard drives? Can I use an IBM 20MB SCSI hard drive in a Macintosh? Any warranty problems (would it void your warranty or AppleCare)?

This article has been archived and is no longer updated by Apple.

If you swap just the hard drive mechanism, it should work. The controller will be different--the ROM in particular.

There really isn't an Apple SCSI vs. Standard SCSI. ANSI determines the SCSI standards, and Apple provides input to the standard. The problem is that SCSI is an evolving standard.

ANSI is the American National Standards Institution

This would not be an approved repair for an Apple Warranty or AppleCare.

Published Date: Feb 18, 2012

Macintosh: Changing Font Size in Menu Bars

This article has been archived and is no longer updated by Apple.

At the end of this article is the MPW Assembly source code for an Init file that, when placed in the System Folder, modifies three low memory globals at startup.

The Init changes the System font from Chicago 12 to Chicago 14, the largest font that doesn't cause distortion in dialogs and buttons. (You must, of course, have Chicago 14 installed in the System file.) Menu bars and window title bars will change in size based on the values you supply.

Warnings: This method of changing the size of the system font is not recommended, but is the easiest way to change the font size of the menu bar with existing System files. The Init has been tested with few applications, but may not work with all programs. It makes direct calls to hardware locations and may not work with future versions of hardware or of system software.

For more information, see:
- the Font Manager Chapter of Inside Macintosh, volume III
- the Menu Manger Chapter of Inside Macintosh, volume V

Here is the source code for the ChangeFont Init:

```
; Source for an Init that will change the system default menu bar size to other
; than chicago 12 point. By Jim Mensch
; Note: you can use ResEdit to change the Font/size without recompiling
;
Main Proc Export
OPT NONE ; Turns off code optimization
lea $BA6,A0 ; Load address of system font number
lea $BA8,A1 ; Load address of system font size
Move.W #$00,(A0) ; Store my font number into sysFont ( 0 is
; Chicago )
Move.W #$0E,(A1) ; Store the new Font Size
lea $BAA,A0 ; Load in the MBar Heigth address
Move.W #$16,(A0) ; Adjust it for 14 pt NOTE: you must do this in
; order to make the finder adjust at boot time
; This value must be computed for each
; font/size pair you want to use. To easily
; get this number use macsbug to change the
; Font/Size and do an Exit to Shell. This will
; cause the address BAA to be recomputed
; {Because it calls InitMenus}
rts
end
;
; MPW assemble and link instructions for this init
; asm ChangeFont.a
; link -o ChangeFont -rt INIT=0 -c ZSYS -t INIT ChangeFont.a.o
; DumpCode -rt INIT=0 ChangeFont
;
; File: ChangeFont, Resource 0, Type: INIT, Name: Main
; 000000: 41F8 0BA6 'A...' LEA $0BA6,A0
; 000004: 43F8 0BA8 'C...' LEA $0BA8,A1
; 000008: 30BC 0000 '0...' MOVE.W #$0000,(A0)
; 00000C: 32BC 000E '2...' MOVE.W #$000E,(A1)
; 000010: 41F8 0BAA 'A...' LEA $0BAA,A0
; 000014: 30BC 0016 '0...' MOVE.W #$0016,(A0)
; 000018: 4E75 'Nu' RTS
;
```

Published Date: Feb 18, 2012

Ultrasonic Humidifiers and Computer Equipment

The inside of my computer is coated by something other than dust. The only source of contamination seems to be my cool mist humidifier.

Is there any information regarding ultrasonic humidifiers and their effects when placed close to computers? Specifically, can the mineral mist be attracted to the electrical components inside a Macintosh or LaserWriter?
This article has been archived and is no longer updated by Apple.
Dust in general is not good for computers: it causes heat build up and gets between the various connectors, particularly the SIMMs which can cause errors or other operational problems.

An ultrasonic humidifier should not cause any more damage than common dust.
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Apple IIGS: Use Third-Party Memory Cards with HyperCard

We have a classroom with 15 original Apple IIGS computers and one instructor station. Each workstation has an Apple 1MB board installed. We will be teaching using HyperCard for the Apple IIGS. What is the cheapest way to add more memory to our computers?

This article has been archived and is no longer updated by Apple.
Apple does not offer a memory expansion card for the original Apple IIGS that goes beyond 1.25MB of memory. There are several third-party memory cards for the Apple IIGS that can handle HyperCard's memory requirements.

Check the Redgate Macintosh Registry on AppleLink for further information.

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Apple Monitors: Nearby Interference can Cause Horizontal Lines

A horizontal scan line keeps cycling down my computer screen. How can I correct this?
This article has been archived and is no longer updated by Apple.
The line you are seeing is caused by a 60 Hz noise somewhere near the monitor. When the horizontal scan rate of the monitor is 60.15Hz, it is very susceptible to external noise in the 60Hz area. The only solution is to find the source of the noise and move it or move the monitor. The noise could be from a lamp or anything else plugged into a nearby outlet.

You may also want to try turning the monitor in different directions to see if things improve at all. The interference may change due to magnetic fields.

Published Date: Feb 18, 2012

Macintosh: Daisy-Chaining 3.5-Inch Floppy Drives Not Supported

Can I daisy-chain two or more 3.5-inch drives on a Macintosh?

This article has been archived and is no longer updated by Apple.
You can't daisy-chain floppy drives with any Macintosh computer.
Daisy-chaining works only on the Apple II product line.

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Display Card 8■24 GC: Problems with PC 5.25 Drive Card (11/94)

I've been having problems with my Macintosh Display Card 8*24 GC with a PC 5.25 Drive card. I removed the Apple PC 5.25-inch Drive card from my Macintosh, re-accelerated the Macintosh Display Card 8*24 GC, and everything works fine.

This article has been archived and is no longer updated by Apple.
The Apple PC 5.25 Drive sometimes clashes with the NuBus clock. This happens because the card has a 13-inch trace and six leads on that line. Symptoms of this issue include other installed NuBus cards not functioning properly. For example, NuBus video cards do not appear installed, and networking cards do not provide access to a network.

Putting the card in slot $E helps minimize the problem. If you experience a problem, try running with the PC 5.25 Drive card in slot $E.

Article Change History:
10 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
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Apple IIe Card: Macintosh Compatibility

Which Macintosh computers are compatible with the Apple IIe Card?
This article has been archived and is no longer updated by Apple.
The Apple IIe card is only compatible with computers that have the LC style processor direct slot (PDS) and do not require 32-bit addressing. This includes:

- Macintosh Color Classic
- Performa 400 series
- Macintosh LC/Performa 500 series computers (except the Macintosh LC 580 and Performa 580)
- Macintosh LC series computers except: Macintosh 630 family, Power Macintosh 5200 and 5300 LC, Macintosh Performa 5200, 5300, 6200, 6300 series.

The Macintosh LC 580, Macintosh 630 Family, Power Macintosh 5200 and 5300 LC, Performa 5200/5300 and 6200/6300 series only operate in 32-bit addressing mode. Since the Apple IIe card is not compatible with 32-bit addressing, the Apple IIe Card is not compatible with these computers.

The Power Macintosh 5400 and 6400 series and the Macintosh Performa 6400 series and 6360/160 computers do not have LC-PDS slots. These computers have PCI expansion slots. Thus, they do not support the Apple IIe card.

Compatibility Table	
Computer	Apple IIe Card Compatible
Macintosh LC	Y
Macintosh Color Classic	Y
Macintosh LC II	Y
Macintosh LC III	Y
Macintosh LC 475	Y
Macintosh LC 520	Y
Macintosh LC 550	Y
Macintosh LC 575 *	Y
Macintosh LC 580	N
Macintosh LC 630	N
Macintosh Quadra 605	Y
Macintosh 630 Family	N
Macintosh Performa 4xx	Y
Macintosh Performa 55x	Y
Macintosh Performa 56x	Y
Macintosh Performa 57x *	Y
Macintosh Performa 63x	N
Power Macintosh 5200/75 LC	N
Power Macintosh 5300/100 LC	N
Power Macintosh 5400 Series	N
Power Macintosh 6400/200	N
Performa 6200 Series	N
Performa 6300 Series	N
Performa 6400 Series	N
Performa 6360/160	N

* The 68040 versions of the Macintosh LC 5xx and Performa 5xx series do not recognize the Apple IIe Card when there is a communication card occupying the Communication Slot.

Note: The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

TA46886_Apple_IIe_Card_Macintosh_Compatibility_(TIL08458).pdf

This article was published in the Information Alley on 15 November 1996.
Published Date: Feb 18, 2012

Apple IIGS: Where To Find Hard Disk Backup Utilities

Is there a backup utility in ProDOS or GS/OS?

This article has been archived and is no longer updated by Apple.
There's no backup utility built in to the operating system of the Apple IIGS. Third parties have written backup utilities for the Apple IIGS that are currently available and are quite effective.

If you have access to AppleLink, search in the Redgate directory.

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TA46888_Apple_II_FORTRAN_Double_precision_arithmetic_(TIL00846).pdf

Apple II FORTRAN: Double precision arithmetic

Usually, in FORTRAN IV & 77, the way to handle numbers up to 10 to 11 significant figures is to declare double precision variables or implicit double precision variables.
This article has been archived and is no longer updated by Apple.
The new strategy here is to use the Pascal SANE unit linked to a FORTRAN program following the instructions in the Apple FORTRAN Language Reference Manual Chapters 15 and 16. Double precision poses more difficult problems.

With the advent of the SANE package there are solutions possible. In short, such Pascal units are not available and must be written and created by the FORTRAN user.
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TA46889_Macintosh_Classic_Power_Size_Requirements_for_Internal_Drives_(TIL08465).pdf

Macintosh Classic: Power & Size Requirements for Internal Drives

What are the limitations regarding the Macintosh Classic and third-party internal hard drives, specifically power consumption and physical size?

This article has been archived and is no longer updated by Apple.
An internal hard drive for the Macintosh Classic drive must not be more than "1/3 height" (meaning one inch) in height. There simply isn't any room for larger hard drive.

The exact power figure for the Macintosh Classic's drive connector is 10 watts, but power consumption isn't an issue for most 1/3 height drives.

Published Date: Feb 18, 2012

Apple IIe: Control-Reset Function Can‘t Be Turned Off

How can I disable the Control-Reset function on an Apple IIe?

This article has been archived and is no longer updated by Apple.
The Control-Reset is a hardware function that can't be overridden by software.

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TA46891_Macintosh_Display_Card_GC_How_DRAM_Improves_Performance_(TIL08467).pdf

Macintosh Display Card 824 GC: How DRAM Improves Performance

What does the DRAM expansion kit do when it is added to the Macintosh Display Card 8*24 GC? How does more DRAM affect the image capture capabilities of the display card?

This article has been archived and is no longer updated by Apple.
When you add the DRAM expansion kit it allows the Macintosh Display Card 8*24 GC to boost the performance of applications that use off-screen bitmaps and other graphics techniques. This way, when you scroll a picture through a window, more of it has already been drawn and the image scrolls without jittering.

Published Date: Feb 18, 2012

EPS Files: Programs that can View Them

Do you know of any programs (shareware or otherwise) that can view and manipulate EPS files?

This article has been archived and is no longer updated by Apple.
There are many programs that can open and modify EPS files. These include: Freehand by Aldus, Illustrator by Adobe, PageMaker by Aldus, and Ready-Set-Go by Letraset. There are others.

Use the two product libraries on AppleLink (Menu and the Redgate Buyer's Guide) to compare features of the different programs, if you have access to that.

Published Date: Feb 18, 2012

EtherTalk Driver: Where To Find One

I have an Asante EtherTalk card and need an Apple EtherTalk driver version 2.02. Where can I find one?

This article has been archived and is no longer updated by Apple.
You need a EtherTalk 2.0 disk and the Network Products Installer disk 6.0.5 or 6.0.7. When you run the installer on the NPI disk and it asks for the EtherTalk driver disk, 2.02 is installed.

The difference between EtherTalk 2.0 and 2.02 is the .enet driver that is installed into the System file, not the actual driver.

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FORTRAN II: Reading Keyboard variables

To READ more than one variable at a time from the keyboard, use the proper format described on page 83 and 84 of the FORTRAN manual.
This article has been archived and is no longer updated by Apple.
The form of the iolist mentioned there is any list of variables, array elements, character substrings, character arrays. Members of the iolist must be separated by commas, for example, READ A,B,C.
Published Date: Feb 18, 2012

Macintosh: HP DeskWriter Issues

There are issues using the HP DeskWriter with certain Macintosh models.The printer seems to go from serial mode to AppleTalk mode by itself and displays the message "Error Trap 10864".

HP says the issue is with Apple's Logic Boards. What is Apple's position on using the HP DeskWriter?

This article has been archived and is no longer updated by Apple.
Apple and Hewlett-Packard have discovered a component failure on the logic boards of some Macintosh models that causes the HP DeskWriter printer to go into AppleTalk mode and flash an error on its control panel.

Apple has taken steps to assure that all service parts are free of this failure. If you experience this problem, please contact your dealer for resolution.
Published Date: Feb 18, 2012

HyperCard 2.0: Unlocking Stacks Made in HyperCard 1.0

When trying to open a HyperCard 1.0 stack with HyperCard 2.0, the file locks up. The problem is that the "Protect Stack" option is dimmed and can't be unlocked. Is this always the case with HyperCard 2.0 and old stacks or is there a way to unlock these stacks and edit them?

This article has been archived and is no longer updated by Apple.
When you launch a HyperCard 1.0 stack under HyperCard 2.0 the stack is protected and cannot be modified. If you want to convert the stack, use the "convert" command in HyperCard 2.0.

Published Date: Feb 18, 2012

Macintosh II Family: Troubleshooting Power-On Problems (4/94)

When I shutdown my Macintosh II, I can't power it on again without unplugging the computer for about two minutes. What could be causing this?

This article has been archived and is no longer updated by Apple.
Have an Apple Authorized Dealer try the following:

Check the battery levels on the logic board. The voltage should be 3.6VDC. If it is 3.3VDC or less, replace the battery. If the battery is fine, try another power supply (even if you've replaced it already) and a new keyboard.

Article Change History:
5 April 1994 - Reviewed for technical accuracy, revised formatting.

Support Information Services
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Laser Prep: Must Be In Sync With LaserWriter Driver

I'm having problems with printing from my Macintosh since upgrading my Laser Prep file. I keep getting "Print Monitor unexpectedly quit" errors and lock-ups.

This article has been archived and is no longer updated by Apple.
There is no upgrade of just the Laser Prep file. LaserWriter and Laser Prep must be upgraded together. For example, you need to use LaserWriter 5.2 with Laser Prep 5.2 or LaserWriter 6.0 with Laser Prep 6.0.

Note however that Laser Prep is no longer required as of version 7.0 of the LaserWriter driver. The System 7 version of the driver sends the prep information along with each print job. Any Laser Prep files that for some reason remain in the System Folder will not cause any damage, but also will not help printing. They can be trashed.

Published Date: Feb 18, 2012

LaserWriter to PC: LaserWriter Switch Settings

I have a serial cable that was specifically designed to connect my Apple LaserWriter IINTX to a DOS machine.

What are the switch settings on the LaserWriter that will allow my Compaq computer to transmit data serially and have PostScript access?

I want to transmit at least 9600 Baud, but not greater than 19,200 Baud.

This article has been archived and is no longer updated by Apple.
Here are your LaserWriter switch settings:

For 9600, XON/XOFF handshake and PostScript:

Off On Off Off Off Off

For 9600, XON/XOff handshake and text (screen dumps, text only Applications):

Off On On Off Off Off

Published Date: Feb 18, 2012

Macintosh II Family: Improving Sound Sampling Rate

I want to get better sound quality out of my Macintosh IIsi. I've read that the Macintosh IIsi can sample sound at 11kHz and 22kHz. How can I change my sampling rate to 22kHz? Can I also upgrade my sound chip from 8-bit to 12-bit?

This article has been archived and is no longer updated by Apple.
The sampling rate for the Macintosh IIsi is set at 11khz by the software that comes with the Macintosh IIsi. Third parties will be delivering software that will take advantage of the greater sound capabilities of the Macintosh IIsi in the near future.

There's no way for you to upgrade the Macintosh IIsi sound chip as it is soldered to the logic board. Any upgrade has to be done by Apple at the factory.

In terms of hearing a better output, you hook up your Macintosh to a stereo system, or simply attach some speakers to the Sound Port on the back of the Macintosh. Bose is one company that makes speakers that are popular with the Macintosh.

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TA46902_Macintosh_IIsi_Math_CoProcessor_Not_On_Logic_Board_(TIL08480).pdf

Macintosh IIsi: Math Co-Processor Not On Logic Board

Are the math co-processors on the Macintosh IIsi adapter boards socketed (and removable) or are they hard-wired?

This article has been archived and is no longer updated by Apple.

The co-processors are soldered onto the Macintosh IIsi adapter boards (this is true of both the Macintosh IIsi 030 Direct Slot Adapter Card and the Macintosh IIsi NuBus Adapter Card).

The co-processors are not soldered onto the IIsi logic board itself.

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Macintosh II Family: Troubleshooting Mysterious Restarts

My Macintosh II restarts when I do a shutdown from the Finder.

This article has been archived and is no longer updated by Apple.
Here are things that can cause this problem:

- Power-on switch locked down

- A damaged keyboard

- INITs, particularly keyboard macros

Published Date: Feb 18, 2012

Macintosh Guided Tours: Don‘t Use with Two-Page Monitor

My Macintosh IIx Tour Disk bombs at various points and never runs successfully. I'm using a two-page monitor display.

This article has been archived and is no longer updated by Apple.
The tour disks were not written to take advantage of monitors larger than the 13 inches. Try running the tour on a standard black and white or color monitor. This will take care of your problem.

Published Date: Feb 18, 2012

ImageWriter II: Problems with Jamming and Ribbon Tension

My ImageWriter II printer randomly jams if its printer ribbon is snug. The same ribbon works fine on other printers.

Are there any specifications regarding the tightness of the ribbon for the ImageWriter II printer?

This article has been archived and is no longer updated by Apple.
There are no specifications for the tightness of winding the ribbon.

If the same ribbon works in another printer it should work in your printer. Try replacing the ImageWriter II's ribbon wire. A new spring may be all that's needed to get your ribbon advancing.

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TA46906_Macintosh_IIci_Use_and_Support_in_Japan_(TIL08484).pdf

Macintosh IIci: Use and Support in Japan

Will a USA Macintosh IIci work in Japan? If something goes wrong, who should I call?

This article has been archived and is no longer updated by Apple.
The Macintosh IIci will work in Japan. It has a power rating of 100v-240v AC, with a frequency of 50-60 hertz. The Macintosh IIci is auto-configuring, just plug it in and it works.

If you have any problems, contact:

Apple Computer
25 Mori Bldg. 23/24F
1-4-30 Roppongi, Minato-ku
Tokyo 106, Japan

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TA46907_Macintosh_LC_IIe_Mode_to_HP_Deskwriter_(TIL08486).pdf

Macintosh LC: IIe Mode to HP Deskwriter

Can my Macintosh LC, in Apple IIe mode, print to an HP DeskWriter?

This article has been archived and is no longer updated by Apple.
As long as the DeskWriter's driver works with the Macintosh LC and System 6.0.7, you can print. A Macintosh LC with an Apple IIe emulation card can access LocalTalk and serially connected printers.

Published Date: Feb 18, 2012

TA46908_Apple_IIe_Card_Doesnt_Support_IIGS_Software_(TIL08487).pdf

Apple IIe Card Doesn‘t Support IIGS Software

Does the Apple IIe card for the Macintosh LC support Apple IIGS software?

This article has been archived and is no longer updated by Apple.
The Apple IIe card does not support Apple IIGS software.

Published Date: Feb 18, 2012

TA46909_Macintosh_Plus_Keyboard_Cable_Shouldnt_Exceed_Feet_(TIL08488).pdf

Macintosh Plus: Keyboard Cable Shouldn‘t Exceed 10 Feet

How long can a Macintosh Plus' keyboard cable be extended without losing the signal?

This article has been archived and is no longer updated by Apple.
Keyboard extension cables should not exceed 10 feet in length.

Published Date: Feb 18, 2012

Third-Party Hard Drives: Changing Their Desktop Icons

Even though I've completely reformatted my third-party hard drive, the drive keeps appearing on my desktop with the third-party's icon. How can I do a low-level drive format to remove their icon?

This article has been archived and is no longer updated by Apple.
Apple does not supply a low-level formatting utility with any of our system software. This level of formatting is handled by the third-party vendor before they ship their drives. Apple's drive utility software only initializes the drive.

You might want to try Silverlining from La Cie. Silverlining can give you back the generic icon. There are also some icon altering utilities.

The Tech Info Library article titled "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.

Published Date: Feb 18, 2012

Macintosh 128K: 400K Floppy Drives Not Available from Apple

Does Apple still sell an external floppy drive for the Macintosh 128K? If not, where do I find one?

This article has been archived and is no longer updated by Apple.
Apple no longer sells an external 400K drive for the Macintosh 128K. Try contacting Sun Remarketing, since they resell many of Apple's older products.

For more information, search on "Sun Remarketing".

Published Date: Feb 18, 2012

Macintosh 512K: How To Connect To LocalTalk Network

Is it possible to connect a Macintosh 512K to an AppleTalk network?

This article has been archived and is no longer updated by Apple.
You do not have to make any modifications to the Macintosh 512K to connect it to a LocalTalk network. All you need is a LocalTalk Locking Connecter Kit-DB9, part number M2065.

Published Date: Feb 18, 2012

Macintosh: Holding Down Keys While Loading INITs

When I hold down the "esc" key while booting up my Macintosh some of my INITs don't load.

What exactly does the "esc" key do?

This article has been archived and is no longer updated by Apple.
The keyboard itself does not have any special function with INITs. What's happening is that some of your INITs have a bypass function mapped to the esc key.

Published Date: Feb 18, 2012

Macintosh IIfx: Problems Getting Internal Hard Drives to Start

Article Change History

11/04/92 - UPDATED
* To explain that there is a small power trace difference on the Macintosh II and Macintosh IIfx logic boards.

My internal hard drive stopped working after upgrading my Macintosh II to a Macintosh IIfx. The drive just clicks and won't spin up.

I've been told by the drive's manufacturer that this is because the power trace on the Macintosh IIfx motherboard is half the size of the same power trace on the Macintosh II. Is this correct?

This article has been archived and is no longer updated by Apple.
There is small difference in the power trace from the Macintosh II to the Macintosh IIfx. However, the difference would be within the limits of the power draw specifications that we require drive manufactures to meet.

If your particular drive is drawing more than Apple allows, you'll need to swap drives for one that does not require so much power to spin up.

Published Date: Feb 18, 2012

AppleShare: Macintosh LC vs. Macintosh SE/30 Performance

What are the advantages and disadvantages of using the Macintosh LC as an AppleShare file server compared to a Macintosh SE/30 or Macintosh II (besides the available expansion slots in the Macintosh II)? Does AppleShare take advantage of the MC68881/MC68882 math co-processors? Are there any compatibility problems between AppleShare 2.01 and the Macintosh LC?

This article has been archived and is no longer updated by Apple.
Compared to a Macintosh SE/30, the Macintosh LC is slower. The Macintosh LC uses a 68020 chip where the Macintosh SE/30 uses the 68030 processor.

There are no known compatibility issues between AppleShare 2.0.1 and the Macintosh LC. If speed is not an issue and price is, the Macintosh LC would be a good choice for a file server.

AppleShare really doesn't utilize a math co-processor so this is not really a factor.

Published Date: Feb 18, 2012

TA46916_Macintosh_LC_Memory_Speeds_of_SIMMs_and_OnBoard_DRAM_(TIL08496).pdf

Macintosh LC: Memory Speeds of SIMMs and On-Board DRAM

What is the recommended speed for additional 1MB memory SIMMs for a Macintosh LC? What is the speed of the memory on the system board?

This article has been archived and is no longer updated by Apple.
The recommended speed for the Macintosh LC SIMMs is 100ns or faster. The speed of the DRAM soldered onto the logic board is 80ns.

Published Date: Feb 18, 2012

Macintosh Classic: MIDI Interface Box Plugs Into Modem Port

Article Change History

03/30/93 - REVISED
* To clarify information.

Does the sound-out port on a Macintosh Classic work with MIDI? If not, how do I run MIDI on a Macintosh?

This article has been archived and is no longer updated by Apple.
You need an Apple MIDI Interface box, part number A9M0103. This box plugs into the modem port of the Macintosh. There are also third-party products for running MIDI on a Macintosh; they offer varied sets of features.

Published Date: Feb 18, 2012

Apple Monitors: Can‘t Be Swapped Between Macintosh & Apple IIGS

I know that a Macintosh LC can't use an Apple IIGS color monitor, but can an Apple IIGS use a low-cost Macintosh color monitor?

This article has been archived and is no longer updated by Apple.
The Macintosh 12-inch RGB Display can only be used on a Macintosh computer with a built-in video port or an appropriate video card, such as the Macintosh Display Card 4*8 or the Macintosh Display Card 8*24.

Published Date: Feb 18, 2012

MUFFIN: DOS Utility Program Description

This article describes the DOS utility program MUFFIN.
This article has been archived and is no longer updated by Apple.
Description:
MUFFIN converts 13 sector diskettes to 16 sector (DOS 3.2 to DOS 3.3). Some diskettes which have protection schemes cannot be converted by MUFFIN. These diskettes must continue to be used with the Basics diskette, or by BRUNing Boot13.

MUFFIN is included on the DOS 3.3 System Master diskette and there is only one version.

Note: To convert from DOS 3.3 to ProDOS, then use the ProDOS System Utilities to copy the files from a DOS 3.3 disk to a ProDOS-formatted disk. The conversion is automatic during the copy.
Published Date: Feb 18, 2012

Macintosh: Troubleshooting Multiple Hard Drive Icons

When I start up my Macintosh, multiple icons of my hard drive mysteriously appear on my Desktop.
This article has been archived and is no longer updated by Apple.
There are several causes of this symptom, including SCSI ID conflicts, damaged system software, or corrupted PRAM.

The most common cause is having a SCSI device with a SCSI ID 7, which is the same address reserved for the computer. To resolve this, check to see if either the internal or external hard drive or other SCSI device has a SCSI ID 7. If so, change it to a unique number; all devices on the SCSI bus must have different SCSI ID numbers.

Next, try starting up from the system software CD or Disk Tools floppy disk. If you do not see multiple hard disk icons when starting up this way, then you likely need to reinstall your system software. If you still see multiple hard disk icons, use HD SC Setup or Drive Setup to update the hard disk driver.

If the multiple SCSI disk icons persist, then reset the PRAM. To do this, hold down the Command-Option-P-R keys simultaneously as you start up the computer. Do not release the keys until you hear two startup chimes.
Published Date: Feb 18, 2012

Apple IIe: Profile Drives can be Swapped with Apple SCSI Drives

On an Apple IIe, is it okay to replace a Profile with an Apple SCSI hard drive with an Apple high-speed SCSI card without compatibility problems?

This article has been archived and is no longer updated by Apple.
Yes, that should work fine. ProDOS is ProDOS.

Published Date: Feb 18, 2012

Macintosh Portable: How To Get Ethernet Capability (8/94)

Are there any Ethernet cards that work with a Macintosh Portable?

This article has been archived and is no longer updated by Apple.
We do not know of any Ethernet cards for the Macintosh Portable, but there are other Ethernet solutions available. At least two companies produce Ethernet adapters that connect to Macintosh SCSI ports. These adapters tend to have slower maximum throughput than NuBus or PDS Ethernet cards, but they are still a vast improvement over LocalTalk speeds. Contact the following companies for detailed information on their products:

* EtherSC from Kinetics, a division of Excelan, Inc.

* Ether+ from Compatible Systems Corp.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
08 Aug 1994 - Removed Dove Computer from list of vendors.

Support Information Services

Published Date: Feb 18, 2012

AppleShare: Problems Using Chooser with Apple II Computers

I recently set up an AppleShare Network with Apple II and Macintosh computers. All seemed well except for a small item on the Apple II side.

Using Aristotle, everything works fine except the Chooser.

When trying to use Chooser, the window opens to show the application just short of finishing. The Chooser then stops with a message that it cannot load or open:

/System/System.Setup/ATInit

How can I repair the above file without reinstalling the entire AppleShare network?

This article has been archived and is no longer updated by Apple.
If you're using Apple IIGS computers, you don't need to use the Chooser anymore. Select printers with the Control Panel.

If you're using Apple IIe computers, be sure you use the AppleShare Apple II Setup Disk 2.1.1 or greater when setting up your server.

Published Date: Feb 18, 2012

Macintosh: Using IBM PC SIMMs

Can I use IBM SIMMs in a Macintosh II? The SIMMs are the same size as Macintosh SIMMs and are rated at 80ns. The only real difference is that they have a parity bit. Will this extra bit cause a problem or can the Macintosh just ignore the parity bit?

This article has been archived and is no longer updated by Apple.

The memory should be compatible, the parity chip will be ignored by the Macintosh. We would not expect any damage if the SIMM is incompatible, the machine just won't work.

Published Date: Feb 18, 2012

TA46926_Macintosh_SE_Chip_is_Soldered_to_the_Logic_Board_(TIL08509).pdf

Macintosh SE/30: 68030 Chip is Soldered to the Logic Board

How is the Macintosh SE/30's processor chip attached to the logic board?

This article has been archived and is no longer updated by Apple.
Early in the Macintosh SE/30's development, the chip was socketed. As a cost reduction enhancement, the 68030 processor chip is soldered onto the Macintosh SE/30's logic board.

Published Date: Feb 18, 2012

TA46927_Macintosh_System_and_Alarm_Clock_(TIL00851).pdf

Macintosh: System 4.0 and Alarm Clock

This article has been archived and is no longer updated by Apple.

With System 4.0, every time you restart the system, you must reset the alarm.

Published Date: Feb 18, 2012

TA46928_Macintosh_IIsi_NuBus_Card_Shouldnt_Touch_Internal_Hard_Drive_(TIL08510).pdf

Macintosh IIsi: NuBus Card Shouldn‘t Touch Internal Hard Drive

In a Macintosh IIsi, the adapter board makes a 90 degree turn so a NuBus card can be parallel to the motherboard. Is a NuBus card supposed to actually touch the internal hard drive?

This article has been archived and is no longer updated by Apple.
The NuBus card rests just above the hard drive. There is about 1/2-inch clearance between the drive and the NuBus card depending on the card type. The card doesn't rest on the hard drive.

Published Date: Feb 18, 2012

Macintosh: Spooling to Speed Typesetting

I have a typesetter connected to my Macintosh II. When I print, the computer is tied up for a long time. If I had an AppleShare server and used the print spooler feature, would this free up my system sooner?

This article has been archived and is no longer updated by Apple.
Because the typesetter can be put on a LocalTalk network, it can be captured by the AppleShare print spooler. This would certainly free up your system sooner. Alternatively, you should find out if your typesetter supports background printing directly from your Macintosh. This would also free up your system sooner. If the option for turning on background printing is available in the Chooser, try turning it on.

Published Date: Feb 18, 2012

TA46930_Hard_Disk_SC_How_to_Connect_to_an_Apple_IIeIIGS_(TIL08512).pdf

Hard Disk 20SC: How to Connect to an Apple IIe/IIGS

What do I need to connect an Apple HD20 SC to an Apple IIe or Apple IIGS?

This article has been archived and is no longer updated by Apple.
Apple sells a High-Speed SCSI Card for the Apple II to use a SCSI hard drive. The part number for the card is A0220LL/A. You also need SCSI cables.

Published Date: Feb 18, 2012

Macintosh Classic and IIsi: Checking for Memory Upgrade

How do I check a memory upgrade for a Macintosh Classic and Macintosh IIsi?

This article has been archived and is no longer updated by Apple.
There are no memory diagnostics available for those systems.

The only way to verify the amount of memory in these systems to click the Apple menu and select About The Finder, when you are at the finder level. If the upgrade is installed correctly and is good, the numbers will appear in Total Memory.

Published Date: Feb 18, 2012

Apple IIe to Epson LX-86: Cable Recommendations

We are having trouble connecting an Apple IIe configured with an Apple Parallel card to an Epson LX-86. Both the printer and Apple IIe test work okay separately. The only questionable item seems to be the cable.

This article has been archived and is no longer updated by Apple.
We couldn't find anything on connecting the Epson LX-86 printer to an Apple IIe. However, there is an article in the Tech Info Library that may help: "Epson FX 80: Connecting it to an Apple II Plus or Apple IIe ".

We recommend that you contact Epson to verify that the connection is the same. If the pinouts on the LX are different from the FX, get the pinouts of the LX from Epson. You can find the pinouts of the Parallel card in the "Peripheral Interface Guide" on page 2.4 with the DIP switch settings for the Parallel card on that page.

To find the article, search the Tech Info Library under "Epson" and "FX 80".

Published Date: Feb 18, 2012

TA46933_HyperCard_K_Limit_for_Scripts_and_Fields_(TIL08516).pdf

HyperCard 2.0: 32K Limit for Scripts and Fields

I know there was a 32K limit to the number of characters in a HyperCard script. Is this still true in HyperCard 2.0?

This article has been archived and is no longer updated by Apple.

Yes, the limit remains 32K for the number of characters you can have in a HyperCard script or field. This limit does not apply to variables.

Published Date: Feb 18, 2012

Macintosh Finder: Reasons for Slow Operation

This article has been archived and is no longer updated by Apple.

TOPIC ----------

What could make the Finder run slowly?

DISCUSSION ----------

A slow Finder is not caused by the size of the disk, but by the size of the Desktop file. The size of the Desktop file is not directly related to the number of files it contains, but to the number of icons and file comments.

The number of icons is related to the number of applications. Slow operation becomes a problem for hard disks with more than 50 applications. The number of comments is a problem only for those who add a comment to every file and folder. This is typical with public domain software. To remove all comments, you can rebuild the Desktop file in one of two ways.

- You can delete the Desktop file in ResEdit.

- You can hold down the Command and Option keys while you start up your computer.

These operations remove the comments and speed things up appreciably.

Published Date: Feb 18, 2012

Macintosh: Opening Documents and Differing Application Versions

When I double-click on a document, the Macintosh Finder also launches the application that created the document. However, when there is more than one copy of an application on a volume, the copy of the application that gets launched isn't predictable.

1) How does the Finder determine which application to launch?

2) Can I control which version of the application will be launched?

This problem is especially annoying when still working with HyperCard 1.2.x and 2.x.

This article has been archived and is no longer updated by Apple.
1) There are two different answers to this question, one for System 6 and one for System 7:

In System 6, a volume that has two or more copies of an application, or where there are different versions that use the same creator, the last copy installed on that volume is the one that launches.

In System 7, the application with the most recent creation date is the one that launches.

2) There is no way to change this. However, a sure way to eliminate the version confusion is to change the Creator of the applications you don't want to launch.

For example, use ResEdit to change the creator of HyperCard from "WILD" to "FRED". When you double-click on a stack, the system will go looking for the application whose creator matches the creator of the document (stack). If you have another copy of HyperCard (say, 2.0v2) on a mounted device, it will be launched. Saving files from the changed application is unaffected (they still have "WILD" for their creator).

So, your solution is to change the creator of all non-current HyperCard applications to something other than "WILD" (try "DLIW"; it's probably not used by other applications). All stacks launched will come up in HyperCard 2.0v2. Opening the stacks in other versions is done by launching the application and using "Open╔" in the file menu.

Published Date: Feb 18, 2012

MacWrite II: Early Versions Don‘t Fully Support TrueType

Using MacWrite II version 1.1, when I create text in TrueType Times above the 127 point size, and have the strike-through feature, the strike-through line appears above the text. When I try to edit the text, the "I" beam doesn't go where I click.

Is this a problem with MacWrite or TrueType?
This article has been archived and is no longer updated by Apple.
MacWrite II 1.1v1 and earlier versions do not support TrueType when using font sizes larger than 127 point. Claris is working on a new version of MacWrite II that will solve this problem.
Published Date: Feb 18, 2012

A/UX 2.0.1: Solution for "syschk" Error Problem

I'm having a problem with the System Checker disk of the A/UX v2.0.1 release: the shell script syschk is not executable (protection 444 instead of 555). I changed the protection to the right value and then I got an error message when running the syschk command: "Message too long".

This article has been archived and is no longer updated by Apple.

```
We have verified the problem.  The 'syschk' Korn Shell script file in the
A/UX 2.0.1 distributed System Checker disk seems to be missing some "echo"
statements before the displayed error message.  The echo statements should
be inserted before the displayed message, around lines 145 and 168 in the
syschk script file.  They should be changed to the following:

          if [-n $noopt"]; then
          echo "\\n             <================ inserted
      Error - insufficient room in / partition.
      At least $need more free blocks needed to install optional files.
      Optional file (manuals, games) disregarded in calculations.
          "                    <================ inserted

          if [-n $noopt"]; then
          echo "\\n             <================ inserted
      Error - insufficient room in /usr partition.
      At least $usrneed more free blocks needed to install optional files.
      Optional file (manuals, games) disregarded in calculations.
          "                    <================ inserted

Note: If the script was written in Korn Shell not Bourne Shell, use 'ksh
syschk' instead of 'sh syschk'.  The 'syschk' file is unnecessarily changed
to executable if it is invoked by 'ksh syschk'.  The "Message too long"
message results from the Bourne Shell.
```

Published Date: Feb 18, 2012

A/UX Sockets and FASYNC Signal

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

I'm trying to port a BSD sockets-based application to A/UX. I'm running on Sun and DEC Ultrix platforms.

My problem is I can't find support for sending asynchronous signals via sockets. Other platforms have a flag in the file control header /usr/include/fcntl.h called "fasync". The flag is needed to send asynchronous signals.

Does Apple support this feature?

This article has been archived and is no longer updated by Apple.
We looked into the /usr/include/fcntl.h file on an Apple Campus UNIX machine (apple.com, a BSD 4.3 UNIX system), and the FASYNC flag is defined in the /usr/include/fcntl.h header file. In A/UX, instead of defining in the /usr/include/fcntl.h file, it is defined in the "/usr/include/sys/file.h" file with this statement:

#define FASYNC 0x00000040 /* signal pgrp when data ready */

Therefore, we think it is supported in A/UX because the BSD socket library is supported under A/UX.

Published Date: Feb 18, 2012

MacTCP: Broadcast Address Ranges, Problems & Workarounds

I am running into an issue with the TCP connection tool. I'm trying to run MacX and Telnet/TCP. Both are failing. I can run Telnet that uses its own TCP/IP, so I know that the physical connection is there.

When I try to run MacX, I get the message, "none of the connection tools are working at the moment...". And with Telnet/TCP 2.3, I get the familiar flash of the screen and then it quits to the Finder. I've worked with MacX and MacTCP on several occasions, so I don't think it's an installation Error.

I have gotten this same error message when a gateway has been down. That leads me to believe that there is a configuration issue on the host/network side.

Host:
Sun 128.0.0.2
subnet FFFF0000
broadcast 128.0.0.0 had them change to 128.255.255.255

1) What are the valid IP address ranges for class A, B, and C IP nodes? Is this documented in any specific RFC?

2) Is it true that if a host TCP/IP implementation uses zeros for broadcast address bits, that:

* Can't interoperate with it and A/UX or MacTCP?

* The host must have a new implementation of TCP/IP added to make it interoperable?

3) Do you know of any "standard" written down in an RFC?
This article has been archived and is no longer updated by Apple.
MacTCP does NOT support 0's as broadcast address bits, so your systems need to be reconfigured to support 1's as broadcast bits. Changing your Sun and MacTCP values will fix the issue:

Hosts:
Sun: 128.1.1.1
subnet: 255.255.0.0
broadcast: 128.0.255.255

Macintosh: 128.1.1.4
subnet: 255.255.0.0
broadcast: 128.0.255.255

MacTCP-based application error messages often leave out the most common error possibility -- an invalid address. MacX, for example, gave the error message to check installation of the MacTCPTool, when in fact it was the IP addressing scheme itself that was wrong.

MacTCP DOES accept "INVALID" TCP/IP addresses without complaining, and will then fail to attempt any connections with those addresses. You can configure "invalid" addresses, like 128.0.0.0 or 0.0.0.255, without any complaints, but there will not be any support for application services on top of them.

1) Here are the valid IP address ranges for:

Valid Class A IP addresses: 1.0.0.1 through 127.255.255.254. In a class A IP address, the first octet contains the network number. The second, third, or fourth octet must contain a non-zero value. Examples of valid addresses include: 17.5.0.0; 45.0.0.200; and 50.0.120.0.

Valid Class B IP addresses: 128.0.0.1 through 191.255.255.254. In a class B IP address, the first and second octets contain the network number. The third or fourth octet must contain a non-zero value. Examples of valid addresses include: 135.0.17.0; 160.0.0.210; and180.22.120.0.

Valid Class C IP addresses: 192.0.0.1 through 223.255.255.254. In a class C IP address, the first, second, and third octets contain the network number. The fourth octet must contain a non-zero value. Examples of valid addresses include: 221.5.0.1; 198.0.0.200; and 202.0.120.23.

Also internet addresses in the range 128.0.rrr.rrr, and 192.0.0.rrr are
reserved. MacTCP doesn't allow use of this address, and issues a "bac
ip or LAP configuration error".

2) MacTCP, under the Macintosh OS, uses 255 for broadcasts, not zero. In other words, a broadcast on a class network would use an address like this: 17.255.255.255, not 17.0.0.0. A/UX, or MacTCP running under A/UX, can be configured to use zero for broadcasts (for example 17.0.0.0).

You cannot use MacTCP, under the Macintosh OS, on a network that does not use 255 for broadcasts.

3) RFC 1166 is the document with the information you need.
Published Date: Feb 18, 2012

A/UX 2.0.1: Problem Recognizing 800K Drives with Macintosh IIfx

I am using A/UX on a Macintosh II that has been upgraded to a Macintosh IIfx.

A/UX seems to think my 800K floppy drive is a 400K drive and that it is bad. In fact, we can format floppies to 800K and otherwise use the drive. But the A/UX Finder and DOSMounter certainly believe that the drive is 400K and will only format it or use it as 400K.

An Apple Macintosh IIfx with an FDHD and an 800K drive, booting under A/UX release 2.0.1 version SVR2 has the following symptoms:

* The 800K floppy drive is only recognized as a 400K drive.

* Part of the message from the A/UX kernel during boot reads "FD:floppy driver ver. 1.9; iop swim, D1 is 400K (1 head), D0 is an FDHD drive." "FD: D1 400K drive unusable."

* If the unit is not booting under A/UX, the 800K drive operates as expected.

This article has been archived and is no longer updated by Apple.

It is a floppy driver incompatibility in A/UX 2.0.1 with a Macintosh IIfx. On a Macintosh IIfx, the driver incorrectly identifies the drive as a 400K drive, and claims it's unusable because 400K drive hardware isn't supported on the Macintosh II series systems. If you insert a blank floppy, however, you can format it, but only as 400K single-sided floppy. The drive is still usable as a 400K drive.

You can still read and write existing 800K floppies, even though the drive says you can't.

This problem has been fixed with A/UX 3.0 and above.

Published Date: Feb 18, 2012

TA46942_AUX_How_To_Do_Screen_Shots__(TIL08528).pdf

A/UX: How To Do Screen Shots (8/94)

How do I do screen shots under A/UX?

This article has been archived and is no longer updated by Apple.
With A/UX 3.0 or later, press CMD-Shift 3. This will take a snapshot of the screen.

Article Change History:
29 Aug 1994 - Updated for A/UX 3.0

Support Information Services

Published Date: Feb 18, 2012

Color Picker: Relationship of Values to RGB Gun Voltages

Is there any relationship between the 65535 values (for example, of the Color Picker) and the analog voltages of RGB guns in color monitors?

This article has been archived and is no longer updated by Apple.

There isn't a direct relationship between the two, but there is a proportional relationship.

A zero setting of the Color Picker's red field causes minimum volts at the red gun of the monitor. The 65535 setting of the Color Picker's red field gives maximum voltage at the red gun. The same is true of the blue gun and the green gun.

No two monitors have the same voltage settings, because of differences in the gamma tables, the analog adjustments of the monitor, and the monitor's voltage specifications.

(The following STARTDISCUSSguns in the color monitor.)

To get the exact voltage relationship to Color Picker values requires selecting the uncorrected gamma table in the Monitors CDEV.

1) Hold down the option key while selecting the option button in the CDEV.

2) Once the uncorrected gamma table is in use, set each of the red, blue, and green values of the Color Picker to 0 (zero). Measure the voltage of the guns. This will be the minimum voltage of the guns.

3) Set each value of the red, blue, and green Color Picker fields to 65535. Now measure the voltage of the guns. This will be the maximum voltage produced by the guns.

As long as the uncorrected gamma table is in use, there should be a linear relationship between the Color Picker values and the gun voltages.

However, the analog adjustments of the monitor can affect the linear nature of this relationship. Also, if a corrected gamma table is selected, the linear relationship is further perturbed.

Published Date: Feb 18, 2012

TA46944_AppleLine_Capabilities_(TIL00853).pdf

AppleLine: Capabilities

This article has been archived and is no longer updated by Apple.
AppleLine will replace a 3278 Model 2 on a IBM 3274 or 3276 control unit (cluster controller). It supports a 25 line display and 80 or 132 columns. It must be used in conjunction with a 3270 type emulator on the Apple product; 4 user passwords and one supervisors password are supported. It can also be attached to the Apple product via asynchronous modems.
Published Date: Feb 18, 2012

TA46945_Apple_IIe_No_Support_for_the_StyleWriter_(TIL08530).pdf

Apple IIe: No Support for the StyleWriter

Can I use the StyleWriter with an Apple IIe?

This article has been archived and is no longer updated by Apple.

No, the Apple IIe does not support the StyleWriter.

Published Date: Feb 18, 2012

System 7: Sharing CD-ROM Discs & Other Removable Media

When I try to disconnect (unmount) a CD-ROM on my Macintosh running System 7, I get a message stating that the CD-ROM volume cannot be unmounted because it is being shared. However, File Sharing status shows no volumes or folders being shared. Depending on the type of Macintosh being used, restarting the Macintosh may or may not correct the problem.
This article has been archived and is no longer updated by Apple.
When File Sharing starts up, it takes a snapshot of the volumes available on the current desktop. All volumes (excluding floppies, which cannot be shared) are "implicitly" shared. This occurs even if no one is connected to your system, and you have not explicitly shared any folders or volumes via the Sharing menu.

If a CD-ROM isn't inserted into the drive when you start File Sharing, you can't share the CD-ROM. Also, if you turn on File Sharing while a CD-ROM is inserted into the drive, you can't eject the CD-ROM.

When you start File Sharing, you make all volumes on your system available to the owner from anywhere on the network. Therefore, your CD-ROM (or audio CD), and any other removable media, such as removable hard drives and optical drives, are now being shared for the owner and can't be removed.

If you make a volume available to your system after File Sharing has been started, that volume won't be available to the owner unless you explicitly share it via the Sharing menu. Therefore, once you start File Sharing either by starting up with it active, or through the Sharing Setup Control Panel, you can mount and unmount new volumes as often as you like until they are explicitly shared.

To unmount (remove from your desktop) a volume that has been implicitly shared:

1. Turn File Sharing off.
2. Remove the volume.
3. Turn File Sharing back on without restarting your system.

Note: as of System 7.5, Update 1.0, file sharing was modified to allow removeable media to be shared/unshared without having to turn file sharing on and off

On most Macintosh systems, restarting works because the CD-ROM is ejected at restart, File Sharing is reset, and then you re-insert the CD-ROM. However, on other systems such as a Power Macintosh with the CD 300i Plus drive, restarting will not work because it does not eject CD's on restart.

You can share an Audio CD-ROM, but you can't use the CD Remote DA to control someone else's CD-ROM. This means an Audio CD-ROM has the same problems that removable media does with System 7 File Sharing. If you turn File Sharing on with an audio CD-ROM in the computer, it's shared. You must turn off File Sharing to eject the volume. To avoid this problem insert the audio CD-ROM after File Sharing is already turned on.
Published Date: Feb 18, 2012

System 7: Virtual Memory and Largest Unused Block

My Macintosh has 4MB of RAM, and I set it to 24-bit addressing mode with 13MB of virtual memory. I see the following distribution of RAM according to "About This Macintosh."

Built-in memory 4,096K
Total memory 13,312K
System Software 1,577K
Largest Unused Block 7,319K

System Software added to Largest Unused Block equals 8,896K. This leaves 4,416K missing.

When I set the Macintosh to 32-bit mode, I see the following distribution of RAM:

Built-in memory 4,096K
Total memory 13,312K
System Software 1,577K
Largest Unused Block 11,712K

System Software plus Largest Unused Block equals 13,289K.

Why does there appear to be more memory available with 32-bit addressing turned on?
This article has been archived and is no longer updated by Apple.
Virtual memory in 24-bit addressing mode fragments the memory available when you set the memory size to greater than 8MB. Virtual memory in 32-bit addressing doesn't face this limitation. The following examples show how this happens.

24-Bit Addressing
Setting your Macintosh to 24-bit addressing mode makes 16MB available to the computer. Here's what the memory map looks like in 24-bit mode:

MB	Function
1-8	Physical & Virtual RAM
9	ROM
10-15	NuBus slots
16	I/O

When you set virtual memory greater than 8MB, the location of ROM in the memory map fragments the free memory. So the largest block available will always be 8MB minus memory any running applications use, until you exceed 8MB. After exceeding 8MB, the largest available blocks are the memory mapped into NuBus slot space.

The memory available to applications (application heap) includes the first 8 megabytes, plus any memory the NuBus cards (10-15) aren't using that has been mapped as memory by virtual memory. This is where the RAM available under virtual memory becomes fragmented. In the example of RAM distribution for 24-bit addressing, 11,735K of RAM is really available for the application heap even though the Largest Unused Block shows as only 7,319K.

32-Bit Addressing
Setting the Macintosh to 32-bit mode prevents fragmenting available memory because it maps ROM and I/O to the top of the memory map. This makes 1GB available to the computer. Here's what the memory map looks like in 32-bit mode:

Memory	Function
1GB	Physical & Virtual RAM
256MB	ROM
2.5GB	NuBus slots
256MB	I/O

Virtual memory in 32-bit mode only accesses the 1GB RAM memory space. This leaves the memory space between system heap and ROM available. The application heap is a contiguous block in the top thousand megabytes of the memory map. In the example for 32-bit addressing, the Largest Unused Block (11,712K) is equal to the total RAM available for the application heap.
Published Date: Feb 18, 2012

HyperCard 1.2.5: System 6.0.7 Workaround for Sound Issues

I've read somewhere that HyperCard 1.2.5 doesn't run properly under System 6.0.7, especially when sound is involved.

System 6.0.7 is required for a Macintosh LC, so how can one resolve this issue without going to HyperCard 2.0 for the time being?
This article has been archived and is no longer updated by Apple.
HyperCard 1.2.5 is not fully compatible with System 6.0.7. If you never "play" a sound, it works fine, but because Apple can't guarantee that sounds will never be played, the software is listed as "incompatible".

Claris suggests turning the volume all the way down; in effect, turning the sound off.

Here's another workaround for turning the sound down: add the following two handlers to Home's stack script:

```
on play
--stops most play commands getting through to HyperCard, it's unlikely
--that a stack would have used "send play ... to HyperCard".
end play

on beep -- flash the menu bar instead of beeping
type space with commandkey
type space with commandkey
end beep
```

Published Date: Feb 18, 2012

Backlit Macintosh Portable: System 6 Requires Control Panel 1.3

The backlit Macintosh Portable requires a new Control Panel document to adjust the intensity of the back lighting. Where can I get the new control Panel?

This article has been archived and is no longer updated by Apple.
Version 1.3 of the Macintosh Portable Control Panel is required for the backlit Macintosh Portable with System 6.0.x. It wasn't included with System 6.0.7. If you're using System 6.0.7 or System 7.0.x, you can use the Brightness control panel to adjust the brightness.

Version 1.3 of the Macintosh Portable control panel shipped only with new Macintosh Portable computers, or with the Macintosh Portable Backlight Screen Upgrade, but is now available on AppleLink. Please see the article "Macintosh Portable: Use Macintosh Portable INIT with Modem", the control panel is attached to that article.

Published Date: Feb 18, 2012

PostScript: Displaying Output on Macintosh Screen

I want to create a PowerPoint presentation using a "screen shot" from a VAX workstation. I have made a PostScript file on the VAX that I downloaded to my Macintosh as a text file. On my Macintosh, the file shows up as a series of PostScript commands, as opposed to an image that the Macintosh can display properly.

Other than Display PostScript, do you know of any way to read in a PostScript file and have it displayed on-screen as it would appear on the printer? Is there a utility that would 'interpret' the PostScript file into a QuickDraw-generated screen display?

This article has been archived and is no longer updated by Apple.
It is possible to display an EPS (Encapsulated PostScript) file with many Macintosh applications, including Adobe Illustrator.

To display full PostScript files under the Macintosh OS, use an application like LaserTalk from Emerald City Software or PostShow from Lincoln & Co.

It's possible that your PostScript files generated on the VAX wouldn't be well-behaved enough to work with PostShow. Extremely complex images can have problems. It also may not be worth it to buy this product for a one-time need. Many users duplicate the displays of non-Macintosh computers by hiring an artist to draw it using a Macintosh graphics program. The decision is usually based on how many times the conversion will be required.

Search on company names for contact information.
Published Date: Feb 18, 2012

TA46951_LaserWriter_II_Intelligent_Controller_Box_(TIL08536).pdf

LaserWriter II: Intelligent Controller Box

Is there an intelligent controller box for a LaserWriter II that allows both AppleTalk and serial communications without resetting the printer?

This article has been archived and is no longer updated by Apple.
BridgePort, from Extended Systems, allows input from RS-232, parallel, and LocalTalk sources. Unfortunately, BridgePort only outputs via parallel or RS-232. This works with a LaserWriter, but does not take advantage of the LocalTalk port. You can use it with non-Apple PostScript printers that don't have a LocalTalk interface.

To locate a vendor's address and phone numbers, use vendor name as a search string.

Published Date: Feb 18, 2012

Macintosh IIfx: Problems Using with UB MaxTalk

I am using Ungermann-Bass Access/One to connect Macintosh computers via the LocalTalk port to the UB MaxTalk card. Everything works fine with all Macintosh models except the Macintosh IIfx. The connection is weak or very slow.

I've installed the Serial Switch CDEV, and that solves the problem. My Macintosh computers are using only AppleShare Workstation software and System Software 6.0.7 to connect to the AppleShare server.

Some questions:

1) Have you heard of problems with the Macintosh IIfx and the UB MaxTalk Card?

2) Can you give me more details on the Serial Switch CDEV?

3) Is this an Apple problem or because the Ungermann-Bass product doesn't follow AppleTalk guidelines?

This article has been archived and is no longer updated by Apple.
1) Ungermann-Bass Tech Support confirms the problem. They also state that using the Serial Switch CDEV solves the problem.

2) The Serial Switch CDEV for the Macintosh IIfx lets you bypass the IOP for the SCC chip, enabling compatibility with serial devices that don't work with the IOP. The I/O Processor (IOP) is an Apple custom IC designed to provide intelligent support for I/O controllers. There are two of these IOP chips in the Macintosh IIfx computer: one for the SWIM and ADB and one for the SCC. The IOP sits between the main processor and the I/O controllers.

The features of the IOP include:

* A built-in microprocessor (6502 running at 2 MHz)

* A 17-bit timer

* Two DMA controllers: one for each serial I/O channel (only used in the Serial IOP)

* Address and data buses for RAM used by the IOP and host processor

* Two digital I/O ports for controlling the ADB (on the SWIM-ADB IOP)

* 32K of external memory of IOP code and data storage

The 68030 communicates with the IOP through a set of control registers in the IOP that are mapped into the main processor's I/O space. The main processor can interrupt the IOP using a bit in one of the control registers, whereas the IOP can interrupt the 68030 by using an interrupt line.

Each IOP has 32K of external RAM that holds the driver and acts as a buffer for the data processed by the processor. The IOP contains a 16-bit auto-incrementing address register and an 8-bit data port that the host processor uses for access to the shared RAM.

3) It's not AppleTalk guidelines that need to be followed, but serial

port guidelines. The reason Apple put an SCC IOP in the Macintosh IIfx was to handle the interaction with both serial ports. The SCC IOP handles LocalTalk to relieve the CPU from interrupts created by the LocalTalk transmission. Unfortunately, many applications accesses the SCC chips directly instead of the serial driver. Therefore, the Serial Switch CDEV was distributed for those applications to bypass the IOP.

We're not sure what the UB software does exactly and could not get the information from UB, but it is likely that they might be accessing SCC directly.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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TA46953_System_MacIrma_Versions_for_System__(TIL08539).pdf

System 7: MacIrma Versions for System 7

Article Change History

09/15/92 - UPDATED
* To provide search information.

What is the correct version of MacIrma software to use with System 7?

This article has been archived and is no longer updated by Apple.
MacIrma Entry Emulation 1.2.6 (cut mode only) and MacIrma Workstation 1.1.2 (cut and DFT) are the System 7-compatible versions of MacIrma software. These versions are currently available and shipping from DCA.

To locate the vendor's address and phone numbers, use "Digital Communications Associates, Inc. (DCA)" as a search string.

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Apple 300/1200 Modem:Using one from within BASIC on an Apple II

This article has been archived and is no longer updated by Apple.
On page 3 of the Modem 300/1200 User's Manual, "Part II: Guide to Apple II", you're told to set SW2-2 on the Super Serial Card (SSC) to the OFF position. This isn't entirely correct.

Setting the switches this way causes the SSC to send data in 7 data bits and 1 stop bit, whereas Apple modems are only equipped to handle data in 8 data bits and 1 stop bit. This situation causes no problems if you're using Access II or AppleTerm. These terminal programs override the switch settings on the SSC, and send data to the modem in 8 data b; and 1 stop bit no matter what the switches on the SSC are set to.

It DOES cause problems, though, if you're using BASIC with your modem, since BASIC has no such override capability. When you use BASIC with your Apple modem, the switches on the Super Serial Card must be:

SW2-1 ON
SW2-2 ON

Published Date: Feb 18, 2012

TA46956_MacX_TCPIP_and_SLIP_Support_(TIL08541).pdf

MacX: TCP/IP and SLIP Support

Is there a product that will allow MacX to support TCP/IP and SLIP?

This article has been archived and is no longer updated by Apple.
MacTCP (version 1.1) is capable of supporting alternate LAPs (Link Access Protocol) including token ring andSLIP (Serial Line Internet Protocol). However, a third party must develop the SLIP driver for Macintosh.

Published Date: Feb 18, 2012

X Window System for A/UX 2.1: Xt and Athena Widget Set

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

X Window System for A/UX 2.1 supports Xlib and the X Toolkit. Is the X Toolkit the same as the Xt toolkit? Does the X Toolkit include the MIT Athena Widget set? What makes up the MIT Athena Widget set, and what is its relationship to X Toolkit?

This article has been archived and is no longer updated by Apple.
The X Toolkit in X Window System 2.1 for A/UX is the standard toolkit from MIT known as the X Toolkit. The Xt is short for X Toolkit.

In order to better understand the components of X, here is a summary of each component:

- Xlib (/usr/lib/libX11.a)
The standard C language library interface to X, which defines an extensive set of functions that provides complete access and control over the display, windows, and input devices such as mouse and keyboard.

- X Toolkit (/usr/lib/libXt.a)
The high-level toolkits designed for use with X to build applications easily.

The X Toolkit consists of two parts:

* The Xt Intrinsics
Xt Intrinsics supports many different widget sets. Yes, X Window System 2.1 for A/UX supports the Athena Widget Set from MIT.

* The X Widgets set
The X Widgets set implements user interface components which include scroll bars, menu, and buttons. The Xt Intrinsics provides a framework that allows the programmer to combine these components to produce a complete user interface. The entire MIT Athena Widgets Set for X Window System 2.1 for A/UX has been built and kept in the /usr/lib/libXaw.a library. You can see all modules (Box, Form, Scrollbar, and so on) of the Widget set from the output of "ar-tv /usr/lib/libXaw.a".

Both the Xt Intrinsics and the X Widgets set are written in C and built on top of Xlib. In short, the X Toolkit includes a layer known as the Xt Intrinsics which defines an architecture for combining user interface components known as widgets to create an application user interface.

Published Date: Feb 18, 2012

TA46958_AUX_Uses_bit_Character_Set_for_Filenames_(TIL08543).pdf

A/UX: Uses 7-bit Character Set for Filenames

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Does A/UX 2.0.1 support an 8-bit or a 7-bit character set? I would have guessed 8-bit, but I've not been able to use special characters in filenames.

This article has been archived and is no longer updated by Apple.
ASCII is a 7-bit character set code with values ranging from 0 to 127. Binary data uses the 8-bit character set, with code values ranging from 0 to 255.

A/UX supports 8-bit binary files, which are usually executable applications and binary data files. A/UX 2.0.1 recognizes only 7-bit filenames, which means you can't create filenames with character values greater than 127. Special characters prohibited by 7-bit ASCII include '/', '|', and so on.

However, Macintosh HFS filenames can use the 8-bit character set.

Published Date: Feb 18, 2012

System 7: Compatibility Checker 1.1

Article Change History

09/02/92 - UPDATED
* To add availability information.

Is there an updated version of the Compatibility Checker to reflect third-party upgrades and broader testing of existing products?

This article has been archived and is no longer updated by Apple.
There is a new version of the Compatibility Checker. Compatibility Checker 1.1 is now available. You can get it from AppleLink, Apple service providers, and Users Groups. The System 7.0 upgrade kits now include it.

Compatibility Checker 1.1 has 165 new records, as well as updated product compatibility information and corrected phone numbers. It also offers compatibility information on third-party drivers.

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System 7: When an Application Doesn‘t Support Stationery

Article Change History

08/18/92 - REVIEWED
* For technical accuracy; edited.

The Stationery feature seems to have a counter-intuitive user interface. If I check both Stationery and Locked in a document's Get Info box, and then open the document, I get an untitled document with the contents of the selected Stationery document. Is this how it should work?

This article has been archived and is no longer updated by Apple.
Yes, this is how it should work. But the application must support Stationery for it to work correctly. If the application doesn't provide support, the Finder substitutes fundamental actions. What you see are the Finder actions taken in the absence of Stationery support from the application.

When you double-click a Stationery Pad in the Finder, you open a copy of the document. If a document is marked as Stationery, the Finder checks the application to see if it supports Stationery. If the application doesn't support Stationery, the Finder creates a new document from the template and prompts you for a name. The Finder then makes a copy of the document and displays the copy dialog.

When you open a Stationery document from an application that doesn't support Stationery, an alert box warns that you are opening the Stationery Pad itself, not a copy of it. Opened from the application, you make changes to the Stationery document as if it were an ordinary document. It is possible in such a case to change a Stationery document even when you didn't intend to alter the template.

If the application supports Stationery, the Finder won't perform auxiliary actions. The application takes responsibility for what happens. The specifications for Stationery support require that the application copy the template's contents into a new document and open the document in an untitled window.

Published Date: Feb 18, 2012

Grimes Security Kit: Macintosh LC Requires Two Loops

Here in Sweden, we sell a Grimes Universal Security Kit. It's supposed to fit all Macintosh computers, but it doesn't cover both the Macintosh LC and its keyboard because the kit includes only one loop. Can we get a second loop separately?

This article has been archived and is no longer updated by Apple.
Grimes is in the process of repackaging their security product. The current kit contains one keyboard loop. To use the product on a Macintosh LC, you need two loops. Contact Grimes for additional loops.

You can find the address and phone number for Grimes, Inc. in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

SchoolBus: File Sharing

This article discusses file sharing using the BOS (Bus Operating System).
This article has been archived and is no longer updated by Apple.
The BOS (Bus Operating System) will not allow different users to access the files of a single user. A student cannot save a file to disk so that another student can access that file. BOS only allows the student to save files and retrieve them under his name and will not allow more than one user to have the same name.
Published Date: Feb 18, 2012

Instant Pascal: Compatibility with Apple IIe Card

Can you use Instant Pascal on the Apple IIe Card and Macintosh LC?

This article has been archived and is no longer updated by Apple.

We tested Instant Pascal and found it was compatible with the Apple IIe Card in the Macintosh LC. Even on the Apple II, Instant Pascal displays poorly on RGB monitors. This condition also appears on the Apple IIe Card/Macintosh LC combination. We suggest black-and-white display for best results.

Published Date: Feb 18, 2012

TA46968_Macintosh_Display_Cards_Identifying_PALCompatible_Versions_(TIL08555).pdf

Macintosh Display Cards: Identifying PAL-Compatible Versions

There are PAL versions for the Macintosh Display Cards. The label appends "/A" for NTSC, and "/B" for the PAL version.

Is there a visible difference on the card to identify the PAL version?

This article has been archived and is no longer updated by Apple.
The Macintosh Display Card 8*24 GC (M0122LL/C) has always had PAL capability. The current ROM version is 1.1.

On the other cards, there is no visible difference (8*24 M0507PA/B; 4*8 M0121PA/B). The only change is a ROM revision.

Apple introduced a new ROM for the Macintosh Display Cards 4*8 and 8*24 in July. The card uses sense-pin combinations to determine NTSC or PAL. We ship all new cards with this ROM (version 1.2, part number 341-0868). You can get upgrades for older cards (fee involved; see the August Service Mailing).

Published Date: Feb 18, 2012

PostScript: Printing From a PC

I need to print, on an Apple LaserWriter, some Macintosh PostScript files that were transferred to an IBM. Do you know of any programs for the PC that can send a PostScript file to a PostScript printer (similar to SendPS on the Macintosh)?
This article has been archived and is no longer updated by Apple.
The nature of connections between PCs and printers eliminates the need for a SendPS type of utility. On a Macintosh, SendPS sets up a PAP session with a LaserWriter and downloads the specified file. With a PC, the LaserWriter connects to one of the serial ports directly, or via a network card that allows mapping of COM or LPT ports to the LaserWriter. In either case, you can COPY a desired file to the port to print it.

Assuming your LaserWriter is connected serially, these are the required steps:

1) Set up the COM port with the MODE command. Typical settings are 8 data bits, 1 stop bit, and no parity.

2) With these settings, and assuming the use of COM1, the command looks like this:

MODE COM1:9600,n,8,1,p

Note: You execute this command only once each time you start the computer. Because the settings remain until the next startup, this command is frequently placed in the AUTOEXEC.BAT file.

3) To print a PostScript file to the LaserWriter, use the COPY command: COPY myfile.ps COM1
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Improving Server Performance

Which makes more sense to increase network performance when getting files from the hard drive of a file server?

- Upgrade the server to a faster CPU? (e.g. from a Macintosh II to IIfx)

- Add SCSI Cards to speed up performance of the disk drive?

This article has been archived and is no longer updated by Apple.
It depends on what part of the system is currently the bottleneck and how much you want to spend. Since the target is the CPU and I/O, we assume you're already using EtherTalk and not LocalTalk. This is the most obvious first step to improve performance.

The next step depends on what the most important application is on the server. Upgrading the CPU from a Macintosh II to a Macintosh IIfx can help a number of server operations a little, but it won't make dramatic differences. If a high percentage of the server's time is spent waiting for the disk drive to complete seek operations (such as with multi-user database applications), then speeding up this waiting won't do much good, and you should consider a higher performance disk drive. This may consist of a disk drive with faster seeks and throughput, but could also be a caching SCSI card such as the DayStar SCSI PowerCard with several megabytes of cache RAM. Each contributes unique advantages.

A combination of all of these upgrades would give the highest performance improvement. Since we haven't performed any benchmarks on this subject, we can't provide you with real numbers for comparison. Our recommendation is to obtain a caching SCSI card for evaluation and decide if it provides the necessary performance improvements.

Published Date: Feb 18, 2012

DAL for VM: IBM‘s TCP/IP 2.0 Issue Fix

We experience a high failure rate in connecting to the DAL VM Server using IBM's TCP/IP 2.0.
This article has been archived and is no longer updated by Apple.
There is a known conflict with IBM's TCP/IP 2.0 for VM, and an APAR is available from IBM that will fix the problem. The APAR number is PN02784, and has been very successful for the beta site.
Published Date: Feb 18, 2012

TA46972_Softcard_III_SOSXFER_file_size_(TIL00856).pdf

Softcard III: SOSXFER file size

This article has been archived and is no longer updated by Apple.
SOSXFER is limited to a file length of 31K. If the file is larger than that, it will truncate it to 31K.
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Cellular Modems from Cellabs

I would like to use my Macintosh Portable with a cellular phone in the car to access the network in the office. Any ideas?

This article has been archived and is no longer updated by Apple.
Cellabs makes two products that allow you to access your office network using a cellular phone. Both products tie into an existing cellular phone between the handset and base unit.

* One product is Cellmodem 2400. If you don't have a modem, Cellmodem 2400 can provide both 2400 baud modem and Datajack capabilities in one unit.

* Another product, Datajack, allows a cellular phone to work with any internal/external modem you already have.

You can find the address and phone number for Cellabs in a separate article in the Tech Info Library.

Published Date: Feb 18, 2012

MacX Server and X Client Source Code

Is there any way to take the source code of an X application and move it to a Macintosh so that the client piece as well as the server piece both will run on the Macintosh?

I know I can run MacX to another X client, but the X client does most of the processing. I want the Macintosh to do all of the processing.

This article has been archived and is no longer updated by Apple.
No, currently there is no way you can take the X client source code compiled under Macintosh OS and run with the MacX server under Macintosh OS. No X11 library and Xt intrinsics are available for Macintosh OS, and there is no way to compile the X client under Macintosh OS. Only the MacX "server" environment is supported under Macintosh OS.

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Tape Backup 40SC: Problems with HD Setup (9/93)

The Tape Backup 40SC Owner's Manual (copyright 1987, 030-5571-A) clearly states on page 29, "Important: Back up and restore to the same device. Don't back up one hard disk and restore to another".

IMPORTANT COMPATIBILITY NOTES:
* The bundled software included with the Tape Backup 40SC is Tape Backup 40SC 2.0.1, which is INCOMPATIBLE with System 7 and later.

* Apple recommends using third-party backup software with the Tape Backup 40SC. Some third-party products that work with the Tape Backup 40SC are Retrospect and Retrospect Remote from Dantz Development Corp., and FastBack Plus from Fifth Generation Systems. Further, using of these applications will not cause the problem detailed below.

This article has been archived and is no longer updated by Apple.
Here is a more in-depth explanation of the manual statement:

When using the Apple Tape Backup 40SC and Tape Backup 40SC 2.0.1 software to do a "Volume" backup, be aware of several factors. The tape backup program puts a "mirror" image of the hard drive onto the tape. In other words, the backup software starts at sector 0 and continues reading to the end of the hard drive. During this process, the backup software writes the data to the tape, sector by sector; any and all bad sectors are written onto the tape as well. This method of backup also copies information such as boot blocks, volume size, and the volume directory.

When the "Restore Volume" command is selected, the software checks the tape for the size of the volume it is going to restore. You are now prompted to select the volume you want to have restored. At this point, the tape backup program verifies that both volumes are exactly the same size. If the volume you are restoring to is smaller than the volume on the tape backup, you get an error message and the backup program won't allow you to continue. If the volume you are restoring to is larger than the tape backup volume, you'll be able to restore, but the volume will appear to be the same size as the original volume. For example, after backing up a HD 20SC using the backup "Volume" option, then restoring it to a HD 40SC, the HD 40SC will appear to have a total of only 20 megabytes of storage.

Different versions of the HD Setup program format Apple hard drives with various amounts of total capacity. HD Setup 1.0 and 1.1 format hard drives with the same number of blocks. HD Setup 1.2 give a different number than 1.0 and 1.1, while HD Setup 1.3 and 1.4 yield yet another different number of blocks. The numbers of blocks also depends on the physical size of the disk (e.g. 5.25" vs 3.5") or manufacturer.

Apple HD Setup 1.4 and later versions format all hard drives of like capacity with the same number of blocks.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
27 September 1993 - Revised, removing obsolete information and adding current compatibility information.
5 November 1987 - Reviewed for technical accuracy.
Published Date: Feb 18, 2012

Macintosh Monitors: MS-DOS PC Compatibility

Can a Macintosh monitor be used on a MS-DOS personal computer? I have the pinouts for the Macintosh monitors. If I made a special cable to meet the pinout specifications, could it be done?
This article has been archived and is no longer updated by Apple.
The video cards for MS-DOS computers have different timing than the Apple monitors. With the exception of Multiple Scan displays, Apple monitors are locked into a specific scan rate, which matches the Apple video cards, and cannot be changed.

However, many modern PC graphics cards can be made to run with Apple compatible timing, usually through software drivers. You would need to check with the card vendor to ensure compatibility with Apple monitors. Also, check the monitor user's manual for additional information like cable pinouts.

Many third-party monitors adapt to a variety of scan rates, just like Apple's Multiple Scan displays. We do not have a reference list of third-party monitors that are Macintosh and MS-DOS compatible. Contact the monitor manufacturer to determine a monitor's ability to work in both environments. Generally, monitors used with MS-DOS computers are known as EGA-, VGA-, CGA- (or similar "xGA-") compatible.
Published Date: Feb 18, 2012

Macintosh Access to Btrieve on Netware

We have a Novell network (currently upgrading to 3.11) using SoftPC, MagicPC and Btrieve. We would like to use applications that are resident on the Novell server. What can we use to access Btrieve files created in DOS format from a Macintosh? Can we run applications? Will there be a performance penalty?

This article has been archived and is no longer updated by Apple.

Accessing Btrieve files from a Macintosh workstation cannot be done directly from the Mac OS because we don't know of an implementation of Btrieve that is Mac OS compatible. There are other B-tree library solutions like c-tree Plus from FairCom, but they are not file-compatible with Btrieve. There are, however, several solutions for executing DOS programs on a Macintosh, and these could be those same Btrieve-based applications used on the PCs.

The classic solutions for executing DOS applications on a Macintosh are SoftPC (from Insignia Solutions, Inc.) or a DOS coprocessor card. The coprocessor cards, such as the Orange Micro Mac286 or Mac386, are PCs on a card that plug into a Macintosh and are accessed via a Macintosh program. These hardware solutions tend to be faster, but are also much more expensive.

A third and more recent solution is Novell's Netware Access Server. This product installs on the Netware server and allows up to 16 simultaneous virtual DOS sessions to be distributed over the network to workstations. The workstations run client software that provides the DOS session in a Macintosh window. Since you already have a Netware server installed, this might be the way to go.

Performance of each solution depends on the application. The Mac386 card is likely to give the best performance, but this isn't very cost effective if a number of users need them. The performance potential of the Novell solution is good, especially if the Btrieve files are located on the Netware server with the DOS session server. The only network traffic is for user input and screen updates. With a database application, this may even outperform the DOS coprocessor cards.

We recommend that you first try the PC applications with SoftPC, since you already have that. If the performance isn't to your liking, you may wish to try another solution. Either way, it sounds like you're already very close.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.

Published Date: Feb 18, 2012

Novell Netware: Doesn‘t Support the Apple LocalTalk PC Card

I need the LAN Driver disk for the generation of the IPX shell for Novell 2.15C with AppleTalk PC Card (M2313/A). When IPX is executed, it locks up an IBM P/2 Model 30/286.
This article has been archived and is no longer updated by Apple.
According to Novell, Netware doesn't support the Apple LocalTalk PC card. The only LocalTalk card Netware supports is the Dayna DL/2000 (a replacement for the older NL1000).

The DL/2000, for Standard PC Bus computers, and the DL/2, for MicroChannel computers, are LocalTalk adapter cards that replace Novell's NL/1000 and NL/2 cards. These cards are Novell certified and are ideal for use with DaynaNet and Netware for Macintosh networks. In addition to supporting AppleTalk Filing Protocols (AFP), the cards, along with the DaynaTalk cards, are LocalTalk cards that also carry Netware NCP and IPX protocols. This feature allows the adapter cards to be used in Netware file servers and PC workstations, providing full access to print spooling and administration over the LocalTalk cable.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

SNAps: 510 Error on SDLC Connection

Article Change History

10/15/92 - REVIEWED
* Reviewed for technical accuracy.

I'm trying to get an SDLC connection from the SNA*ps Gateway across an Apple Serial NuBus card. The 3270 Emulator instantly put up a 510 error on connect, and the Message log from SNA*ps Admin indicated a successful connection to Host 01.

The Mainframe people at the remote host site got nothing at all on their FEP port. Communications attached a breakout box to the line and said that the Clear to Send line was held low (although I don't believe that was coming from the Serial card).

Should I use port 2 (A or B) on the Hydra cable instead of Port 1A? Can you confirm whether this is the problem?

This article has been archived and is no longer updated by Apple.
As you might already know, the Apple Serial NB cards, as shipped, are configured with ports 1A and 1B as high-speed V.35/RS-422 types of ports, and ports 2A and 2B as low-speed RS-232-C ports. If you plan to use port 1A or 1B also as RS-232-C ports, you have to remove two small components, called R-paks, from the card. Refer to the Apple Serial NB Card Installation Guide for the location of these R-paks. If you use the V.35 modems, you can use port 1A. Otherwise you need to select ports 2A or 2B in the SDLC Line Screen. See if the R-paks were removed from your card, and/or configure the ports correctly, and try again.

Published Date: Feb 18, 2012

Ethernet NB Card and DECnet INIT

In testing the Apple Ethernet NB Card with PATHWORKS to load the DECnet INIT, the system crashes with a bus error. Is a fix available?

This article has been archived and is no longer updated by Apple.
We were able to load DECnet for Macintosh 1.0, and use NetCopy to transfer files from a VAX to our Macintosh without any issues. We also used DECnet for Macintosh 1.1 EFT1 and that also worked fine.

We used a Macintosh IIfx, running system software 6.0.5, 4MB RAM, and DECnet for Macintosh 1.0. Our EtherTalk software was installed from the EtherTalk Installer version 2.5.1 that came with the Apple Ethernet NB Card. The other EtherTalk components and versions are EtherTalk Prep 1.0, EtherTalk Phase 2 version 2.2.2, and A/ROSE 1.1.4.

To troubleshoot further, answer these questions:
- Did this happen on every system? Could you try other systems?
- What is the hardware configuration of the Macintosh?
- What are the system software and network software versions?
- Did you try on more than one Apple Ethernet NB card?
- Do you have any INIT or CDEV, which might conflict with Apple software or DECnet software? You should try with a clean system.

Published Date: Feb 18, 2012

TokenTalk NB Card: SNA■ps and AS/400 Compatibility

Is the TokenTalk NB card compatible with AS/400? Will SNA*ps work with it?

This article has been archived and is no longer updated by Apple.
You can configure the AS/400 with an optional token ring communications subsystem. Each token ring adapter card supports up to 254 devices on the ring. A Macintosh with an Apple TokenTalk NB Card can connect to a token ring LAN and to the AS/400.

A Macintosh running TokenTalk can also communicate with an AS/400 using a product that supports distributed sessions over AppleTalk networks. An example of this is NetAxcess from Andrew Systems.

SNA*ps is fully compatible with the Apple TokenTalk NB Card. In fact, a Macintosh with an Apple TokenTalk NB card can run as a SNA*ps APPC Gateway. Legent Corporation (formerly by Spectrum Concepts) and Andrew Systems developed products to take advantage of this SNA*ps APPC Gateway. MacXCOM 6.2 from Spectrum Concepts is fully compatible with SNA*ps APPC API and provides Macintosh users with File Transfer, Remote AS/400 Job entry, and a Report Writer. TokenAxcess from Andrew Systems allows a Macintosh in a token ring to access the AS/400 as a 5250 workstation.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History
23 July 1993 - Company title changed from Spectrum Concepts to Legent Corp.
9 February 1993 - Updated, spectrum Concepts acquired by Legent Corporation.

Published Date: Feb 18, 2012

SNA■ps: Third Party Token Ring Cards and Routers

1) I just want to verify that the SNA*ps client piece will run with third-party token ring cards.

2) When running SNA*ps Gateway (on an Apple token ring card), are there any issues related to accessing mainframes across routers such as Cisco?

This article has been archived and is no longer updated by Apple.

1) SNA*ps Gateway requires Apple Token Ring cards. It doesn't support third-party Token Ring cards. SNA*ps Gateway communicates with distributed Macintosh computers via ADSP, so the distributed Macintosh computers can have third-party Token Ring cards as long as they are TokenTalk compatible.

2) The Cisco router provides both AppleTalk routing and source routing bridging, so it should work with SNA*ps running either as a gateway or distributed SNA*ps 3270 on AppleTalk (LocalTalk, EtherTalk, and TokenTalk) networks.

To locate a vendor's address and phone number, use the vendor's name as a search string in the Tech Info Library.

Published Date: Feb 18, 2012

DAL Server: MVS/VTAM

I'm about to purchase DAL for VTAM. Is the following information correct?

1) TCP/IP is not currently supported.

2) SNA support is available via Netway 2000, Avatar, and MacIrma, but not via SNA*ps.

3) There are no extra pieces needed on the IBM (in addition to DAL). I have experience with a few other products that require LU6.2. DAL for VTAM does not require LU6.2. DAL for VTAM doesn't run under CICS.
This article has been archived and is no longer updated by Apple.
1) DAL 1.3 only supports MacTCP connection to IBM host systems running VM.

2) The following connections are available using the 3270 display station (LU2) communications protocols:

* MacDFT Coax/Twinax, TokenTalk NB Card, or Serial NB Card
* Netway 1000/2000
* MacMainFrame
* MacIrma

Additionally, with SNA*ps, you can define a connection using the APPC display station (LU6.2) communications protocol. Use this connection if your Macintosh connects to an IBM mainframe through a LocalTalk or Ethernet network which has access to a SNA*ps 1.0.1 gateway.

3) Correct. CICS 1.7 or later is optional, and is required only if you are using the CICS Passthru program to access the VTAM server.
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Grappler+ Card: Using w/ProDOS 1.1.1 Software

This article list the revision of the Grappler+ parallel printer interface cards experiencing problems with ProDOS 1.1.1 based software.
This article has been archived and is no longer updated by Apple.
Grappler+ parallel printer interface cards that have PROM rev. 3.1 or earlier do not work well with software that is ProDOS 1.1.1-based.
Published Date: Feb 18, 2012

MacX Over DECnet without PATHWORKS (1/95)

I want to run MacX on a Macintosh IIci (with Ethernet board) to a VAXstation using the DECnet protocol. Is there a software package to get the DECnet services? I know that I can use MacX with PATHWORKS to run DECnet, but I'm not sure if DEC wrote specialized software. In my case, buying PATHWORKS is not an option.

This article has been archived and is no longer updated by Apple.
Since you aren't buying PATHWORKS for Macintosh, you need to get DECnet software called TSSnet from Thursby Software (Alisa also sells this Thursby TSSnet package). The VAXstation should be running DECnet, which comes with VAX/VMS. You miss the following two things by doing it this way:

* PATHWORKS includes DECwindows fonts that you will need when you run DECwindows clients. If you buy MacX from Apple, you won't get these fonts.

* PATHWORKS provides a DECnet object called MSAX$CLIENT, which allows automatic execution of DECwindows clients from the remote Macintosh running MacX server. Without this DECnet object (which does not come with standard DECnet), you must:

* Log on to the VAX using a terminal emulator.

* Define a DECwindows display using the DCL SET DISPLAY command.

* Use RUN/DETACH or SPAWN to execute the DECwindows client.

Article Change History:
30 Jan 1995 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

DAL: Out-of-memory Error Due to Application‘s List of Tables

I'm evaluating DAL on an IBM 3090. I would like to hard code the name of a specific table within a query. Is there a way to avoid maintaining a list of tables in memory that causes an out-of-memory error due to the large list of tables available?

I've been able to use the Excel add-in to do the following tasks:

- Connect to the mainframe
- Access the DAL server
- Open sqlds
- Open the iu database

At this point, the Excel data access add-in appears to be creating a local copy of information about all the tables within the iu database on the mainframe. Why is this necessary? Since the combination of the system, the Finder, and Excel use up about 3.4MB of the 4MB available on our Macintosh IIci 4/80, I get an out-of-memory message box with an OK button.

ClearAccess actually does the same sort of thing. When creating a new query, it fills one component of the query-building window with a scroll box containing all the tables that I have in my view of the iu database. Since I'm running only a desk accessory, there is enough memory for this to happen.

This article has been archived and is no longer updated by Apple. DAL engineering confirmed that this is an application implementation problem, not a DAL problem. DAL doesn't require a list of tables kept locally on the workstation.

We recommend that you discuss this issue with the application vendors.

You can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

Ethernet and Routers versus LocalTalk Bridges

I am looking for some network performance information. Specifically, I need to know what the performance advantages are for putting in Ethernet and routers versus LocalTalk bridges to extend a network beyond the standard LocalTalk limitations. My network is in a publishing environment that deals with many large color graphics and images.

The nodes are all Macintosh II series, mostly high-end systems. They are scattered over a number of different floors in a building. I have 48 nodes now, and expect that number to grow significantly.

This article has been archived and is no longer updated by Apple.
It's difficult to make specific statements about the viability of LocalTalk over Ethernet or Ethernet over LocalTalk without knowing more about the customer's environment. Two important factors to consider are the number of potential users on the network, and the actual type of work they do over the network (that is, file sharing, mail, database, and so on). It's not too difficult to come up with a few graphs to show the difference between LocalTalk and Ethernet transfer rates, but it really doesn't tell the whole story or justify the expense of moving to Ethernet.

LocalTalk uses CSMA/CA and Ethernet uses CSMA/CD. A certain amount of overhead is associated with CSMA/CA which is not needed in a CSMA/CD (Ethernet) environment. The bandwidth of a LocalTalk network can be dominated by a single node doing a single file transfer. Ethernet has plenty of bandwidth available, which makes domination by a single node almost impossible. On the other hand, LocalTalk is basically free and Ethernet requires a significant investment in hardware.

Ethernet is definitely the best choice for anyone contemplating large numbers of users accessing a shared resource and/or anyone who may have significant data transfer requirements. It sounds like you fit this description. Remember that networks usually grow larger and more complex. With more demanding network-based applications predicted for the future, LocalTalk may be a viable topology only for small workgroups that only transfer an occasional file and/or read mail.

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AppleTalk Over X.25

Is it possible to connect two AppleTalk networks using X.25 and two half-routers (like a Shiva TeleBridge)? I understand that this would be much slower than pure LocalTalk, but it might be a nice alternative to a 9600-baud NetModem.
This article has been archived and is no longer updated by Apple.
With the Apple Internet Router 3.0 Wide Area Extension options, you can connect geographically remote workgroups using wide-area telecommunications links. The AppleTalk/X.25 Wide Area Extension (available separately) enables two or more AppleTalk networks to communicate through an X.25 communications link. This wide area extension includes:

* Offers a wide variety of X.25 parameter settings, enabling you to implement the most effective X.25 service.

* Provides a set of standard profiles for the major public packet-switched networks worldwide.

* Allows you to create your own customized profiles for any public or private data network.

Apple's X.25 product, MacX25, can't route AppleTalk over a packet-switched network. You can also explore third-party solutions. Keep in mind that the PDN (Packet Data Network) provider's charges are based on, among other things, the size and number of packets.

One AppleTalk X.25 WAN routing scheme is from Access Privilege, a company in France. Their product named "The Link" is based on the CommToolBox and works with the Apple Internet Router. It provides routing over a variety of links including X.25, and eventually ISDN.

One of the more commonly used AppleTalk tunneling solutions comes from DEC. GatorBox and cisco offer good solutions.

In general, Apple does not control how third parties choose to implement routers and other such products based around AppleTalk. With every solution, you check with the supplier to find whether their product serves your needs. It's a good idea to request testimonies and account referrals.

The rest of this article lists third-party router manufacturers who can route AppleTalk over X.25.

Ungermann-Bass, Inc.
A remote router and software for an AppleTalk hub work with the company's Access/One multiprotocol hub system. The ASM 8320 plugs into the same multiprotocol hub as the company's MaxTalk--a 16-port, twisted-pair AppleTalk hub--to connect physically separated networks over several kinds of media. The router connects sites over standard serial lines, 56-Kbpsleased lines, high-speed T-1 lines, or X.25 packet-switched networks at data transfer rates of up to 2.05MBps.

The two-port version with router software can route packets locally between AppleTalk networks using any combination of LocalTalk, Ethernet or Token Ring. A separate DOS-based management program lets users configure the router to filter and restrict traffic according to protocol type, port number, or source or destination address. Managers also can identify high-priority packets from a particular address or of a certain type that the router will forward immediately.

New MaxTalk software adds AppleTalk Phase 2 support as well as Phase 1-to-Phase 2 routing to the company's combination AppleTalk hub and TCP/IP gateway. Improved security lets network administrators control access to printers and file servers.

cisco Systems, Inc.
Like other cisco routers, the AGS+ routes a number of protocols, including TCP/IP, DECnet, OSI, XNS, Apollo Domain, Novell IPX, Banyan VINES, 3Com 3+Open, Ungermann-Bass Net/One, X.25, DDN X.25, and AppleTalk. Optional concurrent bridging and source-route bridging are available to handle non-routable protocols such as DEC's LAT and IBM's SNA and NetBIOS. It also supports multiple routing protocols (RIP, IGRP, BGP, EGP, RTMP) and the Simple Network Management Protocol (SNMP) for remote network monitoring.

Proteon Corp
Proteon Corp offers the ProNet CNX series of RISC-based communications routers. The ProNet CNX series uses a special multiport shared-memory architecture and AMD's (Advanced Micro Devices) 29000 RISC processor. The CNX 500, the first in the series, runs at 25,000 packets per second. The router is intended for IBM SNA/multiple-protocol environments, particularly for work groups needing to move from 16M-bps token ring backbones to 100M-bps Fiber Distributed Data Interface (FDDI) backbones. The device routes IBM-environment messages into IPX (Novell Netware), OSI, DECnet, AppleTalk, XNS, and TCP/IP protocol stacks; it supports T1/E1 lines, X.25, and frame-relay fast-packet switching for WANs.

NCR Comten
Mainframe vendor NCR Comten sells a line of intelligent communications servers, the Open Network System (ONS), that function as a freestanding OSI-based backbone for large heterogeneous environments. ONS integrates mixed systems to reduce the amount of interconnecting equipment. It allows growth and control of enterprise-wide computing by offering a configurable and scalable system that is built on industry standards: Intel Corp. processors, MicroChannel bus, SCSI connection, and the UNIX System V operating system.

ONS offers concurrent bridging and routing capabilities. It supports AppleTalk, NetBIOS, Netware IPX, OSI, SNA, TCP/IP, and 3Com 3+ XNS protocols. It supports the RS-232 and RS-422 serial, T1, X.25, and SDLC WAN interfaces. It also supports Stp and token ring source-

routing.

BBN Communications
BBN Communications markets the T/200 IPR as part of its internetwork product portfolio. The T/200 is a multi-protocol, multi-media router that supports such protocols as TCP/IP, DECnet, XNS, IPX, AppleTalk, and X.25 in addition to Spanning Tree bridging. The T/20 and T/200 IPRs are a family of products which can be used in the same network or internetwork.

AT&T Computer Systems
AT&T Computer Systems enhanced its Datakit II Virtual Circuit Switch line by adding token ring support, support for AppleTalk networks, and by including access to multiple hosts. Release 2.0 of the product includes the capacity to relay switch, two-way communication between Datakit terminals and X.25 hosts on public and private packet networks. Disk storage was increased to include support of a 40MB SCSI hard disk and tape subsystem. Current users of the product can upgrade. An optional offering is the Maintenance and Redundancy Control Module, an interface which lets you switch the unit from a primary network to a backup.

To locate a vendor's address and phone number, use the vendor name as a search string.

Note: This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.
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Macintosh: Wyse 60 Terminal Emulation

I am currently using Motorola Models 3640 and 3840 mid-range computers. The PCs connected to them use a Wyse 60 terminal emulation package from Motorola. Motorola offers no support for the Macintosh. They also provide file server/printer server access for PCs, but not for Macintosh computers. I understand that Motorola bought Pacer software technologies to provide these services on the Macintosh.

I need to locate a vendor that offers the Wyse 60 tool to use with PacerTerm for Macintosh terminal emulation.

This article has been archived and is no longer updated by Apple.
We are not aware of an available Wyse 60 tool that PacerTerm could support. Here are two alternatives:

- Wyse 60 Support within the PacerLink Software

PacerLink software (which is available now to OIR as a preferred customer) doesn't support Wyse 60 directly. Pacer engineers told us that many customers use the ADDS 60 option in place of Wyse 60, but it doesn't work in all instances. It's definitely worth trying.

- A Different Terminal Emulation Package that Supports Wyse 60

We realize that this may not be an alternative in your environment, but you may want to consider a different terminal emulation package which does support Wyse 60. Investigate Term from Century Software or MacEmulate from TLC.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

TA46992_System_Sending_PostScript_Files_to_a_LaserWriter_(TIL08587).pdf

System 7: Sending PostScript Files to a LaserWriter

Article Change History

08/25/92 - REVIEWED
* For technical accuracy.

Do you know of a PostScript file download utility that works with System 7 and the System 7 LaserWriter drivers? SendPS version 2.1, doesn't work with the new drivers. This is more important than ever now that we can save a PostScript file from the Print dialog box.

This article has been archived and is no longer updated by Apple.
The new LaserWriter Utility program can download PostScript files to a LaserWriter via an option in the Utilities menu.

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AppleTalk Update-Based Routing Protocol (AURP)

What is AURP?

This article has been archived and is no longer updated by Apple.
Apple has been working with the IETF, and router vendors to provide enhancements to the AppleTalk Phase 2 routing protocol. The proposed protocol to provide better routing in large wide-area network environmentsis called "AURP."

AURP stands for Apple Update-based Routing Protocol. AURP is the routing information propagation protocol used for full "plug and play" functionality of AppleTalk. This protocol was designed to provide a continuum of options between the static and dynamic cases. In its most dynamic mode, it is functionally equivalent to the current AppleTalk routing information protocol (RTMP and ZIP).

Information regarding this product can be found in Product Information on the Apple Computer, Inc web page.

http://product.info.apple.com/productinfo/datasheets/as/internetrouter.html

Published Date: Feb 18, 2012

Token Ring: 16MBps Over Synoptics UTP

Article Change History

02/09/93 - UPDATED
* h-athree Systems, Corp. now Asante Technologies, Inc.

Is there a solution for connecting our Macintosh II series to a 16MBps Token Ring to an IBM system? We have a Synoptics Model 3000 concentrator (Lattisnet) on unshielded twisted pair, and we would like to connect our Macintosh computers to this Token Ring to do 3270 terminal emulation and DFT.

This article has been archived and is no longer updated by Apple.
Synoptics confirmed that its Model 300 Concentrator supports 16MBps Token Ring. You will need the UTP (Unshielded Twisted Pair) Token Ring Host Module model 3505.

On the Macintosh, you need one of the following Token Ring adapters:

- Tri-Data LanWay 16/4 Family: This is a 16/4 Token Ring (IEEE 802.5) LAN option that consists of two adapters--one for the Macintosh SE/30, and one for the Macintosh II family. Equipped with the Texas Instruments TMS380C16 Token Ring Processor, the LanWay Token Ring card can operate at both 16MBps and 4MBps in a single adapter. Software switches the card between the two speeds. For high-performance operations, Tri-Data Systems provides 128K of onboard RAM for multiple transmit and receive operations. The board is TokenTalk compatible, so all AppleTalk LAN operations are compatible with the cards.

- Asante Technologies (formerly h-three Systems, Corp.) MacRing NB 16/4: This is an expansion card (with firmware and software) that connects Macintosh II computers to 16MBps or 4MBps Token Ring networks. The card's speed is hardware- or software-selectable. MacRing NB 16/4 supports third-party software for 3270 connectivity to IBM mainframes and 5250 connectivity to IBM midrange systems over Token Ring networks. It supports AppleTalk Phase 2, IEEE 802.2 LLC (Types 1 and 2) and IEEE 802.5 Token Ring protocols. It supports the Apple LLC IPC interface and IBM source routing. The package consists of the MacRing NB 16/4 expansion card, software, and downloadable firmware on a 3.5-inch disk, a user's guide and a one-year warranty.

You will also need a 4/15MB Medial Filter, such as those offered by Black Box. The media filter connects the Macintosh computers to the MAUs or the Synoptics Token Ring Host Module. It converts the Macintosh's DB-9 connector to a twisted-pair RJ-45 connection.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

System 7: Installing LaserWriter Drivers to Work with System 6

Article Change History

08/18/92 - REVIEWED
* For technical accuracy.

How do I install the new LaserWriter 7.0 drivers to work properly with System 6?

This article has been archived and is no longer updated by Apple.
To properly install the new LaserWriter 7.0 drivers under System 6 or later, be sure to use the Installer found on the Printing Tools disk or in the Printing Tools folder (if using a Network Installer found on a local AppleShare File Server). Using the Installer ensures that Print Monitor (which allows printing to a LaserWriter in the background) will work under system software version 6.0.5 or later with MultiFinder.

Note that if you're using the Installer from a floppy disk, you don't need to restart your Macintosh. The Installer can install "live" over system software currently in use.

Follow these steps:

1) Launch the Installer.

2) Click the OK button when the opening display screen appears.

3) You are now at the Easy Install screen. You can click Install to update all of the printer drivers you have currently installed. Otherwise, click on the Customize button to choose individual printer drivers.

4) Once you make your choices and click the Install button, the Installer installs the software and prompts you to quit. A restart is not necessary.

5) Please note that the default (suggested) memory size for Print Monitor is 80K.

Note: We recommend system software version 6.0.5 or later when using version 7.0 drivers. Version 6.0.8 comes with version 7.0 drivers. Anything below version 6.0.5 may not be fully compatible.

Published Date: Feb 18, 2012

Macintosh: Connecting to SAG‘s Natural Connection

I want connect a Macintosh directly to an IBM 3174/3274/3276 TCU using Type A coax cabling.

The communication protocol required is IBM 3270 D.S. with support for CUT and DFT modes. There must be file transfer facilities which interfaces with FT/TSO on the IBM host. The software must also be compatible with SAG's Natural/Connection software.

I'm interested in trying MacDFT with Coax/Twinax card, but I need to know if MacDFT is compatible with SAG's Natural/Connection software.

This article has been archived and is no longer updated by Apple.
Software AG does distribute a "Natural Connection for the Macintosh" (and for OS/2, and for MS-DOS). It requires a minimum of a Macintosh Plus, with 1MB of RAM and 2 floppies. Their Macintosh application consumes from 348K of RAM (B/W) to 640K (color) or more depending upon the font selected. For color or MultiFinder support you must use Macintosh System Software 6.0.4 or later. The host Natural software must be version 1.2 or 2.1.

The hardware supported include the Apple Coax/Twinax card, DCA's MacIrma, and Avatar's MacMainFrame. AppleTalk support is provided via the Netway 1000 or 2000. The host and client software also supports dialup connectivity.

For More information, search under: "Software AG"

Published Date: Feb 18, 2012

AppleWorks: Printing a Text File

The Appleworks option to print to "a text (ASCII) file on disk" does not put carriage returns at the end of each line. It is designed to let the user create a file which can be used with other (ASCII) word processors.
This article has been archived and is no longer updated by Apple.
If you want to use Appleworks for electronic mail or other applications which require a carriage return at the end of each line, here's how:

From the Main Menu:

Choose "5. Other Activities."

Choose "7. Specify Information about your Printer."

Choose "2. Add a Printer."

Choose "4. Apple Silentype."

Name the printer "EMail" (or name of your choice).

Choose "7. Print onto disk or on another Apple."

Press Escape 3 times to return to the Main Menu.

Now, when you wish to print a file to disk with carriage returns at the end of every line, choose the printer "EMail."

Notes:

1) The Apple Silentype was chosen for the "EMail" printer because it accepts no printer control codes. Therefore, the file that is created contains only text with the appropriate carriage returns.

2) This works for IIIEasy Pieces as well.
Published Date: Feb 18, 2012

Personal LaserWriter LS: Use Prep with System 6.0.7 (8/93)

Do the production disks for Personal LaserWriter LS include a Personal LaserWriter LS icon and a LaserWriter Prep icon? I downloaded the driver from AppleLink and the Prep file wasn't included. I couldn't get it to work on System 6.0.7 without Prep.

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter LS Prep file is in fact a "serial" driver needed for systems running System Software 6.0.7. System 7 contains this new serial driver, making the prep unnecessary.

There are two versions of the Personal LaserWriter LS "printer" driver: the one shipping originally with the printer, version 1.0, and the latest version that ships with System 7, version 7.0. The System 7 driver is preferred as it is faster and contains solutions to earlier problems; this version is compatible with systems running System Software 6.0.7 when used with the (version 1.0) Personal LaserWriter LS Prep file.

Article Change History:
12 Aug 1993 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

Farallon Communications: Support and Upgrades

This article contains contact information for Farallon Communications, plus support links and software upgrade links for Farallon products sold through the Apple Store.

Note: Apple support for third party products sold through the Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Contact Information

Farallon Communications, Inc.
3089 Teagarden Street
San Leandro, CA 94577-5720

(510) 346-8000 (Main)

(510) 346-8119 (Fax)

URL: **http://www.farallon.com**

Customer Service and Technical Support:

(510) 346-8001 (Phone)

(510) 346-8117 (Fax)

Company Profile:

Hardware and software, specializing in routers, PCI (Peripheral Component Interconnect) cards, star controllers, repeaters, ethernet cards, as well as screen sharing and document sharing software.

Apple Store Support Links and Upgrade Links

Company:	**Farallon Communications, Inc.**
Company Web Site:	http://www.farallon.com/
Product:	**Farallon EtherMac iPrint Adapter LT**
Product Description:	Ethernet to Localtalk adaptor with RJ-45 10Base-T Ethernet connecter and RJ-11 localtalk connector.
Product Support Site:	http://www.farallon.com/support/
Product Updates Site:	http://www.farallon.com/support/software/

Technical Support

Telephone: 510.346.8001
email: http://www.farallon.com/support/contact_us.html
FAQ: http://www.farallon.com/products/ether/adapters/iprintadapterfaq.html

Software Update Information

If you want to be notified automatically of software updates for this product, use the Version Tracker web site at:
http://www.versiontracker.com

or the AppleUpdate Web site, which also tracks international updates, at:

http://AppleUpdate.com

Published Date: Feb 18, 2012

Casady & Greene: Support and Upgrades

This article contains contact information for Casady & Greene, plus support links and software upgrade links for Casady & Greene products sold through the Apple Store.

Note: Apple support for third party products sold through the Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Contact Information

Casady & Greene, Inc.
22734 Portola Dr.
Salinas, CA 93908-1119

(831) 484-9228 (Main)
(800) 359-4920 (US Sales)
(831) 484-9228 (Technical Support and International Sales)
(831) 484-9218 (Fax)

URL: **http://www.casadyg.com**

email: **tech@casadyg.com** (registered users only)
email: **sales@casadyg.com** (sales and upgrade information)

Company Profile:
Software company specializing in games, fonts, virus, audio, and utility programs, such as Spell Checker and Grammarian.

Apple Store Support Links and Upgrade Links

Company:	**Casady & Greene**
Company Web Site:	http://www.casadyg.com/
Product:	SoundJam MP
Product Description:	MP3 player/encoder
Product Support Site:	http://www.casadyg.com/support/default.html
Product Updates Site:	http://www.casadyg.com/downloads/default.html
Technical Support	
Mailing Lists:	http://www.casadyg.com/support/lists.html
Message Boards:	http://www.casadyg.com/support/msgboard/default.html
FAQ:	http://www.casadyg.com/support/faq/default.html?prodTitle=SoundJam%20MP
Product:	Spell Catcher 8
Product Description:	Writing tools suite
Product Support Site:	http://www.casadyg.com/support/default.html
Product Updates Site:	http://www.casadyg.com/downloads/default.html
Technical Support	
Mailing Lists:	http://www.casadyg.com/support/lists.html
Message Boards:	http://www.casadyg.com/support/msgboard/default.html
FAQ:	http://www.casadyg.com/support/faq/default.html?prodTitle=Spell%20Catcher%208%20for%20Mac

Software Update Information

If you want to be notified automatically of software updates for this product, use the Version Tracker web site at:
http://www.versiontracker.com

Demos and Updates available

Below you will find a complete list of all Casady & Greene's downloadable product demos and updates. You will need Aladdin Systems' Stuffit ExpanderTM to unstuff these compressed files.

Macintosh Freeware

- Baker Street Assistant

Macintosh Demos

- AmoebArena CD Demo
- Conflict Catcher 8 Demo
- Glider Pro CD Demo
- Grammarian 2 Demo
- InfoGenie 2 Demo
- SoundJam MP Demo
- Spell Catcher 8 for Macintosh Demo
- Step On It Demo
- Zone Warrior CD Demo

Note: Third party products may not be compatible with all versions of Macintosh system software. Please search the Knowledge Base for compatibility information.

Compatibility

For Casady & Greene compatibility information see the following article:

Knowledge Base article 30203: "**Mac OS 8: Conflict Compatibility**"

Published Date: Feb 18, 2012

A/UX: Transferring Binary Data to Macintosh OS (8/94)

I want to transfer UNIX files that contain binary data (but are not executable) to the Macintosh environment. Normally, the linefeeds in these files are converted to carriage returns, but I don't want to let that happen. Any hints?

This article has been archived and is no longer updated by Apple.
By default, the A/UX file manager converts a line feed into a carriage return when copying a "TEXT" file from an A/UX partition to a Macintosh HFS partition. If the source file was binary executable or a non-executable data file, A/UX file manager copies it intact (without conversion).

In this case, make sure the source file that's going to be copied from an A/UX partition is a Non-TextEditor document (although you want to make sure it IS binary data). The file type can be shown by "Get Info" or the icon on the desktop.

If you are sure it's binary data but you are shown a "TextEditor" document, you have to use the A/UX "setfile" (set attributes for Macintosh files) utility to change its type and creator.

Here is an example: the /usr/lib/font/ftS is a binary data file, but it shows a "TextEditor" document via "Get Info" or icon. Before copying it (without any conversion) to a Macintosh OS HFS partition, do the following to change its file type to binary and creator to A/UX:

```
# setfile -t"BIN " -c"A/UX" ftS
```

NOTE: The file type and creator must be exactly 4 characters long including SPACES.

Article Change History:
23 Aug 1994 - Reviewed and updated.
23 Aug 1991 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

Chronos: Support and Upgrades

This article contains support links and software upgrade links for Chronos products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.
Note about product name: (source: Chronos' Web site)

We are in the process of changing the names of Consultant and Office Consultant. Consultant will now be **Personal Organizer** and Office Consultant will now be **Group Organizer**. The products are the same, we are just changing the names. Please bear with us through this transition. Our website will slowly change to reflect the new names.

Company:	**Chronos**
Company Web Site:	http://www.chronosnet.com/

Product:	Personal Organizer
Product Description:	Personal organization software
Product Support Site:	http://www.chronosnet.com/support/index.html
Product Updates Site:	http://www.chronosnet.com/download/update/update.html
Technical Support	
Mailing List:	http://www.chronosnet.com/support/mail/mailinglist.html
email:	**support@chronosnet.com**
FAQ:	http://www.chronosnet.com/support/FAQ/faq.html

Software Update Information

If you want to be notified automatically of software updates for this product, use the Version Tracker web site at:
http://www.versiontracker.com

Published Date: Feb 18, 2012

Graphic Simulations: Support and Upgrades

This article contains support links and software upgrade links for Graphic Simulations products sold through the Apple Store.

Note: Apple support for third-party products sold through The Apple Store varies by country.

This article has been archived and is no longer updated by Apple.

Company: **Graphic Simulations**
Company Web Site: http://www.graphsim.com/

Product: Descent III
Product Description: Action Game
Product Support Site: http://www.graphsim.com/support.htm
Technical Support
Telephone: 972.386.7575
email: **support@graphsim.com**
FAQ: http://www.graphsim.com/support_d3_faq.htm

Product: FA 18 Korea
Product Description: Combat Flight Simulator Game
Product Support Site: http://www.graphsim.com/support.htm
Technical Support
Telephone: 972.386.7575
email: **support@graphsim.com**
FAQ: http://www.graphsim.com/~mackorea/faqHornetMac.htm

Software Update Information

If you want to be notified automatically of software updates for this product, use the Version Tracker web site at:
http://www.versiontracker.com

Published Date: Feb 18, 2012

A/UX: FASYNC And Other Asynchronous Flags Supported (8/94)

Is the FASYNC signal supported in A/UX?

This article has been archived and is no longer updated by Apple.
A/UX supports asynchronous signals (such as FASYNC) on sockets. An asynchronous socket implies that requests will not block.

To receive signals on sockets however, you must do a SIOCSPGRP ioctl call, or a F_SETOWN fcntl call on the socket that will be receiving signals.

Article Change History:
29 Aug 1994 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

AppleShare IP 6.x: Some Mail is Misrouted to Postmaster

When an AppleShare IP 6.x mail server obtains email using the POP (Post Office Protocol) account collection method, some email is sent to the Postmaster instead of the intended recipient.
This article has been archived and is no longer updated by Apple.

Symptom

When using the POP mail collection feature of AppleShare IP 6.x mail server to get email from an ISP's (Internet Service Provider) mail server, some email is sent to the Apple Share IP Postmaster's mailbox instead of the intended user's mailbox. This happens most often with mailing lists.

Products affected

- AppleShare IP 6.2 and later

Solution

This misrouting of email is inherent in the way that POP delivery works. To avoid this situation, use SMTP (Simple Mail Transfer Protocol) to have email delivered to your AppleShare mail server. If do not have a dedicated Internet connection, AppleShare IP 6.0 and later provide ETRN (Extended Turn), which can query your ISP's mail server periodically for new email. ETRN is an extension of SMTP, so all of the SMTP commands are maintained when your server connects to your ISP. For details on setting up ETRN with an intermittent connection, see article 30570: **"AppleShare IP Mail Server: Dialup Send & Receive Setup."**

Note: For an explanation of this limitation of the POP collection method, see article 86030: "**POP Mail Collection Relies on Header Information.**"

Published Date: Feb 18, 2012

Apple Monochrome Monitors: Dot Pitch Not Applicable

What are the dot pitch specifications for Apple's monochrome monitors?

This article has been archived and is no longer updated by Apple.
The monochrome monitors do not use dot pitch.

Dot pitch is a specification for the placement of the three (red, green and blue) dots that make up one color pixel. Since the monochrome image is made of only one dot, there is no need for a pitch specification since that one dot will be the entire pixel.

Published Date: Feb 18, 2012

LaserWriter: Clarifying Serial Switch Documentation

The LaserWriter IINTX manual says that revision 3.0 ROMs can switch between ports using software. The manual says I can disable the RS-422 port to connect an IBM to the RS-232-C port, but it's not clear whether the RS-422 and the RS-232-C ports can be switched while using the IBM.

I have been disabling the RS-232-C port by sending the following program to the printer from the IBM:

```
serverdist begin 0 exitserver
statusdict begin
25 0 0 setsccbatch
25 0 0 setsccinteractive
```

This sets the serial port to a null baud rate. The manual states that the RS-422 port can then be reenabled by typing the same program but using 9 instead of 25 and substituting the desired baud rate for the first zero and the Options Number from the chart labeled C-5 for the second number. This is found on page 141 of the LaserWriter IINTX manual.

However, in apparent contradiction to this, the LaserWriter Reference Manual from Addison Wesley states on page 143 that the setsccbatch and the setsccinteractive commands use the port assignment for the first digit, the baud rate for the second digit, and the parity for the third digit (not the options number!)

Is this third digit supposed to be the options number from the LaserWriter IINTX owners manual, or is it the Parity from the listing of parity digits available on page 144 of the LaserWriter Reference Manual? What IS the options number or the parity selection?

I also am having trouble with the baud rate selection for the AppleTalk port. AppleTalk is supposed to be 235K baud, but there is no selection above 56K baud.

This article has been archived and is no longer updated by Apple.
The setsccbatch and setsccinteractive operators set a port's baud rate, but for asynchronous communications only. More specifically, they set the rate used when the hardwareiomode is set to 0. The only time AppleTalk communications are affected by these operators is if the baud rate of the 9 (or 8) pin port is set to 0.

Setting a port's baud rate to 0 has the effect of disabling it entirely, whether asynchronous serial or AppleTalk is in use. To reactivate the port, either set the baud rate to whatever is desired, or for AppleTalk, set the hardwareiomode to 2 and don't bother with the baud rate.

Page 141 of the LaserWriter IINT/IINTX Owner's Guide contains a misleading paragraph that states the RS-422 port is reactivated by setting its baud rate. You could, in fact, enable it this way for asynchronous communications, but AppleTalk can only be activated by setting hardwareiomode to 2.

As for the apparent contradiction between the Addison Wesley manual and the Owner's Guide, they're both right - they just tell a different part of the same story. The options number used with setsccbatch and setsccinteractive is an 8-bit value made up of 4 separate bit-fields; 2 bits for parity, 3 bits for flow control, 2 bits for data bits, and 1 bit for stop bits, in that order. They are arranged with parity being the least significant 2

bits, and stop bits being the most significant bit of the byte. Since each parameter can be computed and set independently, any value from the table on page 153 can be used individually. Though it's more common to add each parameter's value and set them all at once, it is possible to use something like "3" for the options value to set mark parity. This will leave the other parameters as they are. Likewise, data bits could be set to 8 by using "64" as the options value. Parity, flow control and stop bits would remain unchanged.

Currently the easiest way to set LaserWriter parameters is to use a PostScript downloading utility to send PostScript programs written in a word processor. This downloading function is available in recent versions (7.0 or later) of the LaserWriter Font Utility. A more direct method is available with Microsoft Word by using its PostScript style. Text that is of the style PostScript will be passed to the LaserWriter as a PostScript program instead of as text to be printed.

Published Date: Feb 18, 2012

DAL: Support for PICK Database

I'm interested in using DAL with a PICK database, or rather a Unidata PICK clone that runs under UNIX and supports SQL (which the real PICK does not).

Have you heard of any such database? If not, do you have any feel for how long it takes to write a new DAL server based on the DAL server package?
This article has been archived and is no longer updated by Apple.
There is no DAL server/adapter for PICK databases.

There is no facility to enable non-licensed creation of servers or DBMS adapters to work with DAL.
Published Date: Feb 18, 2012

Mac OS 9: Apple DVD Player Opens Before Multiple User Login

While the computer is starting up the Apple DVD Player application opens before the Multiple Users login screen appears.
This article has been archived and is no longer updated by Apple.

Symptom:

The Apple DVD Player application opens before the Multiple Users login screen appears.

Products Affected:

- Power Mac G4 (Gigabit Ethernet)
- Power Mac G4 (Digital Audio)
- Power Mac G4 (QuickSilver)
- Power Mac G4 (QuickSilver 2002)
- iMac (Summer 2000)
- iMac (Early 2001)
- Power Mac G4 Cube
- PowerBook G4
- PowerBook G4 (Gigabit Ethernet)

This issue happens when Multiple Users is turned on, and a DVD-Video disc is in the DVD-ROM drive when the computer starts up.

Solution:

Remove the DVD-Video disc from the DVD-ROM drive before shutting down or restarting the computer.

or

Open the Extensions Manager control panel and turn off the DVD AutoLauncher extension. To play a DVD video, open Apple DVD Player (in the Apple menu).

Published Date: Feb 18, 2012

Mac OS X Server: Does Not Work With Power Mac G4 (Gigabit Ethernet) or Power Mac G4 Cube

Mac OS X Server version 1.2 or earlier does not work with the Power Mac G4 (Gigabit Ethernet) or Powe Mac G4 Cube computers.

Note: Apple has released Mac OS X Server 1.2v3. For information on this product see article 31291: "**Mac OS X Server 1.2v3: Read Me**"

This article has been archived and is no longer updated by Apple.
On 2000-07-19, Apple announced the Power Mac G4 (Gigabit Ethernet) and Power Mac G4 Cube computers. Mac OS X Server version 1.2 or earlier does not work with these computers.

Note: Apple has released Mac OS X Server 1.2v3. For information on this product see article 31291: "**Mac OS X Server 1.2v3: Read Me**"

Published Date: Feb 18, 2012

Macintosh: Terminal Emulators for UNIX Systems

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I need a UNIX terminal emulator (to run on a Macintosh) that will do the following:

- Toggle between 80 character mode to 132 character display
- reverse video
- Downline load ASCII files

This article has been archived and is no longer updated by Apple.
UNIX systems support almost all types of terminal available. One of the most popular terminal types supported is the Digital VT100 series. Lots of Macintosh programs support this terminal type, especially the later ones which use the Communications ToolBox.

MacTerminal 3.0 allows you to use the VT102, or the VT320 Tools. In the Screen setting, you can toggle between 80/132-columns, and select inverse video. In the File Transfer setting, you can select files transfer using the Text Tool, or the XModem Tool.

Pacer's PacerTerm and Synergy's VersaTerm-Pro also use the Communications ToolBox and support other Tools besides the Apple Tools.

For more information, search on the above product names.

Published Date: Feb 18, 2012

PATHWORKS 1.0: No Official Support for HP LaserJet

Does PATHWORKS 1.0 support HP LaserJet? Does the print driver from the PATHWORKS (either 6.0 or 7.0) support LaserJet?

This article has been archived and is no longer updated by Apple.
Officially, PATHWORKS 1.0 Print Services only support following PostScript printers:

Printer	Connected to the VAX computer through
Digital LPS20	Ethernet
Digital LPS40	Ethernet
Digital LPS40 Plus	Ethernet
Digital LN03R	Serial Connection

Apple printers: LocalTalk/Ethernet bridge or an RS-232 serial connection

LaserWriter Plus
LaserWriter IINT
LaserWriter IINTX

The PATHWORKS print drivers are for the above PostScript printers only.

If you need more specific information or you have enhancement requests, contact Digital Technical Support directly.

For more information, search under: "Digital"

Published Date: Feb 18, 2012

PATHWORKS for Macintosh: Components Updates

If I buy "PATHWORKS for Macintosh" licenses from Digital, do they include software updates for Apple software in the bundle (MacX 1.1.7, MacTCP 1.1, MacTerminal, DAL, and so on)?
This article has been archived and is no longer updated by Apple.
The "PATHWORKS for Macintosh" licenses package from Digital does not include automatic software updates.

If you would like to have software updates, you need to order Maintenance Service from Digital, part number QTYPCAA-E5. There is a yearly charge. Contact your local Digital representative or Digital DECdirect Pre-purchase Technical Assistance.

For more information, search under: "Digital"
Published Date: Feb 18, 2012

.Mac iDisk: Filenames Appears as Random Characters

Files copied to iDisk must use either MacJapanese or MacRoman character sets.
This article has been archived and is no longer updated by Apple.

Symptom

Files on your iDisk appear to have filenames composed of random characters when you connect to your iDisk using Apple File Protocol (AFP).

Solution

1. If a filename appears to be composed of random characters after you copy it to your iDisk, check the original to see if it is encoded using Chinese or another character set.
2. If the file is encoded using something other than MacJapanese or MacRoman character sets, change character sets to rename the file using either the Roman or Japanese character sets.

Keep in mind that special characters in filenames can cause problems on some computers. If using the Roman alphabet, use only uppercase letters (A-Z), lowercase letters (a-z), numbers (0-9), and the underscore (_) in your filenames.

Published Date: Feb 18, 2012

TA47017_PASCAL_II_Line_Feeds_(TIL00861).pdf

PASCAL II 1.1: Line Feeds

Pascal always prints a LF after a CR; to suppress the LF you have to execute LINEFEED.CODE. (This only works for the PRINTER:.)
This article has been archived and is no longer updated by Apple.
There is a way to override this feature for REMOUT: when using a Super Serial Card and UNITWRITE, but not when using WRITE and WRITELN.
Published Date: Feb 18, 2012

VAXshare: Printer Services and LaserWriter Zones

Apple Technical Support says that a "VAX can be in a different zone than the LaserWriter printers, but there can only be one zone for the non-extended LocalTalk network where the LaserWriter printers are".

Referring to the following diagram, can I configure all printers serially connected to the VAX to be in Zone A and LaserWriter X to be in Zone B, and LaserWriter Y in Zone C (assuming I also upgrade FastPath to support AppleTalk Phase 2)?

VAX (PATHWORKS 1.0) ** Zone A **
| Ethernet

| |
FastPath (with Phase 1 support) Internet router (Phase 1,2 support)
| |
---------- LocalTalk network ----------LocalTalk network
LaserWriter X ** Zone B** LaserWriter Y ** Zone C **

This article has been archived and is no longer updated by Apple.
It is not clear from your description that the printer connected to the VAX serially is a Digital PostScript printer or an Apple LaserWriter. Nevertheless, the answer is Yes, you can configure the printers in those zones.

Here is more information:

1. If you connect the LaserWriter directly to the VAX computer as a serial device, follow the following steps from the Digital System Administrator's Guide:

1.1. Connect a straight through RS-232 cable from the 25 pin connector on the back of the LaserWriter to the serial output connector on the VAX computer.

1.2. Set the printer switches as follows:

Printer Settings
------- --------

LaserWriter 4 position mode switch to 9600
LaserWriter Plus 4 position mode switch to 9600
LaserWriter IINT
1 Up
2 Down

LaserWriter IINTX
1 Up or Down
2 Down
3 Up
4 Up
5 Down
6 Down

1.3. Set the VMS terminal line to which the printer is connected by entering the following command:

$ SET TERMINAL device-name:
_$ /NOAUTOBAUD/NOBRDCSTMBX/NOBROADCAST-
_$ /DEVICE_TYPE=UNKNOWN-

```
_$ /NODISCONNECT/NOECHO/EIGHT_BIT/NOESCAPE-
_$ /FORM/FULLDUP-
_$ /HARDCOPY/HOSTSYNC/LOWERCASE/PASTHRU/PERMANENT-
_$ /SPEED=9600/TAB/TTSYNC/TYPE_AHEAD/NOWRAP
```

For subsequent reboot of the VAX, add the above line to the SYS$STARTUP:SYSTARTUP_V5.COM file. Be sure you enter this line before the SYS$STARTUP:MSA$STARTUP.COM line.

1.4. Add the VAXshare LaserWriter printer service. The following example creates a LaserWriter printer service called "Serial LaserWriter" with a queue name, "LW_SERIAL".

```
$ ADMIN/MSA
MSA$MANAGER> ADD PRINTER "Serial LaserWriter"-
_MSA$MANAGER> /QUEUE=LW_SERIAL/DEST=device_name:
MSA$MANAGER> EXIT
```

1.5. To create the queue and start the service, enter the following command:

```
$ ADMIN/MSA START PRINTER "Serial LaserWriter"
```

2. If the printer connected to the VAX is a Digital PostScript printer, you need to specify the Printer Service name and VMS queue name to add a VAXshare printer service for it. You need to know the name of an existing VMS printer queue for which you want to set up printer services. If you do not have an existing queue, create one by using the standard VMS commands. The printer service will appear in the zone the VAX is in, which is Zone A in your example.

```
$ ADMIN/MSA
_MSA$MANAGER> ADD PRINTER "Digital printer"-
_MSA$MANAGER> /QUE=LPS_20_POST-
_MSA$MANAGER> /PARAM=(DATA_TYPE=PostScript)-
MSA$MANAGER> EXIT
```

3. Assuming that your FastPath is upgraded to support AppleTalk Phase 2, both the LaserWriter printers in the LocalTalk network can be added to VAXshare print services. The /DESTINATION will be used to specify the zones where the printers reside. For example, the following defines the LaserWriter X and Y in Zone B and Zone C as LaserWriter X and Y Spoolers.

```
$ ADMIN/MSA
MSA$MANAGER> ADD PRINTER "LaserWriter X Spooler"/QUEUE=LWX_PRINT-
_MSA$MANAGER> /DESTINATION="LaserWriter X@Zone B"-
_MSA$MANAGER> /DEFAULTS=(FLAG, TRAILER, FORM=LTR_12)-
_MSA$MANAGER> /FONTS=MSAP$FONTLIST_APPLE35.TXT
_MSA$MANAGER> ADD PRINTER "LaserWriter Y Spooler"/QUEUE=LWY_PRINT-
_MSA$MANAGER> /DESTINATION="LaserWriter Y@Zone C"-
_MSA$MANAGER> /DEFAULTS=(FLAG, TRAILER, FORM=LTR_12)-
_MSA$MANAGER> /FONTS=MSAP$FONTLIST_APPLE35.TXT
MSA$MANAGER> EXIT
```

Published Date: Feb 18, 2012

StyleWriter and ImageWriter: Printer Modes

I'm using TrueType, a StyleWriter and an ImageWriter. I upgraded to System Software 6.0.7, then to System 7.0. Both printers only work in BEST mode (not in the Draft or Fast mode).

Could this be due to the outline font technology (instead of bitmap)?

This article has been archived and is no longer updated by Apple.
The use of the effect of the "outlined" font has nothing to do with the disabling some of the print quality button selection.

Your problem is probably caused by how the application deals with the printer driver. Often when the application run into an unfamiliar printer driver, it will use the low level printer driver call, SetRsl to set printer resolution to the maximum. If this is done when using the StyleWriter, the "faster mode" push button will be disabled.

Applications like MacWrite, that talks only to the high level print driver, do not have this problem.

Published Date: Feb 18, 2012

Final Cut Pro 3: OMF Exports Exhibit One Frame Offset in Pro Tools

OMF exports can result in Digidesign Pro Tools reporting a one-frame offset between audio and video tracks.
This article has been archived and is no longer updated by Apple.

Symptom

Pro Tools indicates that audio and video tracks are one frame off.

Solution

Apple believes this issue is caused by a combination of factors within Pro Tools. First, in some cases audio and video tracks slip by one or two audio samples. One audio sample is only about 1/1600th of a frame (assuming 48 kHz audio), so this is almost never noticeable. The second issue has to do with Pro Tools mismatching audio samples and video frames so that the offset of one or two audio samples is reported as being off by an entire video frame. This is purely a timecode reporting error and does not affect the actual synchronization of audio and video clips within Pro Tools or Final Cut Pro.

Contact Digidesign for more information on this issue.

Important: Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.

Document 17159, "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

DAL: How It Accesses DB-2 Tables via VTAM or CICS

1) How does DAL access DB2 tables in the VTAM version and when using the CICS passthru program?

2) How does DAL implement "stored procedures" on the host?

3) Please explain how the DAL-APPC implementation works?

This article has been archived and is no longer updated by Apple.

1) DAL uses the standard "TSO to = specs batch DB2 interface" to communicate with DB2. Security is supported via standard RACROUTE calls. The VTAM server is a multi-user server that runs as a batch job (or a started task) and that has a VTAM API front-end that controls access. The user needs a valid ID and password, but does not log on to TSO. Instead the user issues a "logon applid(_____)" command to connect to the VTAM Server. With the CICS passthru, the user logs on to CICS and requests the CICS transaction which uses APPC (LU62) to connect to the VTAM front-end of the server. CICS can be at version 1.7 but the PUT for LU6.2 support must have been applied to allow DAL VTAM Server access (version 2.1, or better, of CICS includes this LU62 support).

2) Stored procedures are kept in the DAL.AUTOEXEC file that is installed with the Server. (Only two sample database connection procedures are shipped with the server.) You can create your own procedures and store them there for general use. See the Server Installation Guide for more detail on this issue.

3) APPC communication from the client to the VTAM server (as opposed to from CICS to the VTAM server) requires the Apple product SNA*ps and its APPC Gateway. This connection type will allow for faster data transfer because it is not using the LU2 protocols (3270 data streams) but instead the LU6.2 protocols (APPC). Only the direct access method ("?ogon applid(_____)") to the VTAM server supports this protocol. The CICS passthru requires 3270 protocols (since CICS requires them) and therefore is supported by all the current network connections that support TSO server access.

Published Date: Feb 18, 2012

System 7: How to Have More Then One Trash Can

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

I have two monitors attached to my Macintosh. I'd like a trash can in each of them. Is this possible?

This article has been archived and is no longer updated by Apple.
Yes, System 7 lets you make aliases for your trash can -- as many as you like. Here's how:

1) In the finder, select the Trash icon.

2) Choose Make Alias from the File menu. A new icon appears, named "Trash alias"

3) If you like, rename the alias -- anything but "Trash" -- and drag it to the other screen.

If you drag, say, a document into the new trash icon, the document actually goes into the original Trash. The original Trash icon expands to indicate there's something in it (though your alias will not bulge).

If you decide you no longer want an extra trash can, drag it into (you guessed it!) the original Trash.

Published Date: Feb 18, 2012

Super PILOT: Random number generator

Super PILOT uses the Pascal function RANDOM.
This article has been archived and is no longer updated by Apple.
Running a Pascal program that calls RANDOMIZE (before running a Super PILOT program) will generate a different starting point for the numbers returned. For more info, see the Pascal Language Reference Manual, pages 101 and 102.
Published Date: Feb 18, 2012

Macintosh LC: Third-Party Solution For Co-Processor

Is there any way to install a co-processor into a Macintosh LC?

This article has been archived and is no longer updated by Apple.
Apple does not have a co-processor option for the Macintosh LC. However, our information search, which included the Redgate Macintosh Registry on AppleLink, provided these third-party solutions:

- "DataLink LC" and "FastMath LC" from Applied Engineering
- "MacCon+ series" from Asante Technologies
- "DaynaPort E/LC" from Dayna Communications
- "Apex" from Second Wave
- "QuikMath/LC" from System Technology Corp.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

HD Setup: Differences Between Version 2.0.1 and 2.0.3

I need to find out what the differences are between HD Setup 2.0.1, 2.0.3 and the HD Setup for System 7.0B4.

I am especially interested in how initialization and bad sector mapping have changed and about reentrance code and where it resides on the drive.

This article has been archived and is no longer updated by Apple.
The differences between 2.0.1 and 2.0.3 were very minor minor bug fixes that never did crop up in normal use but the engineers knew they were there and fixed them anyway.

For the System 7 driver, it was modified to include a reentrant driver for support of virtual memory. The driver is written to the disk very early in the boot process to a portion of the drive to which we, as users, do not have access.

Published Date: Feb 18, 2012

iMovie 3: Has Generic Icon and Won‘t Open After Reinstalling Mac OS X

iMovie 3 may have a generic icon and may not open if you reinstall Mac OS X.
This article has been archived and is no longer updated by Apple.

Symptom

iMovie does not open. Its icon looks like a generic application.

Solution

Use one of these solutions:

- Drag the iMovie application to the Trash, and use the Mac OS X installer to reinstall iMovie 3.

  or
- Install iMovie 3 separately. It can be installed from the iLife CD, or downloaded from the iMovie website (http://www.apple.com/imovie/).

Published Date: Feb 18, 2012

Apple Does Not Release ELF Radiation Information

How can I get ELF radiation information on Apple products?
This article has been archived and is no longer updated by Apple.
Currently, it is Apple policy not to release this information unless there are extenuating circumstances (eg. a large bid on hold until ratings can be released under non-disclosure.) To date, ELF specific information has not been released to any customers.

At this time there is no standard for measuring and reporting VLF/ELF emissions. Without standards the numbers are meaningless unless they are compared only with other monitors measured in the same manner. Apple is using a Combinova¿ meter for measuring EMI, and a Radians-inova¿ meter for measuring ELF/VLF. The results of this testing are kept within the engineering group. Apple is taking the ELF/VLF issue seriously and is promoting significant research to study it.

Apple ensures that all of its products meet government regulations for the countries in which they are sold. A great deal of time and energy is being focused on the reduction of ELF/VLF emissions from our products, but at this time no product announcements have been made. Apple's official policy is that ELF/VLF emissions do not appear to pose a threat, and that additional studies need to be done.

Relatively low cost test instruments are available for those who wish to do their own comparison testing. Holaday Industries, Inc. sells test equipment which will meausure ELF/VLF emmissions. In addition, they offer occasional seminars covering various aspects of VDT emissions related issues. For more information, search under "Holaday Industries".
Published Date: Feb 18, 2012

TA47029_K_SIMMs_Work_Only_in_Macintosh_IIci_and_Macintosh_IIsi_(TIL08626).pdf

512K SIMMs: Work Only in Macintosh IIci and Macintosh IIsi

Can the 512K SIMMs that come in the 3MB Macintosh IIsi be used in any other Macintosh?

This article has been archived and is no longer updated by Apple.

512K SIMMs will ONLY work in the Macintosh IIci and Macintosh IIsi. They will not work in any other Macintosh.

Published Date: Feb 18, 2012

System 6.0.7: Compatible With Entire Macintosh Family

I have a hard drive which I would like to be able to connect to any Macintosh, from a Macintosh Plus to a Macintosh IIfx.

Will the lower-end Macintoshes operate if the hard drive is using System 6.0.7?

This article has been archived and is no longer updated by Apple.
System 6.0.7 is compatible all the way down to the Macintosh Plus; the only real requirements are 1MB of RAM and 800K disk drives. Your hard drive should work fine.

The one thing to remember is that you do not want to use this external hard drive you will be carrying around as the startup drive, because the installer scripts for each machine is different. In other words, you need to set up the system software for a particular machine. This would cause a problem if you used the hard drive as the startup drive on different model macintoshes. The only exception would be if the machine you connect it to is set up with the same installer scripts as the hard drives system software.

Published Date: Feb 18, 2012

System 6.0.7: Troubleshooting Font Loading Problems

I'm having a problem with the Font/DA Mover on several networked Macintosh computers running System 6.0.7. Only one computer will load some PostScript Fonts. Other machines either lock up or have systems errors.

This article has been archived and is no longer updated by Apple.
Make sure that you are using at least version 3.8 of the utility. You mentioned PostScript fonts, but Font/DA Mover only moves bit images. It is possible that older bit fonts have a problem with the latest Font/DA Mover. These fonts would be fonts that don't include the FOND Resource.

If that is the case, you should open the suitcase containing these fonts and then save them to a new suitcase. This will create a FOND resource for them. Then copy these fonts to the System file.

Published Date: Feb 18, 2012

TrueType: Using With Non-Apple Printer

I have a Macintosh Classic running System 6.0.7 and an NEC SilentWriter 290 PostScript laser printer. I would like to use TrueType fonts for better screen display of text.

Can the TrueType fonts be used with the NEC printer, and what would have to be loaded onto the Macintosh Classic?

This article has been archived and is no longer updated by Apple.
TrueType is compatible with any output device as it is a self-contained driver and font set. Since you are running System 6.0.7, you have to install the TrueType INIT, and the specific TrueType fonts you wish to use. System 7 has the functionality of TrueType built in, so those running System 7 do not have to install the INIT, just the specific fonts they wish to use.

The INIT is available on the StyleWriter and Personal LaserWriter LS diskettes, or through authorized Apple resellers.

Published Date: Feb 18, 2012

Xserve, Xserve (Slot Load): Apple System Profiler Lists SCSI Card Twice

When an Xserve or Xserve (Slot Load) server has a SCSI card installed, you may see the SCSI card listed twice in Apple System Profiler. The card otherwise appears to function as expected.
This article has been archived and is no longer updated by Apple.

Symptom

When an Xserve or Xserve (Slot Load) server has a SCSI card installed, you may see the SCSI card listed twice in Apple System Profiler. The card otherwise appears to function as expected.

Products affected

- Xserve
- Xserve (Slot Load)
- any SCSI card installed in the upper dual PCI slot

Solution

This symptom does not indicate a hardware issue. Apple is aware of the issue and is investigating solutions.

Note: This document will be updated as more information becomes available.
Published Date: Feb 18, 2012

MacTerminal: Escape character

This article has been archived and is no longer updated by Apple.
MacTerminal adheres, as specified, to the keyboard layout that LisaTerminal uses. Thus an escape is generated by the tilde (~) key (upper left corner of the keyboard).

To Send Escape sequences to the Imagewriter via MacTerminal, you must connect the printer to the printer port. Select Local Echo and New Line in the Terminal Settings Dialog box, and Another Computer in the Compatiblilty Settings Dialog box. Using the Escape Key (Accent/Tilde Key), the control letter and return will then send the sequence to the printer.
Published Date: Feb 18, 2012

A/UX 3.0: "Root File System Is Full" Error Workaround (3/95)

I think I overfilled one of the drives with data; when I enter any A/UX command, I get "Cannot execute this command. The root file system is full".

I have tried cancelling when booting A/UX, but I still cannot execute any commands, even from that shell. Is there any way to get in and erase some files in my root file system?

This article has been archived and is no longer updated by Apple.
Interrupting A/UX from booting will bring you to the "A/UX Startup" mode or what is called SASH (Standalone Shell). You should get a startup# prompt.

Under startup#, try a "fsck" (file system check and repair) or a "rm" (remove a file).

If neither of these works, try the "chroot" (change root) command to change the current working root directory to a different one, like "Eschatology 1". To change the current working root directory to "Eschatology 1", do the following (where X is the SCSI ID of the A/UX boot drive):

startup# pname -cX -s3 "Eschatology 1"
startup# chroot (X,0,3)/

startup# rm (X,0,0)/FILES-ON-THE-DEFAULT-ROOT-TO-BE-REMOVED

After removing all the files you need, you can change back to the default root directory by issuing the command

"chroot (0,0,0)/"

Make sure do "fsck" on the default root filesystem to get a "clean" root file system.

Article Change History:
24 Mar 1995 - Changed title for clarity.
18 Jun 1993 - Retitled for accuracy and clean up article.
31 Aug 1992 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

A/UX: Questions About "Alerts" (8/94)

1. How do A/UX alerts work? If I am using a Macintosh or hybrid application, when an alert appears, can I switch to another process and/or Mac application?

2. If the process has a fatal system error when running A/UX, do I have to restart the Macintosh or only the process itself? How about a system bomb when running a Mac Application?

This article has been archived and is no longer updated by Apple.
1. You do have to deal with the alert in A/UX before switching to another process. This is the same as modal dialogs under the Macintosh operating system.

2. This is also similar to the Mac OS: it depends on "how fatal" the error is. Some errors, such as Out Of Memory conditions, only affect the active application. Other errors will trash significant portions of A/UX and freeze the system (this is what a Macintosh application will do if it bombs); others may disable the OS, but allow you to gracefully exit the other processes. There are really too many variables to predict exactly what will happen.

Article Change History:
29 Aug 1994 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

Xserve (Slot Load): Apple System Profiler, Server Monitor Report Same Hard Drive to Have Different Capacities

When looking at Apple System Profiler and Server Monitor on an Xserve (Slot Load) server, you may note that the two applications do not report the same hard drive capacity.
This article has been archived and is no longer updated by Apple.

Symptom

When looking at the hard drive capacity in Apple System Profiler and Server Monitor, the two applications report that the hard drives have different capacities that are several gigabytes apart.

Solution

This symptom does not indicate a hardware failure. Apple is aware of the issue and is investigating.

This document will be updated as more information becomes available.

Published Date: Feb 18, 2012

AppleShare: View By Icon Folders can‘t be Changed by Users

Is there any way to keep the folders and/or documents contained on an AppleShare File Server in a set order when viewed by icon? I have a 160MB File Server that has about 40 folders in it. Users are complaining that every time they connect to the server, they can't find a folder where they put it last.

This article has been archived and is no longer updated by Apple.
The actual views that an individual server user sees can be modified by the user but they will revert to the layout that the server administrator set up.

If the users can agree on a set organization of the folders, boot the server with a diskette and rearrange the folders then restart the server.

This is the only way for the folders to stay arranged in such a way as each user wants.

Published Date: Feb 18, 2012

AppleShare: Can‘t Have A "Wild Card" Volume Name

I have a series of Macintosh Laboratories that are set up to use a single, "Campus Standard Startup disk". This disk is a floppy that students can take to any lab on campus, insert into a Macintosh, turn on the machine and have the server volume come up automatically.

All the servers have the name "Server" and there is an "*" in the AppleShare Prep file that I am told tells the Macintosh to look for the server in "the zone you are in". In the past, when a new lab has been brought up, we have just added the new server volume name to a list in the prep file. This is not working any more.

Is there any way we can get the format of the AppleShare Prep file? Or is there a way we can use the "*" to tell it to mount "whatever volume is on that server" like the "*" for zones?

This article has been archived and is no longer updated by Apple.
It is not possible to use a wild card for the volume name. It would appear that you are changing something in the AppleShare Prep file that is being ignored.

This is the "includes" definition for the Boot Mount List (BMLS resource).

```
bmlFSElSize EQU 0 ; size of this FSElement
bmlFSNumVols EQU bmlFSElSize+2 ; number of volumes for this
FSElement
bmlUAM EQU bmlFSNumVols+2 ; UAM chosen value (1,2,3)
bmlFSSTStamp EQU bmlUAM+2 ; server timestamp
bmlHasPassword EQU bmlFSSTStamp+4 ; if zero then no password saved
bmlFSPassword EQU bmlHasPassword+2 ; server password
bmlFSUName EQU bmlFSPassword+8 ; start of user name string
bmlFSSObjName EQU bmlFSUName+32 ; server NBP object name
bmlFSSZoneName EQU bmlFSSObjName+33 ; server NBP zone name
bmlFSVolInfo EQU bmlFSSZoneName+33 ; start of volume info
```

Published Date: Feb 18, 2012

.Mac: Eight-Character Limit in Internet System Preference Password

The .Mac tab of the Internet preference pane does not allow passwords greater than eight characters in the password field.
This article has been archived and is no longer updated by Apple.

Symptom

The .Mac tab of the Internet system preference pane does not allow passwords greater than 8 characters in the password field.

Solution

Update to Mac OS X 10.2.5 or later.
Published Date: Feb 18, 2012

Xserve, Xserve (Slot Load): 180 GB Apple Drive Module May Have Incorrect Label

The antistatic shipping bags for small number of 180 GB Apple Drive Modules (ADMs) have a inaccurate label that states: "This drive is for use in an Xserve RAID only. Server Monitor software will not support this drive is installed in an Xserve."
This article has been archived and is no longer updated by Apple.

Symptom

An 180 GB ADM's antistatic bag label may inaccurately state: "This drive is for use in an Xserve RAID only. Server Monitor software will not support this drive is installed in an Xserve."

Solution

The 180 GB ADM is fully functional in Xserve and Xserve (Slot Load) servers. The statement on the antistatic bag label is incorrect and not a cause for concern.

Published Date: Feb 18, 2012

ImageWriter II: Dip Switch Settings for AppleTalk Card

How should the dip switches be set for an ImageWriter II with an AppleTalk card installed?

This article has been archived and is no longer updated by Apple.

The only switch that needs to be changed is Switch Bank 2, Switch 4. Set it to the on/closed position.

Published Date: Feb 18, 2012

StyleWriter: Compatible with Adobe Type Manager

Can ATM be used with the StyleWriter?

This article has been archived and is no longer updated by Apple.
Yes, ATM is compatible with the StyleWriter.

ATM is Adobe Type Manager, Adobe Systems' version of outline font technology.

Published Date: Feb 18, 2012

Macintosh: All Hard Drives have Auto-Parking Heads

Article Change History ---------- 10/28/92 - REVIEWED * For technical accuracy. Do Macintosh hard drives have auto-parking heads?

This article has been archived and is no longer updated by Apple.

All drives used in Macintosh products have auto-parking heads, no utility is necessary to park the head.

Published Date: Feb 18, 2012

StyleWriter: Remove Bitmapped Fonts To Avoid Default Font Use

I am using a Macintosh Classic and a StyleWriter. I have TrueType fonts and Adobe fonts, and am using Adobe Type Manager.

When I print any document the print quality is very poor, as though it was printed from a dot matrix printer. Installing Adobe Type Manager doesn't seem to have changed anything. What can I do?

This article has been archived and is no longer updated by Apple.
Try removing the bitmapped versions of the fonts. If they are installed, the default printing font will be the bitmapped version.

You will will get over 300 dots per inch when using TrueType fonts.

Published Date: Feb 18, 2012

Display Card 824 GC: Accelerates Any QuickDraw Application

Does the Macintosh Display Card 8*24 GC automatically accelerate ALL graphics, or is it necessary for a particular program to access the acceleration capabilities of the card to have any effect?

This article has been archived and is no longer updated by Apple.
The Macintosh Display Card 8*24 GC will accelerate any application that uses QuickDraw correctly.

The only reported application that the card won't accelerate is MacX. As of June, 1992 MacX has not yet been updated to make it compatible with the 8*24 GC's acceleration software.

Published Date: Feb 18, 2012

TA47047_AppleShare_Incompatible_with_AST__(TIL00864).pdf

AppleShare 1.0, 1.1: Incompatible with AST-4000 3.0

This article has been archived and is no longer updated by Apple.

Version 3.0 of the AST-4000 utilities is incompatible with AppleShare and can cause server crashes. AST Utilities version 3.2 fixes the problem. Among other things, it supports changing the SCSI address of the AST-4000. You can use AST's product BBS (714-660-9175) to download the software and send queries to the AST's Tech Support group.

Published Date: Feb 18, 2012

Macintosh Display Card 824 GC: Best Programs to Demonstrate

Can You recommend some programs that demonstrate the full capabilities of the Macintosh Display Card 8*24 GC?

This article has been archived and is no longer updated by Apple.
Any program that is graphics intensive (with many redraws or math algorithms) should work. CAD/CAM programs would be a good choice.

Published Date: Feb 18, 2012

Macintosh Display Card 824 GC: What SIMMs To Use

Can the 1MB 100ns SIMMs installed in a Macintosh II be used as memory on the Macintosh Display Card 8*24 GC? What about Macintosh IIfx SIMMs?

What are the specifications for SIMMS that work with the Macintosh Display Card 8*24 GC?

This article has been archived and is no longer updated by Apple.
No, Macintosh II or Macintosh IIfx SIMMs will not work.

The main specs are: 1MB, 256K ICs, 64-pin SIMM, 100ns. Use the Macintosh Display Card DRAM Expansion Kit (part number M0505LL/A) to upgrade the card.

There are other specs that are required that we don't publish (we provide it to RAM distributors). You will need to contact the third-party RAM manufacturers and simply ask for SIMMs that will work with the Macintosh Display Card 8*24 GC.

Published Date: Feb 18, 2012

GS/OS: How To Identify Version Numbers

I recently received the GS/OS 5.04 disks. I searched for a version number and could not find one.

What is the on-screen version number of GS/OS v5.0.4?
This article has been archived and is no longer updated by Apple.
On bootup, hold down space bar and a text screen will appear. If you have version 5.0.4, the first line should say, "Welcome to the World of GS/OS 3.03".
Published Date: Feb 18, 2012

StyleWriter: Printing Gets Lighter Problem

I use a StyleWriter printer.

When I print a self-test, the print is dark. When I then print from the computer, the print gets continuously lighter.

What can I do?

This article has been archived and is no longer updated by Apple.

1. Purge the ink cartridge

2. Make sure you're using 16 lb. to 24 lb. bond paper.

3. Make sure forms-thickness lever is set in the UP position.

4. Replace the ink cartridge.

Published Date: Feb 18, 2012

Power Mac G5: Mac OS X Server 10.2 Not Supported

No version of Mac OS X Server is supported for use on the Power Mac G5 computer.
This article has been archived and is no longer updated by Apple.
The Power Mac G5 computer is not supported for use with any version of Mac OS X Server 10.2, or any earlier version of Mac OS X Server. Mac OS X Server 10.3 will be supported on Power Mac G5 computers.

Power Mac G5 computers require Mac OS X 10.2.7 (G5), which is made specifically for this computer. Mac OS X 10.2.7 (G5) cannot be installed on other computers, and other versions of Mac OS X 10.2 (both server and client) cannot be installed on the Power Mac G5 computer.
Published Date: Feb 18, 2012

Macintosh Portable: Don‘t Ignore Battery Icon

How can I remove the battery icon that appears in the upper right hand corner of my Macintosh Portable screen? It interferes with "Balloon" Help and my SuperClock. I can't seem to find a way of controlling its presence in the menu bar.

This article has been archived and is no longer updated by Apple.
One reason for the icon's appearance is running the battery desk accessory; the Application Menu icon will show the DA's battery icon (in the top right corner).

Another possibility is that the battery is low, and the battery DA is flashing its icon as a notification to recharge.

Before you try to suppress it, it's important to know whether it's telling you something important.

Published Date: Feb 18, 2012

MacTCP: Host File‘s 7K Storage Limit

Only about the first 118 lines of my Hosts file is being read when I press the "Host" button in the "Edit Command" box of MacX. Any items beyond line 118 bring up the message: "that Host cannot be translated", and they do not show up in the list window despite the fact that they are in the Hosts file.

Is there a limit as to how big the Hosts file can be, or can I change a setting to use a larger file? My host file is currently 484 lines.

This article has been archived and is no longer updated by Apple.
Yes, it is a known limitation on MacTCP Hosts file (and was stated in the Release Notes of MacTCP 1.0) that there is a 7K of storage limitation of parsing Hosts file.

The only workaround we can suggest is to use DNR (Domain Name Resolver) in MacTCP. This will reduce the size of the Hosts file.

Published Date: Feb 18, 2012

ProDOS: Substitute for FRE(0)

To perform garbage collection in a ProDOS Basic program, use the following ProDOS FRE commands.
This article has been archived and is no longer updated by Apple.
Use the ProDOS FRE command like this:

```
10 D$ = CHR$(4)
20 PRINT D$;"FRE"
```

Using this method substantially speeds up garbage collection.
Published Date: Feb 18, 2012

Apple IIe Card: Can‘t Use Apple II Memory Expansion Cards

Up to 1MB of the Macintosh LC's memory can be addressed via a "virtual" Apple IIe-style memory expansion card. Does this mean that an Apple IIe memory card can be installed in the Macintosh LC?

This article has been archived and is no longer updated by Apple.

The Apple IIe Card uses the memory of the Macintosh LC. The Macintosh LC cannot utilize Apple II memory expansion cards, for several reasons:

- No slot available in the Macintosh LC.

- Apple II cards are too large for the Macintosh LC.

- The RAM is too slow.

Published Date: Feb 18, 2012

Macintosh IIsi: When 8-Bit Color Is Missing

I have a Macintosh IIsi and 12-inch monitor. I see only four or 16 colors as selections in the control panel under monitors--but I should have 8-bit color. What is happening here?

This article has been archived and is no longer updated by Apple.

Here are a few suggestions that might cure your problem:

- Open the Monitors control panel. Click on the Options button. In the dialog box which appears, you can set aside more RAM for displaying colors. Click the button marked: "Up to 256 Colors/Grays" Click the OK button to return to the Monitors control panel.

- Reset PRAM. Under System 6.0.x, hold down the Command-Option-Shift keys while selecting the control panel. Click OK. Under System 7.x and Mac OS 8, hold down the Command, Option, P and R keys while starting up your Macintosh. When the Macintosh restarts again, release the keys.

- Restart from a System Tools Disk. If you can then select 8-bit color, trash and then reinstall the System Folder on the hard drive.

- If the above options don't work for you, you may have a problem with the Macintosh IIsi Logic Board.

Published Date: Feb 18, 2012

Macintosh IIci and IIfx: 160MB Drives Can Be Interchanged

I want to have interchangeable hard drives between a Macintosh IIfx and Macintosh IIci. Can the 160MB Drive for the Macintosh IIci be transferred at some point to a Macintosh IIfx and plugged in seamlessly?

This article has been archived and is no longer updated by Apple.
You will be able to move your 160MB drive from the Macintosh IIci to the Macintosh IIfx with the addition of a different drive bracket which has just been made available. The drive bracket is Apple Part #805-0952.

Published Date: Feb 18, 2012

TA47061_LaserWriter_Serial_Printing_from_MicroChannel_System_(TIL08657).pdf

LaserWriter: Serial Printing from MicroChannel System

I have a MiniMicro 386 with a microchannel bus. I'm in a Macintosh environment and want to print to the LaserWriter IINT.

I bought a Radio Shack cable 9- to 25-pin with transmit and receive reversed. I put the LaserWriter IINT into Diablo 630 Emulation Mode. When I tried to print, signals were sent to the printer but all that came out was a blank sheet. I then used a straight-through RS-232 cable with a null modem and got the same results.

Any suggestions?

This article has been archived and is no longer updated by Apple.
The problem printing serially could be caused by a number of things, but a straight-through cable with a null modem at the LaserWriter end should provide a workable solution.

However, you also need to make a couple of Mode Command statements to direct the output correctly to the LaserWriter. The commands are:

Mode: LPT1 96,N,8,1,P
Mode: LPT1 = COM1

Published Date: Feb 18, 2012

System 6.0.7 Installer: Problem with TrueType

The System 6.0.7 Installer seems to have trouble dealing with reinstalling the System software onto a disk that is using TrueType.

Even when the Installer is just doing a simple installation, it compares the Backgrounder that it has with the one that's been installed, and refuses to continue unless it's given permission to replace the newer Backgrounder with the older one.

Is there a solution to this problem that DOESN'T require extreme acrobatics? Or will I have to install the System software, replacing the new files with the old, then reinstall the TrueType set?

This article has been archived and is no longer updated by Apple.
Unfortunately, here is no way around this situation. The System Software 6.0.7 Installer was released many months before the StyleWriter and Personal LaserWriter LS were introduced. The installer script writers did not anticipate this situation.

Published Date: Feb 18, 2012

System 6.0.7: EtherTalk, CD-ROM Driver Installation

I have a Macintosh IIsi with a CD-ROM and Ethernet Board. I need drivers for using both of these devices with System 6.0.7 and Installer 3.0 or greater.

This article has been archived and is no longer updated by Apple.
The Installer required to install the EtherTalk drivers are located on the Network Products Installer Disk, which is located in the "Read Me First" manual that came with the Macintosh IIsi.

There isn't an updated installer for the CD-ROM drivers, but there is a workaround. Just drag the following files into the System Folder:
- Apple CD-ROM
- Foreign File Access
- Audio Access
- CD Remote INIT
- ISO 9660 File Access
- High Sierra File Access

Use Font/DA Mover to install the CD Remote desk accessory, then restart the system.

Published Date: Feb 18, 2012

Macintosh Display Card 824 GC: Memory Configurations

What memory configurations are possible on the Macintosh Display Card 8*24 GC? Do both memory slots have to be filled? What are the minimum and maximum memory per slot?

This article has been archived and is no longer updated by Apple.
The card can be upgraded to 2MB with Apple's expansion kit, or up to 8MB with kits available from third-party vendors. Both slots have to be filled with the same density SIMMs:

2MB = 1MB SIMM X2
8MB = 4MB SIMM X2

Published Date: Feb 18, 2012

AppleShare: Systems after 6.0.3 Need Network Products Installer

Is there any way to get AppleShare Installer with System 6.0.5? Can I just make a set of disks with System 6.0.5?

This article has been archived and is no longer updated by Apple.
It's not possible to upgrade the AppleShare Installer to System 6.0.5; disastrous things could happen if you tried the upgrade and then attempted an installation. The AppleShare Admin disk can be upgraded to System 6.0.5, as the application itself doesn't depend on the system version.

If you need to install AppleShare software onto a computer that requires a higher version of the System than 6.0.3 (like a Macintosh IIci or Macintosh IIfx), then you need to use the Network Products Installer Diskette to install the software. This disk is shipped with the computer (not the operating system) and can be found in the "Read Me First" booklet, which is inside the "Open Me First" box.

Published Date: Feb 18, 2012

Apple IIGS: Using CD-ROM Volumes on AppleShare

I have an Apple IIGS on an AppleShare network with a Macintosh file server. I want to hook up a CD-ROM drive to this network. Is it possible for the Apple IIGS to access the CD-ROM drive? Are there any special drivers that I need to have on the Apple IIGS?

This article has been archived and is no longer updated by Apple.

The Apple IIGS should be able to access the CD-ROM on the AppleShare file server with no additional drivers necessary beyond the standard AppleShare drivers. The CD-ROM will be seen to any workstation as another AppleShare volume.

Published Date: Feb 18, 2012

Apple IIGS: Using the AppleShare Print Spooler

I have an Apple IIGS on an AppleShare Print Server. The only way I can print is by not spooling. Is there something I'm doing wrong? Will an Apple IIGS spool to ImageWriter?

This article has been archived and is no longer updated by Apple.

The ImageWriter II can be chosen and printed to from an Apple IIGS through the AppleShare Print Server. If you're using Aristotle, the spooled printer must be selected within Aristotle and assigned to yourself.

Published Date: Feb 18, 2012

A/UX: With StyleWriter or Personal LaserWriter LS (2/94)

Does A/UX 3.0.2 support the StyleWriter as an lp device? In other words, can it do something like this:

cat tmp99 | lp0

This article has been archived and is no longer updated by Apple.
The StyleWriter or Personal LaserWriter LS works in A/UX via the Chooser and through the Command Shell by selecting what you want printed and selecting "print selection" from the file menu. There is no print cap file available for the printer so you cannot us it as an lp printer. This is per the A/UX 3.0 manual under "Setting Up Accounts and Peripherals for A/UX."

Article Change History:
2 Feb 1994 - Updated for A/UX 3.0.2 and included Personal LaserWriter LS.

Published Date: Feb 18, 2012

80-Column Text Card: Interrupt Disable (11/96)

Is there anyway to prevent the 80-column card form disabling interrupts on the I/O slots?

This article has been archived and is no longer updated by Apple.

There is no way to prevent the 80-column card from disabling interrupts on the I/O slots. A programmer whose program relies on interrupts could write routines to do everything the 80-column card firmware does without disabling interrupts, but this is a far-from-trivial programming task.

Article Change History:
14 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Apple IIe Card: Includes Applesoft BASIC

Does the Apple IIe Card for the Macintosh LC have Applesoft BASIC on it?

This article has been archived and is no longer updated by Apple.
The Apple IIe Card for the Macintosh LC is not an emulation card but an actual Apple IIe on a card. Applesoft BASIC is included in ROM. The card provides 98% compatibility with Apple lle non-copy protected software programs.

The card does not require a startup disk of any sort. It launches right into Applesoft BASIC.

Published Date: Feb 18, 2012

LocalTalk: Additional Cable Grounding Not Needed

I'm connecting my Macintosh networks with shielded twisted-pair cable.
What is the best way to ground this cable?

This article has been archived and is no longer updated by Apple.
There's no need to provide any additional grounding for LocalTalk cabling.
The shield is already grounded to chassis.

Published Date: Feb 18, 2012

ImageWriter I: Troubleshooting with Macintosh Classic (2/96)

I cannot get my Macintosh Classic to work with my ImageWriter I.

This article has been archived and is no longer updated by Apple.

Step 1

Make sure that the ImageWriter I printer's switch settings are

correct:

Switch 1

1-Off

2-Off

3-Off

4-Off

5-Off

6-On

7-Off

8-Off

Switch 2

1-ON

2-ON

3-OFF

4-XX

Step 2

Verify that you are using the correct cable. Cable part number 590-0555, or the original Macintosh to ImageWriter DB-9 to DB-25 cable (part # 590-0169) with the DB-9 to Mini DIN 8 Macintosh Peripheral Adapter cable (part # 590-0553) can be used.

Step 3

From the Chooser, verify the following:

- ImageWriter driver is selected

- AppleTalk is off

- The correct port is selected

If this does not work, you may want to start looking for hardware failures:

Try the ImageWriter on another computer, then try another printer with your computer.

Article Change History:

05 Feb 1996 - Added additional cable information.

Support Information Services

Published Date: Feb 18, 2012

DART: Utility for Duplicating Floppy Disks

Is there a Macintosh utility program for duplicating Macintosh, Lisa, Apple II or MS-DOS 3.5-inch floppy disks?
This article has been archived and is no longer updated by Apple.
DART (Disk Archive/Retrieval Tool) is an application that enables you to duplicate Macintosh, Lisa, Apple II, or MS-DOS disks, save disk images, and create disks from image files. DART 1.5 can read disk image files in DART, DiskMaker, or Disk Copy format. DART 1.5 image files are compressed, approaching a reduction in size comparable to that obtained by using a commercial compression utility. DART 1.5 is System 7.0 "savvy", and implements a custom Apple event mechanism to automate the conversion of older DART or Disk Copy files to 1.5 format. The conversion process can be run by "remote control" (even across a network!) using an accompanying HyperCard stack.
(For more information, please refer to the DART User Manual.)

Features of DART 1.5
---
* Data compression: more disk images can be archived in the same amount of space.
* Data checksumming for reliable disk duplication.
* Can read Disk Copy image files.
* Requires only 224K of RAM to run.
* Stack utility enables you to batch-convert DART 1.4 or Disk Copy files.
* Apple events support ("required" AE suite and custom 'cnvt' event.)
* System 7 "drag-and-drop" disk image creation.
* 32-bit clean.
* A/UX compatible.
* Color icons and balloon help.

Where to Obtain DART

As of December 22, 1997 DART is no longer supported.

Note: If you need to access disk images created by DART, you can use Disk Copy 6.1 or later.

These articles can help you locate the software update mentioned here:

- Article 14724: "**Where To Find Apple Software Updates**" - Lists online services for free Apple software updates.
- Article 16332: "**US Apple SW Updates Available Online**" - An index to USA Apple Software Updates showing the current software location on the Internet.
- Article 17664: "**WW Apple SW Updates Available Online**" - An index to International Apple Software Updates showing the current software location on the Internet.

Published Date: Feb 18, 2012

Apple IIe: Best Way to Shut Down with Floppy Drive

Which of these is the better way to shut down an Apple IIe with a floppy disk drive?

1) Save the work
2) Wait until the in-use light is off
3) Remove the disk(s) from the drive(s)
4) Switch off the power

Or

1) Save the work
2) Wait until the in-use light is off
3) Switch off the power
4) Remove the disk(s) from the drive(s)

This article has been archived and is no longer updated by Apple.
Both methods of shutting down will work without any problems most of the time. The safest procedure is to remove the disk before shutting down. You should do that just in case there is some freak signal sent through the drive that corrupts the diskette. This is very rare but does happen.

Published Date: Feb 18, 2012

A/UX: Driver Needed for Ethernet Compatibility

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

Does the correct EtherTalk driver installed into the Macintosh System folder make the Ethernet card compatible with A/UX? Does the A/UX kernel need to be modified for compatibility?

This article has been archived and is no longer updated by Apple.
The Ethernet driver that you need to use with A/UX is called ae6. You add or remove this driver from A/UX via the newconfig(1M) command. You can check the man pages in A/UX for more information on this command.

Published Date: Feb 18, 2012

iPod (Click Wheel) has long sync times or freezes with some PC FireWire connections

Is your iPod transferring music or data slowly when you connect it to your PC using FireWire? Keep reading to get your iPod into the fast lane!
This article has been archived and is no longer updated by Apple.
If you notice your iPod (Click Wheel) taking a long time to sync music or data, or even freezing if it's in Disk Mode, check what kind of FireWire bus host controller or onboard controller you have on your PC.

You can check this by using the Device Manager. To get to Device Manager:

1. Right-click on My Computer and select Manage.
2. Choose Device or Device Manager.

Under IEEE 1394 Bus host controllers, if it says VIA, you have a VIA chipset.

If your computer has a VIA chipset FireWire connection and a USB 2.0 connection, the USB 2.0 connection may provide a faster throughput for data transfer. You can try the USB 2.0 port if you have one or you can download the most recent iPod software update which addresses this issue.

Published Date: Feb 18, 2012

Pascal : STRING and CHAR concatenation

This article has been archived and is no longer updated by Apple.

To concatenate using STRING types and CHAR types and not get a type mismatch error, use the routine below to create a STRING containing the CHARacters the user wishes to add to the STRING, then use the Pascal CONCAT to put them together. Make sure that if this is done within a PROCEDURE or FUNCTION, and the STRING is passed as a parameter, that the (*$V-*) option is used as well as declaring a TYPE to pass rather than STRING.

```
TYPE STR_TO_PASS = STRING;

PROCEDURE WHATEVER (ST : STR_TO_PASS);
BEGIN
END;
```

here's the concat stuff...

```
PROGRAM CONCAT_CHAR;

CONST LEN = 4; { or whatever you want }

VAR TEST_STRING : STRING;
CH : CHAR;
I : INTEGER;

(*$R-*) { turn Range Checking off so you can }
{ alter individual cells of the string }
BEGIN
TEST_STRING[0] := CHR(LEN); { set length of string }
FOR I := 1 TO LEN DO
BEGIN
READ (CH);
TEST_STRING[I] := CH;
END;
WRITELN;
WRITELN (TEST_STRING);
END.
```

Published Date: Feb 18, 2012

EtherTalk: How To Determine Version Number

What is the proper procedure for determining what version of EtherTalk a Macintosh is running?
This article has been archived and is no longer updated by Apple.
To determine what version of the EtherTalk drivers you're using:

1. Open your System Folder
2. Click on the EtherTalk driver
3. Select Get Info.
4. The Get Info Box will appear along with the version number under "Version".

Published Date: Feb 18, 2012

TA47082_Macintosh_SE_Upgrading_to_use_SuperDrive_Discontinued_(TIL08681).pdf

Macintosh SE: Upgrading to use SuperDrive (Discontinued)

Article Review/Updated: 15 September 1995

Can I hookup an external FDHD SuperDrive to an older Macintosh SE that has only 800K internal drives?

This article has been archived and is no longer updated by Apple.
The external SuperDrive requires the FDHD ROMs just as the internal SuperDrive does. There is an FDHD upgrade kit available through authorized dealers that allows older Macintosh SE's to use the Apple SuperDrive (formerly Apple FDHD).

This upgrade has been discontinued.

Article Change History:
15 Sep 1995 - Revised to show discontinued upgrade.

Support Information Services
Published Date: Feb 18, 2012

TA47083_Apple_IIGS_Compatible_Toshiba_RAM_(TIL08683).pdf

Apple IIGS: Compatible Toshiba RAM

What Toshiba RAM chips are compatible with the Apple IIGS memory expansion board?

This article has been archived and is no longer updated by Apple.
The only Toshiba chip that we know of to be compatible are part number TMM41256P-15. The chips that are used in the Apple IIGS have to be 150ns, 256K x 1 bit, and CAS before RAS.

Published Date: Feb 18, 2012

Apple II Plus: Monitor and Drives Compatible with Apple IIe

Can I use the monitor and disk drives from an Apple II Plus with an Apple IIe?

This article has been archived and is no longer updated by Apple.

Yes, it's okay to switch the monitor and drives between the two systems.

Published Date: Feb 18, 2012

Macintosh IIsi: Using with VGA Monitors (8/93)

I want to connect a Macintosh IIsi to a Sony CPD-1304 monitor. I've seen several references to the Macintosh LC and Macintosh LC II being used with VGA monitors, but nothing about the Macintosh IIsi.

This article has been archived and is no longer updated by Apple.
Most newer Macintosh models with built-in video support VGA monitors. The Macintosh IIsi, however, requires an adapter before it will support VGA.

Lapis Technologies, Inc. produces a DisplayServer card for the Macintosh IIsi that supports VGA output.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
6 August 1993 - Removed references to other models with built-in video.

Published Date: Feb 18, 2012

Macintosh IIsi: Upgrading from 3MB Configuration

How is the Macintosh IIsi 3/40 configured so it has 3MB of RAM?

Also, do the four memory slots have to be full in order for the Macintosh IIsi to operate?

This article has been archived and is no longer updated by Apple.
The Macintosh IIsi has 1MB on the logic board and four 512K SIMMs installed to give a 3MB configuration.

As in all Macintosh computers, all slots of a particular SIMM bank must be filled for the machine to work properly. In the case of the Macintosh IIsi, all four slots must be filled.

Published Date: Feb 18, 2012

Apple Hard Drives: Moving Internal To External

Do you know of any way to turn internal hard drives into external hard drives?
This article has been archived and is no longer updated by Apple.
The mechanisms are no different, but here is what you will need to go through to be able to do it. Is is probably more trouble than it's worth.

- You will need to obtain an external hard drive case
- You will need to obtain a power supply for the external case
- You will need to obtain a different mounting bracket
- You will need to obtain an external SCSI cable and termintor

This is not an easy process, and probably not cost effective when including labor costs.
Published Date: Feb 18, 2012

TA47088_Personal_LaserWriter_LS_Prints_in_Shadow_and_Outline_(TIL08690).pdf

Personal LaserWriter LS: Prints in Shadow and Outline

Can the Personal LaserWriter LS print in Bold and Italic, as well as Shadow and Outline?

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter LS prints in Shadow and Outline as well as other text effects.

Published Date: Feb 18, 2012

AppleScan: Can‘t Run from Read-only Server

I'm trying to set up a scanner operation to work remotely. How can I keep AppleScan on a read-only server and make it accessible to those logging on from a scanner at a remote site? (Both are running System 7.)

AppleScan is being "shared" from a Macintosh with "read only" status. Unfortunately, AppleScan needs to write a file when it is launched. An alias doesn't seem to work, because it still launches from the server.

This article has been archived and is no longer updated by Apple.
Because AppleScan creates temporary work files in the folder where it is located, there is no way to make it work in a "read-only" situation. The application would need to be re-written with read-only file server operation in mind. The temporary files would need to be written to another location that is not read-only. In AppleScan, there is no method for designating where the temporary files will be written.

An alias does nothing to improve the situation because it simply points to the original application.

Two possible workarounds:

- Download the application from the server to the remote site and then execute the application at the remote site.

- Place the AppleScan software in a read-write location on the server.

Published Date: Feb 18, 2012

System 7: Function of Backgrounder File

What is the function of Backgrounder (on the System 7 Printing disk)? There's no Backgrounder on my hard disk, yet I can print to a LaserWriter IINTX successfully in the background.
This article has been archived and is no longer updated by Apple.
In System 7, the function of the Backgrounder is built into the Finder. You don't need the Backgrounder file at all if you're running System 7.

The Backgrounder file is, however, required on System 6.0.x systems that use System 7 printer drivers if they are to do background printing.

When you run the Installer on the 7.0 Printing Tools Disk from a 6.0.x system, the Backgrounder on that disk is installed on the 6.0.x system.
Published Date: Feb 18, 2012

Applesoft Reference Manual: Errata

Listed below are corrections to the Applesoft Reference manual.
This article has been archived and is no longer updated by Apple.
Page 5
Paragraph 4, the last line should read: However, only the first 9 digits are usually significant, and the tenth digit is rounded off.

Page 15
Line 90 should read: 90 DIM A(8): REM DIMENSION ARRAY WITH MAX. 9 ELEMENTS

Page 15
Line 180 should read: 180 IF A(I) <= A(I+1) THEN GOTO 240

Page 21
The line about mid-page that reads
C$ = RIGHT$(B$,3) + "-" + LEFT$(B$,4) + "-" + MID$(B$,6,7) should read
C$ = RIGHT$(B$,4) + "-" + LEFT$(B$,4) + "-" + MID$(B$,6,7)

Page 23
Line 180 should read: 180 I = I+1: IF I < 15 THEN GOTO 130

Page 51
If TAB(X) is the last item in a PRINT statement Applesoft will act as if there is a semi-colon after it.

Page 52
If SPC(X) is the last item in a PRINT statement Applesoft will act as if there is a semi-colon after it.

Page 53
FRE returns the amount of memory ... Applesoft sometimes stores duplicate strings separately.

Page 53
PRINT FRE (0) sometimes returns a negative number because of the way integers are handled in Applesoft. Adding 65536 to the negative number will give the positive representation.

Page 63
Rule 2 should read "The total number of elements RECALLed must be at least equal to" instead of "...equal th".

Page 66
Similarly, a response... If an ASCII NUL character, CTRL-SHIFT-P, is included in a line of input, the input will be truncated at the character before the NUL. A NUL as the first character in response to INPUT A$ will result in a null string. A NUL as the first character in response to INPUT A will result in ?REENTER.

Page 66-67
A line of input longer than 255 characters will be cancelled by the monitor and the user is left in the input statement. A line greater than 239 but less than 255 will be truncated to 239 characters.

Page 81
ONERR GOTO, "When an error occurs..." should read "After executing an ONERR GOTO command, when an error occurs...".

Page 96
Paragraph 1, line 6, the sentence that starts "Press the RESET key..." should read "Type CALL -151" because Apple IIs with the Auto-Start ROM will not go into the monitor when the RESET key is pressed.

Page 102
The function for LOG of X base 10 is LOG (X) / LOG (10).

Page 118
"1) Use multiple statements" states that the maximum line number is 65529 when the actual maximum line number is 63999.

Page 131
Second paragraph, line 7, replace "POKE 22,W" with "POKE 33,W".

Page 135
Replace the top part with:

260 POKE -16296,0
Clear game control "annunicator" output #0 (Game I/O connector, pin 15) to TTL low (0.3 volts). This is the "off" condition: maximum current 8 milliamperes.

270 POKE -16295,0
Set game control "annunicator" output #0 (Game I/O connector, pin 15) to TTL high (3.5 volts). This is the "on" condition: maximum current 0.4 milliamperes.

280 POKE -16294,0
Clear game control "annunicator" output #1 (Game I/O connector, pin 14) to TTL low (0.3 volts). This is the "off" condition: maximum current 8 milliamperes.

290 POKE -16293,0
Set game control "annunicator" output #1 (Game I/O connector, pin 14) to TTL high (3.5 volts). This is the "on" condition: maximum current 0.4 milliamperes.

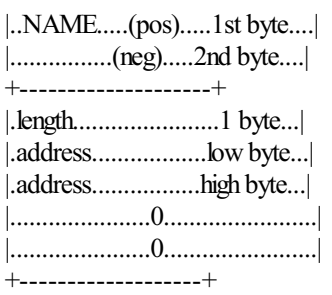
300 POKE -16292,0
Clear game control "annunicator" output #2 (Game I/O connector, pin 13) to TTL low (0.3 volts). This is the "off" condition: maximum current 8 milliamperes.

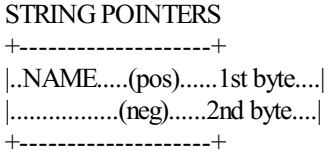
310 POKE -16291,0
Set game control "annunicator" output #2 (Game I/O connector, pin 13) to TTL high (3.5 volts). This is the "on" condition: maximum current 0.4 milliamperes.

320 POKE -16290,0
Clear game control "annunicator" output #3 (Game I/O connector, pin 12) to TTL low (0.3 volts). This is the "off" condition: maximum current 8 milliamperes.

330 POKE -16289,0
Set game control "annunicator" output #3 (Game I/O connector, pin 12) to TTL high (3.5 volts). This is the "on" condition: maximum current 0.4 milliamperes.

Page 137
The table for string pointers is incorrect.

STRING POINTERS


STRING POINTERS


Published Date: Feb 18, 2012

NuBus: Recommended Board Placement for 24-bit Mode

I've heard that the placement of NuBus boards in Macintosh IIci and IIcx computers can affect memory use and performance under System 7. Is it true that the boards should be placed contiguously from left to right in Macintosh IIcx computers, and from right to left in Macintosh IIci computers, to maximize memory performance?

This article has been archived and is no longer updated by Apple.

RECOMMENDATIONS

Yes, there are recommendations as to where the NuBus cards should be placed. This has to do with heap fragmentation, not speed.

The following recommendations are valid only for 24-bit mode:

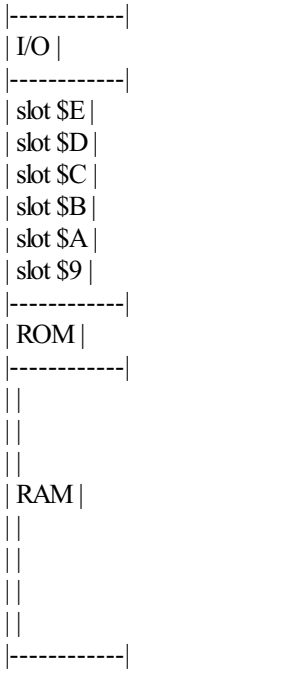
- The Macintosh IIcx should have the cards placed from left to right.

- The Macintosh IIci should have the cards placed from right to left.

- Any Macintosh with six slots should have the cards placed contiguously from either side.

BACKGROUND

The memory map of any Macintosh running in 24-bit mode is 8MB for RAM, 1MB for ROM, 6MB for slot space, and 1MB for I/O. This is in order from bottom to top as follows:

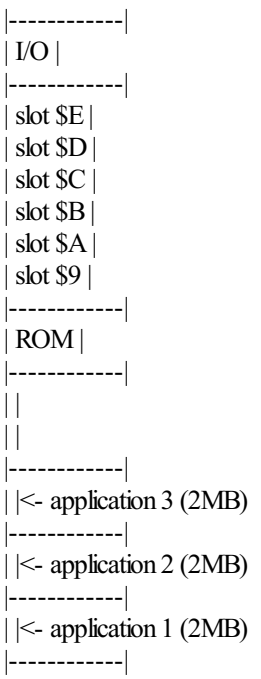


There may be more memory than the amount that shows up as the largest unused block, and thus the amount available for an application to be loaded into, because the memory is fragmented. Say, for example, you had a Macintosh IIfx set for 13MB with virtual memory, with a card in slot $C. Applications were then loaded one after the other that took 7MB of memory combined. The largest unused block would be 3MB, even though there were 6MB of memory available to use, as only 3MB of it was contiguous. The 1MB below ROM, as well as the 2MB from slots $D and $E, could be used, but only as 1MB and 2MB chunks, respectively.

This is the same thing we see when multiple applications are launched, and then one of the middle applications is quit. The memory that the middle

application used is not added to the largest unused block.

In the example below, three applications, each using 2MB of memory are loaded. Assume for this example that virtual memory is not on. If you then quit from application 2, the largest unused block would be 2MB, even though 4MB is not being used. If you load another application that used 1MB of memory, you would have 2MB as the largest unused block, because the 2MB on top is still available. This is the same issue as with the NuBus slots and virtual memory. When a card is placed in a NuBus slot, it is the same as having an application permanently loaded in that space.



With that in mind, on a Macintosh IIcx, the NuBus slots used are $9, $A, and $B. Therefore, if you fill $9 first, which is right next to ROM, you have 5MB of contiguous slot address space. If you fill $A first, you have two chunks, one of 1MB of contiguous slot address space, and the other 4MB of contiguous slot address space, and thus 4MB would be the largest unused block.

A Macintosh IIci uses slot $B for video RAM. The NuBus slots used are $C, $D, and $E. If you are using built in video, it doesn't matter which way you load the cards. If you are not using built in video, using slot $E first would give you the most contiguous slot address space.

On a Macintosh with six NuBus slots, it does not matter which direction you fill the slots from, but to get the most contiguous space, they should be loaded one next to the other.

The ordering of the NuBus cards solely affects heap fragmentation. This has NO effect on the speed of virtual memory. Once you load the applications, the speed is the same regardless of where you place the cards. Heap fragmentation gives you less contiguous memory to load things in, but it does not affect the system's speed.

Remember, this is true only in 24-bit mode. Once you go to 32-bit addressing, the whole address map changes, and this is no longer an issue.

Published Date: Feb 18, 2012

DAL: How to Determine Client Version Number

Is there an easy way to tell what version of DAL (client software) a Macintosh is running?

This article has been archived and is no longer updated by Apple.

Use the DAL Installation Checker application, which is included with the DAL ToolKit. This application identifies the DAL driver and network adapters installed on your Macintosh, assesses their compatibility with each other, and identifies which ones, if any, are improperly installed.

Published Date: Feb 18, 2012

TA47097_AppleTalk_Length_and_Distance_Determined_by_Cabling_(TIL08705).pdf

AppleTalk: Length and Distance Determined by Cabling

What is the maximum allowable length of a full AppleTalk network from end to end?

What is the maximum allowable distance from one device to another (that is from one device to the next device in the chain)

This article has been archived and is no longer updated by Apple.
The total length of any AppleTalk network depends on the type of cabling. AppleTalk is only a set of protocols: the cabling is what determines the total length and the distance between nodes.

Published Date: Feb 18, 2012

AppleWorks 3.0: How To Set Privileges on Network

With the network version of AppleWorks 3.0, how can privileges be set so AppleWorks users can not delete the program or necessary program files?

This article has been archived and is no longer updated by Apple.

If Aristotle is not in use, within AppleShare you can assign a printer to a particular user. You also have the option to select a printer from the Chooser or to type the name. If the name chosen or typed in does not match the spooled printer's name, the printer won't be seen. We suggest verifying what the name of the printer for each user is.

You can set the folder privileges so the users have read-only rights. Do not give users the ability to make changes.

Published Date: Feb 18, 2012

Apple IIGS: "AppleTalk must be installed" Error

I am trying to print AppleWorks on a LaserWriter from an Apple IIGS over AppleTalk. I downloaded "Apple IIGS: Printing to the LaserWriter from AppleWorks" from Tech Info on AppleLink. When trying to set this up by going into the Chooser, I get the error message "Error: AppleTalk must be installed to run this program."

This article has been archived and is no longer updated by Apple.
The error message is a little misleading. The actual cause is an improper setting of the slots in the Apple IIGS Control Panel.

With the older Apple IIGS (256K of RAM on the logic board), you need to set Slot 1 to "Your Card" and Slot 7 to "Built-In AppleTalk". If you have a newer Apple IIGS (1MB RAM), set only Slot 1 to "AppleTalk". You'll have to restart after making the changes for them to take effect.

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Aristotle: How To Exceed the 150 Application Limit

I'm working with Aristotle on an Apple IIGS school network and have 150 applications listed in our current menu. The Apple IIGS teacher workstation has 2MB of RAM installed.

I want to add additional applications to the network, but run up against the 150 limit. How can I create an additional menu while continuing to work under "Administrator"?

This article has been archived and is no longer updated by Apple.
The Aristotle user manual has a 256K RAM card/cache set for initial setup. By increasing the amount of RAM card/cache, you should be able to exceed the 150 barrier that you encountered. The Users, Teachers and menu information are loaded into the RAM card/cache when you log on to the server.

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Macintosh: "Bad F-line Instruction" Error

I am getting a "Bad F-line Instruction" errors on my 68k Macintosh computer. What causes these errors?
This article has been archived and is no longer updated by Apple.
In System 7.x, the "Bad F-line Instruction" error is also referred to as the "Co-processor Not Installed" or "No FPU Installed" error; in System 6.0.7 it is referred to as the ID=10 error.

F-Line instructions are used to access attached processors, such as a floating-point math co-processor. A bad F-Line instruction is a bad Floating Point Unit (FPU) call. However, when you see this on computers without FPUs, or in applications that do not support an FPU, then it is probably a spurious error. These messages often indicate software related errors generated by a program that has extraneous program code. On very rare occasions a hardware failure generates these errors.

With System 6.0.7, these errors do not have a direct relationship with floating point co-processors; you will not resolve this error by installing an FPU. In System 7.x, there may be a problem with the math chip, or it may be an unrelated software error.

The error may be caused by bad code in the application which is calling a processor that is not present or calling a memory location that is not there. There may be a corrupted application or an extension causing some spurious memory problem.

A possible solution is to remove and reinstall the application and/or remove and reinstall the system software.

NOTE: On Power Macintosh computers, there may be additional causes to these types of errors. See the Tech Info articles, "Power Macintosh Computers: No FPU Installed Error" and "Power Macintosh: Type 11 & No FPU Errors Technote" for additional information.
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Apple Writer IIe: DOS 3.3 Printer codes from all Apples

Many printers have special features that the computer signals by sending command codes.

To send codes to a printer from Apple Writer IIe under DOS 3.3, you must insert the codes into the Apple Writer file you want printed. The manual of the printer may list the codes by several names: decimal, hexadecimal, teletype abbreviations (SOH, ETX, DC1, DC3, etc.), standard keys, and combinations of the above.
This article has been archived and is no longer updated by Apple.
Using the chart "ASCII characters, values, and keystrokes", you have to translate from the name of the code in the printer manual into the name of the corresponding keystroke or keystrokes on the keyboard of the Apple IIe, Enhanced Apple IIe, or Apple IIc.

Some keystrokes put so-called control characters into the Apple Writer file. These control characters are not part of the conventional English character set; while screen shows them, the printer intercepts and does not print them, instead recognizing them as signals to turn special functions on and off or to change printer settings.

NOTE: In the descriptions of the keystrokes, the characters greater than and less than, < and >, are used to contain one keystroke, which can mean that:

1. You must simultaneously hold down the control key, the shift key, or both as you press the other key, or
2. You must press a special key, such as ESC or RETURN.

With these considerations in mind, here is a list of codes and methods for inserting them in an Apple Writer file.

Null (ASCII value 0):
The following patch is for Apple Writer IIe under DOS 3.3. The patch allows you to enter NULs (CTRL-@) when in CTRL-V mode. The only side-effect is that the DELETE key doesn't work for correcting a filename entered from the keyboard for the DOS COMMANDS or ADDITIONAL FUNCTIONS menu; instead, just use the left arrow key.

1. Boot the DOS 3.3 System Master diskette.

2. Remove the System Master diskette, insert the Apple Writer IIe under DOS 3.3 diskette and type the following commands.

```
BLOAD OBJ.APWRTIIE
CALL -151
1CE1:EA EA EA EA
3EBA:EA EA EA EA
3D0G
UNLOCK OBJ.APWRTIIE
BSAVE OBJ.APWRTIIE,A$1900,L$2F58
LOCK OBJ.APWRTIIE
BLOAD OBJ.APWRTIIF
CALL -151
1D81:EA EA EA EA
4033:EA EA EA EA
3D0G
UNLOCK OBJ.APWRTIIF
BSAVE OBJ.APWRTIIF,A$1900,L$30D1
LOCK OBJ.APWRTIIF
```

If you don't want to do this to your Apple Writer IIe diskette, refer below to the Applesoft BASIC solution.

Control-A through Control-Z (ASCII decimal values 01 through 26):

Example: Control-Z (ASCII decimal value 26): <CTRL-V><CTRL-Z><CTRL-V>

Exception: Control-V (ASCII decimal value 22) can't be entered. See "Missing Characters" below.

Escape (ASCII value 27): <CTRL-V><ESC><CTRL-V>

Other Control characters: These can be entered in the manner of Control-A through Control-Z.

Missing Characters:
You can't directly enter a Control-V in Apple Writer. To use these and other characters in Apple Writer, it is necessary to use an Apple Writer glossary file.

Apple Writer doesn't send a Null character.

Applesoft BASIC can be used to send a Null character to your printer by following these steps:

1. Create your Apple Writer document as usual, but substitute a unique character in each place that you want a Null character.

2. Type <CTRL-P> to display the Print/Programs Command menu.

3. Type PD8, Apple Writer's code for Print to Disk on an Apple II.

4. Type NP to begin printing.

5. To the Apple Writer prompt for a file name, do not enter the same name with which the file is already saved. Enter a unique name, and note it down.

6. After the printing to disk is finished, exit Apple Writer and boot up a ProDOS diskette.

7. Run the following program:

```
100 HOME
110 PRINT TAB(10);APPLE WRITER TO PRINTER"
120 VTAB 5
130 INPUT "NAME OF APPLE WRITER FILE PRINTED TO DISK: ";F$
140 IF F$="" THEN 900
145 VTAB 12
146 INPUT "CHARACTER TO REPLACE: ";X$
147 IF X$="" THEN 145
150 VTAB 10
160 INPUT "PRINTER SLOT #: ";S$
170 IF S$="" THEN 900
180 S=VAL$(S$); IF S < 1 OR S > 7 OR INT(S) <> S THEN 150
190 D$=CHR$(4)
200 ONERR GOTO 800
210 PRINT D$;"UNLOCK";F$
220 POKE 216,0
230 VTAB 12: PRINT SPC(75)
240 PRINT
250 PRINT D$;"PR#";S
260 PRINT CHR$(9);"132N"
270 PRINT D$;"OPEN";F$280 ONERR GOTO 400
290 PRINT D$;"READ";F$
300 A$=""
310 GET C$
315 IF C$=CHR$(12) THEN 310
320 IF C$=CHR$(13) THEN 350
330 IF C$=X$ THEN C$=CHR$(0)
340 A$=A$+C$:GOTO 310
350 PRINT A$
390 GOTO 300
400 POKE 216,0
410 PRINT D$;"CLOSE"
420 PRINT D$;"PR#0"
430 VTAB 15
440 PRINT TAB(5);"FILE ";F$;" HAS BEEN PRINTED."
450 GOTO 900
800 POKE 216,0
810 VTAB 12
820 PRINT CHR$(7);"I CAN'T FIND THE FILE ";F$;"."
830 INPUT "";Z$
840 GOTO 100
900 END
```

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Macintosh: Troubleshooting ID=01 "Bus Error"

I'm getting a lot of ID=01, "Bus Errors" on my Macintosh.

It has happened when I'm setting up disks (both floppies and external hard disks); it has happened with most of the programs I run; it has happened when I try to print. What does it mean?

This article has been archived and is no longer updated by Apple.
ID=01, or "Bus Error", is one of the more common System errors, along with 02, 03, 10, 25, 28. The main reason you are seeing this type of error is that the programmers have changed their coding of errors from an ID-XX format to a "more helpful" word-based error. A Bus or Coprocessor Error can be caused by any application (including the Finder) trying to access any memory address in the F hexadecimal range, which accounts for approximately 50% of the address ranges in most Macintosh models.

These errors usually represent some sort of software incompatibility. It could be that the application is incompatible with the System version, a system extension or INIT (screen dimmer, startup screens, startup sounds, etc.) is conflicting with another extension, or the extension is incompatible with the System version.

There are three ways to reduce the frequency of this error:

1) First try removing all third party extensions (INITs) and control panels from your System Folder, as there may be a potential conflict there. (If running System 7, holding down the Shift key as the Macintosh starts up accomplishes this for the current session.) After restarting, if the Bus Error ceases, the problem is with a conflicting extension or control panel, or perhaps a combination of them. Move these files back into the System Folder gradually, restarting between each move, until you identify the conflicting file.

2) Be sure the computer is free of ANY virus, but particularly the WDEF strain. System 6.0.7 has serious problems with WDEF, and in 90% of the cases we've seen these bus and coprocessor errors were caused by WDEF.

3) Throw away the current System Folder and reinstall from known good LOCKED disks.

Use your machine for a day or so before adding extensions or control panels back into the system to see if the same errors come up. If they come up only in certain applications, check with the software manufacturer to make sure you have the most current version, and whether they have seen or heard of the problems you are having.

There is a slight chance the errors are hardware related. If the software fixes don't work, try running diagnostics on the hardware. The following parts are the likeliest problem spots:

* RAM
* Logic board
* Hard drive

Published Date: Feb 18, 2012

EtherTalk Installation: How System 6.0.7 and System 7 Differ

Will System 6.0.7 and System 7.x automatically install EtherTalk 2.0.2 as needed for a Macintosh IIfx?

This article has been archived and is no longer updated by Apple.

System 6.0.7

System 6.0.7 does not automatically install the EtherTalk Drivers. You must use the Network Products Installer that comes with the computer. This correctly installs the Network CDEV and network drivers.

System 7

System 7 automatically installs network drivers and CDEVs -- if a network card is installed on the computer. If you find that some networking software you need is not installed, use the Installer program on your System installation disks and use the Customize option. The Customize option lets you install the specific software you want without disturbing the rest of your system.

Published Date: Feb 18, 2012

System 6: Non-Opening Folder May Be a Memory Problem 2/93

Article Change History

02/02/93 - REVISED
* To indicate that this is valid for System 6 only.

Is there a limit to the number of files that can be placed in a folder? I have over 1,000 files in a Data Club network folder, and it will no longer open.

This article has been archived and is no longer updated by Apple.
The maximum number of files and folders available on a hard drive is roughly limited to about 4.3 billion total, with a 64,000 file limit. If you're having a problem opening the files, it may be related to Finder memory allocation instead.

Do this:

1) Do Get Info on the Finder. (In the Finder, select the Finder file, then choose Get Info from the File menu.)

2) Increase the Application Memory Size by 100K.

3) If that doesn't work, increase the memory allocation by another 100K.

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ImageWriter 15-Inch: How To Improve Blurry Printing

I have an ImageWriter 15-inch (wide carriage). When printing in "Best" mode the letters appear blurry.

When the printer puts down the second strike from the other direction during printing it is slightly off, giving the job a blurry look. (I have tried printing the same things with a narrow-carriage ImageWriter I and the print is much sharper.)

I've tried adjusting the carrier wire, replacing the logic board, drive transistor set, carrier motor, carrier wire, and print head, but none of these things helped.

Does the mechanical assembly just wear out after a time, producing a little "slop" that could cause this problem? Is there an adjustment for horizontal linearity? Is there a way to get unidirectional printing in the "BEST" mode?

This article has been archived and is no longer updated by Apple. Printers, like all mechanical devices, eventually exhibit symptoms of fatigue and general wear and tear. There is a point in every printer's life cycle where the cost to repair exceeds the cost of replacement.

Here's what you can do to help your ImageWriter 15-inch:

1) Perform the VR1 adjustment. This adjusts for optimum vertical alignment. This is more of a fine tuning adjustment but should be performed first.

2) Clean the Carriage Rails thoroughly. This means buff the rails and make sure they are clean all the way around. A quick wipe will not do the trick.

3) Check the carrier wire (Apple Part #970-0818) that attaches to the Carrier Assembly. Where the cable mounts to the carrier assembly, a small rubber bushing is used to isolate the Carriage assembly from the cable. As the printer ages, this rubber bushing may deteriorate. If that seems to be the case, order another bushing and see if that solves the problem.

Unidirectional printing in Best mode is not an available option.

Published Date: Feb 18, 2012

LaserWriter II: 6MB Configuration Won‘t Cause Problems (11/94)

I've been told that a 6MB RAM configuration in a LaserWriter IIntx can cause problems.

The only documentation I've been able to locate states that the 6MB configuration can be physically installed, but that the printer will recognize only 5MB.

Will leaving excess memory in the otherwise empty slots cause any damage or problems with the printer or the attached systems?

This article has been archived and is no longer updated by Apple.
As you have discovered, 1MB of the 6MB is not be recognized. We are not aware of any problems that could be caused by having 6MB installed in the printer.

Article Change History:
10 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

MacX: Uses Standard Macintosh System Color Palette as Default

When plotting a color bar of 256 colors in MacX, I get a full range of colors on the left side (colors 0 through 128 or so) but get only a solid color on the right (colors 128 to 256). When printed to a Tektronix color printer, the screen dump routine returns a error message "130 colors found". This occurs in both root and rootless windows.

The color bar is complete (256 colors) on both the screen and printer when running White Pine's Exodus II, and matches the color table of the host.

Why isn't MacX displaying all the colors like Exodus II?

This article has been archived and is no longer updated by Apple.
There are many X client applications that use the standard or default X color map. MacX uses the standard Macintosh system palette as the default color map (which it should), and this can lead to the situation you describe because the System palette has 128 colors locked in and no additional colors specified.

If the X client application requests a new color map from MacX, it should get the full 256 colors it requests.

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TA47110_Apple_III_Problems_with_cursor_positioning_in_CPM_(TIL00872).pdf

Apple III: Problems with cursor positioning in CP/M

This article has been archived and is no longer updated by Apple.

If you're having problems with cursor positioning in CP/M--specifically, problems with accessing rows 8 or 9 from BASIC--you're probably using a version of CP/M earlier than version 2.21. The remedy is to upgrade to CP/M 2.21, and then to study page 32 of the documentation that comes with that upgrade.

Published Date: Feb 18, 2012

Apple II: Mouse Memory Locations

What are the memory addresses for mouse information on the Apple IIe and Apple IIGS?

This article has been archived and is no longer updated by Apple.

Apple IIe/IIc

With the mouse card in slot four of the Apple IIe, locations are stored as follows:

- low byte x $047C

- high byte x $057C

- low byte y $04FC

- high byte y $05FC

(This is different if the card is in a slot other than slot four.)

More data on Apple IIe and IIc applications is on pages 196 through 198 and page 363 of the "Apple IIc Technical Reference Manual" from Addison-Wesley.

Apple IIGS

Information on the Apple IIGS locations is on pages 200 through 205 of the "Apple IIGS Firmware Reference" from Addison-Wesley.

Published Date: Feb 18, 2012

MultiFinder: Application Memory Is Released at Quitting

Under MultiFinder or System 7, does the Memory Manager lock up memory allocated to an already launched application (reserving any extra RAM in that allocation for other calls to memory), or does the Memory Manager allow other programs to reuse allocated memory?

This article has been archived and is no longer updated by Apple.

The memory allocated to an application is reserved for that application when it is running. But when the application is quit, the reserved memory goes back into available memory for other applications to use.

Published Date: Feb 18, 2012

SCSI: Apple Supports Both SCSI Group 0 and Group 1

I understand that computers that use SCSI Group 0 set of commands on drives larger than 1.073742 gigabytes will, when they reach the 1.073742 limit, wrap around to the beginning of the disk, overwriting the first blocks.

I am also told that the SCSI Group 0 set of commands is in some Sun Microsystems -- and virtually ALL Apple -- operating systems.

If this is true, what is the solution if I want to have these large capacity drives? Are the vendors of these large drives responsible for providing a solution?

This article has been archived and is no longer updated by Apple.

Apple's "driver" (software installed to the drive during HD SC Setup and uploaded to the memory during system boot) can be set up to use either 6 bytes (Group 0) or 10 bytes (Group 1) SCSI commands. Although they are using 6 bytes command currently, if the capacity of our drives goes beyond 1.2GB, then the driver can be changed to use Group 1 commands for those drives.

The Macintosh OS can allow different drivers to exist at the same time, so we don't have to change the driver for the current drives, just add the new driver when necessary. Incidentally, our current drives support both group 0 and group 1 commands, too.

Our driver currently supports Group 0, but can easily be modified to support Group 1 when necessary.

Note: Apple's driver only supports Apple hard drives. Third-party hard drives require their own drivers.

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System 7.0: "Put Away" Problem Workaround

Article Change History

09/11/92 - REVISED
* To make more clear.

I'm having a problem with System 7 when I follow these steps:

1) Drag an application to the desktop.

2) Select it and use the Put Away command on it.

3) Close the window the Application is in. Now double-click on any document for that application.

4) A message says the application can't be found.

This article has been archived and is no longer updated by Apple.
Here's a workaround: Don't use Put Away. Instead, drag the application to the desktop again, then drag it back to fix the problem. Rebuild the Desktop file.

Published Date: Feb 18, 2012

System 7: Unavailable Published Fonts Default to Geneva

Article Change History

09/22/92 - REVIEWED
* For technical accuracy.

When a file is published, is its original format maintained? If I publish a paragraph of text with PostScript fonts, does the subscriber get PostScript fonts? What if he has different fonts, or only TrueType fonts?

This article has been archived and is no longer updated by Apple.
If the font that is used in the published document is not available in the subscriber's system, Geneva is used.

If the font is in the System folder, the subscriber's resident font format determines both screen and printer output.

Published Date: Feb 18, 2012

MacTCP: System 7 Compatibility Problems and Workaround

Is there a System 7-compatible version of MacTCP?

Since I've upgraded, I've lost my Ethernet connectivity and have to log on to the mainframe via Microphone II, which is very slow in a terminal emulating mode. I've also lost my FTP capabilities.

This article has been archived and is no longer updated by Apple.
Although currently (August, 1991) MacTCP is not fully compatible with System 7, you actually can use MacTCP -- if you put it in the right place.

Take MacTCP out of your Extension folder and put it into the System folder itself. Since you are making your connection via LocalTalk, and since you cannot be running VM, you should be able to make a connection.

This is a workaround, but it should give you the same functionality you used to have until full compatibility with System 7 is available.

Published Date: Feb 18, 2012

TrueType: Combining Fonts Under Common Name in Font Menu

I want to combine TrueType family of typefaces into one common name under the Font menu: for example, typefaces like Times-bold & Times-italic appearing under one name (Times) in the Font menu.

I have heard of utilities that do this for PostScript fonts (Fifth Generation Systems', Inc. Suitcase II/Font Harmony being one) and also resolve ID conflicts with different fonts. Is there something similar for TrueType?
This article has been archived and is no longer updated by Apple.
The FOND resource is what makes it possible to have different styles of one font family show as one item in a font menu. The possible styles include plain and any combination of the following: bold, italic, underline, outline, shadow, condensed, and extended. Typically, the font styles you see are plain, bold, italic, and bold-italic. Sometimes you see a condensed font. This mechanism is not intended to combine AvantGard-Demi and AvanteGard- DemiOblique under the same font menu item.

Modifying a FOND resource to support more font styles is not something we recommend, as it is rather tricky. However, if you want to try, please read Macintosh Technical Note #198 and Inside Macintosh Volume IV, chapter 5, specifically page IV-39. These documents provide the information you need to attempt this.

We contacted Fifth Generation Systems, Inc., who told us their Font Harmony product does not currently support TrueType fonts.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

AppleShare: Suggestions for Expanding Beyond 50 Users

I have 35 computers on my AppleShare network and need to add 20 workstations. I have a star controller. Do I need to divide the network into zones? Do I need to add a bridge? Do I need to add another file server?

This article has been archived and is no longer updated by Apple.
If you go over the 50-user limit, not everyone will be able to log on to your server at the same time and the network will slow down.

Another AppleShare file server is needed. We also suggest you add an Apple Internet Router that runs in the background on the servers. This will enable you to break up your network into logical zones. Each Internet Router supports two LocalTalk networks. You also might want to consider using an Ethernet backbone between the servers to speed things up.

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TA47119_Super_Serial_Card_Detecting_DSR__(TIL00873).pdf

Super Serial Card: Detecting DSR (12/96)

This article discusses how to detect if a printer has issued a DSR signal.

This article has been archived and is no longer updated by Apple.

If you're writing a program that outputs to a printer and want to be able to Peek into a location to detect whether the printer has issued a DSR signal, the info you seek is on page 54 of the SSC manual. Checking location $C0E9 will give the status of DSR as read from the ACIA status register. If using some non-Apple card, check that card's manual.

Article Change History:
16 Dec 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Aristotle: Troubleshooting Menu Management "File Already Open."

I have an AppleShare network with Apple II workstations and a Macintosh file server. My problem is with Menu Management in Aristotle. After I make changes in menu.m and I try to save changes, I get the error "File already open." Even after repeated tries, I still get this error and must quit without saving my changes.

This article has been archived and is no longer updated by Apple.
The problem may be with the Access Privileges in the Administrator's ESP folder.

Aristotle's menu management program creates folders named ESP that are stored within individual users' folders on the server's startup volume. In order for Aristotle to work correctly, access privileges must be set up in a certain way:

1) Open AppleShare Admin.

2) Display the list of folders.

3) Open the Users folder.

4) Open the appropriate user's folder.

5) Display the access privileges on the ESP folder.

6) Ensure that all boxes in Access Privileges are checked EXCEPT "Make Changes: Everyone".

7) Make sure that Teacher appears in the Group box.

Published Date: Feb 18, 2012

AppleWorks: Landscape Printing on LaserWriter Not Supported

I'm using a LaserWriter Plus with an Apple IIe and AppleWorks 2.1. I can print to the LaserWriter using either Diablo emulation or the IWEM ImageWriter emulator. (This is a stand-alone configuration, with the Apple IIe printing through a Super Serial Card.)

1) Can the Diablo emulation mode print sideways?

2) Can I change IWEM for landscape printing, or could AppleWorks be used to send a PostScript "setup string" to the LaserWriter to prepare it to print sideways?

This article has been archived and is no longer updated by Apple.
Landscape LaserWriter printing is not supported using Diablo 630 emulation, just as it is not feasible on a Daisy Wheel Printer. The daisy wheel would need another print head to handle the 90 degree rotation of print.

As far as altering the IWEM to print landscape, this is theoretically possible but we know of no easy way to do this. It would involve a fair amount of PostScript programming changes to the IWEM.
Published Date: Feb 18, 2012

Macintosh: Troubleshooting Frequent Hard Disk Access Light

My hard drive access light comes on every 15 seconds or so, blinks as if it is accessing a file, then stops. This happens all the time. What's going on?

This article has been archived and is no longer updated by Apple.
This behavior is most likely caused by a third-party INIT or CDEV, such as On Location, rather than by a hardware problem. An easy test is to start up your system with a known-good System floppy disk. If the symptoms persist, then you may have a damaged hard drive -- though the problem is most likely in software.

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Macintosh Portable: Tips for Long-Term Storage

If I use my Macintosh Portable only once every three months, how should I treat the battery: do nothing or keep the charger attached?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable battery is a sealed lead-acid battery and must be recharged periodically in order to maintain normal battery life. If the battery falls below 5.4 volts, it cannot be recharged.

To prevent the battery from completely discharging, keep it plugged in to the Battery Recharger, or leave the Macintosh Portable plugged in to the power adapter whenever possible.

When neither of these methods is possible, observe these precautions for recharging and storing the battery:

- Do not leave the battery in the Macintosh Portable for longer than TWO WEEKS without plugging in the power adapter.

- If you store the battery, recharge it overnight before storing it, then store it in a cool, dry place.

- Do not leave a battery in storage for longer than SIX MONTHS without recharging it.

Failure to follow these steps for recharging and storing the battery will result in a dead battery that CANNOT be recharged and will need to be replaced.

Published Date: Feb 18, 2012

AppleCD SC: Has Universal Power Supply

My AppleCD SC is clearly marked "110 VAC Only", yet its specification sheet says it has a universal power supply. Which is it?

This article has been archived and is no longer updated by Apple.

The drive's label is incorrect. The AppleCD SC does indeed have a universal power supply, even though label on the bottom of the unit says otherwise. The power supply is labeled "AC Input: 110-240v, 50/60Hz".

Published Date: Feb 18, 2012

Desk Accessories: Troubleshooting Inappropriate Fonts (9/94)

When opening the Chooser to select a LaserWriter, the LaserWriter appears, but with its name displayed in the Cairo typeface.

This article has been archived and is no longer updated by Apple.
If everything else on your system seems to be working, something is probably wrong with your Chooser desk accessory. (This can also happen to desk accessories like the System 6.0.x Find File, and so on.) The information about the LaserWriter coming in over the network doesn't have font information. If your other modeless dialog boxes are working, then the problem must be with the information compiled and generated by the Chooser.

There are several repair options here, depending on exactly where the problem is:

* Reinstall Chooser (with Font/DA Mover if your System is earlier than System 7).

* Reload all System fonts from original disks.

* Reinstall the System file with Installer.

* Zapping the PRAM (under System 6.0.x or 7.x) doesn't usually work.

* Reinstalling the system software (6.0.x or 7.x) doesn't always work.

* Run the shareware control panel ApFont to reset your system file default font (normally Geneva 12) This usually fixes the problem.

* Delete the entire System folder, then reinstall with Installer.

The last option is the most drastic, but also has the greatest probability of fixing the problem the first time.

You can obtain ApFont from AppleLink.

These articles can help you locate software updates mentioned here:

* Where To Find Apple Software Updates
Lists online services for "free" Apple software updates

* Obtaining Apple Product Support in the USA
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
15 Sep 1994 - Removed binary file.
08 Jul 1993 - RETITLED and REVISED

Support Information Services
Published Date: Feb 18, 2012

Apple Peripherals & Drivers: Advantage over Third-Party Products

What's the advantage of using an Apple printer instead of one from another manufacturer?

This article has been archived and is no longer updated by Apple.
The Macintosh operating system uses drivers for connecting peripheral devices such as printers. At this time, Apple provides drivers only for its own peripherals, not for third-party products.

Some third-party developers have opted to create drivers for non-apple printers. In most cases these drivers work well. Not all printers or drivers have the same capabilities that our drivers and printers have, while others may have more.

Most software developers develop their software to be compatible with our drivers, but not necessarily with third-party drivers. By sticking with Apple products, you are assured a greater compatibility with off-the-shelf software.

Published Date: Feb 18, 2012

Apple II: Translating Graphics Files to Macintosh

Is it possible to convert ProDOS clip art files to Macintosh SuperPaint files using Apple File Exchange (AFE)? If so, what translator is needed?

This article has been archived and is no longer updated by Apple.

We don't know of a product that converts graphic files between Apple II and Macintosh formats. This type of conversion is one of the most difficult, as the files are usually stored as an approximation of the hardware's display capabilities, which vary greatly between different computer lines.

Though we couldn't find a product that will do this, what you're probably looking for is a utility that will convert a file into a "standard format," such as Graphic Interchange Format (GIF). Once in this format, you could move it to the Macintosh and re-translate it.

Published Date: Feb 18, 2012

CloseView: Conflict Display Cards 48, 824, 824 GC & System 6

I'm having intermittent crashes that seem to be related to the CloseView control panel. I am running System 6.0.x. I frequently need to use CloseView, and my Macintosh crashes almost always when using CloseView.

This article has been archived and is no longer updated by Apple.
There is a known anomaly with CloseView versions prior to 7.0 (that is, those versions before System 7) and the Macintosh Display Cards 4*8, 8*24, and 8*24 GC in the NuBus Macintosh. Your symptoms are typical of this anomaly. The only workaround for using CloseView with these cards is to upgrade to System 7.

CloseView behaves gracefully under System 6 in other Apple-supplied video environments: Macintosh Classic, Macintosh IIsi built-in video, Macintosh IIci built-in video, Macintosh LC built-in video, Macintosh Plus, Macintosh SE, Macintosh SE/30, Two-Page Display Card, Portrait Display Card, and Macintosh II Video Card. We have no data regarding third-party video cards.

The version of CloseView that ships with System 7 is compatible with the 8*24 style of video cards. Users wishing this functionality are encouraged to upgrade to System 7.

Note that though in very brief testing we didn't encounter any problems using CloseView version 7.0 on Macintoshes running System 6.0.x having an 8*24 video card, Apple did not formally test this configuration nor is this a recommended configuration.

An alternative is to use third party CloseView-like programs, such as Stepping Out from Berkeley Systems, Inc. For more information, search under Berkeley Systems.

Published Date: Feb 18, 2012

Apple III COBOL: Using CALL and CANCEL with subprograms

This article has been archived and is no longer updated by Apple.
When a linkage section is used between a calling and a called program and there is I/O (disk read/write, etc.) in the called program, the file I/O instructions are not successfully executed by the called program. Also, the "Cancel" verb does not seem to always free up the entire amount of memory allocated to subprograms.

Page 85 of the COBOL Manual states," If you are not careful in Call/Cancel sequences, you can fragment memory, leaving no room for a new Call, even though the total amount of free memory might be enough." Page 86 says," There is one more complication to consider: any program can be segmented. When you Call a segemented program, The Run-Time System allocates for it enough memory to hold the root segment and the largest overlay." What this all means is that all memory is returned with Cancel but fragmentation could be the problem. A Called module requires contigous memory to be loaded.
Published Date: Feb 18, 2012

Apple IIe Card: Effect of Video RAM in Macintosh LC

What effect does the Macintosh LC's video RAM card have when running Apple IIe programs using the Apple IIe card with a color monitor?

This article has been archived and is no longer updated by Apple.

The 13-inch High Resolution RGB monitor works fine on the Macintosh LC in Apple IIe emulation. The video RAM SIMM has no effect on Apple IIe emulation. The VRAM SIMM increases the pixel depth of the monitors so it displays more colors or shades of grey.

Published Date: Feb 18, 2012

Daystar PowerCard: Prevents Start-Up from High-Density Floppy

Can a Daystar 50MHz PowerCard affect SCSI transfers? Does the PowerCard's processor speed adversely affect the SWIM chip upgrade?
This article has been archived and is no longer updated by Apple.
The Daystar 50MHz PowerCard should not affect SCSI transfers.

The SWIM chip that controls floppy drives should not be affected except for one minor problem: you can't start up from a high-density floppy because the accelerator card requires an INIT in order to use high-density disks. High density disks can't be used as startup disks because the INIT must be loaded first.

Published Date: Feb 18, 2012

TA47133_Apple_III_Drive_Parts_Not_Interchangeable_with_DuoDisk_Disk_II_(TIL08745).pdf

Apple III Drive: Parts Not Interchangeable with DuoDisk, Disk II

I have some spare Apple III computers equipped with 5.25 disk drives. Is it possible to use the drive mechanisms or other parts from the disk drive in the Apple III computers and replace them with parts in the DuoDisk drive?

This article has been archived and is no longer updated by Apple.
The drive mechanism from the Apple III drive is not compatible with either the Disk II or the DuoDisk, so you would have to purchase the mechanical assembly for the DuoDisk. The part number for that drive's mechanical assembly is 661-72128

Published Date: Feb 18, 2012

AFE 1.4: 824 GC Acceleration Problem

Apple File Exchange will not make a clean transfer of data to IBM format when the Macintosh Display Card 8*24 GC's acceleration is on. AFE works okay when the accelerator is turned off.

This article has been archived and is no longer updated by Apple.
This is a known issue with version 1.4 of AFE. The problem occurs with AFE when the Macintosh Display Card 8*24 GC graphic acceleration is turned on and may cause the system to hang, especially when formatting or erasing disks.

The problem does not exist with version 7.0 of AFE. However, AFE 7.0 has only been tested with System 7 and the 7.0.1 version of the 8*24 GC software. The current solution for System 6 users is to turn off graphics acceleration when using disks with AFE 1.4.

Published Date: Feb 18, 2012

Macintosh IIsi: How to Install EtherTalk

How do I install the drivers for an Apple Ethernet board on a Macintosh IIsi?

This article has been archived and is no longer updated by Apple.
This procedure will install the EtherTalk drivers as well as the Network CDEV into your System Folder:

1) The Macintosh IIsi comes with a disk called Network Products Installer. Start your Macintosh IIsi with this disk.

2) Launch the Installer.

3) Click OK.

4) Select EtherTalk.

5) Select the drive you wish to install to.

6) Click on Install (at some point during this procedure, the application will ask you for your EtherTalk Installation Disk).

7) Quit after installation is complete.

8) In the Control Panel, select EtherTalk.

Published Date: Feb 18, 2012

AppleFax Modem: Explanation of Transfer Speeds

The AppleFax Modem's specifications state that it can send at 9600bps, and slower speeds -- presumably to other similar modems' speed.

Is there any detailed information about this modem and the speed at which it transmits files under different conditions?

This article has been archived and is no longer updated by Apple.
The specification you're requesting don't really exist as true benchmarks, as there are too many variables inherent in any data transmission. Most communication hardware specifications cite baud rates and bps ratings, and use that as the basis of comparison with other products.

The AppleFax Modem is an often misunderstood product. It is a Group 3-compatible facsimile device, and communicates with other AppleFax Modems at 9600bps in a modem-like fashion. It's important to note the latter point, as many users mistakenly believe that it also functions as a standard modem.

As far as fax transmission goes, the Group 3 protocols call for extensive error checking, which slows data throughput. In addition, Group 3 fax machines automatically lower their transmission rates based on the noisiness of the phone line. These two factors often make the fax modem appear to be transmitting slower than it actually is.

Published Date: Feb 18, 2012

TA47137_Dow_Jones_Portfolio_Evaluator_and_Apple_Modem_(TIL00875).pdf

Dow Jones Portfolio Evaluator and Apple Modem

This article has been archived and is no longer updated by Apple.

DJPE does not support the Apple Modem as far as autodial. If the software finds a Super Serial Card, it automatically goes to a manual dial mode. From the terminal mode, type the commands for the modem to dial, and then manually log on. After that, type CTRL-G (for go), and the software will operate normally from then on. No revision is planned for either of the Dow Jones packages.

Published Date: Feb 18, 2012

Macintosh: Basic Troubleshooting for Font Problems

I'm suddenly having problems with the font in one of my Macintosh applications. The font is breaking up and looks like there is no printer font installed. I've reloaded the program, resources, fonts, everything -- but no change.

This article has been archived and is no longer updated by Apple.
In general, font problems can be traced to either corrupt system resources or to a corrupt application. Here is a short troubleshooting procedure you can try to determine which of the two it may be:

Start up the computer with a known good System Tools or Disk Tools startup diskette (one which contains a complete System Folder). This effectively eliminates any conflicts you may be having with system extensions or control panels in your main System Folder. If this solves your problem, then go back to your main System Folder and move all items that did not come with the original system software to another temporary folder, moving one item back in at a time until you diagnose which caused the conflict.

One other possible problem is duplicate System Folders. Your Macintosh may be "switching" to another System on your hard disk and you aren't aware of it. You think you're modifying and testing one System Folder, but your Macintosh is actually using the other System.

Use the Find File desk accessory (or System 7's Find command) to search for multiple System Folders. If you find more than one, trash all but the active System Folder. If that remaining System Folder is still a problem, then move any items from it you want saved to a holding folder and drag the remainder of the System Folder to the trash. Then start up from an Installer disk and reinstall the system.

Published Date: Feb 18, 2012

Macintosh IIfx: Two Internal Hard Drives Not Supported

I have a Macintosh IIfx with two internal 3.5 SCSI drives. The drives are daisy-chained, with the last drive having a terminator and the first one without. I also have an external SyQuest drive with internal termination and a short cable.

I'm concerned that somehow this setup will not work with the Macintosh IIfx and its different bus impedance.

It looks to me like:

1) I need to remove internal termination of SyQuest and use a Terminator II.

2) I need to keep the internal drives the same but add a noise filter, probably at end of internal daisy chain on drive which has termination.

Am I right?

This article has been archived and is no longer updated by Apple.
Your configuration is not an Apple-supported solution. We advise removing the second internal hard drive, particularly with the Macintosh IIfx and its exact termination requirements.

You have the right idea about what it takes to make this work. The termination needs to be augmented with a SCSI Filter on the last internal hard drive and a Terminator II installed on the last external device (and no internal termination).

Published Date: Feb 18, 2012

Ethernet: Don‘t have Different Routers Point to Same Network

Is it possible to have two different zone-creating devices pointing to the same local zone (for example, a Cayman GatorBox and the Internet Router)? Could there be two Ethernet connections, one on the GatorBox and the other on the Internet router, both attached to the same LocalTalk LAN on the other side?

This article has been archived and is no longer updated by Apple.
You can't have two different routers point to the same physical network. An Ethernet backbone is a much better way to access the three different networks.

Published Date: Feb 18, 2012

GS/OS 5.04 Upgrade: Correcting Drive Recognition Problem

I upgraded my Apple IIGS to GS/OS 5.04 on an AppleShare network and it no longer recognizes 5.25 drives.

This article has been archived and is no longer updated by Apple.

When this happens, the 5.25 driver is usually missing from the drivers folder. Run the GS/OS 5.04 Installer again and install the 5.25 drivers.

Published Date: Feb 18, 2012

Apple HD Backup: Incompatible with SuperDrive Floppies

Is Apple's HD Backup compatible with High Density 1.44MB floppies?

This article has been archived and is no longer updated by Apple.
HD Backup is incompatible with the Apple SuperDrive. It doesn't correctly format diskettes inserted in this type of drive -- and it tries to format every diskette it's going to back up to.

Apple HD Backup ceased shipping with System Software beginning with System 6.0.5, and is no longer shipping with external disk drives beginning with those bundled with System 6.0.7.

Published Date: Feb 18, 2012

Hard Drives: What to Do about Volume BTREE Structure Problems

Even though there is plenty of room, suddenly my hard drive says I have no space left on the disk. There are no viruses, and rebuilding the Desktop doesn't help.

Norton Utilities tells me that:

- It can't read BTREE header
- The Volume bit map is incorrect
- The Volume info blocks have errors

This article has been archived and is no longer updated by Apple.

You're experiencing Volume BTREE Structure Corruption. When this happens, the hard drive needs to be reformatted. It is possible for software to bomb or crash hard enough to cause format structure damage to the hard drive. This is one of the main reasons we strongly suggest frequent backups.

Published Date: Feb 18, 2012

Macintosh Hard Disk 20: How To Verify HFS Formatting

How do I get a Macintosh Hard Disk 20 to format as an HFS volume?

This article has been archived and is no longer updated by Apple.
Select the Macintosh Hard Disk 20 volume and choose Erase Disk in the Special menu.

You can to see if formatting was successful if there are the two thin lines near the top of the disk window. If you see a one-pixel dot at the left side of those two lines, it is an HFS volume.

Published Date: Feb 18, 2012

Macintosh IIsi: How To Invoke Interrupt with MacsBug

I'm having problems using the programmer switch on a Macintosh IIsi. I'm using MacsBug and have tried Command-Power On and Control-Command-Power On to no avail.

This article has been archived and is no longer updated by Apple.

To invoke the interrupt on a Macintosh IIsi through MacsBug, use the "hot keys" Command-Reset. And it's important that you use the latest version of MacsBug.

Published Date: Feb 18, 2012

Macintosh XL: No Support for LaserWriter LS

I want to use a Macintosh XL with a LaserWriter LS. Can System 6.0.7 run on a Macintosh XL?

This article has been archived and is no longer updated by Apple.
All further Apple development on the Macintosh XL was stopped when it was discontinued. At this time, there are no plans for upgrading MacWorks to System 6.0.7 for LaserWriter LS support.

Published Date: Feb 18, 2012

TA47147_Macintosh_XL_Memory_Upgrades_(TIL08760).pdf

Macintosh XL: Memory Upgrades

Are there any Apple memory upgrades available for the Macintosh XL?

This article has been archived and is no longer updated by Apple.
When the Macintosh XL was available, Apple used 512K memory boards, of which two were supported in the system. AST used to manufacture 1MB memory boards, but they have since discontinued that product.

Sun Remarketing is an excellent source for support on the Macintosh XL. They also carry outdated third-party products for many discontinued Apple products. They may have some of those AST board in stock.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

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TA47149_Apple_II_HighSpeed_SCSI_Card_Using_with_GS__(TIL08762).pdf

Apple II High-Speed SCSI Card: Using with GS (11/96)

I have an Apple IIGS with a High-Speed SCSI Card but am unable to access my SCSI Hard Drive. I am using the drivers that came on the System Tools disk 5.0.2.

This article has been archived and is no longer updated by Apple.

You need to install the drivers on System Tools disk 5.0.4, which should support the High Speed SCSI card. The SCSI card is also self-terminating and any external terminators should be removed.

Article Change History
15 Nov 1996 - Reviewed for technical accuracy, revised formatting.

Published Date: Feb 18, 2012

LaserWriter: Improving the Speed of a Shared LaserWriter

I have a 15-node TOPS network with a shared LaserWriter IINT. I'm not happy with the printing speed across the network and I'm considering upgrading to a LaserWriter IINTX. Most of the documents we print are 1 to 4 pages with only 3 to 4 fonts. Is the bottleneck the LocalTalk speed, or could a LaserWriter IINTX significantly improve printing speed? Can you tell me how a LaserWriter IINTX could increase speed, and how much improvement to expect?

This article has been archived and is no longer updated by Apple.
Upgrading to a LaserWriter IINTX will definitely help performance some, but it's important to consider other factors that may also help. The principal items that affect printing to a PostScript LaserWriter with a given application (not necessarily in this order) are:

- The LaserWriter's CPU performance.

- The type of print job: complex graphics or text.

- Whether the required fonts are resident in the printer or need to be downloaded.

- The type of connection to the host: serial or LocalTalk.

- The host's performance: how fast it can prepare and send data.

The environment may also play a major role in printing performance. Connection to a LocalTalk network adversely affects the performance of many LaserWriters if that network is used for file services such as an AppleShare File Server or TOPS installation. The LocalTalk bandwidth can be used up, resulting in poor network and printing performance.

From what you've told us about your installation, it doesn't sound like upgrading to a LaserWriter IINTX will help much. You may see a mild improvement in print speeds, but unless you print complex graphics as well as text, you won't see a dramatic change.

The type of Macintosh, the system software versions, and the applications you use can affect speed quite a bit.

Printing slows down if you repeatedly use fonts (TrueType or PostScript) that must be downloaded. If this is the case, we recommend that you make a habit of downloading the most frequently used fonts to the LaserWriter with the LaserWriter Font Utility. Downloading fonts once between power cycles instead of for each print job improves speed on both the LaserWriter IINT and IINTX.

The LaserWriter IINTX does have the advantage of optional memory upgrades for additional fonts and performance. A hard disk is also available for the LaserWriter IINTX to download fonts only once.

Published Date: Feb 18, 2012

Apple HD Setup: Why 80MB Drive Formats to Only 76.8MB

I've noticed that the new Apple 80MB internal drives only format to 76,800 Kbytes usable! Is there any reason for this? (The old drives formatted to the entire 80MB.)

This article has been archived and is no longer updated by Apple.
Earlier versions of HD Setup initialized a volume to its maximum formatted capacity. Drives of similar advertised capacity have slightly varying total formatted size.

The release of the Apple Tape Backup unit lets you do a mirror-image backup of your drive. But in order to restore a mirror image backup, the volume that is being restored to must be of like or greater capacity than the volume from which the data came.

If, for instance, you had a failing hard disk that could be formatted to 78MB, did a mirror-image backup, had the drive replaced with one that could be formatted to only 76MB, you wouldn't be able to restore your work.

Apple modified HD Setup so that it formats each series of drive we sell to a like-total formatted size for that series, regardless of vendor. In the case of the nominally 80MB drive, 76MB is the lowest common denominator of all vendors that we use.

You may be able to reclaim some of the unused 4MB by using a third-party initialization application, but this is not guaranteed nor supported by Apple.

Published Date: Feb 18, 2012

ImageWriter: First printed line is expanded or crunched

This article has been archived and is no longer updated by Apple.
When you print a file on the Imagewriter, sometimes the first printed line at the beginning of the paper is crunched or expanded. This problem sometimes occurs after you take the paper out of the platen: you may have left the tractor gears in a position "between linefeeds". Solve this problem by doing a form feed right every time you reload the printer with paper.

Sometimes the paper is not held tight enough by the rollers, especially when you use cut sheets. Solve the problem by "burping" the printer: turn the printer off and on so the printhead moves back and forth and the gears are tightened.
Published Date: Feb 18, 2012

Macintosh Display Card 824 GC: Acceleration Slows Some Apps

My Color Studio graphics software runs slower with the Macintosh Display Card 8*24 GC's acceleration turned on than with it off.

This article has been archived and is no longer updated by Apple.
Many graphics programs have been optimized at the hardware level, bypassing the QuickDraw routines. In such cases, turning on software acceleration causes the slowdown you're encountering. We suggest you contact the software vendor for upgrade and compatibility information.

When the accelerator is turned off, the Macintosh Display Card 8*24 GC behaves just like a Macintosh Display Card 8*24.

Published Date: Feb 18, 2012

Macintosh: Troubleshooting Invisible Folders Problem

When opening a Macintosh-formatted floppy disk from within Microsoft Works to select a file, no folders appear. But the folders appear normally in the Finder directory. The files are all available, but the folders on the disk are invisible. How can we get the disk back to normal?

This article has been archived and is no longer updated by Apple.

1) It's possible that the disk directory got corrupted, causing the problem you are seeing. Rebuild your Desktop by holding down the Command and Option keys while inserting the diskette. Run Disk First Aid to repair any directory damage.

2) Someone may have made the folders invisible. Use a utility such as ResEdit or Symantec Utilities to check this.

3) If running System 7.0 or 7.0.1, make sure to obtain System 7 Tune-Up version 1.1.1 or greater. Running Tune-Up 1.1.1 or greater will prevent a problem from occurring where folders and files begin to disappear from the desktop, but are in fact still intact and available.

Published Date: Feb 18, 2012

AppleShare: Not Possible to Expand Server Beyond 50 Users

I have an AppleShare network that's reached the 50-user limit. I want to be able to stretch and get an additional 5 users on the net. Is there some kind of a patch or workaround to do this?

This article has been archived and is no longer updated by Apple.
There is no known patch for enlarging the number of allowed users for AppleShare. The only solution at this time is to acquire another server.

Published Date: Feb 18, 2012

TA47159_AUX_Cant_Run_on_Macintosh_LC__(TIL08775).pdf

A/UX: Can‘t Run on Macintosh LC (8/94)

Can I modify a Macintosh LC so it can run A/UX?

This article has been archived and is no longer updated by Apple.
The Macintosh LC can't run A/UX because it lacks the required PMMU. Currently, Apple does not offer a PMMU upgrade for the Macintosh LC. This could be a third-party opportunity, though we aren't aware of any company manufacturing a PMMU for the Macintosh LC at this time.

Refer to the document titled "A/UX and Compatible Macintosh Computers" for a complete list of which Macintosh models are supported by A/UX.

Article Change History:
29 Aug 1994 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

TA47160_AUX_Simultaneous_LocalTalk_and_EtherTalk_Connections__(TIL08776).pdf

A/UX: Simultaneous LocalTalk and EtherTalk Connections (4/95)

Does A/UX support simultaneous connections to LaserWriters on LocalTalk and TCP communications over EtherTalk, or is a GatorBox or FastPath required for a simultaneous connections?

This article has been archived and is no longer updated by Apple.
A Macintosh running A/UX will not allow simultaneous network connections via LocalTalk and Ethernet. You can print to a LaserWriter by making it a local printer to your Macintosh as a serial PostScript device under A/UX, or by selecting EtherTalk in the Network control panel in the Macintosh environment under A/UX.

Article Change History:
17 Apr 1995 - Updated the article for clarity.
31 Aug 1992 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

System 7: Can‘t Run from Single 800K Floppy Disk

Article Change History

08/18/92 - CORRECTED
* To clarify that a high density (1.4MB) startup floppy is possible.

Is there a way to create a bootable floppy of System 7?

If not, what is Apple's recommendation for doing diagnostics in the event of a system hang on startup or a hard disk crash?

This article has been archived and is no longer updated by Apple.
It is not possible to create an 800K system startup floppy disk, though a high density (1.4MB) floppy will hold a minimal System 7. For those Macintoshes that have an Apple (FDHD) SuperDrive, making a bootable floppy is simply a matter of running the System 7 Installer program, choosing customize, and selecting "Min System" for your Macintosh model.

The initial recommendation for troubleshooting System 7 is to hold down the Shift key on startup to temporarily disable any system extensions (INITs). Some other suggestions for system software troubleshooting:

1. Attach an external hard drive that has System 7 on it and set startup. Make sure this hard drive has appropriate and latest virus checkers installed.

2. Run standard hardware diagnostics to check the hardware.

3. Completely replace the System 7 software if removing the system extensions doesn't help. This is where it might be useful to have a 1.4MB startup floppy, so that you can at least get to the hard disk to remove the damaged system files and set aside other files you want to save.

Published Date: Feb 18, 2012

Macintosh: Explanation of "About This Macintosh..."

When I choose "About This Macintosh..." from the Apple menu, I get information about my computer's memory and how it's being allocated. When I look at how much memory my applications are using, I typically see a grayed bar that's fully or partially filled by a black bar. Sometimes the black bar moves around.

What do the black and grey bars indicate? I have always thought the gray was for how much memory the program had reserved for itself and that the black was how much memory it was currently using.
This article has been archived and is no longer updated by Apple.
The total bar (black + gray) equals the amount of RAM allocated to the application, with the black portion indicating the amount of RAM currently used by that application. Technically, the program would have to use the operating system's memory manager for the black portion to be completely accurate, and some programs don't do that. The black portion fluctuates in proportion to actual RAM in use.

Notes:

* Under System 6.0.x, you get the same information with the "About The Finder..." item under the Apple menu.

* Under System 7.x, you can get an "About The Finder..." choice under the Apple menu instead of "About This Macintosh..." by holding down the Option key. When you select this menu item, you'll see the mountain Finder graphic.

* Performa systems display the same information with the "About This Computer..." item under the Apple menu.
Published Date: Feb 18, 2012

TA47163_Macintosh_SE_SE_Upgrade_Changes_Function_of_CommandShift_(TIL08779).pdf

Macintosh SE: SE/30 Upgrade Changes Function of Command-Shift-4

I've upgraded my Macintosh SE to a Macintosh SE/30. Command-Shift-4 with Caps Lock up used to print the active window. Now it form-feeds one sheet of blank paper on my ImageWriter II.

How do I print the active window on a Macintosh SE/30?

This article has been archived and is no longer updated by Apple.
The screen dump of the active window was discontinued in System 6.X for any system newer than the Macintosh SE.

However, holding down Command-Shift-Caps Lock-4 should give you a screen dump of the desktop, including any active windows.

Published Date: Feb 18, 2012

Using Lisa 2.0 Files With Lisa 7/7

This article has been archived and is no longer updated by Apple.

When you open a document with a Lisa application, there must be enough disk space to retain the original document while you work - in the event you later choose "revert to previous version." Even more disk space is required to enable you to use "undo." This is why you may see the message "Not enough room to open file" when you try to read a Lisa 2.0 document stored on diskette by Lisa 7/7. If this happens, move the document to the hard disk, where you are likely to have more free storage space. You should then be able to work on your document with no problems.

Published Date: Feb 18, 2012

Macintosh: Do Not Split ADB Signal

Some Macintosh computers, like the Macintosh IIsi, have only one ADB port in the back. Can I make up my own ADB "T" plug or "Y" cable, so that two ADB sockets would be provided from the one port? Will the two ADB devices interfere with each other?

Another way to phrase the question: on a Macintosh with two ADB ports on the back, does each port come off a different and separate part of an interface chip, or are the two connections "common", so that pin 1 on connector 1 is connected to pin 1 on connector 2?

This article has been archived and is no longer updated by Apple.
We do not recommend splitting the ADB signal, because it could cause difficulties with signal integrity. The signal is not very strong, and if split would be even weaker.

On a Macintosh with two ADB ports, both ports both go to the same ADB controller chip, but are physically separated to deliver the full signal down the bus.

Published Date: Feb 18, 2012

Macintosh: How To Make "Curly" Quotation Marks

My Macintosh (using New York font) makes quotation marks angled only one way. How can I produce the opposing quotation mark?
This article has been archived and is no longer updated by Apple.
Here's how to produce "curly" quotes from the Macintosh keyboard:

For this character	Press these keys
"	Option-[
'	Option-]
"	Option-Shift-[
'	Option-Shift-]

Some word-processing applications (MacWrite is one) can be set to automatically produce the appropriate "curly" quotes when you type ' or ".

Here's how to use the Key Caps desk accessory to see what characters are available to you:

1) Once you select Key Caps from the Apple menu, you see a display of all characters available in the current font -- actually, all those you can produce without using the Shift, Command, or Option key.

2) To see what characters you can make with various combinations of the Shift, Control, and Option keys, just press those keys on the keyboard.

3) To change to another font, select it from the Key Caps menu.
Published Date: Feb 18, 2012

TA47168_AppleShare_AppleShare_System_Can_CoExist_(TIL08783).pdf

AppleShare: AppleShare 2.0.1, System 6.0.5 & 6.0.7 Can Co-Exist

I have a Macintosh SE/30 file server running System 6.0.5 and AppleShare 2.0.1. There are Macintosh LC and Macintosh Classic computers on the network. Will the file server need to be upgraded to System 6.0.7, and is AppleShare 2.0.1 still okay to use?

This article has been archived and is no longer updated by Apple.
You do not need to upgrade the file server's system software, and AppleShare 2.0.1 will work just fine.

Published Date: Feb 18, 2012

TA47170_AppleCD_SC_IBM_PC_Compatibility_(TIL08785).pdf

AppleCD SC: IBM PC Compatibility

Article Change History

03/25/93 - UPDATED
* With new information

Can I use an AppleCD SC with an IBM PC?

This article has been archived and is no longer updated by Apple.
The AppleCD SC and the AppleCD SC+ can be used with MS-DOS systems that have a SCSI connection when the Trantor CD-ROM drivers are installed on the MS-DOS system. Trantor does not support the AppleCD 150 and AppleCD 300 with their current version of driver.

Published Date: Feb 18, 2012

Apple IIe Card: Using with Apple High Resolution 13-inch Monitor

Are there any display problems associated with connecting the Apple 13-inch High Resolution Monitor to a Macintosh LC with an Apple IIe Card? Will some objects display with incorrect aspect ratios?

This article has been archived and is no longer updated by Apple.
There shouldn't be any problem using the Apple High Resolution 13-inch Monitor with the Apple IIe Card. Using a 13-inch RGB monitor on the Macintosh LC with Apple IIe emulation should not affect the aspect ratio of any object. Circles should still be circles. However, when running Apple IIe emulation, you can only use certain Apple IIe text display modes:

- 80 columns, 24 lines, 5x7 dot matrix

- 40 columns, 24 lines, 5x7 dot matrix

- All text appears on the screen as normal, inverse, or MouseText characters

Published Date: Feb 18, 2012

Apple PC 5.25 Drive: Troubleshooting Slow Disk Recognition

My Apple PC 5.25-inch floppy takes about a minute for an inserted 5.25-inch disk to be recognized by my Macintosh. Is this normal?

This article has been archived and is no longer updated by Apple.
It depends on the amount of information on the MS-DOS diskette, but there are probably some other factors involved to bring the access time to a full minute. More than likely there are other INITs, CDEVs or applications (if you're running under MultiFinder) that are stealing CPU time away from Apple File Exchange. You can easily check this by starting up with a floppy under Finder-only and launching AFE.

Another possibility is that AFE is running out of memory. If you're running MultiFinder, try boosting the RAM allocation by 200K or so.

Published Date: Feb 18, 2012

AppleShare Print Server: Prep File and Using with System 7

I can't make my AppleShare Print Server accept print files from System 7 drivers. The AppleShare Print Server doesn't see the "Prep" file on the server that matches System 7.

This article has been archived and is no longer updated by Apple.

The Laser Prep file is now included in the System 7 LaserWriter driver. Apple also includes a System 7 Prep file that is separate from the LaserWriter driver specifically for the AppleShare Print Server.

Copy both the System 7 LaserWriter Driver and the System 7 LaserWriter Prep file over to the AppleShare Print Server. This prep file is needed only on the server, not your individual workstation.

Published Date: Feb 18, 2012

Apple IIc: Using American version in Europe

Can an American version of the Apple IIc be usen in Europe?

This article has been archived and is no longer updated by Apple.

An domestic Apple IIc will work well in Europe (Italy, for instance), as long as it has a 220V external power supply. Video out at the RCA jack would be NTSC, however.

Published Date: Feb 18, 2012

AppleCD SC: How to Connect Loudspeakers

I want to use Bose 101B speakers with the AppleCD SC. Is this possible?
This article has been archived and is no longer updated by Apple.
The AppleCD SC provides stereo line-out jacks on the back of the unit. The connectors are standard RCA phono plug jacks.

Because the output is non-amplified, an amplifier is needed to drive most loudspeakers. Self-powered speakers need only be plugged into the headphone jack.

Published Date: Feb 18, 2012

Apple IIGS: How To Set Slots for AppleShare

I have an AppleShare network with a Macintosh SE server connected to Apple IIGS and Apple IIe computers.

One Apple IIGS has a SCSI hard drive. When I use this Apple IIGS on the network, I have its Control Panel slot settings to Startup Slot=Slot 7, and Slot 7 set for built-in AppleTalk.

I want to install AppleShare and the Apple IIGS Desktop/Finder to the hard drive and use it as a startup device so I can sign on to the server using the Control Panel. Since both AppleTalk and the hard drive seem to require slot 7, how can I use both at the same time?

This article has been archived and is no longer updated by Apple.
The SCSI hard disk does not have to be in slot 7.

- If you want to start up from the hard drive, place the hard drive controller in slot 2 and set your startup slot to 2 in the Control Panel.

- If you want to start up over the network, leave the start-up slot as 7 and set slot 7 as AppleTalk.

Published Date: Feb 18, 2012

Macintosh: Vibration Tolerance

What are the limits of vibration tolerated by Macintosh computers?
This article has been archived and is no longer updated by Apple.
The most sensitive components in a Macintosh system are:

1) the floppy disk drive
2) the hard drive

Here are the vibration limits for floppy drives:

- Operating Limit: 5 Hz - 500 Hz at Max. .5 G
- Non-Operating Limit: 5 Hz - 500 Hz at Max. 2 G

For vibration limits of hard drives, perform a search on the hard drive itself. The specifications for the drive will state its vibration or shock limit.
Published Date: Feb 18, 2012

Networks: Selectively Securing Zones and Devices

Is there any product available that will allow a network administrator to hide zones or services on a selective basis? I have two divisions on a single network that want to keep their printers separate. Each zone contains printers from only one division.

This article has been archived and is no longer updated by Apple.
There are several products available to isolate a LaserWriter. Some are hardware, some are software, but most work on the level of zones, hiding devices within a zone to the entire Internet.

There are several options available to allow zone and device hiding, some are LocalTalk-to-Ethernet routers, and some are Ethernet-to-Ethernet routers. To locate a vendor's address and phone number, use the vendor name as a search string.

Apple Internet Router
Apple Internet Router supports three "families" of access methods: AppleTalk, half-routing, and tunneling. Each family may include more than one specific access method. For example, LocalTalk, EtherTalk, and TokenTalk are all AppleTalk access methods.

One of the more interesting features of Apple Internet Router is device hiding, which lets you select any device or devices on your local network to be hidden from users on other networks. Device hiding is configured in the "Hide Devices..." dialog, which is accessed by clicking the "Hide..." button in the Port Info window.

You can elect to hide no devices, all devices, only a specific list of devices, or all devices except a specific list. You can hide your selection from all other ports or from a specific other port.

The administrator must use good judgment when setting up the list of hidden devices (or the list of not hidden devices). If the list contains more than a few devices, it will adversely affect performance.

In order for device hiding to be effective in a loop environment, all routers on a given network must hide the same devices. Otherwise, a "hidden" device would be accessible through another router that isn't hiding it.

Device hiding is not foolproof. Users could obtain a hidden device's AppleTalk address through some means other than looking for it on their network, such as running Inter*Poll on a portion of the internet that does have access to the device. Armed with that information, a user could access the device programmatically, even though the device is theoretically hidden.

AppleTalk Router Security Features: LocalTalk-to-Ethernet Routers

Cayman Systems GatorBox
Zone filtering prevents users in the filtered zone from seeing other zones on the network. This also prevents users in zones outside of the filtered zone from seeing devices in the filtered zone.

Laser filtering is, in a sense, a subset of zone filtering. Where the zone filtering shields all of the devices from the outside, laser filtering allows you to hide only LaserWriter printers from anyone outside of its AppleTalk zone. This also prevents users in the filtered zone from seeing LaserWriter printers in other zones.

Tilde filtering allows you to hide any device with a tilde character (~) at the end of its name from being seen by anyone outside of its zone.

Shiva FastPath
The Stay in Zone option prevents users in the filtered zone from seeing other zones on the network. This also prevents users in zones outside the filtered zone from seeing devices in the filtered zone.

LaserWriter Security is, in a sense, a subset of zone filtering. Where the zone filtering shields all of the devices from the outside, laser filtering allows you to hide only LaserWriter printers from anyone outside of its AppleTalk zone. This also prevents users in the filtered zone from seeing LaserWriter printers in other zones.

Tilde Security allows you to hide any device with a tilde character (~) at the end of its name from being seen by anyone outside of its zone.

NRC 2000
The Insecure option allows you to define sections of your Internet as insecure. Insecure network's routing information is not propagated to any other section of the network, thus providing a way to control who can and cannot access the secure sections of the Internet.

APT
APT Communications announced an update to their AppleTalk routers. They now support device security across zones. Users can, for example, hide their LaserWriter from anyone not in their zone. You can hide other devices, such as file servers and NetModems.

You can allow other users on different zones, different sets of access to different devices. For example, Zone A may have no access to your

LaserWriter, but still have access to a File Server, while Zone B has access to all LaserWriter printers, but not AppleTalk ImageWriter printers or NetModems.

APT routers connect multiple LocalTalk, Ethernet, WAN, and Serial networks and support Phase II AppleTalk.

AppleTalk Router Security Features: Ethernet-to-Ethernet Routers

NRC Multigate Macintosh
The Insecure option allows you to define sections of your Internet as insecure. The Insecure network's routing information is not propagated to any other section of the network, thus providing a way to control who can and cannot access the secure sections of the Internet.

Cisco (CGS/MGS/AGS)
The Cisco router offers the ability to set up access lists that allow controlled access to your network. Access lists are set up to filter all inbound network traffic from any network listed in the access list. It excludes traffic from networks listed in the access lists from your network. Traffic from your network is still propagated to all other segments of your Internet.

International Transware (InterTalk)
This is a 2-port LocalTalk router that lets the user create blind and private zones. Users in a blind zone cannot see or use the resources of the AppleTalk Internet, but users outside of the blind zone can see and access any of the services in the blind zone. Private zone users have access to the entire Internet, but users outside the private zone cannot see or access any of the services of the private zone.

NetCounter
NetCounter limits use of a LaserWriter by using the user name as specified in the Chooser for all accounting and access control. Therefore, NetCounter does NOT provide a secure environment against knowledgeable users who are motivated to circumvent the NetCounter controls. The security can be increased to some degree by removing the Chooser Desk Accessory, if the Chooser is not required.

NetCounter is an application that downloads PostScript code to PostScript printers. Thus, NetCounter does NOT support QuickDraw printers such as the LaserWriter IISC. Because the accounting code executes on the printer rather than on the Macintosh, you install the NetCounter application only on the administrator's Macintosh, not on each Macintosh on the network.

The NetCounter code and log data normally reside in the printer memory. Therefore, in the event of a power failure or printer reset, the log data in the printer memory is lost. A Macintosh running NetCounter can request transfer of log data from the printer to the Macintosh, so the administrator can limit the amount of information lost in the event of a power failure. If the printer has a hard disk attached (like a LaserWriter IINTX with hard disk), the log data is automatically saved to the hard disk, so that no information is lost in the event of a power failure. If the printer has the new PostScript ROMs installed (such as M0445LL/A LaserWriter IINTX Upgrade Kit or M6215/A Printer), you can install the NetCounter PostScript code on the printer's hard disk. This allows NetCounter to start up automatically after a power failure or whenever the printer is turned on, and the code does not need to be manually downloaded. This is the recommended configuration.

Within the constraints described, NetCounter offers the following features:

* Provides a count of the number of pages printed by each user.

* Provides two different approaches to control access to the printer:
- Grant access to specific users (deny all other users).
- Deny access to specific users (grant access to all other users).

* Provides miscellaneous control and display of printer parameters
For example, enable/disable printer startup page, or set the manual feed timeout.

* Prevents the PostScript Trojan horse (which changes the printer's password) from infecting the printer while NetCounter is running.

NetCounter can control multiple printers, but it is awkward, with the current version, to specify a different access control list for each printer.

Note: This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.
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TA47179_System_DesignCAD_DD_Compatibility_(TIL08798).pdf

System 7: DesignCAD 2D/3D Compatibility

Is DesignCAD 2D/3D, from DesignCAD, Inc., compatible with system software version 7.0?

This article has been archived and is no longer updated by Apple.
DesignCAD 2D/3D works with system software version 7.0 except on the Macintosh Plus, Macintosh SE, and Macintosh Portable. On these Macintosh models, DesignCAD 2D/3D fails to recognize the presence of 32-bit QuickDraw, which is built into version 7.0, and gives the user a message to install 32-bit QuickDraw.

At this time, there is no known workaround.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

Published Date: Feb 18, 2012

Apple Modem: Using one from within an Applesoft BASIC program

This article has been archived and is no longer updated by Apple.
If you wish to use an Apple Modem from within an Applesoft BASIC program, you must write your own software to do so; you must be prepared to read each character you send, though, since the Apple Modem echoes each character sent through it.

Following is an example routine for dialing a number. NOTE: this routine is only meant to illustrate how to read each character after sending it. The routine does dial a number, but this routine cannot stand alone: notice how it ends without completely flushing the input from the modem.

```
10 D$ = CHR$(4)
20 S$ = "AT D123-4567"
30 PRINT D$;"PR#2"
40 PRINT D$;"IN#2"
50 FOR I = 1 TO LEN(S$)
60 PRINT MID$(S$,I,1);
70 GET X$
80 NEXT I
90 PRINT
100 PRINT D$;"PR#0"
110 PRINT D$;"IN#0"
```

WARNING: When trying to access the modem from the program, if you use PRINT CHR$(4);"PR#2" and/or PRINT CHR$(4);"IN#2", followed by CTRL-A T, the computer hangs and BASIC program control is lost. That's because once you send a CTRL-A T, the firmware takes over and is in control until you type CTRL-A Q.

To send AT commands to the modem, send only the "PR#2"; then, using a PRINT statement, you may send whatever you wish. For example:

```
10 D$ = CHR$ (4)
20 PRINT D$; "PR#2"
30 PRINT "ATDT1231234"
40 END
```

will dial 123-1234. You could also replace line 40 with

```
40 PRINT D$; "IN#2" and add,
50 PRINT CHR$ (1); "T"
```

and you'd be in terminal mode.

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System 7: Invisible Icon File Sizes Not Included in Folder Size

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

I received an out-of-space error message when I tried to copy some folders to another disk even though the available disk space was more than enough to hold the folders I was moving.

This article has been archived and is no longer updated by Apple.
When you copy folders with custom icons to another disk, the sizes of the invisible icon files are not included in the total folder size. This can result in the out-of-space error message you received.

Published Date: Feb 18, 2012

Network Assistant: Observation Eyes Appear Even When Checkbox Is Deselected

Network Assistant observation eyes may appear in a client's menu bar even if that option is deselected.
This article has been archived and is no longer updated by Apple.

Symptom

The "Show me when I am being observed" checkbox is deselected in the Network Assistant Security application on the client computer. However the eyes still appear in the client's menu bar when the client is being observed from the Network Administrator station. This situation can occasionally occur when there is an issue with the Network Assistant preferences file.

Solution

1. Drag the file "Network Assistant Prefs" from the Preferences folder on the client to the Trash.
2. Restart the client computer.
3. Set up the client preferences with the Network Assistant Security application.

Published Date: Feb 18, 2012

PrintMonitor Alerts: Conflict with LW Manual Feed (11/94)

I use manual feed to print to my Personal LaserWriter SC with background printing turned on. After the print job is finished, I get a dialog box stating, "Please bring PrintMonitor to the front. The Personal LaserWriter SC is waiting for a sheet of paper." If I insert a sheet of paper, I get a second printout of the last page printed, whether it's a 1-page or multi-page document.

Sometimes it asks for another sheet of paper over and over in an endless loop; other times, it asks only once or twice. Occasionally, if I load an extra sheet of paper before printing, I don't get this message and the page prints fine.

This article has been archived and is no longer updated by Apple.
This is related to the PrintMonitor default Preferences settings. To correct the problem, use this procedure:

1) Launch the PrintMonitor application.

2) Choose Preferences from the File menu.

A Preferences window appears with three section:

* Show the PrintMonitor window when printing:

o Yes
o No

The default is No.

* When a printing error needs to be reported:

o Only display diamond in Application menu
o Also display icon in menu bar
o Also display alert

The default is to show all displays.

* When a manual feed job starts:

o Give no notification
o Display icon in menu bar
o Also display alert

The default is to give notification and display both icon and alert.

3) In the "When a manual feed job starts:" section, click the "Give no notification" button.

If you still have the problem after you've made this adjustment, change the settings in the "When a printing error needs to be reported:" section to "Only display diamond in Application menu" by clicking that button.

This problem seems to be caused by a conflict between alert messages and manual feed and may happen with other LaserWriter printers.

Article Change History:
10 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Sherlock 2: How to Save Changes to Volumes and Search Engines

This article explains how to save changes to the volumes and/or search engines used by Sherlock 2.
This article has been archived and is no longer updated by Apple.
In order to save the volumes or Internet search engines selected to perform searches:

1. Select the volumes you would like to search by placing a checkmark in the volumes box (see Figure 1).
2. When you have the volumes you would like to keep as a default set, change the channel. For instance, if you are in the file search, change the channel to an Internet search.

Figure 1 Sherlock 2 window

The next time you open Sherlock it retains these selections.

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Network Assistant 4.0.x: Errors When Remotely Shutting Down or Restarting

Error messages may appear when trying to remotely shut down or restart a client workstation running Macintosh Manager and Network Assistant 4.0

This article has been archived and is no longer updated by Apple.

Symptom

One of the following messages appears when trying to shut down a client workstation from the administrator's console:

- There is a modal dialog on the client.
- You are not permitted to change file sharing settings.

Products affected

- Macintosh Manager
- Network Assistant 4.0

Solution

When using Network Assistant's Shut Down or Restart command you have the option to let users save their work before the workstation restarts, or to restart immediately. If you see an error that a modal dialog is on the screen which prevents the client workstation from restarting, choose Restart Immediately. If you see an error about file sharing, choose Allow user to save their work.

Published Date: Feb 18, 2012

HyperCard 2.0: How to Change Address Book‘s Font Size

Is there any way to increase the font size of the mailing labels that HyperCard prints from the Address Book? The default point size for the labels is very small.

This article has been archived and is no longer updated by Apple.
To do this, you need HyperCard 2.0, which lets a text field contain multiple fonts, styles, and sizes.

1) Select the text you want to change.

2) Either choose "Text Style..." from the Edit menu, or make a choice from the Font or Style menu.

You can also use HyperTalk to find or set the attributes of any range of characters.

Published Date: Feb 18, 2012

NuBus Ethernet Card: 1990 Revision Didn‘t Change Functionality

Apple introduced a new version of the Macintosh II NuBus Ethernet Card in December 1990, replacing the old version. Both boards have the same part number: M0410LL/A.

What is the difference between the two cards?

This article has been archived and is no longer updated by Apple.
Whenever Apple Manufacturing changes a board layout or card design these are considered "revisions". In the case of the December 1990 revision, it was a board layout change. There were no changes to functionality or power requirements.

Published Date: Feb 18, 2012

Apple IIe Card: Which Drives are Supported

1) What disk drives does the Apple IIe Card support?

2) Why hook up a UniDisk 3.5-inch to the Apple IIe Card?

3) How do I eject the internal 3.5-inch disk?

4) If I connect a compatible Apple 5.25 Drive to this Macintosh LC, can I run regular Apple IIe software?

This article has been archived and is no longer updated by Apple.

1) The Apple IIe Card supports the following drives:

* The two Internal Macintosh LC SuperDrive disk drives

* One UniDisk 3.5-inch (part number A2M2053, white).

* Two Apple 5.25-inch Disk Drive (part number A9M0107, platinum) connected to the drive cable or UniDisk 3.5. Note: If you hook up a UniDisk 3.5-inch and Apple 5.25-inch, the UniDisk 3.5-inch goes first.

The Apple IIe Card does NOT support:
* The Apple 3.5-inch
* UniDisk (beige 5.25-inch)
* DuoDisk
* Disk II

The older 5.25-inch drives use -12 volts, which the Macintosh LC does not support.

2) Some copy-protected applications require a UniDisk 3.5-inch as part of the configuration, or they won't work correctly. Nor do they work on the SuperDrive inside the Macintosh LC.

3) To eject a disk from an internal 3.5-inch disk:

* Press Command-Shift-1

* Enter the Option Panel (Command-Control-Esc) and press the Disk Eject button.

4) Yes. In Apple IIe mode, the Macintosh LC will function exactly as an Apple IIe.

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TA47190_Apple_III_SOS_Error__(TIL00881).pdf

Apple III: SOS Error 90

This article has been archived and is no longer updated by Apple.
SOS error 90 is, in fact (in hex), error $5A. Error code $5A is a 'bad bitmap address on a block device'. This usually indicates that the directory bitmap information is damaged or mangled in some way, or at least SOS thinks so.
Published Date: Feb 18, 2012

Apple II BASIC: How to Convert Into Macintosh QuickBasic

Is there a way to convert Apple IIe/IIGS BASIC files into Microsoft QuickBasic files for the Macintosh?

This article has been archived and is no longer updated by Apple.
Yes, follow these steps:

1) Save a listing of the program as an ASCII text file.

2) Transfer the file to the Macintosh using Apple File Exchange.

3) Import it directly into Microsoft QuickBasic. QuickBasic accepts ASCII Text Files.

4) Now, it's just a matter of modification (if needed). According to Microsoft, some programs work even without conversion.

Published Date: Feb 18, 2012

PowerBook: Power and Battery Frequently Asked Questions, Part II

This article contains frequently asked questions (FAQ) regarding PowerBook batteries and power issues, with answers to those questions.

For Part I of this FAQ, please see article 18241: "**PowerBook: Power and Battery Frequently Asked Questions, Part I**"

This article has been archived and is no longer updated by Apple.
Questions answered in this article:

1. How can I increase the battery life of my PowerBook?
2. What is processor cycling and how do I turn it off?
3. Can I charge my PowerBook from a car cigarette lighter?
4. I am taking my PowerBook to another country, do I need a power converter?
5. Can the PowerBook 5300 or 190 use two batteries simultaneously?
6. Where else can I go for answers about my PowerBook?

Question 1: How can I increase the battery life of my PowerBook?

Answer: The two operations of your portable computer that drain the battery the most are using the backlight on your screen and using your hard drive. To increase battery life reduce these two factors. Set your hard drive to spin down quickly and turn off your backlight or sleep the machine when not in use. In addition, turning on processor cycling or using the slower processor speed available on some models will increase your battery life. These options are available in the PowerBook or Energy Saver control panel.

Some steps to reduce hard drive usage are disconnecting any external peripherals, removing PC (PCMCIA) cards, increasing your disk cache in the Memory control panel, increasing the memory allowance for programs, and running frequently used programs off a ram disk, esp. if they are disk intensive.

For more information on this subject read article 50666: **"Tips for maximizing your PowerBook and iBook battery charge."**

Question 2: What is processor cycling and how do I turn it off?

Answer: All PowerBook models implement a feature called processor cycling intended to save battery life. This feature activates when the computer detects that the keyboard, mouse, track ball or Trackpad has not been used for more than a few seconds. At this time, the processor speed is reduced and all processing functions become extremely slow. Processor cycling will not activate while the computer is doing any sort of data transfer.Processor cycling also reduces the overall average power the CPU dissipates and helps keep the average CPU temperature lower.

It is recommended to keep the processor cycling option enabled unless the user finds specific applications that are affected by this cycling in which the interruptions are intolerable. Note that processor cycling is on by default, and although it is intended to for battery life conservation, it will also activate while running off AC power.

The method of turning off processor cycling will depend on the version of the system software you are using:

System 7.0.1

1. Open the Portable control panel.
2. While holding down the Option key, click on the word "Minutes".
3. Select Don't Rest and click OK.

System 7.1

1. Open the PowerBook control panel.
2. While holding down the Option key on the keyboard, click the Options... button in the control panel.
3. Select "Don't allow cycling".

System 7.5 through Mac OS 8.1 (except PowerBook G3 Series)

1. Open the PowerBook control panel.
2. Make sure the toggle switch in the control panel is set to Easy.
3. While holding down the Option key on the keyboard, drag the toggle switch from Easy to Custom and let go.
4. Uncheck the "Allow processor cycling - more battery savings" checkbox.

Mac OS 8.5 or later (or PowerBook G3 Series running Mac OS 8.1)

1. Open the Energy Saver control panel.
2. Click on the Advanced Settings button.
3. In the "Settings for:" pull-down menu, select whether you will be adjusting the settings for Battery or Power Adapter.
4. In the section, Additonal Power Savings, deselect Allow processor cycling.

Question 3: Can I charge my PowerBook from a car cigarette lighter?

Answer: Yes, there are several commercial auto adapters on the market designed specifically for charging portable computers. Be sure to get one designed for a PowerBook computer. Alternatively you can obtain an inverter which takes the 12v DC power from the cigarette lighter and converts it to the correct AC voltage for the country it was purchased in (110 V in US, 220 to 240 V in Europe and Asia). You can then plug in your standard PowerBook AC adapter to charge the battery.

Question 4: I am taking my PowerBook to another country, do I need a power converter?

Answer: All of the PowerBook AC adapters are capable of AC power specifications from around the world. To verify, there should be a line on the AC adapter stating something to the effect of:

AUTO RANGING INPUT:100-120V~1.5A 200-240V~0.75A.

If your AC adapter has this on it, it will adjust to the proper voltage.

Note: You will need an adapter to allow you to plug your power cord into a foreign plug. These are available at most electronic stores and travel stores.

Question 5: Can the PowerBook 5300 or 190 use two batteries simultaneously?

Answer: Yes, the PowerBook 5300 and 190 expansion bay (where the floppy disk drive normally is) can accept a battery. BTI (800-982-8284) was planning to release such a battery. Since the expansion bay does not pass AC power through, any battery used through the expansion bay will require its own power supply for charging.

Question 6: Where else can I go for answers about my PowerBook?

Answer: If you haven't done so already, check the other PowerBook FAQ documents in the Apple Knowledge Base at **http://kbase.info.apple.com**. This contains thousands of technical articles which are easily searchable using boolean search strings.

This article can help you locate the software update mentioned here:

- Article 14724: "**Where To Find Apple Software Updates**" - Lists online services for free Apple software updates.

Published Date: Feb 18, 2012

Mac OS X Server 1.x: Services FAQ, Part II

This article contains frequently asked questions about Mac OS X Server, with answers to those questions.

For Part I of this article, please see article 60167: "**Mac OS X Server: Services FAQ, Part I**"

See also the following articles:

Article 60165: "**Mac OS X Server: General FAQ**"
Article 60166: "**Mac OS X Server: Operating System FAQ**"
Article 60168: "**Mac OS X Server: NetBoot/Macintosh Manager FAQ**"
Article 60169: "**Mac OS X Server: Hardware and Compatibility FAQ**"
Article 60170: "**Mac OS X Server: Pricing and Availability FAQ**"

This article has been archived and is no longer updated by Apple.
Note: This article pertains to Mac OS X Server versions 1.x, which were released prior to May 2001.

Questions answered in this article:

1. Is QuickTime streaming available with Mac OS X Server?
2. Is print spooling available with Mac OS X Server?
3. How many clients can Mac OS X Server support?
4. Can Mac OS X Server run all these services at the same time?
5. Do all these Mac OS X Server services use the same user and group information?

Question 1: Is QuickTime streaming available with Mac OS X Server?

Answer: A preview version of the QuickTime Streaming Server was included with Mac OS X Server. The final version of this software was released by Apple 19 April 1999 and is available for downloading from the Apple Software Updates Web site at http://www.apple.com/swupdates. QuickTime 4 is required to view movies streamed by QuickTime Streaming Server. QuickTime 4 Pro is required to created streaming movies.

Question 2: Is print spooling available with Mac OS X Server?

Answer: Yes. Macintosh customers can use the Desktop Printer Utility LPR support to connect to a Mac OS X Server print spooler. Mac OS X Server can spool files to any PostScript-capable network printer over either AppleTalk or TCP/IP. There are also a number of third-party print-spooling products available for the publishing industry

Question 3: How many clients can Mac OS X Server support?

Answer: The Macintosh Server G3 with Mac OS X Server configuration running a single service, if properly configured, can support:

- Millions of Web transactions a day
- Approximately 50 NetBoot clients
- Over a thousand AppleShare clients
- Thousands of Macintosh Manager clients

The actual number of clients supported depends on your network environment, usage scenarios, and hardware configuration.

Question 4: Can Mac OS X Server run all these services at the same time?

Answer: Not quite. Thanks to the power of preemptive multitasking, you can efficiently run multiple services on a single server. However, this requires more memory than running a single service, and it reduces the maximum load sustainable by any given service. The exact details depend strongly on your usage patterns. More information on optimal configurations will be available in Apple's Tech Info Library at til.info.apple.com.

Question 5: Do all these Mac OS X Server services use the same user and group information?

Answer: No. Apple file services (and NFS) use the native users and groups based on NetInfo, allowing the information to be shared among computers. Macintosh Manager maintains its own user and group information, as does Apache. WebObjects applications can be designed to work with Apache users and groups, but often verify against the underlying database used by the application.

Published Date: Feb 18, 2012

TA47194_Apple_IIe_Card_Doesnt_Support_Pascal_Partitions_(TIL08811).pdf

Apple IIe Card: Doesn‘t Support Pascal Partitions

Will the software for the Apple IIe Card ever allow Pascal partitioning?

This article has been archived and is no longer updated by Apple.
ProDOS is the only partition that is currently planned to be supported in a future release of the software.

Published Date: Feb 18, 2012

AppleWorks 5 and Macintosh Manager: XTND Alerts

An alert box may appear if you try to use AppleWorks 5 with XTND translators on a Macintosh Manager client.
This article has been archived and is no longer updated by Apple.

Symptom

When you save or import documents in various file formats an alert box with this message appears:

> "The translator 'x' could not be found. Please delete the file 'XTND Translator List' from your preference folder and relaunch AppleWorks

Solution

1. If you are running Macintosh Manager 1.3, install the Security Bypass extension or update to Macintosh Manager 1.4.1, both of which are available from the Apple Software Updates Web site at http://www.apple.com/swupdates.
2. If you are running Macintosh Manager 1.4 or 1.4.1, open the Privileges pane of the Workgroups pane, and deselect the "Enable file level security on Mac OS 9 workstations" option.

Published Date: Feb 18, 2012

iMovie 2.1 for Mac OS X: Playback Clip in Full Screen Starts at Beginning of the Clip

In iMovie 2.1 for Mac OS X, playing a clip in Full Screen mode plays from the beginning of the clip, instead of from the position of the playhead on the selected clip.

This article has been archived and is no longer updated by Apple.

Symptom

In previous versions of iMovie, Full Screen playback of a selected clip would play starting from the position of the playhead. In iMovie 2.1 for Mac OS X, playback starts from the beginning of the clip. If no clip is selected, Full Screen playback starts from the beginning of the project.

Solution

Apple is aware of this behavior, which only affects full screen playback. You can preview your clip or project using the Viewer to start from the position of the playhead.

Published Date: Feb 18, 2012

TA47197_Apple_IIe_Emulation_via_In_A_Mac_(TIL08812).pdf

Apple IIe Emulation via][In A Mac

Does the Apple IIe Card work in the Macintosh IIsi? Is the Macintosh LC the only computer available that runs Apple IIe software?

This article has been archived and is no longer updated by Apple.
The Apple IIe Card is designed exclusively for the Macintosh LC.

There is an alternative for Apple IIe emulation in other Macintosh models. The product is called "][In A Mac". Contact the vendor for compatibility information.

More information is available in the Redgate Product Registry on AppleLink.

Published Date: Feb 18, 2012

Macintosh Display Card 824 GC: Troubleshooting Screen Flicker

My Macintosh IIfx with a Macintosh Display Card 8*24 GC is having intermittent screen flicker. I've swapped out the Macintosh Display Card 8*24 GC, the DRAM in the Display Card, the monitor, and the logic board.

This article has been archived and is no longer updated by Apple.
The flicker may be caused by the Macintosh Display Card 8*24 GC CDEV. Turn off the CDEV and restart the computer. If the flickering goes away, then the problem is related to software corruption or hardware/software incompatibility. This incompatibility can range to other hardware cards installed, especially other video cards made by third-party vendors, to incompatible software packages or other third-party INITs.

With the Macintosh Display Card 8*24 GC CDEV turned off, the card acts just like a Macintosh Display Card 8*24. If the flickering still occurs, you may be encountering an environment issue related to EMF (electromagnetic interference).

Published Date: Feb 18, 2012

Macintosh: Troubleshooting Random Sound Problems

I'm getting a random monkey alert sound on my Macintosh even though the alarm is off and the regular beep sound is selected in the Control Panel. I have no special sound INITs or CDEVs.

This article has been archived and is no longer updated by Apple.
The sounds selected for the beep are loaded into RAM during startup. It's possible that your System Folder may be corrupted and is pointing to another beep sound.

Try starting up from a locked System disk and let it sit for a while to see if it does random beeps. If this doesn't fix things, trash and reinstall the System Folder. If the problem still persists when you start from the floppy, then you may have a hardware failure.

You also mentioned no special CDEVs and INITs being used. Were you referring to sound-type INITs? Other INITs that have some time/delay activation might also cause similar symptoms: SuperClock, screen savers, and spelling checker CDEVs to name a few.

Published Date: Feb 18, 2012

WebObjects 4.5.1: Adaptor Source Will Not Compile on Mac OS X Server 1.2

This article describes how to fix the WebObjects 4.5.1 adaptor source so it will compile on Mac OS X Server 1.2
This article has been archived and is no longer updated by Apple.

Symptom

After running the make command or building in ProjectBuilderWO you see these messages:

```
In file included from ../Adaptor/cohostedapps.h:16,
                 from ../Adaptor/cohostedapps.c:18:
../Adaptor/WOAppReq.h:41: `WA_MAX_APP_NAME_LENGTH' undeclared here (not in a function)
../Adaptor/WOAppReq.h:42: `WA_MAX_HOST_NAME_LENGTH' undeclared here (not in a function)
../Adaptor/WOAppReq.h:45: `WA_MAX_INSTANCE_NUMBER_LENGTH' undeclared here (not in a function)
.
.
.
```

Solution

1. Remove the directory tree rooted at:
   `/System/Developer/Examples/WebObjects/Source/Adaptors`
2. Reinstall the WebObjectsAdaptors.pkg from the WebObjects 4.5.1 release.
3. Recompile the adaptor source.

Note: This issue is caused by files left behind from a previous version of WebObjects. The WebObjects 4.0.1 adaptor source was included in the DeveloperDocs package from the Mac OS X Server Developer Tools.
Published Date: Feb 18, 2012

TA47201_Apple_IIGS_Little_Difference_Between_MB_ROMs_(TIL08815).pdf

Apple IIGS: Little Difference Between 1MB ROMs

What's the difference between ROMs 341-0737/0748 and ROMs 341-0728/0749 on the Apple IIGS 1MB logic boards?

This article has been archived and is no longer updated by Apple.
Aside from some changes in the Toolbox, there weren't many changes to the Apple IIGS ROMs. In fact, that's why Apple doesn't have an upgrade path to the new ROMs. It wouldn't be cost effective for the customer.

Published Date: Feb 18, 2012

Apple IIGS Monitor: How to Set to 60 Hertz

How do I change an Apple IIGS monitor from 50Hz to 60Hz?

This article has been archived and is no longer updated by Apple.
Here's how to reset your Apple IIGS to 60 hertz:

1) Turn on the Apple IIGS while holding down the option key.

2) Press 2 for "2=Set system standards and 60 hertz."

Published Date: Feb 18, 2012

AppleWorks 6.1.2: Files Exported to DOS-Formatted Disks Are Not Saved

AppleWorks 6.1.2 may not save a file if you export it using one of the included translators and save it to a DOS-formatted floppy disk.
This article has been archived and is no longer updated by Apple.

Symptom

AppleWorks does not save a file when:

- You choose to export the file using one of the included translators, such as "Save As Word 98 document".
- You choose to save the file onto a DOS-formatted floppy disk.

Warning: If you export the file using a filename that already exists on the disk, the existing file may be deleted, and the new file will not be saved.

Note: This symptom does not occur with DOS-formatted Zip or SuperDisk disks.

Solution

1. Export the file and save it on your computer's hard disk.
2. Copy the file to the floppy disk.

Published Date: Feb 18, 2012

Personal LaserWriter NT: Styled Text with AppleWorks GS

I want to use my Apple IIGS with a Personal LaserWriter NT. How can I get various fonts and styled text (sizes, underline, bold, and so on)?

This article has been archived and is no longer updated by Apple.
Obtain AppleWorks GS from Claris. That version of AppleWorks supports printing using the ROMs in the LaserWriter, giving you various point sizes and font types in PostScript. Without this software you are limited to the one font.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

Published Date: Feb 18, 2012

WebObjects: JavaConverter and EOValidation API Changes

This document discribes how WebObjects 5 handles validations differently than WebObjects 4.5.
This article has been archived and is no longer updated by Apple.

Symptom

A validation code used to return void in a WebObjects 4.5 application. However, in the converted WebObjects 5 application, the Java Converter coerces the void into a null causing validation issues.

Solution

The validation mechanism has changed in WebObjects 5.

In WebObjects 4.5 applications written in Objective-C, validation methods return an exception object if the target object is invalid, and receive a pointer to the target as their parameter. If coercion is necessary, the validation method would perform a side effect on its parameter. For applications written in Java, validation methods simply return void. If something is invalid, an EOValidation.Exception is thrown.

In WebObjects 5, this was changed to better accommodate the Java language. There are no side effects on the argument, and the return value is the desired, valid value. If something is invalid, an NSValidation.ValidationException must be thrown. Returning null will be interpreted as value coercion to the null Object reference.

Validation Examples

```
// Objective-C code in WebObjects 4.5

- (NSException *) validateStreetAddress: (NSString *) address;

// Java code in WebObjects 4.5

public void validateStreetAddress(String address) throws EOValidation.Exception;

// Proper conversion in WebObjects 5

// Returns the valid string object or throws NSValidation.ValidationException

// if the street address string is invalid.

public String validateStreetAddress(String address) throws NSValidation.ValidationException;
```

The WebObjects 5 Java Converter does not provide any warnings or errors when converting these validation methods. When converting a WebObjects 4.5 Java application to WebObjects 5 Java code, the converter does not properly change the WebObjects 4.5 void return method to a method returning the proper datatype. Since the method has no return value, EOF validation mechanism returns NULL and this leads to unwanted results at runtime.

Therefore, you should do a manual conversion based on the examples shown above in order for the EOValidation mechanism to function properly.

Published Date: Feb 18, 2012

WebObjects: "EOEditingContext: Access With No Lock" in a DirectAction Method Errors

Using an EOEditingContext in a direct action method to fetch objects results in errors.
This article has been archived and is no longer updated by Apple.

Symptom:

Using an EOEditingContext in a direct action method to fetch objects results in the following errors:

*** EOEditingContext: access with no lock: recordForGID()!
*** EOEditingContext: access with no lock: recordObject()!

Firing faults also causes the EOEditingContext to complain:

*** EOEditingContext: access with no lock: globalIDForObject()!

Solution

Call lock() and unlock() on the EC inside the direct action method, as in:

```
 public WOActionResults testAction() {
ec.lock(); // Assume EC exists
.
// do fetch/processing with EC.
.
ec.unlock();
    }
```

Published Date: Feb 18, 2012

WebObjects: LDAPAdaptor Stops Responding When Trying to Use Channel to Refetch

This article describes a WebObjects issue where LDAPAdaptor stops responding when trying to refetch, and provides a workaround.

This article has been archived and is no longer updated by Apple.

Symptom:

LDAPAdaptor stops responding when trying to use channel to refetch a second time.

Solution

The LDAPAdaptor in WO 4.5 never disconnects from the directory server after fetching. However, most directory servers will sever the connection after 30 minutes. The adaptor thinks that the channel is still valid when you try to connect after the server has severed the connection and the application will stop responding.

To correct this issue, explicitly close the LDAP channel once you are done with fetching.

In Objective-C

```
EOEditingContext *ec; // Assume this exists

EODatabaseContext *dbContext = [ec databaseContextForModelNamed:@"yourModel"];

EOAdaptorContext *adaptorContext = [dbContext adaptorContext];

// Close the channel

[[adaptorContext channels] lastObject] closeChannel];
```

In Java

```
EOEditingContext ec; // Assume this exists

EODatabaseContext dbContext = EOUtilities.databaseContextForModelNamed(ec,"yourModel");

EOAdaptorContext  adaptorContext = dbContext.adaptorContext();

// Close the channel

EOAdaptorChannel adaptorChannel = (EOAdaptorChannel)(adaptorContext.channels().lastObject());

adaptorChannel.closeChannel();
```

Published Date: Feb 18, 2012

Macintosh: When System Restarts Instead of Shutting Down (2/95)

My Macintosh restarts when I select Shutdown from the Special menu. Why is this and how can I be assured my computer will actually shut down?

This article has been archived and is no longer updated by Apple.
The first step is to determine if the problem is software related. Restart your computer with the Disk Tools diskette and select Shutdown to see if it works properly. If it does, the likely cause of the problem is corrupted system software. A clean installation of system software is recommended to resolve the problem.

If choosing Shutdown still causes a Restart, try zapping PRAM. For more information on zapping the PRAM, for the Tech Info Library article "Macintosh: How to Reset Parameter RAM".

For Macintosh computers with lockable power switches, such as the Macintosh IIci and Macintosh IIsi, make sure the switch is not locked in the ON position. Rotating the switch 90 degrees to the left should release it so it is not in the locked on position.

If you determine the problem is not related to the power switch or system software, there are three possibilities: a defective keyboard, power supply, or logic board (in that order). As a quick test, disconnect the keyboard and mouse from the Macintosh and try a manual shutdown. If the Macintosh stays off, start replacing ADB devices. If not, have the power supply checked.

If the Macintosh still does not work properly, have the logic board replaced.

Article Change History:
24 Feb 1995 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

WebObjects 5.0: WORedirect "attempt to load the application failed" Errors

This document discusses errors that may occur when using the WORedirect class in a WebObjects 5 application, and provides a workaround.
This article has been archived and is no longer updated by Apple.

Symptom

When using the WORedirect class in WebObjects 5 applications, "attempt to load the application failed" errors occur and the following messages appear:

```
java.lang.NoClassDefFoundError: com/webobjects/appserver/WORedirect
at java.lang.Class.forName0(Native Method)
at java.lang.Class.forName(Class.java:120)
```

Solution

The WORedirect class (com.webobjects.appserver.WORedirect) has been misplaced in the JavaWOExtensions jar file. Add the JavaWOExtensions framework to the project and recompile.

The path to the framework is:

Mac OS X

```
/System/Library/Frameworks/JavaWOExtensions.framework
```

Windows

```
$NEXT_ROOT/Library/Frameworks/JavaWOExtensions.framework
```

This issue is expected to be addressed in a future version of WebObjects.

Published Date: Feb 18, 2012

WebObjects 5: Does Not Install on Mac OS X 10.0 Unless Logged in as root User

You must log in as the root user to install WebObjects 5 on Mac OS X.
This article has been archived and is no longer updated by Apple.

Symptom

WebObjects 5 will not install on your Mac OS X disk.

Solution

Log in as the root user to install WebObjects 5.

Important: The root user must be enabled before you can log in this way. The root user is enabled by default in Mac OS X Server but not in Mac OS X (client). Mac OS X 10.0 (client) is compatible with WebObjects 5 Developer but not WebObjects 5 Deployment. For more information, see:

Technical document 106290:
"**Mac OS X 10.0: About the root User and How to Enable It**"

Technical document 106361:
"**Mac OS X 10.0, Mac OS X Server 10.0: Password Does Not Work as Expected After a Change**"

Technical document 72598:
"**WebObjects Compatibility Guide**"

When root is enabled, you may follow these steps:

1. Choose Log Out from the Apple Menu.
2. In the Name field type: root
3. Enter the root password and click Log In.
4. Install WebObjects 5.

After completing this process, you should log out and log back in as your user or Admin user.
Published Date: Feb 18, 2012

WebObjects: JDBC Adaptors

This document describes the JDBC Adaptor and provides a link to a technical note on how to write a JDBC plugin.
This article has been archived and is no longer updated by Apple.
With WebObjects 5, all database access goes through the JDBC Adaptor. JDBC is widely supported by database vendors, but not every data source behaves exactly the same way. As a result, the adaptor uses a helper class, a subclass of JDBCPlugIn, to customize the JDBC adaptor for a particular database or driver.

The JDBC Adaptor for WebObjects 5 ships with built-in support for Oracle 8i and OpenBase. Other data sources may require additional support from custom plugins. This technical note, as well as an example, can be found on Apple's Developer Web site (http://developer.apple.com/technotes/tn/tn2027.html).

Published Date: Feb 18, 2012

Business Basic III: Distinguishing between RETURN and ENTER keys

This article has been archived and is no longer updated by Apple.
Using an invokable module (which you'd have to write), it is possible to detect whether the key pressed is located on the keypad or the main keyboard, and thereby distinguish (if you wish) between the RETURN key and the ENTER key. The Standard Device Drivers manual provides information on how this is done, particularly in Appendix G and in the chapter on the Console driver.

Also, Volume #1, Issue #1 of a magazine named "On Three" contains a program for recognizing the difference between the ENTER and RETURN keys. You can obtain a copy by writing to:

Attn: Order Dept.
P.O. Box 3825
Ventura, CA 93006
(805) 644-3514

Published Date: Feb 18, 2012

AppleWorks 6 for Windows: Font Menu Does Not Scroll in Windows 95

This article describes an issue with font selection when using AppleWorks 6 for Windows under Windows 95, and provides a workaround.
This article has been archived and is no longer updated by Apple.

Symptom

When selecting fonts from the AppleWorks toolbar, the Font menu or ruler only displays a subset of available fonts. Fonts listed below the bottom of the screen cannot be selected as the Font menu will not scroll using the mouse.

Products Affected

- AppleWorks 6
- Windows 95

Solution

- Select the Text menu with the mouse, or by pressing Alt+T on the keyboard.
- Use the cursor keys on the keyboard to navigate through the Font submenu.
- Observe the status area of the AppleWorks window when navigating below the last displayed font in the listing.

Note: The selected font will continue to change in the status area (lower left corner) of the AppleWorks window, even when navigating to a font which is located beyond the displayed listing.

This issue does not affect AppleWorks 6 running under later versions of Windows.

Published Date: Feb 18, 2012

AppleShare: Leave LaserWriters on for Apple II Workstations

Is there a way to download the ImageWriter emulation to a LaserWriter for an Apple IIGS on an AppleShare network at the time the servers are turned on each morning?

This article has been archived and is no longer updated by Apple.
That would be a nice enhancement for AppleShare, but presently there is no way to do this. We suggest you download the emulator and leave the printer on. This won't seriously affect the life of the printer.

Published Date: Feb 18, 2012

AppleFax Modem: Use Apple System Peripheral-8 Cable

What cable is used to connect an AppleFax Modem to a Macintosh?

This article has been archived and is no longer updated by Apple.
Use the Apple System Peripheral-8 Cable (part number M0197).

Published Date: Feb 18, 2012

AppleShare PC: Does Not Support 3Com EtherLink IITP Card

Does AppleShare PC support the 3Com EtherLink IITP (twisted pair) card?

This article has been archived and is no longer updated by Apple.
No. AppleShare PC has drivers for only the 3Com 503 and 525 cards.

Published Date: Feb 18, 2012

AppleTalk Phase 2 Routers: Disappearing Services

I upgraded my routers to AppleTalk Phase 2. Since then, services sometimes disappear.

This article has been archived and is no longer updated by Apple.
Ensure that your seed routers are configured with the same zone name and network range information.

Published Date: Feb 18, 2012

AppleTalk for VMS: Use Version 2.0.6 with Pacer 5.2b

I installed AppleTalk for VMS 3.0 and am unable to use it when I'm running Pacer 5.2b.

This article has been archived and is no longer updated by Apple.

Pacer 5.2b is a Phase 1 device that takes over the Ethernet card in the VAX when it is running. The two alternatives are to stop running Pacer or to install AppleTalk for VMS version 2.0.6, which is a Phase 1 device.

Published Date: Feb 18, 2012

TA47224_Apple_IIe_and_the_Numeric_Keypad_Some_problems_(TIL00883).pdf

Apple IIe and the Numeric Keypad: Some problems

This article has been archived and is no longer updated by Apple.

If an Apple IIe is configured with a 342-0132-B ROM as the keyboard ROM, then the numeric keypad works properly. If there is a 342-0132-C ROM installed, then the keypad numbers work right but the functions do not. This ROM IS NOT related to the Mousetext ROM change. A Rev D ROM will be released soon.

Published Date: Feb 18, 2012

AppleTalk for VMS: Use Version 2.1 When Running Informix

I am installing DAL 1.2 and AppleTalk for VMS 3.0. The manual states that AppleTalk for VMS 3.0 requires VMS 5.3 or higher. I can't upgrade to VMS 5.3 because I am running Informix, which doesn't support that version.

Is there a workaround for this?

This article has been archived and is no longer updated by Apple.

Yes. Install AppleTalk for VMS version 2.1 instead of version 3.0.

Published Date: Feb 18, 2012

iMac (Flat Panel): How to Pick up and Carry

This document describes how to pick up and carry the iMac (Flat Panel) computer.
This article has been archived and is no longer updated by Apple.
The iMac (Flat Panel) display neck is capable of fully supporting the computer. However, placing a hand under the computer, as illustrated in Figure 1, makes it easier to carry.

Note: Before moving the iMac (Flat Panel), make sure all cables and cords are disconnected.

Figure 1 How to pick up the iMac (Flat Panel) computer

Published Date: Feb 18, 2012

MacTerminal: How to Send a Long Break

How do you send a long break in MacTerminal?

This article has been archived and is no longer updated by Apple.
To send a long break in MacTerminal, press the Shift-Enter keys.

Published Date: Feb 18, 2012

iMac (Flat Panel): Use Latest Version of iPod Software

This document describes an issue with earlier versions of the iPod software and the iMac (Flat Panel) computer, and provides a workaround. This article has been archived and is no longer updated by Apple.

Symptom

- iPod may not appear on the desktop.
- A number of alert boxes may appear while copying information to and from iPod.
- iPod or the computer may stop responding.

Solution

iPod Software 1.0.4 (and later) includes enhancements for iMac (Flat Panel) computers. If you are using iPod software previous to 1.0.4, you should upgrade to the latest iPod software.

Verify that your iPod is up to date by downloading and running the latest iPod Software Updater available from the Apple Software Downloads Web site (http://www.apple.com/swupdates/).

For more information on how to find out which software version is installed on your iPod, see technical document 60984: "**iPod: How to Find Software Version**."

Published Date: Feb 18, 2012

SNA Communications Cards: Board IDs

What are the board IDs for the Apple Coax/Twinax, TokenTalk NB, and Serial NB Cards?

This article has been archived and is no longer updated by Apple.
The board IDs are:

Card	Board ID
Apple Coax/Twinax	10
Apple TokenTalk NB	11
Apple Serial NB	25

Published Date: Feb 18, 2012

AppleShare PC w/LocalTalk Card: Includes Printing, File Services

Do I need anything besides AppleShare PC software and the LocalTalk PC Card to print to network printers?

This article has been archived and is no longer updated by Apple.

No. That bundle includes printing services as well as file services.

Published Date: Feb 18, 2012

Macintosh Classic: How to Install AppleShare

How do you install AppleShare on a Macintosh Classic?

This article has been archived and is no longer updated by Apple.
To install AppleShare on a Macintosh Classic, use the Network Products Installer disk.

Published Date: Feb 18, 2012

DAL: How to Use the "$col" Function in a C Program

I tried to use the "$col" function from within a C program using the example in the DAL documentation, but it did not work. The "$col" function is supposed to return the number of columns in the selected rowset.

This article has been archived and is no longer updated by Apple.

The example in the DAL documentation is not complete. Put the code into a DAL program string and do clsend("program text").

Published Date: Feb 18, 2012

DAL: Manufacturers of Compatible 3270 Products

What third-party companies' 3270 products are compatible with DAL?
This article has been archived and is no longer updated by Apple.
These companies' 3270 products are compatible with DAL:
- Avatar Technology
- Digital Communications Associations, Inc. (DCA)
- Tri-Data Systems, Inc.

Tech Info Library Article 17159: "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

DAL: Compatible AppleTalk for VMS Versions

What versions of AppleTalk for VMS work with DAL?
This article has been archived and is no longer updated by Apple.
For Phase 1 networks, use AppleTalk for VMS version 2.0.6.

For Phase 2 networks, use AppleTalk for VMS versions 2.1 and 3.0.
Published Date: Feb 18, 2012

DAL 1.2 & Avatar Coax Card: Driver to use for CUT/DFT Modes

I can't connect to DAL 1.2 on an IBM mainframe using an Avatar coax card in CUT mode.

This article has been archived and is no longer updated by Apple.

DAL 1.2 requires driver release 3.2 or later to work in CUT mode with the Avatar coax card. To run in DFT mode, use driver release 3.3 or later.

Published Date: Feb 18, 2012

TA47236_Apple_III_Pascal_ToolKit_(TIL00884).pdf

Apple III: Pascal ToolKit

This article has been archived and is no longer updated by Apple.
Page 5 of the Pascal ToolKit manual says:

The 2.0 Compiler shipped with the Tool Kit consists of three files:

PAS.CODE
PASCAL.OPTIONS
PASCAL.ERRORS

These files are not on the disk. After the files were dropped from the product, the editors left the reference to the files in the manual by oversight. Future builds will have Errata Sheets addressing this problem.
Published Date: Feb 18, 2012

DAL: "longchar" Variable Supports a Maximum of 240 Characters

How many characters does the DAL "longchar" variable support?
This article has been archived and is no longer updated by Apple.
The DAL "longchar" variable supports a maximum of 240 characters.
Published Date: Feb 18, 2012

PATHWORKS Oracle Access: Use APDA‘s DAL Server for the VAX/VMS

I purchased PATHWORKS for the VAX and received only the network adapter for Rdb. Where can I get the Oracle database adapter?
This article has been archived and is no longer updated by Apple.
PATHWORKS comes only with the Rdb adapter. To talk with Oracle, you need to purchase the DAL Database Adapters for the VAX/VMS from APDA.

For APDA contact information, search the Tech Info Library under "APDA and Cupertino".
Published Date: Feb 18, 2012

Apple HD SC Setup: Meaning of Dimmed Update Option

I tried to use Apple HD SC Setup to update my hard drive to System 7, but the Update option is dimmed.

This article has been archived and is no longer updated by Apple.
When the Update option in Apple HD SC Setup is dimmed, it means that the hard drive was not initialized using Apple HD SC Setup.

Published Date: Feb 18, 2012

MacDFT: To Print, Turn Off Background Printing

The "Print" option is dimmed when I try to print from MacDFT.
This article has been archived and is no longer updated by Apple.
To print from MacDFT, the "Background Printing" option must be turned off.
Published Date: Feb 18, 2012

MacDFT: Supports OS/2 LAN Manager, Not Token Ring to PC-LAN 1.3

Does MacDFT work over Token Ring to an IBM PC-LAN 1.3 gateway?

This article has been archived and is no longer updated by Apple.

No. The IBM PC-LAN 1.3 uses NetBIOS, which MacDFT does not support. MacDFT does work with the OS/2 LAN Manager.

Published Date: Feb 18, 2012

MacDFT: Use Shielded Twisted-pair or Type 3 Cabling

I'm running MacDFT over the Apple TokenTalk NB Card, and I'm getting a "no cable connected" message.
This article has been archived and is no longer updated by Apple.
You're using unshielded twisted-pair cabling, which is generating a signal too weak for MacDFT to pick up. There are two alternatives:

- Switch to shielded twisted-pair cabling.
- Use Type 3 cabling.

Published Date: Feb 18, 2012

Mac OS X Server 10.1.5 for Xserve: RAID Creation and Deletion Does Not Work in Japanese

Using Disk Utility to create or delete RAID sets does not function properly when Japanese is the selected language.
This article has been archived and is no longer updated by Apple.

Symptom

RAID sets created in Disk Utility when Japanese is the preferred language do not appear in the Mac OS X Server installer. Existing RAID sets cannot be deleted in Disk Utility while Japanese is the preferred language. An alert box may appear with a message indicating that an unexpected error occurred.

Note: This issue only occurs when the Xserve is started up from the Mac OS X Server 10.1.5 CD.

Solution

1. Quit Disk Utility.
2. Click the Back button in the installer until you see the language selection screen.
Note: You may have to restart the Xserve if you have proceeded too far in the installer.
3. Select a language other than Japanese.
4. Choose Open Disk Utility from the Installer menu.
5. Create RAID set(s).
6. Quit Disk Utility.
7. Select Japanese.
8. Proceed with installation of Mac OS X Server 10.1.5.

Published Date: Feb 18, 2012

MacTCP: Needs DDP/IP Gateway For AppleTalk Network

Can I run MacTCP over LocalTalk-based AppleTalk network system?
This article has been archived and is no longer updated by Apple.
To run MacTCP over a LocalTalk-based network, you need a DDP/IP gateway like the Apple IP Gateway, Kinetics FastPath, or the Cayman GatorBox.

To locate a vendor's address and phone number, use the vendor name as a search string.
Published Date: Feb 18, 2012

iPhoto 1.1.1: Slide Show May Cause Computer to Stop Responding

Some computers may stop responding when using the Slide Show feature of iPhoto 1.1.1.
This article has been archived and is no longer updated by Apple.

Symptom

When watching a slide show in iPhoto, the slide show stops and the computer stops responding ("freezes").

Solution

If the computer stops responding during the slide show:

1. Press the Command-Option-Esc keyboard shortcut to open the Force Quit window.
2. Select iPhoto from the list of applications.
3. Click Force Quit.
4. Click Force Quit again to confirm. iPhoto quits.

If the computer does not respond to the Force Quit command, press and hold the power button on the computer to shut it down.

To resolve this issue, update to Mac OS X 10.2.3.
Published Date: Feb 18, 2012

Xserve: Server Does Not Fully Slide Into the Case

This document explains why Xserve may not fully slide into the case, and provides a workaround.
This article has been archived and is no longer updated by Apple.

Symptom

When sliding Xserve back into its case the server's chassis stops about 10 cm short with an audible metal against metal sound.

Solution

The locking mechanism has been moved to the locked position while Xserve was outside of its case (top cover).

To insert the Xserve fully into the case:

1. Turn the locking mechanism back to the unlocked position using the supplied hex key.
2. Slide Xserve into the case.

Published Date: Feb 18, 2012

MacX: Can Be Used to Launch Local Xclients

If I don't have an Ethernet card, can I run MacX to launch local Xclients?

This article has been archived and is no longer updated by Apple.
Yes, but you must be running under A/UX (not Macintosh OS) and specify "localhost" as the hostname.

You can use a name other than "localhost" if you edit the "/etc/hosts" file and add the name you want to use to the line for the loop address.

Published Date: Feb 18, 2012

iPod (touch wheel): How to Reinsert the FireWire Port Cover

This document describes the FireWire port cover on the iPod with touch wheel, and explains how to reinstall it if it is accidentally removed.
This article has been archived and is no longer updated by Apple.
The iPod with touch wheel models come with a FireWire port cover attached to the case. (See Figure 1.)

Figure 1 Location of FireWire port and cover

1. FireWire Port Cover
2. FireWire Port
3. Headphones
4. Hold Switch

The FireWire port cover fits in iPod's FireWire port when it is not in use. The FireWire port cover protects the port from debris and the environment.

Installing the FireWire Port Cover

The FireWire port cover comes attached to iPod. You should not remove the FireWire port cover.

If the FireWire port cover is forcibly removed, it may be possible to reinsert it.

To reinsert the FireWire port cover:

1. Correctly orient the FireWire port cover.

2. Press firmly down on the plug to reinsert into the case:

Figure 2 Inserting the FireWire port cover

If you cannot reinsert the FireWire port cover after performing these steps, it may need to be repaired. You can arrange for repair at the iPod Service Web site (http://depot.info.apple.com/ipod/).

Published Date: Feb 18, 2012

MacX: Macintosh OS Version Is Compatible with A/UX

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Can I use the Macintosh OS version of MacX under A/UX?

This article has been archived and is no longer updated by Apple.
Yes. The Macintosh OS MacX package is compatible with A/UX.

Install MacX and the MacTCP Tool from the Macintosh OS version; however, don't install either MacTCP or AdminTCP because MacTCP is already part of A/UX, and you need the A/UX versions.

Published Date: Feb 18, 2012

MacX: Does Not Support the Serial Connections Tool (1/95)

I am using MacX with the Communications Toolbox and cannot select the serial connections tool.

This article has been archived and is no longer updated by Apple.
MacX does not support the serial connections tool. MacX does support the DECnet and MacTCP tools.

Article Change History:
30 Jan 1995 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Business BASIC III: Random Access File Problem

This article has been archived and is no longer updated by Apple.
In Business Basic, if you open TWO random access files and then try to access some of the records, you get a SOS CALL ERROR 22. This error occurs, for example, in line 511 of the following sample program:

Enter the record number 723 for A%, and anything for B%;
enter anything for A$ and B$ on the first entry;
enter the record number 723 for A%, and anything for B%;
the system crashes with a "SOS CALL ERROR 22".

```
10 OPEN#6,".PROFILE/FILE1",15
20 OPEN#7,".PROFILE/FILE2",15
25 CATALOG".PROFILE"
30 INPUT "Enter A% ";A%
40 INPUT "Enter B% ";B%
50 ON EOF#6 GOTO 500
60 READ#6,A%
70 R=0:IF TYP(6)<>4 THEN GOTO 510
80 READ#6;A$
90 IF R=0 THEN 520
95 INPUT "Enter A$ & B$";A$,B$
100 WRITE#7,B%;A$
110 WRITE#6,A%;B$
120 GOTO 25
500 PRINT"Nothing in the file":OFF EOF#6:GOTO 70
510 PRINT"Nothing in the record":R=1
511 CLOSE#6
512 OPEN#6,".PROFILE/FILE1",15
513 GOTO 90
520 END
```

If, however, you add the following lines, the program seems to continue to work normally:

```
5 ON ERR GOTO 1000
1000 PRINT"Error# "; ERR
1010 OFF ERR
1020 GOTO 512
```

Use this workaround to avoid any further problems.
Published Date: Feb 18, 2012

System 7: Install MacTCP Tool in the Extensions Folder

Where is the MacTCP Tool installed under System 7?
This article has been archived and is no longer updated by Apple.
System Sofware 6.0.x --> Communications Folder
System 7 --> Extensions Folder

MacTCP Tool belongs in the Extensions Folder. MacTCP, the control panel device (cdev), goes into the Control Panels folder. The file MacTCP DNR (Domain Name Resolver) will be created by MacTCP and installed at the root level of your System Folder.
Published Date: Feb 18, 2012

TokenTalk: Packet Size Is 256 Bytes

What is the packet size for TokenTalk?

This article has been archived and is no longer updated by Apple.

TokenTalk packet size is 256 bytes.

Published Date: Feb 18, 2012

X11: How to Start Up in Color

Can X11 be started up in color?
This article has been archived and is no longer updated by Apple.
Yes. This article describes a recommended method, as well as two others.

The recommended method

1. Create a file called ".X11" in the home directory of the user. Ensure that the ".X11" file is executable. The contents of the ".X11" file:

X -screen 0 -depth 8

2. Log on, selecting an X Window session at the login dialog.

Here are two other methods

1. Modify the /usr/bin/X11/X file and insert before the $* in the startup entry:

-screen 0 -depth 8

2. Start X11 at the command line in color with the command:

/usr/bin/X11/X -screen 0 -depth 8
Published Date: Feb 18, 2012

X11: How to Display Xclient on a Color Monitor

I am trying to display an Xclient that does not accept the -display option. Is there any way to display the client on a color monitor?
This article has been archived and is no longer updated by Apple.
Since the client is reading the DISPLAY variable from the environment, an easy way around this is to set the environment as part of the command.

For example: env DISPLAY=hostname:0.3 /usr/bin/X11/xterm.
Published Date: Feb 18, 2012

AppleShare Volume: How to Copy Without Losing Access Privileges

How do you copy an AppleShare volume without losing access privileges?

This article has been archived and is no longer updated by Apple.
Use the "Copy Volume" command in the "Volume" menu of the AppleShare Administration program.

Published Date: Feb 18, 2012

AppleTalk: How to Identify AppleTalk Packets

I need to filter all AppleTalk packets on my network. How can I identify them?

This article has been archived and is no longer updated by Apple.

AppleTalk packets start with 7B90.

Published Date: Feb 18, 2012

DAL: DB2 SQL Command Digits Workaround

I want to use the DB2 SQL command digits (a NumToString function), but DAL does not support this command.
This article has been archived and is no longer updated by Apple.
The workaround is to build a set of dummy tables to use as a scratch space for doing the conversions. Then use the standard DAL select command to retrieve the result.
Published Date: Feb 18, 2012

DAL: DECnet Connection to VAX Not Supported

Does DAL support a DECnet connection to a VAX?

This article has been archived and is no longer updated by Apple.

No. DAL supports only AppleTalk for VMS and asynchronous connections to a VAX and the matching Comm Toolbox tools for them.

Published Date: Feb 18, 2012

DAL: Error Message 10632

I am using Oracle 6.029.1, AppleTalk for VMS 3.0, VMS 5.3, and DAL 1.2. When I issue the command:

open oracle DBMS
open oracle db as user xxx pw xxx; go

I get an error message "10632".
This article has been archived and is no longer updated by Apple.
This is a generic error message that may be caused by a number of different problems, including:

- DAL logicals not defined.
- DAL subsystem not installed.
- DAL server not found on the VAX.
- AppleTalk for VMS problem.
- INIT conflict on the Macintosh.

Published Date: Feb 18, 2012

DAL: Version 1.3 and Later Supports VM/XA

Does DAL support VM/XA?

This article has been archived and is no longer updated by Apple.

DAL 1.3 (and later) supports VM/XA. DAL 1.2 (and earlier) does not support VM/XA. However, since under XA and ESA for VM IBM does not support the "attach to database" SQL/DS command, you must issue the "Open Database" DAL command with either a null database name or "@ SQL". Using one of these special database names will cause DAL to not attempt to do the "attach" command, but instead to connect to the default database.

Published Date: Feb 18, 2012

DOS Tool Kit: Assembler

Here's an undocumented fact about the DOS Tool Kit: If you have assembled a relocatable file and are then trying to run it from a BASIC program, make sure that the BASIC program file name does not begin with the same characters as your relocatable file.
This article has been archived and is no longer updated by Apple.
An example of what to avoid:

Relocatable file = Relocate Example.OBJO
BASIC file = Relocate

If you make this error, the following BASIC program (named Relocate) will fail and display the error message "Undefined statement at 5".

```
10 ADDRS=0: REM PRE ALLOCATE VARIABLE TABLE
20 PRINT CHR$(4); "BLOAD RBOOT" CALL 520
30 ADRS=USR(0),"RELOCATE.OBJO"
40 CALL ADRS
```

Simply by changing the name of the relocatable file to Example.OBJO, and changing line 30 in the above program as follows, you can correct the problem.

```
30 ADRS=USR(0),"EXAMPLE.OBJO"
```

Published Date: Feb 18, 2012

TA47263_MacAPPC_Does_Not_Support_LU__(TIL08860).pdf

MacAPPC: Does Not Support LU 0

Does MacAPPC support LU 0?

This article has been archived and is no longer updated by Apple.

No, MacAPPC does not support LU 0.

Published Date: Feb 18, 2012

TA47264_System_Compatible_TokenTalk_Drivers_(TIL08861).pdf

System 7: Compatible TokenTalk Drivers

Article Change History

09/15/92 - REVIEWED
* For current version information.

What TokenTalk drivers are compatible with System 7?

This article has been archived and is no longer updated by Apple.
The compatible drivers are TokenTalk 2.2 (or later) and A/ROSE 1.1.3 (or later).

Published Date: Feb 18, 2012

DAL and DCA Drivers: Use DAL "Custom" Installation

I am trying to use a DCA MacIrma card to make a connection to my DAL server on an IBM mainframe. I get the message "network adapter not loaded, network not found."
This article has been archived and is no longer updated by Apple.
The most common cause of this error message is using "Easy Install" to install DAL. You need to use the "Custom" install option when installing DAL to load the DCA drivers.

Be sure to add a ":1" at the end of your script in your host.cl1 file whether running in CUT or DFT mode. You need to do this for MacIrma DAL driver 1.1.0 (or later), the only version DCA is supporting.
Published Date: Feb 18, 2012

Ethernet: AAUI Connector Pinouts

What are the AAUI connector pinouts for: Macintosh Quadra computers, Apple Ethernet NB Card, and LaserWriter IIg printers?

This article has been archived and is no longer updated by Apple.

The AAUI (Apple Attachment Unit Interface) connector is a 14-position, 0.050-inch-spaced ribbon contact connector.

The pinouts are:

Pin	Signal Name	Signal Description
1	FN Pwr	Power (+12V @ 2.1W or +5V @ 1.9W)
2	DI-A	Data In circuit A
3	DI-B	Data In circuit B
4	VCC	Voltage Common
5	CI-A	Control In circuit A
6	CI-B	Control In circuit B
7	+5V	+5 volts (from host)
8	+5V	Secondary +5 volts (from host)
9	DO-A	Data Out circuit A
10	DO-B	Data Out circuit B
11	VCC	Secondary Voltage Common
12	NC	Reserved
13	NC	Reserved
14	FN Pwr	Secondary +12V @ 2.1W or +5V @ 1.9W
Shell	Protective Gnd	Protective Ground

AAUI signals have the same description, function, and electrical requirements as the AUI signals of the same name, as detailed in IEEE Standard 802.3-1990 CSMA/CD, section 7.

Published Date: Feb 18, 2012

AppleColor Plotter: Pen and Pen Holder Availability (5/97)

Do you know any AppleColor Plotter pen and pen holder suppliers?

This article has been archived and is no longer updated by Apple.

AppleColor Plotter pens and pen holders are available from Hearlihy & Company.

Published Date: Feb 18, 2012

AppleColor High-Resolution RGB: Color Temperature (12/94)

What is the color temperature of the AppleColor High-Resolution RGB Monitor?

This article has been archived and is no longer updated by Apple.
According to the Level 2 specifications for the AppleColor High-Resolution RGB Monitor:

Each gun is set so that there is approximately 15 foot-lamberts of 9300 degrees.

Article Change History:
05 Dec 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

TA47270_Lisa_Printing_Executive_PS_on_a_DWP_(TIL00887).pdf

Lisa 7/7: Printing Executive PS on a DWP

This article has been archived and is no longer updated by Apple.

When you select to print a document on a Daisy Wheel Printer in Executive PS, the printer sometimes simply ejects a blank page. If this occurs, select Elite 12, Courier 10 or Gothic 15 instead; your DWP will then print properly.

Published Date: Feb 18, 2012

ImageWriter LQ: Ribbon Specifications (8/94)

What are the ImageWriter LQ ribbon specifications?

NOTE: This product has been discontinued and is no longer available.

This article has been archived and is no longer updated by Apple.
Here are the ImageWriter LQ ribbon specifications:

Ribbon

- Cassette containing black-inked fabric ribbon, continuous
- Optional: four-color ribbon (black, yellow, magenta, cyan)

Ribbon Life

- 4 million characters (black)
- 1 million characters/band (color)

Shelf Life

- Packaged, unwrapped, not exposed to the environment, and stored under cool conditions (80 degrees F): Approximately 2 years

- Unwrapped and exposed to the environment: Approximately 6 months to 1 year

Note: The older the ribbon, the drier it becomes when exposed to sunlight, air, and so on.

Article Change History:
31 Aug 1994 - Removed specsht keyword. Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

Aristotle: Display and Management Programs Quit Differently

We have Macintosh LC computers with Apple IIe cards installed and Apple IIe software version 2.0 in our lab. When teachers log on to the Macintosh LC and start the Apple IIe over the network, they connect to the server through the Aristotle menu system. Everything works fine, except they can't quit the teacher management menu. We get a screen with /ram2/ at the top and three options at the bottom. Why doesn't it go back to the Aristotle log-on screen?

This article has been archived and is no longer updated by Apple.
The screen displaying the /ram2/ indicates the Aristotle menu management application successfully quit. The /ram2/ screen is a menu system from ProDOS 8 version 1.9. The three options at the bottom of the screen provide the method of navigation through the menu system.

The current ProDOS volume name is /ram2/. To change to a different volume (that is, probably the AppleShare file server volume), press the Tab key. This displays all applications and folders (subdirectories) on the volume. (The "/ram2/" volume shows no applications or folders.) The up and down arrow keys allow you to move to an application or folder. The Return key launches an application, or opens a folder. The ESCape key closes the current folder and moves into the next higher folder.

Previous versions of ProDOS 8 left the user with the "ENTER PREFIX (PRESS "RETURN" TO ACCEPT)" message with the current prefix as the default. After entering the prefix, you need to enter the name of the application. The menu system of ProDOS 8 version 1.9 provides a more useful interface.

The two Aristotle applications, Display and Management, behave differently when the user exits: the Display program returns the user to the launching application, but Management returns the user to the ProDOS quit location. This is true both for an Apple IIe computer and for a Macintosh LC with Apple IIe Card.

Here are two ways to run Aristotle:

- First, you can run the Management program immediately. To accomplish this, go to the server's Administration program. Select the teacher and set the startup application to Aristotle's Management program. This option returns the teacher to the ProDOS 8 v1.9 menu (the /ram2/ screen).

LOGOFF from the Apple IIe Workstation Card disk provides a graceful sign off from the server. When you use LOGOFF, the log-on list of servers is not in alphabetical order. Open Apple-Control-Reset (Command-Control-Reset) works as well. This is not so graceful, but causes no damage.

- The second variation uses the Management program to set up a "class" of teachers who can run the Management program from the Display program. For example, when teachers log on to the server, their startup program is Aristotle's Display. From within Display's menu, teachers can select Management. This option returns to the Aristotle Display program. You need to quit the Display program to log off the file server.

Published Date: Feb 18, 2012

TA47275_Apple_IIe_Card_Software_v_Not_Tested_with_System__(TIL08874).pdf

Apple IIe Card Software v2.0: Not Tested with System 6.0.7

Is it essential to install system software version 6.0.8 (that is, 7.0 print drivers) with the Apple IIe Card software version 2.0?

This article has been archived and is no longer updated by Apple.
The Apple IIe software v2.0 was only tested using system software version 6.0.8. There is no known reason for the Apple IIe Card v2.0 software to fail using version 6.0.7. However, Apple cannot stand behind the use of version 6.0.7 due to the lack of testing.

Whatever configuration you decide on, the print driver versions must be the same on all systems. Otherwise, there will be driver conflicts when the printers are used.

Published Date: Feb 18, 2012

AppleShare Print Server: Transition from System 6 to System 7

Article Change History

09/15/92 - REWRITTEN
* To explain better the existing situation with System 6.0.8, the desired situation, and to note that AppleShare 3.0 is available.

I would like to use the Macintosh IIci as an AppleShare Print Server. I'm running system software version 6.0.8 (equivalent to System 6.0.7 with the addition of System 7 print drivers). I run the Network Products Installer version 6.0.7 to install the AppleShare Print Server, and it doesn't recognize the 7.0 LaserWriter drivers. I must quit the Installer, remove the 7.0 print drivers, install the print server software, and reinstall 7.0 drivers. Is there an easier way to do this?

This article has been archived and is no longer updated by Apple.
Unfortunately, it doesn't get much easier. The following steps will minimize the confusion:

1) Format the hard drive (if it's not already formatted).

2) Install system software 6.0.8 (if not already installed).

3) Remove the print drivers from the System Folder (in System 6.0.8, they are actually the System 7 print drivers).

4) Install the AppleShare Print Server using Network Products Installer 6.0.7.

5) Drag over the LaserPrep version 7.0 file from the 6.0.8 disks.

There is no need to reinstall the print drivers on the Print Server. They aren't used. However, it is VERY important to put the LaserPrep file in the folder with the Print Server's System file.

Note that upgrading to AppleShare 3.0 will eliminate much of this confusion and the steps required to get the print server running successfully with System 7 drivers.

Published Date: Feb 18, 2012

TA47277_Concurrent_Terminal_Emulation_(TIL08877).pdf

Concurrent 6312 Terminal Emulation

Is there a product that emulates a Concurrent Computer (formerly Perkin-Elmer) 6312 or 1251 terminal?

This article has been archived and is no longer updated by Apple.
Opal Software sells communication software for the Perkin-Elmer 6312.
VIA Systems, Inc. is the U.S. distributor for Opal products.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

System 7: Making KiwiEnvelopes 3 Work with LaserWriter IISC

I purchased KiwiEnvelopes 3.1.3 to be compatible with System 7. The version 3.1.3 did not print properly to the LaserWriter IISC with the Personal LaserWriter SC driver (Apple provides this driver for LaserWriter IISC System 7 compatibility).

The Personal LaserWriter SC feeds envelopes from the side of the tray, and the LaserWriter IISC feeds them from the center. Print on envelopes was in the wrong location (shifted downward on the envelope).

How can I get proper printing on the LaserWriter IISC?
This article has been archived and is no longer updated by Apple.
There are two ways to modify KiwiEnvelopes 3.1.3 to remedy this:

* Throw Away "KiwiFile3".
This causes the software to re-evaluate the printer in use and reset preferences. The software is now compatible with the LaserWriter IISC. However, you lose all names and addresses stored by KiwiEnvelopes.

* Use ResEdit to Remove the "PRTP" Resource from "KiwiFile3".
Trashing this resource resets preferences, but retains names and addresses stored in the file.

Warning: The instructions in this article refer to using ResEdit. Apple Computer, Inc., is not liable for any damage done to your software through the use of ResEdit to alter software.
Published Date: Feb 18, 2012

LaserWriter IINTX: DIP Switch Positions Affect Renaming

After moving a LaserWriter IINTX, we could find the printer in the Chooser as "LaserWriter IINTX," but the name should be "LaserWriter IINTX 5/80." On the start page, the name was "LaserWriter IINTX 5/80," but the Chooser again called it "LaserWriter IINTX." We renamed the printer, and the name appeared on the start page, but not in the Chooser. The LaserWriter IINTX printed normally through all this.

We found that the DIP switches 5 and 6 were down. We switched them up, and this fixed the naming problem. Can you explain this behavior?

This article has been archived and is no longer updated by Apple.
Moving switches 5 and 6 to the down position sets asynchronous handshaking to XON/XOFF. The LaserWriter broadcasts the default printer name set in ROM instead of using the changeable version set in the ZPRAM (Zero Power RAM). The startup page still registers the correct name, but the name broadcast over the network doesn't change.

Make sure that both switches are in the up position unless you require another form of handshaking. Other combinations of these switches do not cause the name inconsistencies.

Published Date: Feb 18, 2012

SQL Client/Server Products for Both Macintosh and PS/2

Can you provide a list of SQL client/server-based products that work with PS/2, and also have compatible versions for the Macintosh?

This article has been archived and is no longer updated by Apple.
Here is a partial list of SQL Client/Server based products:

- Omnis 5 (Blyth Software) for both Macintosh and Windows environments

- The three DAL query tools, now available for Windows:
* ClearAccess (Clear Access Corp. <formerly Fairfield Software, Inc.>)
* DataPrism (Brio Technology)
* GQL (Andyne Computing)

- Oracle products

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Article Change History:
23 July 1993 - Company title changed from Fairfield Software, Inc. to Clear Access Corp.
Published Date: Feb 18, 2012

Internet Router and EtherTalk: Install Router Software First

I have a problem when trying to install an AppleTalk Internet Router on a Macintosh LC with system software 6.0.7.

I use the Network Products Installer for version 6.0.7, and the AppleTalk Internet Router 2.0. Installation seems to be OK, but when I try to start the router (once it is configured with LocalTalk and Ethernet zones) it displays the message "Can't load MBDF."

This article has been archived and is no longer updated by Apple.
You must install the AppleTalk Internet Router software first, and then the EtherTalk software.

Published Date: Feb 18, 2012

TA47284_System_How_to_Install_TokenTalk_and_EtherTalk_Drivers_(TIL08895).pdf

System 7: How to Install TokenTalk and EtherTalk Drivers

Article Change History

09/15/92 - UPDATED
* To provide information on different installation methods.

How do you install the TokenTalk and EtherTalk drivers under System 7 now that there is no longer a Network Products Installer Disk)?

This article has been archived and is no longer updated by Apple.
Use the System 7 Installer to install the EtherTalk and TokenTalk drivers. Either choose Customize and select the appropriate choice, or do an Easy Install and the Installer will update appropriately those system components you currently have loaded.

Published Date: Feb 18, 2012

Token Ring Card: How to Determine the Burned-in Address

How do I find the burned-in address of the Token Ring card?

This article has been archived and is no longer updated by Apple.
The IEEE 802 committee has assigned Apple the address range 5000E0000000 to 5000EFFFFFFF. To determine the "burned-in" address, start with the lowest number of this range and add to it the serial number on the card (after converting it to hex). The result will be the burned-in address of the card.

Published Date: Feb 18, 2012

AppleShare PC: Problem with Zenith Multi-I/O Card

I am running AppleShare PC on the LocalTalk PC card on a Zenith Z386 PC (with a Zenith multi-I/O card). When I try to run DA, it says "scanning for zones" and then locks up.

This article has been archived and is no longer updated by Apple.

Remove the Zenith multi-I/O card. The card may be trying to intercept any information sent to the LPT ports, which is what AppleShare PC does.

Published Date: Feb 18, 2012

CL/1 Version 1.1: Doesn‘t Run under VMS 5.4

?Does CL/1 version 1.1 run under VMS 5.4?

This article has been archived and is no longer updated by Apple.
No, it doesn't.

Published Date: Feb 18, 2012

DAL: No Support for Arrays of Variables

Does DAL support arrays of variables?

This article has been archived and is no longer updated by Apple.

No, it doesn't.

Published Date: Feb 18, 2012

Applesoft Tutorial: Errata

The following manual corrections are for the Applesoft Tutorial manual.
This article has been archived and is no longer updated by Apple.
Page 6
References to the RESET key need to refer to CTRL-RESET for newer Apples.

Page 17
"STOPPING THE COMPUTER"; Pressing RETURN after a CTRL-C may be required if the Apple is waiting for input from the keyboard.

Page 23-24
There are only five different elementary arithmetic operations. They are:
+ Addition
* Multiplication
- Subtraction
/ Division
^ Exponentiation

Page 37
GAMEPOINTS = 45 won't work because it contains the key word, INT. It will be parsed as GAMEPO INT S and it will return a SYNTAX ERROR. GAMEPTS = 45 should be OK.

Page 38
The line before the last listing should say "Try the statements below in order:" instead of "Try the statements on the next page in order:"

Page 59
Line 230 at the bottom of the page should read: 230 IF N < = 10 THEN GOTO 210

Page 63
Line 270 should read: 270 X = X / 7

Page 65
Line 3220 should read: 3020 COLOR = N

Page 69
The last line on the page reads:
120 PRINT "THE STRIKES AND BALLS ARE ";STRIKES;" ";BALLS
It is difficult to tell this because the space after STRIKES;" comes at the end of the line of listing.

Page 71
Lines 650 and 660 are reversed. They should read:
650 NEXT Y
660 NEXT X

Page 79
The two example line 780s are incorrect. The word "BACKGROUND" will be parsed as "BACK GR OUND" because GR is a key word and because there is already a variable BALL which would share the same Applesoft variable name, BA. Try using "FIELD" instead.

Page 81
Paragraph 3, "One possible solution is given on the next page," should read "One possible solution is given below,"

Page 85
Line 220 has an extra ")". It should read: 220 COLOR= INT (16 * RND(1))

Page 95
The program will give incorrect values for the Y variable unless a time delay is installed. Add this line: 1005 FOR J = 1 TO 10: NEXT J

Page 96
Line 360 should read: 360 FOR S = 0 TO 1: REM 2 LINES, FROM Y AND Y + 1

Page 105
Replace line 120 with: 120 WHOLE$ = HALF$ + " " + OTHERHALF$

Page 108

According to page 99 and iii, the title on this page should read "INTRODUCING ARRAYS: DIM".

Page 109
The last sentence in the last paragraph should read "The program below accomplishes this."

Page 109
Line 340 should read:
340 TEMP = GLASS(WINE):GLASS(WINE) = GLASS(MILK):GLASS(MILK) = TEMP

Page 110
Starting in the middle of the 9th line, the text should read; "Then line 320 makes sure that the value of WINE is not equal to the value of MILK at any given time. The contents of variables GLASS(WINE) and GLASS(MILK) are switched in line 340. Finally the array is printed with lines 370 through 390."

Page 130
Clear the entire screen should be press <ESC> then <SHIFT> and <P@> instead of <CTRL> and <P@>.

Page 148-149
The green keys should have slashed zeros to differentiate them from capital O.
Published Date: Feb 18, 2012

AppleWorks: Problems with calculations in spreadsheets

If, in cell A1, you enter the formula 17.9-17*10, the cell will display 9, the correct result. If you then enter, in cell A2, @INT(A1), the cell will display 8. Even if you try the @IF, the result will always be something less than 9.

This article has been archived and is no longer updated by Apple.

This phenomenon is not the application's fault: it's that old standard floating point error. Remember that 17.9-17 isn't .9, but rather .899999, so that when you multiply by 10, you get 8.99999--and @INT(8.9999) = 8. The best workaround is to use @INT(A1+0.5) instead.

Published Date: Feb 18, 2012

MacDFT: File Transfer to CICS/DISOSS Not Supported

Does MacDFT support file transfer to DISOSS?

This article has been archived and is no longer updated by Apple.

MacDFT does not support file transfer under CICS. (DISOSS runs under CICS). MacDFT only supports file transfer under VM and MVS.

Published Date: Feb 18, 2012

Macintosh LC: Use EtherTalk 2.5 or higher

▌cannot get EtherTalk 2.0.1 to work on my Macintosh LC.

This article has been archived and is no longer updated by Apple.
The Macintosh LC requires EtherTalk 2.5 or higher.

Published Date: Feb 18, 2012

Ethernet: Apple Cabling Is Self-Terminating

Is Apple Ethernet cable self-terminated? If I don't use Apple cabling, but use standard thin Ethernet instead, will I need a terminator at the end of my network?

This article has been archived and is no longer updated by Apple.

When using Apple thin Ethernet transceivers, you don't need to terminate both ends of your Ethernet backbone as the transceiver is internally terminated.

If you use non-Apple transceivers, you may need to place a terminator at both ends of the network.

Published Date: Feb 18, 2012

AppleShare PC: Lists Servers in Response Order, Not Alphabetical

Why doesn't AppleShare PC list all of the servers in alphabetical order in the DA?

This article has been archived and is no longer updated by Apple.

AppleShare PC does a broadcast to get zone information, then lists the servers in the order in which they respond.

Published Date: Feb 18, 2012

System 7: Tips for Using Memory Efficiently

When it's difficult to open applications or print, these tips will help use Macintosh memory more efficiently. For more information about managing memory, see the Macintosh User's Guide.

To use System 7, your Macintosh needs at least 2MB of memory. If you customarily work with several programs at a time, you may wish to install more memory.

This article has been archived and is no longer updated by Apple.

Use the Available Memory

If you get a message asking if you'd like to open a program using the "available memory," click OK, and the program will open. This message appears when the available memory is greater than the minimum memory required to open the program, but less than the recommended amount. In rare cases, you may be unable to use some features of the program.

Quit Some Open Programs

When you open an application and see the "not enough memory" message, you should quit one or more open programs. Open the Application menu (right end of the menu bar) to see which programs are open.

This message appears when the available memory is less than the minimum required to open the program.

Reduce a Program's Memory Size

You can often avoid memory problems by reducing a program's current memory size. In rare cases, reducing a program's memory size degrades performance. Follow these steps to reduce a program's memory size:

1) Quit the program.

2) In the finder, select the program's icon.

3) Choose Get Info from the File menu. The program's Info window appears.

4) Reset the memory size.

5) Close the Info window.

6) Try again to open the program.

Quit Some Programs Before Printing

When you print, you'll sometimes see the Application menu begin to blink. When this happens, follow these steps to quit a program and make more memory available for printing:

1) Choose Finder from the Application menu. You'll see an alert box.

2) Click OK to close the alert box.

3) From the Application menu, choose the program you want to close. The program becomes active.

4) Choose Quit from the File menu.

After quitting one or more programs, try printing again.

Set the Disk Cache to the Smallest Size

The disk cache is a portion of the computer's memory set aside to limit how often the computer must read from a disk. This speeds up the computer's performance. By reducing the size of the disk cache, you can make more memory available for application programs. Follow these steps to adjust the disk cache:

1) Choose Control Panels from the Apple menu.

2) Open the Memory control panel (double-click the Memory icon).

3) In the Memory control panel, click the down arrow repeatedly until the disk cache is the smallest possible size.

4) Choose Restart from the Special menu to restart the Macintosh.

Drag Optional System Extensions Out of the System Folder

System extensions (also known as INITs) compete with application programs for memory. (System extension icons are often displayed in the bottom-left portion of the screen when the computer starts up.) You can conserve memory by removing system extensions that you don't need. For instance, if your Macintosh is not connected to a host database, you can remove the DAL (Data Access Language) system extension. Likewise, if your Macintosh is not connected to a network, you can remove the AppleShare system extension. Follow these steps to remove system extensions:

1) Open the System Folder.

2) Open the Extensions folder.

3) Drag the system extension icon out of the System Folder to another location on your hard disk.

4) Restart the computer.

Restart the Computer

If you have opened and closed a number of programs, your Macintosh memory can become fragmented so that you can't open a large program. When this happens, quit all the open programs, and restart the computer.

Turn Off Background Printing

When background printing is on, you can print while using the computer for other work. If you don't need background printing, you can reduce the amount of memory required to print by turning it off. Follow these steps to turn off background printing:

1) Choose the Chooser from the Apple menu.

2) In the Chooser window, select a LaserWriter icon.

3) Click the Background Printing: Off button.

Turn Off File Sharing

When file sharing is turned on, you can share information on your computer's hard disk with other users on a network. If you don't currently use file sharing, you can conserve memory by turning it off. Follow these steps to turn off file sharing:

1) Choose Control Panels from the Apple menu.

2) Open the Sharing Setup control panel (Double-click the Sharing Setup icon).

3) Click Stop in the File Sharing section of the Sharing Setup control panel. A message appears asking how many minutes the computer should wait until file sharing is turned off.

4) Type a number, and click OK.

Published Date: Feb 18, 2012

AppleTerm: Using it with a IIc or IIe

If the AppleTerm program refuses to address a modem when a printer is attached to another port or card, check that the printer is turned on and selected. If so, everything should work right.
This article has been archived and is no longer updated by Apple.
If the printer isn't turned on or selected, and is yet still connected to the port or card, then the modem won't work. The program sends an initialization procedure to the printer, and if it doesn't get something back from the printer firmware, it will hang.

Usually what happens is that a "@" appears in the upper left corner of the screen.

NOTE: This same problem will occur if the printer interface isn't on an Apple Super Serial Card: AppleTerm will only acknowledge an Apple SSC.
Published Date: Feb 18, 2012

TA47299_LaserWriter_IIf_and_IIg_How_They_Differ_from_LaserWriter_IINTX_(TIL08910).pdf

LaserWriter IIf and IIg: How They Differ from LaserWriter IINTX

This article describes the enhancements of the LaserWriter IIf and IIg, compared to the LaserWriter IINTX.

This article has been archived and is no longer updated by Apple.
The LaserWriter IIf offers a 50% performance improvement over the LaserWriter IINTX. With gray scale mode disabled, the LaserWriter IIg gives twice the performance of the IINTX. The IIg's performance is the same as the IINTX with gray scale mode active.

The LaserWriter IIf and IIg controllers provide twice the processing power of the LaserWriter IINTX. The major controller components include:
- Processors
- Memory
- ASICs (Application Specific Integrated Circuits)
- I/O

These components, plus the PostScript Level 2 software, provide significantly faster performance than LaserWriter IINTX.

The Motorola 68030 in the IIf and IIg improves performance over the 68020 in the LaserWriter IINTX in the following ways:

- The 68030 runs at a faster clock speed. This makes the IIf 25% faster and the IIg 55% faster than the IINTX.

LaserWriter	Clock Speed
IINTX	16 MHz
IIf	20 MHz
IIg	25 MHz

- The 68030 has integrated instruction and data cache to give a 15% performance improvement over the IINTX.

- The 68030 has burst-mode RAM access to transfer large amounts of data in less time.

PhotoGrade allows printing more than 65 levels of gray. The LaserWriter IINTX offers 33 levels of gray.

The IIf and IIg use 80ns memory. This means that RAM from the IINTX or IISC can't be used in the LaserWriter IIf or IIg. The Macintosh IIci uses the same RAM as the LaserWriter IIf and IIg.

Unlike the LaserWriter IINTX, the LaserWriter IIg has three communication ports, and all three can be physically connected at the same time. Arbitration logic controls the activity of the ports. Because PostScript processes one job at a time, only one port has access to the printer at any given time.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: Support Issues

This article discusses some of the support issues for the LaserWriter IIf and IIg
This article has been archived and is no longer updated by Apple.

Driver and Level 2 Support

The driver shipped with LaserWriter IIf and IIg is the LaserWriter driver version 7.0, which doesn't support PostScript Level 2 operators. Access to new Level 2 features is limited to downloaded PostScript programs. The next LaserWriter driver will add Level 2 functionality. The IIf and IIg operate more efficiently even without the new driver because of improved memory management and high speed cache.

Missing Type 1 Fonts In ROM

Due to extremely limited ROM space, the ITC Zapf Dingbats Type 1 font was removed from LaserWriter IIf and IIg ROMs, and included, as a downloadable font, on the font disk.

Legal Size Printing

The standard LaserWriter IIf and IIg configurations don't support full legal size printing. At the standard RAM configurations, the LaserWriter IIf can't print full legal pages and the LaserWriter IIg can't print grayscale legal pages. If you want to use legal size paper with full printing capability, upgrade the RAM from 2MB to 4MB on a LaserWriter IIf, and from 5MB to 8MB on a LaserWriter IIg.

Don't Use Refilled Toner Cartridges

Refilled cartridges performed poorly during LaserWriter IIg gray-scale testing, and aren't recommended.

Kanji Support

The LaserWriter IIg has composite font support, but due to the HFS disk structure, there is no copy protection for the Kanji fonts. Kanji will be fully supported in the LaserWriter 1.1 ROMs.

No Diablo 630 Emulation

LaserWriter IIg ROMs don't provide Diablo 630 emulation.
Published Date: Feb 18, 2012

Apple OneScanner: How it Differs from the Apple Scanner

This article describes the Apple OneScanner's enhancements, compared to the original Apple Scanner.

This article has been archived and is no longer updated by Apple.

Overview

The Apple OneScanner looks like the Apple Scanner flatbed scanner, but supports 8-bit gray scale and provides higher performance. The new scanning application -- called Ofoto -- produces high-quality scans. HyperScan 2.0 scans the images directly into HyperCard to resize the cards and give better image control.

Features

These features differ from the Apple Scanner:

- 8-bit image depth (256 gray scale resolution)

- Variable resolution from 72-dpi to 300-dpi in 1-dpi increments

- Higher scanning and data transfer speed

- Finer control of brightness and contrast settings

- No ADB port

Software Compatibility

All of the Apple OneScanner software is backward-compatible with the original Apple Scanner. A software upgrade kit will give the Apple Scanner all the features of the new software. The Apple Scanner is limited to 4-bit gray scale, but the software upgrade produces better images and is much easier to use.

Published Date: Feb 18, 2012

Apple OneScanner: Support Issues

This article outlines tips for using the Apple OneScanner.
This article has been archived and is no longer updated by Apple.

Software

The Ofoto software requires LaserWriter drivers 6.0.1 or later. Gray scale images won't print properly with earlier drivers.

Ofoto also requires system software version 6.0.7 or later and 32-bit QuickDraw. It is fully compatible with System 7.

Lamp

You need to change the lamp after approximately 30,000 scans. The scanning software indicates when it's necessary to change the scanner lamp.

Macintosh Quadra and Power Macintosh

These computers use a faster SCSI chip, with reset interrupt timing 10 times shorter than previous Macintosh computers. Because of this timing difference, they develop SCSI gridlock and the scanning software indicates that the scanner isn't connected. This occurs only when the scanner is turned on before the Macintosh is turned on.

The solution is to reset the timing by turning the scanner off, then on again. When Ofoto doesn't recognize the scanner, it displays a note in the dialog box telling the user to cycle the scanner power and try again.

Note: With other SCSI devices you normally would want to turn the device on before the Macintosh starts so it will be recognized at startup. With older devices connected to a Macintosh Quadra or Power Macintosh, you may have to cycle power on the SCSI device after the Macintosh completes its boot process.

Published Date: Feb 18, 2012

TA47303_Apple_Access_II_Character_Delay_and_Line_Delay_(TIL00892).pdf

Apple Access II: ‘Character Delay‘ and ‘Line Delay‘

This article has been archived and is no longer updated by Apple. Access II version 1.1 has fixed the problem of 'Line Delay' working erratically. In versions previous to 1.1, a line delay of 100 resulted in a considerable delay, but changing the line delay to 9999 resulted in less delay.

Published Date: Feb 18, 2012

StyleWriter: Printing from Apple IIe Card

Does the Apple IIe Card software version 2.0 support printing to the StyleWriter?

This article has been archived and is no longer updated by Apple.
The Apple IIe Card version 2.0 allows printing via print drivers installed in the Macintosh LC computer System Folder. If the StyleWriter driver (or other driver) is in the Macintosh LC System Folder, the Apple IIe Card can print to the StyleWriter (or other printer).

Follow these steps:

1) In the Apple IIe Option Panel, place the Printer Card icon in the appropriate slot using the Slots icon in the scrolling icon area. By convention, this is slot 1.

2) In the scroll icon area, choose the Print Card icon. This displays the currently selected printer.

3) A note in the dialog area indicates that you can select alternate printers via the Chooser desk accessory. Select a printer in the standard Macintosh Chooser.

Published Date: Feb 18, 2012

Graphic Conversions Between Macintosh and Windows

What are some methods for exchanging graphic files between a PC and a Macintosh? Does the PICT file format translate easily?
This article has been archived and is no longer updated by Apple.
Typically, if you have a similar program on both platforms, such as Adobe PhotoShop, the files are readable across platforms. The PICT file format is not easily read on a Windows computer and is not recommended.

If you have existing graphics on either platform, here are a couple of suggestions for exchanging them between the PC and Macintosh.

- Use MacLinkPlus from DataViz. More information is available from their Web site at http://www.dataviz.com/.
- Save the document in the GIF or JPEG file format. There are graphics viewers available for both Macintosh and Windows that allow you to view the document.

Published Date: Feb 18, 2012

10Base-T Ethernet Network: Source of Wiring Specification

I want to install a 10Base-T Ethernet network. What are the specifications (type of cable, number of conductors, wiring scheme, RJ-45 information, and so on) that we need to know to wire a 10Base-T network with a backbone?
This article has been archived and is no longer updated by Apple.
You can search the Institute of Electrical and Electronics Engineers (IEEE) Web site for specific information on the 10Base-T specification, encompassed in the IEEE 802.3 spec.

Alternatively, you can refer to the vendor of your Ethernet hardware for specifications relevant to the hardware you are installing. If you have not yet purchased equipment, use your favorite Internet search engine to search the web. "Ethernet wiring" would be a good search query to start with.

Institute of Electrical and Electronics Engineers (IEEE) Web site: **http://www.ieee.org/**
Published Date: Feb 18, 2012

ImageWriter II: Every Other Line Faded

This article has been archived and is no longer updated by Apple.

When an ImageWriter II prints correctly in one direction (either left to right, or right to left), but prints faded lines in the opposite direction, try replacing the ribbon wire and spring (935-0001). If the spring has been stretched slightly, the wire can slip on the pulley when moving in one direction. This prevents the ribbon from advancing and creates the faded lines.

Published Date: Feb 18, 2012

AppleShare Server 3.0: Upgrade Information (Discontinued)

The following information serves to inform customers how to upgrade to AppleShare Server 3.0.
This article has been archived and is no longer updated by Apple.
AppleShare Server 3.0 was introduced on October 15, 1991. As a method of upgrading the installed base as well as new customers to AppleShare Server 3.0, an upgrade program - via a coupon - has been established. New customers will be eligible to receive AppleShare Server 3.0 at no charge, the installed base will be offered a reduction in price to upgrade.

The disk file - AppleShare Coupon - is the upgrade coupon for new customers. The order form - AppleShare Order Form - is for the installed base. Although the AppleShare Server 3.0 product will not be available for fulfillment until December, the program begins on October 15, 1991; therefore, coupons may be submitted to the fulfillment house to begin processing on October 15. In addition, coupons (both the new customer coupon and the installed base order form) are available through PROMO.DIST. When requesting additional coupons through PROMO.DIST please note the number as follows:

* #900300 - coupon for new customers to receive the product at no charge.

* #900301 - order form for the installed base to purchase the product at a reduced price.

Requirements

Customers who purchase AppleShare File Server 2.0 between October 15, 1991 and December 31, 1991 will be eligible to receive AppleShare Server 3.0 at no charge.

* The customer is required to mail (to the address indicated on the coupon):
1) The AppleShare coupon (obtained from an authorized Apple Reseller);
2) An original, dated, itemized sales invoice as proof of purchase; and
3) Their original AppleShare File Server 2.0 - Server Installer disk (for each upgrade requested)

* This offer is available for fulfillment through April 1, 1992.

Customers who purchased AppleShare File Server 2.0 prior to October 15, 1991 will be offered a reduction in price to upgrade to AppleShare Server 3.0.

* The customer is required to mail (to the address indicated on the coupon):
1) The AppleShare order form (obtained from an authorized Apple Reseller).
2) Their original AppleShare File Server 2.0 - Server Installer disk (for each upgrade requested), include AppleShare 2.0 Print Server - Server Installer disk if applicable.
3) A certified check or money order for the amount as follows: AppleShare 2.0 File Server owners (only)$299 AppleShare 2.0 File and Print Server owners $199

* This offer is available for fulfillment through April 1, 1992.

Customers who own ONLY AppleShare 2.0 Print Server are required to purchase the AppleShare Server 3.0 product from an authorized Apple reseller.
Published Date: Feb 18, 2012

TA47311_Bit_Mode_Use_SuperClock_for_II_IIx_IIcx_SE__(TIL08935).pdf

32-Bit Mode: Use SuperClock 3.9.1 for II, IIx, IIcx, SE/30 3/93

Article Change History

08/21/92 - RETITLED
* For clarity; edited.
03/02/93 - REVISED
* To add 32-Bit System Enabler information.

The Macintosh II, IIx, IIcx, and SE/30 crash on restart with SuperClock installed and set to 32-bit mode.

This article has been archived and is no longer updated by Apple.
This problem with SuperClock occurs on these Macintosh computers only when they are used in 32-bit mode, such as with A/UX, the 32-Bit System Enabler, or MODE32.

Upgrade to SuperClock 3.9.1 or later, the version that fixes the crash problem in 32-bit mode.

Published Date: Feb 18, 2012

System 7: PrintMonitor Problem when Quitting Foreground App

Article Change History

09/22/92 - UPDATED
* To add information about System 7 Tune-Up.

Why does PrintMonitor sometimes crash when I quit the application that produced the print job?

This article has been archived and is no longer updated by Apple.
This is a known problem in the 7.0 Process Manager, which fails to keep the driver open when it shuts down the foreground application. You can avoid this problem by not quitting out of the foreground application (the one from which you requested the print) while PrintMonitor is in the process of printing.

But this problem has been solved with the LaserWriter driver version 7.1.1 (or later), found on the System 7 Tune-Up disk. To avoid the problem in the future, upgrade to this version of the LaserWriter. If you suspect your copy of PrintMonitor has already been damaged, replace it as well.

Published Date: Feb 18, 2012

AppleTalk Remote Access: Activity Log

What is the Activity Log?

This article has been archived and is no longer updated by Apple.

This is the component of AppleTalk Remote Access that maintains a log of incoming and outgoing calls and connections. The data wraps after 1000 entries. For auditing and tracking, you can cut and paste the data into spreadsheets or databases.

Published Date: Feb 18, 2012

Scribe Printer: What Kinds of Paper to Use (10/93)

What kind of paper can I use in the Scribe printer?

This article has been archived and is no longer updated by Apple.
Tests of continuous feed papers for the Scribe Printer have shown that most smooth finish papers are acceptable, whether fanfold or single-sheet.

If you wish to use other papers, keep in mind that although no specially-coated paper is necessary, it's nevertheless true that the smoother the paper, the better the print quality. Even standard pin-feed and copying machine papers (such as Xerox 4024 copy paper) yield satisfactory results; avoid using rougher-textured papers, though, such as personal stationery or papers with a high rag content.

Article Change History:
20 October 1993 - Removed phone numbers & paper vendors, they no longer exist
Published Date: Feb 18, 2012

AppleTalk Remote Access: the Application

What is the function of the Application component of AppleTalk Remote Access?
This article has been archived and is no longer updated by Apple.
This is the main application that performs these functions:

- Sets up the connection documents
- Views the status and activity log
- Initiates or terminates a remote connection
- Enables call answering (answers calls whether or not the application is open.)

Published Date: Feb 18, 2012

AppleTalk Remote Access: Connection Document

What is the Connection Document?

This article has been archived and is no longer updated by Apple.

A blank connection document appears when you double-click the Remote Access application. AppleTalk Remote Access uses the document when initiating a connection. The connection document specifies the caller's name, password, and phone number of the server Macintosh.

You can save all the configuration information to use later. You can choose whether to save the password with the connection document.

You can also set the time interval between active-connection reminders. This is helpful if you're concerned about phone charges. The default is no reminder.

Published Date: Feb 18, 2012

AppleTalk Remote Access: Modem CCL Files

Where do the modem CCL files go during AppleTalk Remote Access installation?
This article has been archived and is no longer updated by Apple.
The installation process places the modem Connection Control Language (CCL) scripts in the Extensions folder. The scripts appear in the pop-up menu in the Remote Access Setup control panel.

Advanced users can look at the CCL scripts by changing the file type from "mlts" to "TEXT" and reading it with any application that reads text files. A HyperCard stack is available to assist in the development of CCL files. This Modem Workshop tool allows you to interactively edit, run, and monitor CCL scripts.

Installation also places the AppleTalk Remote Access and MNPLink Tool extensions in the Extensions folder. These extensions create and maintain a reliable connection.
Published Date: Feb 18, 2012

AppleTalk Remote Access: Network adev (Remote Only)

What is the AppleTalk Remote Access Remote Only adev?
This article has been archived and is no longer updated by Apple.
The Remote Only adev (AppleTalk device) is installed in the Extensions folder and appears in the Network CDev. You can disconnect from the local network and see only the remote network. Here are two situations where you might need to do this:

- In the Event of a Network Number Conflict

When a resource on the remote network has the same number as a resource on the local network, you can access the remote resource using the Remote Only adev.

- When You Have a Printer Port, and No Other Network Connections

When you must use the printer port for something other than AppleTalk, you can use the Remote Only adev to free up the printer port. For example, a non-networked Macintosh with a serial printer connected to the printer port and a modem connected to the modem port.
Published Date: Feb 18, 2012

AppleTalk Remote Access: Security

AppleTalk Remote Access implements security in several ways, at the Macintosh level and at the network level.
This article has been archived and is no longer updated by Apple.
This document, including graphics, is also available from Software Updates as a self extracting archive of a MacWrite II document. Download, expand, and open with MacWrite II or compatible word processors. It discusses the general security features available with AppleTalk Remote Access. In addition, it specifically addresses the network-wide control functionality which is available for the more security conscious.

This document discusses the general security features available with AppleTalk Remote Access. In addition, it will specifically address the network-wide control functionality which is available for the more security conscious.

Security Features
AppleTalk Remote Access offers sophisticated security options that allow you to restrict access to your computer and any network to which it is connected. They include user-controlled options such as:

- User name and password authentication
- A callback feature which verifies the user's identity by returning their call to a predetermined phone number
- An activity log for recording calling and answering activities, and ´ A hacker proof feature which disables a user account after seven incorrect password attempts

In addition, AppleTalk Remote Access has a built-in network-wide security option. This enables a network administrator to maintain control over who can set up a Remote Access Server on the network.

In order to activate this feature, the network administrator will need to create a special SecurityZone password on the network via some AppleTalk router. (Setting up this SecurityZone is explained later in this document)

The network password is encrypted with DES and is placed in the later half of the SecurityZone name.

Once this SecurityZone is established, AppleTalk Remote Access will request a password anytime an attempt is made to check the 'Answer calls' box. (see below)

If an incorrect password is entered, answering will be disallowed. At this point, users will not be able to use this Macintosh for dial-in access to the network.

NOTE: You can allow exclusive access to a Macintosh on a secure network (for example, if you wanted to share files via File Sharing). This can be accomplished by either physically disconnecting the answering Macintosh from the network or through selecting 'Remote Only' in the network control panel.

IMPORTANT: A fail-safe feature is part of the SecurityZone implementation. There are two scenarios where this is initiated. 1) If the user is not connected to the network when they set up answering and then reconnects and 2) If a SecurityZone is established after 'Answer calls' is checked. AppleTalk Remote Access always does a SecurityZone query when a user tries to dial into the system. In either of the above cases, answering would have been disabled and the call would be terminated.

SecurityZone Set Up
A special HyperCard stack must be used to initially generate the a SecurityZone name with your DES encrypted password.

Once you generate the above zone name, you will need to get access to an AppleTalk router (any AppleTalk Router will work) and create a zone name which exactly matches the name generated by the above stack. Once you create the zone name, it will be distributed throughout the internet via RTMP. The AppleTalk Remote Access software will now require a password anytime someone.
Published Date: Feb 18, 2012

AppleTalk Remote Access: Setup

What is Remote Access Setup?
This article has been archived and is no longer updated by Apple.
This is a control panel device (CDev) that is normally the first component used after installation. It is used to do the following:

- Select the modem type and modem port.
- Allow incoming calls.
- Set the duration of a connection.
- Enable access to the attached network.
- Control the modem speaker.

Published Date: Feb 18, 2012

AppleTalk Remote Access: Status Window

What is the Status Window?
This article has been archived and is no longer updated by Apple.
This window shows the current status of AppleTalk Remote Access. It uses the following messages:

- "Idle..." when no connections are present or being attempted
- "Waiting to answer incoming call..." when ready to accept calls
- "Waiting for call back..." or "Dialing..." to show the stage of making connection or answering a call

Published Date: Feb 18, 2012

AppleTalk Remote Access: Users and Groups File

What is the function of the Users and Groups File component of AppleTalk Remote Access?

This article has been archived and is no longer updated by Apple.

AppleTalk Remote Access uses System 7 file sharing to control access. It uses the same user name and password entered in the file sharing Users and Groups file. You enter the call back phone number here. If installed on an AppleShare 3.0 file server, the file server's Users and Groups file controls access. You access the Users and Groups file via the administrator's program. The menu item doesn't work in this case.

Published Date: Feb 18, 2012

TA47323_AppleShare_Installing_and_Upgrading_Servers_(TIL08948).pdf

AppleShare 3.0: Installing and Upgrading Servers

This article tells you what you need to install or upgrade servers to AppleShare 3.0.
This article has been archived and is no longer updated by Apple.
To upgrade to AppleShare 3.0, you must first upgrade the system software to version 7.0 or later.

The AppleShare 3.0 installation process converts an AppleShare 2.0.1 Users and Groups file for 3.0 use. If System 7 file sharing was activated, the Users and Groups file is active, and the file will be used for the AppleShare 3.0 file. If both files are present, a dialog box prompts the administrator to choose which file to use.
Published Date: Feb 18, 2012

AppleShare 3.0: Using 2.0.x Workstation Software

This article explains the limitations of using AppleShare 2.0.x workstation software with AppleShare 3.0 server software.

This article has been archived and is no longer updated by Apple.

AppleShare 2.0.x clients and System 7 clients can access AppleShare 3.0 servers, but can't use the new features of AppleShare 3.0. If a user with an expired password logs on to an AppleShare 3.0 server, that user's old workstation software doesn't support the extended security, and he or she won't be able to log on. The new workstation software gives a message and the opportunity to enter a new password.

Published Date: Feb 18, 2012

AppleShare 3.0: Access Information Dialog Box

This article describes the functions of the Access Information dialog box.
This article has been archived and is no longer updated by Apple.
The administrator can perform the following functions in the Access Information dialog box.

- Share folders and volumes.

- Lock a file: This is similar to locking a file in the Finder's Get Info window.

- Copy-protect a file: This prevents making Finder copies of a file, but certain utilities can still copy the file.

- Limit launches: This limits the number of times users can simultaneously launch an application.
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AppleShare 3.0: Maximum Number of Connected Users

What is the maximum number of connected users allowed by AppleShare 3.0?

This article has been archived and is no longer updated by Apple.

Version 3.0 of AppleShare increased the maximum number of connected users from 50 to 120. The default setting is 50. The practical upper limit for connected users is probably less than 120 for reasonable response time. Also, the Hierarchical File System (HFS) limits the number of open files to 346.

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AppleShare 3.0: User Setup Dialog Box

A change in the User Setup dialog box gives the administrator more control over user passwords.

This article has been archived and is no longer updated by Apple.

The administrator can force users to change passwords the next time they log on. This is useful when creating several users and giving simple default passwords, such as initials.

Published Date: Feb 18, 2012

AppleTalk Remote Access: Requirements and Components

This article describes the connection and client/server characteristics, requirements, and components of the AppleTalk Remote Access software.
This article has been archived and is no longer updated by Apple.

The Connection and Client/Server Characteristics

AppleTalk Remote Access provides an asynchronous AppleTalk connection through a modem to another Macintosh and its AppleTalk network. The remote user can access all the AppleTalk services such as mail, calendars, file servers, and printers. The software is meant for personal use, and it is easy to set up and configure. It supports one connection at a time.

This software can act as client or server. AppleTalk Remote Access behaves as a node on its local network as well as the remote network, and has access to all services on both networks. As a client on the remote network, it doesn't allow the rest of the remote network to gain access to its local network. In other words, it doesn't create two-way access between networks.

Requirements

For optimum performance, Apple recommends using a V.32 capable 9600 bps or faster modem. A 2400 bps modem provides satisfactory access to on-line mail services or calendaring systems. Connection speeds slower than 2400 bps are likely to cause AppleTalk to time-out between packets. The software supports connection speeds of 2400, 9600, and 19200 bps. It requires System 7 or later, but runs on any CPU capable of running System 7. AppleTalk Remote Access supports built-in serial ports, not serial cards.

Components

- Remote Access Application is the main application that functions to set up, monitor, and control connection.
- Remote Access Setup is a control panel device (cdev) that selects and controls the modem, and connection to a network.
- Users & Groups File uses System 7 file sharing to control access.
- Connection Document provides the information used to initiate a connection.
- Status Window shows the current status of AppleTalk Remote Access.
- Activity Log maintains a log of incoming and outgoing calls and connections.
- Network adev (Remote Only) allows you to disconnect from the local network and see only the remote network.
- Connection Control Language (CCL) scripts.
- MNPLink Tool extensions create and maintain a reliable connection.
- Security at the Macintosh and network levels.

The AppleTalk Remote Access application must be open to see the connection document, status window, and activity log. The other components are independent of the application.

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AppleShare 3.0: Compact Volume Access Privileges Menu

Using the Compact Volume Access Privileges menu, an administrator can perform Parallel Data Structure (PDS) compaction on a volume.
This article has been archived and is no longer updated by Apple.
PDS compaction removes PDS entries derivable from their parent, and gives dynamic access privileges. File service starts up faster after compaction. This operation is safe to do on CD-ROMs because it's impossible to drag folders to another location.
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AppleShare 3.0: Guest Access Default

What is the Guest access default when installing AppleShare 3.0?

This article has been archived and is no longer updated by Apple.

The default for Guest access is Off when installing AppleShare 3.0 on a new system. Upgrading a server sets Guest access to whatever it was on the existing server.

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AppleShare 3.0: Using Maximum Remote User Activity Meter

In AppleShare 3.0.x, the administrator can customize the response time using the Maximum Remote User Activity meter.
This article has been archived and is no longer updated by Apple.
AppleShare File Server activity affects the performance of other applications and services running on the server, and vice versa. The administrator can adjust total system performance using the Maximum Remote User Activity meter. Changes take effect immediately. The default setting is 100%.

Setting the slider to 100% allows the server to access 100% of the available CPU cycles. This doesn't lock out any other running application. Set to 50%, the server uses every other available cycle from the CPU. This is true whether an application uses the other 50% or not.

Recommended Slider Setting

It appears that there are too many variables in making a recommendation on the setting when an AppleShare file server is running in conjunction with another network service such as a print server or mail server. The optimal slider setting in this situation must be determined through trial and error.

The AppleShare 3.0.x file server keeps track of CPU usage. That is, AppleShare knows what percentage of the CPU that remote AFP requests are responsible for. Internally, AppleShare uses a complex scheduling algorithm for tracking and allotting CPU time.

The "Maximum Usage" slider controls what percentage of the CPU that remote AFP requests are allowed. So, what is actually happening when you change the value of the slider is a corresponding variable within the AppleShare scheduler is changed and is then used in scheduler time calculations to determine whether or not to process pending AFP requests.

Example: If the slider were set to 50% and it is determined (by the AppleShare scheduler) that processing another AFP request would result in AppleShare using more than 50% of the CPU and there are currently other processes competing for the CPU, then the scheduler would yield to system processes. Whereas, if the slider were set to 100%, then AFP requests are immediately processed regardless of whether there are other processes waiting for processor time.

As far a recommended settings, it totally depends on how the File/Print Server machine is being used. If it is a dedicated server, then the slider should be set a 100% for maximum server performance. If the machine is only a part time server and you wish to use the machine to run applications and so on, then the slider should be set at a lower value depending on what kind of local performance you desire.
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TA47332_AppleShare_Messages_from_the_Administrator_(TIL08958).pdf

AppleShare 3.0: Messages from the Administrator

In AppleShare 3.0, the administrator can write messages up to 199 characters long, and send three message types.
This article has been archived and is no longer updated by Apple.
The three message types are:

- Greeting Message

AppleShare displays this message at log-on, to inform users of server contents, backup policies, or other news.

- User Message

The administrator can send a custom message to a User or Group.

- Disconnect User

The administrator can send a message to a group of connected users explaining the reason for shut down, or announcing the time service will be restored. The administrator can disconnect a user or group of users without bringing the server down. Disconnection can happen immediately or after a designated time interval.
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AppleShare 3.0: Parallel Data Structure Maintenance

Maintenance of the Parallel Data Structure (PDS) in AppleShare 3.0 is a continuous background task rather than a startup task.
This article has been archived and is no longer updated by Apple.
This change has these benefits:

- Faster server startup time

- Improved integrity of the PDS (many other applications can run on the same system, increasing the chance of a server crash)

- Ability to support removable media: The administrator can mount or unmount volumes while the server is running.

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AppleShare 3.0: File Server Preferences Dialog Box

The administrator can ensure network security with the choices in the File Server Preferences dialog box.
This article has been archived and is no longer updated by Apple.
Network Security Choices:

- Set the maximum number of connections. The maximum is 120 and the default is 50. Restart the server to see the new number take effect. AppleShare allocates 2K of memory at startup for each connection.

- Set the minimum number of characters in a password. Eight characters is the maximum and zero is the default.

- Set the number of days until a password expires. When the password expires, users get a prompt to enter a new word if they have the privilege to change passwords. For a temporary account, set the number of days until expiration for the duration of the account and deny the change-password privilege.

- Set the maximum number of failed log-on attempts. This disables the account when someone tries multiple random passwords to gain access. The administrator must reactivate the account.

- Require a password at startup time. This disables the "Save my name and password" option in the Chooser dialog that allows a choice of servers to mount at startup.
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AppleShare 3.0: Sharing Volumes and Folders

This article discusses some of the new features of AppleShare 3.0 in terms of volume and folder sharing.
This article has been archived and is no longer updated by Apple.
You can share an entire volume, or selected folders. You can mount a maximum of 50 volumes on the AppleShare server, and share a maximum of 50 entities (volumes or folders).

When a remote user creates a new folder, the folder inherits the access privileges of the surrounding folder or volume unless the owner explicitly changes access. Access privileges used to default to owner only.

When the administrator creates a folder in an area that isn't shared or exported, the folder takes on the access privileges of the surrounding folder when dragged to a shared area. When the administrator moves this folder from the shared area to a new folder, the moved folder takes on the privileges of the new enclosing folder. Folders have this property of dynamic access privileges until the administrator assigns explicit privileges to the folder.

You can interchange Users and Groups so that a User who is not in a Group can share an entity along with the Group, and more than one User can own the same folder. A User can belong to 42 groups (up from 16). You can create over 8000 Users or Groups, but the recommended maximum is 2000.

Here are definitions for explicit and inherit access privileges:

Explicit - Retain access privileges regardless of the enclosing folder.
Inherit - Always change to reflect access privileges of enclosing folder.

The default on an AppleShare Server is explicit.
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AppleShare 3.0: New Features in the User Dialog Box

This article tells about the new features added to the User dialog box.
This article has been archived and is no longer updated by Apple.
AppleShare 3.0 allows multiple super users. In the User dialog box, check the All Privileges Enabled box to give full access to all exported entities.

The User dialog box also has a Program Linking Enabled check box to allow IAC events. This dialog also controls AppleTalk Remote Access.
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AppleShare Server 3.0: Product Highlights

This article highlights the most important features of AppleShare Server 3.0.
This article has been archived and is no longer updated by Apple.

Multiple Service Platform

- System 7 multitasking environment, including support for program linking and publish and subscribe.

- Includes AppleShare file and print services.

- Open environment allows additional network services.

Administrator Control

- Set number of connected users

- Send server messages to any user

- Share entire hard disks or selected folders

- Change CD-ROMs without shutting down the server

- Adjust file server performance through system caching and control over file server task prioritization

Security Enhancements

- Minimum password length

- Password aging

- Password history to prevent immediate reuse

- Ability to disallow saved passwords

- Account disable after specified number of password failures

- Adjustable time limit for temporary accounts

- Guest access turned off by default

- Copy-protection setting for documents

- "Lock" setting for folders

- Adjustable number of concurrent application launches*

- Inherited folder privileges

- Administrator log-off of any user

Print Spooling

- Spooling for up to five AppleTalk printers

- Centralized queue management

- Accepts simultaneous print requests

- Reduced user delay

- Print log for 1000 print jobs

Maximum Number of...

- Concurrent users 120

- Open files 346

- Shared volumes 50

- Users 8192**

- Groups 8192**

- Users in group 8191

- Groups per user 42

- Locked ranges per user 20

- Apple II network startups 40

AppleShare Access Privileges

- Both the user and the administrator can control access to information

- Eight different access privileges

How Users View Shared Data

- Full access privileges

- Drop folder, write capability only

- No access privileges

How Users Protect Their Data

- Can't see enclosed folders

- Can't see enclosed files

- Can't write to folder

- Can't write to or see folders

- Can't write to or see files

* Requires a multilaunch application and appropriate license agreement.

** The sum of users and groups cannot exceed 8192. The recommended limit is 2000.
Published Date: Feb 18, 2012

TA47338_System_Use_AppleShare_With_System_Software__(TIL08967).pdf

System 7: Use AppleShare 2.0.2 With System Software 6.0.7

Article Change History

09/15/92 - REVIEWED
* For technical accuracy.

I have a Macintosh IIsi with system software version 7.0 installed, and I have a Macintosh SE/30 with system software version 6.0.7 and AppleShare workstation version 7.0 installed.

When I try to access the Macintosh IIsi from the Macintosh SE/30, I get the message, "Disk needs minor repairs. Do you want to repair it?" If I click the "Yes" button, the message just reappears.

This article has been archived and is no longer updated by Apple.
To correct the problem, remove the System 7 AppleShare extension from the Macintosh SE/30 running system software version 6.0.7, and replace it with AppleShare 2.0.2 workstation software from your 6.0.7 System disk.

Published Date: Feb 18, 2012

System Software 7.0.1: Questions and Answers

Article Change History

09/24/92 - REVIEWED
* For technical accuracy.

This article gives answers to some common questions about system software version 7.0.1.

This article has been archived and is no longer updated by Apple.

Q: Why did Apple release System Software 7.0.1?
A: Macintosh System Software 7.0.1 incorporates software support for new products introduced on 21 October 1991:
- Macintosh PowerBook 100, 140, and 170
- Macintosh Quadra 700 and 900
- Macintosh Classic II

Q: Why is 7.0.1 required when using these Apple products?
A: These Apple products contain hardware features that require support from the new system software.

Q: Does Apple recommend that everyone upgrade to 7.0.1?
A: No. System 7.0.1 contains only software changes from System 7.0 necessary to support the new products and is not a generally recommended upgrade.

Q: Is System 7.0.1 available in the System 7 upgrade kits?
A: No. Because System 7.0.1 is a hardware support release only, and there is no significant benefit for other Macintosh users, the Personal Upgrade Kit won't change. Customers wishing to upgrade to System 7 can purchase an upgrade kit containing System 7.0.

However, System 7.0.1 is on the CD-ROM in the Group Upgrade kit to continue providing network administrators all versions of system software.

Q: Can I share a network between Macintosh computers running System 6, System 7.0, and System 7.0.1?
A: Yes. System 7.0.1 co-exists on networks with System 7.0 and System 6 (with updated System 7 printing software).

Q: What version of HyperCard do I need to run with System 7.0.1?
A: HyperCard version 2.1 is required for use with System 7.0.1.

Q: Does 7.0.1 address any problems with System 7.0?
A: No. Apple is very confident in the stability and compatibility of System 7.0.

Q: If I purchase a System 7 upgrade kit, am I entitled to a free copy of 7.0.1?
A: Customers wishing to get copies of System 7.0.1 can do so through electronic bulletin boards, AppleLink, or an authorized Apple dealer.

Q: How else can I get a copy of System 7.0.1?
A: System 7.0.1 is shipped in-the-box with the Macintosh PowerBook 100, 140, and 170; Macintosh Quadra 700 and 900; and the Macintosh Classic II.

For consistency, Apple also rolled over all newly manufactured systems to System 7.0.1 in the United States and Pacific.

Q: Can I get System 7.0.1 on 800K disks?
A: No. As 7.0.1 is specifically a hardware support release, 1.4MB disks only are required for the Macintosh PowerBook 100, 140, and 170; Macintosh Quadra 700 and 900; and the Macintosh Classic II.

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TA47340_Applesoft_RENUMBER_in_ProDOS_(TIL00897).pdf

Applesoft: RENUMBER in ProDOS

This article has been archived and is no longer updated by Apple.

To renumber your ProDOS Applesoft Basic program, access RENUMBER through the APA program located on your ProDOS Basic Programming Example Disk (part number 680-0235).

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System 7.1 through Mac OS 7.6: Compatibility With Macintosh Computers

This tables in this article list Macintosh computers and the versions of System 7.1 through Mac OS 7.6 that can be used with them. It also lists versions of any required enablers. To search the Technical Information Library for information on system software previous to 7.1 use the search string "system software and 7.0.1."
This article has been archived and is no longer updated by Apple.
Use the following chart to determine which version of system software you should be using on your Macintosh computer:

Key

! - Not supported
OK - Works with this version of system software
* - Works with this version of system software, but requires a Macintosh System Enabler (see below)

System 7 Compatibility

Macintosh	7.6	7.5.5	7.5.3	7.5.2	7.5.1	7.5	7.1.2P	7.1.2	7.1.1	7 Pro	7.1
128K, 512K, 512Ke, and XL/Lisa	!	!	!	!	!	!	!	!	!	!	!
Plus	!	OK	OK	!	OK	OK	!	!	!	!	OK
SE	!	OK	OK	!	OK	OK	!	!	!	OK	OK
SE/30	!	OK	OK	!	OK	OK	!	!	!	OK	OK
Classic	!	OK	OK	!	OK	OK	!	!	!	OK	OK
Classic II	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
Color Classic	OK	OK	OK	!	OK	OK	!	!	!	*	*
II	!	OK	OK	!	OK	OK	!	!	!	OK	OK
IIx	!	OK	OK	!	OK	OK	!	!	!	OK	OK
IIcx	!	OK	OK	!	OK	OK	!	!	!	OK	OK
IIci	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
IIfx	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
IIsi	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
IIvi,IIvx	OK	OK	OK	!	OK	OK	!	!	!	*	*
LC	!	OK	OK	!	OK	OK	!	!	!	OK	OK
LC II	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
LC III	OK	OK	OK	!	OK	OK	!	!	!	*	*
LC 475	OK	OK	OK	!	OK	OK	!	!	!	*	*
LC 520	OK	OK	OK	!	OK	OK	!	!	!	*	*
LC 550	OK	OK	OK	!	OK	OK	!	!	!	*	*
LC 575	OK	OK	OK	!	OK	OK	!	!	!	*	*
LC 580	OK	OK	OK	!	OK	OK	!	!	!	!	!
LC 630	OK	OK	OK	!	OK	OK	*	!	!	!	!
Macintosh TV	OK	OK	OK	!	OK	OK	!	!	!	*	*
Centris 610	OK	OK	OK	!	OK	OK	!	!	!	*	*
Centris 650	OK	OK	OK	!	OK	OK	!	!	!	*	*
Centris 660AV	OK	OK	OK	!	OK	OK	!	!	!	*	*
Quadra 605	OK	OK	OK	!	OK	OK	!	!	!	*	*
Quadra 610	OK	OK	OK	!	OK	OK	!	!	!	*	*
Quadra 630	OK	OK	OK	!	OK	OK	*	!	!	!	!
Quadra 650	OK	OK	OK	!	OK	OK	!	!	!	*	*
Quadra 660AV	OK	OK	OK	!	OK	OK	!	!	!	*	*
Quadra 700	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
Quadra 800	OK	OK	OK	!	OK	OK	!	!	!	*	*
Quadra 840AV	OK	OK	OK	!	OK	OK	!	!	!	*	*

Quadra 900,950	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
PowerMac 5200/75 LC	OK	OK	OK	!	*	!	!	!	!	!	!
PowerMac 5300/100 LC	OK	OK	OK	!	*	!	!	!	!	!	!
PowerMac 5400/200	OK	OK	!	!	!	!	!	!	!	!	!
PowerMac 5500/225	OK	OK	!	!	!	!	!	!	!	!	!
PowerMac 6100/60	OK	OK	OK	!	OK	OK	!	*	!	!	!
PowerMac 6100/66	OK	OK	OK	!	*	*	!	!	!	!	!
PowerMac 7100/66	OK	OK	OK	!	OK	OK	!	*	!	!	!
PowerMac 7100/80	OK	OK	OK	!	*	*	!	!	!	!	!
PowerMac 7200/75	OK	OK	OK	*	!	!	!	!	!	!	!
PowerMac 7200/90	OK	OK	OK	*	!	!	!	!	!	!	!
PowerMac 7300/180	!	OK	*	!	!	!	!	!	!	!	!
PowerMac 7300/200	!	OK	*	!	!	!	!	!	!	!	!
PowerMac 7500/100	OK	OK	OK	*	!	!	!	!	!	!	!
PowerMac 8100/80	OK	OK	OK	!	OK	OK	!	*	!	!	!
PowerMac 8100/100	OK	OK	OK	!	*	*	!	!	!	!	!
PowerMac 8100/110	OK	OK	OK	!	*	*	!	!	!	!	!
PowerMac 8500/120	OK	OK	OK	*	!	!	!	!	!	!	!
PowerMac 8600/200	!	OK	*	!	!	!	!	!	!	!	!
PowerMac 9500/120	OK	OK	OK	*	!	!	!	!	!	!	!
PowerMac 9500/132	OK	OK	OK	*	!	!	!	!	!	!	!
PowerMac 9600/200	!	OK	*	!	!	!	!	!	!	!	!
Workgroup Server 60	!	OK	OK	!	OK	OK	!	!	!	*	*
Workgroup Server 80	!	OK	OK	!	OK	OK	!	!	!	*	*
Workgroup Server 95#	!	!	!	!	!	!	!	!	!	!	!
Workgroup Server 6150/60	OK	OK+	OK	!	OK	OK	!	*	!	!	!
Workgroup Server 6150/66	OK	OK+	OK	!	*	*	!	!	!	!	!
Workgroup Server 7250/120	OK	OK+	OK	!	!	!	!	!	!	!	!
Workgroup Server 7350/180	OK	OK+	OK	!	!	!	!	!	!	!	!
Workgroup Server 8150/80	OK	OK+	OK	!	OK	OK	!	*	!	!	!
Workgroup Server 8150/110	OK	OK+	OK	!	*	*	!	!	!	!	!
Workgroup Server 8550/132	OK	OK+	OK	!	!	!	!	!	!	!	!
Workgroup Server 8550/200	OK	OK+	OK	!	!	!	!	!	!	!	!
Workgroup Server 9150/80	OK	OK+	OK	!	OK	!	!	OK	!	!	!
Workgroup Server 9150/120	OK	OK+	OK	!	OK	!	!	!	!	!	!
Workgroup Server 9650/233	7.6.1	!	!	!	!	!	!	!	!	!	!
Workgroup Server 9650/350	7.6.1	!	!	!	!	!	!	!	!	!	!
Portable	!	OK	OK	!	OK	OK	!	!	!	OK	OK
PowerBook 100	!	OK	OK	!	OK	OK	!	!	!	OK	OK
PowerBook 140	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
PowerBook 145	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
PowerBook 145B	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
PowerBook 170	OK	OK	OK	!	OK	OK	!	!	!	OK	OK
PowerBook 160	OK	OK	OK	!	OK	OK	!	!	!	*	*
PowerBook 165c	OK	OK	OK	!	OK	OK	!	!	!	*	*
PowerBook 180	OK	OK	OK	!	OK	OK	!	!	!	*	*
PowerBook 180c	OK	OK	OK	!	OK	OK	!	!	!	*	*
PowerBook 190	OK	OK	OK	*	!	!	!	!	!	!	!
PowerBook Duo 210	OK	OK	OK	!	OK	OK	!	!	!	*	*

PowerBook Duo 230	OK	OK	OK	!	OK	OK	!	!	!	*	*
PowerBook Duo 2300	OK	OK	OK	*	!	!	!	!	!	!	!
PowerBook Duo 250	OK	OK	OK	!	OK	OK	!	!	!	*	*
PowerBook Duo 270c	OK	OK	OK	!	OK	OK	!	!	!	*	*
PowerBook Duo 280	OK	OK	OK	!	OK	OK	!	!	*	!	!
PowerBook Duo 280c	OK	OK	OK	!	OK	OK	!	!	*	!	!
PowerBook 520, 520c	OK	OK	OK	!	OK	OK	!	!	*	!	!
PowerBook 540, 540c	OK	OK	OK	!	OK	OK	!	!	*	!	!
PowerBook 5300	OK	OK	OK	*	!	!	!	!	!	!	!

The Apple Workgroup Server 95 uses the A/UX operating system.
+ Also requires: System 7.5.5 SCSI Server Update, and PPC Interrupt Extension.

System Enablers

System Enablers are required for the Macintosh models indicated below with System 7.1 or later. Macintosh computers which require System Enablers will not operate properly with System 7.0.1 or earlier.

This chart shows the appropriate System Enabler for the indicated Macintosh computer:

Macintosh Model	Enabler Name	Use Enabler only with System Version	Current Enabler Version	Note
Color Classic	System Enabler 401	7.1	1.0.5	
IIvi	System Enabler 001	7.1	1.0.1	
IIvx	System Enabler 001	7.1	1.0.1	
LC III	System Enabler 003	7.1	1.1	
LC 475	System Enabler 065	7.1	1.2	
LC 520	System Enabler 403	7.1	1.0.2	
LC 550	System Enabler 403	7.1	1.0.2	
LC 575	System Enabler 065	7.1	1.1	
LC 630	System Enabler 405	7.1.2P	7.1.2P	
Macintosh TV	System Enabler 404	7.1	1.0	
Centris 610	System Enabler 040	7.1	1.1	
Centris 650	System Enabler 040	7.1	1.1	
Centris 660AV	System Enabler 088	7.1	1.2	
Quadra 605	System Enabler 065	7.1	1.2	
Quadra 610	System Enabler 040	7.1	1.1	
Quadra 630	System Enabler 405	7.1.2P	7.1.2P	
Quadra 650	System Enabler 040	7.1	1.1	
Quadra 660AV	System Enabler 088	7.1	1.2	
Quadra 800	System Enabler 040	7.1	1.1	
Quadra 840AV	System Enabler 088	7.1	1.2	
PowerMac 5200/75 LC	System Enabler 406	7.5.1	1	
PowerMac 5300/100 LC	System Enabler 406	7.5.1	1	
PowerMac 6100/60	PowerPC Enabler	7.1.2	1.0.2	
PowerMac 6100/66	PowerPC Enabler	7.5	1.1.1	
PowerMac 7100/66	PowerPC Enabler	7.1.2	1.0.2	
PowerMac 7100/80	PowerPC Enabler	7.5	1.1.1	
PowerMac 7200/75	System Enabler 701	7.5.2	1.1	
PowerMac 7200/90	System Enabler 701	7.5.2	1.1	
PowerMac 7300 Series	System Enabler 702	7.5.5		D

PowerMac 7500/100	System Enabler 701	7.5.2	1.2	
PowerMac 8100/80	PowerPC Enabler	7.1.2	1.0.2	
PowerMac 8100/100	PowerPC Enabler	7.5	1.1.1	
PowerMac 8100/110	PowerPC Enabler	7.5	1.1.1	
PowerMac 8500/120	System Enabler 701	7.5.2	1.2	
PowerMac 8600/200	System Enabler 702	7.5.5		D
PowerMac 9500/120	System Enabler 701	7.5.2	1.1	
PowerMac 9500/132	System Enabler 701	7.5.2	1.1	
PowerMac 9600 Series	System Enabler 702	7.5.5		D
PowerBook 150	PowerBook 150 Enabler	7.1.1	1.1	
PowerBook 160	System Enabler 131	7.1	1.0.3	A
PowerBook 165	System Enabler 131	7.1	1.0.3	A
PowerBook 165c	System Enabler 131	7.1	1.0.3	A
PowerBook 180	System Enabler 131	7.1	1.0.3	A
PowerBook 180c	System Enabler 131	7.1	1.0.3	A
PowerBook 190	PowerBook 5300/2300/190 Enabler	7.5.2	1.2.1	
PowerBook Duo 210	PowerBook Duo Enabler	7.1	2.0	B
PowerBook Duo 230	PowerBook Duo Enabler	7.1	2.0	B
PowerBook Duo 2300	PowerBook 5300/2300/190 Enabler	7.5.2	1.2.1	
PowerBook Duo 250	PowerBook Duo Enabler	7.1	2.0	B
PowerBook Duo 270c	PowerBook Duo Enabler	7.1	2.0	
PowerBook Duo 280	PowerBook Duo Enabler	7.1.1	2.0	
PowerBook Duo 280c	PowerBook Duo Enabler	7.1.1	2.0	
PowerBook 500 Series	PowerBook 500 Series Enabler 1.0	7.1.1	1.0.2	
PowerBook 5300	PowerBook 5300/2300/190 Enabler	7.5.2	1.2.1	
Performa Computers				
The Performa 200, 400, 405, 410, 430, 580, 640 and 6110-series NO Enabler required.				
Performa 450	System Enabler 308	7.1P6	1.0	
Performa 460-467	System Enabler 308	7.1P6	1.0	
Performa 475-476	System Enabler 364	7.1P6	1.1	
Performa 550, 560	System Enabler 332	7.1P6	1.1	
Performa 575-578	System Enabler 364	7.1P6	1.1	
Performa 600	System Enabler 304	7.1P6	1.0.1	
Performa 630-638	System Enabler 405	7.1.2P	7.1.2P	
Performa 5300	System Enabler 406	7.5.1	1.0	
Performa 6200	System Enabler 406	7.5.1	1.0	
Performa 6300	System Enabler 406	7.5.1	1.0	

Note

A - System Enabler 131 replaces System Enabler 111 and System Enabler 121

B - Express Modem users should also install the Duo Battery Patch xtension)

C - The Macintosh Plus, SE, SE/30, Classic, Classic II, LC, LC II, LC 580, Mac II, IIx, IIcx, IIsi, IIci, IIfx, Portable, PowerBook 100, 140, 145, 145B, 170, Quadra 700, 900, and 950 do NOT need a System Enabler.

D - These computers shipped with 7.5.5 and require the enabler that shipped with it. These computers do not support Mac OS 7.6 but support Mac OS 7.6.1.

Published Date: Feb 18, 2012

PowerBook 170: Display Dimming is Normal

Sometimes I can see the display of my PowerBook 170 getting dimmer. Is this normal?

This article has been archived and is no longer updated by Apple.
Yes. This is a normal condition of the active matrix as the voltage level of the battery decreases.

Here are three levels of brightness to expect:

- With the adapter plugged in, the display is at its brightest.

- Without the adapter plugged in, the brightness drops by about 30%.

- Without the adapter, the display dims automatically at the first dialog box to about half the brightness of the display when the adapter is plugged in.

Support Information Services
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PowerBook 140 and 145: How They Differ From 170

This article compares the PowerBook 140 and 145 to the PowerBook 170, and lists the feature sets that distinguish them.

This article has been archived and is no longer updated by Apple.

Overview

The PowerBook 140, 145, and 170 computers are notebook-size Macintosh computers. These computers share the same architecture and specifications, with these exceptions: microprocessor speed, amount of on-board RAM, type of display, capacity of the internal hard disk drive, and presence of a coprocessor and an internal modem.

Common Features

The PowerBook 140, 145, and 170 computers are smaller and lighter than the Macintosh Portable and offer improved CPU performance by using a 68030 processor. They are designed to be extremely rugged and portable. Both systems are 11.25 by 9.3 by 2.25 inches and weigh under 7 pounds.

They share a common main logic board, but have different daughter boards for the processor, RAM, and ROM.

PowerBook 140 and 145

The PowerBook 140 and 145 have a 68030 microprocessor. In the PowerBook 140, it runs at 16 MHz; in the PowerBook 145, it runs at 25 MHz.

Both feature a backlit Film Supertwist Nematic (FSTN) display, and a built-in 40MB or 80MB hard disk. They do not include a socket for a 68882 floating- point unit (FPU). Expansion slots (connectors) are provided for RAM cards and modem cards.

Here are the features specific to the Macintosh PowerBook 140 and 145:

- Microprocessor: 68030 running at 16 or 25 MHz

- Coprocessor: NO 68882 FPU

- Video display: flat-panel, transmissive mode, FSTN LCD (liquid crystal display), 640 x 400 pixels, with on-demand CCFL (cold cathode fluorescent lamp) backlighting

- Hard disk: one internal 40MB or 80MB, 2.5-inch SCSI hard disk

- RAM: 2MB or 4MB

- Modem: Optional

PowerBook 170

The PowerBook 170 has a 68030 microprocessor running at 25 MHz, a 68882 FPU, backlit active matrix display, and built-in 40MB hard disk and 2400 baud modem (USA only). Expansion slots (connectors) are provided for RAM cards and modem cards.

Here are the features specific to the Macintosh PowerBook 170:

- Microprocessor: 68030 running at 25 MHz

- Coprocessor: 68882 FPU

- Video display: flat-panel, transreflective Active Matrix LCD (liquid crystal display), 640 x 400 pixels, with on-demand CCFL (cold cathode fluorescent lamp) backlighting

- Hard disk: one internal 80MB, 2.5-inch SCSI hard disk

- Modem: one internal 20-pin connector with 2400 baud modem card installed; send facsimile capability (USA only, international decision on a country-by-country basis)

Support Information Services
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PowerBook Fax/Data Modem: Specifications (6/92)

This article gives the hardware specifications for the Macintosh PowerBook Fax/Data Modem, provided in the "Macintosh PowerBook Fax/Data Modem Developers Guide", which is available from APDA.

This article has been archived and is no longer updated by Apple.

Fax Compatibility
---
* Group 3 only

Data Format

The data format to use is determined by the software application.

* Protocol: serial, binary, asynchronous
* Parity: odd, even, mark, space, or no parity
* Character length:
* 7 data bits, 1 parity bit (even, odd, mark, or space parity), and 1 stop bit
* 7 data bits, no parity, 2 stop bits
* 8 data bits, no parity, and 1 stop bit

Frequency Tolerance
---
* Offset frequency: +/-7 Hz

Data Transmission Modes
---
* Full duplex
* Asynchronous

Fax Transmission Modes
---
* Half duplex

Compatibility and Modulation
---
* Full duplex (data communication standards)

Speed Standard Modulation
--- --- ---
300 bps Bell 103 FSK
1200 bps Bell 212A DPSK
1200 bps CCITT V.22 DPSK
2400 bps CCITT V.22bis QAM

* Half Duplex (fax communications standards)

Speed Standard
--- ---
2400-4800 bps CCITT V.27ter
7200-9600 bps CCITT V.29

Transmit Carrier Frequencies
---
* V.22bis, V.22, Bell 212A Transmit Carrier
Originate 1200 Hz
Answer 2400 Hz

* Bell 103 Mark Space
Originate 1270 1070
Answer 2225 2025

* V.21 Mark Space

Originate 980 1180
Answer & Fax 1650 1850

* V.29 Carrier 1700 Hz

* V.27 Carrier 1800 Hz

Guard Tone Frequencies and Transmit Levels (CCITT only)
---
* 1800 Hz +/-20 Hz 6 +/-dB below the transmit carrier level
* 550 Hz +/-20 Hz 3 +/-dB below the transmit carrier level

Answer Tone Frequency
---
* V.22bis, V.22, V.21, and fax 2100 Hz
* Bell 103, Bell 212A 2225 Hz

Received Signal Frequency Tolerance
---
* Offset frequency: +/-7 Hz

Calling Tone
---
* Fax-specific calling tone: 1100 Hz (0.5s on, 3s off with 15% tolerance)

V.42bis and MNP Features
---
* V.42bis and MNP protocols for error correction and data compression apply to V.22, Bell 212, and V.22bis

Error Control
---
* MNP Classes 2 to 4
* CCITT V.42

Data Compression
---
* MNP Class 5
* CCITT V.42bis

These protocols apply to V.22, V.22bis, and Bell 212 (if available in your country)

Features
---
* Auto-dial and auto/manual answer
* Dual-tone multifrequency (DTMF)/pulse dialing
* Extended AT command set
* Low-power design to help preserve Macintosh PowerBook battery power

Operating Environment
---
* Ambient temperature: 38 to 125 degrees F (5 to 65 degrees C)
* Relative humidity: up to 95% (non-condensing)
* Optimal humidity range: 0 to 75%

Power Requirements
---
* +5V +/-5% supplied by Macintosh PowerBook
* -5V +/-5% supplied by Macintosh PowerBook

Power Consumption
---
* Operational mode: 750 mW typical

* Macintosh PowerBook sleep state: 0 mW

Electrical Requirements
---
* Line voltage: 110 to 220 volts
* Frequency: 50 to 60 Hz

Physical Characteristics
---
* Board for internal installation with one mini-DIN connector and external RJ11 jack
* Modem size: 96x36 mm

Support Information Services
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PowerBook: Apple Peripheral Products (7/92)

This article gives brief descriptions of peripheral products for the Macintosh PowerBook computers.

This article has been archived and is no longer updated by Apple.

Memory Expansion Kits

Macintosh PowerBook memory expansion kits increase system memory to work with advanced Macintosh applications, with or large spreadsheets, scanned images, and sound files. The 2MB and 4MB memory expansion kits expand any Macintosh PowerBook computer to a system with up to 6MB of RAM. Dealer installation is required.

Fax/Data Modem

The Fax/Data Modem allows information exchange with other computers, and sends facsimile transmissions. Communicate with any standard modem operating at 2400, 1200, or 300 baud, and send facsimiles at 9600 baud. This low-power modem fits inside the PowerBook 100, 140, and 170, and can operate unattended for receiving files while you are away from the computer. Two versions are available: one for use in the U.S., Canada, and Japan, and one for use in Europe, Australia, and some South American countries. Dealer installation is required.

HDI-20 External 1.4MB Floppy Disk Drive

The Macintosh HDI-20 External 1.4MB Floppy Disk Drive gives the PowerBook 100 access to high-capacity disk storage including 400K, 800K, and 1.4MB Macintosh- and DOS-formatted disks. It plugs directly into the computer's floppy disk drive port.

Apple HDI-30 SCSI Disk Adapter and System Cable

The Apple HDI-30 SCSI Disk Adapter allows you to use a Macintosh PowerBook 100 computer as an external hard disk with another Macintosh system, for high-speed file transfer or system recovery.

The Apple HDI-30 SCSI system cable connects a PowerBook 100, 140, or 170 to any SCSI peripheral device, such as a CD-ROM drive, scanner, tape backup, or hard disk. You can connect up to five SCSI devices to the PowerBook at once, allowing a total of seven devices on the SCSI chain.

Rechargeable Batteries

The Macintosh PowerBook 140/170 rechargeable battery is a nickel-cadmium battery that provides two to three hours of use for the PowerBook 140 and PowerBook 170 notebook computers before recharging. You can recharge it hundreds of times before it needs replacing.

The Macintosh PowerBook 100 rechargeable battery is a sealed lead-acid battery that provides two to four hours of use. It can be fully recharged hundreds of times before it needs replacing.

Battery Rechargers

The Macintosh PowerBook 140/170 battery recharger recharges one or two nickel-cadmium batteries for the PowerBook 140 or PowerBook 170 computer to full power in just a few hours. An AC adapter (see below) is required.
The Macintosh PowerBook 100 battery recharger recharges the sealed lead- acid battery to full power in a few hours. It charges two batteries at once. An AC Adapter (see below) is required.

AC Adapter

The Macintosh PowerBook AC Adapter recharges batteries without having to unplug and remove the computer's adapter. Additional adapters make it easy to use a PowerBook computer at different locations. You can use it in any country without transformers; it needs just a simple plug adapter.

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PowerBook 140 and 145: Description (7/93) (Discontinued)

This article describes the Macintosh PowerBook 140 and 145 notebook computers. The only difference between the 140 and the 145 is the clock speed of their 68030 microprocessors. Note that the PowerBook 145B is functionally equivalent to the 145; in most cases a reference to the PowerBook 145 also applies to the 145B.

Note: With the PowerBook 145 and System 7.0.1, when you choose About This Macintosh... from the Apple menu, you'll see a window labeled "PowerBook 140". System 7.1 corrects this.

This article has been archived and is no longer updated by Apple.
The Macintosh PowerBook 140 and 145 fit easily inside a briefcase. They're ergonomically designed with an integrated trackball and palm rest to work with easily on your lap. You can adjust the standard-size keyboard and full page-width display.

The PowerBook 140 and 145 offer greater performance than the PowerBook 100. They have a built-in floppy disk drive that accommodates Macintosh, MS-DOS, OS/2, and ProDOS formats.

Built-in features:

* Networking capability that gives access to all the resources in an AppleTalk network.

* Six built-in ports to plug the PowerBook 140 or 145 directly into high-capacity hard disks, printers, and input devices.

* An optional modem sends electronic mail, accesses information on other computers, connects to an AppleTalk network, and sends documents to facsimile machines.

* Built-in sound-input capability.

* Processor: 16 MHz 68030 microprocessor (PowerBook 140)
25 MHz 68030 microprocessor (PowerBook 145)

* 2MB (on the 140) or 4MB RAM, expandable to 8MB

* Expansion: Six built-in ports for peripherals
Internal slots for modem and RAM

* Display: Backlit Supertwist, 640 by 400 pixels

* System Software 7.1, with multitasking, file sharing, Balloon Help, and TrueType fonts

* Networking: Built-in AppleTalk networking
File sharing without a dedicated server

* Compatibility: Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

Article Change History:
14 July 1993 - Updated to include PowerBook 145B.

Support Information Services
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PowerBook 140: Specifications (Discontinued)

This article gives technical specifications for the Macintosh PowerBook 140 notebook computer.

This article has been archived and is no longer updated by Apple.

Microprocessor
---
* 68030, running at 16 MHz

Address and Data Bus

32-bit Address Bus
32-bit Data Bus

Memory
---
* Comes with 2MB or 4MB pseudostatic RAM on the logic board and one memory expansion slot.

* Expandable to 8MB of RAM by installing a RAM expansion card in the expansion slot.

Disk Storage
---
* One built-in 1.4MB drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.

* One internal 40MB or 80MB hard disk

Display
---
* 10 inch (254 mm) diagonal

* Backlit Supertwist liquid crystal display

* 640 by 400 pixels

Battery
---
* NiCad, 2.5 ampere-hours, provides 2 to 3 hours of use before recharging is necessary

* Recharge time: 100% recharged after 5 hours; 80% recharged after 3 hours

Keyboard
---
* Built-in keyboard with standard Macintosh layout

* Two-level tilt adjustment

Trackball
---
* Dual-button trackball, 30 mm diameter,

Clock/Calendar
---
* CMOS custom chip with long-life lithium battery

Interfaces
---
* One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices using a low-speed, synchronous serial bus

* Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices

* One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices

* One sound output port for external audio amplifier

* One sound-in port

Modem
---
* Optional internal 2400-baud modem with facsimile send at 9600 baud; includes facsimile send software

* Error correction and compression: MNP 4, 5 and V.42, V.42bis

Sound Generator
---
* Apple Sound Chip provides 8-bit sound, capable of driving stereo headphones or other stereo equipment through the sound port.

Sound Input
---
* 8-bit sound, sampled at 11 or 22 kHz

Disability Access
---
* CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disability.

ADB Power Requirements
---
* Maximum current draw for all ADB devices is 200 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements
---
* Line voltage: 100 to 240 volts

* Frequency: 50 to 60 Hz

Environmental Requirements
---
* Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)

* Storage Temperature: -40 to 65í C (-40 to 148í F)

* Relative humidity: 20% to 80% noncondensing

* Altitude: Operating: 3048 m (10,000 ft.) maximum
Shipping (non-operating) 0 to 15,000 ft. (0 to 4,722 m)

Size and Weight
---
* Height 2.25 inches (5.7 cm)
* Width 11.25 inches (28.6 cm)
* Depth 9.3 inches (23.6 cm)
* Weight 6.8 lb (3.03 kg)

Noise Level

Noise free except for floppy or hard disk use.

Article Change History
---
22 Mar 1995 - Updated operating and shipping altitude ratings.
02 Jun 1993 - Updated to correct voltage specification.
19 Feb 1993 - Updated to correct storage temperature range.

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PowerBook 170: Description (8/92) (Discontinued)

This article describes the Macintosh PowerBook 170 notebook computer.

This article has been archived and is no longer updated by Apple.
The Macintosh PowerBook 170 offers high performance and flexibility and is small enough to fit inside a briefcase. It includes a CPU, full-size screen and keyboard, trackball, battery, and disk storage.

It is comfortable to work with because of its integrated trackball and palm rest, and you can adjust the standard-size keyboard and full-page-width screen. It runs applications up to 50 percent faster than the PowerBook 140. It comes standard with 4MB of RAM and a built-in modem.

The PowerBook 170 provides the connections for built-in networking and six built-in ports for access to high-capacity hard disks, printers, and input devices.

The built-in modem sends electronic mail, accesses information on other computers, connects to an AppleTalk network, and sends documents to facsimile machines. It has built-in sound input to include sounds from different sources.

Macintosh PowerBook 170 Features

- Processor: 25 MHz 68030 microprocessor
25 MHz 68882 math coprocessor

- Memory: 4MB of RAM, expandable to 8MB

- Expansion: Six built-in ports for peripherals
Internal slots for modem and RAM

- Display: Backlit active matrix, 640 by 400 pixels

- Modem: 2400-baud data, 9600-baud facsimile send

Features Built Into Every Macintosh

- Usability: Runs thousands of Macintosh applications

- System software: System 7.0.1, with multitasking, file sharing, Balloon
Help, and TrueType fonts

- Networking: Built-in AppleTalk networking
File sharing without a dedicated server

- Compatibility: Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

Support Information Services

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AppleShare: Copy-Protection and Locked Files or Folders

This article has been archived and is no longer updated by Apple.

AppleShare 1.0 and 1.1

AppleShare 1.0 and 1.1 do not provide a mechanism to prevent users from copying files from an AppleShare volume.

Locking folders with these versions will not prevent someone from moving the folder elsewhere on the volume.

AppleShare File Server 2.0 or Later

You can Lock folders but you cannot copy-protect them. Locking prevents renaming, discarding, or moving the folder elsewhere on the volume. Locking does not affect access privileges. Only the folder's owner can enable or disable the folder lock option from the Access Privileges window.

Files can be locked and/or copy-protected. Locking a file prevents renaming, discarding, or saving any changes to the file but does NOT prevent someone from moving, copying, or opening the file. You can lock a file from the finder within the Get Info window.

When a file is copy-protected, users are unable to copy or duplicate it in the finder. Users with acess privileges could still open a copy-protected document and using the Save As function could make a copy of the document -- defeating the copy protection.

The copy-protection feature is most useful for preventing copying of applications, to comply with copyrights and licensing agreements. Copy-protection can only be set with AppleShare Administration software within the file information window.

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PowerBook 100: How it Differs from Macintosh Portable (8/92)

This article describes the Macintosh PowerBook 100 features and how they differ from those of the Macintosh Portable.

This article has been archived and is no longer updated by Apple.

The Macintosh PowerBook 100 is the entry-level notebook Macintosh. It has many of the features of the Macintosh Portable, but in a lighter and smaller enclosure. The main differences are that the PowerBook 100 does not have a processor direct slot, ROM expansion slot, internal floppy drive, nor an external modem serial connection. The display is Supertwist instead of active matrix display.

The Macintosh PowerBook 100 has a new feature, SCSI disk mode. This mode allows another Macintosh to mount the internal hard disk drive. This mode requires a special SCSI disk mode adapter. The ROM contains the firmware for this mode. No other Macintosh has this feature.

The basic performance is the same as the Macintosh Portable. This is approximately twice the performance of a Macintosh Classic.

Published Date: Feb 18, 2012

PowerBook 100: Description (8/92) (Discontinued)

This article describes the Macintosh PowerBook 100 notebook computer.

This article has been archived and is no longer updated by Apple.
The Macintosh PowerBook 100 is small enough to fit in a briefcase, yet gives you the use of applications on a Macintosh. The self-contained trackball and palm rest allow you to work anywhere. You can adjust the bright display and the standard-size keyboard to work in any environment.

Built-in networking allows access to an AppleTalk network. Five built-in ports give you plug-and-play connections to high-capacity hard disks, CD-ROM drives, printers, and input devices. With the external floppy disk drive, you can work with data files stored in Macintosh, MS-DOS, OS/2 and ProDOS formats. The optional modem allows you to send electronic mail, access information on other computers, and send documents to facsimile machines.

Macintosh PowerBook 100 Features

- Processor: 16 MHz 68HC000 microprocessor

- Expansion: Five built-in ports for peripherals
Internal slots for modem and RAM
Optional SCSI disk adapter allows the computer to be used as
an external hard disk.

- Usability: Runs thousands of Macintosh applications
Easy to set up, learn, and use

- System software: System 7.0.1, with multitasking, file sharing, Balloon
Help, and TrueType fonts

- Networking: Built-in AppleTalk networking
File sharing without a dedicated server

- Compatibility: Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

Support Information Services
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PowerBook 100: Specifications (Discontinued)

This article gives technical specifications for the Macintosh PowerBook 100 notebook computer.

This article has been archived and is no longer updated by Apple.

Microprocessor

68HC000, running at 16 MHz
Address Bus: 24-bit
Registers (32-bit): 17
Addressing Modes: 14

Memory

- Comes with 2MB pseudostatic RAM on the logic board, and one memory expansion slot.

- Expandable to 8MB of RAM by installing a RAM expansion card in the expansion slot.

Disk storage

- One internal 20MB SCSI hard disk

- External 1.4MB floppy disk drive; reads, writes, and formats Macintosh, MS-DOS, OS/2 and ProDOS disks

Display

- 9 inch (229 mm) diagonal

- Backlit Supertwist liquid crystal display

- 640 by 400 pixels

Battery

- Sealed lead-acid, 2.3 ampere-hours, provides 2 to 4 hours of use before recharging is necessary

- Recharge time: 3 hours

- Three non-rechargeable disk-type Lithium backup batteries (type CR-2430)

Keyboard

- Built-in keyboard with standard Macintosh layout

- Two-level tilt adjustment

Trackball

- dual button trackball, 25 mm diameter

Clock/calendar

- CMOS custom chip with long-life lithium battery

Interfaces

- One Apple Desktop Bus (ADB) port for low-power keyboard, mouse, and other devices using a two-speed, synchronous serial bus

- One RS-422 serial port for LocalTalk networking, printers, modems, and other devices

- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices

- One monophonic sound output port for external audio amplifier

- One HDI-20 floppy disk drive port for the external 1.4MB floppy disk drive

Modem

- Optional internal 2400-baud data modem with facsimile at 9600 baud; includes facsimile send software

- Error correction and compression: MNP 4, 5 and V.42, V.42bis

Sound generator

- Apple Sound Chip provides 8-bit sound capable of driving headphones or other stereo equipment through the sound port.

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disability.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 100 to 240 volts

- Frequency: 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)

- Storage Temperature: -40 to 65í C (-40 to 149í F)

- Relative humidity: 20% to 80% noncondensing

- Altitude: Operating: 3048 m (10,000 ft.) maximum
Shipping (non-operating) 0 to 15,000 ft. (0 to 4,722 m)

Size and Weight

- Height 1.8 inches (4.6 cm)
- Width 11 inches (28.0 cm)
- Depth 8.5 inches (22.0 cm)
- Weight 5.1 lb. (2.3 kg)

Noise Level

Noise free except for floppy or hard disk use.

Article Change History:
22 Mar 1995 - Updated altitude information.

26 Aug 1993 - Updated to correct storage temperature range.
02 Jun 1993 - Updated to correct voltage specification.

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TA47353_PowerBook_Support_Issues__(TIL08983).pdf

PowerBook 100: Support Issues (8/92)

This article discusses some of the support issues for the Macintosh PowerBook 100.

This article has been archived and is no longer updated by Apple.

Hard Disk Recovery

The low end marketing bundle does not include an external floppy disk drive. File sharing or SCSI disk mode will transfer data to and from a desktop Macintosh.

If you rely only on file sharing for file transfer, you may not be able to recover the internal hard disk drive. For example, if the System Folder is corrupted or the hard disk needs repair, file sharing can't connect to the Macintosh PowerBook 100. You need a SCSI disk adapter cable or an external floppy disk drive to connect.

Hard Disk Interleave Factor Mismatch

If another Macintosh initializes the hard disk while the Macintosh PowerBook 100 is in its SCSI disk mode, it may set the interleave factor incorrectly for the PowerBook 100. The PowerBook 100 has an interleave factor of 1. If, for example, a Macintosh Classic initializes the hard disk drive over SCSI disk mode, the default is an interleave factor of 3. This causes some inefficiencies when accessing the hard disk drive.

To work around this, you can force the Hard Disk Setup Utility to initialize with an interleave factor of 2. Type Command-I when the application is open. This brings up a dialog box that allows you to change the interleave factor.

No Support of System Peripheral Cable for File Sharing

This is an old issue from the days of connecting a LaserWriter to a Macintosh in a non-networked environment. You can't use the peripheral cable (Mini DIN-8 to Mini DIN-8, M0197) for connecting AppleTalk devices. You can use a peripheral cable in a point-to-point connection instead of two AppleTalk drop boxes and the cabling. This is a lower-cost solution, but Apple has not tested this configuration and does not guarantee future compatibility of this method for connecting two AppleTalk devices.

Support Information Services
Published Date: Feb 18, 2012

TA47354_Macintosh_Quadra_Support_Issues_(TIL08986).pdf

Macintosh Quadra 700: Support Issues

This article discusses some of the Quadra 700 support issues.

This article has been archived and is no longer updated by Apple.

Processor Cooling

The Quadra 700 is designed with special cooling considerations for the 68040. For the processor to cool properly, the case must be closed whenever the Quadra 700 is running.

VRAM Bank Order

The VRAM banks must be populated in order. If there is a VRAM upgrade, the SIMM slots should be populated from the back of the CPU to the front.

SIMM Slots

The placement of the SIMM slots under the hard drive makes it unlikely that vendors will be able to develop 16MB SIMMs to work on this computer.

Published Date: Feb 18, 2012

Macintosh Quadra 900: Support Issues

This article discusses some of the support issues for the Quadra 900.

This article has been archived and is no longer updated by Apple.

Sound

The existing sound input is 8-bit linear PCM with analog limiting to enhance the power of the signal being digitized. The sample rate may be set for 22 kHz or 11 kHz. Therefore, the results will not be significantly better than a low cost cassette recorder without noise reduction. This level of performance is adequate for voice annotation, but will not produce the best results with music.

Long Memory Checks

When you install large amounts of DRAM, the memory check at startup is lengthy and you may think the machine isn't functioning. There is no message saying that the machine is running memory checks.

Processor Cooling

The Quadra 900 is designed with special cooling considerations for the 68040. For the processor to cool properly, the case must be closed whenever the Quadra 900 is running.

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ProDOS: Error 900 When Using Apple IIc Sys Utilities Disk

I started up my system with the Apple IIc System Utilities Disk. This disk has a new port configuration saved to it. If I select any menu option then press the Escape key to return to the main menu, I always drop into the monitor with Error #900 displayed. How can I get around this?
This article has been archived and is no longer updated by Apple.
The workaround is as follows:

1. Duplicate your Systems Utilities disk: select the main menu option 5. Boot your system with this new copy.

2. Select main menu option 9 to exit from System Utilities.

3. From the Basic prompt, type in the following:

Load SU,S6
List 900

You will see the listing: 900 Call 768: Poke 216,0: Onerr Goto 930

4. Change line 900 to: 900 Poke 216,0: Onerr Goto 930: Call 768

5. Enter the following commands to unlock the file, save the changes to disk and relock the file to prevent accidental damage: List 900

6. Check once again that line 900 reads properly as in step 4, then type:

Unlock SU,S6
Save SU,S6
Lock SU,S6
Published Date: Feb 18, 2012

TA47357_Macintosh_Classic_II_Support_Issues_(TIL08990).pdf

Macintosh Classic II: Support Issues

This article discusses some of the support issues for the Macintosh Classic II.

This article has been archived and is no longer updated by Apple.

No FPU from Apple

Apple does not plan to produce an FPU card for the Macintosh Classic II.

No A/UX

There are no plans for a version of A/UX that runs on the Macintosh Classic II.

Published Date: Feb 18, 2012

Macintosh Classic II & Macintosh Classic:Comparison (8/96)

This article describes enhancements in the Macintosh Classic II, as compared to the Macintosh Classic.

This article has been archived and is no longer updated by Apple.

Processor

The Macintosh Classic II uses a 68030, 16 MHz CPU, while the Macintosh Classic has a 68000, 8MHz CPU.

RAM

The Classic II comes with 2 MB of RAM and two standard 32-pin SIMM sockets to add RAM configurations of 2, 4, 6 or 10 megabytes using standard SIMM modules with 100ns or better access time. The Macintosh Classic can have a maximum of 4 MB of RAM.

ROM

The Macintosh Classic II ROM is a modified version of the Macintosh LC ROM that supports virtual memory and 512 pixels x 342 pixels x 1 bit video. It comes with a 512K ROM, expandable to 4 MB using the on-board FPU/ROM connector.

Analog Board

These are the changes made to the Macintosh Classic analog board for use in the Macintosh Classic II:

- The width adjust coil replaced by a potentiometer.

- A new low-radiation flyback transformer added.

Other Differences

The Macintosh Classic II comes with a microphone for sound input.

The Macintosh Classic II has a connector on the logic board that allows you to add a floating-point coprocessor, available from third parties.

The Macintosh Classic II has a monitor yoke with opposing windings (cancellation coils). It requires system software version 7.0.1, and comes in configurations of 2 MB RAM with a 40 MB hard disk, or 4 MB of RAM with an 80 MB hard disk.

Article Change History:

19 Aug 1996 - Removed note regarding upgrate that is no longer available.

Published Date: Feb 18, 2012

Apple IIe Card: Compatible Monitors and Projection Pads

What Apple monitors work with the Apple IIe Card?

Can I use an LCD projection pads with the IIe card?

This article has been archived and is no longer updated by Apple.

Monitors

The Apple IIe Card supports the following monitors:

- Macintosh 12-inch RGB Display
- Macintosh 12-inch Monochrome Display
- AppleColor 13-inch High Resolution Monitor
- Apple 13-inch Monochrome Monitor
- IBM VGA monitors (those that work with the Macintosh LC, with the correct cable)

In other words, Apple IIe Card supports all monitors that are supported by the Macintosh LC video, including the 13-inch color monitor.

Projection Pads

As for LCD Projection Pads, we have only tried the nView ViewFrame II+2. It works with both the 13-inch and the 12-inch monitor. 13-inch projection pads should work, if you have a 13-inch monitor hooked up in-line with the projection pad cable.

Most pads provide a DB-15 female connector to plug into your monitor. The video that the Macintosh LC sends out is based on the monitor sense pins. If the projection pad can support many different video types, it should work also with a 12-inch monitor connected.

If you have a pad, test it with both the 12-inch and 13-inch monitors. If it works with both monitors, it should work with the Apple IIe card. If the pad has problems with the 12-inch monitor, then it also will have problems with the IIe card.

Published Date: Feb 18, 2012

Apple IIe: How to Limit Access to the Option Panel

I need to limit access to the Apple IIe Option Panel in my school lab.

This article has been archived and is no longer updated by Apple.
You can do so by buying an optional jumper for the Macintosh LC Logic Board. When the jumper is installed on the Macintosh LC logic board, users retain access to these Apple IIe Option Panel buttons:

- Quit IIe
- Eject Disk
- Restart IIe
- Return

However, users will not have access to any of the panels used to change Option Panel settings.

After shutting off the machine and all connected peripherals, put the jumper on the logic board near the battery. There are three sets of pins on the connector. Place the jumper on the pins closest to the battery (labeled CPE or W1 on the board).

This jumper also exists on the Macintosh LCII and Performa 405. However the designation is J17 not CPE.

Article Change History:
21 Jun 1994 - Added information on the LCII and Performa 405.

Support Information Services

Published Date: Feb 18, 2012

Apple II, IIe and II+: Auto-Run Apple w/o DOS

Some applications require that an Apple start running an Applesoft program from power-up without human interaction. This is easy with the disk and Auto-Start ROM. Simply initilaize the diskette with the desired program in memory and the disk will boot and run it when the power comes on. But sometimes a disk drive is undesirable, especially where there is only one program to run and the cost must be kept low. So here is a way to have a card that will load and run an Applesoft program automatically on power-up in any Apple II+.
This article has been archived and is no longer updated by Apple.
I will assume the use of a card like the Mountain Computer ROM+ that has a 256 byte "control ROM" and room for some larger ROMs to store the Applesoft program. On the ROM+ this is a bank of up to six 2716 type EPROMs. Using EPROMs has the advantage that you can change your Applesoft program later by erasing the EPROMs and reprogramming and the disadvantages of higher cost and using more power from the Apple's power supply. The power consumption of the EPROMs won't be a problem if the Apple isn't filled with cards.

The software in the control ROM is required to do five things:

1. Pretend that it's a disk controller card so that the Auto-Start ROM will execute its code.
2. Initialize Applesoft.
3. Move an image of the Applesoft program down from the ROMs into the proper area of RAM.
4. Set up the required Applesoft pointers for the end of the program.
5. RUN the program.

All that's needed to convince the Auto-Start that there's a disk controller card out there is to have a ROM whose first four odd bytes match the Apple P5 or P5A PROM. If the monitor finds a ROM that matches it in slot N, it will do a jump to $CN00. The routine that does this starts at $FAA6 and is listed on page 144 of the Apple II reference manual.

The first eight bytes in the control ROM will be: 24 20 24 00 24 03 24 3C

Note: By having the even numbered bytes equal to $24, (BIT Page zero) when the code is executed starting at $CN00 nothing will happen until the byte after the $3C.

The proper way to initialize Applesoft is to jump to $E000. Unfortunately this entry into Applesoft falls into the normal command level routine. o regain control so that the control ROM can load a program we can use the same trick that DOS uses. As soon as Applesoft reaches its command level it prints a prompt, ("]") and waits for the user to type in a command. Since all input and output in the Apple is handled through two pointers in RAM, we can divert the input routine to point back into the control ROM. This will leave several levels of subroutine on the 6502 stack but Applesoft will re-initialize the stack when we RUN the program so it doesn't matter.

Now the question becomes what address to put into the pointer. The control ROM's address will change depending on which peripheral slot it's plugged into.

The low byte is just the offset from the start of the ROM since the address always starts on a 256 byte boundary but the high byte could be anything from $C1 to $C7. When the Auto-Start ROM looks for a disk controller card it saves the high order byte in $7F8. So the contents of $38 and $39, the input pointer, becomes the offset which is stored at location $7F8. Then we can jump to $E000 to initialize Applesoft confident that we will regain control when it's done.

For the next step a copy of the image of the application program needs to be programmed into the EPROMs. The program starts at the address pointed to by $67 and $68 and ends at the address pointed to by $AF and $B0. The contents of the end address pointer, $AF and $B0, will be inserted in the control ROM at locations $1F and $23. When control comes back through the input routine pointer, Applesoft has already initialized $67 and $68. So the next step is to move the image of the Applesoft program down to where it originally came from. How this is done will depend on the hardware of the ROM card and the length of the Applesoft program. If you use the Apple firmware card you will have to address the soft switch to select the firmware card and then address the switch again to re-select the Applesoft ROMs. With the ROMPLUS it could be as simple as using the monitor move routine, $FE2C, to move a program of less than 2 kilobytes long.

There is a little more initialization to be done before the Applesoft program can be RUN. The end of program pointer mentioned earlier must be put into $69 and $6A and one more Applesoft routine must be called. Unfortunately this one also drops into Applesoft's command mode so we have to modify the input pointer again to point to a third part of the control ROM. Once this is done the final initialization can be done with a jump to $D4F2.

And now the final part, we need to reset the input pointer so that the program can input normally from the keyboard and actually RUN the program. To make things easier there is a routine set by the Auto-Start ROM that will set the input pointers to the keyboard at location $FE89. Then all that's left to do is jump to $D566 which will run the program.

For a bit of finesse, if we put a $80 into location $D6, the user will not be able to list the program. In fact any attempt to do any Applesoft command except LOAD from cassette will cause the program to RUN. Also, by changing the reset vectors in the Auto-Start ROM to point to the RUN routine, the program will become very difficult to stop or modify.

(To change the reset vector, load memory starting at $3F2 with 66 D5 70. See page 36 and 37 of the Apple II Reference manual for more details)

THE LISTING

This listing is all done relative to the start of the ROM so all address are given as one byte. If you use an assembler, simply origin the code in RAM and when it is programmed into the control ROM it will work just fine. The routines are not arranged in order of execution so that the move routine will be at the end since the length of the move routine will vary with the hardware requirements. Just be sure that the three byte jump is inserted behind the move routine.

```
* THE FIRST 4 INSTRUCTIONS LOOK LIKE A DISK BUT DON'T
* DO ANYTHING
*
00: 24 20      BIT $20
02: 24 00      BIT $00
04: 24 03      BIT $03
06: 24 3C      BIT $3C
*
* THIS PART INITIALIZES APPLESOFT AND GETS CONTROL BACK
* AT ENTRY2
*
08: A9 1A      ENTRY1  LDA # ENTRY2
0A: 85 38              STA KSWL
0C: A5 F8 07           LDA $07F8
0F: 85 39              STA KSWH
11: 4C 00 E0           JMP COLDSTART
*
* RESET INPUT TO THE KEYBOARD AND RUN THE PROGRAM
*
14: 20 8  1a   ENRTY3  JSR SETKBD
17: 4C 66 D5           JMP RUN
*
* FINISH INITIALIZATION & MOVE THE PROGRAM TEXT DOWN
* FROM THE ROMS
*
1A: A9 14      ENTRY2  LDA # ENTRY3
1C: 85 38              STA KSWL
1E: A9 LL              LDA # LENGTH-L
20: 85 69              STA LOMEML
22: A9 HH              LDA # LENGTH-H
24: 85 6A              STA LOMEMH

INSERT YOUR MOVE ROUTINE HERE FOLLOWED BY

 : 4C F2 D4           JMP INIT PART 2
```

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Lisa 7/7 (version 3.0): "UNABLE TO PRINT" message

This article has been archived and is no longer updated by Apple.
When your Lisa informs you it's having difficulties printing your document, check everything suggested by both the dialog message and the manual, and then try the following.

1. Open Preferences and click on Connect devices. Select each of the connections (e.g., Serial A Connector), and set each to Nothing.

2. Re-select each of the connecions in Connect Devices, and select what you physically have connected to the Lisa at that connection.

3. Click on Select Defaults in Preferences and make your printer the default printer.

4. Open your document and choose Format for Printer from the File/Print menu. Click on the "New Printer..." button, then select a printer different from what is currently selected (a new default printer). Finally, select Format for Printer and choose the printer you wish to print the document on.

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AppleShare Print Server: -120 Error

I am having problems with an AppleShare Print Server IINTX. When any of the workstations try to print to the network LaserWriter, the print server instantly aborts the print job. After this, the printer must be reset to be re-captured.

A message comes up on the screen stating that the computer is trying to clear the print buffer. I also get a message stating that error number -120 has occurred. The print server is a Macintosh SE 2/40, and the workstations are Macintosh SE 20s. I have re-installed System software, print-server software, LaserWriter files, and Laser Prep files on both the file server and workstations. What else can I do?

This article has been archived and is no longer updated by Apple.
The -120 error is a "directory not found" error that could be related to a hardware failure on the server. ?If you can print to the LaserWriter IINTX via the bypass feature of the AppleShare Print Server, then there is a problem at the server level. It is most important to determine that the workstations can print to the IINTX on bypass to verify the integrity of the hardware.

Here are two things to try on the server:

1) If you reinstalled the software over the old files, trash the old files first and then re-install.

2) Second, consider backing up the server in a file-by-file manner, re-initializing the drive, and restoring the files. The print server may be running into some bad sectors which inhibit its ability to spool the files.

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Macintosh Manager: Third-Party Application Allows Access to Restricted Area

Some third-party applications used in a Macintosh Manager environment may allow users access to areas of the file system from which Macintosh Manager would normally restrict them.
This article has been archived and is no longer updated by Apple.

Symptom

Using certain applications in a Macintosh Manager environment, users have access to an area of the file system that would otherwise be restricted by Macintosh Manager. This may occur through an open or save dialog box. It might also happen, for example, in the Recent Items feature of a word processing application.

Solution

Macintosh Manager limits calls for file system access that an application makes when the application uses standard Mac OS system calls. If a third-party application uses proprietary (nonstandard) calls for access, Macintosh Manager used with Mac OS 8.x does not limit them.

There are two solutions for administrators whose users are affected by this issue:

- Update affected client computers to Mac OS 9.x. Mac OS 9 used with Macintosh Manager restricts proprietary calls in addition to standard calls.
- Contact the maker of the application software to check for updates to the affected application or to request that one be released.

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Macintosh Manager, Multiple Users: Users Folder Created on All Volumes

Macintosh Manager or Multiple Users creates a Users folder on all available volumes, including removable media.
This article has been archived and is no longer updated by Apple.
Macintosh Manager or Multiple Users used with any version of Mac OS 9.x creates a Users folder on each available volume. An affected volume may be a piece of writable removable media (such as an Iomega Zip disk, but not a CD-ROM), a hard disk or partition, or a remote volume that appears on the desktop. This Users folder will have the same permissions as the Users folder located in the Macintosh Manager shared folder located on the startup disk of the Macintosh Manager server.

For related information, please see:

Article 31228: "**Mac OS: Limited Access to Folder Named 'Users'**"

This is a normal behavior for Mac OS 9.x and for Macintosh Manager.
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Macintosh Manager 1.3: Mac OS 7.6.1 Clients Lose Documents

A Mac OS 7.6.1 Macintosh Manager client may log in to find that his documents are no longer available. When you check on the Server, the user's Documents folder is empty.
This article has been archived and is no longer updated by Apple.

Symptom

Your documents folder is empty.

Solution

Download and install Macintosh Manager 1.4 or later. It is available from Apple Software Updates.

If updating to version 1.4.1 does not resolve the issue, try these additional steps:

1. Update to AppleShare Client 3.8.3.
2. Update to Open Transport 1.1.2.
3. Check which Ethernet card is installed (Apple or third-party). If it's a third-party card, check with the vendor to see if there are any driver updates.
4. Try Extensions troubleshooting as described in technical document 30929, "Mac OS: Extension Conflict Troubleshooting/Extensions Manager Features".
5. Isolate your setup (server and clients) from the larger network and test again.

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AppleShare IP 6.3: Troubleshooting Stability Issues

This article offers a list of troubleshooting steps for an AppleShare IP 6.3 or later server that stops responding ("freezes").
This article has been archived and is no longer updated by Apple.

Symptom

The operation of the AppleShare IP 6.3 server is unstable and sometimes stops responding ("freezes").

Solution

This issue may be resolved by installing the AppleShare IP 9.0.4 Update, available from Apple Software Downloads (http://www.apple.com/swupdates/). Alternatively, you may install AppleShare IP 6.3.3. Both contain the same software to address the issue. If this does not help, try the following:

Update Software

First, make sure the server (and the clients) have the appropriate system software. See technical document 16145: "**AppleShare: Platforms and Mac OS Releases Supported**"

Use the table below to check that the following updates are installed:

Computer	Updates
Power Macintosh (Blue and White) Macintosh Server G3 (Blue and White)	Ultra2 SCSI Card Firmware Update 1.2
iMac (Slot Loading) since early November 1999 and before Summer 2000	Ethernet Update 1.0
Power Mac G4, since late November 1999 and before Summer 2000	Ethernet Update 1.0

Note: You should install the Ethernet Update 2.0 on all computers using Mac OS 9.0 to 9.1. It also works with Mac OS 8.6.

If the Macintosh Management Server extension is installed, make sure that the latest version is installed and that you are using the latest version of the Macintosh Manager client software, as shown in the table below.

Software	Version
Macintosh Management Server for AppleShare IP	1.2.2
Macintosh Management Server for Mac OS X Server	1.2

- If you are using SoftRAID, make sure that the latest version is installed.
- If you are using Network Assistant, be sure that no Mac OS 9 computers have Network Assistant 3 installed on them.
  Note: Network Assistant 3 Admin does not work with Mac OS 9. Only Apple Network Assistant 4.0 or later works with Mac OS 9. Be sure to upgrade to the latest version available.
- If the recommended configurations and updates are not used, you may experience unexpected behavior.

Verify and Repair Server Volumes

Use Disk First Aid to verify and repair all server volumes.

Verify Cache Allocation

Verify that the AppleShare IP Cache allocation ("Maximum Server Memory") is set correctly. See technical document 106647: "**AppleShare IP 6.3.3: How to Verify Cache Allocation**"

Reconstruct Users & Groups Data File and the AppleShare PDS File(s)

Use the AppleShare IP First Aid utility to reconstruct the Users & Groups Data File and the AppleShare PDS file(s).

ASIP Thread Manager with Mac OS 9.0

If the server is running ASIP 6.3 and Mac OS 9.0, install the ASIP Thread Manager. This extension is not necessary for Mac OS 9.0.4 and 9.1 because its functionality was included in the Mac OS 9.0.4 system software update.

Sherlock Indexing

Turn off Sherlock Scheduled Indexing of all volumes on the server.

SNMP Extensions

Be sure the SNMP extensions are not installed on the server.

OT AutoPush Support Extension

Turn off the "OT AutoPush Support" extension.

Note: Doing this disables TCP filtering.

Retrospect Settings

If you are running Retrospect 4.0 or later, turn off 'System Heap Use' in Retrospect Preferences by following these steps:

1. Open Retrospect.
2. Click the Special tab.
3. Press and hold the Option key then click Preferences in the Special panel.
4. Select System from the list on the left side.
5. Deselect the checkbox labeled 'Use temporary system memory.'
6. Click OK.

SCSI Connections

Check all SCSI connections for proper cabling, termination, configuration, and updates. If the difficulties still persist, remove non-Apple peripherals such as SCSI tape drives, SCSI PCI cards, USB CD-ROM burners, and so on.

Extensions Manager

Follow these steps to turn on a set of standard extensions with which to operate the server:

1. Open the Extensions Manager and select the set of extensions named "AppleShare IP 6.3.x All".
2. Choose Duplicate Set from the File menu and make a duplicate. Use the duplicate set.
3. Disable the OT AutoPush Support extension.
4. Make sure the Open Transport SNMP extension is turned off.

Restart the computer and test again for the issue.

Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.
The following document can help you search for a particular vendor's address and phone number:
document 17159: "**Locating Vendor Information**"
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Macintosh Manager 1.3: Mac OS 7.6.1 Panels Clients Stop Responding During Desktop Printing

Mac OS 7.6.1 Macintosh Manager 1.3 clients in the Panels environment may stop responding ("freeze") when printing to a desktop printer.
This article has been archived and is no longer updated by Apple.

Symptom

The client stops responding when printing to a desktop printer.

Solution

Update to Desktop Printing 2.1, which is a part of LaserWriter 8.6 and the Color StyleWriter 6000 driver package. It is available from **Apple Downloads**.

This issue only happens in Panels, so another workaround may be to use Restricted Finder, or to do the following:

1. Disable Desktop Print Monitor.
2. Disable the Desktop Printer Extension.
3. Disable the Desktop Printer Spooler.
4. Print to the selected printer in System Access using Macintosh Manager.

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Macintosh Manager 1.3: Users Exceed Quotas

Macintosh Manager 1.4 and later address an issue in which users can exceed disk quotas that are set in excess of 32 MB.
This article has been archived and is no longer updated by Apple.

Symptom

If the disk quota in Macintosh Manager is set to any value higher than 32767 K, users are not restricted from saving further data. If the quota is set to 32767 K or lower, the quota works as expected.

Solution

Update to Macintosh Manager 1.4 or later. Macintosh Manager 1.4.1 is available at Apple Software Downloads (http://www.apple.com/swupdates/).
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HyperCard 2.0: Retooling the Limited Version

How can I access the stack-editing features of the HyperCard that came with my Macintosh?

This article has been archived and is no longer updated by Apple.
The version of HyperCard that ships with the new computers has been set to look like a limited-function version. However, with a couple of alterations, you can make this version run at its full potential. Try any of these three workarounds:

- Type "magic" in the message box the first time you use HyperCard 2.0. (This handler cuts the opaque button from the last card in the Home stack.)

- Go to the last card in the Home stack and cut the opaque button that hides the "set userlevel" buttons. Click the "5" button.

- ?Type "set userlevel to 5" in the message box, each time you use HyperCard 2.0.

Or, you can buy a copy of full-featured HyperCard 2.0, with manuals, from Claris.

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Macintosh Classic: Video Adjustment Screws

On the back of the Classic, there is a cover over several adjustment screws. What do these adjust?

This article has been archived and is no longer updated by Apple.
These adjustment screws are for video adjustments. You can adjust the horizontal and vertical size and shift, along with the brightness, cutoff, and focus.

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LaserWriter: Networking vs. Switch Box

Can a Macintosh II and a Macintosh Portable share the same LaserWriter IINT using a switch box? Or am I better off using AppleTalk?

This article has been archived and is no longer updated by Apple.
Because all three products you mention have networking capabilities built-in, there is no reason not to connect them together with LocalTalk. You can use a switch box, but it would not be easy, and it would be largely a waste of time.

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TA47374_Macintosh_ArabicEnglish_Keyboard_(TIL09009).pdf

Macintosh: Arabic/English Keyboard

I need a bilingual (Arabic/English) keyboard that is ISO and extended.

This article has been archived and is no longer updated by Apple.

Apple's English-version extended keyboards work with other languages. To have an Arabic keyboard means that the Key Caps would be Arabic.

Apple's international keyboards are not sold in the United States.

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LisaCalc: Updating Documents From Earlier Releases

This article has been archived and is no longer updated by Apple.

The new calculation algorithm in LisaCalc, release 3.0, may be unable to fully update a spreadsheet created with an earlier version of LisaCalc. If no data was included to calculate a value for a cell created using Paste Adjusting, then the formula may not be present in the updated spreadsheet. If this occurs, simply Paste Adjust the formula again.

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Macintosh: Power Supply Requires Grounding

I need Macintosh systems that work with 220VAC 50Hz with no ground.

This article has been archived and is no longer updated by Apple.
All members of the Macintosh SE and Macintosh II families have universal power supplies. They are all set to work from 100-240VAC 50/60Hz.

For safety reasons, Apple cannot recommend using a system with no ground. The equipment might work, but would not be safe to use. If a short were to occur, you would be keeping a circuit breaker from stopping the short by not using a ground.

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TA47377_Macintosh_IIci_Using_NonParity_SIMMs_(TIL09013).pdf

Macintosh IIci: Using Non-Parity SIMMs

If I put any non-parity SIMMs in a Macintosh IIci with parity checking, will parity checking still work?

This article has been archived and is no longer updated by Apple.

No. In order for parity checking to work, all SIMMs have to be parity checking also.

On the other hand, using parity SIMMs in a non-parity IIci shouldn't be a problem as long as all the SIMMs in a bank are the same speed.

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MacLAN Connect: How to Install It

Some users need to fuse Macintosh networks to OS/2 nets with Token Ring as unifying backbone. Primarily, Macintosh users create documents that need to be stored on the OS/2 servers and accessed from OS/2 workstations. To a lesser extent, the OS/2 stations share documents with Macintosh users.

This article has been archived and is no longer updated by Apple.
MacLAN Connect from Miramar Systems is a solution. MacLAN Connect enables any PC/XT/AT/386 or compatible to function as an AppleShare-compatible server. All hard disks, LAN volumes, or other storage devices are available to AppleShare-connected Macintosh workstations.

MacLAN Connect is AppleShare Phase 2 compliant. It supports EtherTalk, TokenTalk, Internet Routers, and so on. AppleTalk Filing Protocol (AFP) Version 1.1 specifications are fully supported.

Basically, MacLAN turns a DOS system into an AFP server (which appears to Macintosh systems as any other AppleShare server). In addition, if you log on to PC server volumes before running MacLAN, these volumes can be mounted as logical volumes on the MacLAN AFP servers. Therefore, PC LAN volumes and OS/2 volumes can mount on the Macintosh desktop as AFP volumes.

Although, the process of installation is complex, once installed, it works well. Here's an installation process that worked for one site:

Basic Network

Our basic network setup looks like this:

--Macs on PhoneNet-----
|
Mac IIx, OS/2 Model 50
with Token Ring card, V1.2 running
running router LAN Server MacLAN
| | |
----------MAU----------
(these are on 4Mb Token Ring)

Necessary Software

On the Model 50, you must install the IBM token-ring drivers, Apple token-ring drivers, and the DOS LAN Requester software. DLR is a separate software package that comes with LAN Server. You must install it on a workstation before the station can log on to the server. You also need the PC LAN Support disk to determine the address settings on the IBM Token Ring card. In short, you need:

- DXMAID disk from IBM for IBM Token Ring drivers.

- MacLAN Connect, for the AFP server software and the Apple drivers. Note: In several places in the documentation, you are told to use AppleShare PC as the source of the Apple drivers. This works if you only want to mount the MacLAN CPU's hard disk as an AFP server. This will not work if you want to attach PC LAN or OS/2 volumes as logical volumes, because the ASPC drivers trash the LAN Requester process. In addition, ANET is installed in the AUTOEXEC file by the ASPC installation, and this causes problems. If you follow the documentation here, it won't work.

Instead, use the drivers supplied with the MacLAN package. They're

based on the ASPC drivers. The TOKEN.COM file has been altered to permit the IBM code and Apple code to coexist better.

- IBM Support disk, to check addresses on Token Ring card.

- DOS LAN Requester installation disks (2 disk set)

- Because you want to see the PC server volume on your Macintosh desktop, you'll need to be a user on the PC server. Before beginning this installation, have the system administrator make you a user on the PC server volume. (Under OS/2, this need not mean an entire hard disk; you can designated individual directories as volumes. For our purposes, we designated one directory called COMMON as a shared volume on the OS/2 server.)

Installation Process

Here is the installation process:

1) Install the IBM Token Ring drivers with DXMAID. Check the Config.sys file. It should include:

Files=100
Buffers=50
DEVICE=DXMAOMOD.SYS 001
DEVICE=DXMCOMOD.SYS
DEVICE=DXMTOMOD.SYS

Adjust the files and buffers if your values don't match these. (Note: There is a complete CONFIG.SYS later in this article.)

2) Use the IBM Support Disk to find the ROM and Shared RAM address for the installed Token Ring card.

Typical addresses are:
ROM: DE000
Shared RAM: D8000

These addresses are very important -- you must edit your NET.CFG file later to adjust the MEM 1 and MEM 2 parameters to match these addresses. (If you've ever installed ASPC with Token Ring drivers, you get two screens asking you to set the "primary" and "secondary" memory addresses -- that's what these values are.)

3) Install the DOS LAN Requester software from the IBM disks included with OS/2 LAN Server.

During this process, a directory called DOSLAN is created, and it stores the LAN Requester files as they are unpacked. (Later these files are invoked by commands like "net start" to kick off the network link and "net logon user1" to log on to the server as user1.)

4) Create a directory on the DOS system called MACLAN.

5) Copy the file MACLAN.EXE from MacLAN Disk 1 to the directory and execute it. The file unpacks into the MacLAN executables, including MLCONFIG and MLSERVE.

6) From MacLAN Disk 2, execute the INSTALL.BAT file to install Apple drivers. This creates a DRIVERS directory that contains the appropriate code.

These files look like the usual ASPC code. After installation, check the AUTOEXEC file, and you'll see the familiar code for the ASPC driver installation. However, according to the MacLAN author, some of the

files have been altered, so they can work with LAN Requester.

7) Use a convenient editor to edit the NET.CFG file in the DRIVERS directory. This file will look like this:

```
Link Support
Buffers 11 640
MemPool 16K

Protocol AppleTalk
DEFAULT TOKEN$ #1
AARP TOKEN$ #1 H(0002) L(6) B(C00040000000)

Link Driver TOKEN$
# IBM Token-Ring Network Adapter/A (MicroChannel)
INT #1 2
MEM #1 DE000 0200
MEM #2 D8000 0400
PORT #1 A20 8
PORT #2 2F0 8
PS/2 Slot?
Protocol AppleTalk AA080007809B
Protocol AARP AA00000080F3
```

8) Here are the important pieces:

* Change Buffers and Mempool to these figures.

* INT specifies the interrupt for the card. 2 is OK for Mod 50.

* Remember those ROM and RAM addresses from the IBM Support disk? Set MEM 1 to the ROM address for the Token Ring card. Set MEM 2 to the shared RAM address for the card.

9) Do a warm reboot with Ctrl-Alt-Del. You should see messages indicating that the IBM drivers are loading, followed by the Apple drivers loading.

10) Run DOS LAN Requester and log on to the PC server. This establishes a logical connection between the MacLAN DOS CPU and the remote server volume. In this case, you have designated a directory called COMMON on the OS/2 server as logical volume X. Once you establish the connection, you can log on to the X volume and directory as usual.

11) Run MLCONFIG. This is the MacLAN configuration program, similar to AppleShare Admin program. You set up Macintosh users and groups as usual. The key piece is that you specify the volumes (including the logical attached volumes) that you want to appear as AFP volumes to Macintosh users. To specify the local Mod50 hard drive as an AFP volume, you specify the C drive. In this case, to specify the OS/2 directory that is mounted as the logical X drive, we specified the X drive and the C drive.

This is a nice feature; each volume can be assigned a volume password, in addition to the generic server password. Many people need the additional layer of security.

12) Run MLSERVE. (Be sure to run this from the MacLAN directory, or it can't find the files that it needs.) This kicks off the AFP server process.

When the AFP server is mounted, Macintosh systems on the LAN can see the MacLAN server from the Chooser. After logging onto the server, in our case the C drive and the logical X drive that we had mounted (which is actually a directory on the OS/2 server) appear in the Chooser volume list. After users log onto these volumes in the usual

Macintosh way, the volumes mount on the desktop and you're all set.

You can set up an AUTOEXEC file that automates this, but you'll have to do it manually the first time to set up MLCONFIG files.

Recommendation: MacLAN Connect is a bit harder than the typical Macintosh application to set up and configure, but once it's up and running, it's a seamless solution to this problem. The only real problems are on the OS/2 administrator's side, where they have to administer privileges, and the like, on their server. OS/2 is very much like UNIX in one way: it's very powerful, with lots of features and matching complexity.

The CONFIG.SYS File

This is final version of our CONFIG.SYS file. We adjusted Buffers and Files to MacLAN's recommended values.

```
DEVICE=C:\\DOS\\DXMA0MOD.SYS
DEVICE=C:\\DOS\\DXMC0MOD.SYS
DEVICE=C:\\DOS\\DXMT0MOD.SYS
SHELL=C:\\DOS\\COMMAND.COM /E:2000 /P
BUFFERS=60
FILES=100
FCBS=16,8
LASTDRIVE=Z
BREAK=ON
```

The NET.CFG File

This is final version of NET.CFG file in DRIVERS directory created by MacLAN driver installation. Adjust the Buffers and MemPool settings, if necessary. The crucial changes to make are in Link Driver TOKEN$. Change MEM#1 to match the ROM addresses of your Token Ring card and MEM #2 to match the shared RAM address of your card. You can find these by running the IBM Support disk for your system.

```
Link Support
Buffers 11 640
MemPool 16K

Protocol AppleTalk
DEFAULT TOKEN$ #1
AARP TOKEN$ #1 H(0002) L(6) B(C00040000000)

Link Driver TOKEN$
# IBM Token-Ring Network Adapter/A (MicroChannel)
INT #1 2
MEM #1 DE000 0200
MEM #2 D8000 0400
PORT #1 A20 8
PORT #2 2F0 8
PS/2 Slot?
Protocol AppleTalk AA080007809B
Protocol AARP AA00000080F3
```

The AUTOEXEC.BAT File

This is a copy of our final AUTOEXEC file. It loads Apple drivers, uses "net start" command, and "net logon test1" command to log on to OS/2 server volume as user test1 automatically and launch MacLAN AFP server with MLSERVE command.

```
echo off
C:\\drivers\\LSL
if errorlevel 1 goto aspc_err
C:\\drivers\\TOKNRING /NAME=TOKEN$
if errorlevel 1 goto aspc_err
C:\\drivers\\Atalk
if errorlevel 1 goto aspc_err
C:\\drivers\\compat
if errorlevel 1 goto aspc_err
C:\\drivers\\aarp
if errorlevel 1 goto aspc_err
REM *** Memory usage for the above programs is approximately 66K bytes.
goto skip_aspc
:aspc_err
echo *** A fatal error has occurred while loading AppleShare PC. ***
pause *ASPC*
:skip_aspc
@echo on
PATH=C:\\DOS;C:\\DOSLAN;C:\\DRIVERS;C:\\MACLAN;C:\\TOOLS;C:\\;
SET PMDIR=C:\\TOOLS REM**This is PathMinder directory--ignore
IF ERRORLEVEL 1 GOTO NODLR
NET START REM ** This kicks off network connection
IF ERRORLEVEL 1 GOTO NODLR
net logon test1 REM ** This logs onto specified server vol as test1
:NODLR
mlserve REM*** This kicks off the server
```

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Macintosh 21" Color Display: Automatic Degaussing Feature

This article explains the circuitry in the Macintosh 21-inch Color Display that compensates for magnetic field image distortion.
This article has been archived and is no longer updated by Apple.
The circuitry in the Macintosh 21-inch Color Display provides what is called automatic degaussing to ensure a good image on the screen. Color displays use magnetic fields to guide electron beams inside the CRT to the screen. An external magnetic field close to the CRT can disturb the internal magnetic field, misdirect the beams, and distort the screen image.

Circuitry in most monitors adjusts the internal magnetic field to counteract the external magnetic field, but only at startup. If the external magnetic field changes during operation, a distorted image remains until the power cycles off and on. The AppleColor High-Resolution RGB Monitor has a manual degauss control button that you can press rather than turning off the monitor.

The Macintosh 21-inch Color Display has startup, manual, and automatic degaussing features. It contains an auto-degaussing circuit, called a magnetometer, that measures magnetic fields. The magnetometer sends a signal that initiates a degauss when it senses a major change in the ambient magnetic field. The magnetometer operates constantly while power is on, and degaussing can occur even when no image is on the screen.

Tilting or swiveling the monitor may change the magnetic field enough to cause distortion, and trigger automatic degaussing. Occasional automatic degaussing is normal. If degaussing occurs when you haven't moved the monitor, a source of interference may be in the room. You may have to move the source of interference to reduce the frequency of automatic degaussing. Frequent auto-degaussing can be annoying because it causes the screen to continually blink.
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Macintosh 21" Color Display: Ergonomic Features

This article lists the ergonomic features of the Macintosh 21-inch Color Display.

This article has been archived and is no longer updated by Apple.
Important ergonomic features include:

- The antiglare, antistatic panel reduces glare and dust build-up.

- The built-in tilt and swivel base allows you to change the viewing angle.

- A 75 hertz screen refresh rate eliminates screen flickering.

- The ADB ports are easy to access on the front of the base.

- The brightness and contrast controls are also easily accessed on the front of the monitor.

- The following features minimize the desk space needed for the monitor:

- Curved and recessed base
- Recessed video cable connector
- Right-angled power cord

- The hard plastic spheres on the bottom of the base make it easier to lift and slide the monitor.

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Macintosh 21" Color Display: Shadow Mask

This article explains the function of the shadow mask used in the Macintosh 21-inch Color Display.
This article has been archived and is no longer updated by Apple.
The Macintosh 21-inch Color Display uses a perforated shield called a shadow mask to separate the red, green, and blue electron beams that create the displayed images. Electron beams pass through a mask to strike the designated red, green, or blue dots of phosphor on the back of the screen. These beams cause the colored phosphor dots to glow. The combination of glowing dots produces the color images.

A metal mask or shield commonly used is a vertically-oriented aperture grill design. Traditional mask designs use perforations arranged in a pattern that interacts with the changing pattern of the electron beams as they scan across the shield. The interaction of these patterns frequently causes a screen interference called a moire pattern. The interference is more obvious with certain Macintosh desktop patterns.

The Macintosh 21-inch Color Display uses a pattern of tiny holes in the shadow mask that avoids the distracting effects of the most common moire patterns. This design is an asymmetric dot pitch of .026 mm horizontally and .029 mm vertically. Dot pitch is the distance between two adjacent RGB dot triads. To achieve a high resolution, dot pitch should be as small as possible. This pattern doesn't conflict with the pattern created by electron beams.
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Macintosh 21" Color Display: Video Card Support

What video cards support the Macintosh 21-inch Color Display?

This article has been archived and is no longer updated by Apple.
The same video cards that support the Apple Two-Page Monochrome Monitor support the Macintosh 21-inch Color Display. Cards supporting the 21-inch Color Display include:

- Macintosh Display Card 4*8 at 4 bits per pixel

- Macintosh Display Card 8*24 at 8 bits per pixel

- Macintosh Display Card 8*24 GC at 8 bits per pixel

Here is a table of Macintosh computers and their requirements for use with the Macintosh 21-inch Color Display:

Macintosh	Requirements to Use 21-Inch Color Display
LC	Third-party video card
IIsi	Video card (note 1)
IIci	Video card (note 1)
IIfx	Video card (note 1)
Quadra 700	16 colors built in (notes 1,2)
Quadra 900	256 colors built in (note 2)

Notes (1): Add a third-party video card for 16.7 million colors.
(2): Add VRAM to the logic board for 32,000 colors.
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Macintosh 21" Color Display: Adjustable Color Temp

This article explains the adjustable white point color temperature feature of the Macintosh 21-inch Color Display.
This article has been archived and is no longer updated by Apple.
The white point color temperature is a measure, in degrees Kelvin, of how white a display's white is. Traditional displays use a 9300 degree K white, which has a bluish tint to it and a high contrast. A 6500 degree Kelvin white is similar to page white and is more useful for color matching.

This feature is important to graphics professionals, although other users will appreciate having the choice. With it, users can more closely match the color of an object designed on a computer with how it looks when printed by a commercial printer. The page-white gamma table provides 6500 degrees K white point, which matches the color of white paper. This improves WYSIWYG in graphic design, since the white backgrounds of the monitor and paper are the same.

The Macintosh 21-inch Color Display allows adjustment of the white point color temperature. To make an adjustment, follow these steps:

1) Select the monitor CDEV in the Control Panel. (In System 7, open the Monitors control panel.)

2) Hold down the Option key and click on the Option button.

3) The options dialog offers a choice of gamma tables. Choose:
- the Mac Std Gamma option for 9300 degree K,
- the Page-White Gamma option for 6500 degree K white, or
- uncorrected gamma.

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Apple Desktop Bus (ADB): Specifications (12/94)

This article provides specifications and information about the Apple Desktop Bus, which was introduced with the Apple IIGS and has been used in Macintosh computers since the introduction of the Macintosh SE and Macintosh II.

This article has been archived and is no longer updated by Apple.
The Apple Desktop Bus (ADB) is a standard for input devices connecting to the Apple IIGS and later Macintosh computers that follow the Apple Desktop Bus protocol. Because the Apple Desktop Bus is run by an intelligent microcontroller, a number of different types of input devices may be connected to the ADB simultaneously: the computer's keyboard, mouse, tablet, light pen, second keyboard, or joystick.

Each device has a unique bus address, so that the ADB microcontroller may direct its commands to a particular piece of equipment. The ADB specification supports up to a maximum of 16 unique devices, however it is suggested that only 3 devices be connected to each ADB bus in order to prevent signal degradation problems from appearing. On the Apple IIGS, the control function is performed by the M50740 Keyboard Microcontroller. It uses a superset of the 6502 instruction set, and contains 96 bytes of RAM and 3K bytes of ROM. The Macintosh may use one of several different implementations which are documented in the Guide to the Macintosh Family Hardware manual published by Addison Wesley.

When the microcontroller requests input from a device, it sends a signal to the input device to "talk". If no return input information action (key pressed, mouse movement, button clicked, etc.) has occurred, the microcontroller keeps waiting for the device to respond until a time-out occurs.

The host may also instruct a device to "listen" to data being sent on the bus from the host. All devices on the Apple Desktop Bus must include the intelligence to respond to both talk and listen commands.

The Apple Desktop Bus uses a 4-pin mini-DIN jack and a 4-wire cable, with serial interface signals. When appropriate, the input device will have two ADB jacks, so that devices may be daisy-chained from the host. The Apple Desktop Bus Mouse does not have a second connector, so it must be at the end of the chain.

SPECIFICATIONS:

- throughput: approximately 154 bytes per second
- cable length: maximum 5 meters
- cable capacitance: maximum 100 picofarads per meter

ADB devices may use the +5 volt power supplied by the bus, but must not draw more than 500 mA total for all devices.

The Apple Standard Keyboard draws a maximum of 100 mA, and the Apple Extended Keyboard draws a maximum of 85 mA.

All devices are connected in parallel, using the signal, power, and ground wires. Due to connector resistance and signal degradation, daisy-chaining more than three devices is not recommended.

Article Change History:
08 Dec 1994 - Revised discussion.
21 Jun 1994 - Updated to combine information from two simular articles.

Support Information Services
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MacTCP: Description

This article describes MacTCP software.
This article has been archived and is no longer updated by Apple.
For information on the current version of MacTCP, see the Tech Info Library articles, "TCP/IP Connection for Macintosh 2.0.4" and "MacTCP 2.0.4 to 2.0.6 Patch: Read Me, Release Notes."

With MacTCP software, developers can create Apple Macintosh applications for network environments that use the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite.

TCP/IP is a set of standards widely used for networking heterogeneous systems. MacTCP implements the User Datagram Protocol (UDP), TCP, and IP protocols, and conforms to Internet RFCs and MIL-STDs. This conformity ensures interoperability with systems on the TCP/IP Internet.

MacTCP is co-resident with the AppleTalk protocols and runs over both Ethernet- and LocalTalk-compatible cable systems. You can install it on a Macintosh Plus or later model Macintosh computer. It is compatible with System Software version 6.0.5 (or later) or version 7.x.

Features

- TCP/IP protocol driver implementation

- Compatible with Macintosh Plus or later model Macintosh computers

- Concurrent TCP/IP and AppleTalk operation

- Both C and assembly-language interfaces

- Address configuration using the Control Panel interface

- Apple-supported driver

Benefits

- Provides a standard platform for developing TCP/IP applications and solutions.

- Supports multiple concurrent TCP/IP services.

- Lets third-party developers create applications that can run on a range of Macintosh computers.

- Preserves full access to AppleTalk services. For example, users can run MacTCP while printing to an Apple LaserWriter printer over LocalTalk cable.

- Provides developers with a familiar development environment.

- Simplifies installation and setup procedures for users and network administrators.

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MacTCP 1.x: System Requirements and Product Details

This article gives the system requirements for using MacTCP, and details about what MacTCP offers.
This article has been archived and is no longer updated by Apple.

System Requirements

LocalTalk-compatible systems

- A Macintosh Plus or later model Macintosh computer
- System software version 6.0.5 or later and at least 1MB of memory, or system software version 7.0 and at least 2MB of memory
- Appropriate LocalTalk-compatible cable connectors
- A router with AppleTalk and TCP/IP support, such as the Shiva Corporation FastPath 5 or the Cayman Systems GatorBox CS

Ethernet-compatible systems

- A Macintosh Plus or later model Macintosh computer
- System software version 6.0.5 or later and at least 1MB of memory, or system software version 7.0 and at least 2MB of memory
- An appropriate Ethernet interface card such as the Apple Ethernet NB Card

Product Details

MacTCP consists of object code libraries and associated files for both C and assembly-language development. Libraries include TCP and UDP interfaces along with a name-to-address resolver. A programmer's reference guide and an administrator's guide are provided.

The MacTCP driver allows for the addition of other data link layers through the use of a link layer interface between the IP layer and the data link layer of MacTCP. Examples of these data link layers include Token Ring (IEEE 802.5), Serial Line Internet Protocol (SLIP) -- RFC 1055, and Point- to-Point Protocol (PPP) -- RFCs 1171 and 1172. The link layer interface is described in the reference document Building Alternate Link Access Protocol Modules for MacTCP, available to Apple Partners and Apple Associates through the Developer CD Series.

Protocols

MacTCP implements the following protocols:

IP (RFCs 791,894;MIL-STD 1777)
UDP (RFC 768)
TCP (RFC 793, MIL-STD 1778)
ARP (RFC 826)
RARP (RFC 903)
ICMP (RFC 792)
BootP (RFCs 951, 1048)
RIP (IDEA004)
DNS (RFCs 1034, 1035)
Internet Subnetting (RFC 950)
Internet Assigned Numbers (RFC 1010)

MacTCP complies with Requirements for Internet Hosts-Communication Layers (RFC 1122)

Throughput is 3.0 megabits per second memory-to-memory (on a Macintosh II-family computer over Ethernet).
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MacX25: System Requirements and Product Details

This article gives the system requirements for using MacX25 as well as details about what MacX25 offers.
This article has been archived and is no longer updated by Apple.

System Requirements

- MacX25 Server

To set up a MacX25 server, you need:

- Any modular Macintosh computer with an internal hard disk and at least 2MB of memory for System software version 6.0.7 (4MB of memory for version 7.0)

- Macintosh System software version 6.0.7 (or later) or version 7.0

- An Apple Serial NB Card with the appropriate RS-232-C or V.35 cable

- The appropriate cable connectors

To use MacX25 on an Ethernet or a token ring network, you need the appropriate interface card for your Macintosh.

- MacPAD

To use MacPad, you need:

- A Macintosh Plus computer or later model with at least 1MB of memory for System software version 6.0.7 (2MB of memory for version 7.0)

- A terminal-service application that uses the Macintosh Communications Toolbox

- The appropriate cable connectors

To use MacPAD on an Ethernet or a token ring network, you need the appropriate interface card for your Macintosh.

Product Details

- General Features

MacX25 supports:

- CCITT 1980 Compatible Mode
- CCITT 1984 Compatible Mode
- Packet Assembler/Disassembler (X.3, X.28, and X.29)
- Operation as a DTE
- Operation as a DCE
- Virtual Circuits: 64 maximum
- A single link for each Apple Serial NB Card
- Multiple cards for each modular Macintosh
- Operation at up to 19.2 Kbps with RS-232-C
- Operation at up to 64 Kbps with V.35
- Multiple servers for each AppleTalk network system

MacX25 doesn't support:

- Permanent Virtual Circuits
- X.32 switched circuit operation

- Network Certification

MacX25 is certified for connection to Telenet, GEIS (GEISCO), and Tymnet networks; and in Europe, for Austria (DATEX-P), France (Transpac), Germany (DATEX-P), Italy (ITAPAC), the Netherlands (Datanet-1), Norway (DATAPAK), Sweden (DATAPAK), and Hong Kong (DATAPAK).

In addition, MacX25 can be used to connect to the public PSDN in Australia (Austpac), Canada (Datapac), Denmark (DATAPAK), and Switzerland (Telepac).

- MacX25 Programming Library

The MacX25 Programming Library allows developers to create software solutions that provide users with access to a packet-switched data network. It works in conjunction with the MacX25 server to provide X.25 services to application programs.

The library is a toolkit, or collection of C language routines, that offers a high-level program interface for applications. Routines are included for initiating and terminating contact with the MacX25 server, establishing and closing down a virtual circuit, passing data across an established circuit, and more. Technical support is available to Apple Partners and Associates.
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PowerBook Fax/Data Modem and AppleFax

Will the new Macintosh PowerBook Fax/Data Modem support data communication and file transfer with the AppleFax Modem? If it does, at what baud rate?

This article has been archived and is no longer updated by Apple.
The Macintosh PowerBook Fax/Data Modem will not communicate with the old AppleFax Modem in standard data communication mode. The Macintosh PowerBook Fax/Data Modem is capable of sending facsimiles to the AppleFax Modem.

Page 92 of the "AppleFax Modem User's Guide" states the following:

"If you want, you can use a communications application as long as you're communicating with another AppleFax Modem. A communications application lets you transmit Macintosh files, type messages back and forth, and use the modem commands described in Appendix B."

The manual goes on to say (on page 92) what communications parameters the AppleFax Modem requires to successfully use a 9600-baud modem.

This means that the AppleFax Modem will allow you to transmit Macintosh files (text files, MacPaint files, PICT files, and so on) to another Macintosh at 9600 baud as long as both modems are AppleFax modems. It isn't necessary for both AppleFax Modems to use the same communication software as long they support the same transfer protocol.

The AppleFax Modem does support a subset of the Hayes "AT" command set. For more information on this, look in Appendix B, which starts on page 137.

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LaserWriter IIg: AppleTalk Phase 2 on EtherTalk Network

When an Apple LaserWriter IIg is connected to an EtherTalk network, is it an AppleTalk Phase 2 or AppleTalk Phase 1 node? I suspect that it is an AppleTalk Phase 2 node. Does this mean that it won't work on an AppleTalk Phase 1 EtherTalk network? Can it be changed to AppleTalk Phase 1 somehow?

This article has been archived and is no longer updated by Apple.
The Apple LaserWriter IIg, when connected to an EtherTalk network, is an AppleTalk Phase 2 device only. There is no way to make it an AppleTalk Phase 1 device on an EtherTalk network.

To get the Apple LaserWriter IIg to work on an AppleTalk Phase 1 EtherTalk network, you need to set up an AppleTalk Phase 1/AppleTalk Phase 2 transition router on the EtherTalk network.

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MousePaint: Saving Pictures To Disk

Is there a way to save pictures to a different disk using MousePaint?
This article has been archived and is no longer updated by Apple.
Drive 1 is the default drive in MousePaint. To save a picture to another disk, specify a new ProDOS pathname by selecting "save a picture in" from the File menu.

Then type the pathname of your new destination disk: for example, /NewDisk/MyPicture.
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Quadra 900: Support for 8-Bit Sound

Does the Quadra 900 support 16-bit sound?

This article has been archived and is no longer updated by Apple.
No. The Macintosh Quadra 900 supports 8-bit sound.

Sound in overview:

- Quadra 900 and 700 microphone inputs are monophonic.

- Quadra 900 external sound input takes in stereo sound and turns it into a single audio signal before recording by combining the two channels.

- Both Quadra models play stereo samples through Batman (an updated version of the Apple Sound Chip) if you have stereo samples from a third party. Otherwise everything comes out monophonic.

Note one exception: If you have an internal CD-ROM, stereo tracks "Play through" to the headphone output in stereo. If you record from an internal CD, it will be monophonic.

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AppleShare 3.0: Setting Up a Temporary Account

How can I set up a user (name and password) for temporary use?
This article has been archived and is no longer updated by Apple.
1) In the Server Preferences dialog box, set the number of days until the password expires.

2) Change the user's privileges so that he or she can't change the password.

The only drawback is that it forces all server clients to change their passwords. The added security may be worth it.
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AppleShare Drop Box: Access for System 6 and 7 Clients

Article Change History

08/19/92 - REVIEWED
* For technical accuracy; edited.

If a System 7 user creates a drop box on an AppleShare server, a 6.0 user can't see it. Is there a fix?

This article has been archived and is no longer updated by Apple.
A System 7 user would not be able to see this folder either. The drop folder was created in an area where the user doesn't have access privileges. You must create a drop folder within a folder that the user can access. The folder itself cannot be the share point. Since a user can't "See Folders" on a drop folder, it makes sense that they would be unable to mount that folder as a share point.

Create a folder named "Drop Folders" with all privileges except "Make changes." Within that folder make your drop folder. That should solve the problem.

Published Date: Feb 18, 2012

System 7: Opening System File 6.0.X from System 7

Article Change History

09/11/92 - REVIEWED
* For technical accuracy.

From my Macintosh running System 7, I opened a version 6.0.X System file to get a list of fonts, DAs, and sounds installed in that System file. With that window open, if I choose Page Setup or Print Window from the File menu, garbage is displayed on the right side of the menu bar in the Balloon Help and Application areas.

This article has been archived and is no longer updated by Apple.
Although you can open a version 6.0.X System file under System 7 to get a list of fonts, DAs, or sounds installed, don't choose Print Window or Page Setup for that window. When you open the System file on the version 6.0.X disk, System 7 tries to use the System resources from the version 6.0.X file -- the most recently opened resource file -- which causes unpredictable results, including displaying garbage in the menu bar.

Published Date: Feb 18, 2012

TA47396_Macintosh_Color_Display_Meets_Swedish_Standards_for_ELF_(TIL09035).pdf

Macintosh 21" Color Display: Meets Swedish Standards for ELF

Does the Macintosh 21-inch Color Display meet the Swedish standards for ELF and VLF emissions?

This article has been archived and is no longer updated by Apple.

Yes. The Macintosh 21-inch Color Display meets the Swedish MPR suggested limits for ELF and VLF magnetic and electric field emissions.

Published Date: Feb 18, 2012

Macintosh 21" Color Display: Shipping with CD-ROM

Why is Apple shipping a CD-ROM in the box with the Macintosh 21-inch Color Display?

This article has been archived and is no longer updated by Apple.
The CD-ROM is full of color images, color clip art, screen savers, and demo versions of the most popular color software applications. With this disc, you can experiment with the latest in full color software and immediately take advantage of the features of the new display.

Published Date: Feb 18, 2012

TA47398_Macintosh_Color_Display_Pixel_Count_(TIL09037).pdf

Macintosh 21" Color Display: Pixel Count

How much bigger is the Macintosh 21-inch Color Display compared to the standard AppleColor High-Resolution RGB Monitor (the 13-inch RGB)?

This article has been archived and is no longer updated by Apple.

The Macintosh 21-inch Color Display offers a pixel area of 1152 x 870, over three times as much usable viewing area as the 13-inch High-Resolution RGB or VGA monitors, which have 640 x 480 pixels. In addition, the 21-inch Color Display offers 27 percent more screen area than 1024 x 768 monitors, such as 19-inch color displays and XGA-type monitors.

Published Date: Feb 18, 2012

Macintosh 21" Color Display: Color Calibrator Support

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Published Date: Feb 18, 2012

LaserWriter IIf & IIg: PhotoGrade, FinePrint & Microfine Toner

1) Do the LaserWriter IIf and IIg use microfine toner?

2) Is FinePrint different from H-P's RET?

3) How does PhotoGrade compare to RET and microfine toner?

This article has been archived and is no longer updated by Apple.

1) The LaserWriter IIf and IIg don't use microfine toner, because they get excellent results using the same size toner as before.

2) While they function differently, FinePrint and RET are both designed to improve the quality of text and lines without affecting performance.

3) PhotoGrade is completely different from RET or microfine toner. RET smooths text and lines. It doesn't improve images. Microfine toner doesn't improve the resolution of images; it just has smaller average toner particles. Since a single 300-dpi dot uses a number of particles, smaller toner has minimal impact on print quality.

Published Date: Feb 18, 2012

ProDOS: Filenames and directories

This article provides background information on files and directories. Refer to your ProDOS User's Manual for a more comprehensive discussion of these conventions.
This article has been archived and is no longer updated by Apple.
Filenames

While DOS 3.3 allows you to save a file with a file name that has a tilde for the first characater, ProDOS is much more strict:

--Only fifteen characters
--Only the letters A-Z, numbers 0-9, and a period
--Only a letter for the first character
--No control characters

Some acceptable filenames are:

PotatoSalad
SillyProgram
Biz.letter
Memo.1.April.84

Some unacceptable filenames are:

Potato Salad - can't have spaces
Ridiculousprogram - too long--greater than 15 characters
Emily'sPoem - apostrophes aren't legal characters
Memo: Bill - colons and spaces are illegal characters

If you forget these rules: for example, you leave a blank in the middle of a filename, your program beeps and the cursor won't budge until you type a character that is aceptable.

Directories

When a volume is first formatted, it gets a name and a directory. Anything you save on that volume is accessed through that directory. The directory is also a file, but it just tracks where other files on the disk are stored. You could say that a directory file is like an address book.

There comes a time -- especially with a mass storage disk -- when it's convienient to have a way of organizing your files so you find such things as financial forecasts without listing the contents of the entire disk.

Subdirectories allow you to group your files logically. A subdirectory is just like a directory except that it's subordinate to the directory.

In the directory for the disk, you can create a subdirectory with the name "Financial", and in this subdirectory you create the subdirectories with the names "Forecasts" or "Statements". This kind of arrangement is called a hierarchial file structure because files are organized into successive levels.
Published Date: Feb 18, 2012

Macintosh 21" Color Display: Not Designed for PC or UNIX Workstations

Can the Macintosh 21-Inch Color Display work with PC compatibles or UNIX workstations?
This article has been archived and is no longer updated by Apple.
No. This display is designed and optimized to work only with the Macintosh. Apple designed the Macintosh hardware and software to take advantage of large screen size, multiple monitors, and millions of colors.

Windows and UNIX workstation displays offer pixel areas of 1024 x 768. This provides fewer than a million pixels, which won't display two full pages. The Macintosh 21-inch Color Display provides over a million pixels and offers 27% more viewing area than these displays.

The Macintosh graphics architecture is based on software, while the others (VGA, XGA, UNIX) are based on hardware specifications. This means that the Macintosh takes advantage of many different screen resolutions, while XGA is limited to 640 x 480 or 1024 x 768. The Macintosh architecture supports 24-bit color and multiple monitor configurations. The flexibility of the Macintosh software architecture makes 24-bit color, graphics acceleration, and pivoting displays available on the Macintosh platform.
Published Date: Feb 18, 2012

Macintosh 21" Color Display: Shadow Mask Picture Tube)

Does the Macintosh 21-inch Color Display use a Trinitron picture tube?

This article has been archived and is no longer updated by Apple.

No, this display uses a shadow mask tube. Compared to the 19-inch Trinitron, the 21-inch color display has a larger screen area, exceptional overall and corner focus, brightness uniformity, and the absence of moire interference effects.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: PC Connection

Given the lack of a Centronics interface, how can I connect a LaserWriter IIf or IIg to an MS-DOS PC?

This article has been archived and is no longer updated by Apple.
For this class of product, Ethernet and SCSI interfaces are more important than Centronics. Centronics was omitted due to space constraints.

Here are two ways for PCs to connect to the printer:

- The LaserWriter IIf and IIg support fast serial communication (up to 57K baud) for direct connection.

- LocalTalk cards from third parties enable PCs to share a LaserWriter.

Published Date: Feb 18, 2012

TA47405_LaserWriter_IIf_and_IIg_Not_a_New_Print_Engine_(TIL09044).pdf

LaserWriter IIf and IIg: Not a New Print Engine

Why is the printing engine in the LaserWriter IIf and IIg the same as in previous LaserWriters?

This article has been archived and is no longer updated by Apple.
Using the same engine, Apple can offer important new functionality to new customers, and to the installed base through an inexpensive board upgrade.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: All Ports Active vs QMS ESP

Is Apple's "all ports active" the same as QMS's ESP?

This article has been archived and is no longer updated by Apple.

Both Apple's "all ports active" and ESP allow connecting the printer's different ports at the same time. ESP goes the extra step of guessing what language is spoken (PCL or PostScript) and switching to that mode. "All ports active" allows reliable job switching in software.

Published Date: Feb 18, 2012

TA47407_LaserWriter_IIf_and_IIg_CameraReady_Art_(TIL09046).pdf

LaserWriter IIf and IIg: Camera-Ready Art

Can prints from a LaserWriter IIf or IIg be copied or taken to offset press?

This article has been archived and is no longer updated by Apple.

As with a photograph or high-quality print, PhotoGrade and FinePrint can be copied or used as camera-ready art. The resulting quality depends on the quality of the copy devices and processes. We see some degradation of quality. The printers can be set so they offer inferior originals that are more reproducible.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: How They Differ

What is the difference between the LaserWriter IIf and IIg?

This article has been archived and is no longer updated by Apple.
Both are based on the same design, but there are four major differences:

- The IIg has 5MB of RAM, which is the minimum required for PhotoGrade printing. The IIf can support PhotoGrade with the addition of a 4MB RAM Upgrade kit.

- Ethernet is built into the IIg. It is not available on the IIf.

- The processor on the IIg runs at 25Mhz compared to 20Mhz for the IIf.

- The IIf is less expensive.

Published Date: Feb 18, 2012

LaserWriter IIf & IIg: How FinePrint and TrueType Enhance Output

1) Does FinePrint enhance text only, or graphics too?

2) What is the difference between TrueType and FinePrint?

3) Do the LaserWriter IIf and IIg sense differences between text and images?

This article has been archived and is no longer updated by Apple.

1) FinePrint smooths all black and white objects including:

* Text

* Line graphics

* Line-art scan

2) TrueType (or any outline font technology) scales text to look good at the printer resolution. FinePrint takes that high-quality 300-dpi text, and improves the quality further by eliminating the 300-dpi jaggies.

3) The printer differentiates between text and images, so that FinePrint smoothing is not performed on images. Smoothing images actually degrades the quality so it is critical to differentiate between these data types.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: Hard Disk Support

1) Will my existing LaserWriter IINTX hard disk work with a LaserWriter IIf or IIg?

2) What hard disks are supported?

This article has been archived and is no longer updated by Apple.

1) Yes. Existing hard disks work with the LaserWriter IIf and IIg, but need to be reformatted.

2) We tested the LaserWriter IIf and IIg only with Apple's hard disks, but we expect these LaserWriters will work with any standard Macintosh SCSI-compliant hard disk.

Published Date: Feb 18, 2012

ProDOS: Pathnames and Prefixes

This article discusses ProDOS pathnames and prefixes.
This article has been archived and is no longer updated by Apple.

Pathnames

A pathname is the volume directory name, followed by any number of subdirectory names, followed by the filename. The entire pathname is preceded by a slash; furthermore, each name within the pathname is separated by a slash. This slash is called a delimiter.

To get to a particular file, ProDOS looks at the pathname for the volume directory name. ProDOS then finds that volume and looks in the volume directory for the location of the next subdirectory in the pathname. ProDOS then looks in that directory for the location of the file. You can have as many subdirecories as you want as long as the total number of characters in the pathname dosen't exceed 64.

Prefixes

You may not want to type a complete pathname every time you want to locate a file. ProDOS can store a partial pathname, called a prefix. This prefix stores care of as many subdirectories as you wish; you only type the rest of the pathname, such as the filename. ProDOS appends this after the prefix, completing the pathname, and then looks for the file you want.

To set a prefix with the ProDOS User's Disk:
1) boot from this diskette,
2) enter the filer
3) select P from the filer menu
4) enter your refix, the first character of which should be a slash.

When a you want a file and you want to use the prefix you've entered, don't type a slash for the first character, just type the rest of the pathname, e.g. the filename.

When you want a file and you want ProDOS to ignore the prefix you've entered, type a slash for the first character. This does mean, however, you have to type in the complete pathname, starting with the volume name.

Published Date: Feb 18, 2012

TA47412_LaserWriter_IIf_and_IIg_LaserWriter_Utility_Software_(TIL09050).pdf

LaserWriter IIf and IIg: LaserWriter Utility Software

What does the LaserWriter Utility do?

This article has been archived and is no longer updated by Apple.
The LaserWriter Utility performs the most common LaserWriter tasks, such as naming a printer, turning on/off the start page, and downloading fonts.

To support the new LaserWriter IIf and IIg, it's also used to adjust PhotoGrade and FinePrint, and configure the ports.

Published Date: Feb 18, 2012

TA47413_LaserWriter_IIf_and_IIg_No_PC_Software_Is_Included_(TIL09051).pdf

LaserWriter IIf and IIg: No PC Software Is Included

Do the LaserWriter IIf and IIg include software for PC users?

This article has been archived and is no longer updated by Apple.
No, but the manual does document PC setup.

Published Date: Feb 18, 2012

TA47414_LaserWriter_IIf_and_IIg_Support_for_PCL_(TIL09052).pdf

LaserWriter IIf and IIg: Support for PCL

Why don't the LaserWriter IIf and IIg support PCL Level 5?

This article has been archived and is no longer updated by Apple.
Apple offers PCL support so non-PostScript applications can print. Most new applications support PostScript as well as PCL. PCL support is therefore most important with existing applications that support PCL 4.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: Advantages of PostScript Level 2

Why do the LaserWriter IIf and IIg use PostScript Level 2?

This article has been archived and is no longer updated by Apple.
Adobe PostScript Level 2 provides four things:

- Compatibility with existing applications and drivers

- New features such as compression and caching

- Modular architecture that allows PhotoGrade, FinePrint, and Ethernet

- Improved performance

Published Date: Feb 18, 2012

TA47416_LaserWriter_IIf_and_IIg_No_Support_for_Kanji_(TIL09054).pdf

LaserWriter IIf and IIg: No Support for Kanji

Article Change History:

09/24/92 - REVIEWED
* For technical accuracy.
09/25/92 - UDATED
* To clarify PostScript Kanji support.

Do the LaserWriter IIf and IIg support Kanji?

This article has been archived and is no longer updated by Apple.
No. The LaserWriter IIf and IIg support Level-2 Post Scropt fonts.
Currently no Japanese Level-2 Post Srcipt fonts exist.

Published Date: Feb 18, 2012

SNAps Gateway and 3270: File Transfer and Printer Support

I just installed a TokenTalk card and the SNA*ps gateway and 3270 applications in a Macintosh IIsi. It's connecting to a mainframe through an OS/2 LanServer. We want to do file transfer and make use of printers on the system. Does SNA*ps support these needs?

This article has been archived and is no longer updated by Apple.
SNA*ps 1.0 supports IND$FILE transfer to TSO, CMS, and CICS. The manual documents this. There is no file transfer to the LANServer, only through the IBM host.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: No Automatic Emulation Switching

Does the LaserWriter IIf have auto-sensing for print emulation? The QMS 410 automatically senses HP PCL emulation, and switches the printer into HP PCL emulation mode following a Postscript print job. Does the LaserWriter IIf do this as well?

This article has been archived and is no longer updated by Apple.
The LaserWriter IIf and IIg do NOT automatically sense, and change, emulation modes. The QMS 410 provides auto-sensing for print emulation. In other words, when you send it a print job, it determines what kind of job it is and switched the printer into that mode. If you send it a PostScript job it switches into PostScript mode. If you send it an HP PCL job it switches into that mode.

The LaserWriter IIf and IIg do not do this. You set their ports up ahead of time and whatever they are set up for it what they will accept. The trick thing the LaserWriter IIf and IIg do is let you have more than one connection to the printer (2 for the LaserWriter IIf, 3 for the LaserWriter IIg). Each connection can be a different type of job. The only way to change emulations is via a PostScript program or switch setting.

There is a big difference between auto-sensing and arbitration.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: HP PCL 4+ Emulation

Does the LaserWriter IIf emulate HP PCL 4 or 5?

This article has been archived and is no longer updated by Apple.
The LaserWriter IIf and IIg have HP PCL 4+ emulation, which is equivalent to the LaserJet IIP.

Published Date: Feb 18, 2012

TA47420_Apple_OneScanner_Image_Quality_and_dpi_Ratings_(TIL09058).pdf

Apple OneScanner: Image Quality and dpi Ratings

How does the Apple OneScanner's 300 dpi compare to the 600 or 800 dpi claimed by other vendors?

This article has been archived and is no longer updated by Apple.
When other vendors claim 600 dpi or higher, they are usually referring to a combination of hardware (the true resolution of the scanner itself) and software interpolation. The OneScanner's hardware resolution is 300 dpi, which is more than adequate for the majority of common scanning, even for high-end printers such as imagesetters.

As for software interpolation, the Ofoto software allows scaling up to 16,000 dpi, which is much higher than anything commonly used. What matters is the quality of the resulting image, processed by both hardware and software.

Published Date: Feb 18, 2012

Apple OneScanner: HyperScan 2.0 New Features

How is HyperScan 2.0 different from the original HyperScan?

This article has been archived and is no longer updated by Apple.
Here are the new features of HyperScan 2.0:

- HyperScan 2.0 allows scanning for variable sized cards.

- HyperScan 2.0 uses floating palettes for controls, making it easier to use.

- The exposure controls have been improved significantly.

- A HyperScan Help stack provides extensive on-line documentation and assistance.

- HyperScan 2.0 requires HyperCard 2.0 or later.

Published Date: Feb 18, 2012

LisaWrite: Removing Hyphenated Words From the Dictionary

This article has been archived and is no longer updated by Apple.
If you wish to remove hyphenated words from the dictionary:

1. Select "Write Dictionary to Document" from the Spelling menu.

2. Correct/delete the hyphenated words.

3. Select the dictionary portion of the document.

4. Select "Put in Dictionary".

Published Date: Feb 18, 2012

TA47423_Apple_OneScanner_Image_Editing_Software_(TIL09060).pdf

Apple OneScanner: Image Editing Software

Why doesn't the Apple OneScanner ship with image editing software, such as Photoshop or ColorStudio, as do most other scanners?

This article has been archived and is no longer updated by Apple.
Image editing software isn't necessary for mainstream scanning. Other vendors require a multitude of image editing tools to adjust a scanned image to match the original, whereas Ofoto software automatically produces an accurate scanned image.

Image editing programs actually complement the OneScanner. Customers can benefit from those programs, but they aren't necessary for the basic purpose of getting an excellent scanned image.

Published Date: Feb 18, 2012

TA47424_Apple_OneScanner_Printer_Calibrations_(TIL09061).pdf

Apple OneScanner: Printer Calibrations

Which calibrations come with the Apple OneScanner? What do users with non-Apple printers do?

This article has been archived and is no longer updated by Apple.
The default set of calibrations include all Apple printers as well as the HP DeskWriter and PaintWriter, the Linotronic 300, and the Varityper VT600. Users can easily add additional calibrations via a simple process that involves printing out a built-in chart and scanning it back in.

Published Date: Feb 18, 2012

Apple OneScanner: Ofoto and HyperScan Software

Why does the OneScanner include two scanning applications, Ofoto and HyperScan?
This article has been archived and is no longer updated by Apple.
Ofoto is the main scanning application. Ofoto provides the key benefits of one-button scanning and high-quality images. This is the application that most people will use most of the time.

HyperScan is specifically for users who create HyperCard stacks. HyperScan 2.0 is a HyperCard stack that scans images for use in other HyperCard stacks. It provides 1-bit (black and white) images for on-screen use.

Published Date: Feb 18, 2012

SNAps 3270: System Requirements and Product Details

This article provides product details on the SNA*ps 3270 application software, and system requirements for using SNA*ps 3270.

This article has been archived and is no longer updated by Apple.

System Requirements

To use SNA*ps 3270 for CUT or 5-session DFT, you need:

- A Macintosh II system

- An Apple Coax/Twinax Card, Apple TokenTalk NB Card, or Apple Serial NB Card

- Macintosh system software version 6.0.5 or later

To use SNA*ps 3270 as a client to an SNA*ps Gateway, you need:

- SNA*ps 3270 or SNA*ps 3270 GC

- A Macintosh Plus or later Macintosh system as the client computer

- A Macintosh II system running the SNA*ps Gateway software on your AppleTalk network

- Macintosh system software version 6.0.5 or later

On the IBM host, you must have the following IBM file transfer software:

- 5665-311 (3270-PC File Transfer Program for MVS)

- 5664-281 (3270-PC File Transfer Program for VM/SP)

- 5798-DQH (CICS/VS 3270-PC File Transfer Program)

Product Details

- 3270 Terminal Emulation

SNA*ps supports the following terminal types:

- 3178/3278 models 1, 2, 3, 4, 5, and C3

- 3278/3279 models 2, 3, 4, 5/S2A, S2B, S3A, and S3B

- 3180 model 1

- 3191/3192 Display Station models A, B, C, D, E, F, and L

- 3270 Display Terminal Functions

SNA*ps 3270 supports base and extended attributes, extended color support, and OIA status line symbols.

- MultiFinder Compatibility

SNA*ps 3270 stays active in the background under MultiFinder, enabling file transfers to continue while you work with other 3270 sessions or local Macintosh applications.

- AppleTalk Gateway

SNA*ps 3270 runs as a client to a SNA*ps Gateway on the user's computer or on another computer connected to the AppleTalk network or internetwork.

- Special Features

SNA*ps 3270 includes on-line help, keyboard remapping of 3270 control keys, on-screen keypads for easy access to frequently used 3270 keys, and keystroke recording and playback for automating operations such as file transfers and electronic mail retrieval.

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PowerBook Wins Usability Study (7/92)

Apple's new Macintosh PowerBook notebook computers scored highest in a usability study conducted by an independent industrial design firm. The PowerBook models 170 and 100 won over eight competitive notebooks from Compaq, Toshiba, NEC, Sharp, Zenith, IBM, AT&T, and Zeos. The study involved more than 450 tests of design, ergonomics, functionality, portability, and ease of use.

This article has been archived and is no longer updated by Apple.

A New Approach

Most notebook computer reviews deal with "speeds and feeds," an approach more for technologists than for end users. Apple hired GVO, an independent design company not involved in any of the systems tested, to put the leading notebook computers through a series of real world usability tests, to quantify their designed-in advantages. They performed tests across the whole spectrum of notebook use: from the time the user first opens the box, through extended use in the office and in the field (including use in airplanes and cars).

The NCAT (Notebook Computer Aptitude Test)

GVO specialists evaluated the machines according to four key criteria:

- Function/Purpose: How well the product fulfills the user's purpose
- Physical Fit: How well the product meets the user's ergonomic needs
- Learning/Understanding: How easy the product is to learn and understand
- Satisfaction: How satisfying the product is to see and to use

The study applied these values to out-of-the-box experience, installation and set-up, mechanics, initial use, long-term use, and use while travelling. In all, they conducted more than 450 individual design and usability tests, including true size and weight of all necessary components, set-up and tear-down effort for movement, desktop and laptop footprint, briefcase fit, ergonomics, balance, fit & finish, durability, image, power management, screen viewing angle and visibility, typing, GUI navigation, and usability in the office, on an airplane and in a car. They graded individual tests on a scale of 0 to 4 (4 being the best), and averaged the grades to compute a final score, giving all tests equal weight.

The Results

The Macintosh PowerBooks ranked the highest. The overall scores on a scale of 0 to 4 (4 being the best) were:

Macintosh PowerBook 170: 3.07
Macintosh PowerBook 100: 2.93
AT&T Safari: 2.65
Zeos 386SX: 2.35
NEC Ultralite 286F: 2.29
Toshiba T-2000SX: 2.28
Zenith MasterSport 386SX: 2.22
Compaq 386S/20: 2.15
Sharp 6641: 2.02
IBM PS/2 L-40: 2.00

The PowerBook 140 wasn't included in the test due to its similarity to the PowerBook 170.

The DOS-based systems were equipped with Windows 3.0 and a Logitech TrackMan Portable track ball, in order to compare graphical environments.

Some Quotes From The Findings

"The PowerBook 170 and 100 represent the best notebook value available in the market today.

"The PowerBooks are easily the most portable and flexible of the 10 notebooks tested."

"Through a clever integration of engineering, design, and ergonomics, Apple has created the first notebook computers that can actually be used comfortably in someone's lap."

"The combination of small size, low weight, elegant design, integrated trackball, palm rests, active matrix LCD, and software-controlled floppy drive makes the PowerBook 170 the most usable, versatile, and desirable system tested."

Putting The Tests In Perspective

The Ingram benchmark study showed that the PowerBooks deliver faster performance than competitive notebooks running Windows 3.0. The NCAT gives evidence that the PowerBooks are more usable than the competition. And the DRI studies show what that means to users -- they say they are more productive and satisfied than people who use PC clones running DOS or Windows 3.0.

About GVO

GVO is an independent industrial design firm, located in Palo Alto, California. It was not involved in the design of any of the machines tested. GVO has designed other notebook computers, and is experienced in human engineering, electronics packaging, product planning, and cognitive psychology.

NOTE: If the NCAT results are to be used in a public document, our contract with GVO requires Competitive Analysis to review it first. Please send your drafts to COMPETITION.

Support Information Services
Published Date: Feb 18, 2012

Macintosh Quadra 700 and 900: Recording 44kHz Sound

Is it possible to record 16-bit and 44kHz CD quality on a Quadra 700 or 900?

This article has been archived and is no longer updated by Apple.
The Quadra's sound input is 8-bit linear PCM with analog limiting to enhance the power of the signal being digitized. The sample rate may be 22kHz or 11kHz. Therefore, to achieve 44kHz input, you'll need to obtain third-party hardware and software tools, such as those from Digidesigns, Inc. Information on Digidesigns' offerings may be found in buyer's guides, including the electronic buyer's guides on AppleLink.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Apple IIGS: Network Slot Assignments

You can often trace Apple IIGS network printing difficulties to the setting of slot assignments in the Control Panel.

This article has been archived and is no longer updated by Apple.

Setting Correct Network Slot Assignments

Here are the steps to set the proper network slot assignments:

1) Find the Apple IIGS ROM versions in the initial splash screen when you start the computer. The bottom line of that screen contains information noting either 01 or 03 version ROMs.

2) Open either the Apple IIGS Control Panel (Open Apple-Control-Escape) or the Graphic Control Panel (under the Apple Menu in the GS/OS menu bar).

3) Here are the correct slot settings:

* For Apple IIGS systems with version 01 ROMs, set Slot 1 to "Your Card" and Slot 7 to "Built-in AppleTalk."

* For Apple IIGS systems with version 03 ROMs, set Slot 1 or Slot 2 to "AppleTalk" and Slot 7 to "AppleTalk."

ProDOS 8 Applications

Some ProDOS 8 applications require printer slot definition. In such applications, you need to select the appropriate slot within the application's printer selection routine. For ROM 01 the appropriate slot for network printing will be slot 7. For ROM 03 the appropriate slot for network printing will be slot 1.

Other ProDOS 8 applications insulate the user from the need to select a specific slot. For example AppleWorks 3.0N uses a printer called "ImageWriter (AppleTalk)." The user often still needs to select a printer from within the application. However, these applications indicate that a printer is a network printer.

GS/OS Applications

Applications that are GS/OS based (those that display the Graphic Control Panel) use the Control Panel (or the AppleShare Admin startup information) to select their printer. You don't need to set printer slot assignments within the application. They are handled by the operating system from the Control Panel settings (or the AppleShare Admin startup information).

Published Date: Feb 18, 2012

Macintosh LC: Print, Copy, or Save Apple IIe Card Screen

How can I dump the screen of the Macintosh LC to an ImageWriter connected to the Modem Port while using the Apple IIe Card in Apple IIe mode? Cmd-Shift-4 reportedly doesn't work as it does under the Macintosh operating system.

This article has been archived and is no longer updated by Apple.

Screen Dump to Printer

The following procedure works with version 2.0 of the Apple IIe Card software:

1) After launching the Apple IIe Startup application, open the Apple IIe Option Panel with Open Apple-Control-Escape (or Command-Control-Escape, for Macintosh users).

From the File menu, three options associated with the Apple IIe screen are available:

* Show Apple IIe Screen
* Save Apple IIe Screen╔
* Print Apple IIe Screen╔

From the Edit menu there is one option that is associated with the Apple IIe screen:

* Copy Apple IIe Screen

2) In the Apple IIe Option Panel, select the Slots icon in the left side scrolling window. Place the Printer Card icon in an appropriate slot (generally Slot 1).

NOTE: The icon labeled Serial Card with a plain printer icon is not the correct icon. The correct icon is labeled Printer Card. This icon has more printer detail.

3) Select the Printer Card icon in the left side scrolling window of the Option Panel. Then select the Chooser from the Apple menu. Choose the ImageWriter icon and select the Modem icon for the printer port. Close the Chooser.

4) To confirm the desired display of the Apple IIe screen, select the Show Apple IIe Screen item from the File menu. A reduced view of the Apple IIe screen displays in a Macintosh window. If the Apple IIe screen is 40 columns wide, the reduced view is readable. If the screen is 80 columns wide, the view is abstracted.

5) To print the Apple IIe screen, select the File menu item "Print Apple IIe Screen╔." This brings up the Macintosh ImageWriter dialog. Click OK to print the Apple IIe screen to the ImageWriter.

Save Screen to Disk or Clipboard

In a similar manner, you can save the Apple IIe screen to a MacPaint file by selecting "Save II Screen╔" from the File menu. Or you can copy the Apple IIe screen to the Macintosh Clipboard by selecting "Copy Apple IIe Screen" from the Edit menu.

Pressing Command-Shift-3 also saves the current screen to disk as a PICT file. Once you've saved the file, you can open MacPaint or any other paint program to print the PICT file.

TA47430_Macintosh_LC_Print_Copy_or_Save_Apple_IIe_Card_Screen_(TIL09070).pdf

Published Date: Feb 18, 2012

Macintosh Monitors: Screen Size and Page Rulers Compared (10/95)

When I run my word processing program on different size Macintosh monitors, the program displays the same ruler width.

Why does the 12-inch RGB monitor display the same ruler width as the 9-inch monitor?

This article has been archived and is no longer updated by Apple.
Page rulers on a Macintosh monitor is determined by the number of pixels available, not by the physical screen size. The Macintosh Classic (and other compact Macintosh 9-inch screens) and the 12-inch RGB monitor are 512 pixels wide, so they display the same ruler length.

Even though the ruler width of the two monitors is the same, the 9-inch monitor is 342 pixels tall, while the 12-inch RGB monitor is 384 pixels tall. The 13-inch RGB monitor and the 12-inch monochrome monitor are 640 pixels wide and 480 pixels tall.

This article was published in the "Information Alley":
Volume II, Issue 12, Page 19

Article Change History:
11 Oct 1995 - Revised entire article to better describe situation.
05 Oct 1995 - Added Info Alley information; updated article.
20 Mar 1995 - Minor typographical error.

Support Information Services
Published Date: Feb 18, 2012

Ofoto 2: Improved Copy and Paste Function

This article compares the RAM requirements for copy and paste in Ofoto versions 1 and 2.
This article has been archived and is no longer updated by Apple.
The cut, copy, and paste functions of Ofoto 1 versions weren't optimized for working with other applications. For example, if you scanned a 4 x 5 inch, 300dpi gray scale image, and selected and copied it while in Ofoto, it was difficult to exit Ofoto and enter another application to paste the image. You would frequently see the error "Not enough memory to export this Clipboard" with Ofoto 1 versions. This operation required large amounts of RAM and disk space.

Ofoto 2 completely redesigned the cut, copy, and paste code. It is now possible to copy large, full color (as well as gray scale) images in Ofoto and move to another program to paste them in. It no longer requires large amounts of RAM and disk space.

On a related issue, the 2048K suggested partition size for Ofoto is a good beginning. However, a larger partition improves performance for all functions of Ofoto, not just for copy and paste.
Published Date: Feb 18, 2012

LaserWriter IINT, IINTX, and Personal LaserWriter NT: Font IDs

I need the Adobe library numbers of the fonts in the ROMs of the LaserWriter IINT, IINTX, and Personal LaserWriter NT. I will buy additional fonts, but don't want to duplicate those already in the LaserWriter.

This article has been archived and is no longer updated by Apple.
The Helvetica, Times, Symbol and Courier included with the LaserWriter printers mentioned don't have numbers; they are available only with ATM. ATM users are probably the only ones who would ever want a PostScript version of the font, since ATM uses the PostScript font to create the on-screen representation.

Here are the font library numbers for the others:

Font Number	Font
1	Palatino
2	ITC Bookman
3	ITC Zapf Chancery
	ITC Zapf Dingbats
4	ITC Avant Garde Gothic
5	New Century Schoolbook

None of the font libraries has Helvetica Narrow.

Published Date: Feb 18, 2012

LaserWriter IIf and IIg: Require 80ns RAM

I know that I can use standard IIci-style 80ns memory in the LaserWriter IIf and IIg. Can I safely use slower memory (for example, 100 or 120 ns)?

This article has been archived and is no longer updated by Apple.
No. Both the LaserWriter IIf and IIg require IIci-style RAM, rated at 80ns or better and supporting Fast Page LaserWriter IIf and IIg: Require 80ns RAM

Published Date: Feb 18, 2012

Apple Remote Access: Multiple Clients

Can AppleTalk Remote be run on a Macintosh II computer that accepts several inputs from various modems, maybe with some NuBus boards?
This article has been archived and is no longer updated by Apple.
The 1.x version of AppleTalk Remote Access was not designed for this capability, and we don't know of any way of modifying it for this purpose.

The Apple Remote Access 2.0.1 Multi Port Server will allow multiple clients to log in however. Search the Tech Info Library on the Multi Port Server for additional information on that product.
Published Date: Feb 18, 2012

AppleTalk Remote Access: Setting Up Security Zones

I have these questions about setting up a security zone:

1) Can I change any part of the name? For instance, change the first 3 letters to conform with our naming convention.

2) If two or more security zones are introduced to the network, do I have to type multiple passwords? If I have one password, will it work for the entire network? Is it possible for two security zones to be on the network?

3) If I create a security zone with a password to set up the network properly, and the zone goes away, does the password continue to work? If a second zone is then introduced, will it continue to function or will I need a new password?
This article has been archived and is no longer updated by Apple.
1) No part of the SecurityZone name can deviate from that produced by the Security Stack. There are three characters that could be used before the 32-character zone name limit is exceeded, but then the AppleTalk Remote Access stations won't recognize it as a security zone.

2) You can have up to 16 security zones on a network. Each must have a different password (implied due to zone naming rules), and a user setting up a server need only know one of them. The software will search the entire zone list for a security zone with a matching password. This allows the administrator to group authorized servers and enable or disable groups as needed.

3) Just to clarify, a security zone will affect any AppleTalk Remote Access station on the same AppleTalk network, be it a LAN or WAN. The entire zone list is searched, and if a security zone is present, a password will be required. This is checked both at the time the answering station is set up, and during each connection attempt.

If you set up the answering station while disconnected from the network, the software wouldn't see the zone, and wouldn't ask for the password. But once you reconnected, and a remote user dialed in, the software would see the security zone and disable remote access. The same would happen if the security zone were set up after a station was set up to answer calls.

Also, there is a potentially annoying problem with the Security Stack used to generate the DES encrypted zone name. The field used to display the password is a couple of pixels too narrow and truncates the last character of the encrypted password. If you create a zone with this errant zone name, none of the answering stations will recognize it as a security zone.

The way to fix this is to widen the field slightly so the final character is visible. Use the HyperCard field tool (in authoring mode) to stretch the field bounds as needed, or enter the following command from the message window. It will correct the Zone field width to show the entire zone name.

set width of cd fld "Zone" to 236
Published Date: Feb 18, 2012

Lisa: Error Tones

This article has been archived and is no longer updated by Apple.
Some systems (usually those containing old ROMs) emit a low-high error tone upon startup before starting the internal diagnostics. To proceed, merely power the Lisa off and back on.

Other errors, ones usually associated with hardware failures, sometimes appear on Lisas in the 7/7 Office System. Typically, you may have neglected to erase your hard disk before installing the 7/7 Office System. After you safely backup your documents, reinstall the software after first erasing the present contents of the hard disk.
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PowerBook: Battery DA Manual Correction

The Battery DA is programmed to "lose" the lightning bolt when the battery goes into trickle charge. This isn't an intuitive course for the Battery DA to follow. The user's manual on page 96 says that "when the power adapter is plugged in, the Battery DA will show a lightning bolt through the battery graphic." This is not happening.

This article has been archived and is no longer updated by Apple.

The PowerBook user manuals are being updated to address errors that were discovered, including the one you've identified. Current product inventory will still have the original manuals.

Published Date: Feb 18, 2012

SUM: Don‘t Install on a Server

I've received these two similar problem reports:

1) I have the SUM Shield INIT installed on my Macintosh. When I try to trash a file or folder while file sharing with another Macintosh, my system freezes.

2) I have the SUM Shield INIT installed on my server. Whenever I try to trash anything on the server from a Macintosh on the network, I get an error message saying that the item could not be found.

This article has been archived and is no longer updated by Apple.
According to Symantec, the solution is to not install SUM on a server. This problem happens when both the client and the server have the SUM Shield INIT in their System Folders. The SUM software is not intended for use on a server.

On AppleLink, you can find contact information on Symantec by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

Published Date: Feb 18, 2012

System 7: How to Avoid PrintMonitor Corruption

Article Change History

09/21/92 - UPDATED
* To provide information about System 7 Tune-Up and LaserWriter driver version 7.1.1.

This article lists several steps to follow to help you avoid PrintMonitor corruption.

This article has been archived and is no longer updated by Apple.
The primary reason for corruption of the System 7 PrintMonitor is the LaserWriter driver version 7.0. The best way to avoid problems with PrintMonitor in the future is to install System 7 Tune-Up, which contains version 7.1.1 of the LaserWriter driver (or a version of system software greater than 7.01).

If you have not obtained and installed System 7 Tune-Up yet, or you think your PrintMonitor may be corrupted despite Tune-Up, follow the steps below.

1) Remove any jobs that are printing or are waiting to be printed from the PrintMonitor Documents folder.

2) Reinstall the Printing software.

3) Launch PrintMonitor and from the File menu select Preferences.

4) Configure PrintMonitor to display its window when printing by clicking the Yes button for that item.

5) Click the PrintMonitor application, and from the File menu select Get Info.

6) Increase the amount of memory allocated to PrintMonitor by increasing the amount of RAM shown for the Current size item of the Memory box in the Get Info window. We suggest doubling the 80K default allocation if you have that amount of memory available. Remember, this new amount of RAM needs to be available for background printing to start.

7) Lock the Get Info window by clicking the Locked box and close the window.

8) Create a new folder in the root level of your hard disk called PrintMonitor Backup. Option-drag a copy of the newly configured PrintMonitor to the PrintMonitor Backup folder.

9) Ensure that Background Printing is selected in the Chooser and restart your Macintosh.

Notes

- DO NOT quit the PrintMonitor application when a job is printing (with System 7 Tune-Up and LaserWriter 7.1.1 this is no long a problem).

- If you suspect your PrintMonitor application has become corrupted:

1) Trash your original version of PrintMonitor. (Remember to unlock it via the Get Info window first.)
2) Option-drag a copy of the uncorrupted PrintMonitor application from the PrintMonitor Backup folder to the Extensions

folder.

Published Date: Feb 18, 2012

TA47445_Macintosh_Quadra_Ethernet_Buffer_Size_(TIL09086).pdf

Macintosh Quadra: Ethernet Buffer Size

How large are the Ethernet buffers on the Macintosh Quadra computer's built-in Ethernet?

This article has been archived and is no longer updated by Apple.
The send and receive buffers for the Macintosh Quadra computer's built-in Ethernet are 8 packets each. The maximum packet size is 1500 bytes, so that is 8 x 1500, which equals 12,000 bytes each.

Published Date: Feb 18, 2012

PowerBook: Sleep Mode Power Draw (7/92)

How long do the batteries last in the Macintosh PowerBook 100, 140, and 170 when in sleep mode?

This article has been archived and is no longer updated by Apple.
With a full charge, you can expect the batteries in the Macintosh PowerBook family to sleep-discharge down to the software shutdown level in approximately 7 days. The actual number of days may vary depending on the battery and the Macintosh PowerBook.

Support Information Services
Published Date: Feb 18, 2012

LaserWriter II: New Toner Cartridge Characteristics

I've heard that Apple has been shipping a toner cartridge with new toner for the LaserWriter II for some time. How is this toner cartridge different from the former toner cartridge? Is there a new or updated Safety Data Sheet for this toner?

This article has been archived and is no longer updated by Apple.
Several months before the introduction of the Apple LaserWriter IIg and LaserWriter IIf, Apple started shipping a new toner cartridge for the LaserWriter II family of printers. This new toner cartridge has an improved mechanism that provides more consistent feeding of toner to the paper. This is only noticeable when printing gray scale on the Apple LaserWriter IIg and LaserWriter IIf. There was also a change in the cartridge that helps prevent toner leaks.

Any toner cartridges that you find in stores today will be of the new variety. Externally, there is no way to tell the old cartridge from the new one.

There is no change to the Materials Safety Data Sheet.

Published Date: Feb 18, 2012

Quadra Series, Centris Series: Displays, Video Pinouts

This article details how to wire the video connector sense pins to access all the supported video modes of the Macintosh Quadra series and the Macintosh Centris series.
This article has been archived and is no longer updated by Apple.
The Macintosh Centris and Quadra frame buffer determines what type of display is attached to the video connector by examining the state of 3 sense line pins. The following chart details how these three pins must be wired for each of the supported display types. For each supported display, the screen resolution (horiz. pixels X vertical pixels), bandwidth, and the vertical and horizontal scan rates are listed.

The Macintosh Quadra series and the Macintosh Centris series should support any display, whether from Apple or from another vendor, that meets one of the following specifications:

STANDARD SENSE CODES:

Display	Sense pins 10 7 4	Hor x Vert (Pixels)	Band Width (MHz)	Vert Refrsh (Hz)	Horiz Refrsh (KHz)
Apple 21 Color	0 0 0	1152 x 870	100	75	68.7
Apple Portrait	0 0 1	640 x 870	57.2832	75	68.9
12" AppleColor RGB	0 1 0	512 x 384	15.6672	60.15	24.48
Apple 2-Page Mono.	0 1 1	1152 x 870	100	75	68.7
NTSC	1 0 0	underscan 512 x 384	12.2727	59.94	15.7
	1 0 0	overscan 640 x 480	12.2727	59.94	15.7
To produce a color NTSC signal, a RGB-to-NTSC converter is required.					
12" Apple High-Res Monochrome	1 1 0	640 x 480	30.24	66.7	35.0
13" AppleColor High-Res RGB	1 1 0	640 x 480	30.24	66.7	35.0
Apple 16" Color Disp.	(See Note 4)	832 x 624	57.63	75	49.7
Portrait Color, such as Radius	1 0 1	640 x 870	57.2832	75	68.9

NOTES:

1. Sense pins 4, 7, and 10 are referred to as MON.ID1, MON.ID2, and MON.ID3 in the Macintosh Quadra pinout table or SENSE0, SENSE1, and SENSE2 in pinout tables for the video connectors.

A sense pin value of 0 means that pin should be grounded to the C&VSYNC.GND signal; a value of 1 means do not connect the pin.

2. Extended sense codes will be examined if the following sense code is detected: 1 1 1.

3. The terms 'underscan' and 'overscan' are used to describe the active video resolution for NTSC and PAL modes. Underscan means that the active video area appears in a rectangle centered on the screen with a black surrounding area. This ensures that the entire active video area always is displayed on all monitors. Overscan utilizes the entire possible video area for NTSC or PAL. However, most monitors or televisions will cause some of this video to be lost beyond the edges of the display, so the entire image will not be seen.

4) The Apple 16" Color Display should have pins 4 and 10 tied together and pin 7 should be unconnected. If used with a Macintosh Display Card, the Apple 16" Color Display also requires the Macintosh Display Card 4*8, 8*24, or 8*24 GC with revised ROMs.

EXTENDED SENSE CODES:

NOTE: For extended sense codes: Sense pin pair value of 0 means those pins should be tied together (as opposed to grounding 10, 7, or 4 to pin 11); value of 1, do not connect. DON'T wire any of these pins to ground.

Display	Sense pins 4-10 10-7 7-4	Hor x Vert Pixels	Bandwidth (MHz)	Refresh (Hz)	Scan (KHz)
16-inch Color, such as E-Machines	0 1 1	832 x 624	57.2832	75	49.7

PAL (1)					
PAL Option 1	0 0 0	underscan 640 x 480	14.75	50	15.625
		overscan 768 x 576	14.75	50	15.625
PAL Option 2 (2)	1 1 0	underscan 640 x 480	14.75	50	15.625
		overscan 768 x 576	14.75	50	15.625
VGA	1 0 1	640 x 480	25.175	59.95	31.47
Super VGA (3)	1 0 1	800 x 600	36	56	35.16
19" Color	1 1 0	1024 x 768	80	75	60.24
No external monitor (video halted)	1 1 1				

NOTES:
1. PAL has two wiring options, using the extended sense pin configuration. To produce a color PAL signal, an RGB-to-PAL converter is required.

2. This sense code also requires a diode between sense pins 10 and 7, with anode towards pin 7, cathode towards pin 10.

3. To enable Super VGA, after configuring and connecting the monitor for VGA, open the monitor's control panel and select Options. Choose Super VGA from the dialog and restart your system.

4. The Macintosh Quadra 700 and 900 support PAL Option 1 at up to 8 bpp.

5. The Macintosh Centris 610, 650, and Quadra 800 support PAL Option 1 at up to 16 bpp.

6. The Macintosh Quadra 950 supports PAL Option 1 up to millions of colors.

MACINTOSH QUADRA AND CENTRIS VIDEO PINOUTS:

Pin	Signal	Description
1	RED.GND	Red Video Ground
2	RED.VID	Red Video
3	CYSNC~	Composite Sync
4	MON.ID1	Monitor ID, Bit 1 (also known as SENSE0)
5	GRN.VID	Green Video
6	GRN.GND	Green Video Ground
7	MON.ID2	Monitor ID, Bit 2 (also known as SENSE1)
8	NC	No Connection
9	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3 (also known as SENSE2)
11	C&VSYNC.GND	CSYNC & VSYNC Ground
12	VSYNC~	Vertical Sync
13	BLU.GND	Blue Video Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC~	Horizontal Sync
Shell	CHASSIS.GND	Chassis Ground

If your monitor is a VGA type, try the following cable pinouts.

A cable wired as follows may allow many different brands of VGA monitors to work on a Macintosh Quadra. We advise you to test the monitor on a Macintosh Quadra prior to purchase to see if it meets your expectations.

Cable Pinouts:

Macintosh Video DB-15	Signal	VGA Connector

2	Red Video	1
1	Red Ground	6
9	Blue Video	3
13	Blue Ground	8
5	Green Video	2
6	Green Ground	7
15	Hsync	13
12	Vsync	14
14	Sync Ground	10
10	Connect 10 and 7 so the sense pin ID will equal VGA.	
7		

There are a few issues to keep in mind with VGA monitors.

* VGA monitors will vary depending on the vendor. Check with the vendor about Macintosh Centris and Quadra compatibility before buying, or better yet, actually try the monitor with a Centris or Quadra to see if it works and if the quality is acceptable.

* Vendors have different image quality specifications. There may be significant differences between Apple monitors and the wide range of VGA monitors. Do a side-by-side comparison of the monitors you are considering before buying.

* Many third party cable vendors have off-the-shelf cables that should work.

MACINTOSH QUADRA TO NTSC VIDEO CABLE:
Most NTSC devices use a RCA-type phono-connector and the following diagram uses that as a reference point. A cable wired as follows may allow many different brands of NTSC monitors to work on a Macintosh Centris or Quadra. We advise you to test the monitor on one of these machines prior to purchase to see if it meets your expectations.

Adjust the phono-connector side to whatever type of connector is used (RCA, BNC, etc.). "Tip" is the pin in the center of the connector (the signal); the sleeve is the flange around the outer edges of the connector (the chassis ground).

MACINTOSH QUADRA TO NTSC VIDEO CABLE EXAMPLE:

Card Connector	RCA-Type Phono-Connector
4 MON.ID1 (sense0) - - - -|	
7 MON.ID2 (sense1) - - - -|	
11 C&VSYNC.GND - - - - - - |	
5 GRN.VID ---------->	Tip (signal)
Shell CHASSIS.GND ---------->	Sleeve (ground)

Note: By grounding pin 4 and pin 7 to pin 11, the Macintosh Centris and Quadra CPUs are told that an interlaced (NTSC) monitor is attached. The actual black and white video signal is on pin 5 and connects to the center (Tip) of the phono-plug. The shell of the card connector connects to the sleeve of the phono-plug.

To acquire a color NTSC signal from a Quadra (or any Apple Macintosh display card), an RGB-to-NTSC converter is required, such as those available from RasterOps, Truevision, and Computer Friends. We do not have the cable requirements for any of these interface devices.
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Business Basic III: VARIABLE ERROR in version 1.1 and earlier

This article has been archived and is no longer updated by Apple.

The most common cause for a variable error in versions 1.1 and earlier of Apple III Business Basic is to use SWAP with at least one of the arguments set to a null string: doing so creates an error in the string variable storage area. Unfortunately, these versions of Business Basic don't notice this error until they run short on storage space and try to consolidate all free space; the variable error occurs when the consolidation routine finds the swapped null string. The following fragment of code will generate this error:

```
10 T$ = "The little red fox jumped over the lazy dog's back ten times."
20 PRINT "Length of T$ is " LEN(T$); TAB(40); "Length of B$ is " LEN(B$)
30 SWAP T$, B$
40 PRINT "Length of T$ is " LEN(T$); TAB(40); "Length of B$ is " LEN(B$)
50 PRINT FRE
```

This problem has been fixed in versions 1.2 and later.

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Macintosh Quadra: Excess VRAM Gives No Performance Gain

Does extra VRAM in the Macintosh Quadra improve speed? For example, if I install 2MB of VRAM in a Macintosh Quadra and use a 13-inch RGB set to 256 colors, I get 1.5MB more than what is needed to display 256 colors. Does this improve the video performance/speed compared to 0.5MB?

This article has been archived and is no longer updated by Apple.
Having extra VRAM available on a Macintosh Quadra beyond what is required to support a particular pixel depth doesn't give any performance increase.

This is not true for the Macintosh Display Card 8*24 GC, where the additional and optional DRAM space is used for off-screen data structures.

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Macintosh Quadra: VRAM and Pixel Depth

Article Change History

03/23/93 - RETITLED
* To match another similar article.

I'm confused on the VRAM issue. If I can't run a 21-inch monitor in 24-bit using the full 2MB of VRAM, and I can run a 16-inch in 24-bit with only 1MB of VRAM, then what would I use the full 2MB of VRAM for? A 19-inch monitor maybe?

This article has been archived and is no longer updated by Apple.
The Macintosh Quadra 700 and 900 built-in video supports the Apple 21-inch color and monochrome monitors to 8-bit, 256 colors only. Adding VRAM beyond 1MB to the Macintosh Quadras when using these monitors is not beneficial; to achieve greater pixel depth on the 21-inch color monitor, you'll need a third-party video NuBus card.

A 19-inch monitor that matches the characteristics of other monitors the Macintosh Quadra supports may work; however, none of the other monitors are specifically 19-inch monitors.

The following chart should help explain the video expansion options available on the Macintosh Quadras today. Note that this information should supersede any information you have received thus far.

The following chart lists the Macintosh Quadra 700 and 900 internal video's maximum pixel depths supported, depending upon the VRAM configuration:

Display size	512K VRAM	1MB VRAM	2MB VRAM
12-inch landscape 384 x 512, such as 12-inch RGB	8 bpp	24 bpp	24 bpp
12-inch Monochrome 640 x 480	8 bpp	8 bpp	8 bpp
13-inch RGB and VGA 480 x 640	8 bpp	8 bpp	24 bpp
Super VGA 800 x 600	8 bpp	8 bpp	24 bpp
15-inch Portrait (b/w) 640 x 870	4 bpp	8 bpp	8 bpp
16-inch Color 832 x 624	8 bpp	8 bpp	24 bpp
2-Page Display (b/w) 870 x 1152	4 bpp	8 bpp	8 bpp
21-inch Color 870 x 1152	4 bpp	8 bpp	8 bpp
PAL with convolution	n.a.	8 bpp	8 bpp
PAL without convolution	8 bpp	8 bpp	24 bpp*

NTSC with convolution n.a 8 bpp 8 bpp

NTSC without convolution 8 bpp 8 bpp 24 bpp

* Note: there are two ways to wire a video cable for connecting a PAL monitor to a Macintosh Quadra; only by using the proper extended sense code are you able to achieve 24 bits per pixel. For details, search under "Quadra" and "video sense pinouts".

Note that 512K of VRAM is the minimum configuration for the Macintosh Quadra 700; it is 1MB of VRAM for the Macintosh Quadra 900.

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A/UX: Commando Supports Only 7-bit Characters

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

The CMDO facility in A/UX seems to be unable to handle national characters (that is, 8-bit characters) in the CMDO-scripts. Is this a known problem?

This article has been archived and is no longer updated by Apple.
The Commando facility supports only 7-bit characters under A/UX 2.0.1. We have also verified that it supports only 7-bit characters under A/UX 3.0.

Published Date: Feb 18, 2012

Macintosh Computers: Gestalt ID Codes

I need a list of the Gestalt machine-selector codes for all Macintosh Computers.
This article has been archived and is no longer updated by Apple.
Here is a list of the gestaltMachineType response values. You can use Apple System Profiler to obtain the Machine ID. It is listed in the System Profile tab in the Hardware overview section.

```
gestaltClassic           =  1;     { Macintosh }
gestaltMacXL             =  2;     { Macintosh XL }
gestaltMac512ke          =  3;     { Macintosh 512Ke }
gestaltMacPlus           =  4;     { Macintosh Plus }
gestaltMacSE             =  5;     { Macintosh SE }
gestaltMacII             =  6;     { Macintosh II }
gestaltMacIIx            =  7;     { Macintosh IIx }
gestaltMacIIcx           =  8;     { Macintosh IIcx }
gestaltMacSE30           =  9;     { Macintosh SE/30 }
gestaltMacPortable       = 10;     { Macintosh Portable }
gestaltMacIIci           = 11;     { Macintosh IIci }
gestaltMacIIfx           = 13;     { Macintosh IIfx }
gestaltMacClassic        = 17;     { Macintosh Classic }
gestaltMacIIsi           = 18;     { Macintosh IIsi }
gestaltMacLC             = 19;     { Macintosh LC }
gestaltQuadra900         = 20;     { Macintosh Quadra 900 }
gestaltPowerBook170      = 21;     { Macintosh PowerBook 170 }
gestaltQuadra700         = 22;     { Macintosh Quadra 700 }
gestaltClassicII         = 23;     { Macintosh Classic II }
gestaltPowerBook100      = 24;     { Macintosh PowerBook 100 }
gestaltPowerBook140      = 25;     { Macintosh PowerBook 140 }
gestaltQuadra950         = 26;     { Macintosh Quadra 950}
gestaltMacLCIII          = 27;     { Macintosh LC III }
gestaltPowerBookDuo210   = 29;     { Macintosh PowerBook Duo 210 }
gestaltMacCentris650     = 30;     { Macintosh Centris 650 }
gestaltPowerBookDuo230   = 32;     { Macintosh PowerBook Duo 230 }
gestaltPowerBook180      = 33;     { Macintosh PowerBook 180 }
gestaltPowerBook160      = 34;     { Macintosh PowerBook 160 }
gestaltMacQuadra800      = 35;     { Macintosh Quadra 800 }
gestaltMacQuadra650      = 36;     { Macintosh Quadra 650 }
gestaltMacLCII           = 37;     { Macintosh LC II }
gestaltPowerBookDuo250   = 38;     { Macintosh PowerBook Duo 250 }
gestaltAWS9150_80        = 39;     { Workgroup Server 9150 }
gestaltPowerMac8100_110  = 40;     { Power Macintosh 8100/110 }
gestaltPowerMac5200_75   = 41;     { Power Macintosh 5200/75 }
gestaltPowerMac6200_75   = 42;     { Power Macintosh 6200/75 }
gestaltMacIIvi           = 44;     { Macintosh IIvi }
gestaltPerforma600       = 45;     { Macintosh Performa 600 }
gestaltPowerMac7100_80   = 47;     { Power Macintosh 7100/80 }
gestaltMacIIvx           = 48;     { Macintosh IIvx }
gestaltMacColorClassic   = 49;     { Macintosh Color Classic }
gestaltPowerBook165c     = 50;     { Macintosh PowerBook 165c }
gestaltMacCentris610     = 52;     { Macintosh Centris 610 }
gestaltMacQuadra610      = 53;     { Macintosh Quadra 610 }
gestaltPowerBook145      = 54;     { Macintosh PowerBook 145 & 145b}
gestaltPowerMac8100_100  = 55;     { Power Macintosh 8100/100 }
gestaltMacLC520          = 56;     { Macintosh LC 520 }
gestaltAWS9150_120       = 57;     { Workgroup Server 9150/120 }
gestaltPerforma6400      = 58;     { Macintosh Performa 6400/180, 6400/200 }
gestaltPerforma6360      = 58;     { Macintosh Performa 6360/160 }
gestaltMacCentris660AV   = 60;     { Macintosh Centris 660AV }
gestaltPerforma460       = 62;     { Macintosh Performa 460 }
gestaltPowerMac8100_80   = 65;     { Power Macintosh 8100/80 }
gestaltPowerMac9500_120  = 67;     { Power Macintosh 9500/120 }
gestaltPowerMac9600      = 67;     { Power Macintosh 9600 }
gestaltPowerMac7500_120  = 68;     { Power Macintosh 7200/120 }
gestaltPowerMac8500_120  = 68;     { Power Macintosh 8500/120 }
```

```
gestaltPowerMac8600      = 69;     { Power Macintosh 8600 }
gestaltPowerBook180c     = 71;     { Macintosh PowerBook 180c }
gestaltPowerBook500      = 72;     { Macintosh PowerBook 500 series }
gestaltPowerMac5400      = 74;     { Power Macintosh 5400 }
gestaltPowerMac6100_60   = 75;     { Power Macintosh 6100/60 }
gestaltPowerBookDuo270c  = 77;     { Macintosh PowerBook Duo 270c }
gestaltMacQuadra840AV    = 78;     { Macintosh Quadra 840AV }
gestaltMacLC550          = 80;     { Macintosh LC 550 }
gestaltPowerBook165      = 84;     { Macintosh PowerBook 165 }
gestaltMacTV             = 88;     { Macintosh TV }
gestaltMacLC475          = 89;     { Macintosh LC 475 }
gestaltMacLC575          = 92;     { Macintosh LC 575 }
gestaltMacQuadra605      = 94;     { Macintosh Quadra 605 }
gestaltMac630            = 98;     { Macintosh 630 series }
gestaltMacLC580          = 99;     { Macintosh LC 580 }
gestaltPowerMac6100_66   =100;     { Power Macintosh 6100/66 }
gestaltPowerBookDuo280   =102;     { Macintosh PowerBook Duo 280 }
gestaltPowerBookDuo280c  =103;     { Macintosh PowerBook Duo 280c }
gestaltPowerMac7200_90   =108;     { Power Macintosh 7200/90 }
gestaltPowerMac7300      =109;     { Power Macintosh 7300 }
gestaltPowerMac7100_66   =112;     { Power Macintosh 7100/66 }
gestaltPowerBook150      =115:     { Macintosh PowerBook 150 }
gestaltPowerBookDuo2300  =118;     { Macintosh PowerBook Duo 2300 }
gestaltPowerBook190      =122;     { Macintosh PowerBook 190 }
gestaltPowerBook5300     =128;     { Macintosh PowerBook 5300 }
gestaltPowerBook1400     =310;     { Macintosh PowerBook 1400 }
gestaltPowerMacG3        =510;     { Power Macintosh G3 }
```

Macintosh Processor Upgrade

The follow gestalt identifiers are used by the Macintosh Processor Upgrade, when installed in an eligible 68LC040-based system. When the card is active, the following gestalt identifiers are used:

```
gestaltPowerMac475       =104;     { Power Macintosh 475/605 }
gestaltPowerMac575       =105;     { Power Macintosh 575 }
gestaltPowerMac630       =106;     { Power Macintosh 630 }
gestaltPowerMac580       =107;     { Power Macintosh 580 }
```

Power Macintosh Upgrade Card

The following gestalt identifiers are used by the Power Macintosh upgrade card, when installed into an eligible 040-based system. When the card is active, the following gestalt identifiers are used:

```
gestaltPowerMac700       =116;     { Power Macintosh 700 }
gestaltPowerMac900       =117;     { Power Macintosh 900 }
gestaltPowerMac950       =118;     { Power Macintosh 950 }
gestaltPowerMacC610      =119;     { Power Macintosh C610 }
gestaltPowerMacC650      =120;     { Power Macintosh C650 }
gestaltPowerMacQ610      =121;     { Power Macintosh Q610 }
gestaltPowerMacQ650      =122;     { Power Macintosh Q650 }
gestaltPowerMac800       =123;     { Power Macintosh 800 }
```

Power Macintosh G3

All Power Macintosh G3 computers have a machine ID value of 510 (hexadecimal 1FE). The ROM subversion can help differentiate logic boards. Details can be found in the developer note.

New World ROM computers
Computers based on the New World ROM architecture, such as the Power Macintosh G3 (Blue and White), iMac, PowerBook G3 Series (Bronze keyboard), and later, all have a machine ID of 406.

Gestalt

This Note now documents _Gestalt selectors and return values added since the release of Inside Macintosh Volume VI. Please note that this is supplemental information; for the complete description of _Gestalt and its use, please refer to Inside Macintosh Volume VI.

The Macintosh LC II is identical to the Macintosh LC except for the presence of an MC68030 processor, so under System 7.0.1 it returns the same gestaltMachineType response as the Macintosh LC (that is, 19). However, under System 7.1 and later, the LC II responds to a gestaltMachineType selector with the value 37. Thus, there are two cases when you are on an LC II: under System 7.0.1, you will get a gestaltMachineType response of gestaltMacLC (19), but gestaltProcessorType will return gestalt68030; under future system software,gestaltMachineType will return gestaltMacLCII (37). The processor will, of course, still be a 68030.

There is a similar difficulty with the PowerBook 145. This is essentially a PowerBook 140 with a 25-MHz 68030 processor. Under System 7.0.1, it returns the gestaltMachineType response of gestaltPowerBook140 (25); under System 7.1 and all later system software versions, the value returned is gestaltPowerBook145 (54).

Performa computers have the same gestaltMachineType resources as their Macintosh counterparts.

Developers are reminded that the gestaltMachineType selector is for informational purposes only and should not be used as a basis for programmatic decisions. As always, developers are encouraged to test for the specific features they need and not to rely on any particular machine having a particular set of features.

Notes

The Macintosh PowerBook 100 Developer Notes and the Macintosh PowerBook 140/170 Developer Notes incorrectly document gestaltMachineType response values for the Macintosh PowerBook computers. The above values are, and have always been, the correct values.

The following Tech Info Library article can help you find the Tech Notes mentioned in this article:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
Published Date: Feb 18, 2012

System 7: MODE32 Technical Information (9/94)

Apple's announcement regarding the licensing of MODE32 from Connectix prompted a number of questions about how MODE32 works at a technical level. This document addresses these issues.

This article has been archived and is no longer updated by Apple.
MODE32 is system-level software designed for Macintosh II class systems with ROMs that aren't 32-bit clean (Macintosh II, Macintosh IIx, Macintosh IIcx, and Macintosh SE/30). This became an issue with the release of System 7, because these computers can't run in 32-bit mode. MODE32 allows these computers to run in 32-bit mode.

When installed, MODE32 directly modifies the System file. Virus utilities report this, and may interfere with installation. Turn virus utilities off for the installation.

Modifications to the System file involve:

1) Total replacement of the Memory Manager with a 32-bit clean Memory Manager. This is the biggest change made. Without a 32-bit clean Memory Manager, you can't use 32-bit addressing.

2) Minor patches to certain ROM routines that aren't 32-bit clean. This involves patching specific routines in some managers, not replacing the entire manager as is the case with the Memory Manager.

NOTE: The MODE32 Control Panel (not the Memory Control Panel) can remove most of the resources it installed in the System file . The only portion MODE32 can't remove is a "ptch" resource in the System file, modified to allow 32-bit addressing on older Macintosh computers. To return to a golden master version of System 7, you must reinstall it from Master disks. This should not be an issue, as the updated "ptch" resource works in both 24-bit and 32-bit mode. We aren't aware of any problems when using this modified resource instead of the original.

When you turn your Macintosh on (or restart it), MODE32 executes at the earliest point possible in the startup process. Here is the sequence of events:

1) The Macintosh starts up in 24-bit mode.

2) Drivers load into 24-bit space from each of the installed NuBus cards and from any attached hard drive.

3) MODE32 executes.

4) MODE32 issues a close call to open drivers, switches in the 32-bit Memory Manager, and then reloads the drivers into 32-bit space. We call this process the "stutter start."

5) System start up proceeds normally from this point, and includes loading the other MODE32 patches to specific ROM routines.

NOTE: Some third-party NuBus cards don't have 32-bit clean drivers in their ROMs. Computers with these cards installed, and 32-bit addressing turned on, will fail to start up. The symptom you are most likely to see is repeated unsuccessful attempts to start up. Many manufacturers of cards that aren't 32-bit clean have ROM upgrades that resolve this issue. Disk drivers that are not 32-bit clean are also an issue. Contact the vendor of your drive software and obtain a vendor-certified 32-bit clean version.

Hardware Issues

The main benefit of 32-bit addressing is the ability to address more than 8MB of physical RAM. Even with 8MB of RAM you gain access to more virtual memory, assuming you have either a 68030-based Macintosh or a Macintosh II with a PMMU installed. A side benefit of 32-bit addressing when using virtual memory is that your address space is contiguous. This isn't true in 24-bit mode since ROM is mapped directly above the 8MB allocated for RAM. In 24-bit mode, any virtual memory allocated beyond 8MB is not contiguous with the first 8MB.

Macintosh II and Macintosh IIx computers require special 4MB SIMMs to give you more than 8MB of RAM. You should specifically request these SIMMs, and the vendor you purchase RAM from should be aware of the difference.

NOTE: To take advantage of more than 8MB of physical RAM in a Macintosh II, you must have a PMMU installed. When a Macintosh II starts up, MODE32 uses the PMMU to give you access to the additional RAM. Also, a Macintosh II won't start up if you have 4MB SIMMs in bank

A. You'll hear chimes, indicating a hardware failure. However, you can install the 4MB SIMMs in bank B with 1MB or 256K SIMMs in bank A. The Macintosh II then starts up, and MODE32 uses the PMMU to give you access to the additional RAM.

When you turn the power on (not restart from the Special menu), your Macintosh performs a RAM test. However, older systems only check up to 8MB of RAM, so anything beyond this isn't tested. MODE32 resolves this by checking anything greater than 8MB at the "happy Macintosh" screen. With large amounts of RAM, this can take a long time, and your computer can appear to freeze at this point.

Software Compatibility

We have no reports of 32-bit clean software incompatibilities with MODE32. In a few instances, problems with programs surfaced after installing MODE32.

NOTE: There is a version of Adobe Type Manager (2.0.2 or later) that is 32-bit clean. Be sure to use this version. The symptoms of a Macintosh running older versions of ATM make it appear as if applications may not be 32-bit clean, when the problem is actually an old version of ATM.

Article Change History
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12 Sep 1994 - Reviewed for technical accuracy, revised formatting.
20 Jul 1992 - Reviewed for technical accuracy.
27 Mar 1992 - Updated to change Mode 32 to MODE32.

Support Information Services
Published Date: Feb 18, 2012

PowerBook: HDI-30 Throughput (7/92)

I would like to match external hard disks to the Macintosh PowerBook 140 and 170. Can you tell me the throughput of the SCSI port on these PowerBooks?

This article has been archived and is no longer updated by Apple.
The SCSI circuitry used on the Macintosh PowerBooks (and consequentially, the throughput of the port) is the same as that used in all Macintosh computers. The new HDI-30 SCSI port connector has the same signals as the DB-25 connector, and the HDI-30 throughput is the same as other Macintosh computers.

Hard disks compatible with the Macintosh IIci, for example, work with the Macintosh PowerBooks.

Support Information Services
Published Date: Feb 18, 2012

AppleTalk Remote Access on Token Ring

Can I use AppleTalk Remote Access with Token Ring?
This article has been archived and is no longer updated by Apple.
Yes. The TokenTalk installer that ships with the Token Ring 4/16 NB Card will include AppleTalk version 57, which is required for AppleTalk Remote Access.

NOTE: The AppleTalk Remote Access READ ME file states that "Answering calls on a Token Ring network is not supported as of TokenTalk version 2.2..." The new TokenTalk driver for the Token Ring 4/16 NB card utilizes AppleTalk version 57, which is required for AppleTalk Remote Access. So, AppleTalk Remote Access is now fully functional on a Token Ring network.
Published Date: Feb 18, 2012

Applesoft: A program to simulate PRINT USING

The listing below demonstrates how Applesoft can simulate the BASIC statement PRINT USING.
This article has been archived and is no longer updated by Apple.
This particular example shows a subroutine that formats numeric output into a "Dollars and Cents" format. It's simple and fairly fast. It assumes that the calling program has initialized the following:

X, containing the number to be printed,
N, containing the number of digits to the right of the decimal, and
S, containing the width of the right justified printing field

The subroutine starting at line 1000 does all the work.

```
100 REM PRINT USING SIMULATOR
130 REM
140 LET N = 2: REM SET NUMBER OF DECIMALS
160 LET S = 5: REM SET FIELD WIDTH
180 HOME
190 FOR X = - 5 TO 5 STEP .501
200 PRINT X,"$";
210 GOSUB 1000
220 NEXT X
230 PRINT
240 PRINT "UNFORMATTED FORMATTED"
250 END
1000 LET X$ = " " + STR$(INT(X * 10^N +.5))
1010 LET Q = LEN(X$) - (VAL(X$) < 0)
1020 PRINT SPC(S - Q * (Q > N+1) - (N+2) * (Q <= N+1));
1030 PRINT MID$ (X$,1 + (VAL(X$) < 0), (Q <= N) + (Q-N) * (Q > N));
1040 PRINT MID$ ("0.00", 1 + ((N+1) < Q), 1 + (N-Q+2) * (Q < N+2));
1050 PRINT RIGHT$ (X$, N * (Q > N) + (Q-1) * (Q <= N));
1060 RETURN
```

Published Date: Feb 18, 2012

TA47458_Lisa_Restart_After_Installing_the_Dictionary_(TIL00910).pdf

Lisa: Restart After Installing the Dictionary

This article has been archived and is no longer updated by Apple.
Even though the Lisa often restarts after installing the dictionary, this restart does not necessitate repairing the hard disk. You may begin using the system immediately.
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AppleTalk Remote Access: Answers Only One Call at a Time

Can several people call into AppleTalk Remote Access simultaneously?

This article has been archived and is no longer updated by Apple.

Because AppleTalk Remote Access was designed as a personal networking service geared toward the individual, it can answer only one call at a time. In addition, Apple wanted the product to be both affordable and easy to set up. Allowing more than one line would increase its complexity and cost.

Published Date: Feb 18, 2012

AppleWorks 6: Presentation Transitions Do Not Work When Mirroring

When mirroring an AppleWorks 6 presentation to a second display, slide transitions do not appear on the mirrored display, or they may appear to stutter as they are drawn.
This article has been archived and is no longer updated by Apple.

Symptom

When mirroring an AppleWorks 6 presentation, slide transitions do not appear on the mirrored display, or they may appear to stutter as they are drawn.

Solution

Update to AppleWorks 6.2 or later and QuickTime 5 or later. You may get updates from Apple Software Downloads (http://www.apple.com/swupdates/).

Published Date: Feb 18, 2012

Apple Remote Access: Use AppleEvents at 9600 bps

Can I use AppleEvents over an Apple Remote Access (ARA) connection?
This article has been archived and is no longer updated by Apple.
Yes. Any AppleTalk based service should work fine.

However, there may be time-out problems at low modem speeds. In the case of AppleEvents, the NBP time-out value is not long enough to handle speeds lower than 9600 bps.
Published Date: Feb 18, 2012

Apple Remote Access: AppleTalk Phase I and Phase II

Can Apple Remote Access (ARA) work on Phase I and II AppleTalk networks?

This article has been archived and is no longer updated by Apple.

No version of Apple Remote Access was tested on a network using AppleTalk Phase I and is therefore not supported. Although ARA may work on some network configurations that are using both AppleTalk Phase I and Phase II you do so at your own risk.

There are no practical reasons for continuing to use Phase I on AppleTalk networks, Apple strongly recommends using Phase II.

Published Date: Feb 18, 2012

AppleTalk Remote Access: AppleTalk v57 and Multinode

Does AppleTalk Remote Access (ARA) 1.0 use a new version of AppleTalk?
This article has been archived and is no longer updated by Apple.
Yes. A new version of AppleTalk (version 57) was created specifically for AppleTalk Remote Access. One of the key components in version 57 is a new technology called "multinode." Multinode allows an AppleTalk device (that is, a Macintosh) to acquire and defend multiple AppleTalk nodes.

Apple Remote Access version 2.0 installs AppleTalk version 58.1.3 on your Macintosh.

NOTE: Some older routers may have problems in dealing with the multinode technology. In these rare cases, NBP lookups may not get returned, making it look as if there are no services on the network you've called.
Published Date: Feb 18, 2012

AppleTalk Remote Access 1.0: Coexisting w/ Other Products

Can I install and use these products on the same Macintosh with AppleTalk Remote Access (ARA) v1.0?

- AppleShare 2.0
- AppleShare Server 3.0
- AppleTalk Internet Router 2.0
- Apple SNA*ps Gateway

This article has been archived and is no longer updated by Apple.

AppleShare 2.0

AppleShare 2.0 doesn't work with System 7. Because AppleTalk Remote Access only runs on System 7, this combination won't work.

AppleShare Server 3.0

AppleTalk Remote Access and AppleShare Server 3.0 work together on the same Macintosh. In this configuration, Remote Access users are administered via the AppleShare Server 3.0 Admin program.

AppleTalk Internet Router 2.0

AppleTalk Remote Access and the AppleTalk Internet Router 2.0 cannot run concurrently on the same Macintosh.

Apple SNA'ps Gateway

The SNA'ps Gateway product and AppleTalk Remote Access can reside and run on the same Macintosh.

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AppleTalk Remote Access 1.0: Memory Requirements

How much memory does AppleTalk Remote Access (ARA) require in its minimum configuration? Can I run my favorite word processor and spreadsheet while maintaining a remote link to a network?
This article has been archived and is no longer updated by Apple.
AppleTalk Remote Access 1.0 requires approximately 450K of RAM when calling into another Remote Access system; answering requires an additional 110K of RAM. Generally speaking, this would leave between 230-330K of memory free
in a 2MB system for other activities.

You can quit the Remote Access application while maintaining the remote connection. This frees roughly 200K of memory.

AppleTalk Remote Access works well in a 2MB environment. But if you want to keep several applications open (using the multitasking feature of System 7) while maintaining a remote connection, you should consider increasing the RAM in your system.
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AppleTalk Remote Access: Writing Modem Scripts

Is there any documentation available to help write modem scripts for AppleTalk Remote Access (ARA)?
This article has been archived and is no longer updated by Apple.
Those interested in writing their own scripts can order the "AppleTalk Remote Access Modem Toolkit" (part number R0129LL/A) from APDA, Apple's source for developers' tools. This kit provides all the tools and information necessary to build an AppleTalk Remote Access modem script.

Apple Remote Access MultiPort Server comes with the Modem WorkShop. It includes instructions for writing scripts and descriptions of all the CCL commands. It is intended for experienced programmers with a good understanding of telecommunications and modem operations.
Published Date: Feb 18, 2012

TA47467_LisaDraw_Printing_point_bold_italic_text_(TIL00911).pdf

LisaDraw: Printing 18-point bold italic text

This article has been archived and is no longer updated by Apple.
Even though 18-point bold italic appears to be fine on the screen, it may grow 10 to 15% in size when printed, possibly overrunning any boxes it may have been placed in or graphics it was placed close to.
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AppleTalk Remote Access: Modem Speed Requirements

Can I use any speed modem with AppleTalk Remote Access (ARA) v 1.0 or Apple Remote Access 2.0?

This article has been archived and is no longer updated by Apple.

Any modem with a data rate of 2400 bps or higher can work with either. Most importantly, you need the appropriate modem script for your modem. Apple recommends 9600 bps or higher for best performance. Contact your modem vendor for the latest modem script.

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AppleTalk Remote Access: Compatible Modems

What modems are compatible with AppleTalk Remote Access 1.0 (ARA) and Apple Remote Access 2.0?
This article has been archived and is no longer updated by Apple.
ARA can work with any modem for which a special modem communications script has been written. AppleTalk Remote Access includes scripts for a variety of popular modems on the disks. Contact your modem vendor for updates to your modem script.

AppleTalk Remote Access includes scripts for the following modems:

v.22/2400 bps Modems

All Apple 2400 bps modems
Abaton InterFax 24/96
Global Village TelePort
Hayes SmartModem 2400
Microcom Microport 1024
Practical Peripherals 2400SA
Prometheus 2400M
Supra SupraModem 2400
US Robotic Courier 2400e

v.32/9600 & v.32bis bps Modems

DSI 9624 LE/LE Plus
Hayes Ultra 96
Farallon Remote V.32
Microcom MacModem V.32
MultiTech MultiModemV32
Practical Peripherals 9600SA
Prometheus ProModem Ultima
Telebit T1600
US Robotics Courier V.32 bis
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AppleTalk Remote Access: Using w/ Apple IIe Emulation

Can I use AppleTalk Remote Access (ARA) in Apple II emulation mode on a Macintosh LC with an Apple IIe Card?

This article has been archived and is no longer updated by Apple.

Yes. You must establish the connection before going into emulation mode. Once established, you can access network services via the Apple II control panel.

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AppleTalk Remote Access: Securing the AppleTalk Network

Are services and workstations on an AppleTalk network secure against unauthorized access from a dial-up link?
This article has been archived and is no longer updated by Apple.
AppleTalk Remote Access has several sophisticated security options that allow both the individual user and the network administrator to restrict access to an individual computer or any network to which it is connected.

User-Controllable Options

- User name and password authentication. Callback verifies the user's identity by returning calls to a predetermined phone number.
- An Activity Log for recording calling and answering activities.
- Disabling of user account after seven incorrect password attempts.

Network Administrator Options

Answering authentication allows a network administrator to password-protect the network from unauthorized remote access. This is enabled by creating a unique security zone (SecurityZone_) on the Internet. The administrator uses a special HyperCard stack to generate the SecurityZone and encrypted password.

This HyperCard stack and documentation is available on the two APDA AppleTalk Remote Access toolkits, on several on-line services, and on the Information Source CD-ROMs.
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Apple Remote Access: Using Personal File Sharing

Can I use Macintosh File Sharing at the same time as Apple Remote Access (ARA)? Are other network services available to me through the Remote Access product?

This article has been archived and is no longer updated by Apple.

Yes. Macintosh Personal File Sharing and Apple Remote Access Personal Server or Client can coexist on the same system without any problems. With this combination, access to files on your home or office computer is available from anywhere.

You cannot however, use the ARA MultiPort Server software concurrently with Personal File Sharing. The ARA MultiPort Server software uses the same Users & Groups file format as the AppleShare File Server, so Personal File Sharing is disabled. Also Apple Remote Access MultiPort Server is not compatible with AppleShare 3.0.x. AppleShare 4.0.1 and later are the correct AppleShare versions to use.

In addition, if the answering Macintosh is connected to an AppleTalk network, all the network resources like E-mail, file services, group calendars, host gateways, and so on (assuming the presence of network software and gateways needed) will be available. The only caveat is that the calling Macintosh must have the appropriate client software installed in order to use these services.

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AppleTalk Remote Access: Doesn‘t Power On Remotely

If the Macintosh I wish to dial into is not powered on, can AppleTalk Remote Access (ARA) wake it up?
This article has been archived and is no longer updated by Apple.
AppleTalk Remote Access does not have the ability to turn on power to a remote Macintosh.

There are third-party "wake up" products you can use in conjunction with AppleTalk Remote Access. After you wake up the Macintosh with one of these products, you can call back the remote Macintosh and connect in the normal fashion with AppleTalk Remote Access. Sophisticated Circuits offers such a remote "wake up" product called PowerKey Remote.
Published Date: Feb 18, 2012

Apple Remote Access: Works in the Background

When you turn Remote Access (ARA) answering on, can you still use the system for other things?
This article has been archived and is no longer updated by Apple.
Yes. AppleTalk Remote Access 1.x, 2.x, and Apple Remote Access 3.x work completely in the background.
Published Date: Feb 18, 2012

PowerBook: Disable ARA "Answer Calls" to Send Fax (11/94)

I'm having difficulty sending a Fax from my Macintosh PowerBook 170 with internal AppleFax Modem. Everything seems fine until just after the Fax Monitor Status says "Imaging Document." I get a status of "Waiting for modem" and it never dials. I tried sending the sample document included with the Fax software as well as sending a document from within MacWrite. This seems to be a problem only with the Macintosh PowerBook 170 and Fax.

This article has been archived and is no longer updated by Apple.
You need to disable the Remote Access Setup (ARA) "Answer Calls" option. As long as the Remote Access Setup "Answer Calls" option is enabled, the Macintosh PowerBook AppleFax Modem software will remain in a "Waiting for modem" status when trying to send a Fax.

Article Change History:
28 Nov 1994 - Updated.

Support Information Services

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PowerBook: Third Party Memory Cards

This article lists some of the companies that make memory expansion modules for Macintosh PowerBook computers. Contact the vendor for availability and additional information.
This article has been archived and is no longer updated by Apple.
Here are some companies to contact:

- Lifetime Memory Products, Inc.
- Newer Technology
- Southland
- TechWorks

Note: This article provides information about non-Apple products. Apple Computer, Inc. is not responsible for its content. Please contact the vendor(s) for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.
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DAL for A/UX: Details and System Requirements

This article gives the product details, language specifications, and system requirements for using Data Access Language (DAL) for A/UX.
This article has been archived and is no longer updated by Apple.
NOTE: As of December 1993, Independence Technologies, Inc. (ITI) took ownership of the DAL technology. Contact ITI for current product information.

Product Details

- Database Support
- Informix version 2.1 or later
- Ingres version 6.1 or later
- Oracle version 6.0

- Client Support
Uniform support for any application developed with the DAL Developer's Toolkit for the Macintosh using a supported network

- Network Support
- Asynchronous direct and dial-up connections
- Support for TCP/IP standard UNIX network protocol using Apple's MacTCP software program on the Macintosh computer.

- Asynchronous Communications
- Transmission speed: 300 to 19,200 baud
- Character length: 7 or 8 data bits; 1 or 2 stop bits
- Parity: odd, even, or none
- Handshake
- XON/XOFF and none
- Modem and direct connections
- Log-on sequence specification
- Protocol
- Error-correcting (16-bit CRC)
- Data compression
- Binary data transparency

Language Specifications

DAL is a complete language for describing connectivity tasks. It consists of these statement groups:

- Host Connection Statements
These establish and terminate a connection to a host system in the network. This provides concurrent access to multiple hosts running DAL Servers.

- Data Manipulation Statements
These offer complete ANSI standard level 1, SQL-based data access to host databases.

- Program Structure Statements
These support testing, looping, and procedure calls within a DAL program.

- Output Statements
These generate output messages from the DAL program. The client application software processes these messages.

System Requirements

To use the DAL Server for A/UX, you need the following hardware and software:

- Host environment: A/UX version 2.0 or later. We recommend the A/UX CD-ROM product or the A/UX floppy product. We don't recommend the A/UX external 80MB hard disk because it doesn't contain the software you need to repartition the disk for the DAL Server for A/UX.

- One of the supported database management systems

- Macintosh computer clients running DAL-compatible application programs.

- The appropriate networking hardware and software
Published Date: Feb 18, 2012

AppleWorks: Printing from Brother Printer

This article describes printing tips to use with a Brother Printer when printing from AppleWorks using an Apple IIc or IIe computer.
This article has been archived and is no longer updated by Apple.
Since the Brother printer requires certain escape sequences to include a CTRL-I, the escape sequences in the Brother Manual may have to be modified in order to avoid interface cards from "trapping" the CTRL-I in the card. This occurs in the following situations:

1. Apple IIe with Super Serial Card -- add the following IN FRONT OF THE NORMAL SEQUENCE: <CTRL-I> Z RETURN

2. Apple IIc -- add the following IN FRONT OF THE NORMAL SEQUENCE: <CTRL-I> Z

3. Apple IIe with Apricorn parallel card and parallel Brother printer add the following IN FRONT OF THE NORMAL SEQUENCE: <CTRL-I> <CTRL-A>

Also, Brother's 10-pitch command requires a carriage return as part of the sequence, which does not appear to ever get to the printer. Instead, use the "set to switch command" (<ESC>S) to get back to 10-pitch.

BEST DIP SWITCH SETTINGS FOR APRICORN PARALLEL CARD

Switch	1	2	3	4
ON	X	-	-	-
OFF	-	X	X	X

These settings force an 80-column mode and turn off the screen while printing, just like the serial card does.

APPLEWORKS PRINTER CODES TO USE:

Interface Cards (version 1.2) -- none

10-pitch -- <ESC>S

12-pitch -- <ESC><CTRL-_><CTRL-K>

15-pitch -- Super Serial Card: <CTRL-I>Z<RETURN><ESC><CTRL-_><CTRL-I>

IIc: <CTRL-I>Z<ESC><CTRL-_><CTRL-I>

Parallel Card: <CTRL-I><CTRL-A><ESC><CTRL-_><CTRL-I>

6-LPI -- Super Serial Card: <CTRL-I>Z<RETURN><ESC><CTRL-6><CTRL-I>

IIc: <CTRL-I>Z<ESC><CTRL-6><CTRL-I>

Parallel Card: <CTRL-I><CTRL-A><ESC><CTRL-6><CTRL-I>

8-LPI -- <ESC><CTRL-6><CTRL-G>

Bold Begin: <ESC>F	Bold End: <ESC>&
Subscript Begin: <ESC>U	Subscript End: <ESC>D
Superscript Begin: <ESC>D	Superscript End: <ESC>U
Underline Begin: <ESC>E	Underline End: <ESC>R

Published Date: Feb 18, 2012

Quadra 900 & 950: Internal Hard Drives Must Not Be Terminated

Internal hard drives on the Quadra 900 & 950 must NOT be terminated. All Apple and third-party internal SCSI drives have terminating resistors that must be removed before installing in the Quadra 900 & 950.

This article has been archived and is no longer updated by Apple.
If an internal hard drive is terminated, it will likely damage the Quadra 900 & 950's logic board. This occurs because the Quadra 900 & 950's logic board has active SCSI termination. If a SCSI device is installed with terminating resistors, it will overload the SCSI chip on the logic board and probably cause it to fail. Adding more SCSI devices will increase the load on the SCSI chip and make the failure more likely.

This situation is noted in the Technical Procedures for the Quadra 900 & 950 on
pages 1.6 and 2.11.

Article Change History:

29 Nov 1994 - Reviewed and updated.
26 Jan 1993 - Updated to include the Quadra 950.

Support Information Services
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DAL Server for MVS/VTAM: Features & Benefits

This article describes the Data Access Language (DAL) Server for MVS/VTAM.
This article has been archived and is no longer updated by Apple.
The DAL Server for MVS/VTAM is a multi-user server product that provides DAL access to IBM Database 2 (DB2) and Teradata DBC/1012 databases on an MVS host system. The DAL Server works cooperatively with personal computer applications that support DAL (such as spreadsheets, databases, and query tools running on Macintosh computers) while running under MVS, either directly through native VTAM or under CICS.

A complete connectivity setup for MVS includes a client personal computer running an application with embedded DAL support and an MVS host with the DAL Server. The DAL Server receives requests from the personal computer application, carries them out on MVS against DB2 or DBC/1012, and sends the desired data back to the application for desktop processing.

The DAL Server for MVS/VTAM provides uniform support for DAL-based applications. It works with existing DB2 and DBC/1012 databases, operating under standard MVS, DB2, and Teradata security. As a result, you receive transparent access to the data that you have authorization to access.

Features

- Operates as an MVS Batch Job either directly accessed through native VTAM or a CICS Passthru connectivity

- Uniform support for DAL clients

- Asynchronous operation

- Incremental compiler implementation

- Trace facility

- Additional product, an interactive utility (IDAL) for testing DAL program statements

- Stored procedures

- Sample tables

- Support for Macintosh computers connected by way of Apple's Coax/Twinax, TokenTalk NB and Serial NB cards, Avatar's MacMainFrame, DCA's MacIRMA, TriData's Netway 1000/2000 products, Apple's SNA*ps APPC and 3270 Gateways as well as asynchronous dial-in to a protocol converter (supporting VT100 terminal type).

- Support for Macintosh computers connected asynchronously to a host computer with a compatible protocol converter installed

Benefits

- Maintains the security and integrity of MVS, DB2, and Teradata systems.

- Allows one server to support all personal computers running DAL-compatible Macintosh applications.

- Once the connection is made, returns program control to the Macintosh so that the user can perform other tasks while the DAL Server carries out the requested operation on the host.

- Improves performance for repetitive requests.

- Reduces the client system processing load.

- Facilitates debugging and system tuning.

- Minimizes network traffic by storing commonly executed procedures on the host, where they can be shared.

- Makes developing and testing applications easier.

- Allows you to run applications on Macintosh computers regardless of the hardware connection to the host.
Published Date: Feb 18, 2012

DAL Developer‘s Toolkit for Macintosh: Details & Requirements

This article gives the product details, language specifications, and system requirements for the Data Access Language (DAL) Developer's Toolkit for the Macintosh.
This article has been archived and is no longer updated by Apple.

Product Details

- Supplied Software
- DAL device driver and driver installer
- C and Pascal call libraries
- Interactive DAL tester
- Sample applications, including source code
- DAL HyperCard XCMDs, including source code and sample stack
- DAL documentation in HyperCard Help stack

- Network Support
- Asynchronous communication, by way of direct or dial-up links
- Support for the AppleTalk network system based on the AppleTalk Data Stream Protocol (ADSP)
- Support for TCP/IP using Apple's MacTCP networking software
- Support for the 3270 data streams and APPC (LU6.2) networking protocols
- Support for connections to IBM hosts using Avatar's MacMainFrame, DCA's MacIRMA, and TriData's Netway 1000/2000 products
- Asynchronous communication to IBM hosts equipped with protocol converters

Language Specifications

DAL is a complete language for describing connectivity tasks. It consists of these statement groups:

- Host Connection Statements
These establish and terminate a connection to a host system in the network, providing concurrent access to multiple hosts running DAL Servers.

- Data Manipulation Statements
These offer complete ANSI standard level 1, SQL-based data access to host databases.

- Program Structure Statements
These support testing, looping, and procedure calls within a DAL program.

- Output Statements
These generate output messages from the DAL program. The client application processes these messages.

- Execute Statement
This permits execution of DBMS-specific commands not directly supported by DAL.

System Requirements

To use the DAL Developer's Toolkit for the Macintosh, you need the following hardware and software:

- A Macintosh personal computer

- Macintosh system software version 6.0.5 or later

- The appropriate hardware and software for a supported network

- Access to a host computer with a DAL Server, and a database management system and networking software supported by DAL.

Published Date: Feb 18, 2012

DAL Server for MVS/VTAM: Details and System Requirements

This article gives the product details, language specifications, and system requirements for using the DAL Server for MVS/VTAM.
This article has been archived and is no longer updated by Apple.

Product Details

- Database Support
- Provides access to DB2 databases, version 1.3 or later
- Provides access to Teradata DBC/1012 databases, version 4.1 or later

- Optional CICS Support

A CICS Passthru program runs as a standard CICS transaction program that provides optional CICS support.

- Client Support

Provides uniform support for any application developed with the DAL Developer's Toolkit for the Macintosh using a supported network.

- Network Support
- Provides 3270 data-stream and APPC support. Allows SNA or non-SNA connection.
- The client must have the supported 3270 hardware and software to emulate a 3278-type device or the supported hardware and software to do APPC communications:
- MacDFT software and either the Apple Coax/Twinax Card, Apple Serial NB Card, or the Apple TokenTalk NB Card for the Macintosh II family of computers
- Avatar's MacMainFrame, DCA's MacIRMA, and TriData's Netway 1000/2000 connectivity products
- Asynchronous support to hosts equipped with an appropriate protocol converter
- APPC (LU6.2) support via Apple's SNA*ps Gateway

- Resource Usage
- 1MB of disk storage
- 8MB of address space recommended
- Test program verifies correct installation and usage

Language Specifications

DAL is a complete language for describing connectivity tasks. DAL consists of these statement groups:

- Host Connection Statements

These establish and terminate a connection to a host system in the network, providing concurrent access to multiple hosts running DAL Servers.

- Data Manipulation Statements

These offer complete ANSI standard level 1, SQL-based data access to host databases and files.

- Program Structure Statements

These support testing, looping, and procedure calls within a DAL program.

- Output Statements

These generate output messages from the DAL program. The client application processes these messages.

System Requirements

To use the DAL Server for MVS/VTAM, you need the following software and hardware:

- Host Environment
- MVS/XA version 2.2 or later, or MVS/ESA version 1.0 or later running VTAM version 3.1 or later.
- For the CICS Passthru Program, CICS 1.7 or later with LU6.2 support is required.
- DB2 version 1.3 or later.
- Teradata DBC/1012 version 4.1 or later.

- Macintosh computer clients running DAL-compatible applications

- Appropriate networking hardware and software

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Data Access Language Server for VAX/VMS: Features & Benefits

This article describes the Data Access Language (DAL) Server for VAX/VMS.
This article has been archived and is no longer updated by Apple.
The DAL Server for VAX/VMS is a networking software product that provides DAL access to files and databases on a VAX/VMS host system. The DAL Server runs on a VAX/VMS host and works cooperatively with personal computer applications that support DAL, such as spreadsheets, databases, and query tools on Macintosh computers.

A complete connectivity setup for VAX/VMS includes a client personal computer running an application with embedded DAL support, and a VAX/VMS host with the DAL Server. The DAL Server receives requests from the personal computer application, carries them out on the VAX, and sends the desired data back to the application for local processing.

The DAL Server for VAX/VMS provides uniform support for DAL-based applications, through a variety of network configurations and VAX/VMS data management software. It works with existing VAX/VMS databases, operating under standard VMS and database security. Your Macintosh computer receives transparent access to the VAX data you are authorized to access.

Features

- Server operates as a user process under standard VMS user name/password security

- Uniform support for DAL clients

- Uniform concurrent support for VAX databases

- Standard VAX/VMS installation procedures

- Asynchronous operation, after connection is established.

- Incremental compiler implementation

- Trace facility

- Interactive utility for testing DAL program statements

- Stored procedures

- Sample tables

- Wide range of commercial applications with DAL connectivity available

Benefits

- Maintains the security and integrity of VAX/VMS and the database management system.

- Eliminates the need for new system administration procedures on the VAX.

- Allows one server to support all Macintosh computers running DAL- compatible applications.

- Insulates personal computer applications from the complexities of the database used.

- Supports multivendor environments.

- Makes installation quick and easy.

- Returns program control to the Macintosh so the user can perform other tasks while the DAL Server carries out the requested operation on the host.

- Reduces the client system processing load.

- Facilitates debugging and system tuning.

- IDAL ensures proper connection, installation, and operation of host server.

- Minimizes network traffic by storing commonly located procedures on the host, where they can be shared.

- Makes developing and testing applications easier.

- Provides spreadsheet, query tool, and mapping tool users with seamless host data integration with no programming effort.

Published Date: Feb 18, 2012

DAL Server for VAX/VMS: Details and System Requirements

This article gives the product details, language specifications, and system requirement for using Data Access Language (DAL) Server for VAX/VMS.
This article has been archived and is no longer updated by Apple.

Product Details

- Database Support
- Informix version 2.1 (or later)
- Ingres version 6.1 (or later)
- Oracle version 5.1.22 (or later)
- Oracle version 6.0
- Rdb/SQL version 3.1 (or later)
- Sybase SQL Server version 3.0 (or later)

- Client Support
Uniform support for any application developed with DAL Developer's Toolkit for the Macintosh using a supported network

- Network Support
- Asynchronous direct and dial-up connections
- Support for the AppleTalk network system (requires AppleTalk for VMS version 2.0.6 or later for Phase I and version 2.1 for Phase II), which is supplied with DAL Server for VAX/VMS.

- Asynchronous Communications
- Transmission speed: 300 to 19,200 baud
- Character length: 7 or 8 data bits; 1 or 2 stop bits
- Parity: odd, even, or none
- Handshake
- XON/XOFF and none
- Modem and direct connections
- Log-on sequence specification
- Protocol
- Error-correcting (16-bit CRC)
- Data compression
- Binary data transparency

- Resource Usage
- 1MB of disk storage
- Proper usage verified by test program
- One sharable, reentrant 200K-300K process shared by all attached
Macintosh applications

Language Specifications

DAL is a complete language for describing connectivity tasks. DAL consists of these statement groups:

- Host Connection Statements
These establish and terminate a connection to a host system in the
network, providing concurrent access to multiple hosts running DAL
Servers.

- Data Manipulation Statements
These offer complete ANSI standard level 1, SQL-based data access to host databases.

- Program Structure Statements
These support testing, looping, and procedure calls within a DAL program.

- Output Statements
These generate output messages from the DAL program. The Client application processes these messages.

System Requirements

To use the DAL Server for VAX/VMS, you need the following:

- Host environment: VAX/VMS version 5.1 (or later)

- Macintosh computer clients running DAL-compatible applications

- One or more of the supported database management systems

- The appropriate networking hardware and software

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PowerBook: Which Models Support SCSI Disk Mode

Which PowerBook models allow mounting of the PowerBook computer's internal hard drive as a Small Computer Systems Interface (SCSI) device on the SCSI chain of a desktop Macintosh computer, also called SCSI Disk Mode?
This article has been archived and is no longer updated by Apple.
PowerBook Models Using SCSI Disk Mode
The SCSI Disk Mode feature exists on all PowerBook models except the PowerBook 140, 145, 145B, 150, and 170. Those PowerBook computers that DO support the feature have it coded into their read-only memory (ROM) on the logic board.

PowerBook Models Using HD Target Mode
When you are using a PowerBook 190 or 5300 series computer, this disk mode function is no longer called SCSI Disk Mode. It is called HD Target Mode because these PowerBook models have an integrated drive electronics (IDE) hard drive, not a SCSI hard drive. Although the terminology is different, the function is the same.

Which SCSI Cable?
You must use the appropriate SCSI cable for SCSI Disk Mode. The part number for the Apple HDI-30 Disk Adapter cable is M2539LL/A.

You can distinguish the Disk Adapter cable from a standard PowerBook SCSI cable by looking at the number of pins in the connector on the end of the cable that plugs into the PowerBook.

* The Apple HDI-30 Disk Adapter (M2539LL/A) cable's connector has 30 pins. It is the thirtieth pin that puts the computer into SCSI Disk or HD Target Mode.

* The Apple HDI-30 SCSI System (M2538LL/A) cable's connector has 29 pins. It is used to connect external SCSI devices, like CD-ROMs and hard drives, to your PowerBook computer.

What About PowerBook Duo Computers?
For the PowerBook 200 and 2300 Series (Duo) computers, you must use the Apple HDI-30 Disk Adapter cable in addition to the Duo MiniDock to enable the Duo to be used in SCSI Disk Mode.

NOTE The Duo Dock, Duo Dock II, and Duo Dock Plus do not support SCSI Disk Mode. When a PowerBook Duo computer is docked (except for the MiniDock) its SCSI capabilities are the same as any other desktop Macintosh computer, none of which support any kind of SCSI Disk or Target mode function.

This article was published in the Information Alley on 17 September 1996.
Published Date: Feb 18, 2012

PowerBook: International Travel & Overseas Purchase

What are the legal requirements for travelling with PowerBook computers internationally? What do you advise to avoid damaging the unit and/or voiding the warranty?

What government regulations do I need to be aware of for units purchased overseas (in particular Europe and the Far East), and brought into the U.S.?
This article has been archived and is no longer updated by Apple.
There are export restrictions on PowerBook computers. You should contact the local U.S. Customs Department to find out what paperwork you'll need to export and import the equipment. If the value of the equipment is over $2500, you also need to contact the local Department of Commerce and obtain a Shipper's Invoice.

You should not check the unit with luggage. If you must check it, use the original box. To avoid damage while travelling, a well padded and durable case should be used to transport the PowerBook. Be sure the battery is charged to demonstrate that the unit is functional.

Apple has a global warranty so that products purchased in or out of the United States can be repaired at any Apple authorized service provider. Be aware that parts availability may be limited and as a consequence, repair times may be extended while out of the country of original purchase. Be sure to have your proof of purchase with you when travelling overseas to validate warranty coverage.
Published Date: Feb 18, 2012

TA47488_PowerBook_Macintosh_Classic_II_No_Support_for_System__(TIL09140).pdf

PowerBook & Macintosh Classic II: No Support for System 6

Does system software version 6.0.7 work on the Macintosh Classic II and the Macintosh PowerBook? If not, why not?

This article has been archived and is no longer updated by Apple.
The Macintosh PowerBook models and the Macintosh Classic II DON'T SUPPORT system software version 6.0.7 or version 6.0.8.

The software may work on the Macintosh PowerBook 100, but the backlit screen support, battery DA, and Low Power Dialogs won't work. The PowerBook 140 and 170 don't support System 6.0.x due to the newer ROM and other modifications in those systems.

The Macintosh Classic II has a different processor, and applications may have problems due to the different processor. You may not be able to install or start up with version 6.0.7 or 6.0.8 on the Macintosh Classic II.

Apple Computer won't answer questions based on problems associated with
running system software versions 6.0.7 or 6.0.8 on any of these computers.

Article Change History:
29 Nov 1994 reviewed and updated.

Support Information Services

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Macintosh Quadra 700 and 900: Answers to Common Qs (11/94)

This article answers common questions about the Quadra 700 and 900 computers.

This article has been archived and is no longer updated by Apple.

Q. Can the key position be sensed through software?
A. There is no way to detect the key position through software.

Q. Why didn't Apple use the IIfx RAM? Don't the latched writes speed up the CPU?
A. Apple didn't use the IIfx RAM on the Quadras because it wasn't necessary. The writes are "latched" on the 68040 itself, so we didn't need to do it externally. In other words, if the 68040 needs to do a read and a write at the same time, it will do the read first (since it needs to read data to continue). It saves the write data until the read is done, and then it will write.

Q. How can we get the physical Ethernet address of built-in Ethernet?
A. The Ethernet address is not available via system call.

Q. What is the speed of VRAM?
A. The minimum speed of the VRAM is 100ns, but Apple's upgrade package will be 80ns to assure future compatibility.

Q. Does Apple support 24-bit mode on the 21-inch Color Display? A. When we designed the frame buffer controller, the 256K VRAM SIMMs were the only SIMMs Apple was using (in the Display Card 8*24). The design goal was to use 4 banks of VRAM so that we could do "four-way-bank- interleaving." This is a method for getting the data out of the four banks in a staggered fashion, since no single bank could provide data fast enough to refresh most monitors at higher bit depths.

If we used larger densities of VRAM (that is, 512K), we still couldn't obtain 24-bit on the 21-inch display because the video driver chip (RAM-DAC aka AC/DC) could not support the clock speeds required to do 24-bits on a 21-inch monitor. This would require a much more expensive RAM-DAC. We would have to use 64-bit data paths in the frame buffer, which would have been prohibitively expensive for a main logic board solution.

Q. Does Apple's Display Card 8*24 support the 21-inch Color Display in 24-bit?
A. The Macintosh Display Card 8*24 doesn't support the 21-inch Color Display at 24-bit (2MB is not enough). The RasterOps 24-bit card provides a third-party solution.

Q. Is the 21-inch Color Display supported by the on-board video on the Macintosh IIci, IIsi, or LC?
A. The 21-inch Color Display isn't supported by the on-board video on the Macintosh IIci, IIsi or LC.

Q. Is the AppleCD SC drive supported internally by the Quadra?
A. The older AppleCD SC drive is not supported internally by the Quadra 900.

Q. What is a Pseudo Block transfer?
A. The term "Pseudo Block transfer" is really a 68040 term that indicates what type of system bus cycle we run when a Move16 instruction moves data to/from a NuBus board. Developers should use Move16 in their I/O drivers for higher throughput.

Q. Is the Symantec compiler compatible with the 68040 CPU?
A. Version 5.0 of the Symantec compiler is compatible with the 68040 CPU.

Q. Why isn't there 16-bit monitor support on the internal video as on the Macintosh LC?
A. We don't have 16-bit monitor support because the CLUT-DAC chip we use to generate the video control signals doesn't have a 16-bit mode. We couldn't use the CLUT-DAC chip from the LC because our video operates at higher frequencies (up to 100 MHz), which weren't supported by the LC CLUT-DAC.

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29 Nov 1994 -
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Macintosh Quadra: AppleTalk Phase II Only

While working with a Macintosh Quadra 900 on an AppleTalk Phase 1 network, when I selected the Phase 1 icon under the network icon, I got the message "an error has occurred using LocalTalk."

Is AppleTalk Phase 1 not supported on the Quadra on-board Ethernet?
This article has been archived and is no longer updated by Apple.
Ethernet on all Macintosh Quadra computers is Phase II only.
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TA47491_AUX_Multiple_Macintosh_Partitions__(TIL09144).pdf

A/UX 3.0: Multiple Macintosh Partitions (11/94)

Will A/UX 3.0 support multiple Macintosh partitions on the same hard drive with Apple HD SC Setup?

This article has been archived and is no longer updated by Apple.
If a disk is set up with multiple Macintosh partitions, A/UX 3.0 will mount them all. However, A/UX doesn't include a tool to create them. Apple HD SC Setup will still be limited to creating only one Macintosh partition per disk. Third party utilities that support UFS and HFS file systems can create multiple Macintosh partitions.

Article Change History:
29 November 1994 -
Support Information Services

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PowerBook: Urethane-Based Paint Recommended for ID Label

I want to paint my company name on my PowerBook for security and identification purposes. What type of paint does Apple recommend for the Macintosh PowerBook?

This article has been archived and is no longer updated by Apple.

You should use a urethane-based paint. Be sure to use a primer coat on the polycarbonate plastics first because the finishing paint will not adhere directly to the polycarbonate.

Published Date: Feb 18, 2012

Ethernet NB Card: Cables, Connections, Termination

This article contains the following questions and answers about the Ethernet NB Card, regarding termination and compatibility:

1) Regarding the Ethernet NB Card and thin coax cable, is the termination supplied by the Apple Ethernet Thin Coax Transceiver, or the Apple Ethernet 5/13-meter cable, or both?

2) Would the new self-terminating thin coax cable work if connected to the older EtherTalk NB card (various revs) with a T connector? If so, would a terminator on the T be necessary?

3) Regarding question 2, what if we wish to connect the old card to a new card/CPU with built-in AAUI port? How can the two different cards/ports be connected using the new thin or thick coax cabling/transceivers? Would they need to use standard coax cable or can they use the Apple cable?

Example: We want to connect a Macintosh IIfx with a Rev. M EtherTalk NB card to a Quadra 900, with built-in Ethernet. We now must connect the Rev. M card with a T connector to the AAUI thin coax transceiver on the Quadra 900. Are the cards compatible or is it the cabling?

4) Will the Synoptics concentrators support Apple Ethernet NB cards?

5) Will the current network configuration allow us to use the Apple LaserWriter IIg directly from the RJ-45 ports?
This article has been archived and is no longer updated by Apple.
1) Both the Apple Ethernet Thin Coax Transceiver and the Apple Ethernet 5/13-meter cables have the ability to supply termination. In regard to the Apple Ethernet Thin Coax Transceiver, there are two BNC connectors on the transceiver. If a cable isn't attached to one or both of these BNC connectors, termination is applied. When cables (any cables, Apple or non-Apple) are attached to both connectors, termination is not applied.

The Apple Ethernet 5-meter Thin Coax Cable and Apple Ethernet 13-meter Plenum Cable have terminators at each end of the cables. When nothing is attached at either end of the cable, termination is applied at the end of the cable where nothing is attached.

2) Yes, but the Apple Ethernet 5-meter Thin Coax Cable and Apple Ethernet 13-meter Plenum Cable are only self-terminating when an end is not connected to anything. If you are using an EtherTalk NB Card at the end of a network, the T connector will either need a terminator on the open end, or one of the self-terminating Apple cables attached with nothing connected at the other end of the cable.

3) There is no problem using non-Apple thin coax cable with the Apple Ethernet Thin Coax Transceiver, nor is there an issue using Apple Thin Coax Cable with the EtherTalk NB Card. The Apple Ethernet NB Card and AppleTalk NB Cards can be intermixed on a network with no issues.

4) Yes. The only caveat here is that the Synoptics concentrators must have a 10BaseT compatible card installed (Synoptics LatticeNet 3308 10Base-T Host Card, for example).

5) Yes, if the RJ-45 port is wired into a 10BaseT compatible host card (Synoptics LatticeNet 3308 10Base-T Host Card, for example).
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Macintosh II: Problems With Limelight Projector

I'm having problems using a Limelight projector with a Macintosh II. The resolution isn't very good.
This article has been archived and is no longer updated by Apple.
There are two problems with connecting a Limelight to a Macintosh II video card:

1. The Macintosh II video card has a 15 pin DB-style female connector, whereas the Limelight has a BNC female input.

2. The Macintosh II video signals are 35KHz for horizontal frequency and 66.67Hz for vertical scan rate. To properly display the video signal, a bandwidth of 21 MHz for monochrome and 22MHz for color is needed. The Limelight projector has a bandwidth of 20Mhz and a horizontal auto lock maximum frequency of 33Khz

The first problem can be fixed with a specially configured cable. We wired a Macintosh video cable to split the green signal on pin 5 to a BNC connector. This cable allowed connection of both the monitor and the projector. Another solution would be to contact Arizona Covid or Extron Electronics. These companies manufacture break-out cables and converter boxes. In this case, it would merely be a cable change. Although some enhancements (vertical and horizontal picture centering or color enhancement) are included in their converter boxes, this is not particularly useful on a monochrome projector like the Limelight. Since screen position controls are also supplied on the projector, a converter will probably not be needed.

The second problem is not as easily dealt with without modifications to the projector. Since its circuitry can not accept higher frequency data rates, there is some image loss. Also, the plastic lens of the projector can't focus all parts of the screen clearly, resulting in a good deal of blurring on the edges. (A curved-back screen helps somewhat.) Though the Limelight specification claims a maximum of 33 KHz for the horizontal scan rate, the projector we tested was able to handle a full line of video from the Macintosh at 35KHz. This may be a specification set below the performance level on the projector -- however, the Macintosh scan frequencies were pushing the limits of the projector: it took very little adjustment to the horizontal control to lose the signal. A black box is not likely to sharpen the image by modifying the signals, since the problems are inherent in the projector's ability to handle the resolution. As it stands, with a break-out cable the projector does display the Macintosh II video, though the image may be objectionable to some.

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TA47495_Macintosh_Classic_USJapan_Systems_Are_V_Only__(TIL09150).pdf

Macintosh Classic: US/Japan Systems Are 110V Only 10/91

I have a Macintosh Classic, and on the Power/Sweep-Board (805-0948-A) is a jumper that says 110/220 Volts. Is it simple to change to 220 Volts, 50 Hz for International use?

This article has been archived and is no longer updated by Apple.
The power supply for the US/Japan Macintosh Classic is 110V only. It cannot be switched to 220V. The power supply for the International Macintosh Classic is 220V only. There are different components installed on each power supply.

Modifying the power supply by changing the JP1 jumper to work within a different voltage is definitely not recommended and will void the warranty.

Article Change History:
29 Nov 1994 -
Support Information Services

Published Date: Feb 18, 2012

Apple Ethernet NB Card: 16-bit Bus Path and Tasks

I'm a developer with two questions about the Apple Ethernet NB card.

1) How many data bits does the card work with internally: 8, 16 or 32?

2) What is the use of the 68000 processor when using EtherTalk or MacTCP? Does any of that code run on A/ROSE and does it make the data transfer faster?

This article has been archived and is no longer updated by Apple.

1) The Apple Ethernet NB card has a 16-bit bus, and is comparable in performance to the older EtherTalk NB card.

2) Very few tasks are downloaded to the card (nothing on top of A/ROSE). So the on board 68010 mostly manages the DMA, off-loading little of the cycles and work required of the Macintosh's main logic board processor.

Incidentally, the SONIC chip used in the Ethernet NB card is 32-bit capable, and when used in Quadra systems is in 32-bit mode.

Published Date: Feb 18, 2012

A/UX: terminfo Decompiler (11/94)

Is there a terminal description decompiler available for terminfo?

I need to add a new terminal description for terminfo that is similar to what is already in the database. Is there a decompiler that will allow me to make small changes to an existing terminal type, without having to deduce the entire set of operating parameters?

This article has been archived and is no longer updated by Apple.
Public domain software called "untic" can "decompile" a terminfo description file. The README file and untic.1 manual page provide more information.

You can find public domain software from the usual sources, such as user groups.

These articles can help you locate software updates mentioned here:

* Where To Find Apple Software Updates
Lists online services for "free" Apple software updates

* Obtaining Apple Product Support in the USA
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Apple doesn't provide support for this software.

Article Change History:

29 Nov 1994 - 31 Aug 1992 - Reviewed For technical accuracy.

Published Date: Feb 18, 2012

TA47498_Macintosh_HFS_Technical_Documentation_Available__(TIL09156).pdf

Macintosh HFS: Technical Documentation Available (10/91)

I want to write a driver to allow the CD-ROM drive on my UNIX machine to read Macintosh HFS CDs. Is there any Apple documentation that describes HFS from the programmer's perspective?

This article has been archived and is no longer updated by Apple.
The detailed information of Macintosh HFS (Hierarchical File System) is described in "Inside Macintosh, Volume IV," pages 89 - 212 (The File Manager).

The following Macintosh Technical Notes relating to HFS might be useful:

TN 44 - HFS Compatibility
TN 66 - Determine Which File System Is Active
TN 68 - Searching All Directories on an HFS Volume
TN 77 - HFS Ruminations

You can request the Macintosh Technical Notes from APDA.

Also, the "Technical Introduction to the Macintosh Family" documentation
page 155 has information on the overview of HFS.

Article Change History:
29 Nov 1994 -
Support Information Services

Published Date: Feb 18, 2012

A/UX: Disabling AppleTalk for Serial ImageWriter Connection

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

We want to use a serial ImageWriter under A/UX. We don't have any network printer, and want to connect it on the printer port. To enable this, we reconfigured our kernel (newconfig noappletalk) to remove the AppleTalk connection on the printer port and then restarted to make this change effective.

After restarting, we opened the Chooser DA, and noticed that AppleTalk was still active. We selected the ImageWriter icon, and got the choice between Printer and Modem ports in the right window. As we selected Printer, we got a dialog box saying that AppleTalk will be disconnected. We chose OK and got the usual window reminding us to change the page setup. However, when this dialog box closed, the selected port was still Modem and not Printer.

Fortunately, we can still use the Modem port, even without disabling AppleTalk. Is there a way to disable AppleTalk on the printer port?

This article has been archived and is no longer updated by Apple.
Yes, you can disable AppleTalk on either the Printer port or the Modem port by doing:

appletalk -d

ONLY the Modem port can be used as the Chooser style of printing method from the MultiFinder environment. The Printer port DOESN'T work in A/UX 2.0.1. This applies to both direct serial line and direct LocalTalk line connection.

Published Date: Feb 18, 2012

UNIX: Macintosh File Compression Utility (5/97)

I'm using an FTP product to transfer files from a UNIX host to the Macintosh. The UNIX files are in a compressed format noted by their ".z" extension. Is there a utility for the Macintosh that matches the compression technique used on the UNIX host? I've heard about public domain software called "MacCompress" but don't know how to get it.

This article has been archived and is no longer updated by Apple.

MacCompress is a Macintosh application designed for compressing and uncompressing files compatible with the UNIX version of compress using modified Lempel-Ziv coding algorithm.

You can find the software where public domain software is commonly distributed, such as user groups.

Published Date: Feb 18, 2012

A/UX: Printing Large Files with "lpr" (9/94)

Is there a way to print files that are greater than 1MB using "lpr"? The manual entry says that "If you try to spool too large a file, it will be truncated."

After printing approximately 200 or so pages of a 400-page report, the file is truncated. This works out to about a 1MB limit on lpr. Do you have any suggestions on how we can run the whole file through the printer?

This article has been archived and is no longer updated by Apple.
The default maximum file size printed via Berkeley "lpr" printer spooler under A/UX is 1000 blocks (1K/block) which is about 1MB.

However, this default limitation can be changed via the printcap entry called "mx" specified in the /etc/printcap database file. You may use the 0 value for the unlimited file size printing (for example, mx#0). Refer to the man pages for further details.

Article Change History:
09 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

EtherTalk: Ethernet Connectivity for the Macintosh II

This is an article about EtherNet for the Macintosh.
This article has been archived and is no longer updated by Apple.

Overview

EtherTalk demonstrates that AppleTalk is a network architecture independent of media type. EtherTalk increases AppleTalk's bandwidth significantly by using Ethernet, an industry standard medium. It also provides increased throughput for transmission-intensive applications while implementing the layered features and functionality of the AppleTalk architecture.

Installation

The EtherTalk card is easy to install and use. You don't need to worry about the Ethernet Link Access Protocol address assignments. Each EtherTalk card has a unique address, assigned at the factory and stored on the card. The driver automatically looks for and uses this address on an Ethernet network. (The network address is also printed on a label on the back of the board.)

Features

EtherTalk Macintosh OS software redirects AppleTalk packets from the printer port to the EtherTalk card. These packets are then encapsulated in Ethernet Link Access Protocol and then sent out onto the network. EtherTalk operates at speeds up to 10MBPS. The card can be configured for use on 'thick' or 'thin' Ethernet networks. (See the EtherTalk Interface Card manual for configuration details.)

You can connect a LocalTalk node to the printer port with one or more EtherTalk cards installed, and switch between the printer port or any one of the EtherTalk cards. Only one AppleTalk path can be active at any one time, and the 'network' function in the control panel is used to select the active network. (See Chapter 2 of the EtherTalk User's Guide.) There is a limit of 254 active EtherTalk users (including bridges) on any one Ethernet.

Performance

EtherTalk improves AppleTalk throughput, depending on the level of 'foreign' Ethernet traffic and total available bandwidth. A practical expectation is an improvement of 1.3 to 3 times over LocalTalk connections, with a total capacity of 3 to 5 times that of LocalTalk networks.

Bridges

An EtherTalk Macintosh II can't act as a bridge between a LocalTalk network and Ethernet. It's possible to write bridging software, but none is included with the EtherTalk product.

AppleTalk Protocol Notes

EtherTalk under Macintosh OS implements AppleTalk according to Inside AppleTalk specification with some enhancements to allow operation on Ethernet networks. This means that Ethernet devices that don't implement these protocols and enhancements will be unable to 'see' the card on an Ethernet network. This is applicable only under Macintosh OS using AppleTalk protocol.

Under Macintosh OS, a special driver (.ENET) is utilized to 'push' packets onto the network. This driver is similar to the LocalTalk driver.

Packets sent by this driver in AppleTalk mode are restricted to 768 bytes to allow encapsulation by an Ethernet LAP.

These packets will co-exist with TCP/IP, XNS or other Ethernet protocols on the same network without problem.

Published Date: Feb 18, 2012

A/UX: Maximum Address Space per Process (8/94)

I'm running A/UX on a Macintosh IIfx with 32MB of RAM. When running a test program, it appeared that one process can allocate a maximum of 28MB, although several processes together can allocate the maximum available virtual memory (32MB swap + 13MB internal memory available). Is there a way to increase the limit of 28MB?

This article has been archived and is no longer updated by Apple.
We aren't sure how the "test program" came out with a maximum of 28MB address space allocated to one process. What kind of method did the tested program allocate for memory, via sbrk(), malloc(), calloc() or other system calls?

The maximum user address space for process is by default 40,000 pages, which is about 1GB. The kernel parameter for the maximum user address space is MAXUMEM, shown via "kconfig -av." Although it can be up to 1GB, it still depends on how much swap space and physical memory is currently available. One way to increase to the address space limit for a process is to increase swap space (swap -a)!

Note that the MINASMEM (the minimum number of 10 pages reserved for the system to avoid deadlock) must be taken into consideration when calculating the current available swap disk space and resident memory.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: Printing Garbage When Starting A/UX (9/94)

I am running A/UX 3.0 on a Macintosh IIfx with 32MB of RAM. We have serially connected a line printer, using the "lp" system. The printer works, but when we start A/UX, the computer sends a lot of garbage to the printer. This continues until we turn off the printer. What causes this, and how can we avoid it?

This article has been archived and is no longer updated by Apple.
Perhaps you had AppleTalk/LocalTalk printing configured before, and used either the modem (tty0) or print (tty1) port. Also, some unfinished print jobs left in the spooler might print out this way. Go to the /usr/spool/lp directory and check for anything left in the print queue.

Here are some other things you might want to check:

- Is the printer port (tty0 or tty1) getty disabled in the /etc/inittab file?

- Use the "ps -ef" command to display all processes that might introduce the problem.

- Is the 'lp' or 'lpd' daemon functioning properly?

Article Change History:
08 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

TA47505_AUX_cant_create_lower_memory_segment_Error__(TIL09162).pdf

A/UX: "can‘t create lower memory segment" Error (9/94)

After starting the A/UX system and the Login process, the Finder emulation starts, but the Command Shell doesn't. Meanwhile a message appears somewhere on the screen saying: "can't create lower memory segment". This is an intermittent error that appears three or four times a day.

This article has been archived and is no longer updated by Apple.
The "can't create lower memory segment" error message might be displayed because the system has temporarily exhausted its available physical memory or swap space, or the number of shared memory segments attached to the calling process exceeds the system-imposed limit. This usually happens while trying to start up the Macintosh environment executed by the "startmac" process. Check your available memory and swap space to see if this is the case.

Article Change History:
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

LaserDiscs: Three Companies that Press Custom Discs

Please provide me with the names of several companies that press LaserDiscs.
This article has been archived and is no longer updated by Apple.
We have information on three such companies:

- Pioneer Communication
- 3M Optical Recording
- Disctronics

Each these companies makes sure that the source video material is in the proper format to achieve the desired results. They then master and press the LaserDiscs.

To locate a vendor's address and phone number, use the vendor name as a search string.
Published Date: Feb 18, 2012

ImageWriter LQ Sheet Feeder: Paper Specifications (8/94)

How thick can the paper in the ImageWriter LQ Sheet Feeder be? I found the paper thickness spec for the printer -- is it the same for the feeder?

NOTE: This product has been discontinued and is no longer available.

This article has been archived and is no longer updated by Apple.
The paper specifications for the ImageWriter LQ Sheet Feeder are the same as for the printer, except that the Sheet Feeder can't do multi-part forms.

Here are the paper thickness specifications from the ImageWriter LQ Owner's Guide:

- 0.05 to 0.55 mm
- 0.002 to 0.028 inch
- 16 to 24 lb. paper

Article Change History:
31 Aug 1994 - Removed specsht keyword. Reviewed and updated.

Support Information Services

Published Date: Feb 18, 2012

DAL 1.3: Protocol Converter Manual Correction

I have discovered an error in the DAL 1.3 Macintosh Installation and User's Guide. The section on Protocol Converter connections, page 45, incorrectly specifies the "Escape" character as ^]. It should be ^[(that is, Up arrow, LEFT bracket).

It is shown properly in the example for PFkey 3: ^[3.
This article has been archived and is no longer updated by Apple.
Thanks for the information. This is helpful to people who use a Protocol Converter and key definitions that include Escape character sequences.
Published Date: Feb 18, 2012

TA47509_Macintosh_Dont_Have_More_Than_One_System_Folder_per_Disk_(TIL00917).pdf

Macintosh: Don‘t Have More Than One System Folder per Disk

This article has been archived and is no longer updated by Apple.

In spite of what you may have read -- for example, on page 24 of the Macintosh Hard Disk 20 manual -- a given disk, be it a floppy, HD 20 or SCSI drive, should contain one and only one System folder.

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TA47510_ILink_Controls_Apple_IIc_Bus_Components_from_a_Macintosh_(TIL09170).pdf

I0Link Controls Apple IIc Bus Components from a Macintosh

A new product, called IOLink, that controls Apple IIc bus components from a Macintosh computer is now available from Hamlin Technical. Apple IIc is a serial bus standard developed by Philips/Signetics that allows all circuits within a system to communicate bidirectionally with each other. Apple IIc compatible components are available from a number of manufacturers.

This article has been archived and is no longer updated by Apple.
IOLink offers engineers and technicians a way to control all sorts of circuits on the workbench; for example, analog input and output, parallel I/O ports, high-current solenoid drivers, video and audio circuits. IOLink runs on any Macintosh and consists of a hardware interface and either a stand-alone application or HyperCard XCMD.

The IOLink products are a solution in almost any moderate speed I/O application for the Macintosh where plug-in cards or RS-422 controllers were used. Apple IIc bus developers can test and debug their products from either the IOLink application program or HyperCard.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

Personal LaserWriter: Why No Page Counter

Is there any way to find out how many sides of paper a Personal LaserWriter SC has printed in its lifetime?

This article has been archived and is no longer updated by Apple.

There is nothing built into the Personal LaserWriter engine that counts printed pages. A mechanical counter would add cost and be vulnerable to tampering. An electronic counter would require additional logic that may not otherwise be present.

About the only laser printers with a page counter are those with a built-in PostScript interpreter. Implementing one on a PostScript controller is relatively trivial, because the requisite logic is already in place. The count is usually used to determine mechanism wear.

Published Date: Feb 18, 2012

LaserWriter: Thinnest Possible Lines

What is the minimum line width that a Personal LaserWriter NT can print (in millimeters and points)? Is this the same for all LaserWriter printers?

This article has been archived and is no longer updated by Apple.
The thinnest line a LaserWriter can print is limited by what's known as a device pixel. With all LaserWriter models to date, including the Personal LaserWriter (using the Canon P-110 engine), a device pixel is 1/300 of an inch, or .08mm. This translates to 24/100, or roughly one quarter of a point.

Many programs won't actually display a line this narrow, and instead use one point as their smallest printable unit. This PostScript code will generate an example page with a matrix of lines, each a single device pixel thick:

```
0 setlinewidth
72 72 612 {dup 0 moveto 792 lineto stroke} for
72 72 792 {dup 0 exch moveto 612 exch lineto stroke} for
showpage
```

Use a PostScript dump utility to download this program. This feature is available in version 7 of the LaserWriter Font Utility, or one of the old standbys like PSDump or Widgets.

Published Date: Feb 18, 2012

DAL: TCP/IP Support for VAX, IBM, and UNIX Hosts

I'm using System 7 on a Macintosh II-class computer. I have some DAL questions:

1) Does DAL for VMS, or DAL for MVS, support TCP/IP from the workstation? In other words, can I log on to a VAX or IBM host from a Macintosh using Data Access Language and TCP/IP protocol?

2) Do any of the front-end DAL products (ClearAccess, Brio, GQL) support TCP/IP protocol for doing the DAL/SQL queries?

3) Any idea who might have a DAL for UNIX product?

This article has been archived and is no longer updated by Apple.

1) Neither DAL for VMS nor DAL for MVS support TCP/IP connections. The only DAL servers that support TCP/IP connections are DAL Server for VM and DAL Server for A/UX.

With DAL 1.3, you can log on to a VAX using the following DAL connections:

- ADSP
- ADSP toll (with Comm Toolbox tool)
- Asynchronous
- Async CTB (with Comm Toolbox tool)

With DAL 1.3, you can log on to an IBM MVS host using the following connections:

- MacDFT Coax/Twinax card connection
- MacDFT TokenTalk NB Card connection - not in System 7
- MacDFT Serial NB Card connection - not in System 7
- MacIrma connection
- MacIrma HLLAPI connection
- MacMainFrame connection
- NetWay 1000/2000 connection
- Protocol Converter connection
- SNA*ps APPC connection - as of release 1.3.5 of FAL, SNA*ps 3270
- connection.

2) If DAL Server and Client support the connections between the client workstation and the host, the applications will work without any changes.

3) APDA offers a product for DAL support for TCP/IP connections to VM and to develop for UNIX hosts. Pacer software licenced DAL to develop for UNIX hosts, and are now shipping some UNIX DAL servers. For more information, please contact Pacer directly.

Published Date: Feb 18, 2012

PATHWORKS: Using With Wollongong‘s TCP/IP

We would like to run PATHWORKS on our VAX systems. However, we are entirely based on TCP/IP and don't run DECnet at all. We are using TCP Connect II on Macintosh computers.

The other difficulty is that we don't use DEC's TCP/IP, but rather, Wollongong's TCP/IP.

Will this work?
This article has been archived and is no longer updated by Apple.
PATHWORKS for Macintosh is a Digital product. It is sold and supported by Digital. The official line from Digital is that they only support their version of TCP/IP.

You won't be able to get all the components to work if you don't allow DECnet protocols, since most of them rely on DECnet. The most common thing people use TCP/IP for is MacX and DECwindows; if you use another package, you need to make some adjustments for this to work. For instance, you will have to log on to the VAX via Telenet, and under VMS, create a display for DECwindows with the $ SET DISPLAY command. You will have to know what parameter to specify for /TRANSPORT because the keyword TCPIP is reserved for the Digital TCP package. After you successfully create the display, you may use the $ SPAWN or $ RUN/DETACH command to execute the DECwindows client over the display.

The bottom line is that you will have to work with both Digital and Wollongong to get the correct syntax for different operations. If you are very interested in running PATHWORKS in this environment, we suggest you discuss the situation with the Digital Account Rep for an official Digital solution.
Published Date: Feb 18, 2012

PATHWORKS: Printing Option-Key Characters (11/94)

When printing any letter or character produced by an option-key combination, like the * (Option-8) character, the result is garbage -- regardless of the font/software package used on the Macintosh. I think the eighth bit is being dropped from the datastream somewhere between the Macintosh and the printer.

Here is the configuration:

- DEC VAX running PATHWORKS 1.0 and GrayMatter Print Spooling Software
- Macintosh Workstations running System 7
- QMS PS-810 Laser Printers
- MMac/8 Serial-to-Ethernet Cable Routers connecting the QMS serially to the router, then Ethernet from the router to the VAX.

This article has been archived and is no longer updated by Apple.
We printed a MacWrite document, with a number of Option-key-combination characters, to an Apple LaserWriter via the PATHWORKS 1.0 VAXshare Print Services with no problem.

We aren't really clear how GrayMatter Print Spooling Software fits into this picture, because PATHWORKS for Macintosh comes with the VAXshare Print Service. It would be helpful to know if you're printing from a Macintosh to the VAXshare Print Spooler or from the GrayMatter Print Spooler.

At any rate, the official statement from Digital for PATHWORKS 1.0 is that it only supports the following Digital and Apple printers:

- Digital: LPS20, LPS40, LPS40 Plus, LN03R
- Apple: LaserWriter, LaserWriter Plus, LaserWriter IINT and IINTX

Serially connected printers might have a problem with the default settings of 7-bit mode. To print the Option-key-combination characters, you'll need to set it to 8-bit mode.

To set the printer to 8-bit mode, print the following two files:

msap$set_params.ps
msap$show_params.ps

in the PATHWORKS directory: msa$root:[msa.msap$utility]

The second file prints a confirmation sheet on the printer.

If the above suggestion doesn't work, we strongly suggest that you contact the Digital Customer Support Center. They might know of problems associated with third-party printers and PATHWORKS, and might already have a patch for it in their database.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

DECnet/CTERM & AppleTalk-LAT Gateway Don‘t Run on A/UX

Are either of these compatible with A/UX 2.x or 3.x, now that adsp is available for A/UX?

- DECnet for Macintosh using CTERM Tool
- The upcoming (PATHWORKS 1.1) AppleTalk-LAT Gateway

This article has been archived and is no longer updated by Apple.
Neither works with A/UX. The AppleTalk-LAT Gateway doesn't work on A/UX because it requires LAT, which does not work on A/UX.
Published Date: Feb 18, 2012

AppleShare 3.0: Memory and Apple II Limits

1) To run under System 7, AppleShare 3.0 needs 4MB RAM. Does this include having the Print Serving option running as well?

2) Is 5MB enough to run AppleShare File Server 3.0, AppleShare Print Server 3.0, AppleTalk Internet Router and support for Apple II users?"

3) I saw something on a limitation of 20 some Apple II users -- is this a simultaneous log-on limit, or can I assign only 20 users the ability to log on from an Apple II?

This article has been archived and is no longer updated by Apple.

1) The 4MB requirement for AppleShare 3.0 includes concurrent operation of both file and print services. This includes Apple II access.

2) On a 5MB Macintosh IIci system you would also be able to install the Apple Internet Router, although for performance considerations it would be better to have the Apple Internet Router reside on a dedicated Macintosh. High traffic involving one of the applications can severely impact the performance of the other.

3) Although it is possible to define up to 8,192 users/groups (including the ability to log on from an Apple II), we would recommend not more than 2,000 users/groups. As the number of users/groups grows beyond 2000 and approaches 8000, it can take significantly longer to start up because it takes longer for AppleShare 3.0 to read through so many names. It doesn't affect server running performance or the amount of RAM required. The limitations regarding the number of users, Macintosh and Apple II alike, that can sign on concurrently is defined in the AppleShare 3.0 File Server Preferences. AppleShare 3.0 can accommodate up to 120 connections at one time.

If you plan to have Apple IIGS systems start up over the network, experience has shown that the length of time it takes to have more than 20 Apple IIGS systems do so may exceed the customers expectations. This will not be a problem if the Apple II systems are starting locally and then logging on to the file server.

Published Date: Feb 18, 2012

AppleTalk Remote Access: Hayes SmartModem 9600, Custom CCL Tools

AppleTalk Remote Access doesn't ship with a setup for the Hayes SmartModem 9600. (If you use the standard 9600 with the Ultra CCL, it connects only at 2400, not 9600.) Where can we get a tool to create CCLs for other types of modems for use with AppleTalk Remote Access?
This article has been archived and is no longer updated by Apple.

SmartModem 9600

The Hayes V-Series SmartModem 9600 (also known as the Express 96) uses Advanced Hayes Proprietary 9600 Communications. Due to the nonstandard and proprietary nature of the modems (they are not V.32 compatible), Apple decided not to include a CCL for them.

An Express 96 can only communicate at 9600 baud with another Express 96. As you discovered, use of the "Hayes Ultra 96" CCL limits communications to 2400 baud between Express 96 modems. A "CCL.Hayes V9600" CCL has been developed internally for use with the Express 96.

Tool for Custom CCLs

The Modem Workshop HyperCard stack used to develop AppleTalk Remote Access CCLs is available for customers through APDA.
Published Date: Feb 18, 2012

TA47524_Personal_LaserWriter_LS_Output_Tray_Capacity_Increased_(TIL09188).pdf

Personal LaserWriter LS: Output Tray Capacity Increased

The Apple Personal LaserWriter LS now has an additional multi-purpose tray assembly (output paper tray) available. What is the paper capacity?

This article has been archived and is no longer updated by Apple.
This new tray accommodates 70 sheets, and is interchangeable with the current 50-sheet output tray.

Published Date: Feb 18, 2012

Shiva FastPath 5: No UNIX Host Required for IP Tunneling

Does the Shiva FastPath 5 require a UNIX host to do IP tunneling?

This article has been archived and is no longer updated by Apple.

The Shiva FastPath 5 doesn't require a UNIX host to do IP tunneling. Any AppleShare host (including Macintosh, VAX, and so on) connected to the same network can provide the ATALKATAB file to the FastPath 5 (or FastPath 4 with the new 5.0 Prom).

This information was provided by Shiva.

Published Date: Feb 18, 2012

A/UX: Use "Minimum Macintosh" Install for Mac OS (9/94)

I have the default 2MB Macintosh OS partition, and there isn't enough room to install all necessary A/UX startup files and the bin folder.

This article has been archived and is no longer updated by Apple.
To have enough space in the Macintosh OS partition for the necessary A/UX files, you must do a "Minimum Macintosh" install when installing system software. There isn't enough room to install a standard System Folder and the necessary A/UX files.

Article Change History:
13 Sep 1994 - Reviewed.
31 Jun 1993 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

A/UX: How To Determine Version Number

How can I determine the version of A/UX that I'm running?

This article has been archived and is no longer updated by Apple.
The "/etc/RELEASE_ID" file contains the version number.

Published Date: Feb 18, 2012

TA47528_AUX_Does_Not_Support_TCPIP_Over_LocalTalk_(TIL09193).pdf

A/UX: Does Not Support TCP/IP Over LocalTalk

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

Does A/UX support TCP/IP over both EtherTalk and LocalTalk?

This article has been archived and is no longer updated by Apple.
A/UX supports TCP/IP only over EtherTalk. It does not support TCP/IP over LocalTalk.

Published Date: Feb 18, 2012

A/UX: How to Change Hostname

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Can I change the Hostname of my system?

This article has been archived and is no longer updated by Apple.
Yes. Here's how to change your Hostname:

1) Modify the "/etc/HOSTNAME" file to reflect the new Hostname you want for your system.

2) Ensure that "/etc/hosts" has the new Hostname.

3) Restart the system to make this change become active.

Published Date: Feb 18, 2012

A/UX: How to Change the IP Address

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Can I change my IP address after building a kernel for networking?

This article has been archived and is no longer updated by Apple.
You can temporarily change the IP address using "ifconfig". If you want the change to be permanent, modify the "/etc/NETADDRS" file to reflect the new IP address, and restart the computer.

Published Date: Feb 18, 2012

A/UX 2.0: Recognizes DayStar Cache Card for Macintosh IIci

Does A/UX 2.0 recognize a DayStar cache card for the Macintosh IIci?

This article has been archived and is no longer updated by Apple.

Yes, A/UX recognizes the card without any special drivers installed.

Published Date: Feb 18, 2012

A/UX: "tar" Supports Symbolic Links with -i Option

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Does "tar" support symbolic links?

This article has been archived and is no longer updated by Apple.
Yes, "tar" supports symbolic links if you use the -i option. You can also use "cpio" to copy symbolic links.

Published Date: Feb 18, 2012

TA47533_AUX_How_to_Print_a_PostScript_File_(TIL09199).pdf

A/UX: How to Print a PostScript File

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How do I print a PostScript file to a printer from A/UX?

This article has been archived and is no longer updated by Apple.
Use the "enscript" command.

Published Date: Feb 18, 2012

Applesoft: Internals--Page Zero Memory Map

This article has been archived and is no longer updated by Apple.

00-02	START	Initialize low RAM memory
03-05	RDYJSR	Jumps to STROUT
06,07	ADRAYI	Address of AYINT subroutine
08,09	ADRGAY	Address of GIVAYF subroutine
0A-0C	USRPOK	Vector for USR() function
0D	CHARAC	String delimiter
0E	ENDCHR	String delimiter
0F	COUNT	General purpose counter
10	DIMFLG	Flag to permit arrays
11	VALTYP	Variable type indicator. 0=numeric, 1=string
12	INTFLG	Variable type indicator. 1=integer, 0=real
13	GARBFL	Flag to signal the need for garbage collection
14	SUBFLG	Flag to permit array variables.
15	INPFLG	Determines if this is INPUT or READ
16	TANSGN	Used for the sign during TAN() function
1A,1B	SHAPE	High-Res shape pointer
1C	HCOLOR1	High-Res running color mask
1D	COUNTH	High-Res counter
26,27	HBAS	High-Res base address pointer
2C	H2	
2D	V2	
45	ERROV	
50,51	LINNUM	16 bit integer work area
53,54	LASTPT	Pointer to last used string temporary
55-5D	TEMPST	Temporary string descriptor storage area
5E,5F	INDEX	General purpose index
60,61	INDEX2	General purpose index
62-66	RES	Multiply or divide result (HO,MOH,MO,LO)
67,68	TEXTAB	Pointer to start of the program text
69,6A	VARTAB	Pointer to start of simple variable space
6B,6C	ARYTAB	Pointer to start of array variable space
6D,6E	STREND	Pointer to end of storage in use
6F,70	FRETOP	Pointer to top of string free space
71,72	FRESPC	Pointer to new string
73,74	MEMSIZ	Pointer to top of memory
75,76	CURLIN	Current line number
77,78	OLDLIN	Old line number, set up by ctrl-C, STOP, or END
79,7A	OLDTXT	Old text pointer
7B,7C	DATLIN	Line number where data for next READ comes from
7D,7E	DATPTR	Pointer to data for next READ
7F,80	INPPTR	Pointer to where input is coming from
81,82	VARNAM	Storage area for a variable's name
83,84	VARPNT	Pointer to a variable in memory
85,86	FORPNT	Variable pointer for FOR and LET
87,88	OPPTR	Pointer to current formula operation in OPTAB
89	OPMASK	Mask created by current operator
8A,8B	DEFPNT	Pointer used in function definition

8C,8D	DSCPNT	Pointer to a string descriptor
8E	TEMPF3	Temporary pointer
8F	FOUR6	Constant for garbage collection
90-92	JMPER	Internal vector
93	TEMPF1	Temporary pointer
94,95	ARRYPT	Pointer into an array
94,95	HIGHDS	Destination of highest element in BLT.
96,97	HIGHTR	Source of highest element to move in BLT.
98	TEMPF2	
99,9A	LOWDS	Location of last byte transferred into in BLT.
9B,9C	LOWTR	Last thing to move in BLT. See BLTU.
9D-9F	DSCTMP	Temporary string descriptor
9D-A2	FAC	Floating point accumulator. (EXP,HO,MOH,MO,LO,SGN)
A3	SNGFLG	Sign of FAC. Set up by FIN.
A4	BITS	
A5-AA	ARG	Floating point argument (EXP,HO,MOH,MO,LO,SGN)
AB,AC	STRNG1	Pointer to a string or descriptor
AD,AE	FBUFPT	Pointer into FBUFFER for FOUT
AF,B0	PRGEND	Pointer to the end of the program text
B1-C8	CHRGET	Character fetcher
C9-CD	RNDX	Random number seed
D0,D1	DX	High-Res delta-X for shape and HLIN
D2	DY	High-Res delta-Y for shape and HLIN
D3	QDRNT	High-Res rotation quadrant
D4,D5	E	High-Res error for HLIN
D6	RNONLY	Run only flag
D8	ERRFLG	Flag set by ONERR GOTO
DA,DB	ERRLIN	The line number where the error occured
DC,DD	ERRPOS	Where in memory did the error occur
DE	ERRNUM	Which error occured
DF	ERRSTK	6502 stack pointer from REMSTK after an error
E0,E1	XO	High-Res prior X coordinate save
E2	YO	High-Res prior Y coordinate save
E4	HCOLOR	High-Res color byte for HPLOT, HPOSN
E5	HNDX	High-Res horizontal offset save
E6	HPAG	High-Res page ($20 = HGR1, $40 = HGR2)
E7	SCALE	High-Res scale for SHAPE
E8,E9	SHAPX	High-Res start of shape table
EA	COLLSN	High-Res collision counter
F0	FIRST	
F1	SPDBYT	Controls delay between printed characters
F2	TRFLAG	Controls TRACE mode.
F3	ORMASK	Controls masking for INVERSE on video output
F4-F7	ERRTO	Points to the GOTO part of ONERR statement
F8	REMSTK	6502 Stack pointer save area.
F9	ROTBYT	High-Res rotation factor for SHAPE
100-10F	FBUFFR	Buffer for FOUT
200-2F0	BUF	Input buffer

Published Date: Feb 18, 2012

TA47534_Applesoft_InternalsPage_Zero_Memory_Map.pdf

A/UX: How to Select a Printer

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How do I select a printer under A/UX?

This article has been archived and is no longer updated by Apple.
From the CommandShell prompt, enter the "at_cho_prn" command. This program prompts you to select the zone (if any are present) that the printer is in, then it prompts you to select the correct printer in the zone you chose.

An alternative is to select the printer via the Chooser. Note that the "lpr" command will use the printer selected in the Chooser as the default printer destination.

Published Date: Feb 18, 2012

TA47536_AUX_Problem_Printing_to_Serial_ImageWriter_(TIL09201).pdf

A/UX 2.0: Problem Printing to Serial ImageWriter

I am running A/UX 2.0 and when I try to print from an application to a serially connected ImageWriter, my system hangs. I can print to the same ImageWriter using LPR.

This article has been archived and is no longer updated by Apple.

This problem has been fixed in A/UX 2.0.1.

Published Date: Feb 18, 2012

A/UX: Macintosh Display Card 8■24 GC Support (8/93)

Does A/UX support the Macintosh Display Card 8*24 GC?

This article has been archived and is no longer updated by Apple.
At this time, A/UX does not support the Macintosh Display Card 8*24 GC in accelerated mode. It does support the card in non-accelerated mode.

Article Change History:
3 August 1993 - Reviewed for technical accuracy.
Published Date: Feb 18, 2012

A/UX: Does Not Recognize ADB Port as a tty Port

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Does A/UX recognize the ADB (Apple Desktop Bus) port as a tty port?

This article has been archived and is no longer updated by Apple.
No, it doesn't.

Published Date: Feb 18, 2012

A/UX: Supports One Macintosh Volume per Hard Drive (8/94)

I have four Macintosh volumes on an external drive, but A/UX recognizes only the first volume.

This article has been archived and is no longer updated by Apple.
A/UX supports only a single Macintosh volume on a hard drive. If you have multiple volumes installed, A/UX recognizes only the first volume.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: How To Edit the "/etc/passwd" File (6/93)

When I try to use the vi editor to edit the "/etc/passwd" file, I get a message that the file is in use.

This article has been archived and is no longer updated by Apple.
If no one is currently editing the /etc/passwd file, delete the "/etc/ptmp" file. When this file exists, the "/etc/passwd" file cannot be edited because the "/etc/ptmp" file places a lock on the/etc/passwd" file.

If someone else is editing the /etc/passwd file, wait until they are done. Do not remove /etc/ptmp file in this case.

Article Change History:
17 Jun 1993 - Revised add information at the end of the article.
31 Aug 1992 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

TA47541_LaserWriter_II_Envelope_Cassette_Part_Number_(TIL09206).pdf

LaserWriter II: Envelope Cassette Part Number

What is the part number for the LaserWriter IINTX optional envelope tray?

This article has been archived and is no longer updated by Apple.
The part number is 699-8034 and is only available at an Apple-authorized service provider.

Article Change History:
30 Aug 1995 - Corrected part number.

Support Information Services
Published Date: Feb 18, 2012

Macintosh Pascal 1.0: Screen Echo

This article has been archived and is no longer updated by Apple.
To defeat the echo to the screen when entering data from the keyboard, use the GET statement rather than the READ statement. For example:

```
Program No_Display(input, output);
Var
i:integer;
v:array [1..10] of char;
Begin
i:=1;
Writeln('Enter 10 Character Password:');
While i <=10 do
Begin
Get(input);
v[i]:=input^;
i:=i+1;
End;{while}
End.
```

Published Date: Feb 18, 2012

Macintosh: How Network and Node Numbers Are Determined

How does a Macintosh determine what network and node number to use?

This article has been archived and is no longer updated by Apple.

The Macintosh requests a network number via a broadcast message to the network. Once it receives the network number, the Macintosh tries to set the node number to the same number it used successfully the last time it was started up. If that number is currently in use, a random number is generated until an available node number is found.

Published Date: Feb 18, 2012

MacX: "Another Window Manager Already Running" Error

While trying to load an X client under MacX, I get a message saying that "another window manager is already running."

This article has been archived and is no longer updated by Apple.
You are getting this message because displays 0 and 2 in MacX are controlled by the MacX built-in window manager.

Published Date: Feb 18, 2012

MacDFT: SNAps 3270 Terminal Emulation Software Upgrade Info

I am using MacDFT. How can I get the SNA*ps 3270 terminal emulation software upgrade?
This article has been archived and is no longer updated by Apple.
Registered users of MacDFT will automatically be mailed an upgrade for the SNA*ps 3270 terminal emulation product. Non-registered users should send their original MacDFT disk to:

Apple Computer
Promotional Support
P.O. Box 4055
Cupertino, CA 95015-4055

for the upgrade.
Published Date: Feb 18, 2012

A/UX: Can‘t Access Macintosh HFS Volume From Command Line

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Can I access a Macintosh HFS volume from the command line?

This article has been archived and is no longer updated by Apple.
No.

Published Date: Feb 18, 2012

Macintosh: How Long It Takes to Fully Shut Down

After a Macintosh is shut down, or its power is disconnected, how long does the computer stay charged before it is completely shut off?

This article has been archived and is no longer updated by Apple.

For the Macintosh Plus, it is 17 ms; for all other Macintosh models, it is 20 ms.

Published Date: Feb 18, 2012

MacTCP: Cannot Be Configured for Alternate Path Routing

Can I configure MacTCP for alternate path routing?

This article has been archived and is no longer updated by Apple.

No, you can't.

Published Date: Feb 18, 2012

Macintosh Pascal 1.0: Putting comments into the code

This article has been archived and is no longer updated by Apple.
Multi-line comments with a single pair of brackets are not allowed in Macintosh Pascal; instead, you must frame each line of the comment with its own set of brackets.

To work around the problem of using large blocks of comments within MacPascal, break up large blocks of comments with a valid Pascal statement. A declaration, begin or end statement, etc. will do the job, and the program can then be loaded normally. You might also try severely limiting the number of consecutive comments on lines by themselves.

There are no plans to change this situation, documented in the new version of the MacPascal Technical Reference manual.

The problem is easily duplicated by creating a Pascal "program" that contains nothing but comments. The key is the number of characters contained in the comments: 20 lines of about 70 characters per line should be sufficient. As long as comments reside on lines following an actual Pascal statement, the problem goes away. But this is not really practical or practiced. This will be submitted to Software Testing for further evalution.

To create a Macintosh Pascal listing with any amount of comment information, cut and paste your code to another document; you can then add documentation to this listing as you please.
Published Date: Feb 18, 2012

DAL: Oracle 6.0.31 and Earlier Support

Does DAL support Oracle 6.0.33?

This article has been archived and is no longer updated by Apple.

Yes, as of DAL release 1.3 it is supported. Oracle 6.033 no longer automatically defines the SYS$ORACLE logical so you will have to define it yourself to be able to use DAL. You should define SYS$ORACLE to be the value "ORA_RDBMS".

Published Date: Feb 18, 2012

Personal LaserWriter: Driver Not Same as LaserWriter Driver

I have a Personal LaserWriter SC connected to my Macintosh. When I select the LaserWriter driver in the Chooser, I don't see the printer.

This article has been archived and is no longer updated by Apple.
In the Chooser, select the Personal LaserWriter driver instead of the LaserWriter driver.

Published Date: Feb 18, 2012

MacTCP: Use Version 1.1 with System Software Version 7.0

What version of MacTCP should I use with system software version 7.0?

This article has been archived and is no longer updated by Apple.
You can use MacTCP 1.1 with system software version 7.0 if you install the MacTCP Tool in the Extensions folder and MacTCP in the System Folder.

Published Date: Feb 18, 2012

A/UX: Supports System 7 Print Drivers

Article Change History

06/25/92 - REVIEWED
* For technical accuracy

Does A/UX support system software version 7.0 print drivers?

This article has been archived and is no longer updated by Apple.
Yes. If you have a Personal System Folder, put the drivers in the Personal System Folder, located in the user's home directory.

If you don't have a Personal System Folder, put the drivers in the generic System Folder in /mac/sys/System Folder.

Published Date: Feb 18, 2012

A/UX 2.0.1 Incremental Update: Doesn‘t Require System 6.0.7

I received Macintosh system software version 6.0.7 with the A/UX 2.0.1 Incremental Update. Must I install this version of the system software on my Macintosh?

This article has been archived and is no longer updated by Apple.

No. The A/UX 2.0.1 Incremental Update was released mainly to be compatible with the Macintosh IIsi, which requires system software version 6.0.7.

Published Date: Feb 18, 2012

Macintosh IIsi: How to Install A/UX 2.0.1 Incremental Update

How do I install the A/UX 2.0.1 Incremental Update on my Macintosh IIsi?

This article has been archived and is no longer updated by Apple.
First, install the A/UX 2.0.1 Incremental Update on a hard drive attached to a different Macintosh. Then move that hard drive to the Macintosh IIsi.

The A/UX 2.0.1 installation works on a Macintosh IIsi, but the Incremental Update does not.

Published Date: Feb 18, 2012

A/UX: How to Configure for EtherTalk Support (9/94)

How do I install the EtherTalk drivers under A/UX? Neither the EtherTalk Installer Disk nor the Network CDEV seems to work.

This article has been archived and is no longer updated by Apple.
Network protocols, like TCP/IP and AppleTalk, must be configured into the A/UX kernel before they can be used. When A/UX is shipped, TCP/IP is not part of the kernel. AppleTalk is installed but configured only for the LocalTalk port, not over an Ethernet card.

To add networking capability through the Ethernet port, you must add a low-level driver to the kernel. The EtherTalk drivers on the EtherTalk Installer disk install an Ethernet driver for the Macintosh Toolbox to use. Because, under A/UX, the Macintosh Toolbox environment relies on the A/UX kernel to take care of networking, installing a Macintosh Toolbox level driver is not enough.

To use either TCP/IP or EtherTalk protocols, add the Ethernet driver using the newconfig command. See the directions in the "Network System Administration" manual for a full description of configuring the kernel for Ethernet. The short version follows.

Before beginning, you must have the following:

- An IP address

- A broadcast address

- A netmask and a hostname.

Check with your network administrator if you aren't sure what these should be in your installation. These instructions assume an Apple Ethernet card. If your Ethernet card is from another vendor, you will need to get A/UX drivers for the card. The Macintosh OS drivers are not sufficient to establish Ethernet services (TCP/IP or AppleTalk) under A/UX. Follow the instructions from the vendor for how to install the A/UX drivers and configure the kernel.

1) Assuming you have an Apple card (or have properly configured your third-
party card), from the Command Shell, type the line:

newconfig bnet

2) If you also need nfs services, type:

newconfig nfs

The system will reconfigure itself to include the new modules. It will prompt you to answer several questions, including IP address, broadcast address, and so on. When it asks if you want this system to be a Yellow Pages client, say no.

--WARNING--¨If the system is configured to be a Yellow Pages client when there is no Yellow Pages server present on the network, or if the A/UX system can't talk to the YP server for any reason, the A/UX system will hang forever on the next boot. This is because it is trying to connect to a server that doesn't exist. It's much safer to say "no" to being a YP client now and turn on the YP daemon later, after the TCP/IP connections have been verified.

Article Change History:
2 Sept 1994 - Reviewed.
31 Aug 1992 - REVIEWED for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

TA47557_AUX_How_It_Checks_for_Bit_Clean_(TIL09229).pdf

A/UX: How It Checks for 32-Bit Clean

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

How does A/UX know if something isn't 32-bit clean?

This article has been archived and is no longer updated by Apple.
It checks a bit in the SIZE resource in the application. See man page for changesize for details on how to change the value of this bit.

Published Date: Feb 18, 2012

ImageWriter II: Faded Print Caused By Damaged Carrier Shaft

This article has been archived and is no longer updated by Apple.

If an ImageWriter II is dropped or handled roughly, the carrier shaft bushing may break, allowing the carriage to pull away from the platen on one side. Output looks fine on one side of the paper, but gradually fades out as it moves to the opposite side of the paper. Adjusting the paper thickness lever doesn't cure the problem.

The carrier shaft bushing may appear intact, but if you look closer, the two small dimples that the shims mount to are probably fractured or broken off. Replace the broken carrier shaft bushing (958-0006).

Published Date: Feb 18, 2012

TA47559_AUX_Using_Claris_FileMaker_(TIL09230).pdf

A/UX: Using Claris FileMaker

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

FileMaker works great when I'm logged in as root, but if I log in as anyone else, it says it can't execute.

This article has been archived and is no longer updated by Apple.
Check the ownership and permissions of a directory called "Claris" in the global System Folder. Along with other Claris applications, FileMaker stores temporary files in a folder called "Claris" in the current System Folder.

If the folder doesn't exist, FileMaker creates it and starts putting temporary files there. However, new files and directories under A/UX are created with a default user mask. This mask sets the permissions on the file or directory to allow write permission only to the user who created the file or directory. As a result, the first account to use FileMaker would have a Claris folder created, but only that account could write to it. The solution is to change the permissions on the Claris folder to allow read and write access by everyone.

Published Date: Feb 18, 2012

A/UX: Why Root Has More Space Available than Regular Users

Why do root and regular users have different amounts of space available on their file systems?

This article has been archived and is no longer updated by Apple.

A/UX follows the Berkeley file system. There's a default high-water mark of 10 percent of disk space that isn't available for use by non-privileged users, although you can adjust this with the tunefs command. Root, however, can do anything, including filling the file system to capacity.

Article Change History:
31 Aug 1992 - Reviewed for technical accuracy.
Published Date: Feb 18, 2012

TA47562_LaserWriter_IINTX_and_IIfIIg_Hard_Drive_Formats_Are_Different_(TIL09233).pdf

LaserWriter IINTX and IIf/IIg: Hard Drive Formats Are Different

I have a hard drive formatted for and connected to my LaserWriter IINTX. Can I connect this hard drive directly to either a LaserWriter IIf or LaserWriter IIg without reformatting the drive?

This article has been archived and is no longer updated by Apple.
The hard drive formats for the LaserWriter IINTX and Apple LaserWriter IIf and IIg are different. If you want to connect a hard drive formatted for the LaserWriter IINTX to an Apple LaserWriter IIf or IIg, you have to reformat the hard drive and reinstall the fonts with the LaserWriter Font Utility.

Published Date: Feb 18, 2012

Printing: Background Printing Is Normally Slower

Documents printed with non-TrueType screen fonts under background printing take several minutes per page on the Personal LaserWriter LS. Why?

This article has been archived and is no longer updated by Apple.

This is normal. The advantage of background printing is that it lets you work on a task while a document is printing. Printing in the background means that printing must share the processor with some other process instead of taking all the processing speed. Therefore, it is slower. What you see is normal.

Published Date: Feb 18, 2012

A/UX: Double-Clicking /unix Results in Core Dump (6/93)

When I log in to the Finder and then double-click /unix to start UNIX to launch A/UX, I get a core dump.

This article has been archived and is no longer updated by Apple.
What you're doing brings the Command Shell application to the front with the "core dumped" error message when the execution of /unix fails. The correct way to get a command line under A/UX is to go to the Apple menu and select the Command Shell application.

Article Change History:
17 Jun 1993 - Retitled for clarity.
31 Aug 1992 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

TA47567_AUX_How_to_Protect_the_Macintosh_Partition_(TIL09239).pdf

A/UX: How to Protect the Macintosh Partition

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

How do I protect the Macintosh partition from being used or altered under A/UX?

This article has been archived and is no longer updated by Apple.
The regular UNIX file system protections won't work, because it's a Macintosh OS HFS file system. The only way to protect the Macintosh partition while A/UX is running is to have it not available in the first place. Build the A/UX disk without a Macintosh partition and launch A/UX from a floppy.

Published Date: Feb 18, 2012

A/UX: Syslog Doesn‘t Log su Attempts (8/94)

It looks like syslog does not record attempts to su nor failed login attempts. Syslog does record some events, but it won't record them to a remote host.

This article has been archived and is no longer updated by Apple.
Correct. Syslog belongs to Berkeley UNIX, and A/UX to System V. A/UX login, su, and other programs don't make the calls to syslog, so the messages can't be recorded. The manual page should be updated to reflect this fact. As it stands now, the syslogd man page says that login and su generate syslog messages; this is incorrect.

Logging messages to a remote system is broken, and an SPR has been filed.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: How to Format a Floppy Disk from a Shell Script (8/94)

How do I format a disk from within a shell script?

This article has been archived and is no longer updated by Apple.
Use the diskformat command. See man page for options. Use /dev/floppy0 as the device.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: How to Create a Bootable Partition with HD SC Setup

A/UX 2.0 installation onto an Apple 160MB hard drive fails with a "no valid root partition" message. I used the "50% A/UX, 50% Macintosh OS" option within HD SC Setup.

This article has been archived and is no longer updated by Apple.
The "50% A/UX, 50% Macintosh OS" option creates a disk with half the space in a Macintosh volume and the other half set up for a random A/UX file system. These partitions are not suitable for a bootable A/UX system.

To reserve 80MB for the Macintosh operating system with the remaining space for A/UX, follow these steps:

1) Bring up HD SC Setup, and select the standard A/UX Partition option.

2) Click the Custom button to do custom partitions.

3) Select the Macintosh Partition and delete it.

4) Click and drag the existing A/UX partitions closer to one another to concentrate all the gray space (representing unallocated space on the disk) at the bottom.

5) Create a new Macintosh partition; click in the gray space, select Macintosh Volume as the partition type, and make the size equal to the maximum available.

6) Click "Done" and quit HD SC Setup.

Published Date: Feb 18, 2012

TA47571_AUX_Using_Claris_MacWrite_II__(TIL09244).pdf

A/UX: Using Claris MacWrite II (9/94)

Printing from MacWrite II under A/UX doesn't work. Nothing comes out of the printer. Printing from lpr works as does printing from other Macintosh Toolbox applications.

This article has been archived and is no longer updated by Apple.
Like other Claris products, MacWrite II puts temporary files in a Claris folder located in the System Folder. This folder is created the first time a Claris product runs. If the user happens to be root at the time the application is run, the default user mask sets the privileges on the folder, so that only root has read and execute privileges on the folder.

Change the permissions on the folder to allow read, write, and execute privileges for everyone, and printing should work fine.

Article Change History:
09 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Published Date: Feb 18, 2012

A/UX: No TCP/IP out Printer/LocalTalk Port

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

How can I configure A/UX to do TCP/IP communication (for example, NCSA Telnet) out the printer port?

This article has been archived and is no longer updated by Apple.
Unlike the Macintosh operating system, A/UX only supports TCP/IP communication out the Ethernet port, not the LocalTalk port. The MacTCP that comes with A/UX is not the same MacTCP that runs under the Macintosh operating system, even though they look very similar. The Macintosh operating system version of MacTCP does not work under A/UX.

Published Date: Feb 18, 2012

A/UX: No Way to Track Unsuccessful Login Attempts (8/94)

Can A/UX track unsuccessful login attempts?

This article has been archived and is no longer updated by Apple.
No, it can't.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

TA47574_AUX_No_VT_Terminal_Emulation__(TIL09247).pdf

A/UX: No VT220 Terminal Emulation (8/94)

Does A/UX do VT220 emulation?

This article has been archived and is no longer updated by Apple.
No, it doesn't.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: Cannot Start from a CD Drive (8/94)

How can I configure my A/UX system so it will start from a CD-ROM drive?

This article has been archived and is no longer updated by Apple.
That is not a supported configuration. There are files that need to be updated when you are running, and they can't be updated on a locked volume such as a CD-ROM. You can, however, use a minimal root partition and mount the rest of the files from the CD-ROM.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: How to Keep Users from Starting from a Floppy

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

Is there a way to prevent students and other users from starting their A/UX systems from a floppy?

This article has been archived and is no longer updated by Apple.
There's no way to achieve that level of security, given the way the Macintosh OS works on a normal Macintosh. Beyond locking up the physical computer, there is no way to prevent people from turning their systems off and restarting from a floppy.

One potential workaround would be to unplug the floppy-drive cable from the logic board. This wouldn't stop someone who knew what to look for, but it would get in the way of the less knowledgeable.

Published Date: Feb 18, 2012

A/UX: How to Print to a Specific AppleTalk Printer (8/94)

How do I print to a named AppleTalk printer instead of taking the default printer from the Chooser?

This article has been archived and is no longer updated by Apple.
See the directions in /usr/spool/lpd/AppleTalk/ofilter. Basically, the steps are:

1) Add a new directory with the name of the printer in /usr/spool/lpd
2) Create a new named pipe in the new directory
3) Copy or link the ifilter and ofilter scripts into the new directory
4) Add a new entry to /etc/printcap describing the printer

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: What Terminal Type to Use on Remote System

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

What's a good terminal type to use when talking to a remote VAX UNIX box?

This article has been archived and is no longer updated by Apple.
VT100 is a generic, standard terminal type that almost everyone supports.

Published Date: Feb 18, 2012

A/UX: Ethernet "ae0 transmitter frozen" Errors (9/94)

Ethernet networking won't come up under A/UX. There are many "ae0 transmitter frozen" errors.

This article has been archived and is no longer updated by Apple.
Here are two things to check:

* Is the EtherTalk card set for thin or thick Ethernet? Make sure the jumper is configured appropriately for whichever network you are using.

* Is the network terminated? If there is no terminator at the end of the cable, A/UX produces an endless string of "ae0 transmitter frozen/resetting" errors.

Article Change History:
23 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

System 7: RAM Appropriate for Various Macintosh Models

How much RAM will System 7 support on each model of the Macintosh?

This article has been archived and is no longer updated by Apple.

Macintosh Model	Memory
Macintosh II	8MB
Macintosh IIx	8MB
Macintosh IIcx	8MB
Macintosh IIsi	17MB
Macintosh IIci	32MB
Macintosh IIfx	32MB
Macintosh SE/30	8MB

Published Date: Feb 18, 2012

AppleShare PC: No Support for TOPS Card

Does AppleShare PC support the TOPS card?

This article has been archived and is no longer updated by Apple.

No, it doesn't.

Published Date: Feb 18, 2012

Super Serial Card: Cable for Anadex DP-9500, DP-9501 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a Anadex DP-9500 or DP-9501 printer?

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 19....(SCTS)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

AppleShare 3.0: Upgrading Client Software Highly Recommended

I've recently installed AppleShare 3.0.

When I configured the server using Admin, I set up each user with NO password, and I also set the minimum length of each user's password to 4. Additionally, I checked the option that forces the users to change their passwords the next time they log on.

When I try to log on to the server from the IIx, I get a message that an unknown AppleShare error has occurred. It's not fatal -- I just can't log on. By adding a 4+ letter default password to each user, I can then log on.

Since I support an installed base of over 80 File servers and 6,000 Macintosh computers, I want to stress that whatever options we install with AppleShare 3.0, they must work with 2.01 client software. It's unlikely that most of the installed base will migrate to 3.0 client software.

Configuration:

- Server: Macintosh SE/30 4/80 with System 7.0 and AppleShare 3.0 (all product options) installed.

- Client: Macintosh IIx 5/40 with System 7.0 and AppleShare 2.01 client code.

This article has been archived and is no longer updated by Apple.

The source of your problem is exactly what you are trying to avoid. Without the AppleShare 3.0 client software installed, the client software doesn't understand the messages the server sends to it. For example, using an all AppleShare 3.0 setup, if you need to change your password, you will get the dialog that allows you to change your password. If you have old client software, then you will only get an unsuccessful log-on message. The ability to log on without getting help from an administrator is more than a minimal benefit.

If an administrator is going to take advantage of AppleShare 3.0's extended security features such as minimum password length, or change password at the next log on time, then we highly recommend that you install the client software. You can install it over the network, without restarting, and it won't cause any disruption in the users' operation.

Published Date: Feb 18, 2012

AppleTalk Remote Access: Managing SecurityZone

On an AppleTalk InterNet, I can have different buildings (sites, countries, continents ╔) interconnected. How do I manage the SecurityZone feature so that local administrators can control their Remote Access connections?

This article has been archived and is no longer updated by Apple.

We have assumed there is one person in charge of the entire internet. That person is then responsible for communicating password information to all the local administrators -- even between continents.

If there is more than one Security Zone on an internet, then the AppleTalk Remote Access server needs to have the right password for only one of the zones.

Published Date: Feb 18, 2012

A/UX: MacX Q & A (9/94)

1) Is it possible to have a single copy of MacX that everyone can launch at the same time?

2) Can I run the motif window manager under MacX?

3) MacX seems to have problems with a very large hosts file. MacX appears to handle addresses near the top of the hosts file, but doesn't seem to find addresses near the bottom.

4) When trying to use MacX to talk to an X Windows system on a VAX, does the VAX have to be running PATHWORKS?

This article has been archived and is no longer updated by Apple.
1) No. MacX, like most Toolbox applications, wasn't written to be a multi-user application.

2) Yes, but only in a rooted window.

3) MacTCP 1.1 has a host file limitation of 7K. (The MacTCP 1.1.1 and later fixes this limit.)

4) Yes.

Article Change History:
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

Super Serial Card: Cable for Axiom EX-801, EX-820 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to an Axiom EX-801 or EX-820 printer.

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

A/UX: ASCII Codes Returned By Function Keys Under Command Shell

How can I find out what ASCII codes are returned by the function keys under the command shell?

This article has been archived and is no longer updated by Apple.
Follow these steps:

1) Open a vi window; type vi testfkey and press Enter

2) To begin entering data, press Escape i

3) In the window, press Control-v followed by the function key.

4) To quit vi and save the file, press Escape ZZ Enter

5) With the function key keystroke captured, run od on the document to find out the ASCII/hex codes. For example, to see the contents of the file in hex, type od -h testfkey and press Enter.

Other od flags include:

* a to display bytes under their ASCII names

* d, l, or i to display bytes in decimal

* h to display bytes in hex

Article Change History:
17 Jun 1993 - Revised to add more detail to steps.
31 Aug 1992 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

A/UX: AppleTalk Can Use Enet Port Instead of LocalTalk (8/94)

How can I make AppleTalk use the Ethernet port instead of the LocalTalk port?

This article has been archived and is no longer updated by Apple.
AppleTalk for A/UX is configured via the /etc/appletalkrc file. The interface entry defines if you use EtherTalk or LocalTalk. Follow these steps:

1) Use AppleTalk -d to bring the AppleTalk services down.

2) Change the appletalkrc file to reflect what you want.

3) Bring the services up with appletalk -u.

4) If you're in a Finder session, you must log out and log in again to see the changes.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: Changing the Default Editor (9/94)

Under A/UX, is it possible to change the default editor from TeachText to something else?

This article has been archived and is no longer updated by Apple.
If you wish to change the default editor, change the environment variable FINDER_EDITOR. You'll need to change this in either the .login file for csh users -- or .profile for korn or bourne shell users.

As an example for C shell users add a new line to the bottom of the .login file as follows:

setenv FINDER EDITOR <editorpathname>
setenv FINDER EDITOR /mac/bin/TextEditor -for TextEditor
setenv FINDER EDITOR /usr/bin/vi -for vi"

Article Change History:
01 Sep 1994 - Added C shell example.
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: Troubleshooting Launch Difficulties (8/94)

1) Every time I launch A/UX, I get a message saying "atstatus lw not found."

2) The first page of file "syschck.rpt" prints every time I launch A/UX.

This article has been archived and is no longer updated by Apple.
1) You need to log in to A/UX and select the LaserWriter from the Chooser. From the CommandShell, execute the command "at_cho_prn" to select the LaserWriter.

2) The file "syschck.rpt" is sitting in the print queue and prints every time you launch A/UX. Delete the file to successfully launch A/UX.

Article Change History:
19 Aug 1994 - Updated title and removed reference to A/UX 2.0.1

Support Information Services

Published Date: Feb 18, 2012

A/UX: Log In Permissions (6/93)

I can launch a Finder session as root, but not as a normal user. When I try to log in as a normal user, I get the message that it couldn't create /tmp/mac32sm.208.

This article has been archived and is no longer updated by Apple.
The /tmp directory was only writable by root. Change the permissions of the tmp directory to 777 to log in successfully. 777 causes the directory to have the permission of status to read, write, and execute by owner, group, and others.

Article Change History:
17 Jun 1993 - Revised clarify points in article.
31 Aug 1992 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

TA47594_AUX_Upgrading_Printer_Drivers__(TIL09277).pdf

A/UX: Upgrading Printer Drivers (8/94)

Is it possible to upgrade the printer drivers under A/UX?

This article has been archived and is no longer updated by Apple.
Yes. You need to replace the LaserWriter, Laser Prep, and Print Monitor files in the A/UX System Folder being used.

- If you don't have a personal system folder, then the path for the global system folder is /mac/sys/System Folder.

- If you have a personal system, then place the files in that folder.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: Security Q & A (8/94)

1) The A/UX manual refers to a menu option to change the root password, but I can't find it.

2) Is there a possibility of getting a Startup shell that has password protection?

3) Which file is used to restrict access to the directories?

This article has been archived and is no longer updated by Apple.

1) At the A/UX Login screen, pull down the Options menu and select Change Password.

2) Cancel the A/UX startup so you are in the Startup command shell. Pull down the Preferences menu and select General. Select Password checking. This prevents unauthorized users from canceling A/UX Startup and using the A/UX Startup command shell window.

3) The file is /usr/lib/uucp/Permissions.

Article Change History:
30 Aug 1994 - Updated to describe Startup shell protection.

Support Information Services

Published Date: Feb 18, 2012

TA47596_Super_Serial_Card_Cable_for_Centronics__(TIL00928).pdf

Super Serial Card: Cable for Centronics 737 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a Centronics 737 printer.

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) .... 4 <-----> 6 & 8..(DSR) & (DCD)
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 11
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Article Change History:
20 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

TA47597_AUX_Maximum_Speed_Supported_by_slip__(TIL09280).pdf

A/UX: Maximum Speed Supported by slip (8/94)

What is the maximum speed that SLIP will support?

This article has been archived and is no longer updated by Apple.
The current maximum speed is 19.2K.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

TA47598_AUX_No_Support_for_Tkn_Rng_Serial_NB_Card_NEC_CDROM__(TIL09281).pdf

A/UX: No Support for Tkn Rng, Serial NB Card, NEC CD-ROM (8/94)

1) Does A/UX support Token Ring?

2) Will the Serial NB card work under A/UX?

3) Do NEC CD-ROM drives work with A/UX?

This article has been archived and is no longer updated by Apple.
1) No.

2) No.

3) No.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

A/UX: Adding Swap Space without Repartitioning (6/93)

I keep getting a message about running out of swap space. Is there an alternative to repartitioning the disk and enlarging the size of the swap partition?

This article has been archived and is no longer updated by Apple.

Yes. You need to add a new swap space on a different hard drive and use the command swap -a to have the system recognize the space. The command swap -l (lowercase "el") will give you the status of the current swap space.

Article Change History:
17 Jun 1993 - Revised to clarify swap flag.
31 Aug 1993 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

A/UX: Questions About Using tar (11/95)

1) How can I use tar to create a backup of a directory and compress the output?

2) How can I read a tar floppy if I receive the message "This is not a Macintosh disk" when I insert the disk?

This article has been archived and is no longer updated by Apple.

1) The easiest way to do this in one step is with the command:

tar -cvf - dir_name | compress > dir_name.tar.Z

The file dir_name.tar.Z is now your compressed backup file.

2) Make the CommandShell the front-most application and insert the disk. Under A/UX 2.0 you will be prompted with a dialog asking if the disk is an A/UX or Macintosh floppy. (On A/UX 2.0.1 or later that dialog no longer appears.) Select A/UX and at the prompt type:

tar -tvf /dev/floppy0 To list the contents of the floppy
tar -xvf /dev/floppy0 To extract the contents of the floppy to the current directory.

Article Change History:
28 Nov 1995 - Updated format.
31 Aug 1992 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

A/UX 2.0: Toolbox Shows Only 16MB RAM in About the Finder Window

I have 20MB of physical RAM installed, but "About the Finder" shows only 16MB. (True in 2.0 and 2.0.1)

This article has been archived and is no longer updated by Apple.

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The A/UX Toolbox environment has a 16MB limit when you look at the About
the Finder window.  A/UX itself is using the full 20MB.
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Published Date: Feb 18, 2012

Diamond Multimedia

Diamond Multimedia (was Supra Corporation, still supports Supra products)
This article has been archived and is no longer updated by Apple.
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Albany, OR 97321
USA

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1 (800) 727-8772 (Sales Only)

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1 (800)774-4965 (Technical Support: pre-recorded information)

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+ 1 541 967 2444 (BBS: 8 nodes - 24hr.)

Web site: **http://www.supra.com/**

email: supratech@supra.com (Gen. Support)
email: mactech@supra.com (Macintosh Support)
email: sdms@supra.com (Supra DMS Support)

Company Profile:
Hardware, specializing in modems.
Published Date: Feb 18, 2012

Super Serial Card: Cable for C.Itoh, C.Itoh F10 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a C.Itoh or C.Itoh F10 printer.

This article has been archived and is no longer updated by Apple.

C.Itoh Printer

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

* Check C.Itoh owners manual for additional information on setting the printer's option jumpers.

C.Itoh F10 Printer

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1 .....(FG)
Transmit Data (Tx) ..... 2 <-----> 3 .....(Rx)
Receive Data (Rx) ..... 3 <-----> 2 .....(Tx)
Request to send (RTS) .... 4 <-----> 8 .....(DCD)
Clear To Send (CTS) .... 5 <-----> 8 .....(DCD)
Data Set Ready (DSR) .... 6 <-----> 20 ....(TDR)
Signal Ground .....(SG)..... 7 <-----> 7 .....(SG)
Data Carrier Detect (DCD) .... 8 <-----> 4 & 5 .(RTS) & (CTS)
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) .... 20 <-----> 6 .....(DSR)

* Use printer at 1200 Baud.

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

System Software 7.0.1: Support for PowerBook

This article describes the features of system software version 7.0.1 that support the Macintosh PowerBook computers.

This article has been archived and is no longer updated by Apple.

Caps Lock Extension

The Caps Lock key doesn't stay mechanically pressed down on the PowerBook computers. Caps Lock is an extension that adds an international caps lock symbol as a caps lock indicator to the menu bar. The symbol may not appear the instant the Caps Lock key is pressed, because the processor may have other tasks to handle before the Caps Lock extension is executed. Even though the menu-bar symbol may not change immediately, the keyboard does toggle immediately whenever you press the Caps Lock key.

Revised Low Power Dialogs

There are fewer low power dialogs. A lower voltage level prompts the dialogs to increase battery life and eliminate any memory effect on the NiCad battery. The last dialog box (10 second warning) comes up when the battery voltage is low enough to eliminate the memory effect. There are three dialog boxes that come up. The first dialog appears when about 15 minutes of life remains. The backlight dims to reduce power consumption. This is the time to save documents and plug in the power adapter. If operation continues, a second low-power message is displayed. At this point, you may have just enough time to save your documents. Finally, a 10 second dialog appears and the unit sleeps. If you plug in the power adapter within the next two days, all documents are saved.

New Portable Control Panel

The Portable Control Panel modification eliminates the brightness/contrast controls for the Macintosh PowerBooks. The Macintosh Portable gets this information from the Brightness Control Panel. This panel still selects the time until hard disk drive and system sleep. It also allows selection of internal or external modems on the Macintosh PowerBooks 140, 145, and 170 and the original Macintosh Portable. The PowerBook 100 doesn't have this option because it has no external modem port.

When clicking the "Minutes Until Automatic Sleep" text while holding down the Option key, the system rest dialog box appears. This causes a dialog to appear that allows turning the rest feature on or off.

Battery Control Panel

This controls a number of options and provides a visual indicator of the
charging status of the battery. You click the flag to see a number of options, depending on which PowerBook model you have. A sleep button comes up on all the portables (the Macintosh Portable and all PowerBook models). Power-Saver buttons come up on the Macintosh PowerBook 170. Power-Saver changes the processor speed to 16MHz on the PowerBook 170 to increase battery life.

Article Change History

09/24/92 - Corrected to show that there are three low-power messages, not two.
08/03/92 - Updated for PowerBook 145.

Support Information Services

Published Date: Feb 18, 2012

TA47605_System_Software_Support_for_Quadra__(TIL09294).pdf

System Software 7.0.1: Support for Quadra 700, 900, 950

Article Change History

09/24/92 - UPDATED
* To include Quadra 950.

This article describes the features of system software version 7.0.1 that specifically support the Quadra 700, 900 and, 950.

This article has been archived and is no longer updated by Apple.

Virtual Memory

The MMU table format changed in the 68040 CPU. The 68040 copy-back cache mode requires microprocessor-specific modifications to virtual memory. The ROM supports page write protection that prevents modification of RAM pages to ensure data integrity of those pages. The RAM disk feature of the Memory control panel uses this feature.

Network Control Panel

The Network control panel allows switching between physical networks such as built-in LocalTalk and Ethernet. The Quadra 700, 900, and 950 required modifications to the Network control panel to select the internal Ethernet connection.

Keylock Support

The keylock switch support disables all ADB activity, including power on in the secure position. The software programs the clock/ADB chip which controls ADB functions.

Published Date: Feb 18, 2012

System Software Version 7.0.1: New Features

Article Change History

09/24/92 - REVIEWED
* For technical accuracy.

This article lists the new features of Macintosh system software, version 7.0.1.

This article has been archived and is no longer updated by Apple.
System software version 7.0.1 supports the following new or revised features:

- Installer Script and CPU name support

- Memory control panel revisions

- Additional shutdown dialogs

- Revised Sound Manager

- Enhanced SANE routines

- Revised Brightness Control Panel

- Revised Network Control Panel to support on-board Ethernet

- Caps Lock indicator

- Revised low-power dialog messages

- Revised Portable control panel

- SCSI Disk Mode

- Battery DA modification

Memory Control Panel

The Memory Control Panel now supports a RAM disk on the Macintosh Portable, the PowerBooks, and the Quadra 700, 900, and 950. The RAM disk can only be used if the system has at least 3MB of memory.

Revised Shutdown Warning

A shutdown warning dialog appears on the PowerBook 140 and 170 and the Quadra 700 and 900 saying that you will lose all data in the RAM disk if you continue the shutdown. The dialog doesn't appear if there is no RAM disk, or if there are no files on the RAM disk.

NOTE: RAM disks on the Macintosh Portable and PowerBook 100 don't go away when the system is shut down. The warning is not needed on those computers.

Sound Manager Updates

The Sound Manager now supports the sound chips in the computers listed here. These computers use different sound chips, and the Sound Manager responds differently for each system.

Computer Sound Input Sound Output

PowerBook 100	No	Mono
Macintosh Classic II	Yes	Mono
PowerBook 140	Yes	Stereo
PowerBook 170	Yes	Stereo
Quadra 700	Yes	Stereo
Quadra 900	Yes	Stereo

Enhanced SANE Routines

A significant System file change provides a new SANE package for the Macintosh IIsi (when FPU is installed), IIfx, IIci, PowerBook 140 and 170, and Quadra 700 and 900. The SANE changes the trap call to a JSR that points directly to the SANE code in the system heap, bypassing the trap dispatcher. This increases the performance up to two and one-half times for integer and 5 to 6 times for floating point.

Brightness/Contrast Control Panel

The Brightness control panel modification supports the Macintosh Classic II. This driver is used with the Macintosh Classic, Macintosh Classic II, and the original and backlit Macintosh Portables.

This control panel doesn't work with the PowerBook computers. The PowerBook software reads from the slider controls and adjusts the screen brightness based on those values. The Power Manager handles the screen update and checks the sliders.

Backlight Driver

The Backlight driver supports the PowerBook computers and the Macintosh Classic II. This driver gets data from the Brightness control panel for the Macintosh Portable and the Macintosh Classic II, and from the slider or knobs on the PowerBook computers.

Published Date: Feb 18, 2012

PowerBook: Sound Circuitry Power Conservation (8/93)

My PowerBook 140 emits a click from the speaker from time to time. Is this common, or is my unit defective?

This article has been archived and is no longer updated by Apple.
The system software detects if the sound chip is being used. If it hasn't been used for a while, power is disconnected from the sound circuitry in order to conserve power. During this shutdown process, a click may be heard from the speaker.

This power saving mode mostly affects the PowerBook 100, 140, 145, and 170. On more recent PowerBook models, it is possible to disable sound entirely by moving the volume to zero in the Sound control panel. Once the volume is set at zero on those models, even the startup sound will not chime. There will be no clicks from the speaker with the volume set to zero since the power to the sound circuitry is always off.

Article Change History:
16 August 1993 - Revised article with information about recent models.

Support Information Services

Published Date: Feb 18, 2012

PowerBook: Screen Power Consumption and Battery Life (7/92)

Does the use of white pixels draw more power than the use of black pixels on the PowerBooks (supertwist and active matrix)?

We're comparing the PowerBook 100 to several PC-compatible notebooks, and found that the PowerBook 100 doesn't have quite the battery life of some PC-compatibles. We're wondering about the screen's power consumption. We have some information on the PC-compatibles that says using the screens in inverse mode (black text on a white background) uses more power than their normal mode (white text on a black background). Is it worth setting the desktop pattern to all black or not?

This article has been archived and is no longer updated by Apple.

Screen Power Consumption

The black screen and the white screen draw almost the same amount of power: the black slightly less than the white (approximately 300 mW versus 320 mW).

The real power draw is the backlight (approximately 2.5 watts). The backlight at maximum is the largest power consumer of the entire system. Because most customers really use the light at maximum, Apple quotes battery life with the light on full brightness. We can't speak for how other manufacturers quote their battery life. However, the black versus white background argument is not valid in discussing battery life.

Battery Size Versus Weight

Not all batteries are exactly the same, but Apple uses a state-of-the-art NiCad battery. In this class of battery, capacity and weight are directly related. Competitors with higher system weight may have larger batteries, and therefore, longer battery life.

Truth in Testing

Apple tries to provide a real battery life description. We hear many reports of portable computers not meeting their reported battery life. Sometimes we suspect the testing procedure. Additionally, every manufacturer tests with a fully charged battery. NiCad charging is somewhat tricky; therefore, consumer reports of less than expected battery life need to be interpreted as a function of the NiCad charging sequence, battery history, and other factors. Apple uses an intelligent charging system to provide the best recharging possible.

Support Information Services
Published Date: Feb 18, 2012

PowerBook 100: When It Won‘t Recognize Third-Party Drive (8/92)

My PowerBook 100 won't recognize non-Apple hard drives.

This article has been archived and is no longer updated by Apple.
Are you using one terminator in the chain? This means either an external terminator or a built-in terminator to the third-party device.

The termination on the PowerBook 100 hard disk drive isn't strong enough to support the bus. So if the third-party device doesn't have an internal terminator, you need to provide an external terminator.

Support Information Services
Published Date: Feb 18, 2012

PowerBook 100: Cure for Continual Restarts (8/92)

My PowerBook 100 continuously restarts while the battery switch is on.

This article has been archived and is no longer updated by Apple.
Using the PowerBook 100's SCSI Disk mode, re-install the System software.

Support Information Services
Published Date: Feb 18, 2012

PowerBook: How to Clean the Trackball

My PowerBook's trackball doesn't work smoothly; it appears to "stick" or "jump" when rolled.
This article has been archived and is no longer updated by Apple.
Most PowerBook trackball problems are due to contamination of the rollers. The trackball is just like the standard Apple mouse in that dust and debris can accumulate on the rollers and impede smooth movement of the trackball.

Symptoms of a Dirty Trackball

Symptoms that your trackball is dirty are:

- The trackball appears to stick or jump when rolled.
- The cursor will not track horizontally or vertically.
- It sometimes seems like the cursor is hitting a wall.
- On-screen buttons fail to activate when you click on them.
- The movement of the cursor on the screen isnt smooth.
- The trackball is physically difficult to roll.

How to Clean the Trackball

1) Remove the trackball retaining ring by turning it counterclockwise until it pops out (about 1/4 turn). You dont need tools for this; you can just press against the two small ridges on the ring with your fingernails.

2) Lift the retaining ring and trackball out of its cavity.

3) Locate the small rubber rollers at the left and bottom sides of the trackball cavity. Depending on your model, they may look like small rings or wheels.

4) Use any reasonably clean, blunt object (such as your finger or a cotton swab) to wipe off the rollers. Do not use any liquid, including any amount of cleaning fluid or water, inside the computer.

5) Locate the three white or red bearings located at approximately clockwise 4:00, 7:00, and 11:00 in all PowerBooks except the PowerBook 100, which has three black posts instead of bearings. Using a fingertip, dry cotton swab, or other blunt object, clean them of any debris.

6) Replace the trackball and the retaining ring.

In addition, on a PowerBook 140 or 170, reseating the cables on the trackball and keyboard may solve the problem. This is very effective if the failure is related to the computer heating up. These cables are located inside the PowerBook, so your authorized service provider or Apple must do this.

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iMovie 3: Preview Button Does Not Preview Effect or Title

On some configurations, clicking the Preview button in iMovie 3 may not display a preview of the title or effect in the larger playback window.
This article has been archived and is no longer updated by Apple.

Symptom

After selecting an effect or title in iMovie 3, clicking the Preview button does not render the preview in the large playback window as expected.

Solution

Update to iMovie 3.0.3 or later. It is available from the iMovie website (http://www.apple.com/imovie).
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Final Cut Express: French Version Missing Options in View Menu

The French version of Final Cut Express 1.0.1 is missing two commands from the Video submenu in the View menu.
This article has been archived and is no longer updated by Apple.

Symptom

The Video submenu in the View menu usually contains the commands: "RealTime", "FireWire", and "Show Current". In the French localization of Final Cut Express 1.0.1, though, only "Title Safe" and "Show Current" are available.

Solution

Video played through FireWire or in RealTime cannot be selected through the View menu in the French version of Final Cut Express 1.0.1.

Even though the menu commands are not available, you can switch between RealTime and FireWire by pressing Command-F12.

This document will be updated as more information becomes available.

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Final Cut Express: System Requirements for Real-Time Effects

This document describes the system requirements for Final Cut Express and real-time effects.
This article has been archived and is no longer updated by Apple.
G4 Real-time Effects work on the following computers:

- Any Macintosh computer with dual PowerPC G4 microprocessors.
- Any Macintosh computer with a single 733 MHz PowerPC G4 microprocessor or faster.
- Macintosh computers with a single 500 MHz to 700 MHz PowerPC G4 microprocessor and at least 1 MB of L2 or L3 cache.

Published Date: Feb 18, 2012

PowerBook: SCSI Disk Mode and Termination

Macintosh PowerBook computers, with the exception of PowerBook 140, 145, 145B, 150, and 170, can function as an external hard drive to a desktop Macintosh via SCSI Disk Mode.
This article has been archived and is no longer updated by Apple.

Overview

SCSI Disk Mode (in the PowerBook's ROM) allows you to use a PowerBook as an external SCSI device. You can then connect the PowerBook to any other SCSI-equipped Macintosh and transfer files directly from the desktop Macintosh to and from the PowerBook.

Preliminaries

The two hard-drive volume names (the one in the desktop Macintosh and the one in the PowerBook) CAN'T be identical.
To use SCSI Disk mode, you need:
* The HDI-30 SCSI disk adapter, which plugs into the SCSI port of the PowerBook.
* A SCSI system cable and SCSI terminator.

Making the Connection

The Macintosh User's Guide for Macintosh PowerBook computers contains instructions for making the connections between the PowerBook and various desktop Macintosh systems. Just as with any other SCSI device, both the PowerBook and the desktop Macintosh MUST BE POWERED OFF when the cable connections are made. Make sure your PowerBook is not in Sleep mode.

Activating SCSI Disk Mode

1) Once you connect the cables, power up the PowerBook by pressing the appropriate key. The drive will then spin up.

2) Power up the desktop system. The PowerBook's hard drive should appear on desktop system's display (the PowerBook display will show a moving SCSI icon with the selected SCSI ID number.) In SCSI Disk Mode, treat the PowerBook like an external hard drive.

Exiting From SCSI Disk Mode

To exit SCSI Disk Mode, press the PowerBook's Reset switch or the interrupt switch, or both together. This shuts down the PowerBook to allow removal of the SCSI Disk Mode adapter.

The next time you turn on the PowerBook, it will start up as usual.

Termination

Most PowerBook computers, as well as the Macintosh Portable, provide internal hard disk drive termination. The 1.3 KOhm pull-up resistor provides a minimal amount of termination. Therefore, even though the system has internal termination, it requires an external terminator when used in SCSI Disk Mode.

PowerBook computers that use IDE (ATA) hard drives do not provide SCSI termination. This includes the Powerbook 1400 series and Powerbook 3400 series.

With the introduction of IDE (ATA) specification internal hard drives in Powerbook computers, in most cases (as outlined in the user's guide) it is necessary to use double-termination when connecting external SCSI devices to the Powerbook. When connecting a device with internal termination an extra external terminator should be placed between the cable and the device. If the device lacks internal termination a total of two external terminators are required. One should be placed between the cable and the device, and the second terminator should be applied to the second port on the device.

* Double-termination does not apply to Disk Mode or Target Mode applications.

* While in SCSI Disk Mode with a Macintosh IIfx, remember to use the black terminator between the adapter and the SCSI system cable. With other desktop Macintosh models, use the standard gray terminator.

Technical Notes

You enter SCSI Disk Mode by starting the PowerBook with a special adapter plugged into the SCSI connector on the back of the computer. The ROM code checks for the presence of the SCSI Disk Mode adapter. If the adapter is absent, the ROM sets the SCSI address to seven (normal CPU SCSI address), and continues to start up normally. If the cable is present, the ROM checks the battery voltage to see if it's high enough to enter SCSI Disk Mode. The ROM then changes the hard disk address to the address stored in PRAM, sets backlighting to minimum, turns on the hard drive, and begins animating the screen.

The SCSI Disk Mode ID number is set in the PowerBook control panel. The default is 1, but you can select any number from 1 to 6. This number is stored in parameter RAM (PRAM).

It's important to connect the SCSI Disk Mode adapter only when the PowerBook has been shut down. The firmware necessary to enter SCSI Disk Mode is executed only at startup. Because the SCSI Disk Mode firmware isn't executed when you connect the adapter during sleep, the SCSI bus potentially has two bus masters and two devices with SCSI ID 0, leading to potential data loss.

To prevent data loss in this situation, a modal warning dialog window appears and the menu bar isn't accessible. You have two options:

* Disconnect the SCSI Disk Mode adapter. Removing the adapter removes the warning dialog box, and you can resume using the system. Although this procedure is counter to the suggestion of always making connections while the system is shut down, you can do it with no problems under these circumstances. You can then shut down the system from the menu bar.

* Simultaneously press the Reset and Interrupt buttons. This shuts down the system, but all RAM data will be lost with no opportunity to save the data.

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Burning playlists with purchased songs in iTunes 4.5 and later

This article has been archived and is no longer updated by Apple.

If a playlist contains any songs purchased from the iTunes Store, iTunes software restricts the number of times the same playlist may be burned to seven.

Notes

1. Music files you encode as an AAC file from a source other than the iTunes Store (such as an audio CD) do not need to be authorized.
2. iTunes lets you use the CD-RW drive, Combo drive or DVD-R/CD-RW SuperDrive in your Mac, to burn your own CDs. Some third-party drives may also work. See the drive compatibility page for Mac OS X 10.2 for information. Windows users click here to see if your drive can burn CD-R discs.

A note about copyright

iTunes software may be used to reproduce materials. It is licensed to you only for reproduction of non-copyrighted materials, materials in which you own the copyright, or materials you are authorized or legally permitted to reproduce. If you are uncertain about your right to copy any material, you should contact your legal advisor. See the iTunes Music Store Terms of Service for additional information.

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400MB, 3.5-Inch, Half-High, SCSI Hard Disk Drive: Connectors

This article describes the connectors used in the 400MB SCSI hard disk drive.

This article has been archived and is no longer updated by Apple.

Power Connector

The power for the drive is provided through a 4-pin male polarized connector. Pin 1 is the rightmost pin when viewing the connector with drive top cover up.

SCSI Connector

The SCSI connector is a 50-pin, shrouded (4-sided), male, keyed, right-angle connector. Pin 1 is the rightmost pin of the upper row when viewing the connector with drive top cover up (key slot up).

Termination

Removable termination resistor packs with standard SCSI 220/330 termination resistors. The packs are removable without having to remove the board. The drive provides termination power to the TERMPWR line (pin 26) of the SCSI bus through a diode and provides a 1.5 amp current-limiting function.

Device Select Connector

The device select connector is a 6-pin male connector located behind the power connector along the drive side. Nominal pin spacing is 0.100 inches.

LED Connector

The LED connector is a 2-pin, right-angle, un-shrouded, nonpolarized male header to connect with the LED cable assembly. Nominal pin spacing is 0.100 inches. It is located on the opposite end of the drive from the SCSI connector.

Connector J6

Connector J6 is an 8-pin male connector located on the side of the drive away from the SCSI connector. Pin 1 is the bottom pin farthest from the SCSI connector end.

Pin 1 - Not Jumpered (Factory use only)
Pin 2 - Not Jumpered (Motor start option)
Pin 3 - Not Jumpered (Delayed Motor start option)
Pin 4 - Not Jumpered (Write-protect option)
Pin 5 - Jumper Installed (Parity checking and error reporting)
Pin 6 - Not Jumpered (Reserved for later use)
Pin 7 - Jumpered in a Macintosh Quadra 900/950
(Termination Power is supplied to the SCSI bus.)
Pin 8 - Jumpered in a Macintosh Quadra 700
(Termination is supplied to the drive terminators.)

Note

Pins 7 and 8 jumpered at the same time is allowed.

TA47617_MB_Inch_HalfHigh_SCSI_Hard_Disk_Drive_Connectors_(TIL09302).pdf

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400MB, 3.5-Inch, Half-High, SCSI Hard Disk Drive: Overview

This article describes the Apple 400MB SCSI hard drive.

This article has been archived and is no longer updated by Apple.
The 400MB hard disk drive is intended for use in the Quadra 700 and 900 computers, as well as other Apple products. The drive possesses features that benefit many different applications.

The hard disk assembly consists of as few mechanical components as possible. It's designed for simplified assembly without requiring sensitive adjustments or calibration during the manufacturing process.

Powerful data error correction techniques ensure data integrity. When power is turned on, the drive releases the actuator arm assembly from the locked position, only if the read/write heads have achieved a stable flying condition. This feature ensures no direct physical contact between the heads and the data area on the disk surfaces. If power shuts off suddenly, the actuator arm automatically retracts to the landing zone before the heads make contact with the disk surfaces.

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Backing up your music files in iTunes 4

This article has been archived and is no longer updated by Apple.

Learn how to back up songs that are in your iTunes library. If you have iTunes 5 or iTunes 6, click here.

Be sure to make regular backups of your music files (in your iTunes Music folder) by copying them to an external hard disk or other media. Otherwise, if your hard disk becomes damaged or you lose any of the music you've purchased, you'll have to buy any purchased music again to rebuild your library.

Backing up your music to a CD or DVD

You can burn a data CD or DVD with any of the songs and spoken word content in your iTunes library. You might want to do this to make a backup copy (or archive) of all your audio files, or to transfer them to another computer.

To burn a DVD, your computer should have an internal SuperDrive and Mac OS 10.2.4 or later. Some third-party DVD burners may also work. You can store about 650 MB of files on a CD, and about 4.7 GB on a DVD.

To create a playlist of your entire library

1. Open iTunes.
2. Click Library in the Source list.
3. Click the Browse button or choose **Show Browser** from the **Edit** menu.
4. Make sure "All" is selected for Genre, Artist, and Album.

5. Click any single song, then choose **Select All** from the **Edit** menu.

6. From the **File** menu, choose **New Playlist From Selection**.
7. Type a name for the new playlist.

Note: If you don't mind re-importing your other music from your CD collection, you can just back up yout iTunes Store and Audible content by creating a smart Playlist that contains all songs and audiobooks with Kind set to Protected AAC audio file or Audible file as shown here:

To burn a data CD or DVD

1. Open iTunes.
2. From the **iTunes** menu, choose **Preferences** (Windows: From the **Edit** menu, choose **Preferences**).
3. Click the Burning button.
4. Choose Data CD or DVD as the Disc Format.
5. Click OK.
6. Create a playlist that includes all the items in your library (see steps above), or all the items you want to back up to the CD or DVD.
7. Select the playlist you want to burn to the CD or DVD, then click the Burn Disc button.
8. Insert a blank CD-R, CD-RW, DVD-R, or DVD-RW disc, and click Burn Disc again.

Any audio files in the playlist (MP3, AAC, AIFF, WAV, Audible) are copied to the CD or DVD.

Tip: You can only burn a CD or DVD from the songs in a playlist. If the playlist contains more songs than will fit on a single disc, iTunes will notify

you and will give you the option to use multiple discs. You can see the size of the selected playlist at the bottom of the iTunes window.

Data CDs or DVDs will work on your computer, but will not work in most CD/DVD players.

You can make regular, incremental backups of your music (that means only backing up what has changed).

Restoring music files from backup:

To add music files back into your iTunes library from your backup discs:

1. Insert the disc into your computer. The disc shows up in iTunes.
2. Click the disc in the Source list.
3. Click the Browse button in the upper right to make browsing the disc easier.
4. Locate the songs, albums, artists or entire genres you are missing.
5. Drag the missing files to Library in the Source list.

A note about copyright iTunes software may be used to reproduce materials. It is licensed to you only for reproduction of non-copyrighted materials, materials in which you own the copyright, or materials you are authorized or legally permitted to reproduce. If you are uncertain about your right to copy any material, you should contact your legal advisor. See the iTunes Store Terms of Service for additional information.

Related Documents

93041 iTunes: How to Locate Downloaded Files

93358 iTunes for Windows: About Where iTunes Audio Files Are Stored

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Slow performance when using the iTunes Store on a dial-up connection

This article has been archived and is no longer updated by Apple.

If you connect to the iTunes Store using a dial-up connection over a phone line, music previews might sound odd or they might not play at all.

The iTunes Store rocks with a high-speed (broadband) Internet connection like DSL or cable modem. Broadband is the best way to experience the iTunes Store, but if for whatever reason you can't get a high-speed connection, there is something you can do to get the previews to play.

1. Open iTunes and then go to the iTunes Preferences:
   Windows: On the **Edit** menu, click **Preferences**.
   Mac: From the **iTunes** menu, choose **Preferences**.
2. Click the Store tab at the top of the window.
3. Check the "Load complete preview before playing" checkbox.

4. Click OK.
5. Try previewing the song again.

Because the preview will download completely, the preview should sound great when you play it.

Tip: The preview is a small segment of the song on the iTunes Store. If the preview doesn't sound right to you, even after the it loads completely, the song probably won't sound right, either.

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Keynote: How to Add Page Numbers to All Slides

This document explains how to add page numbers that automatically increment as you arrange or add slides.
This article has been archived and is no longer updated by Apple.
To automatically update page numbers on slides as you create or arrange them, add a page number to the master slide(s). Follow these steps:

1. Open Keynote.
2. Open your document or create a new document.
3. Choose View > Show Master Slides.
4. Select the master slide in the Master Slides column.
5. Choose View > Show Inspector.
6. Select the "Show Slide #" checkbox in the Layout pane of the Master Slide inspector window.
7. Position the page number in the master slide

Repeat steps 4 through 7 for each master slide you want to number.
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iTunes 4: Text Has Rough or Jagged Edges

Text in iTunes 4 may appear rough or have jagged edges.
This article has been archived and is no longer updated by Apple.

Symptom

Text has rough or jagged edges

Solution

Update to iTunes 4.0.1 or later. Download the current version of iTunes from http://www.apple.com/itunes/download/

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68040 CPU Architecture: NuBus Transfer Modes and Performance

Can you give information about the architecture of the 68040 CPU? It isn't clear which master/slave transfer modes are supported in the 68040 computer between the host and the NuBus. What would the NuBus Block Transfer Modes Resource Entries look like for the 68040 computer per the DTS Technical Note #288? What performance can we expect?
This article has been archived and is no longer updated by Apple.
The Macintosh Quadra computers support all sizes of block transfers when the main logic board is accessed as a slave device. (The NuBus specification states that if a slave accepts any block transfer, it must accept all block transfers.) As a NuBus master, the Quadra doesn't initiate block transfers. NuBus masters don't have to support all sizes of block transfers.

The data rate a NuBus master will see when doing block transfers to the main logic board is 8 to 10 MB/sec, depending on main memory refresh cycles and synchronization delays. This is a maximum rate that can be achieved only if the NuBus master does nothing but block transfers (that is, it moves data continuously without doing any other operations). A more realistic maximum rate is 4 to 5 MB/sec.

When the main logic board is the bus master, the transfer rate depends greatly on the speed of the NuBus slave device. A zero wait state NuBus slave (none of which exist as far as we know) could give peak transfer rates approaching 20 MB/sec. Real NuBus slave devices will probably have transfer rates under 10 MB/sec (more like 2 to 4 MB/sec). The only way to really determine how fast a Quadra can transfer data to a NuBus slave is to run real code and time the bus transfers.

The following Tech Info Library article can help you find the Tech Note mentioned here:

Article 24493: "**Apple Tech Notes: What They Are, Where To Find Them**"
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iTunes 4: Effects Can Cause Some Sound Fluctuation During Playback

Update to a later version of iTunes 4 if you hear a rapid fluctuation in volume in iTunes 4.0.
This article has been archived and is no longer updated by Apple.

Symptom

When playing a song, the sound volume fluctuates rapidly, or you hear other distortions.

Solution

Download and install iTunes 4.0.1 or later. It is available from the Software Update pane in System Preferences, or from the iTunes website (http://www.apple.com/itunes/download/).

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QuickTime: About the QuickTime 6.2 Update

The QuickTime 6.2 Update enhances QuickTime to work with iTunes 4 and addresses certain issues.
This article has been archived and is no longer updated by Apple.
This software updates QuickTime 6.0, 6.0.1, 6.0.2, 6.1 or 6.1.1 to QuickTime 6.2.

System Requirements

To use QuickTime 6.2, your computer should meet these system requirements.

- PowerPC G3, or PowerPC G4 microprocessor
- Mac OS X 10.1.5 or later
- A minimum of 128 MB of memory (RAM)

Automated Software Update Installation

1. Choose Apple menu > System Preferences.
2. Choose View > QuickTime.
3. Click the Update tab.
4. Click Update Now.

Note: QuickTime 6.2 is also available as an update in the Software Update pane of System Preferences.

Standalone Installer

A standalone installer is available from the QuickTime download website (**http://www.apple.com/quicktime/download/**).

About QuickTime 6.2

QuickTime is Apple's award-winning, industry-leading software architecture for creating, playing, and streaming digital media for Mac OS and Windows.

Enhancements in QuickTime 6.2

- Foundation support for iTunes 4
- Enhanced AAC audio encoder (QuickTime Pro only)

This update is recommended for users of iTunes 4. It allows you to do the following:

- Use music purchased from the iTunes Store in other applications.
- Within iTunes 4, you can now import CDs into AAC, the new industry standard for high-quality digital audio.

QuickTime Pro users also get access to an enhanced AAC encoder.

Enhancements in previous versions of QuickTime 6

- MPEG-4 ISO compliant file creation
- MPEG-4 video codec
- AAC audio codec
- Instant-On streaming
- Macromedia Flash 5
- Enhanced QuickTime Player interface
- QuickTime Picks, bringing you the best, up-to-date content

Using QuickTime 6.2 with other applications

- iMovie 3
  If you encode your own .m4a (AAC encoded audio) files or bring .m4p (AAC Protected audio) from another computer you will be unable to use the Import command in iMovie 3. Bring the files into iTunes first. They can then be accessed via the audio pane in iMovie 3.

For more information, see the QuickTime Web site at (**http://www.apple.com/quicktime/**). The QuickTime Web site also provides many links to cool QuickTime content and to other Internet sites that showcase QuickTime.

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Macintosh Quadra 900: Dual Channel SCSI

What is the value of dual channel SCSI on the Macintosh Quadra 900?

This article has been archived and is no longer updated by Apple.
The dual SCSI implementation on the Quadra 900 means several things:

- Because the SCSI chains are electrically separate, there won't be any interruption on the internal chain if something goes wrong on the external chain (like a disconnect while the computer is on, poor termination schemes, and so on).

- It gives third parties (and potentially Apple) the opportunity to implement disk arrays using the two chips. Micronet is advertising their Raven array without using two NuBus slots.

- You can assure speed of the drive internally using the internal cabling, and not limit the speed of a drive by the cable you use (frayed cables, bad cables, and so on).

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Final Cut Pro 3: About Fonts That Can Be Used

This document discusses the kind of fonts Final Cut Pro 3 can use.
This article has been archived and is no longer updated by Apple.
Final Cut Pro 3 uses only TrueType fonts.
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PowerBook and PowerBook Duo: No Apple Support for A/UX

Can any of the PowerBooks or PowerBook Duos run A/UX 3.0?

This article has been archived and is no longer updated by Apple.
No, Apple does not support any version of A/UX on any of the PowerBook or PowerBook Duo computers.

MachTen from Tenon InterSystems is a 3rd party solution for running Unix on a Powerbook. Search on Tenon or MacTen for company information.

Article Change History:
2 November 1992 - Updated for new models.

Support Information Services

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MacTCP: Releasing IP Addresses

A Macintosh with MacTCP installed refuses to give up a dynamically assigned IP number until the we restart the computer.

If a Macintosh uses an application that requires an IP number from the network (in this case a GatorBox and no MacTCP installed) and the application is no longer in use, the IP is released for use by someone else. This is what it's supposed to do.

When we add the MacTCP drivers and run an application that requires MacTCP and an IP number, the Macintosh doesn't release the IP number, even after quitting this program. My explanation is the MacTCP drivers are now loaded into the Macintosh and reside there, holding on to the IP number. Hence, until the machine is shut off or restarted, it doesn't release the number.

Is this normal, and should I look for a way to release the number without shutting off the Macintosh? Or is this a bug that will be fixed or maybe someone has come up with a fix?

I have been told that the node number and IP numbers are all reset at startup time. Is this correct?

This article has been archived and is no longer updated by Apple.
You are correct; MacTCP doesn't release an acquired IP address until you restart the Macintosh.

In the first instance you mention, an application has its own TCP/IP driver; NCSA Telnet 2.3 (non-MacTCP) is a good example. When Telnet tries to open a session, the built-in TCP/IP driver is opened and an IP address is obtained. When you quit the application, the driver is removed from memory and the IP address is released.

With MacTCP, when an application or DA opens the driver, an IP address is obtained. Since MacTCP is a system-wide resource not limited to a specific application, the driver is not removed from memory when the application is quit because other applications or DAs may be using the driver as well. This causes the IP address to remain in use until you restart the computer.

This behavior is not a bug, and will not be changed in a future release of MacTCP.

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iSync 1.0: Cannot Sync To Do List With iPod (with Dock Connector)

iSync 1.0 does not sync To Do lists with the iPod (with Dock Connector).
This article has been archived and is no longer updated by Apple.

Symptom

After syncing with iSync, the calendar and address book information appears on iPod, but To Do information does not.

Solution

Update to iSync 1.1 or later to synchronize To Do items with your iPod (with Dock Connector). To download the latest version of iSync, visit the iSync website (http://www.apple.com/isync/).

Earlier iPod models do not have a To Do feature to view To Do items. This includes any iPod using version 1.x of the iPod software. iSync will not synchronize To Do items with these iPods.

Related documents

- 61131 "**iPod: How to Use iPod As an External Hard Disk**"

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Super Serial Card: Cable for Comprint 912 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a Comprint 912 printer.

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

* Check Comprint owners manual for correct setting of the printer option jumpers.

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
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iPod (with Dock Connector): Left and Right Stereo Channels Swap

Under some conditions, the right and left stereo channels swap.
This article has been archived and is no longer updated by Apple.

Symptom

The stereo sound channels swap left-to-right and right-to-left.

Solution

Download and install iPod Software 2.1. It is available from software download document 120229, **iPod Software 2.1: Information and Download.**

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LaserWriter IIg: LocalTalk and EtherTalk Zones

I have a question about the LaserWriter IIg. I have the same printer name on both the LocalTalk zone and the Ethernet zone, and the printer is connected to both LocalTalk and Ethernet. Between these zones I have an AppleTalk Internet Router.

When I print from a Macintosh on Ethernet to the LaserWriter, I can actually reach the printer from both Ethernet and LocalTalk. Which printer port is used in that case? Does it choose the shortest way, or does it prefer LocalTalk?

This article has been archived and is no longer updated by Apple.
If a LaserWriter IIg is connected to the same Internet via LocalTalk and EtherTalk, and the LocalTalk and EtherTalk connections are in the same zone, the LocalTalk connection is shut down.

If the LocalTalk and EtherTalk connections are in different zones, the printer will be advertised in both zones. If you select the LaserWriter IIg via the LocalTalk zone, all communications go through the LocalTalk port. If you select the LaserWriter IIg via the EtherTalk zone, all communications go through the EtherTalk port.

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Keynote: "Can‘t apply theme" Alert

You may not be able to open Keynote themes if Hebrew is the preferred language in the International preference pane.
This article has been archived and is no longer updated by Apple.

Symptom

When you try to select a theme in Keynote an alert with this message appears:

> "Keynote can't apply the theme /resources/keynote.app/contents/resources/themes/<themename> to the current document because there is a problem with the theme".

Solution

Check to see if Hebrew is the preferred language in the International preference pane:

1. Choose Apple > System Preferences.
2. Choose View > International.
3. Click the Language tab, if necessary.
4. If Hebrew is the first language listed in the Languages area, drag English, French, or Spanish to the top of the list so that it becomes the preferred language.
5. Choose Apple menu > Log Out.
6. Log in.

Keynote should now open themes.
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LaserWriter II Fonts 1 Disk: Zapf Dingbats Incorrectly Named

When printing to the Apple LaserWriter IIf or Apple LaserWriter IIg from a Macintosh using System 7 and the LaserWriter 7.0 driver, the system will not download the Zapf Dingbats PostScript font that comes on the "LaserWriter II Install 4.0" disks. These disks come with the Apple LaserWriter IIg and Apple LaserWriter IIf.

This article has been archived and is no longer updated by Apple.

The problem with the Zapf Dingbats font on the LaserWriter II Fonts 1 disk (one of the "LaserWriter II Install 4.0" disks) is that the Postscript file is named incorrectly to be temporarily downloaded by the LaserWriter driver. The filename as it appears on the disk is "Zapf Dingbats." For the font to be downloaded by the LaserWriter driver, the downloadable Postscript file needs to be called "ZapfDin". Note: The incorrect name doesn't interfere with the LaserWriter Utility's ability to download the font into the printer's memory.

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iTunes 4: How to Create Your Own MP3 CDs

You can use iTunes to create a data CD with the music stored in MP3 format.
This article has been archived and is no longer updated by Apple.
Creating your own MP3 CDs

You can use iTunes to create a data CD with the music stored in MP3 format. MP3 is a high-quality, Internet-standard encoding method. You can listen to the MP3 CDs you create in iTunes on special consumer CD players or on your computer.

You can store over 12 hours of music, or about 150 songs, on a 650 MB CD-R disc.

1. Choose iTunes > Preferences, then click the Burning button at the top of the window.
2. Choose MP3 CD as the Disc Format, then click OK.
3. Select the playlist you want to burn to the CD, then click the Burn Disc button.
    - You can only burn a CD from the songs in a playlist. For instructions on creating your list of songs, search the Knowledge Base or Mac Help.
    - If the playlist contains more songs than will fit on the CD, iTunes will only burn as many songs as will fit on the disc. (You can see the size of the selected playlist at the bottom of the iTunes window.) If necessary, you may need to create more than one playlist and burn each one to a CD.
4. Insert a blank CD-R disc and click Burn Disc again.

If you plan to only play the CD using your computer, you can also use a CD-RW disc. To play it on a digital music player or computer, use a CD-R disc.

If your playlist includes songs in formats other than MP3, they will not burned on the CD. See technical document 93071 "**iTunes 4: Music Purchased From iTunes Store Cannot Be Burned to MP3 Disc**" for additional information.

The songs sound as good on the CD as they do in iTunes. Songs you download from the Internet may be encoded differently, so their quality may be different.

For information about buying CDs, choosing import options, or creating an audio CD or data DVD, search the Knowledge Base or Mac Help.

This information comes from Mac Help, the help system included with your computer. This information comes from iTunes version 4. You should refer to the Help menu on your computer if you have a different version. Updated or expanded information may also exist elsewhere in the Knowledge Base.

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LaserWriter II: "Unlimited Downloadable Fonts" Slowdown

I have an Excel 3.0 document that uses the Zapf Dingbats fonts. The document takes 30 seconds to print on my Personal LaserWriter NT. The same document takes 10 minutes to print on the LaserWriter IIf. I'm using System 7 with the Zapf Dingbats PostScript in the System Folder (it is named "ZapfDin"). Other documents in Word, FileMaker, and so on, print fine on the LaserWriter IIf.

This article has been archived and is no longer updated by Apple.
We looked at the "Page Setup..." options for the document you sent. The "Unlimited Downloadable Fonts in a Document" option was turned on. With this option enabled, any font that the driver downloads is purged as soon as another font is used, even if this other font is in the printer's ROM. The document has Zapf Dingbats characters interspersed throughout. Zapf Dingbats is downloaded the first time the font is used. As soon as another font is used, Zapf Dingbats is purged from memory. When it's used again, the LaserWriter driver has to download the font again. Because of the layout of the document, the Zapf Dingbats PostScript is downloaded dozens of times.

If you disable the "Unlimited Downloadable Fonts in a Document" option, the document takes 30 seconds to print on the LaserWriter IIf.

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iTunes 4: "Shared Music Library Is Not Compatible" Alert

Computers with iTunes 4.0 are unable to share music with computers that have iTunes 4.0.1 or later installed.
This article has been archived and is no longer updated by Apple.

Symptom

This alert appears: "The shared music library <shared library name> is not compatible with this version of iTunes."

This occurs when you click on a shared music library in the Source list.

Solution

If you are using iTunes 4.0
Download and install iTunes 4.0.1 or later. See the iTunes website for update information (http://www.apple.com/itunes/).

If you are using iTunes 4.0.1 or later
The computer sharing the music library to needs to update to iTunes 4.0.1 or later.

iTunes 4.0.1 only allows music sharing between computers using iTunes 4.0.1 or later on a local network (in the same subnet).
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QuickTime 6.3 Software Update Does Not Appear in Update Window or Will Not Install

QuickTime 6.3 requires Mac OS X 10.2.3.
This article has been archived and is no longer updated by Apple.

Symptom

One or both of the following may occur:

- The QuickTime software update does not appear in the Software Update window.
- The alert "This disk is dimmed because the system version is not at least 10.2.3" appears when you try to use the standalone installer on a computer with Mac OS X 10.2, 10.2.1 or 10.2.2.

Solution

1. Download and install Mac OS X 10.2.3 or later. It is available from the Software Update pane of System Preferences, or from Apple Software Downloads (http://www.apple.com/swupdates/).
2. Reinstall the QuickTime 6.3 update.

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QuickTime: About QuickTime 6.3

QuickTime 6.3 includes new features and enhancements.
This article has been archived and is no longer updated by Apple.
This software updates QuickTime 6.0 through 6.2 to QuickTime 6.3.

System Requirements

To use QuickTime 6.3, your computer should meet these system requirements.

Macintosh

- Macintosh computer with 400 MHz PowerPC G3 or faster
- Mac OS X 10.1.5
- Mac OS X 10.2.3 or later
- A minimum of 128 MB of memory (RAM)

Windows

- Intel Pentium or compatible microprocessor
- Windows 98
- Windows Millennium Edition (Me)
- Windows 2000
- Windows XP
- A minimum of 128 MB of memory (RAM)

How to update

Automated Software Update Installation (Mac OS X)

1. Choose Apple menu > System Preferences.
2. Choose View > QuickTime.
3. Click the Update tab.
4. Click Update Now.

Note: QuickTime 6.3 is also available as an update in the Software Update pane of System Preferences. It will not appear in Software Update for computers with Mac OS X 10.2, 10.2.1, or 10.2.2. Use the steps above instead.

Automated Software Update Installation (Windows)

1. Open the QuickTime folder.
2. Open the QuickTime Updater application program. It automatically checks the server, then downloads and installs the update.

Alternatively, open the QuickTime Player application, and choose Help > "Check for QuickTime Updates". Make sure you have an active Internet connection before you check for updates.

Standalone Installer
Standalone installers for Mac OS X and Windows are available from the QuickTime download website (**http://www.apple.com/quicktime/download/**).

About QuickTime 6.3

QuickTime is Apple's award-winning, industry-leading software architecture for creating, playing, and streaming digital media for Mac OS and Windows.

Enhancements in QuickTime 6.3

- Support for 3GPP, the new standard for multimedia on wireless devices, including:
    - AAC and AMR audio
    - MPEG-4 and H.263 video
    - 3G Text
    - Native .3gp file format support (available via the 3GPP Component, a free download at

http://www.apple.com/quicktime/download/)

- Playback of .amr and .sdv files (available via the 3GPP Component, a free download at http://www.apple.com/quicktime/download/).
- Automatic detection of streaming transport.
- Improved MPEG video playback in Keynote.
- Significant improvements to DV audio and video synchronization.
- Import and playback of Kodak DCS Photo Desk JPEG files.

QuickTime Pro users also get access to an enhanced AAC encoder.

Enhancements in previous versions of QuickTime 6

- Foundation support for iTunes 4
- Enhanced AAC audio codec (QuickTime Pro only)
- Enhanced MPEG-4 video codec.
- Full screen mode enhancements, including keyboard shortcuts and performance improvements
- Significant improvements to DV codec performance
- MPEG-4 ISO compliant file creation
- Instant-On streaming
- Macromedia Flash 5
- Enhanced QuickTime Player interface
- QuickTime Picks, bringing you the best, up-to-date content

For more information, see the QuickTime website at (**http://www.apple.com/quicktime/**). The QuickTime website also provides many links to cool QuickTime content and to other Internet sites that showcase QuickTime.
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AppleTalk Internet Router: What Happens with More than 256 Zones

I know the AppleTalk Internet Router supports up to 256 zones on an Internet. What happens to the AppleTalk Internet Router when the Internet it is attached to exceeds 256 zones?

This article has been archived and is no longer updated by Apple.
The AppleTalk Internet Router continues to run on an Internet with more than 256 zones. The AppleTalk Internet Router doesn't return an error message in this situation.

The router will enter only 256 zones into its Zone Information Table. If the router has defined 10 zones on its own, it accepts the first 246 zones in the ZIP Reply packets it receives from the router on the Internet that responds to its ZIP Query packet. It discards the remaining 10 zones. Nodes that use this AppleTalk Internet Router to access the rest of the Internet won't be able to do NBP lookups for devices in the 10 missing zones.

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iMovie 3.0.3: The Ken Burns Effect Won‘t Stay On

The way to use the Ken Burns Effect in iMovie 3.0.3 changed from earlier versions.
This article has been archived and is no longer updated by Apple.
Sometimes it may appear that the Ken Burns Effect won't stay on. For example, if you turn off the effect and add a photo with no motion to your movie, then select the Ken Burns Effect checkbox, clips that you select in the Photos pane don't show motion in the Preview monitor (even though the checkbox is selected). If you select another photo and drag it to your movie, the Ken Burns Effect checkbox is automatically deselected and the photo is added as a still.

This lack of motion saves your computer's processor time and allows iMovie to perform faster because it doesn't need to create motion where there is none. It also saves you time if you want to add a lot of still images quickly.

If you want to add pan and zoom to a photo after you've added a still image, select the Ken Burns Effect checkbox and set up the pan and zoom effects you want. When you click Apply, the clip renders as usual, and the Ken Burns Effect checkbox stays selected.

This information comes from the Late Breaking News document included with iMovie 3.0.3.
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Cinema Tools: Empty Scene and Take Fields May Not Be Populated

Importing clips into Cinema Tools without information in the scene and take fields may result in those fields being empty in the Cinema Tools database.

This article has been archived and is no longer updated by Apple.

Symptom

Scene and take information is not listed for the clip in the Cinema Tools database.

Solution

This is expected behavior. You can force scene and take information to appear by either:

- Explicitly adding the information in Final Cut Pro.

or

- Use a hyphen in the clip name. Cinema Tools will parse the information after the hyphen as the scene and take.

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Cinema Tools 1.0: Cannot Handle Keynumbers Beyond 9999

Cinema Tools 1.0 is unable to handle keynumbers that "roll over" from 9999 to 0000, a convention common with some brands of film (such as Fuji), although it will not happen with Kodak film.
This article has been archived and is no longer updated by Apple.

Symptom

Cinema Tools adds a fifth digit to the keynumber instead of rolling over to 0000.

Solution

Upgrade to Final Cut Pro 4.0, which includes Cinema Tools 2.0.
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Final Cut Pro 4: Text Tracking May Change When Upgrading Final Cut Pro 3 Projects

When upgrading a Final Cut Pro 3 project to Final Cut Pro 4, be sure to check any text generators you've added for consistency.
This article has been archived and is no longer updated by Apple.

Symptom

In a project upgraded from Final Cut Pro 3 to Final Cut Pro 4, text created with one of Final Cut Pro's text generators is wider or narrower than before.

Products affected

- Final Cut Pro 4

Solution

Adjust the text tracking as necessary to ensure that the appearance of the text is consistent with its appearance in Final Cut Pro 3.

Additional information

The method for determining text tracking has changed between Final Cut Pro 3 and 4. When upgrading a Final Cut Pro 3 project to Final Cut Pro 4, be sure to check any text generators you've added for consistency.

Published Date: Feb 18, 2012

Final Cut Pro 4: Location of Electronic Documentation

The Final Cut Pro 4 manual can be accessed from the Help menu.
This article has been archived and is no longer updated by Apple.
The Documentation folder on the installation disc contains electronic manuals for other programs, but not Final Cut Pro 4. The Final Cut Pro 4 User's Manual can be accessed by choosing Help > Final Cut Pro Help.
Published Date: Feb 18, 2012

Kanji 6.0.7 and 6.0.7.1: Use U.S. Backlit Portable INIT (7/94)

Is a localized version of the Portable CDEV available for Kanji 6.0.7 that supports backlit Portables? The Portable CDEV in the Kanji system 6.0.7 on Developer CD Vol. VIII is localized, but doesn't support backlit Portables, it is for contrast only. I moved the U.S. English Portable CDEV v1.3 over to Kanji 6.0.7, and it works, but I can't find one that is both localized AND supports backlighting.

This article has been archived and is no longer updated by Apple.
You're right. The Backlit Portable INIT wasn't localized in Japanese (current versions of system software, 6.0.7 and 6.0.7.1). So to use KanjiTalk on the Backlit Portable, you'll need to use U.S. Portable INIT to control the screen brightness.

Article Change History:
13 Jul 1994 - Reviewed for technical accuracy, revised formatting,
clarified title.
25 Sep 1992 - Reviewed for technical accuracy.
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iDVD 3: Chapter Marker Submenu Not Created for Movies Over 60 Minutes

A chapter marker submenu is not created in iDVD 3 when importing a movie over 60 minutes long if the "importing movies" preference is set to "ask each time."
This article has been archived and is no longer updated by Apple.

Symptom

No chapter submenus are created when importing a movie over 60 minutes in length.

This happens if the preference for importing movies is set to "ask each time."

Solution

1. Open iDVD.
2. From the **iDVD** menu, choose **Preferences**.
3. Click the Movies icon.
4. Select the "automatically create" option for "when importing movies".

Additional Information

When importing a movie containing chapter markers, iDVD 3 will create a "scene selection" submenu containing buttons for the chapters. If the preference for importing movies is set to "ask each time," iDVD will ask whether to create a chapter submenu. However, if the movie being imported is over 60 minutes long, iDVD will warn that the duration of the project is changing, but will not ask whether to create a chapter submenu. No chapter submenu will be created.

Note: This does not occur with iDVD 3.0.1 or later.
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iMovie 3: Buzzing Noise During Transition Clip

Transitions applied between a still clip and a video clip may produce a "buzzing" noise. This document explains how to correct this issue.
This article has been archived and is no longer updated by Apple.

Symptom

After applying a transition between a still clip and a video clip, there is a buzzing noise during the transition when you play the movie.

Solution

Download and install iMovie 3.0.3 or later. It is available from the iMovie website (http://www.apple.com/imovie/).

To resolve this issue with clips that were imported before upgrading to iMovie 3.0.3:

1. Delete the affected transition.
2. Remove the still clip adjacent to the affected transition.
3. Reimport the still clip and move it to the timeline.
4. Re-apply the transition.

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Soundtrack 1.0: Saving Collected Files Resets Loop Transients

Saving a Soundtrack project using the "Collected" option can cause audio loops to have their modification date changed, resetting the loop transients next time the loops are opened in Soundtrack or Soundtrack Loop Utility.
This article has been archived and is no longer updated by Apple.

Symptom

One or both of the following occur:

- After saving a project as "Collected," sound quality is reduced or isn't properly matched to the project's key and tempo.
- In Soundtrack Loop Utility the transients are all evenly spaced and don't match the waveforms in the audio.

Solution

Update to Soundtrack 1.1. Use Software Updates in System Preferences to install the updates. **Note**: The Pro Apps Support package (ProKit Framework) must be installed first. Once the Pro Apps Support Package is installed, then click Check Now in Software Update again to see the Soundtrack update.

Related documents

93156 "**Soundtrack: Transients Get Reset if Sound File Changes**"

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Final Cut Pro 4: MPEG-2 Component Requires Upgrade for QuickTime 6.3

Final Cut Pro 4.0 comes with version 6.0.2 of the QuickTime MPEG-2 Playback component. If you upgrade to QuickTime 6.3, you should also upgrade the MPEG-2 playback component.
This article has been archived and is no longer updated by Apple.

Symptom

MPEG-2 content does not play.

Solution

Upgrade the QuickTime MPEG-2 Playback component to version 6.3 or later. See technical document 93168 "**QuickTime 6.3: MPEG-2 Playback Component for Mac OS X Requires Update**" for additional information.

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Soundtrack: Transients Reset After Saving Loop to Server

Saving an audio loop to a networked server can reset any custom transients that have been added to the loop.
This article has been archived and is no longer updated by Apple.

Symptom

One or both of the following occurs:

- Custom transient settings are lost.
- Sound quality is reduced or isn't properly matched to the project's key and tempo.

Solution

Update to Soundtrack 1.1. Use Software Updates in System Preferences to install the updates. **Note**: The Pro Apps Support package (ProKit Framework) must be installed first. Once the Pro Apps Support Package is installed, then click Check Now in Software Update again to see the Soundtrack update.

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AppleWorks 6: How to Change the Highlight Color

AppleWorks uses the Mac OS X System Preferences highlight color.
This article has been archived and is no longer updated by Apple.
With Mac OS X, AppleWorks uses the System Preferences highlight color when selecting text and when selecting cells in the spreadsheet.

You can change highlight color in System Preferences. To do this:

1. Choose Apple > System Preferences.
2. Choose View > General.
3. Choose a color from the Highlight Color pop-up menu.

If you want a color that is not shown, choose Other to see the Color Picker dialog.

Note: This will affect the highlight color for any application that uses the System Preferences settings.
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Ethernet NB Card: Works Under A/UX 2.0.1 for Native TCP/IP

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

Does the new Apple Ethernet NB Card under A/UX 2.0.1 work for native TCP/IP communications?

This article has been archived and is no longer updated by Apple.
Yes, the new Apple Ethernet NB Card does work under A/UX 2.0.1 for any TCP/IP communication. Note that there is a special driver ("as") that you need to install with the EtherTalk startup disk that came with the Apple Ethernet NB Card package. Follow the instructions in the Apple Ethernet NB Card User's Guide to do the installation for A/UX.

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Super Serial Card: Cable for DEC LA34, DEC LA120 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a DEC LA34 or LA120 printer.

This article has been archived and is no longer updated by Apple.

DEC LA34 Cable

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

* Use printer at 300 Baud.

DEC LA120 Cable

Super Serial Card (SSC) Pin Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1 .....(FG)
Transmit Data (Tx) ..... 2 <-----> 3 .....(Rx)
Receive Data (Rx) ..... 3 <-----> 2 .....(Tx)
Request to send (RTS) .... 4 <-----> 8 .....(DCD)
Clear To Send (CTS) .... 5 <-----> 8 .....(DCD)
Data Set Ready (DSR) .... 6 <-----> 20 ....(TDR)
Signal Ground .....(SG)..... 7 <-----> 7 .....(SG)
Data Carrier Detect (DCD) .... 8 <-----> 4 & 5 .(RTS) & (CTS)
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) .... 20 <-----> 6 .....(DSR)

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
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A/UX: BBX Works with A/UX 3.0 (9/94)

There is a problem with the A/UX pseudo-tty driver when running BBX (a 4GL development tool from BASIS International). Here is a detailed description of the problem:

When I open a pseudo-tty with the O_NDELAY flag, some of the output doesn't show up on the screen until AFTER I type a character on the screen. The pty is opened unbuffered -- this is something internal to the system. The first half of a page of text prints out. I have to type something to print the rest of the page.

This doesn't happen on the console or serial ports -- only the ptys. I'm using read() and write(), not stdio, and it's unbuffered. Doing an ioctl(tcsetaw) on the fd of the pty fixes the problem, but shouldn't be necessary.

This article has been archived and is no longer updated by Apple.
There is a new kernel patch for the problem between A/UX pseudo tty and BBX. We tested the BBX software with the new kernel, and it works well. This patch fixes the longstanding problem between A/UX and BBX. This fix is now included in A/UX 3.0.

Article Change History:
09 Sep 1994 - Reviewed. Changed title.
31 Aug 1992 - Reviewed.

Support Information Services

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iMovie 3.0.3: Projects Don‘t Open In Final Cut Express or Final Cut Pro

Final Cut Express and Final Cut Pro 4 can open iMovie 3 projects. However, projects saved from iMovie 3.0.3 will not open correctly.
This article has been archived and is no longer updated by Apple.

Symptom

When you try to open an iMovie project, this message appears: "Unable to open iMovie project. Final Cut Pro (or Express) requires iMovie 3.0 project files."

Solution

For Final Cut Pro 4
Update to Final Cut Pro 4.0.1 or later (4.1-J or later for Japanese versions). Use Software Updates in System Preferences to install the updates.
Note: The Pro Apps Support package (ProKit Framework) must be installed first. Once the Pro Apps Support Package is installed, then click Check Now in Software Update again to see the Final Cut Pro update.

For Final Cut Express
Update to Final Cut Express 2.0 or later.
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Final Cut Pro 4: Text Generator May Choose the Incorrect Font

In some cases the Final Cut Pro 4.0 text generator can choose the wrong base font from a font family. This can result in text being displayed in unexpected ways, such as always italicized or always bold.
This article has been archived and is no longer updated by Apple.

Symptom

Text is italicized or bold instead of the normal appearance.

Solution

Update to Final Cut Pro 4.0.1. Use Software Updates in System Preferences to install the updates. **Note**: The Pro Apps Support package (ProKit Framework) must be installed first. Once the Pro Apps Support Package is installed, then click Check Now in Software Update again to see the Final Cut Pro update.

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Shake Qmaster: Changing the Minimum Frames Setting For Shake Jobs

This document discusses the Minimum frames setting for batches submitted for processing with Shake Qmaster.
This article has been archived and is no longer updated by Apple.

Changing the Minimum Frames Setting for Shake Jobs

When you submit batches for processing with Shake Qmaster, a command dialog appears when you add a Shake job to a batch. Most of the settings in this dialog correspond to commonly used Shake commands. However, the Minimum setting is unique to submitting Shake jobs with Shake Qmaster and requires some explanation.

As described in the Shake Qmaster User's Manual, Shake Qmaster divides Shake jobs into segments of frames for efficient distributed processing. For example, one service node may process frames 1 through 10, while another service node processes frames 1 through 21.

When you are submitting a Shake job, you can change the value in the Minimum field to change the minimum number of frames in each Shake Qmaster segment. For example, with a minimum value of ten (the default), Shake Qmaster would divide a 100-frame job into at least ten segments of ten frames each. If you changed the minimum value to five, Shake Qmaster would divide a 100-frame job into at least 20 segments of five frames each. When you set a minimum, keep in mind that while smaller segments allow a job to be distributed to more nodes at once, smaller segments can also mean that more processing effort is spent on opening and closing Shake on each node.

This information comes from the Qmaster Late Breaking News for Shake version 3.0. You should refer to the Help menu on your computer if you have a different version. Updated or expanded information may also exist elsewhere in the Knowledge Base.

Published Date: Feb 18, 2012

TA47668_Macintosh_LC_Video_Specifications_(TIL09323).pdf

Macintosh LC: Video Specifications

I'm looking for the video specifications for the Macintosh LC. What are the Macintosh LC video characteristics (such as Horizontal and Vertical frequencies), and are they interlaced? (I understand the Horizontal and Vertical frequencies vary with the monitor.)

This article has been archived and is no longer updated by Apple.
The Macintosh LC has three modes of operation, based on the monitor connected: 12-inch RGB, 12-inch monochrome/13-inch RGB, and VGA. The timings for these Macintosh LC video modes are the same as for other Macintosh models supporting these same monitors.

Monitor	Vertical Refresh Hz	Horizontal Refresh KHz	Dot Clock MHz
12-inch RGB	60.15	24.48	15.7
VGA	59.95	31.47	25.175
12-inch Monochrome and 13-inch RGB	66.7	35	30.2

None of the Macintosh LC video modes uses interlace scan. All modes use a progressive scan.

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Shake Qmaster: Monitoring Extended Node Cluster Activity

This document describes how to use Batch Monitor to monitor extended node (QuickCluster) cluster activity.
This article has been archived and is no longer updated by Apple.

Monitoring Extended Node (QuickCluster) Cluster Activity

In the Batch Monitor, you cannot view clusters in administrator mode if they were created with the Shake Qmaster System Preferences QuickCluster option. To monitor the status of batches submitted to extended node clusters, use the Batch Monitor in user mode by opening the Batch Monitor in any of the following ways:

- Use the Batch Monitor that automatically opens after you submit a batch.
- Click the Batch Monitor button in the Shake Qmaster window.
- Double-click the Batch Monitor application icon (/Applications/Utilities).

This information comes from the Qmaster Late Breaking News for Shake version 3.0. You should refer to the Help menu on your computer if you have a different version. Updated or expanded information may also exist elsewhere in the Knowledge Base.

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Shake Qmaster: Cluster Passwords Can Be Changed But Not Removed

Passwords can be changed, but not removed from Shake Qmaster clusters.
This article has been archived and is no longer updated by Apple.

Cluster Passwords Can Be Changed But Not Removed

Once you create a cluster user password or cluster administrator password with Shake Qadministrator, you can change either password by choosing Cluster > Change Password. However, once a cluster user password or cluster administrator password has been created, there is no way to remove it from an existing cluster other than to delete and re-create the same cluster without passwords.

This information comes from the Qmaster Late Breaking News for Shake version 3.0. You should refer to the Help menu on your computer if you have a different version. Updated or expanded information may also exist elsewhere in the Knowledge Base.

Published Date: Feb 18, 2012

Shake Qmaster: How to Drag a Job or Batch From the History Table

This document describes how to drag a job or batch from the History table in Shake Qmaster.
This article has been archived and is no longer updated by Apple.

Dragging Jobs and Batches From the History Table in Shake Qmaster

To drag a job or batch from the History table in Shake Qmaster, select the first column of the job or batch, then drag. (You cannot drag a job or batch by selecting the second column.)

This information comes from the Qmaster Late Breaking News for Shake version 3.0. You should refer to the Help menu on your computer if you have a different version. Updated or expanded information may also exist elsewhere in the Knowledge Base.
Published Date: Feb 18, 2012

Compressor: Unable to connect to background process

This article has been archived and is no longer updated by Apple.

In some situations submitting a job in Compressor fails even though a valid source, preset, and destination have been added.

Symptom

The Submit button is dimmed in Compressor's Batch window, or a message appears stating "Unable to connect to background process" when submitting a job. This can occur due to an issue during Compressor's installation.

To prevent this, either completely disable or temporarily remove third-party antivirus software or disk utilities which may run background processes during Compressor's installation.

Solution

Compressor 2

If this issue occurs with Compressor 2, go to /Library/Receipts and, if found, drag the following files to the Trash:

- Compressor.pkg
- Qmaster_Applications.pkg
- Qmaster_Frameworks.pkg
- Qmaster_Plugins.pkg
- Qmaster_Services.pkg

Then, go to /Applications and, if found, drag the following files to the Trash:

- Compressor
- Apple QMaster
- Apple Qadministrator

From your install disc, reinstall Compressor and Apple Qmaster (in custom install window, make sure that Compressor and Apple Qmaster items are checked). Once you have reinstalled the Compressor and QMaster applications and services, install all updates using Software Update and restart your computer.

Compressor 1

If you see the security alert described in "Qmaster startup item evokes security message in Mac OS X 10.4 Tiger," click "Fix" and restart your computer.

If you have Mac OS X 10.3 or Mac OS X 10.4 Tiger, update to Compressor 1.2.1.

If the issue continues:

1. Click the Finder in the Dock.
2. From the **Go** menu, choose **Go To Folder**.
3. Enter "/Library/Receipts" and click Go.
4. If present, drag files which contain the name "CompressorUpdate" to the Trash.
5. From the **Go** menu, choose **Go To Folder**.
6. Enter "/Library/Frameworks" and click Go.
7. Drag the file "Compressor.framework" to the Trash.
8. Install Compressor from your original software discs.
9. Use Software Update to update Compressor to version 1.2.1.

If this does not resolve the issue and you have both Final Cut Pro 4 and DVD Studio Pro 3 then do the following:

1. Reinstall Final Cut Pro 4 and download and install all updates.
2. Install DVD Studio Pro 3 making sure to select "Custom" and uncheck Compressor to install only DVD Studio Pro and A.Pack.

Note: If you have only one of these applications, then reinstalling the single application should resolve the issue.

For Mac OS X 10.2 to 10.2.8

In most situations, updating to Compressor 1.1 should resolve this. You can use Software Update in System Preferences to install the updates. **Note**: The Pro Apps Support package (ProKit Framework) must be installed first. Once the Pro Apps Support Package is installed, then click Check Now in Software Update again to see the Compressor update.

If the issue continues, it may be because DVD Studio Pro 2 was installed after installing Compressor 1.1. DVD Studio Pro 2 installs some components that do not work with Compressor 1.1. To resolve this, follow these steps:

1. Click the Finder in the Dock.
2. From the **Go** menu, choose **Go To Folder**.
3. Enter "/Library/Receipts" and click Go.
4. Drag the file "CompressorUpdate1.1.pkg" to the Trash.
5. From the **Go** menu, choose **Go To Folder**.
6. Enter "/Library/Frameworks" and click Go.
7. Drag the file "Compressor.framework" to the Trash.
8. Install Compressor from your original software discs.
9. Use Software Update to update Compressor to version 1.2.1.

See "Compressor: Troubleshooting basics" for other troubleshooting information.

Published Date: Feb 18, 2012

Final Cut Pro 4: Speed Attribute Not Pasted To Multiple Clips

Pasting the speed attribute onto multiple clips results in only the first selected clip accepting the speed.
This article has been archived and is no longer updated by Apple.

Symptom

When pasting the speed attribute onto multiple clips, only the first selected clip is changed.

Products Affected

- Final Cut Pro 4

Solution

Update to Final Cut Pro 4.1. The update can be obtained via the Software Update pane in System Preferences or via the Final Cut Pro Download page (http://www.apple.com/finalcutpro/download/).

Published Date: Feb 18, 2012

AFE: Remove ProDOS or MS-DOS File System Before Translating

Is there a problem using Apple File Exchange with Works-Works Transporter v2.0 and the ProDOS File System INIT that comes with the Apple IIe Card used on the Macintosh LC?

I have a Macintosh LC and I want to convert AppleWorks files to Microsoft Works files. I can't do this when the ProDOS File System INIT is in the System Folder. When in AFE, I can go to the menu and highlight AppleWorks to Microsoft Works as the translation, but it won't accept it. It appears to accept it, but only translates in the default mode. If the ProDOS File System INIT is taken out of the System Folder, AFE with Works-Works Transporter works fine.
This article has been archived and is no longer updated by Apple.
Apple File Exchange incorrectly assumes that the volumes it locates are Macintosh-readable. It isn't an issue with the Works-Works Transporter.

When AFE looks for the available volumes, it checks for the type of volume. When it finds a volume format not Macintosh-readable (that is, ProDOS or MS-DOS), then AFE displays an appropriate set of "to/from" menus for the volume format located.

The ProDOS File System INIT causes AFE to assume that the volume is Macintosh readable. Therefore, the volume doesn't appear to need translation from another operating system format. The same is true of similar INITs for MS-DOS volumes, such as AccessPC and DOSmounter.

The Macintosh foreign file system tools allow mounting the ProDOS and MS-DOS volumes on the Macintosh desktop. The INITs are the code segments that make this possible. When a volume is mountable on the Macintosh desktop, AFE considers it a Macintosh readable volume. This is an incorrect assumption for AFE to make.

Until Apple File Exchange is revised to allow mounting other volume formats on the Macintosh desktop, the only method of using AFE translation (beyondthe text-to-text mode) is to remove the ProDOS or MS-DOS file system INIT from the System Folder and restart the Macintosh. Then use AFE to perform the translation. To have the ProDOS or MS-DOS volume mountable on the desktop again, replace the file system INIT in the System Folder, and restart the Macintosh.
Published Date: Feb 18, 2012

Shake 3.0: "Open Script" Does Not Save Script Containing Only Audio Clips

When a script only has audio files, choosing Open Script or New Script discards the current script.
This article has been archived and is no longer updated by Apple.

Symptom

When you choose File > Open Script or File > New Script the current script is deleted without warning.

This occurs when a script only has audio files. It does not occur with scripts that have image files

Solution

Save the current script before opening or creating a new script.

This document will be updated when more information becomes available.

Published Date: Feb 18, 2012

Soundtrack 1.0: Unexpectedly Quits When Opening Document

Soundtrack 1.0 may unexpectedly quit if the end-of-song marker is set to 0.
This article has been archived and is no longer updated by Apple.

Symptom

If you set the end-of-song marker to 0, and save the document, Soundtrack unexpectedly quits when you later open the document.

Solution

Update to Soundtrack 1.1. Use Software Updates in System Preferences to install the update. **Note**: The Pro Apps Support package (ProKit Framework) must be installed first. Once the Pro Apps Support Package is installed, then click Check Now in Software Update again to see the Soundtrack update.

Published Date: Feb 18, 2012

Final Cut Pro 4: Some Projects Created in Final Cut Pro 3 Take Longer to Open

Some projects created in Final Cut Pro 3 take significantly longer to open using Final Cut Pro 4.
This article has been archived and is no longer updated by Apple.
Projects containing DV media files captured using versions of Final Cut Pro prior to version 4 may take significantly longer to open. This is expected behavior.

When opening or importing DV media files captured with Final Cut Pro 1, 2, or 3 into Final Cut Pro 4, you may notice a slight delay for each file. This delay is due to Final Cut Pro 4 validating the audio sample rate of each media file to ensure that audio/video sync is maintained. DV media files captured using Final Cut Pro 4 have this adjustment applied during the capture process, and stored permanently in each media file.

This delay is different than the project updater that runs the when an earlier project file is opened in Final Cut Pro 4 for the first time.

Published Date: Feb 18, 2012

iMovie 3 and 4: Scrolling Block and Music Video Titles Limited to Approximately 240 Characters

If you enter more than 240 characters in a Scrolling Block or Music Video title, some of the title text may not appear in the clip.
This article has been archived and is no longer updated by Apple.

Symptom

After entering Scrolling Block or Music Video title text, some of the text is missing from the end of the title.

Solution

Scrolling Block or Music Video title is limited to approximately 240 characters.

Published Date: Feb 18, 2012

TA47679_Ofoto_Doesnt_Descreen_a_Rastered_Photograph_(TIL09325).pdf

Ofoto: Doesn‘t Descreen a Rastered Photograph

Does Ofoto allow "descreening" a rastered (screened halftone) photograph from a printed document?

This article has been archived and is no longer updated by Apple.
Ofoto doesn't support this feature. Only a few scanners have this feature.

Published Date: Feb 18, 2012

Final Cut Pro 4 and Final Cut Express 2: Unusual keyboard shortcuts with some keyboards

Final Cut Pro 4 and Final Cut Express 2 may use nonstandard keyboard shortcuts for keyboard layouts of languages which are not available in the installed version of Final Cut Pro or Final Cut Express.
This article has been archived and is no longer updated by Apple.

Symptom

Standard Final Cut Pro or Final Cut Express keyboard shortcuts, such as those for the Zoom In Tool, Selection Tool, Toggle Windows and Toggle Wireframes, appear in menus to be linked to unusual or nonstandard keys.

This also can affect shortcuts such as Undo, Close Window, Select All, and Quit.

Products affected

- Final Cut Pro 4
- Final Cut Pro HD 4.5
- Final Cut Express 2.0

Solution

Final Cut Pro and Final Cut Express determine the default keyboard shortcuts based on the language that the computer is running in, for example only the default shortcuts for Belgian, French, Swiss French and other French language keyboard layout shortcuts are available when running Final Cut Pro or Final Cut Express in French.

As a partial workaround, create a custom keyboard layout using the Keyboard Layout options from the Tools menu. However it is not possible to reassign shortcuts to the key combinations to which the Undo, Cut, Copy, Paste and Abort are assigned.

Published Date: Feb 18, 2012

Final Cut Pro 4: How to Name Clips Captured With "Capture Now"

Final Cut Pro 4 streamlines the capturing workflow by saving clips captured using the "Capture Now" feature directly to the Browser.
This article has been archived and is no longer updated by Apple.
After capturing a clip using the "Capture Now" feature, the clip is saved to the Browser and given a name based on the Description, Scene, and Shot/Take fields of the Logging tab in the Log and Capture window. The captured file on disk uses this same name. The checkboxes to the right of each field determine whether the information will be used as part of the filename.

If the fields are left blank, the clips in the Browser and the disk will be titled "Untitled", "Untitled1", "Untitled2", and so forth.

You can change a clip's name in the Browser by selecting the name and moving the mouse (or choosing Edit > Item Properties > Logging Info), but the filename on the disk will stay the same as when it was captured.

Published Date: Feb 18, 2012

TA47682_AUX_How_to_Access_the_Serial_Ports__(TIL09327).pdf

A/UX: How to Access the Serial Ports (8/94)

How do you refer to the serial ports in A/UX? (For example, if a modem is attached to the Macintosh.)

This article has been archived and is no longer updated by Apple.
You can access the serial ports through a number of different methods:

- A/UX supports the calls to the Macintosh serial driver (it will not arbitrate between applications trying to use the serial port at the same time).

- A/UX also supports the Communications Toolbox.

- Finally, A/UX supports standard UNIX calls to the serial port.

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30 Aug 1994 - Reviewed

Support Information Services

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Final Cut Pro 4: Cannot Import Sony EDLs

Final Cut Pro 4 cannot import EDLs (Edit Decision Lists) in the Sony 9100 or Sony 5000 EDLs format.
This article has been archived and is no longer updated by Apple.

Symptom

When importing an EDL in Sony 9100 or Sony 5000 format, the resulting sequence has no name and no clips.

Solution

Update to Final Cut Pro 4.1. The update can be obtained via the Software Update pane in System Preferences or from the Final Cut Pro Download page (http://www.apple.com/finalcutpro/download/).

Published Date: Feb 18, 2012

iDVD 3: Option to Burn Not Available

While iDVD 3.0.1 and later can be used on any PowerPC G4-or G5-based Macintosh model to create DVD content, the option to burn the finished DVD is only available on computers with a built-in SuperDrive.
This article has been archived and is no longer updated by Apple.

Symptom

After creating a project in iDVD, the option to burn the DVD is not available. The Burn button does not respond when you click it.

Solution

Copy the iDVD project and any files associated with it (iMovie projects, still photos, and audio files) to a computer that has a built-in SuperDrive.

Starting with version 3.0.1, iDVD can be used on any Macintosh computer with a PowerPC G4 or G5 processor to create DVD content. However, the option to burn the finished DVD is only available on computers with a built-in SuperDrive. iDVD 3 may be included with your computer, even if it does not have a SuperDrive.

Published Date: Feb 18, 2012

A/UX 2.0: Standard Toolbox Calls from within A/UX

Can you make calls to the standard toolbox from within A/UX? What books and other resources can help?

This article has been archived and is no longer updated by Apple.

The most important of the A/UX programmer's manuals is probably the A/UX Toolbox Macintosh ROM Interface, which details the Macintosh Toolbox calls that are available under A/UX.

Using this information, you need to decide what type of application you want. It is possible to write your application under the Macintosh OS in any of the development systems available to you there, as long as you take into account which Toolbox calls are available to you under A/UX. This would give you the added benefit of having your application run under both A/UX and the Macintosh OS.

The A/UX Developers Tools from APDA gives you the benefit of programming under A/UX, and this package includes a number of very useful tools designed specifically for A/UX development. This package is centered around an A/UX-compatible version of the Macintosh Programmer's Workshop, so if you are familiar with that package, you will be right at home. Note that applications written in this environment will not be able to run under the native Macintosh OS.

Published Date: Feb 18, 2012

iMovie: Centered Titles Are Slightly Off Center

A Centered Title may be slightly off center in iMovie 3.
This article has been archived and is no longer updated by Apple.

Symptom

A rendered Centered Title is slightly off center.

Solution

Add a few spaces to the beginning of each line of text before rendering the title.

This document will be updated when more information becomes available.

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TA47687_AUX_Where_to_Find_GCC_Binary_(TIL09329).pdf

A/UX: Where to Find GCC Binary

Article Change History

08/31/92 - REVIEWED
* For technical accuracy

I need the executable code for A/UX 2.0.1 of the compiler GCC. This compiler is produced by Free Software Foundation, but they give the source code only. I can't compile it because cc, standard compiler of A/UX, is not ANSI. Please tell me if you have available the executable code of GCC, or send information of any other ANSI C compiler for A/UX 2.0.1.

This article has been archived and is no longer updated by Apple.
You have two options:

- You can order the A/UX Development Toolkit from APDA. This contains C89, which is an ANSI standard C compiler for A/UX. You could then use this to compile your source for GCC.

- You can obtain the A/UX GCC binary from any of the following Internet addresses: wuarchive.wustl.edu, afsg.Apple.com, aux.support.Apple.com.

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Soundtrack: Score Markers Are Not Preserved Correctly

This document describes an issue that can occur if you add Score Markers to a DV50 23.98 clip and then export it from Final Cut Pro to Soundtrack.
This article has been archived and is no longer updated by Apple.

Symptom

Score Markers are not in the correct places.

This happens when a DV50 23.98 clip is edited in the Timeline, Score Markers are added, and the clip is exported from Final Cut Pro to Soundtrack.

Solution

Update to Soundtrack 1.1. The update can be obtained via the Software Update pane in System Preferences.

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iDVD: About the Four Stages of DVD Burning

This document describes the four stages of burning a DVD-R disc in iDVD.
This article has been archived and is no longer updated by Apple.
When burning a DVD-R disc, iDVD goes through four stages.

Stage 1 Preparing

Stage 2 Menu Rendering and Encoding

Stage 3 Asset Encoding

Stage 4 Multiplexing and Burning

The amount of time it takes for the disc to be created depends on the amount of video on the disc and the type of computer. On average, it takes two to four minutes to convert one minute of video into DVD format and write it to the disc. This means that on the first pass, an iDVD project that includes an hour of video may take up to 4 hours to burn to a DVD-R disc. If you are creating multiple discs, the second and subsequent discs will be created faster because iDVD only has to convert the video once.

Important: iDVD software may be used to reproduce materials. It is licensed to you only for reproduction of non-copyrighted materials, materials in which you own the copyright, or materials you are authorized or legally permitted to reproduce. If you are uncertain about your right to copy any material you should contact your legal advisor.
Published Date: Feb 18, 2012

iMovie: How to Save Projects to Another Hard Disk

This document explains how to work with a hard disk other than your computer's startup disk in iMovie.
This article has been archived and is no longer updated by Apple.
If your computer's startup disk is low on disk space, you can use a secondary hard drive to save, back up, or archive your projects.

If you are creating a new project, simply select the secondary volume as the destination in the save dialog. If you do not see the disk in the destination list, click the disclosure triangle in the save window and scroll to the left to see all available volumes (see Figure 1).

Figure 1 Save dialog with multiple volumes

To copy an iMovie project to another disk:

1. Quit iMovie if it is open.
2. Locate the project folder in the Finder.
3. Drag the project folder to the other disk.

Note: You must move the complete project folder, intact, to the other disk in order to successfully copy the project. The project folder has the same name as the project listed in the iMovie window. This folder includes the iMovie project file, as well as a Media folder, which contains all of the clips associated with this project. If you don't copy all of these items, the project may no longer be readable in iMovie.

Once you have copied the project, try opening it in iMovie to ensure that it copied to the other disk successfully.

Important Considerations

Drive speed, bandwidth, and format are important when editing an iMovie project. Keep the following in mind when transferring a project to a volume other than the internal hard drive:

- Zip drives, floppy drives, hard drives connected via USB, and file server volumes are too slow to support direct editing of iMovie projects. These storage devices should only be used to back up and archive your projects.
- The drive must be formatted as Mac OS Extended (HFS Plus) or Mac OS Standard (HFS) format. Copying your iMovie project to disks that use DOS, UFS, or other formats may result in a project that is no longer useable in iMovie.
- When using drives connected to your computer with FireWire, connect the drive directly to the computer. If playback appears to stutter, or if iMovie indicates that the "disk responded slowly" consider disconnecting other FireWire devices.
- Disk fragmentation can cause playback issues within iMovie. If playback appears to stutter, or if iMovie indicates that the "disk responded slowly", consider defragmenting the disk using a defragmentation utility.

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DVD Studio Pro: "Use Button Of" Property Not Implemented

The marker property "Use Button Of" is not implemented in DVD Studio Pro 2.
This article has been archived and is no longer updated by Apple.
The "Use Button Of" marker property is not available in DVD Studio Pro 2.0.

If projects created with an earlier version of DVD Studio Pro utilize the "Use Button Of" marker property, then the button they represent will need to be recreated in DVD Studio Pro 2.
Published Date: Feb 18, 2012

iPod for Windows: MUSICMATCH Jukebox Stuck At "Preparing to Synchronize"

The MUSICMATCH Jukebox can incorrectly report that the iPod is still in the process of synchronizing, even when the iPod has completely synchronized.
This article has been archived and is no longer updated by Apple.

Symptom

You see one of these two alert messages:

- "Preparing to synchronize IPOD with MM Jukebox. Please Wait..."
- "Operation Complete"

Note: The second message appears with a progress bar that is not complete.

This occurs even though the iPod has fully synchronized with MUSICMATCH Jukebox.

Solution

Click on the MUSICMATCH Jukebox Playlists icon, then click back on the iPod.

To prevent this in the future, do not select synchronize unless there have been changes to the MUSICMATCH Jukebox library or playlists.

Additional Information

This usually happens if you select synchronize when there has been no change since the last synchronization between MUSICMATCH Jukebox and the iPod.

Published Date: Feb 18, 2012

iPod (with Dock Connector): iPod Software 2.0.2 is Not Required

Some iPod (with Dock Connector) models include iPod software 2.0.2, which is an update used in manufacturing and has no functional changes.
This article has been archived and is no longer updated by Apple.
Certain iPod (with Dock Connector) models include iPod software 2.0.2. The 2.0.2 version of the iPod software is an update used in manufacturing to adjust the default contrast setting and contains no functional changes.

It is not required, and is not available as a download.
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Final Cut Pro 4: Frame Viewer Does Not Appear on External Video

This article corrects a misstatement regarding the Frame Viewer tool in the Final Cut Pro 4 user's manual.
This article has been archived and is no longer updated by Apple.
The Final Cut Pro 4 User's Manual incorrectly states that the image in the Frame Viewer tool can be sent to an external video monitor through FireWire. The Frame Viewer image can only be displayed within the Frame Viewer window.
Published Date: Feb 18, 2012

Final Cut Pro 4.0.1J: DVcam Cannot Be Selected as a Voice Over Source

In Final Cut Pro 4.0.1J, you cannot select the connected DVcam as the source for a Voice Over.
This article has been archived and is no longer updated by Apple.

Symptom

An alert appears when trying to select the connected DVcam as the source for Voice Over (see Figure 1).

Figure 1 Unable to select DV audio as source.

Solution

Update to Final Cut Pro 4.0.2J. This update is available using Software Update in System Preferences.

Published Date: Feb 18, 2012

LaserWriter IIg: Connecting to MS-DOS PC over Ethernet (5/97)

Is it possible to connect the LaserWriter IIg to an MS-DOS PC through Ethernet instead of through a serial connection?

This article has been archived and is no longer updated by Apple.

The only solution we are aware of is PhoneNET Talk from Farallon Computing,Inc. This is the successor to AppleShare PC, and it implements theAppleTalk protocol stack on an MS-DOS system. You would have to make surethat the Ethernet card used in the MS-DOS system is one of those supportedby PhoneNET Talk. There are a number of different cards supported, so youshould be able to find one to fit your needs.

Since both the LaserWriter IIg and PhoneNET Talk implement AppleTalk Phase2, you should have no difficulty communicating with the printer using thisproduct.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number..

Published Date: Feb 18, 2012

Final Cut Pro 4: Multi-Channel Audio Interfaces Appear to Have Fewer Channels

Final Cut Pro 4 will work with most multi-channel audio interfaces that provide a Mac OS X driver. However, devices that report multiple streams instead of all channels in a single stream may need additional configuration in the sequence settings to work properly.
This article has been archived and is no longer updated by Apple.

Symptom

In the Audio Device Options window of the Audio/Video Settings, the number of audio channels available is fewer than the actual number of channels that the audio interface provides.

For example: A 10-channel audio card might report a separate stream for each channel, leading Final Cut Pro 4 to show the card as only being capable of a single channel.

Solution

This issue only affects the setup in the Audio/Video Settings window. If you set the sequence settings (choose Sequence > Settings and click the Audio Outputs tab) to support all the channels the device supports and configure the output map accordingly in the sequence settings, then all channels will be played to the device.

Note: With this setup, Final Cut Pro 4 will erroneously warn you that you have set up the sequence with more channels than the device actually has. This warning can be ignored.

Additional information

Final Cut Pro 4 works with most multi-channel audio interfaces that provide a Mac OS X driver. While Final Cut Pro 4 expects audio interfaces to report a single stream containing all available audio channels, some interfaces report multiple streams. At this time, the Audio/Video Settings window presents these devices as only being capable of the number of channels in the first stream.

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Using the iPod Dock Connector to FireWire and USB 2.0 Cable

Learn how to connect the iPod Dock Connector to FireWire and USB 2.0 Cable to your iPod.
This article has been archived and is no longer updated by Apple.

About the cable

There are two versions of the iPod Dock Connector to FireWire and USB 2.0 Cable (sometimes referred to as a Y-cable or V-cable because of it's shape). The older model (order number M9126G/A) is 1.8 meters long and worked only with the iPod (with Dock Connector) model.

The new version (order number M9688G/A) is 1.15 meters long and works with iPod mini and all iPod models with a dock connector. The new cable also has this writing on the cable jacket:

"Designed by Apple in California Assembled in China•".

Besides the length and writing on the new cable, the two cables look the same and connect to the power adapter, iPod, and computer in the same way.

The iPod Dock Connector to FireWire and USB 2.0 Cable has three separate sections and connectors. See Figure 1. At one end of the cable is the dock connector. You connect it to iPod or to the iPod Dock. At the ends of the other two sections are a FireWire connector and a USB 2.0 connector. You connect them to the Apple iPod Power Adapter and your computer.

Figure 1 The iPod Dock Connector to FireWire and USB 2.0 Cable

Connecting to your computer with USB 2.0 (Windows-compatible computers only)

After connecting the dock connector to iPod or the iPod Dock, insert the USB 2.0 connector into one of the computer's USB 2.0 ports. Because USB does not supply iPod with power, you should also connect the FireWire portion of the cable to an Apple iPod Power Adapter. Connecting all three sections of the cable will allow you to manage the iPod music library from your computer and charge the battery at the same time. See Figure 2.

Figure 2 iPod connected to power adapter and computer

Connecting to your computer with FireWire

If your computer has a FireWire port, you can simply connect the FireWire portion of the cable to the computer and the Dock Connector portion to iPod (or the iPod Dock). You don't need to connect the USB 2.0 portion of the cable. This updates iPod with the music library on your computer and charges the battery at the same time.

Note: The FireWire port of some Windows-compatible computers may not supply power. In this case, you can:

- Purchase and install a FireWire card that supplies power.
- Connect iPod to a powered FireWire hub, then connect the FireWire hub to the computer's FireWire port.
- Fully charge iPod using the Apple iPod Power Adapter before trying to update the music library.
- Connect iPod to your computer's USB 2.0 port, if it has one, as described above in "Connecting to your computer with USB 2.0".

Important: Never connect both the FireWire and the USB 2.0 connector to your computer at the same time. Doing so can cause unexpected behavior.

Related documents

61676: "iPod for Windows: Does Not Charge When Connected to Your Computer."
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System 7 RAM Disk: Macintosh Computers Supported

Which Macintosh computers support the RAM Disk feature of System 7.x?
This article has been archived and is no longer updated by Apple.
The following computers support the System 7 RAM disk:

- Macintosh IIvx
- Macintosh Centris 610
- Macintosh Centris 650
- Macintosh Centris 660AV
- Macintosh Color Classic
- Macintosh LC III
- Macintosh LC 475
- Macintosh LC 520
- Macintosh LC 550
- Macintosh LC 575
- Macintosh LC 630
- Macintosh Performa 410
- Macintosh Performa 450
- Macintosh Performa 460
- Macintosh Performa 466
- Macintosh Performa 467
- Macintosh Performa 475
- Macintosh Performa 476
- Macintosh Performa 550
- Macintosh Performa 600
- Macintosh Performa 630, 635, 636, 637, 638
- Macintosh Portable
- Macintosh Quadra 605
- Macintosh Quadra 630
- Macintosh Quadra 660AV
- Macintosh Quadra 700
- Macintosh Quadra 800
- Macintosh Quadra 840AV
- Macintosh Quadra 900
- Macintosh Quadra 950
- All Power Macintosh models which support System 7
- All PowerBook computers which support System 7

The RAM Disk feature was first built into the ROMs of the Quadra models, and subsequent models include this feature. Models without this code in ROM can't support the System 7.x RAM disk feature, and no software workaround is currently available.

Third-party software is available to provide this function for most Macintosh models. You can use shareware programs, like Ram Disk or AppDisk, available on most on-line services. Or you can purchase Maxima from Connectix. To locate a vendor's address and phone numbers, use the vendor name as a search string.

Note: The Assistant Toolbox extension in the PowerBook File Assistant saves the RAM disk contents between shutdowns.

The following information is for Apple Internal & Support Providers Only
Published Date: Feb 18, 2012

iChat: Your buddy icon doesn‘t update in Bonjour buddy lists

This article has been archived and is no longer updated by Apple.

Update to iChat 2.0 if your buddy icon isn't visible in other users' Bonjour buddy lists.

Issue or symptom

Your buddy icon does not update in the Bonjour buddy lists of other people on your network.

This happens if you are using iChat AV (Public Beta) and the other users have Mac OS X 10.2 or later and iChat AV 2.0 or later.

Solution

Upgrade to iChat AV 2.0 or later.

Published Date: Feb 18, 2012

Burning an audio CD in iTunes for Windows

Using iTunes for Windows, you can burn an audio CD with your computer's CD-R or CD-RW drive.
This article has been archived and is no longer updated by Apple.
If your computer has a CD-R or CD-RW capable drive, including some DVD-R and DVD+R drives, you can make or "burn" an audio CD using iTunes for Windows. If you're not sure what kind of drive your computer has, or if it can burn a CD, you can easily find out.

To burn an audio CD:

1. Open iTunes for Windows.
2. From the **Edit** menu, choose **Preferences**.
3. Click the Burning tab.
4. Select "Audio CD" as the disc format.

5. To have iTunes adjust the volume of the songs so they all play at the same level, click the checkbox labeled "Use Sound Check". This can be useful if your playlist has songs from different albums.
6. Click OK.
7. Select the playlist you want to burn to the CD. You can only burn a CD from the songs in a playlist.
8. Click the Burn Disc button, as shown here.
9. Insert a blank CD-R disc and click Burn Disc again.

Tip: If you plan on playing the CD in a home or car stereo CD player, use a blank CD-R disc. If you're only going to play the CD on your computer, you can use either a blank CD-R disc or a CD-RW disc.

Selected playlist and Burn Disc button

If you run into trouble burning an audio disc, read this informative article.

Blank CD-R discs are available from the Apple Store.

A note about copyright

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Published Date: Feb 18, 2012

Pers LW LS: Serialport Arbitrator/PrintMonitor Conflict (11/94)

I just installed Apple Remote Access. Now when I try to print to my Personal LaserWriter LS with background printing enabled, I get a message that there is "no LaserWriter available, please check the power and connections."

If I turn background printing off, it works fine. It also seems that everything runs fine if I remove the Serialport Arbitrator from the Extensions folder.

This article has been archived and is no longer updated by Apple.
This is a known conflict between the Serialport Arbitrator and PrintMonitor with the Personal LaserWriter LS. It occurs with system software version 7.0 or 7.0.1, and with the Personal LaserWriter LS driver version 7.0 or 7.1.

The only current workaround is to either disable background printing, or remove the Serialport Arbitrator, as you have already discovered.

Article Change History:
21 Nov 1994 - Reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

iMovie: Unexpectedly Quits When You Add Audio to a Project

iMovie 3.0.3 may unexpectedly quit when you try to add audio to a project if outdated Formac TVR software is installed on your computer.
This article has been archived and is no longer updated by Apple.

Symptom

iMovie unexpectedly quits when you click the Audio button or drag an audio track from the audio pane to the timeline.

Solution

Contact Formac (http://www.formac.com) to get the latest version of their software. **Note**: Registration is required to view product updates at this website. Look for the Support option under the "For You" menu.

Related documents

93267 "**iMovie: Some Third-Party Codecs May Cause iMovie to Unexpectedly Quit**"

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Published Date: Feb 18, 2012

Personal LaserWriter LS: Scaling Limits

I'd like to print to the Personal LaserWriter LS at 85% reduction, but only 50% and 75% are available. Is there a way to get reduction in print size, via the page layout, other than 50% and 75%?

This article has been archived and is no longer updated by Apple.
The current implementation of the Personal LaserWriter LS driver is limited to the 25% reduction increments, and there is no way to modify this.

A possible workaround is called DynoPage, by Portfolio Systems, Inc. In addition to reduction options, it allows double-sided printing and printing to any page size. It can be extended to user-specified page layouts.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

Final Cut Pro and DVD Studio Pro 2: Compressor - Distortion in Text Overlay on Power Mac G5

On Power Mac G5 computers, the MPEG-2 text overlays in Compressor may look distorted.
This article has been archived and is no longer updated by Apple.

Symptom

After adding a text overlay to MPEG-2 material, the area of the clip where the overlay was added appears distorted.

Solution

Update to Compressor 1.1. It is available in Software Update preferences or from the Download section of (http://www.apple.com/software/pro/).

Published Date: Feb 18, 2012

Final Cut Pro 4: High Quality Option Doesn‘t Appear in RT Pop-Up Menu

The high quality option does not appear in the Timeline's RT pop-up menu on all computers for all video formats.
This article has been archived and is no longer updated by Apple.
On some PowerPC G4-based desktop and portable computers, the high quality option only appears in the Timeline's RT pop-up menu if the computer's microprocessor is fast enough to perform real time effects at high quality (Figure 1). The computer's microprocessor speed and the selected video format determines if the option appears or not.

Figure 1 High quality option selected in RT pop-up

Note: When a sequence is rendered, playback to a video device is always at "high" quality, even if the RT pop-up menu does not indicate that option.

Minimum requirements for the RT pop-up menu to display the High Quality option:

Mac OS X 10.3 Panther

- DV25 30fps:
  - Desktop at 500 MHz
  - PowerBook at 667 MHz
- DV50 30fps:
  - 800 MHz with cache
  - 1 GHz no cache
  - Any dual-processor computer

Mac OS X 10.2 with QuickTime 6.4

- DV25 30fps:
  - 800 MHz with cache
  - 1 GHz no cache
  - Any dual-processor Power Mac G4
- DV50 30fps:
  - 800 MHz with cache,
  - 1 GHz no cache
  - Any dual-processor Power Mac G4

Mac OS X 10.2 with QuickTime 6.3

- DV25 30fps:
  - 800 MHz with cache,
  - 1 GHz no cache,
  - Dual processor at 800 MHz
- DV25 30fps:
  - 800 MHz with cache
  - 1 GHz no cache
  - Dual processor at 800 MHz

Published Date: Feb 18, 2012

Final Cut Pro 4: Boris Calligraphy Quits If Last Used Font Is Removed

Final Cut Pro 4 unexpectedly quits when using one of the Boris Calligraphy text generators (Title 3D or Title Crawl) if the previously used font is no longer available.
This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro 4 unexpectedly quits when using one of the Boris Calligraphy text generators (Title 3D or Title Crawl).

Solution

Do one of the following:

- Reinstall the font that was recently removed.
- Delete the Final Cut Pro 4 Preferences files located at ~/Library/Preferences/Final Cut Pro User Data/
  Note: The tilde "~" refers to your home folder. For more information see technical document 106167 "**Mac OS X: Using Your Home Directory**".

Note: Deleting Final Cut Pro 4 user preferences resets certain custom settings in the application.

Published Date: Feb 18, 2012

Moving your MUSICMATCH songs into your iTunes Library

Learn how to move songs from MUSICMATCH into your iTunes for Windows Library.
This article has been archived and is no longer updated by Apple.
When you first start iTunes, you are given the option to search for music to add to the iTunes library. If you did not select this option, follow the steps below to add music to iTunes.

To move songs from MUSICMATCH into the iTunes Library:

1. Open iTunes.
2. Open your "My Music" folder by clicking the **Start** button and then pointing to **My Music**.
3. Arrange the windows so you can see both the My Music folder, and the iTunes Source list.
4. Drag your MUSICMATCH songs from the My Music folder to the Library in the Source list.

Dragging your music files to the iTunes Library

Tip: The My Music folder is the default location for your MUSICMATCH songs. If you have moved the songs to another location, drag them from there instead. If you're not sure where your MUSICMATCH songs are located, use the following steps to find out.

1. Open MUSICMATCH.
2. From the **Options** menu, choose **Settings**.
3. Click the Recorder tab.
4. Click the Tracks Directory button. The full path of the music library is located at the top of the window.

iTunes will synchronize music and audiobooks to your iPod. You can continue to use MUSICMATCH Jukebox and Audible Manager, but they will no longer transfer content directly to your iPod. Any content you want to sync with your iPod should be imported into iTunes.

If your MusicMatch playlists are on the same computer as iTunes, you can import them into the iTunes Source list. From the **File** menu, choose **Import**, then locate the playlists that you want copied into iTunes. iTunes can import playlist files ending with .m3u, .txt, or .xml.

Related documents

107958: Importing Windows Media Audio files with iTunes for Windows
61476: iPod: About compatible song formats
Published Date: Feb 18, 2012

Soundtrack 1.0.1: Sample Rates Other Than 44.1 kHz on Mac OS X 10.3 May Create Unreadable Files

Tracks or mixes you export from Soundtrack 1.0.1 that contain effects at a sample rate other than 44.1 kHz may be unreadable after upgrading to Mac OS X 10.3.
This article has been archived and is no longer updated by Apple.

Symptom

Soundtrack cannot read files exported at a sample rate other than 44.1 kHz. When you try to open the files, the pointer turns into a progress indicator (looks like colored pinwheel) and Soundtrack stops responding.

This happens after upgrading to Mac OS X 10.3.

Solution

Update to Soundtrack 1.1. The update can be obtained via the Software Update pane in System Preferences. The update can also be found at the Soundtrack download page (http://www.apple.com/soundtrack/download).

Published Date: Feb 18, 2012

TA47713_Super_Serial_Card_Cable_for_Diablo__(TIL00934).pdf

Super Serial Card: Cable for Diablo 630 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a Diablo 630 printer.

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) .... 4 <-----> 6 & 8.(DSR) & (DCD)
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 11
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Final Cut Pro 4: Unexpectedly Quits With Long Clips on Power Mac G5 With QuickTime 6.3

Final Cut Pro 4 may unexpectedly quit when working with long clips on Power Mac G5 computers with QuickTime 6.3 installed. To resolve this, upgrade to QuickTime 6.4.
This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro 4 unexpectedly quits when you drag long clips to the timeline or render long sequences.

Solution

Install QuickTime 6.4 or later.

Download QuickTime 6.4 from the QuickTime download website (http://www.apple.com/quicktime/download). You can also download the update using the Software Update pane in System Preferences.

Published Date: Feb 18, 2012

iTunes for Windows: Ellipsis Appears as as Black Box

Black boxes appear in iTunes for Windows in place of the ellipsis character (...).
This article has been archived and is no longer updated by Apple.

Symptom

If you upgraded to Windows 2000 from Windows 98, the default font may still be set to MS Sans Serif, which does not have the ellipsis character.

This happens when the system font is set to MS Sans Serif.

Solution

Use "Display Properties" to change the system font to one that includes the ellipsis character, such as the Tahoma font.

1. Click the **Start** button, then point to **Control Panel**.
2. Click Display.
3. Click Appearance.
4. From the Item pop-up menu, choose Menu, then from the Font pop-up menu, choose Tahoma (Figure 1).
5. From the Item pop-up menu, choose Message Box, then from the Font pop-up menu, choose Tahoma.
6. From the Item pop-up menu, choose Selected Items, then from the Font pop-up menu, choose Tahoma.
7. From the Item pop-up menu, choose Tool Tip, then from the Font pop-up menu, choose Tahoma.

Figure 1 The Menu and Font pop-up menus.

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Published Date: Feb 18, 2012

Final Cut Pro 4: Compressor - Droplets May Require Movies Have Filename Extensions

Droplets created with Compressor may not recognize movies unless they have a filename extension such as ".mov".
This article has been archived and is no longer updated by Apple.

Symptom

The droplet does not highlight when you drag a movie file icon on it.

Solution

There are two options to use the droplet:

Option 1

1. Rename the movie to include the filename extension ".mov". Example: "newmovie.mov".
2. Drag the renamed file to the droplet.

Option 2

1. Double-click the droplet.
2. Drag the movie to the Source File section of the Droplet window (Figure 1).
3. Click the Submit button.

Figure 1 The Source File section of the Droplet window.

Published Date: Feb 18, 2012

AppleTalk-LAT Gateway: Accessing from A/UX

Can an A/UX desktop run a terminal emulator using the AppleTalk-LAT Tool of CommToolBox which only requires A/UX to support ADSP?
The AppleTalk-LAT Gateway can run on a Macintosh operating system.
This article has been archived and is no longer updated by Apple.
Yes, the AppleTalk-LAT Tool will work on an A/UX computer to access an AppleTalk-LAT Gateway running on a Macintosh operating system.
Published Date: Feb 18, 2012

iMovie 3: Audio CD Does Not Appear in Audio Pane

If you don't see an audio CD in the Audio pane, try ejecting and reinserting the CD.
This article has been archived and is no longer updated by Apple.
If you can't choose Audio CD from the pop-up menu in iMovie (Figure 1), but the CD works fine in the Finder and iTunes, eject the audio CD and reinsert it. iMovie should recognize it now.

Figure 1 Audio CD is unavailable

Tip: Wait until iMovie is open before inserting an audio CD.

Published Date: Feb 18, 2012

Final Cut Pro and DVD Studio Pro 2: Compressor 1.1 "Queue Reset" Keyboard Shortcut

The Queue Reset keyboard shortcut has changed with Compressor 1.1 and Mac OS X 10.3.
This article has been archived and is no longer updated by Apple.
The Queue Reset keyboard shortcut in Compressor 1.1 is Option-Command-F12.

In Compressor 1.0, the keyboard shortcut was Option-Command-'. It no longer works.
Published Date: Feb 18, 2012

Final Cut Pro 4: Stops Responding When Rendering Non-DV Clip With QuickTime 6.4

Reinstall QuickTime 6.3 if Final Cut Pro stops responding when you render a clip.
This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro stops responding when you render a clip that doesn't use the DV codec. The cursor turns into a progress indicator (looks like a colored pinwheel).

This may occur most frequently when you render clips from LiveType because LiveType uses the Animation codec instead of the DV codec.

Solution

Download and install the Final Cut Pro QuickTime Render Plug-in

This is available in document 120263 "**Final Cut Pro QuickTime Render Plug-in**".

Published Date: Feb 18, 2012

Keynote 1.1.1: About the "MS Comic Sans Error" Message

Reselect the Blackboard theme in Keynote 1.1.1 if the alert, ""MS Comic Sans Error" appears.
This article has been archived and is no longer updated by Apple.

Symptom

An alert appears with the text "MS Comic Sans Error".

This happens when you open a file that uses the Blackboard theme.

Solution

Reselect the Blackboard theme.

1. From the **File** menu, choose **Choose Theme**.
2. Click the Blackboard theme.
3. Click the Choose Theme button.

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iPod Software Updater for Windows: "Can‘t Mount iPod" Message

If Windows is installed on a volume other than the C drive, the message "Can't Mount iPod" may appear.
This article has been archived and is no longer updated by Apple.

Symptom

The message "Can't Mount iPod" appears.

This happens when you try to install or restore using the iPod Software Updater for Windows.

Products affected

- iPod
- Microsoft Windows

The following are not affected by this:

- iPod mini Software 1.0 and later
- iPod Software version 2.x
- iPod Software 2004-04-28 and later

Solution

This occurs if Windows is installed on a different volume than the C drive. Windows should be installed on the C drive. **Note**: This will only occur with iPod Software Updater versions 1.x.

For help installing Windows, contact your computer manufacturer or Microsoft.

Published Date: Feb 18, 2012

iPod for Windows: Long Delay Accessing Songs in iPod

iTunes for Windows version 4.1.1 resolves an issue that could cause slow performance on an iPod.
This article has been archived and is no longer updated by Apple.

Symptom

After syncing music to an iPod using iTunes for Windows version 4.1, iPod starts up slowly.

iPod may skip the selected song and play the next one.

Solution

1. Download and install iTunes 4.2 for Windows from the iTunes website: (**http://www.apple.com/itunes/download/**).
2. Restart the computer when prompted to do so.
3. Perform a full Restore of the iPod using the latest version of the iPod Updater that is available for your iPod--version 2.1 for iPod (with Dock Connector) and version 1.3 for previous iPod models. Both versions are available from **http://www.apple.com/ipod/download/**.
4. Sync your music to the iPod using iTunes 4.2.

Published Date: Feb 18, 2012

DAL Server: For MVS to Access IBM DB-2 Database (11/94)

I have an IBM 3090 Mainframe running virtual memory and MVS. The database of choice is DB-2. Do you have a DB-2 DAL Server that runs on a 3090 running MVS and virtual memory?

This article has been archived and is no longer updated by Apple.

You need Data Access Language Server for MVS/TSO or the server for MVS/V TAM. These products provide support for DAL-based applications using data residing in the IBM DB-2 or Teradata DBC/1012 databases. They work with existing DB-2 databases, operating under standard MVS and database security.

DAL Server for MVS/TSO v1.3 supports MVS/XA release 2.2 or greater, DB-2 release 1.3 or greater, and Teradata DBC/1012, v4.1 or later. It also supports access via Apple's MacDFT along with Apple's Coax/Twinax, TokenTalk NB, or Serial NB cards. You can use TriData's Netway 1000 or 2000, Avatar's MacMainFrame, and DCA's MacIrma hardware and software products in place of Apple's 3270 products listed above. It also supports a synchronous connection via protocol converters.

The DAL Servers for MVS/TSO and MVS/V TAM are available through APDA.

To locate a vendor's address and phone number, use the vendor's name as a search string in the Tech Info Library.

Published Date: Feb 18, 2012

iTunes for Windows: iTunes Store Window Is Blank

You may not be able to access the iTunes Store if you're using Web acceleration software.
This article has been archived and is no longer updated by Apple.

Symptom

When you click iTunes Store in the Source list, the main part of the iTunes window turns white and remains blank.

This happens if you are using Web accelerator software.

Solution

Download and install iTunes for Windows 4.2 or later.

Important: Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.

Document 17159, "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.

Published Date: Feb 18, 2012

iPod Software 1.3.1 Updater Installs iPod 1.3 Software on iPod

The iPod Software 1.3.1 Updater is for Mac OS X 10.3 compatibility and installs iPod 1.3 software.
This article has been archived and is no longer updated by Apple.
iPod Software 1.3.1 Updater installs the same software as iPod Software 1.3 Updater. The only difference is that iPod Software 1.3.1 Updater is compatible with Mac OS X 10.3, and iPod Software 1.3 Updater is not. If you don't have Mac OS X Panther, you don't need to use iPod Software Updater 1.3.1.

After using iPod Software 1.3.1 Updater, iPod's About screen will still read version 1.3, not 1.3.1. You can update to the latest version of the iPod software using Software Update or clicking the links below.

iPod (with touchwheel and scroll wheel)
Download iPod 1.3 for Windows and iPod 1.3.1 for Mac OS X.

iPod (with Dock Connector)
iPod 2.1 for both Mac OS X and Windows is available from the iPod Download page.

Related documents

- 61688 "**iPod: How to Identify Models**"
- 60984 "**iPod: How to Find Software Version**".

Published Date: Feb 18, 2012

Shake Qmaster‘s "Extended Node Cluster" Feature Does Not Work After Upgrading to Mac OS X 10.3

Clusters taking advantage of the "Extended Node Cluster" feature in Qmaster won't work with Mac OS X 10.3 Panther.
This article has been archived and is no longer updated by Apple.

Symptom

After creating an Extended Node Cluster, the job never processes. The job displays Status = Waiting.

Solution

Update to Mac OS X 10.3.2 using the Software Update Preferences or download from document 120288 "**Mac OS X 10.3.2 Update: Information and Download.**"

Update to Shake Qmaster 1.1 by downloading the Shake 3.0.1 update from the Shake download page at (http://www.apple.com/shake/download/).

Published Date: Feb 18, 2012

Shake: About Qmaster Preferences in Mac OS X 10.3

Click the Shake Qmaster icon in System Preferences a second time to open it in Mac OS X 10.3 Panther.
This article has been archived and is no longer updated by Apple.

Symptom

When you click the Shake Qmaster icon in System Preferences, it doesn't open.

Solution

Update to Mac OS X 10.3.2 using the Software Update Preferences or download from document 120288 "**Mac OS X 10.3.2 Update: Information and Download.**"

Update to Shake Qmaster 1.1 by downloading the Shake 3.0.1 update from the Shake download page at (http://www.apple.com/shake/download/).

Published Date: Feb 18, 2012

Shake: About Qmaster‘s "Qadmin" Feature in Mac OS X 10.3

When changing services on a service node, Qadmin does not let you add to a new cluster until you restart it.
This article has been archived and is no longer updated by Apple.

Symptom

When you remove a cluster, Stop and Start the service, then create a New Cluster and try to add a node, Qadmin won't add it.

Solution

Update to Mac OS X 10.3.2 using the Software Update Preferences or download from document 120288 "**Mac OS X 10.3.2 Update: Information and Download.**"

Update to Shake Qmaster 1.1 by downloading the Shake 3.0.1 update from the Shake download page at (http://www.apple.com/shake/download/).
Published Date: Feb 18, 2012

PATHWORKS 1.0 & PageMaker: Printing through VAXshare Issue

I'm using PATHWORKS 1.0. I have difficulty printing PageMaker documents, especially ones with complex graphics, when using VAX/VMS print queues to spool Apple LaserWriter printers. I suspect this has something to do with the Aldus Prep PostScript dictionary file not being passed to the printer by PATHWORKS. Is there a workaround?

This article has been archived and is no longer updated by Apple.

VAXshare Print Services in PATHWORKS is a component developed by Digital. Digital Customer Support Center (CSC) in Atlanta confirmed that they are aware of this problem, and that they already escalated it to Digital engineering.

Published Date: Feb 18, 2012

Shake: Qmaster Incompatibilities With Mac OS X 10.3

Shake users who rely on Qmaster should update to Shake Qmaster 1.1 and Mac OS X 10.3.2.
This article has been archived and is no longer updated by Apple.
Shake Qmaster users who upgrade to Mac OS X Panther should update to Shake Qmaster 1.1 and Mac OS X 10.3.2. These updates will address the following issues:

- 93437 "**Shake Qmaster's "Extended Node Cluster" Feature Does Not Work After Upgrading to Mac OS X 10.3**"
- 93438 "**Shake: About Qmaster Preferences in Mac OS X 10.3**"
- 93443 "**Shake: About Qmaster's "Qadmin Feature in Mac OS X 10.3**"

Update to Mac OS X 10.3.2 using the Software Update Preferences or download from document 120288 "**Mac OS X 10.3.2 Update: Information and Download.**"

Update to Shake Qmaster 1.1 by downloading the Shake 3.0.1 update from the Shake download page at (http://www.apple.com/shake/download/).

Published Date: Feb 18, 2012

DVD Studio Pro 2: "Break Point Not Found" Error on French Systems

Learn what to do if you experience a "Break Point not found" error in the French version of DVD Studio Pro 2 .
This article has been archived and is no longer updated by Apple.

Symptom

When formatting a multilayer DVD project with manually set break points, this message appears: "Break Point not found".

Solution

Update to DVD Studio Pro 2.0.4 or later using the Software Update preferences.

Published Date: Feb 18, 2012

Final Cut Pro 4: Export for Soundtrack Issues

If you encounter issues with Final Cut Pro 4 when exporting a sequence for Soundtrack, update to Final Cut Pro 4.0.2 or later.
This article has been archived and is no longer updated by Apple.

Symptom

One or both of the following occurs:

- After choosing Export For Soundtrack once, it is not available again.
- A movie originally exported for Soundtrack cannot be found.

Solution

Update to Final Cut Pro 4.0.2 or later. See "**Final Cut Pro 4.1**" or open Software Update in System Preferences to download the update.

Published Date: Feb 18, 2012

Final Cut Pro 4: Compressor - Some Text Overlay Features Not Available in Mac OS X 10.3

The Compressor text overlay filter ignores the text options introduced in Mac OS X Panther.
This article has been archived and is no longer updated by Apple.
If you use Mac OS X 10.3 with Compressor, add text attributes such as underline, strikethrough, and shadow to the source using a titler such as LiveType instead of the text overlay filter within Compressor.

This document will be updated as more information becomes available.

Published Date: Feb 18, 2012

QuickTime VR Authoring Studio: How to Install With Final Cut Pro or DVD Studio Pro 2

If you have installed Final Cut Pro 4 or DVD Studio Pro 2, you may not be able to install QuickTime VR Authoring Studio.
This article has been archived and is no longer updated by Apple.

Symptom

When you try to install QuickTime VR Authoring Studio, this message appears:

> "Installation on the active startup disk 'Macintosh HD' cannot take place while another application is running. Please quit 'compressord' and try again."

Solution

Restart the computer, then install QuickTime VR Authoring Studio.

The process "compressord" runs in the background and starts when you use the Compressor application included with Final Cut Pro 4 and DVD Studio Pro 2. Restarting the computer quits the process and allows you to install QuickTime VR Authoring Studio.

Related documents

30817 QuickTime VR Authoring Studio 1.0.1 Update Document and Software

Published Date: Feb 18, 2012

iPod: About Saving Changes in iPod Manager and MUSICMATCH

If both MUSICMATCH and iPod Manager are open at the same time, changes you make may not be saved to iPod.
This article has been archived and is no longer updated by Apple.
MUSICMATCH and iPod Manager both provide access to certain settings for iPod.

Tip: Before making any changes to iPod settings in one application, quit the other one first.

If you have Windows XP or Windows 2000, you can also use iTunes for Windows to manage your iPod. See **iTunes.com** for information on how to upgrade to iTunes for free.
Published Date: Feb 18, 2012

Final Cut Pro 4: Exporting to Compressor if a Clip Uses an Unavailable Codec

Final Cut Pro and Compressor may stop responding ("hang") if the sequence you export contains clips that use a codec that is not installed on the system.

This article has been archived and is no longer updated by Apple.

Symptom

Compressor stops responding while processing a job. If you are able to cancel the Compressor job, Final Cut Pro 4 stops responding and must be force quit.

Solution

In Final Cut Pro, change your sequence settings to use a preset that your system supports.

This document will be updated as more information becomes available.

Published Date: Feb 18, 2012

Use a Smart Playlist to make regular backups of your music in iTunes

This article has been archived and is no longer updated by Apple.

You can use a Smart Playlist in iTunes to make regular, incremental backups of your music, videos, and spoken word media (audio books).

If you have an optical drive that can burn a CD or DVD, you can make regular backups of your iTunes library including music, audiobooks, and movie files.

To make an initial backup of your library, follow the steps outlined in "How to back up your library in iTunes 5 or 6" or "iTunes 4: How to Back Up Music".

Once you have backed up all of your existing iTunes library, take note of the date and time you completed the backup and then continue with the following steps.

Create a playlist of content you've added since your last backup

1. Open iTunes.
2. From the **File** menu, choose **New Smart Playlist**.
3. Configure the Smart Playlist so that it includes all content with a Date Added that is after the date of your last backup.

4. Click OK.
5. Name the Smart Playlist something like "Backup Playlist".

Burn a backup disc of all the files you have added since your last backup

1. Open iTunes.
2. Open iTunes Preferences.
   - Mac OS X: From the **iTunes** menu, choose **Preferences**.
   - Windows: From the **Edit** menu, choose **Preferences**.
3. Click Advanced (iTunes 5 or later).
4. Click Burning.
5. Click Data CD or DVD.
6. Click OK.
7. Select Backup Playlist in the Source list.
8. Click Burn Disc.
9. Insert a blank disc. If you have added more files since your last backup than can fit on one disc, iTunes can burn them onto two or more discs.
10. When iTunes finishes burning the disc, eject it and write the current date on it.

Next time you do a backup

1. Open iTunes.
2. Select the "Backup Playlist" in the Source list.
3. From the **Edit** menu, choose **Edit Smart Playlist**.
4. Change the date to the date you wrote on your last backup disc and repeat steps 1 through 10 above.

Only want to backup purchased files?

If you only want to backup content you purchased from the iTunes Store, you can configure the Smart Playlist to only look at the Purchased Content playlist as shown here:

Then follow the burn a backup steps above.

Restoring files from backup:

To add music files back into your iTunes library from your backup discs:

1. Insert the disc into your computer. The disc shows up in iTunes.
2. Click the disc in the Source list.
3. Click the Browse button in the upper right to make browsing the disc easier.
4. Locate the songs, albums, artists, videos, audiobooks, or entire genres you are missing.
5. Drag the missing files to Library in the Source list.

Published Date: Feb 18, 2012

Soundtrack: Score Markers Imported Incorrectly

When importing a clip with multiple score markers, Soundtrack may mix up the markers.
This article has been archived and is no longer updated by Apple.

Symptom

When importing a clip with multiple score markers into Soundtrack, the score markers appear to be mixed up. For example, marker 1 is where marker 2 should have been, marker 2 is where marker 3 should have been, and so forth.

Solution

Update to Soundtrack 1.1. Soundtrack updates can be found in Software Update preferences or at the Soundtrack download page (http://www.apple.com/soundtrack/download/).

Published Date: Feb 18, 2012

Final Cut Pro 4 and DVD Studio Pro 2: Compressor - Help Is Not Available If English Is Not the Primary Language

Compressor Help is not available from the Help menu if the preferred language in International preferences is something other than English.
This article has been archived and is no longer updated by Apple.

Symptom

Choosing Compressor Help from the Help menu has no effect.

Solution

Download and install Compressor 1.1. It is available in Software Update preferences, or from the Downloads section at (http://www.apple.com/software/pro/).

Published Date: Feb 18, 2012

Final Cut Pro 4, DVD Studio Pro 2, and Final Cut Express 2: Installer quits if you don‘t have an administrator account

The installer for Final Cut Pro 4, Final Cut Express 2, and DVD Studio Pro 2 unexpectedly quits when looking for the installation destination unless you log in with an administrator account.
This article has been archived and is no longer updated by Apple.

Symptom

After opening the installer package, the installer quits.

Solution

Update to Final Cut Pro HD.

Published Date: Feb 18, 2012

Final Cut Pro 4: Media End Point Is Incorrect After Recapturing 29.97 Video Into 23.98 Sequence

Learn how to address inaccuracies caused by recapturing 29.97 video into a 23.98 sequence.
This article has been archived and is no longer updated by Apple.

Symptom

An inaccurate calculation results in the Media End point for each clip, giving it an earlier timecode.

This can happen when using Media Manager to create a new 23.98 offline project from an existing 23.98 project and capturing clips in the new 23.98 offline project at 29.97 fps and then applying the Remove Advanced Pulldown option to this 29.97 media.

Solution

1. Select the affected clips in the Browser.
2. From the **Modify** menu, choose **Make Offline**.
3. Select the option to "Leave Them on the Disk" and click OK.
4. From the **File** menu, choose **Reconnect Media**.
5. In the Reconnect window, locate the clips on disk and click Choose.

This document will be updated as more information becomes available.

Published Date: Feb 18, 2012

Final Cut Pro 4: Installs on Disks With Mac OS X 10.2.5 or Later

You can only install Final Cut Pro 4 on disks that have Mac OS X 10.2.5 or later installed on them.
This article has been archived and is no longer updated by Apple.
The Final Cut Pro 4 Installer only installs the application on hard disk volumes that have Mac OS X 10.2.5 or later on them. Other disks will appear in the installer window, but you can't install on them. See Figure 1.

Figure 1 Select a Mac OS X volume to install Final Cut Pro 4
Published Date: Feb 18, 2012

Final Cut Pro 4: EDL Export Fails If a Certain Japanese Character Is Used

An EDL export from Final Cut Pro 4 will fail if the Japanese character □ (formed by typing Shift-n-a using the Kotoeri input method) is used in the sequence name.

This article has been archived and is no longer updated by Apple.

Symptom

When you export an EDL, a message appears that says: "Badly formatted EDL".

Solution

Remove the □ character from the name of the sequence.

This document will be updated as more information becomes available.

Published Date: Feb 18, 2012

iPod 2.0: You Can‘t Hear the Alarm Clock Beep

Download and install iPod Software 2.1 if you can't hear iPod's alarm clock beep.
This article has been archived and is no longer updated by Apple.
If you can't hear iPod's alarm clock beep, download and install iPod Software 2.1. It's available from the iPod website (http://www.apple.com/ipod/download/). In Mac OS X , you can also download it in Software Update preferences.

Published Date: Feb 18, 2012

iTunes for Windows: "Service for importing and burning CDs and DVDs has not been started" Message

Learn how to start the service for importing and burning CDs and DVDs if you see a message that says it hasn't been started.
This article has been archived and is no longer updated by Apple.

Symptom

This message appears when you open iTunes:

> "Warning! The iTunes service for importing and burning CDs and DVDs has not been started. Please restart the service to enable burning and importing."

Solution

Update to iTunes for Windows 4.2 or later, available from the iTunes download page.

If you're not able to update, follow these steps to have the GEARSecurity service start up automatically:

1. Quit iTunes.
2. Right-click My Computer. (In Windows XP, My Computer appears in the Start menu.)
3. From the shortcut menu that appears, choose **Manage.**
4. Expand the entry for Services and Applications by clicking the plus sign.
5. Click Services in the Computer Management window.

6. Right-click the GEARSecurity in the Services list.
7. From the shortcut menu that appears, choose **Properties**. This message appears: "The specified device instance handle does not correspond to a present device."
8. Click OK.
9. Make sure **Automatic** is chosen in the "**Startup type**" pop-up menu.

10. Click Start.
11. Click Apply. This message appears: "The specified device instance handle does not correspond to a present device."
12. Click OK.
13. Open iTunes.

Published Date: Feb 18, 2012

Final Cut Pro and Final Cut Express: How to Stop Capturing After Disk Full Message

Change your scratch disk location to avoid a disk full message in Mac OS X 10.3.
This article has been archived and is no longer updated by Apple.

Symptom

While using Capture Now in Final Cut Pro or Final Cut Express, the following message appears:

> "Your startup disk is almost full. You need to make more space available on your startup disk by deleting files."

After clicking OK, pressing the Esc (Escape) key does not stop the capture as usual.

Solution

To avoid the issue in the future, update to Final Cut Pro HD. To address the issue immediately, follow the steps below.

To end the capture

1. Click the Final Cut Pro or Final Cut Express icon in the Dock, or click one of the application's menus (such as File or Edit).
2. Press the Esc key.

To prevent this issue from occurring in the future, choose a scratch disk other than your startup disk.

To change the scratch settings

1. Open Final Cut Pro or Final Cut Express.
2. From the **Final Cut Express** menu, choose **Preferences**, or from the **Final Cut Pro** menu, choose **System Settings**.
3. Click the Scratch Disks tab.
4. Choose a different volume for your scratch disk.

This document will be updated as more information becomes available.

Published Date: Feb 18, 2012

iPhoto: Device Compatibility With Mac OS X 10.2.8

This article has been archived and is no longer updated by Apple.

Learn what devices work with iPhoto using Mac OS X 10.2.8. For Mac OS X 10.3, click here. For the latest Mac OS X and iLife device information click here

iPhoto Device Compatibility for Mac OS X 10.2.8

Cameras

- Canon
- Fuji
- Hewlett-Packard (HP)
- Kodak
- Minolta
- Nikon
- Olympus
- Pentax
- Sigma
- Sony
- Media Readers (Card Readers)

Printers

Built-in raster printer support

- Canon
- Epson
- Hewlett-Packard (HP)
- Lexmark

Built-in PostScript printer support

- Apple
- Epson
- Hewlett-Packard (HP)
- Xerox/Techtronix
- Lexmark

Cameras

Canon Digital Cameras
PowerShot A200
PowerShot A30
PowerShot A40
PowerShot A100
PowerShot G3 (3)
PowerShot S330

Nikon Digital Cameras
CoolPix 990
CoolPix 880
CoolPix 775
CoolPix 885
CoolPix 995
CoolPix 2000
CoolPix 2500
CoolPix 3500
CoolPix 4300

PowerShot S45 (3)
PowerShot S10
PowerShot S20
PowerShot S30
PowerShot S40
PowerShot S100 Digital Elph
PowerShot S110
PowerShot S200
PowerShot S230 (3)
PowerShot S300
PowerShot A10
PowerShot A20
PowerShot G1
PowerShot G2
PowerShot Pro90IS
EOS D30
EOS D60
EOS 1D
IXY DIGITAL
IXY DIGITAL 200
IXY DIGITAL 300
DIGITAL IXUS v2
DIGITAL IXUS v

Fuji Digital Cameras

FinePix 1300
FinePix 1400 Zoom
FinePix 2300
FinePix 2400 Zoom
FinePix 2600 Zoom
FinePix 2650 Zoom
FinePix 2800 Zoom
FinePix 3800 Zoom
FinePix 4700 Zoom
FinePix 4900 Zoom
FinePix 6300 Zoom
FinePix 6800 Zoom
FinePix 6900 Zoom
FinePix A101
FinePix A200
FinePix A201
FinePix A202
FinePix A203 Zoom
FinePix A303 Zoom
FinePix F401 Zoom

CoolPix 4500
CoolPix 5000
CoolPix 5700
D100
D1H*
D1X*
D10*

Olympus Digital Cameras

Brio D-100
Brio D-150 Zoom
Brio D-230
C-21
C-120
C-211 Zoom
C-220 Zoom
C-300 Zoom
C-700 Ultra Zoom
C-720 Ultra Zoom
C-730 Ultra Zoom
C-2000
C-2020 Zoom
C-2040
C-2100 Ultra Zoom
C-2500L
C-3000
C-3020
C-3030 Zoom
C-3040
C-4000
C-4040 Zoom
D-40 Zoom
D-320L
D-340L
D-340R
D-360L
D-370
D-380
D-400
D-450
D-460
D-490 Zoom
D-500
D-510 Zoom
D-520 Zoom
D-550 Zoom

FinePix F402 Zoom
FinePix F601 Zoom
FinePix S304 Zoom
FinePix S602 Zoom
FinePix S1 Pro
FinePix S2 Pro

HP Digital Cameras
PhotoSmart 120
PhotoSmart 315
PhotoSmart 318
PhotoSmart 320
PhotoSmart 612
PhotoSmart 618
PhotoSmart 620
PhotoSmart 715
PhotoSmart 720
Photosmart 812
PhotoSmart 850
PhotoSmart 912

Kodak Digital Cameras
CX4200
CX4230 zoom
DC 220
DC 240
DC 260
DC 265
DC 280
DC 290
DC3215 zoom
DC3400
DX3500
DX3600 zoom
DX3700
DX3900 zoom
DC4330
DC4800
DC4900 zoom
DC5000
DX4900
MC3
DCS Pro Back 620x*
DCS Pro Back 720x*
LS420

D-600
D-620L
E-10
E-20N
E-100RS

Pentax Digital Cameras
Optio 230
Optio 330GS
Optio 330RS
Optio 430RS

Sigma Digital Cameras
SD-9

Sony Digital Cameras
CyberShot DSC-P1
CyberShot DSC-P2
CyberShot DSC-P3
CyberShot DSC-P5
CyberShot DSC-P7
CyberShot DSC-P9
CyberShot DSC-P20
CyberShot DSC-P30
CyberShot DSC-P31
CyberShot DSC-P50
CyberShot DSC-P51
CyberShot DSC-P71
CyberShot DSC-S75
CyberShot DSC-S85
CyberShot DSC-F505V
CyberShot DSC-F707
CyberShot DSC-F717**
CyberShot DSC-U10
CD Mavica MVC-CD250
CD Mavica MVC-CD300
CD Mavica MVC-CD400
FD Mavica MVC-FD100
FD Mavica MVC-FD200

Media Readers
Belkin USB Media Reader/Writer for MultiMedia Card and Secure Digital
Dazzle 6 in 1 Reader
Zio! Memory Stick Reader

Minolta Digital Cameras
DiMAGE 5
DiMAGE 7
DiMAGE 7Hi
DiMAGE 7i
DiMAGE E201
DiMAGE EX 1500
DiMAGE F100
DiMAGE RD 3000
DiMAGE X
DiMAGE S304
DiMAGE S404

Imation MultiMedia/SecureDigital Reader
Imation Memory Stick USB Reader
LaCie HEXA Media Drive
Lexar Media SmartMedia USB Reader
Lexar Media MultiMedia/SecureDigital Reader
Lexar Media Memory Stick USB Reader
Memorex USB Dual Card Reader
SmartDisk Reader for Memory Stick
SmartDisk MemoryStick Reader
SmartDisk CompactFlash Reader
Sony MSAC-US1 (Memory Stick)

All cameras are USB 1.x unless otherwise noted. Additional cameras may be supported. Non-USB digital still cameras that use CompactFlash, Memory Stick, MultiMedia Card (MMC), SecureDigital (SD) and SmartMedia cards are supported when the memory card is used with a supported media reader. While most media readers are MSC-compliant and will "just work", some media readers may require additional drivers to be installed in order to work with Mac OS X. Native ("RAW") picture formats may require additional software.

Notes:

(1) FireWire (IEEE 1394a) interface.

(2) USB 2.0, will work at 1.x speed when connected via a USB 1.x port.

(3) Requires Mac OS X v10.2.2 to work in default mode. Will work with any version of Mac OS X when set to PTP mode.

Built-in Raster Support
Canon printers
BJF210
BJF360
BJF660
BJF850
BJF870
BJC85
BJC2100
BJC8200
BJM70
BJS6300
BJS600
BJS630
S100
S100SP
S300
S400
S400SP
S450

Built-in PostScript Support (cont.)
HP Printers
Business Inkjet 2250
Business Inkjet 2280
Business Inkjet 2600
Color LaserJet
Color LaserJet 4500
Color LaserJet 4550
Color LaserJet 4600
Color LaserJet 5M
Color LaserJet 8500
Color LaserJet 8550
DesignJet 1050C PS3
DesignJet 1055CM PS3
DesignJet 2500CP PS3
DesignJet 3500CP PS3
DesignJet 5000 PS3
DesignJet 800C PS3
LaserJet 1200
LaserJet 1220

S500
S750
S600
S630
S800
S900
S6300
S9000

Epson printers
C40 Series
C60 Series
C70 Series
C80 Series
CL750
MC 2000
PM-2200C
PM-720C
PM 730C
PM-780C
PM 790PT
PM 830C
PM-880C
PM 890C
PM-900C
PM-920C
PM-950C
PM-3500C
Stylus Color 680
Stylus Color 740
Stylus Color 760
Stylus Color 777
Stylus Color 860
Stylus Color 880
Stylus Color 900
Stylus Color 980
Stylus Photo 780
Stylus Photo 785EPX
Stylus Photo 790
Stylus Photo 810 Series
Stylus Photo 820 Series
Stylus Photo 870
Stylus Photo 875DC
Stylus Photo 890
Stylus Photo 895

LaserJet 2100 Series
LaserJet 2200
LaserJet 3200
LaserJet 3300 Series
LaserJet 4 Plus
LaserJet 4000 Series
LaserJet 4050 Series
LaserJet 4100 MFP
LaserJet 4100 Series
LaserJet 4ML
LaserJet 4MP
LaserJet 4Si v2011.110
LaserJet 4V
LaserJet 5000 Series
LaserJet 5100 Series
LaserJet 5M
LaserJet 5MP
LaserJet 5Si
LaserJet 5Si Mopier
LaserJet 6MP
LaserJet 8000 Series
LaserJet 8100 Series
LaserJet 8150 Series
LaserJet 9000 Series
LaserJet 9000 MFP
Mopier 240
Mopier 220
LaserJet 4

Xerox/Techtronix Printers
Document Centre 490/480/470/460 families
Document Centre 440/432/425/420 families
Document Centre 340/332/230/220 families
Document Centre 265/255/240 families
DocuPrint N2025 PS
DocuPrint N2125 PS
DocuPrint N2825 PS
DocuPrint N3225 PS
DocuPrint N4025 PS
DocuPrint N4525 PS
Phaser 790
Phaser 840Ev5
Phaser 840Pv5
Phaser 840v5

Stylus Photo 1270

Stylus Photo 1280

Stylus Photo 1290

Stylus Photo 2000P

HP printers

Color Inkjet CP1700

Color Inkjet CP1160

Deskjet 350

Deskjet 3420

Deskjet 3820

Deskjet 5550

Deskjet 5551

Deskjet 640C

Deskjet 810C

Deskjet 815C

Deskjet 816C

Deskjet 825C

Deskjet 830C

Deskjet 840C

Deskjet 845C

Deskjet 880C

Deskjet 920C

Deskjet 935

Deskjet 895Cse

Deskjet 895Cxi

Deskjet 930C

Deskjet 940C

Deskjet 948C

Deskjet 950C

Deskjet 955C

Deskjet 957C

Deskjet 960Cxi

Deskjet 960Cse

Deskjet 970

Deskjet 980Cse

Deskjet 980Cxi

Deskjet 990Cse

Deskjet 990Cxi

Deskjet 990Cm series

Deskjet 995

Deskjet 1125C

Deskjet 1220C

Deskjet 3420C

Deskjet 1200-series

Phaser 850DPv2

Phaser 850DXv2

Phaser 850Nv2

Phaser 860Bv2

Phaser 860DPv2

Phaser 860DXv2

Phaser 860Nv2

Phaser 360 Extended

Phaser 740 Extended

Phaser 740 Plus

Phaser 750N

Phaser 750P

Phaser 780 Graphics

Phaser 780 Plus

Phaser 840 Extended

Phaser 840 Plus

Phaser 850N

Phaser 740

Phaser 780

Phaser 840

Phaser 1235 PS

Phaser 2135 PS

Phaser 8200Bv2

Phaser 8200DPv2

Phaser 8200DXv2

Phaser 8200v2

Tektronix 750DP1

Tektronix 750DX1

Tektronix 7700DN

Tektronix 7700DX

Tektronix 7700GX

Tektronix Phaser 360 P1

Tektronix Phaser 740 E1

Tektronix Phaser 740 E4

Tektronix Phaser 740 P1

Tektronix Phaser 740 P4

Tektronix Phaser 750 N1

Tektronix Phaser 750 P1

Tektronix Phaser 780 G1

Tektronix Phaser 780 P1

Tektronix Phaser 780 G4

Tektronix Phaser 780 P4

Tektronix Phaser 1235 Series

Tektronix Phaser 2135 Series

Tektronix Phaser 7401

Tektronix Phaser 7404

Lexmark printers
Z22-32
Z23-22
Z25-35
Z53
Z45
Z55
Z65

Built-in PostScript Support
Apple Laserwriter printers
4/600 PS
12/640 PS
16/600 PS
16/600 PS Fax
16/600 PS-J
8500
Color 12/600 PS
Color 12/600 PS-J
Color 12/660 PS
IIf v2010.113
IIf v2010.130
IIg v2010.113
IIg v2010.130
Personal 320
Personal NTR
LaserWriter Pro 400
LaserWriter Pro 405
LaserWriter Pro 600
LaserWriter Pro 630
Pro 810
Pro 810f
Select 360
Select 360f
Select 360 v2013.112
Select 610

Some printers may require a 3rd party adapter or print server.

Additional PPD files are available from several sites on the Internet, including Adobe.

Tektronix Phaser 7801
Tektronix Phaser 7804
Xerox 2006
Xerox Phaser 790
Xerox Phaser 3400
Xerox Phaser 5400
Xerox Phaser 6200B
Xerox Phaser 6200DP
Xerox Phaser 6200DX
Xerox Phaser 6200N

Lexmark
Lexmark 4039 plus
Lexmark 4079 plus
Lexmark C720
Lexmark C750
Lexmark C910
Lexmark E320
Lexmark E322
Lexmark Optra C
Optra C710
Optra Color 40
Optra Color 45
Optra Color 1200
Optra E310
Optra E312
Optra E312L
Lexmark Optra Ep
Lexmark Optra K
Lexmark Optra L
Lexmark Optra Lx+
Lexmark Optra Lx
Lexmark Optra Lxi+
Lexmark Optra Lxn+
Optra M410
Optra M412
Lexmark Optra N
Lexmark Optra R+
Lexmark Optra R
Lexmark Optra Rn+
Lexmark Optra Rt+
Lexmark Optra Rx
Lexmark Optra S plus
Lexmark Optra S xxx5 Series
Lexmark Optra S

Lexmark Optra SC
Optra T
Optra W810
T520SBE
T520
T522
T620
T622
W820
IBM Color Jetprinter PS 4079
IBM Laserprinter 4029
IBM Laserprinter 4039

Published Date: Feb 18, 2012

iTunes for Windows: Unable to Burn MP3 CD, Data CD, or DVD

You might not be able to burn an MP3 CD, data CD, or DVD with Spanish, Swedish, or Finish versions of Windows 2000 or Windows XP.

This article has been archived and is no longer updated by Apple.

Symptom

One of the following occurs:

- iTunes for Windows unexpectedly quits when you click Burn.
- iTunes for Windows does not recognize audio CDs.

This happens with the Spanish, Swedish, and Finnish versions of Windows 2000 and Windows XP when you try to burn an MP3 CD or data CD or DVD. It doesn't happen when you burn an audio CD.

Solution

Update to iTunes 4.6 or later.

Related documents

iTunes for Windows: Unable to Burn a CD

iTunes for Windows: Additional Troubleshooting for Burning Issues

Published Date: Feb 18, 2012

Soundtrack: Don‘t Use Same Name For Loops and One-Shots

Saving a One-shot recording with the same name as a previously recorded Loop replaces the Loop with the One-shot.
This article has been archived and is no longer updated by Apple.

Symptom

When you record and save a couple of tracks as Loops and name them "Take 1" and "Take 2", for example, then record two other tracks and save them as "One-shots" with the same names as the Loops, the "One-shot" tracks replace the "Loop" tracks.

Solution

Don't use the same name for the tracks. Consider adding additional descriptions, for example "take 1 loop" or "take 1 1shot".

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

Super Serial Card: Cable for Epson MX-70, MX-80, MX-100 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a Expson MX-70, MX-80 or MX-100 printer.

This article has been archived and is no longer updated by Apple.

MX-70 & MX-80 Cable

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 11
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

* Use printer at 9600 Baud.

MX-100 Cable

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

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21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
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DAL: Third-Party Servers

I want to put servers on Apollo and Ultrix-based VAX workstations so Macintosh computers can access the data there. I need a list of current DAL servers.
This article has been archived and is no longer updated by Apple.
The following are available from APDA:

Data Access Language Developer's Toolkit
Data Access Language Server for VAX/VMS (9 track format)
Data Access Language Server for VAX/VMS(TK 50 Format)
Data Access Language Server for VM/CMS
Data Access Language Server for MVS/TSO
Data Access Language Server for A/UX v1.3
Data Access Language Server for MVS/VTAM v1.3

Since you're looking for a DAL server for Ultrix and Apollo UNIX, the answer is very likely to come from Pacer.

Here is the latest information from the DAL Product Manager:

- Pacer Software announced a DAL Server for HP/UX, and DAL Server for SunOS on Sun SparcStation. Transport methods are TCP and Asynchronous. Databases supported are Ingres, Oracle, Informix, and Sybase.

They also have plans for DAL Server for Ultrix, and DAL Server for RS/6000 platform in early 1992.

- Novell is shipping on a DAL Server for Netware.

- Tandem is currently shipping DAL Server Tandem.

- Data General is working on a Server Product. Please contact directly for expected shipping date.

- Blyth Software is shipping DAL Toolkit for MS/DOS. AttachMate Software is required.
Published Date: Feb 18, 2012

DVD Studio Pro 2: Black Frame Appears Between Menus in Simulator

When moving between menus or between menus and video tracks on a simulated disc, a black frame may briefly appear.
This article has been archived and is no longer updated by Apple.

Symptom

A black frame appears between menus or between menus and video tracks when using the Simulator.

Solution

This only happens with the Simulator. Build the title and play back from a DVD Player to preview the disc.

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

DVD Studio Pro 2: Importing and Saving an iDVD Project Rewrites the Project File

If you import an iDVD project into DVD Studio Pro 2, save the DVD Studio Pro project using a different name.
This article has been archived and is no longer updated by Apple.

Symptom

iDVD can't open a project. This happens after you imported the project into DVD Studio Pro 2.

Solution

To prevent this from occurring, save the project using a different name. In DVD Studio Pro, choose **Save As** from the **File** menu.

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

DVD Studio Pro: Audio and Video Duration Are Not the Same in Asset Container

Because audio and video have different frame sizes, the durations will not be exactly the same.

This article has been archived and is no longer updated by Apple.

When you import a movie, the audio and video are listed separately in the Asset container. The Length column in the Asset container may show that the duration of the audio for the movie is one frame longer than the video. This is normal and occurs because audio and video have different frame sizes.

Published Date: Feb 18, 2012

iPod (With Dock Connector): Image Capture Unexpectedly Quits While Importing Photos

Image Capture may unexpectedly quit when importing photos from an iPod whose name includes Japanese characters or an apostrophe.
This article has been archived and is no longer updated by Apple.

Symptom

Image Capture unexpectedly quits while importing photos from iPod.

Solution

Use iPhoto instead of Image Capture to import photos or rename the iPod so it does not include the following characters:

- Apostrophe (')
- Japanese characters

See technical document 60952, "**iPod: How to Rename Your iPod**", if you need help renaming your iPod.
Published Date: Feb 18, 2012

DVD Studio Pro 2: Missing Assets Do Not Automatically Relink While the Project Is Open

Missing assets must be relinked in DVD Studio Pro 2.
This article has been archived and is no longer updated by Apple.
If your project has missing assets, their names, and the names of any elements that use them, are red in the Assets and Outline tabs (Figure 1). This can happen if the assets are on an external hard disk that isn't turned on or connected to your Mac, for example.

Once the assets are available, their names in the Assets tab turn black, and can be relinked. If the assets don't automatically relink themselves, relink them manually using the pop-up menu in the Assets tab or by clicking on the individual element in the Outline tab to bring up the Relink dialog. Alternatively, you can close and reopen the project.

Figure 1 Missing asset appears in red
Published Date: Feb 18, 2012

DVD Studio Pro 2: Display Profile Affects Color of Assets on Burned Discs

The colors you see in your DVD Studio Pro 2 project are affected by the Display Profile you choose in Display preferences.
This article has been archived and is no longer updated by Apple.
If you are using more than one computer to build a specific project, make sure to choose the same Display Profile in Display preferences. The best choice is probably Generic RGB Profile. Using different profiles could cause a disc burned on one computer to have different colors than the same project burned on another computer.

Follow these steps on each computer you use for a specific project::

1. From the **Apple** menu, choose **System Preferences**.
2. From the **View** menu, choose **Displays**.
3. Click Display.
4. From the **Colors** pop-up menu, choose **Millions**.
5. Click Color.
6. Select the Generic RGB Profile.
7. Quit System Preferences.

Published Date: Feb 18, 2012

DVD Studio Pro 2: Slideshows Created in iDVD Drop Zones Only Display the First Slide When Imported

If you import an iDVD project that contains a drop zone with a slideshow for the asset, DVD Studio Pro will only import and display the first slide in the drop zone.

This article has been archived and is no longer updated by Apple.

Symptom

The Drop Zone asset is empty.

Solution

Create a QuickTime movie of the slideshow, import and set it as the drop zone asset in iDVD or DVD Studio Pro 2.

Published Date: Feb 18, 2012

DVD Studio Pro 2: Projects Not Fully Previewed in iDVD Do Not Import Properly

When a menu has never been opened or rendered in iDVD, the information in the project file is not complete and DVD Studio Pro will not import the drop zones.
This article has been archived and is no longer updated by Apple.

Symptom

Menus are missing backgrounds and button shapes in an iDVD project you imported into DVD Studio Pro 2.

Solution

To ensure all iDVD menu elements import correctly into DVD Studio Pro, navigate to each chapter index menu in iDVD before saving the project. This is also true for any menus you add to your iDVD project by clicking the Folder button.

Published Date: Feb 18, 2012

DAL 1.3: Use With Different Oracle Process Names

I tried to install DAL 1.3 for ORACLE V6 on a VAX/VMS system for an evaluation period. In the installation manual it says that the ORACLE V6 processes should have the following names: ORA_DEMO_RMON, ORA_DEMO_SMON. I can't imagine a lot of sites using these names for the ORACLE processes of their production database. In the installation notes I couldn't find the necessary commands to type if you have other ORACLE process names, in order to get DAL to work. Can you give me some guidelines? The VMS process names in this particular case are: ORA_CIT_RMON, ORA_CIT_SMON.
This article has been archived and is no longer updated by Apple.
When you install ORACLE 6.x, you are asked to name an SID for the instance. An SID is an instance's unique identifier. It's a one-to-size character that identifies the new instance. Oracle uses this SID in the names of the processes associated with that instance.

These names, however, don't change the way you start DAL to use ORACLE. The examples in the Installation Guide used the name DEMO, but you can use any SID you like.

On the VAX, you still use "idal" to try a connection to the ORACLE demonstration database.

The example you saw in the Installation Guide shows you how to check for ORACLE DBMS status. No matter what your SID name is, you still use the $ SHOW SYS command. These four processes should be in the list output by SHOW SYS.

If this doesn't work, access these tables using ORACLE's SQLPlus to see if it works. If it doesn't, check your ORACLE installation, startup procedure, and privileges of the account you are using.

By the way, DAL 1.2 and 1.3 have problems with Oracle 6.0.33 (6.0.32 and before are OK) because ORACLE stops defining the logical name SYS$ORACLE, which we need for DAL to work. To get around this, you can define the logical name for them in the MSAD$LOGICALS file. You should define SYS$ORACLE to be the value "ORA_RDBMS" and then things should work.

The symptom for this is subtle. You can open up the DBMS, but any attempt to open up a database causes the connection to go away. So it looks like it might be a networking or AppleTalk for VMS problem. It's actually the DAL server dying, because it assumes that value exists when it doesn't.
Published Date: Feb 18, 2012

iTunes 4: Optical Drive Support For Mac OS X

iTunes 4 supports optical drives that work with Mac OS X.
This article has been archived and is no longer updated by Apple.
Optical drives that work with Mac OS X work with iTunes 4. Apple does not publish a list of supported optical drives. However, Apple will often add support to Mac OS X and its updates shortly after optical drives are released by third-party manufacturers.

Apple puts a high priority on supporting optical drives that are sold at the Apple Store (online and retail). There may be some lag time between when Apple starts selling a new optical drive and when a Mac OS X update is released that adds support for it. In the meantime, you may want to check the drive manufacturer's website to see if a driver that supports Mac OS X is available.

If you have updated Mac OS X to the latest version available through Software Update, and Apple System Profiler doesn't show that the drive can be used to burn discs, check the drive manufacturer's website to see if a driver is available.

Document 17159, "**Locating Vendor Information**" can help you search for a particular vendor's address and phone number.
Published Date: Feb 18, 2012

DVD Studio Pro: About Markers in MPEG Encoded With DVD Studio Pro 2

The markers in MPEG files encoded with DVD Studio Pro 2 do not work with earlier versions of DVD Studio Pro.
This article has been archived and is no longer updated by Apple.

Symptom

Chapter markers do not appear in earlier versions (1.0 through 1.5.2) of DVD Studio Pro when importing MPEG files encoded with DVD Studio Pro 2.

Solution

You can manually add the markers to the files if you want to import them into the earlier version of DVD Studio Pro.

Published Date: Feb 18, 2012

DVD Studio Pro 2: Single Layer Shape Files Are Not Supported

If you import a shape file that has a single layer, a gap appears in the Palette where the shape should appear, and you cannot select the shape or delete it in DVD Studio Pro.
This article has been archived and is no longer updated by Apple.

Symptom

An imported shape file is completely invisible, unusable, undeletable, and has no visible name. Attempts to replace it are not successful.

Solution

All shape files you import must have at least two layers.

To delete a single layer shape file, do one of the following:

If the shape was not imported as a project-only shape

1. Click the Finder icon in the Dock.
2. From the **Go** menu, choose **Go to Folder**.
3. Type: `/Library/Application Support/DVD Studio Pro/Shapes`
4. Click Go.
5. Drag the specific shape file to the Trash.

If the shape was imported as a project-only shape

You only have to delete the original shape file from its original location. When a shape is imported as a project-only shape, a reference is added to the project, defining the shape's location.

Published Date: Feb 18, 2012

DVD Studio Pro 2: Mask Edges May Be Visible in Shapes You Create

If you make the thumbnail image mask layer (the first layer) of a shape the same size as the shape's graphics layer (the second layer), you may see some of the mask layer around the edges of the graphics layer.
This article has been archived and is no longer updated by Apple.

Symptom

Drop Zones have a small white fringe around the shape

Solution

This occurs because the shape's graphics layer is processed differently than the mask layer. You can work around this issue by making the mask layer slightly smaller than the graphics layer.

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

iMovie 4: Some Titles Plug-ins Require at Least 16 MB of Video Memory

Your computer must have at least 16 MB of video memory (VRAM) to use all the plug-ins in the Titles pane.
This article has been archived and is no longer updated by Apple.
Computers that normally work with iMovie 4 must also have at least 16 MB of video memory in order to use the Twirl, 3D Spin, and the Far Far Away plug-ins in the Titles pane. If your computer doesn't have enough VRAM, these plug-ins won't appear in the Titles pane.

Additional requirements for iMovie can be found in technical document 93598 "**iMovie 4: System Requirements**."
Published Date: Feb 18, 2012

QuickTime 6.3: Installs on Top of Mac OS X Systems With Later Versions of QuickTime

The QuickTime 6.3 installer for Mac OS X does not warn you that you are installing on top of a later version of QuickTime.
This article has been archived and is no longer updated by Apple.
If you accidentally installed QuickTime 6.3 on top of a later version (including QuickTime 6.4 or 6.5), download and install the later version again.
It's available from the QuickTime Download webpage (http://www.apple.com/quicktime/download).

This document will be updated when additional information is available.
Published Date: Feb 18, 2012

Final Cut Pro 4J: Exporting Text Generator to XML

When using the Japanese version of Final Cut Pro 4.1, if you use the text generator without selecting a font, the default font is encoded improperly and results in invalid XML.
This article has been archived and is no longer updated by Apple.

Symptom

Final Cut Pro will not import the XML.

Solution

Make sure you select a font in the text generator controls before exporting the project as XML.

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

AppleWorks: Envelope Assistant Uses Wrong Font Size

AppleWorks may create text with a larger font size than the one you selected in the Envelope Assistant.
This article has been archived and is no longer updated by Apple.

Symptom

If you choose a small font size (9- or 10-point) in the Envelope Assistant, AppleWorks creates text with a 72-point font size.

Solution

To change the font size of all the text in the document:

1. From the **Edit** menu, choose **Select All**.
2. From the **Text** menu, choose **Size**, then choose the correct font size.

This document will be updated as more information becomes available.
Published Date: Feb 18, 2012

DVD Studio Pro 2: QuickTime Missing Assets Search Dialog Reappears After Being Canceled

The QuickTime Missing Assets search dialog reappears after being canceled if you can't find a reference QuickTime movie (one that relies on a master movie for its content).
This article has been archived and is no longer updated by Apple.

Symptom

The QuickTime Missing Assets search dialog reappears after being canceled.

Solution

The dialog will appear three times. Click cancel each time the dialog appears to dismiss it.

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

Final Cut Express 2.0: "3 Way Color Corrector" Not Included

A Final Cut Express 2.0 Help document describes information about the "3 Way Color Corrector", which is not a part of Final Cut Express 2.0.
This article has been archived and is no longer updated by Apple.
The "3 Way Color Corrector" mentioned in a Help document is not a part of Final Cut Express 2.0.

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

Final Cut Express 2.0: Minimum Allowable Free Space on Scratch Disks Value

Chapter 1, page 16 of user's manual incorrectly states the "Minimum Allowable Free Space On Scratch Disk".
This article has been archived and is no longer updated by Apple.
Chapter 1, page 16 of the Final Cut Express 2.0 manual reads:

> **"Minimum Allowable Free Space on Scratch Disks:** In the System Settings Scratch Disks tab (choose Final Cut Express > System Settings), change this value from 50 MB to 500 MB."

It should read:

> **"Minimum Allowable Free Space on Scratch Disks:** In the System Settings Scratch Disks tab (choose Final Cut Express > System Settings), change this value from 10 MB to 500 MB."

Published Date: Feb 18, 2012

Final Cut Express 2.0: Tip - Always Install on Startup Disk

Always install Final Cut Express 2.0 on the computer's startup disk.
This article has been archived and is no longer updated by Apple.
You should always install Final Cut Express 2.0 on the computer's startup disk even if the installer allows you to install it on a different disk.
Published Date: Feb 18, 2012

AppleWorks 6: Images Aren‘t Saved When You Export a Document to Word

Images from your AppleWorks document are not saved when you export using the Microsoft Word format.
This article has been archived and is no longer updated by Apple.

Symptom

Images from your document do not appear when you open it in Microsoft Word.

Solution

Save the AppleWorks document in rich text format (RTF).

1. From the **File** menu, choose **Save As**.
2. From the **File Format** pop-up menu, choose **RTF**.
3. Click Save.

Published Date: Feb 18, 2012

DVD Studio Pro 2: Handling Files Created With Sonic Creator

Files created with the Sonic Creator system may not behave as expected in DVD Studio Pro.
This article has been archived and is no longer updated by Apple.

Symptom

MPEG files encoded with the Sonic Creator system cannot be dragged into the Timeline or the Outline Contents. When you try to do so, the item snaps back to its original location.

Solution

Drag the file into the Assets tab, then drag it from the Assets tab into the Timeline or Outline tab.

Published Date: Feb 18, 2012

Final Cut: Stops Responding After Dragging PSD, PIC, or JPEG Clips Directly to the Canvas

The application may stop responding if you drag multiple PSD, PIC, or JPEG files directly to the canvas or browser from the Finder.
This article has been archived and is no longer updated by Apple.

Symptom

The application stops responding if you drag PSD (Photoshop), PIC, or JPEG images directly to the canvas or browser from the Finder five or more times. The pointer may turn into a progress indicator (looks like a spinning disc), and the application may unexpectedly quit.

Solution

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

Final Cut Express 2.0: Reverse Playback Is Jerky When FireWire Out Is Enabled

When FireWire Out is enabled and a clip is in the viewer, playback is jerky after pressing "K" to reverse. It remains jerky after pressing "L" to resume forward playback.
This article has been archived and is no longer updated by Apple.

Symptom

Playback is jerky after using reverse playback.

This occurs if FireWire Out is enabled and a clip is in the viewer.

Solution

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

Serial Printer: Connecting to UNIX Host Via Ethernet

I would like to print to our LaserWriter IINT via Ethernet from an SCO UNIX 3.2 computer. Is there a driver available to do this? Can this work for an ImageWriter II as well?

This article has been archived and is no longer updated by Apple.
You can connect a LaserWriter IINT to a UNIX host with very little difficulty. But since the LaserWriter IINT has no Ethernet port, it's going to be very difficult to connect it directly to an Ethernet network.

You can, however, connect the LaserWriter IINT to a UNIX host via a serial connection. Then use the UNIX print spooler to allow other UNIX hosts on an Ethernet to print to the serially connected printer. You could use Adobe Systems' Transcript software to allow PostScript printing from the UNIX host. Or you could put the printer into Diablo 630 emulation mode and use it just like any ASCII printer.

You can connect the ImageWriter the same way. Of course PostScript style output would not be available, so the Transcript software won't be necessary.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

QuickTime 6.5: Localized Menus Are in English

The menu items and dialogs will be in English if you install some localized versions of QuickTime 6.5 for Windows over an English version.
This article has been archived and is no longer updated by Apple.

Symptom

QuickTime for Windows menus and dialogs appears in English.

This occurs after installing the localized Chinese (Traditional and Simplified) or Korean version of QuickTime 6.5 for Windows on a computer where an English version of QuickTime for Windows was already installed.

Solution

Remove the English QuickTime for Windows version before installing the localized version of QuickTime for Windows.

See technical document 60342, "**QuickTime: How to Uninstall QuickTime on a Windows-Compatible Computer**," for steps to remove the English version of QuickTime.

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

AppleTalk Remote Access: How to Copy It to an 800K System

I have a PowerBook 140, with AppleTalk Remote Access. I want to use this copy of Remote Access (on 1.4MB diskette) in my Macintosh SE, which has 800K diskettes. How can I get a copy of Remote Access on 800K diskettes if I have a version on 1.4MB diskettes? Do I have to buy a copy?

This article has been archived and is no longer updated by Apple.

The license accompanying AppleTalk Remote Access allows a single user to make up to three copies of the AppleTalk Remote Access software for use on Apple computers they own and/or operate. You don't need to purchase another copy for your Macintosh SE.

To get a copy of the software for your Macintosh SE, (800K, two disks) we recommend the following:

- Get a copy from your dealer.

- Copy the software to your PowerBook 140 and then do a "Live Install" on your Macintosh SE, over the network. The procedure below assumes you have an AppleTalk network in place between the PowerBook 140 and Macintosh SE, either with LocalTalk cabling, PhoneNet cabling, or serial cable (not supported by Apple).

1) Insert the AppleTalk Remote Access 1.4MB floppy into the PowerBook.

2) Drag the Floppy Disk icon on top of the Hard Disk icon. This creates a folder on the PowerBook 140 called "Installer" with all of the AppleTalk Remote Access software within.

3) Open the Installer folder.

4) Rename the application inside from "Installer" to "Install".

5) Drag the files "Install" and "Remote Access Script" out of the Installer folder, to the root level of the hard disk (not the desktop).

6) Turn on File Sharing on the PowerBook.

7) From the Macintosh SE, use the Chooser to connect to the Macintosh PowerBook server. Sign on as the PowerBook owner. This gives you access to the entire PowerBook hard drive (that is, the PowerBook hard drive icon will appear on the Macintosh SE desktop).

8) From the Macintosh SE, open the PowerBook hard drive icon.

9) From the Macintosh SE, you should be able to see the "Install" application. Double click on it.

Published Date: Feb 18, 2012

Final Cut Express 2.0: How to Move Clips in the Timeline

Use the mouse to drag a clip in the Final Cut Express 2.0 Timeline.
This article has been archived and is no longer updated by Apple.
Use the mouse to move clips in the Timeline. Clips do not move if you use numbers, for example +2.0, to move 2 seconds ahead.
Published Date: Feb 18, 2012

Preview pane shows partial image in iMovie

This article has been archived and is no longer updated by Apple.

If the Preview pane in iMovie does not show the complete image, try restarting iMovie.

Restart iMovie if you only see about 1/6th of the Preview when you play your project.

1. Quit iMovie.
2. Open iMovie.
3. Check to see if the Preview window works correctly.

The Preview should show the whole image as expected.

Published Date: Feb 18, 2012

DAL: Defining Oracle Image Identifier

I have several instances of Oracle installed on my system. How does DAL know which one to look at?
This article has been archived and is no longer updated by Apple.
The DAL Oracle database adapter, as supplied, is linked with the Oracle Image Identifier "S". If your installation selected a different image identifier, two assign statements must be supplied in either the system login file or the user's login file to point DAL to the correct Oracle images:

- Oracle 5.1.22

$assign/nolog device:[directory]ORACLEx.EXE ORACLES
$assign/nolog device:[directory]ORACRTLx.EXE ORACRTLS

where "x" is the Oracle Image Identifier.

- Oracle 6.0

$assign/nolog device:[directory]ORACLEx.EXE ORACLES
$assign/nolog device:[directory]ORACRTLx.EXE ORA_CRTLS

where "x" is the Oracle Image Identifier.
Published Date: Feb 18, 2012

iMovie 4: About Bluetooth Devices

iMovie 4 is compatible with Bluetooth devices that are compliant with 3GPP and have an appropriate video application to display movies.
This article has been archived and is no longer updated by Apple.
To send your movie to a Bluetooth device, the device must be compliant with the Third Generation Partnership Program (3GPP) and have an appropriate video application to display movies.

For more information about Bluetooth wireless technology, see the Apple Bluetooth webpage (http://www.apple.com/bluetooth/).
Published Date: Feb 18, 2012

Final Cut Express 2: Offline Clip Thumbnail Appears in Browser After Saving and Re-Opening a Project

An Offline Clip thumbnail may unexpectedly appear in the browser when a project has been saved and re-opened.
This article has been archived and is no longer updated by Apple.

Symptom

The Offline Clip thumbnail unexpectedly appears.

Solution

This document will be updated when additional information is available.

Published Date: Feb 18, 2012

DVD Studio Pro 2: Last Chapter Played Setting Reliable When Assigned to Menus

Learn how the Last Chapter Played setting can be used in DVD Studio Pro 2.

This article has been archived and is no longer updated by Apple.

When using the Last Chapter Played setting for display conditions assigned to a track or story, you will get unreliable playback on some DVD players. However, the Last Chapter Played setting can be used reliably with display conditions assigned to menus.

Published Date: Feb 18, 2012

DVD Studio Pro 2: Some DVD Players Do Not Allow Parental Level in Display Conditions

Learn why the parental level option may work as expected on some DVD players.

This article has been archived and is no longer updated by Apple.

Some DVD players do not process the parental level option correctly when used in a display condition, allowing content to play that should be disallowed.

Published Date: Feb 18, 2012

iPod mini: Now Playing Screen Does Not Display an Album‘s Title

iPod mini's software does not display the album title in the Now Playing menu.

This article has been archived and is no longer updated by Apple.

As part of its compact size, iPod mini has a slightly smaller display than iPod. As a result, iPod mini's Now Playing screen does not include the current song's album name (Figure 1). Even so, iPod mini's software recognizes the album field and uses it like iPod does when browsing songs by album.

Figure 1 Now Playing screen

To determine which iPod model you have see technical document 61688, "**iPod: How to Identify Models**."

Published Date: Feb 18, 2012

Final Cut Express 2.0: Incorrect FAQ Entry

One of the questions in the Final Cut Express 2.0 FAQ only applies to Final Cut Express 1.0.
This article has been archived and is no longer updated by Apple.
Page 2 of the Frequently Asked Questions About Final Cut Express 2.0 document incorrectly includes the following information that applied to the original version of Final Cut Express.

> How can I prevent out-of-sync audio on long clips?
> Make sure that the "Sync Adjust Movies Over...Minutes" setting is enabled in Preferences. Then, delete the clips that are out of sync and reimport them.

This is not an option in Final Cut Express 2.0 preferences.
Published Date: Feb 18, 2012

iMovie 3: Cannot Print Tutorial

The iMovie 3 tutorial materials may not print to some PostScript printers.
This article has been archived and is no longer updated by Apple.

Symptom

When you print the iMovie 3 tutorial PDF files, the job spools to the print queue, but never prints. The printer may report a PostScript error.

Solution

Use one or more of the following methods to print the tutorial material:

- Print the tutorial to a non-PostScript printer (such as an inkjet printer).
- Print the tutorial material from Adobe Reader instead of Preview. You can find the tutorial PDF files on your computer's hard disk. Choose **Go to Folder** from the Finder's **Go** menu, type "/Library/Documentation/iMovie/", click Go and locate the files you want to print.
- Download and print the iMovie 4 tutorial materials instead. Please note that some features presented in the iMovie 4 tutorials are unavailable in iMovie 3 . The iMovie 4 tutorial PDF files are available at the bottom of the iMovie support webpage.

Published Date: Feb 18, 2012

iMovie 3: Compatiblity

This document contains device compatibility information for iMovie 3. For iMovie 4 see the iMovie Compatibility page located at: http://www.apple.com/imovie/compatibility/camcorder.html.
This article has been archived and is no longer updated by Apple.

iMovie 3 Camcorder Compatibility

Supported AV Adapters
Sony
Sony DVMC-DA2 (Allows use of non-DV devices)

Supported Digital Video VCRs
Sony
Sony GVD-900

Supported Camcorders	
Canon	Visit Canon's Website
Canon 400i (PAL)	
Canon Elura	
Canon Elura2	
Canon Elura 20MC	
Canon GL1 - Learn More	
Canon Mini DV MV3i (PAL)	
Canon MV1 (PAL)	
Canon MV10 (PAL)	
Canon MV100 (PAL)	
Canon MV20i (PAL)	
Canon MV30i (PAL)	
Canon MV200i (PAL)	
Canon MV300i (PAL)	
Canon MVX1i (PAL)	
Canon Optura	
Canon Optura Pi	
Canon Optura 20MC	
Canon Optura 100MC - Learn More	
Canon Ultura	
Canon Vistura	
Canon XL1 - Learn More	
Canon XM1 (PAL)	
Canon XL1 (PAL)	
Canon XL-1S	
Canon ZR	
Canon ZR10	
Canon ZR20	
Canon ZR25	
Canon ZR25MC	

Panasonic	Visit Panasonic's Website
Panasonic AG-EZ20	
Panasonic PV-DV100	
Panasonic PV-DV200	
Panasonic PV-DV400	
Panasonic PV-DV600	
Panasonic PV-DV710	
Panasonic PV-DV800	
Panasonic NV-C5 (J)	
Panasonic NV-DJ100(J)	
Panasonic NV-MG3 (J)	
Sony	Visit Sony's Website
Sony DCR-PC1	
Sony DCR-PC2E (PAL)	
Sony DCR-PC5	
Sony DCR-PC9	
Sony DCR-PC10	
Sony DCR-PC100	
Sony DCR-PC3	
Sony DCR-TRV-5E (PAL)	
Sony DCR-TRV-8E (PAL)	
Sony DCR-TRV7	
Sony DCR-TRV8	
Sony DCR-TRV9	
Sony DCR-TRV9E	
Sony DCR-TRV11	
Sony DCR-TRV17	
Sony DCR-TRV18 - Learn More	
Sony DCR-TRV20	
Sony DCR-TRV27 - Learn More	
Sony DCR-TRV120	
Sony DCR-TRV310	
Sony DCR-TRV220	
Sony DCR-TRV510	
Sony DCR-TRV520	
Sony DCR-TRV530	
Sony DCR-TRV720	
Sony DCR-TRV730	
Sony DCR-TRV900	

Canon ZR30MC
Canon ZR40 - Learn More
Canon ZR45MC - Learn More
JVC Visit JVC's Website
JVC DV600UA
JVC GRDVL815U
JVC GRDVM55U
JVC GRDV2000U
JVC GRDVP3U
JVC GY-DV550U
JVC GY-DV700WU

Sony DCR-TRV900E (PAL)
Sony DCR-TR7000
Sony DCR-VX1000
Sony DCR-VX2000
Sony DHR-1000
Sony DSR-30
Sony PD100A

Published Date: Feb 18, 2012

iPhoto 4: Transitions Are Not Exported to QuickTime

iPhoto 4 slideshow transitions cannot be exported to QuickTime.

This article has been archived and is no longer updated by Apple.

When exporting your slideshow from iPhoto to QuickTime, any transitions you have selected are replaced with the dissolve transition in the resulting QuickTime movie.

Published Date: Feb 18, 2012

iPod: Smart Playlists Based on Grouping

Create Smart Playlists for your iPod based on something other than Grouping.
This article has been archived and is no longer updated by Apple.
iTunes 4.2 lets you create Smart Playlists based on Grouping, but these playlists will be empty on your iPod. To resolve this, update to the iPod Updater 2004-04-28 or later available from the iPod download page.

For more information on ID3 tags, see "MP3 ID3 Tags: What Are They?"

Published Date: Oct 4, 2008

iLife ‘04: Cannot install from CD or DVD

Find out what you can do if your computer doesn't work with the iLife '04 CD or DVD.
This article has been archived and is no longer updated by Apple.
When you try to open the iLife '04 installer on the iLife '04 Install CD:

- An alert appears that says the computer contains a DVD drive and that you must install iLife from the install DVD.
- If you try to install iLife from the DVD as instructed, the computer ejects the DVD as unreadable disc.

The solution is to install the components individually as follows:

1. Insert the iLife '04 install CD.
2. In the Install CD window that appears, select the iLife installer package icon in the Finder.
3. From the **File** menu, choose **Show Original**.
4. In the window that appears, locate the following items:
    - iMovie.pkg
    - iPhoto.mpkg
    - iTunes4.pkg
5. Open each of the individual installers listed above to install each item that is part of the iLife package.

Published Date: Feb 18, 2012

LaserWriter IIg: Configure for Twisted Pair Ethernet (5/95)

My Apple LaserWriter IIg does not appear in the Chooser. When I send a print job to the printer, the green light on the transceiver flashes, but the job times out and isn't printed.

I swapped the suspect Apple LaserWriter IIg with a known good one and had the same problem.

This article has been archived and is no longer updated by Apple.
Check the push button switch on the back of the LaserWriter IIg, make sure it is set to 0 (zero) for AppleTalk Ethernet networks.

Also it appears you are connecting an Apple Twisted Pair Transceiver to a Farallon PhoneNet EN transceiver via RJ-45 cabling. Although the boxes are physically compatible, they are not logically compatible. The Apple Twisted Pair Transceiver is 10BaseT-compliant, but the Farallon PhoneNET EN is not.

The Apple Twisted Pair Adapter (part number M0845) is not the correct part. You need to use an Apple Ethernet AUI Adapter and power supply (part number M0432).

Here is the configuration:

Macintosh IIcx with 3Com EtherLink card -----> Farallon PhoneNET EN -----> Farallon StarController EN (via RJ-45 cable) -----> Farallon PhoneNET EN (via RJ-45 cable) -----> Apple Ethernet AUI Adapter (M0432) -----> Power Supply and Apple LaserWriter IIg.

Article Change History:
04 May 1995 - Added the push-button switch informaiton.

Support Information Services
Published Date: Feb 18, 2012

Final Cut Express 2: Video stops at a still frame in an exported movie

When your sequence has gaps or blank areas, the video in an exported movie stops playing on the first frame of the clip after the gap, but the audio keeps playing. If your sequence begins with a blank area, the audio plays but there is no video (the video is black).
This article has been archived and is no longer updated by Apple.
To get the audio and video to play together drag a Slug effect into the Timeline from the Video Generators folder in the Effects tab of the Browser and edit it into the Timeline wherever there is a gap in video.

Upgrade to Final Cut Express 2.0.3 or later to avoid the need to use a Slug.

Note: A Slug is a video clip of a black image with an empty pair of audio tracks. Use it as a placeholder in areas where you want to keep a gap between two clips.
Published Date: Feb 18, 2012

iPod: Software Updater Stops Responding in Mac OS X 10.3

Versions of the iPod Software Updater older than 1.3.1 or 2.1 do not work with Mac OS X 10.3.
This article has been archived and is no longer updated by Apple.
Always use the latest version of the iPod Software Updater utility. It's available from the iPod website (**http://www.apple.com/ipod/download/**).

If you use an older version, it may stop responding ("crash" or "freeze") in Mac OS 10.3 or later. If this happens, choose Force Quit from the Apple menu, select the utility from the list of applications, then click Force Quit. Download the latest iPod updater for your iPod and try again.

Related documents

86539 "**Mac OS X 10.3: I Can't Quit an Application Because It Stopped Working**"
93435 "**iPod Software 1.3.1 Updater Installs iPod 1.3 Software on iPod**"
61688 "**iPod: How to Identify Models**"
60984 "**iPod: How to Find Software Version**"

Published Date: Feb 18, 2012

A/UX: How to Back Up Installation Floppies

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

How can I use A/UX to make backup copies of my installation media? The floppies don't have Macintosh file systems on them, so regular Macintosh backup programs don't work.

This article has been archived and is no longer updated by Apple.
To clone an A/UX installation floppy, follow these steps:

1) Give the command:

dd if=/dev/floppy0 of=/tmp/floppy.image

This creates a file containing a copy of the floppy disk contents on the A/UX file system.

2) Insert the duplicate floppy and type:

dd if=/tmp/floppy.image of=/dev/floppy0

to move the copy of the A/UX file system to the new floppy.

As an alternative, you can make the backup copies under the Macintosh OS using a program like DiskCopy.

Published Date: Feb 18, 2012

iPhoto 4 doesn‘t export photos because "there‘s not enough disk space"

iPhoto 4 may incorrectly think a photo's file size is several billion megabytes, which prevents it from being exported.
This article has been archived and is no longer updated by Apple.
If this happens, you won't be able to burn a CD or DVD of your photo library, or save the photo to disk. The solution is to download and install iPhoto 4.0.1 or later.
Published Date: Feb 18, 2012

DVD Studio Pro 2: Last Letter in Italicized Text May Be Partially Clipped

Learn what to do if the last letter in italicized text is partially clipped.

This article has been archived and is no longer updated by Apple.

When you add italicized text to a text object or button in the Menu Editor, it is possible that the last character may be partially clipped. Whether or not this happens depends on what the last letter is and the font you are using. You can work around this issue by adding one or more spaces to the end of the text.

Published Date: Feb 18, 2012

Final Cut Express 2: Uninstalling the program

Learn how to uninstall Final Cut Express 2.
This article has been archived and is no longer updated by Apple.
The Final Cut Express 2 installer does not include an uninstall option. The files and folders installed during a full installation of Final Cut Express 2 are listed below. To uninstall Final Cut Express 2, drag these items to the Trash. Some of them may not be present depending on what you installed.

Tip: You may prefer to access these locations using the Finder's Go to Folder feature. From the **Go** menu, choose **Go to Folder** and enter the directory path.

Location	File/folder to be deleted
/Applications	Final Cut Express
/Library/Application Support	Final Cut Express Support Boris FX BorisFX
/Library/Application Support/ProApps/	Final Cut Express System ID
/Library/Receipts	FinaCutExpress.pkg Any other files with FinalCutExpress in the name
~/Library/Preferences	com.apple.FinalCutExpress.plist Final Cut Express User Data

Note: The tilde "~" refers to your home directory.

Published Date: Feb 18, 2012

DiskCopy: When It Doesn‘t Recognize Disks

I'm having problems using DiskCopy. It doesn't seem to recognize the floppy I'm trying to copy.

This article has been archived and is no longer updated by Apple.

```
Launch DiskCopy first.  Then insert the floppy disk to be copied.

E
```

Published Date: Feb 18, 2012

Tips for charging iPod and connecting to your computer

Follow these tips if you have trouble charging iPod or connecting it to your computer or if you receive an alert that states: "A HI-SPEED USB device is plugged into a non-HI-SPEED USB hub".
This article has been archived and is no longer updated by Apple.

- It's best to connect your iPod or iPod mini directly to your computer's Hi-Speed USB 2.0 or FireWire (IEEE 1394) port. Check here for information on Mac OS X computers using USB 2.0. Avoid connecting it to a hub or another device that is connected to the computer.
- If you connect iPod or iPod mini through a hub, make sure it is a powered hub. **Important**: A USB keyboard acts like a hub, but is not powered.
- If you are using a Hi-Speed USB or FireWire hub and you are not sure if it's powered, check with the manufacturer.
- The FireWire ports on some Windows-compatible computers may not be powered, which means they can't charge iPod or iPod mini. A port that only accepts a 4-pin cable is not powered.
- If you experience any issues using the ports on the front of the computer then try using the Hi-Speed USB ports on the back of your Windows-compatible desktop computer.
- Using the cable that came with the iPod, connect it directly to the iPod Power Adapter.

Related documents

60941: iPod's battery doesn't charge
61415: Troubleshooting the Apple iPod AC Adapter
61676: iPod for Windows: Does Not Charge When Connected to Your Computer

Related Terms: charged, charges, powering, powers, battery

Published Date: Feb 18, 2012

TA47821_Super_Serial_Card_Cable_for_Heathkit_H__(TIL00937).pdf

Super Serial Card: Cable for Heathkit H-14 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a Heathkit H-14 printer.

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 4.....(RTS)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

A/UX: How to Recover your Root Password

Article Change History

08/31/92 - REVIEWED
* For technical accuracy.

I forgot my root password. Is there a way to get into the system without reinstalling?

This article has been archived and is no longer updated by Apple.
Make a copy of /etc/passwd, and using ed from the A/UX Startup application, edit it to remove the password for root. Remember to set a new password for root once you're logged in.

Published Date: Feb 18, 2012

TA47823_AUX_How_to_Avoid_NFS_Timeouts__(TIL09371).pdf

A/UX: How to Avoid NFS Timeouts (8/94)

I'm getting lots of NFS timeout errors. How do I avoid them?

This article has been archived and is no longer updated by Apple.
Time a ping message to the server. Then modify /etc/fstab by setting the timeo option to about the average time it takes for the ping message to return.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Published Date: Feb 18, 2012

DVD-R discs you burn in iDVD 4 or DVD Studio Pro 3 may not play in Mac OS 9

Apple DVD Player in Mac OS 9 may not recognize or play the DVD-R discs you burn in iDVD 4 or DVD Studio Pro 3.
This article has been archived and is no longer updated by Apple.
As a workaround, try holding the Command-Option-I keys simultaneously when you insert the DVD-R disc. Keep holding the keys down until the DVD disc appears.

Holding these keys down forces the computer to make the disc available on the Desktop as an ISO 9660 format disc instead of a UDF formatted disc.

Note: If the disc has a DVD-ROM section containing a high number of items, the disc may take a little while to appear.

This document will be updated as more information becomes available.

Related documents
30878 DVD Discs: Cannot See on Desktop and/or No Sound
Published Date: Feb 18, 2012

AWS 95 & A/UX: Not Booting - "yp: server not responding"

I have configured my A/UX system for bnet. When the system asked me if I wanted to be a NIS client, I respond with yes. Now, it does not boot.
This article has been archived and is no longer updated by Apple.
When an A/UX system is configured to be a Yellow Pages client, it tries to connect to a Yellow Pages server during the boot process. If it cannot find a server, it displays the message yp: server not responding and the system waits until one becomes available.

One way to disable Yellow Pages is from the startup shell, by typing:

```
mv /etc/ypbind /etc/ypbind.hold
```

Then continue to boot normally. Once you have booted, we suggest that you turn off Yellow Pages in /etc/inittab and move the file back to the original location. To turn off Yellow Pages, find the line that executes ypbind and set it to off.

Another way is to edit the file /etc/inittab, using the ed editor from the A/UX Startup application.

Here is the process:

1) Launch A/UX Startup and click Cancel as it begins to launch A/UX.

2) At the startup# prompt, type: `ed /etc/inittab`

3) Use standard ed editing commands to change the line:

```
.  nfs2:2:wait:/etc/ypbind
```

- to -

```
.  nfs2:2:off:/etc/ypbind
```

NOTE: For help with the ed editor, read the manual, "A/UX Text Editing Tools."

This article was published in the "Information Alley": Volume I, Issue 25, Page 8
Published Date: Feb 18, 2012

DAL 1.2: Fix for AppleTalk Connections Dropping

I am running DAL 1.2 on a VAX and my AppleTalk connections occasionally drop into a mutex state. When AppleTalk for VMS drops into this state, I can't make a connection to DAL.
This article has been archived and is no longer updated by Apple.
This is a known problem with DAL and a patch is available on tape to fix the problem. To get a copy of the patch:

- Apple SEs should contact Tech Comm.
- Apple customers should contact the DRC.

Published Date: Feb 18, 2012

Tip: Delete encoded assets after updating to iDVD 4.0.1

If you have a dual processor Power Mac G5 computer, or if you have encountered any issues with your iDVD 4 projects, delete the encoded assets after updating to iDVD 4.0.1.
This article has been archived and is no longer updated by Apple.
Follow these steps for each project you created with iDVD 4.0.

1. Open the iDVD project.
2. From the **Advanced** menu, choose **Delete Encoded Assets**.
3. From the **File** menu, choose **Save Project**.

These steps help ensure that your project's material will be encoded and burned utilizing the benefit of the iDVD 4.0.1 update.
Published Date: Feb 18, 2012

How to Set up a Claris Folder

What is the Claris folder inside my System Folder?
This article has been archived and is no longer updated by Apple.

A Description of the Claris Folder

Nearly all Claris applications can use the Claris XTND System for import & export of other file types. (XTND is also Claris Translators.) The Claris dictionaries are also used by nearly all Claris applications and are available in four languages in addition to US English.

This quick reference guide shows you how to set up a Claris folder in your System Folder. This allows all of your Claris applications to share the same Claris Translator files, as well as Claris dictionary files, saving space on your hard disk.

MacDraw Pro (1.0 or 1.5) and Claris Resolve (1.1) will automatically create a Claris folder and install the files which they use. They will not, however, install all of the files you may need.

Before You Install

Make sure you have access to the most recent versions of the Claris software.

Installing files into the Claris folder:

1. Open the System Folder.
2. Create a folder called Claris -with exactly those characters. Claris Folder, Claris, or even putting spaces around Claris will cause Claris applications to FAIL to locate the folder.
3. Copy the Claris Translators folder from the MacWrite II Reference disk into the Claris folder.
4. Copy the Claris XTND System file to the Claris folder. (This file enables the Claris Translator folder.)
5. Copy the Main Dictionary and User Dictionary to the Claris folder.
6. Copy the Claris Help System to the Claris folder.
7. Copy any applicable help files to the Claris folder.

Help files come with all Claris products except MacPaint 2.0.

(Please remember that you need both the "Claris Help System" file, as well as any of the above help files.)

Claris Translators also work with ON Location 2.0.1 and Instant Update 1.0.1

Installing foreign language dictionaries:

Foreign Language Dictionaries are currently available for Claris applications in: British, French, Spanish, and German.

To install a foreign language dictionary:

1. Drag the appropriate dictionary and hyphenation files into the Claris folder. (Each foreign language dictionary has a separate hyphenation file.)
2. In your Claris application, choose Install Dictionaries ╔ (From the Spelling menu in MacWrite II, from the Check Spelling hierarchical menu under the Edit menu in FileMaker Pro, Claris CAD and MacDraw Pro.)
3. Select the appropriate dictionary in the dialog box which appears. You're ready to begin spell checking!

Stationery/Options Documents:

A. Changing Default Settings:

In MacDraw Pro 1.0 & 1.5, MacWrite II 1.1, Claris CAD 2.0, and MacProject II 2.5; you can change any of the default settings such as: fonts, fonts sizes, headers, footers, custom styles (MacWrite II) rulers, pen sizes, artwork (MacDraw Pro 1.0 & 1.5, Claris CAD) and save them as a Stationery document. From now on, each time you open the specified application or create a new document, all of the customized settings will be the default settings. The following procedure explains how this is done.

1. Select New from the File menu.
2. Change any of the default settings to those you routinely use. (i.e., customize the menus, change the pattern palette, etc.)
3. Add any graphics, such as a letterhead or logo, that routinely appear in your documents.
4. Choose Save As from the File menu.
5. Type in the filename "<application name> II Options" and click Stationery. (<Application name> equals one of the following: MacWrite

II Options, MacDraw Pro Options, Claris CAD Options, etc.)
6. Select either the System Folder, or the Claris folder within the System Folder, or the folder that contains the given Claris application as the folder in which you want to save this file.
7. Click Save.
8. Choose quit from the File menu.

B. Temporarily Disabling Your Custom Default Options:

1. Hold down the option key while starting the given application and it will not look for your startup file in the System Folder. OR ...
2. When choosing New from the File menu in your application, hold down the option key. This will bring up a blank document.

Specific Application Notes

MACWRITE II 1.1: Using MacLink Plus Bridge

MacWrite II users can order an additional set of file translators containing many more PC and mainframe application file formats from DataViz, Inc.

In order to use the additional translator files, follow the installation procedure below:

1. Copy the MacLink Plus Bridge file from the MacWrite II Program disk into either the Claris folder, or the Claris Translators folder.
2. If present, the DataViz MacLink Plus/Translators file should be in the Claris folder. PLEASE NOTE: IF THE MACLINK PLUS/TRANSLATORS FILE IS IN THE CLARIS TRANSLATORS FOLDER, IT WILL NOT BE READ.

To see the full range of XTND filters in MacWrite II

If the Open and Save As dialog boxes in MacWrite II do not display all the XTND filters in the pop up menu, try doing an "Insert File" (command-shift-i). Typically, this option will show all the XTND filters available when the pop-up is clicked.

FileMaker Pro/MacDraw Pro: Additional Claris Translator files

In order to ensure that these new versions can read and write needed file formats, make sure the Claris Translators files from the FileMaker Pro/MacDraw Pro disks are copied into your Claris folder, as well as the Help documents, if you wish to use help inside these applications.

Claris Translator Files

(Excludes MacLink Plus/Bridge files purchased from DataViz, as well as native formats, such Stationery, Text, Tab Text, Comma Separated Text, etc.)

(Also excludes ClarisWorks translators, which are a single 100K file, version 1.0v3; and Claris Resolve translators, which reside inside the application.)

Claris XTND file 1.3
Acta 3.0 (1.0)
AppleWorks (1.0)
AppleWorks GS (1.0)
Claris XTND Bridge (1.0)
EPSF (1.0v3) (Encapsulated Postscript File)
MacDraw II 1.1 (1.0v4)
MacLink Plus/Bridge (2.0)
MacPaint (1.0v2)
MacPaint 2.0 (1.0v2)
MacWrite (1.0)
MacWrite 5.0 (1.0v3)
MacWrite II (1.0)
Microsoft Word 3.0 (1.0)
Microsoft Word 4.0 (1.0v2)
Microsoft Word PC (1.0v2)
Microsoft Works 1.1 (1.0v2)
Microsoft Works DB (1.0v2)
PICT (1.0)
Plain Text (1.0)

RTF (1.0v2) (Rich Text Format)
TIFF (1.0v2) (Tagged Image File Format)
WordPerfect (1.0)
WordPerfect PC 4.2 (1.0v2)
WordPerfect PC 5.0 (1.0v4)
WriteNow (1.0v2)
WriteNow NeXT (1.0)

If you don't want to use the Claris folder

There are several other options for you if you don't want to create a Claris folder in your System Folder. Although the Claris folder approach is recommended, here are some alternatives:

- The Claris Translators folder in the root(top) level of the System Folder.
- The Claris Translators folder in the same folder as MacWrite II 1.1.
- Claris Application (Stationery) Option Files: Select either the System Folder, or the folder that contains the given Claris application, as the folder in which you want to save this file.
- Main Dictionary and User Dictionary files: the folder that contains the given Claris application as the folder in which you want to save this file.
- Help System and Help Document files: the folder that contains the given Claris application as the folder in which you want to save this file.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The following Tech Info Library article can help you search for a particular vendor's address and phone number:

Article 17159: "**Locating Vendor Information**"
Published Date: Feb 18, 2012

DAL 1.2: Current Release Runs Under TSO

Does a DAL Server on an IBM mainframe run in its own address space or does it run under TSO?

This article has been archived and is no longer updated by Apple.

Data Access Language Server for MVS/TSO runs under TSO and uses a TSO session for each user. Data Access Language Server for MVS/VTAM (available from APDA) runs in its own address space or a Batch job or Started Task, and allows access through CICS and VTAM directly with no TSO overhead.

Published Date: Feb 18, 2012

Apple IIe Card: Control Panel vs. Option Panel

How do the Macintosh Control Panel and the Apple IIe Option panel relate to each other?

This article has been archived and is no longer updated by Apple.
They are separate. Printers, keyboard, mouse, and other Macintosh settings have no effect on the IIe side. The only setting that affects the IIe Option Panel is the Monitors setting in the Macintosh. If the Macintosh is set to black and white, the Apple IIe Card only displays black and white data.

Published Date: Feb 18, 2012

iTunes: How to backup and restore playlists

Learn how to back up and restore your playlists.
This article has been archived and is no longer updated by Apple.

Backing up playlists

Follow these steps:

1. Open iTunes.
2. Select one of your playlists from the Source list.
3. From the **File** menu, choose **Export Song List**. A Save dialog appears.
4. From the **Format** pop-up menu, choose **XML**.
5. From the **Where** pop-up menu, choose **Desktop**.
6. Click Save.
7. Repeat steps 2 through 6 for each of the playlists that you have created in iTunes.

Note: These smart playlists are created automatically by iTunes, so you do not need to back them up:

- 60's Music
- My Top Rated
- Recently Played
- Top 25 Most Played.

Restoring playlists

Follow these steps:

1. From the **File** menu, choose **Import**.
2. Navigate to and select one of the exported playlist files on your Desktop.
3. Click Choose.
4. Repeat steps 1 through 3 for each of the playlist files that you have exported to the Desktop.

Important: Some playlist information, such as Play Count and Last Played date, is not preserved.

For steps to recreate the iTunes library file see "iTunes: How to recreate your iTunes Library."

Published Date: Feb 18, 2012

Apple IIe Card: Red Text May Be BASIC‘s FLASH Command

With the Apple IIe Card, why does some text appear in red?

This article has been archived and is no longer updated by Apple.
This is how the Apple IIe card handles BASIC's FLASH command. If you set Apple IIe Option panel to black and white, the text in question appears as inverse text.

Published Date: Feb 18, 2012

iDVD 4 processes reported incorrectly as hung in Activity Monitor

It can be handy to use Activity Monitor to check the status of iDVD 4 and its processes while encoding and burning a project to disc in iDVD 4. However, if you open iDVD after Activity Monitor is already running, you may notice that ThumbnailServer and EncoderServer (which are processes of the iDVD 4 application) are listed in red and are labeled as being hung.
This article has been archived and is no longer updated by Apple.

They are actually running normally. If you quit Activity Monitor and open it again while iDVD is already open, those processes will be listed accurately.
Published Date: Feb 18, 2012

iMovie 4: Vertical lines in still image

Still clips may display as black and white vertical lines in your iMovie 4 project.
This article has been archived and is no longer updated by Apple.
The project would look similar to this:

If you are experiencing the issue, the solution is:

1. Open your project in iMovie.
2. Insert a DV or Ken Burns still clip at the beginning of your project as a placeholder.
3. Delete the affected still clip.
4. Import once again the original photo used for the still clip.
5. Reapply any transitions or effects to the reimported still image if needed.
6. When finished editing, delete the clip added in step 2.

To prevent this from occurring with new projects insert a DV clip or Ken Burns still image as the first clip of your project. You can delete this clip after you are finished editing your project.

This document will be updated as more information becomes available.

Published Date: Feb 18, 2012

About the iPod Updater

This article has been archived and is no longer updated by Apple.

Apple provides a single updater for all iPod models. The updater installs the latest software appropriate for your iPod. For example, the "iPod Updater 2006-01-10" will install the lastest iPod software available as of January 10th, 2006. The latest iPod Updater can be downloaded from http://www.apple.com/ipod/download/.

To verify which software version the updater installs, first open iPod updater, then:

On a Mac:

- From the **iPod Updater** menu, choose **About iPod Updater**.

In Microsoft Windows:

- Right-click on the iPod Updater window's title bar.

Note: The Universal iPod Updater does not necessarily enable the same features on all iPod models; some features such as voice recording and photo importing are model-specific.

Note: In Mac OS X, the Software Update version of the iPod updater may have a different version number than software that is installed. In the picture below, version 3.0.2 is the version of the automatic updater which includes several different versions of iPod software. See above for information on what version of iPod software is installed on different iPod models.

Related documents

60984 iPod: How to find software version

Frequently Asked Questions about iPod Updater

Starting with iPod Updater 2006-01-10, iPod Updater has some new changes and improvements.

How can I tell if I am using the latest iPod Updater?

The date is in the name of the application. For Macintosh, iPod Updater 2006-01-10 and later has:

- A Help menu that links to the iPod Support page and Register iPod page. If you don't see this menu, you are not using the latest version.
- An improved user interface that tells you more about the iPod you're using.
- Better integration with iTunes.
- A Preferences menu to quickly quit the Updater and open iTunes.

Is iPod Updater supported on Macs with Intel Core Processors?

Yes, iPod Updater 2006-01-10 (and later) is a Universal Binary and is supported on Mac OS X 10.2.8 or later on Macs with a PowerPC or Intel Core Processor. Like previous iPod Updaters, it can be used to update all iPod models, dating back to the original iPod.

Known issues

- Updating or restoring the original iPod (dock connector) via USB is not supported. Use FireWire to update this iPod. (The updater reminds you of this.)
- After you update or restore an iPod and quit to launch iTunes, there may be a delay before the iPod appears in iTunes. If it doesn't show up in iTunes, check the iPod's screen to see if it is still updating its firmware or just wait a few minutes.
- The new Updater requires Mac OS X 10.2.8 or later. If you are using an older version of Mac OS X, check the support downloads area to download the iPod Updater 2005-11-17, which is supported on Mac OS X 10.1.5.

- With older iPod models that require you to connect your iPod to power to complete the Update or Restore:
  - If you select the preference to always quit after update/restore, you may not see the message that explains to connect your older iPod to power to complete the restore.
  - After you restore, you may see a message that your iPod was updated. It is in fact restored.
  - In rare instances, if you update or restore but ignore the quit dialog and wait until your iPod has appeared in the Finder, when you do quit, iTunes won't recognize iPod. If this happens, simply quit iTunes and open iTunes again.

Published Date: Feb 18, 2012

Quit iPod Updater 2004-04-28 before opening iTunes

iTunes may not recognize an iPod while iPod Updater is open, even if it appears on the Desktop in the Finder (Mac OS X) or in Windows Explorer (Windows)

This article has been archived and is no longer updated by Apple.

If iTunes is already open when you quit the iPod Updater, just quit and reopen iTunes.

Published Date: Feb 18, 2012

Super Serial Card: Cable for IDS 125,225,440,445,460,560 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a IDS 125, 225, 440, 445, 460, or 560 printer.

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

iMovie can no longer export to camera after installing Final Cut Pro HD or Final Cut Express HD

After installing Final Cut Pro HD or Final Cut Express HD, you can no longer use iMovie to export to a DV camera connected via FireWire.
This article has been archived and is no longer updated by Apple.
You may see the following alert:

> **Lost connection to camera.**
> iMovie lost the connection to the video camera. please check the connections and try again.

This can happen with iMovie 3 or iMovie 4. This does not occur with iMovie HD 5.0.

The solution is to temporarily move the following files from /Library/QuickTime/ to the Desktop:

Final Cut Pro HD

- DesktopVideoOut.component
- DVCPROHDVideoOutput.component

Final Cut Express HD

- DesktopVideoOut.component

Restart the computer and try exporting from iMovie to your camera.

When you need to use Final Cut Pro HD or Final Cut Express HD again, drag these files back to /Library/QuickTime/ and restart the computer.

Published Date: Feb 18, 2012

You can authorize five computers to play songs from the iTunes Store

As of 28 April 2004, you can authorize up to five computers to play songs bought with the same account from the iTunes Store.
This article has been archived and is no longer updated by Apple.
Prior to 28 April 2004, the maximum number of authorized computers per account was three.

A note about copyright

iTunes software may be used to reproduce materials. It is licensed to you only for reproduction of non-copyrighted materials, materials in which you own the copyright, or materials you are authorized or legally permitted to reproduce. If you are uncertain about your right to copy any material, you should contact your legal advisor. See the iTunes Store Terms of Service for additional information.

Published Date: Feb 18, 2012

TA47841_Thumbnail_shows_deleted_frame_in_iMovie_and_.pdf

Thumbnail shows deleted frame in iMovie 3 and 4

The thumbnail image in the clip viewer is the same as it was before you trimmed the first frame.
This article has been archived and is no longer updated by Apple.
This can occur in iMovie 3 or iMovie 4 after you do the following:

1. Drag a movie clip from the Clips pane to the Clip Viewer.
2. Trim off the beginning of the clip in iMovie monitor.
3. Empty the iMovie Trash.
4. Quit iMovie.
5. Open iMovie and open the same project.

Even though the thumbnail shows the incorrect frame, the movie plays back and exports correctly.

Tip: This symptom does not occur if you don't empty the iMovie Trash.
Published Date: Feb 18, 2012

Apple IIe Card: Sound Level Control

How do I control the Apple IIe Card sound level?

This article has been archived and is no longer updated by Apple.
You can control sound either from the Macintosh side or from the Apple IIe Card software:

- From the Macintosh Control panel, you can slide the speaker volume control from seven (loudest) to zero (silence), thus altering the volume of the beep.

- From the Apple IIe Card Option panel, you can change the type of "beep" the computer makes, but you cannot change the volume level.

Neither the Macintosh nor the Apple IIe Card can control the sound(s) that an application makes. For example, computer and card panel settings will not affect a music program or a game's sound effects.

Published Date: Feb 18, 2012

iTunes 4: Spanning multiple discs requires Mac OS X 10.2 or later

When you try to burn a playlist that contains an audio book file that is too large to fit on one audio CD, the burn does not begin. You get this alert message from iTunes:
This article has been archived and is no longer updated by Apple.
"None of the items in this playlist can be burned to disc."

This can happen with iTunes 4 and Mac OS X 10.1.5.

The solution is to break the audio book file into segments when burning, as discussed here.

A note about copyright

iTunes software may be used to reproduce materials. It is licensed to you only for reproduction of non-copyrighted materials, materials in which you own the copyright, or materials you are authorized or legally permitted to reproduce. If you are uncertain about your right to copy any material, you should contact your legal advisor. See the iTunes Store Terms of Service for additional information.

Published Date: Feb 18, 2012

Opening iDVD projects with missing assets in DVD Studio Pro 3

If DVD Studio Pro can't open an iDVD project because it's unable to locate one or more of the project's assets, an alert appears with a list of the missing assets and their path.
This article has been archived and is no longer updated by Apple.
When this happens:

1. Quit DVD Studio Pro.
2. Open the project in iDVD.
3. Locate the missing assets.
4. Save the project.
5. Open the project in DVD Studio Pro.

Published Date: Feb 18, 2012

Finding the Final Cut Express 2 registration number

The 11-digit registration number for Final Cut Express 2 is located on the front page of the booklet titled "Installing Your Software", as shown here.

This article has been archived and is no longer updated by Apple.

This number is required when you call AppleCare Technical Support.

Important: The registration number is different from the software serial number you use to activate and serialize your professional software product. Both the registration number and software serial numbers are important. Keep them in a safe place for future reference.

Final Cut Express includes 90 days of free telephone support, which includes help installing and opening your Apple Professional Software Product, and with basic troubleshooting.

Note: In the United States, Canada, Europe and Japan, Apple products come with 90 days of free telephone support. In other countries, availability of support, duration of the complimentary support period, telephone numbers, and hours of operation may vary and are subject to change. Telephone call charges may apply.

Published Date: Feb 18, 2012

Disk Copy 4.2: How to Install and Use (2/97)

Article Last Reviewed: 12 February 1997

Disk Copy 4.2 is a utility program that transfers image files onto 3.5-inch floppy disks, whether 800K or High Density. (A High Density, also called FDHD, disk holds 1.44MB.)

This article has been archived and is no longer updated by Apple.

Increasing Memory Allocation (for High Density images)

If you are reading High Density images, follow these steps to increase the memory allocation for Apple Disk Copy to 1600K:

Step 1:
Select the Apple Disk Copy 4.2 icon.

Step 2:
From the File menu, choose Get Info (or press Command-i).

Step 3:
In the Current Size box, type 1600.

Step 4:
Close the Get Info window.

Step 5:
Launch Apple Disk Copy 4.2 and proceed with Step 3 in the following section, "Apple Disk Copy 4.2: Installation and Use".

Apple Disk Copy 4.2: Installation and Use

To install and use Apple Disk Copy 4.2, follow these steps:

Step 1:
Copy the Disk Copy 4.2 folder to your hard drive.

Step 2:
Open the Disk Copy 4.2 folder and double-click the Disk Copy icon.

Step 3:
The title screen appears; click the mouse to continue.

Step 4:
The main screen appears; click the Load Image File... button. (You can also select Load Disk Image from the File menu or press Comand-L.)

Step 5:
Choose the image file you want to copy to floppy disk.

Step 6:
Click the Open button. A message appears: "Reading the master disk image into memory..." After the image is loaded into memory, the Make A Copy button is highlighted.

Step 7:
Click the Make a Copy button and a prompt appears: "Please insert a disk to COPY ONTO..."

Step 8:
Insert a floppy disk (formatted or unformatted) into the main floppy drive. This message appears: "Now copying and verifying a disk..."

If there is already data on the disk, a beep sounds and a dialog box appears. If it is okay to write over the disk, click the Duplicate button. Otherwise, click the Eject button. If you eject the disk, the main screen reappears. Click the Make A Copy button again and insert a different disk.

When the image file has been transferred to the floppy disk, the disk automatically ejects.

Step 9:

For each image file you want to put on floppy disk, repeat steps 4-8. When you are finished, click the Quit button. (You can also select Quit from the File menu or press Command-Q.)

Hints and Help

To launch Apple Disk Copy 4.2 and load the image file into memory at the same time, double-click the image file icon.

If you want to learn more, read the "Disk Image Directions" document in the Apple Disk Copy 4.2 folder.

Other Disk Copy Features

--Making copies directly from a floppy disk. To copy the contents of a master disk onto one or more other disks, take the following steps:

1) Choose Single Copy or Multiple Copies from the File menu.

2) Insert a master floppy disk to copy from into the floppy disk drive.

3) Click Read Master Floppy to read the contents of the master disk.

4) When the image file is loaded, click Make A Copy to start copying. (If you are making multiple copies, this button is labeled Make Some Copies.)

5) Insert a blank disk in the floppy disk drive to receive the newly created disk contents. When the wristwatch pointer changes back to the arrow pointer, disk creation is complete. If you are making multiple copies, insert each blank disk in turn.

--Creating an image file for later use
You can store an image file on your hard disk and use it to create duplicate floppy disks. Follow these steps to put an image file of a floppy disk on your hard disk:

1) Insert the floppy disk that you want to duplicate into the floppy disk drive.

2) Click Read Master Floppy.

3) After the contents of the floppy disk have been read, choose Save Disk Image from the File menu.

4) In the window provided, give the image file a name, and click Save.

Article Change History:
12 Feb 1997 - Retitled to add version number, added content from a similiar article.
10 Feb 1995 - Added keyword; modified title; made several technical updates.
27 Oct 1994 - Changed title and updated format.

Support Information Services
Published Date: Feb 18, 2012

Before Installing System 7.1

This quick reference shows you what to do before installing System 7.1 software. It includes:

- Backing up your hard disk
- Running Compatibility Checker
- Updating hard disk drivers
- Where to get more information

This article has been archived and is no longer updated by Apple.

Backing Up Your Hard Disk

Back up your entire hard drive. If you can't do this, at least make a backup copy of your System Folder. To do this:

1) Click the System Folder once to select it.

2) From the File menu, choose Duplicate or press Command-D.

3) Save the duplicate System Folder to another hard disk, to floppies, or to tape backup as an added measure of security.

Running Compatibility Checker

Compatibility Checker 2.0 is a stand-alone application. To run it, simply do the following:

1) Copy the Compatibility Checker 2.0 application to your hard disk.

2) Double-click the Compatibility Checker icon to launch the application.

3) The Welcome window appears. Click the continue button at the bottom right side of the window.

4) A dialog box appears with a listing of currently available disks marked by selected check boxes. Click the OK button if you want Compatibility Checker to scan all of your hard disks, otherwise click the check boxes to deselect any hard disk(s) you do not want to scan. Compatibility Checker scans your hard disk. Progress is marked by a modal dialog box, similar to the Copy dialog box in the Finder

5) If Compatibility Checker finds potentially incompatible items, a screen appears.

6) Click one of the two buttons at the bottom of the screen. If you click the Move button, the items will be moved to a folder on top level of the hard disk named "May Not Work With System 7.1." In either case, the Compatibility Report window will appear.

7) Use the Sections menu, as shown below, to navigate around the report. (It's best to print the report and use it as a guide to update your software if necessary.)

8) When you're finished with Compatibility Checker, click the Quit button. A dialog box appears, asking if you want to save the report.

9) After you've chosen whether or not to save the report, the a dialog box appears, notifying you that any items Compatibility Checker moved out of your System Folder are still active until you restart your Macintosh.

10) Review the report, following the instructions detailed in it. Remember, individual vendors are the best sources of information, please contact them directly if you have any questions.

Checking Hard Disks With Disk First Aid

Disk First Aid can detect and repair any issues that your Apple supplied hard disk(s) might have before installing system 7.1. Specifically, Disk First Aid 7.1 can detect and repair any occurrence of the "disappearing folders and files bug" which System 7 Tune-Up prevents, but cannot repair. Previously, the only course open to users was to re-initialize their hard disk.

1) Disable any virus or security software.

2) Start up with the Disk Tools disk. To do this, turn on your Macintosh. If your Macintosh is already on, select Restart from the Special menu.

3) Put the Disk Tools disk in the main floppy drive right after you hear the chime. The Disk Tools disk icon appears in the upper right corner of the desktop.

If disk icon does not appear, select Restart from the Special menu. The disk will eject, simply pop it back into the drive immediately.

4) Double-click the Disk Tools icon. A dialog box appears.

5) Double-click the Disk First Aid icon. A dialog box appears.

6) Click the Drive button in dialog box to select your (first) hard disk. Click the Open button. A Disk First Aid window appears.

7) Click the Start button. If no problems are found, the message: "This disk is OK" appears. Skip to step #9.

8) If damage was found, click the repair button. When repairs are completed, go to step #10. If repairs are unsuccessful, you'll need to back up the disk, then re-initialize the disk with HD SC Setup.

9) Repeat for any additional hard disks. Choose Open from the File menu and repeat steps #5 through #7.

10) Choose Quit from the File to return to the Finder.

Updating Hard Disk Drivers

Drivers are small programs that tell your hard disk how to interact with your Macintosh. You must update these drivers on your Apple hard disk(s) before installing System 7.0. To update your drivers, follow these steps:

1) Disable any virus or security software.

2) Start up with the Disk Tools disk. To do this, turn on your Macintosh. If your Macintosh is already on, select Restart from the Special menu.

3) Put the Disk Tools disk in the main floppy drive as soon as you hear the chime. The Disk Tools disk icon appears in the upper-right corner of the desktop -- if it doesn't, select Restart from the Special menu. When the disk ejects, pop it back into the drive immediately.

4) Double-click the Disk Tools icon.

5) Double-click the Apple HD SC Setup icon.

6) Click the Update button. A message appears.

7) Click the Quit button.

You are now ready to install System 7.0 software. Refer to the "Quick Reference: How to Install System 7.0" for instructions.

Where to Get More Information

- The Macintosh Bible Guide to System 7 by Charles Rubin
- Macintosh Reference (System 6.0.x) by Apple Computer, Inc. (030-4015-A)
- Macintosh Reference (System 7) by Apple Computer, Inc. (030-3934-A)
- MacWorld Guide to System 7 by Lon Poole

Published Date: Feb 18, 2012

iTunes Store Terms of Service

This article has been archived and is no longer updated by Apple.

The iTunes Store Terms of Service may vary depending on your geographic location.

Select the country of your residence to see the Terms of Service for your location:

Deutschland

- Dienstleistungsbedingungen
- Verkaufsbedingungen
- Geschenkgutscheine, iTunes Karten, MusikCodes und Monatsgutscheine

France

- Conditions générales du service
- Conditions générales de vente
- Chèque cadeau, codes de chanson et comptes cadeaux mensuels

United Kingdom

- Terms of Service
- Terms of Sale
- Gift Certificate, iTunes Cards, Song Codes and Monthly Gifts

United States

- Terms of Service
- Terms of Sale
- Gift Certificate, iTunes Cards, Song Codes and Allowances

Published Date: Feb 18, 2012

How to Connect to File Servers

This article gives basic instructions on how to work with file servers or "shared disks" as they are also called. Its topics include:

- Connecting to file server (shared disk)
- Logging on as a guest
- Logging on as a registered user
- Setting your password
- System 7.0 hints and help
- Where to get more information

This article has been archived and is no longer updated by Apple.

Connecting to a File Server (Shared Disk)

Follow these steps to connect to a file server:

1. From the Apple menu, select Chooser. The Chooser window appears.
2. Click the AppleShare icon in the upper-left part of the Chooser window.
3. Scroll the list of AppleTalk Zones to find the one you want.
4. Click the name of the AppleTalk Zone to select it. A list of shared disks (also called file servers) in that zone appears in the right-hand window.
5. To select a shared disk, click its name.
6. Click the OK button (or you can double-click the shared disk name, which does the same as steps 5 and 6).
7. Click the Guest or Registered User radio button. Read the instructions that follow for the radio button you've chosen.

Logging on as a Guest

If Guests are allowed to log on, the word Guest appears in regular type. If Guests are not allowed, the word Guest appears dimmed (grayed out). Follow these steps to log on as a guest:

1. If you want to log on as a Guest, and Guests are allowed, click the Guest radio button.
2. Click the OK button to see the volume list.
3. If the name of the volume is not already selected, click it.
4. Click the OK button and the shared disk (server) icon appears on your desktop.

When you're finished with the shared disk, drag its icon into the Trash.

Logging on as a Registered User

Follow these steps to log on as a registered user:

1. If you are a Registered User, click the Registered User radio button.
2. Type your name and password.
3. Click the OK button to see the volume list.
4. If the name of the volume is not already selected, click it.
5. Click the OK button, and the shared disk (server) icon appears on your desktop.

When you're finished working with the shared disk, drag its icon to the Trash.

Setting Your Password

If you are a Registered User, you need to set up your Password initially and occasionally change it. Here's how:

1. Follow steps 1-6 of Connecting to a Shared Disk.
2. Click the Set Password button.
3. Click the OK button, and a dialog box appears.
4. Type your old password.
5. Press the Tab key.
6. Type your new password.
7. Click the OK button (or press Return).
8. Click the OK button (or press Return).
9. Type your new password again.
10. Click the OK button (or press Return). Your password is changed.

System 7.0 Hints and Help

To move between sections of the Chooser, press the Tab key.
To move to an item quickly within any section of the Chooser, type one or more characters that begin the name of the desired item.

Where to Get More Information

Macintosh Networking Reference by Apple Computer, Inc. (030-3936-A)
Macintosh Reference (System 6.0.x) by Apple Computer, Inc. (030-4015-A)
Macintosh Reference (System 7) by Apple Computer, Inc. (030-3934-A)

Published Date: Feb 18, 2012

Playing DTS audio files with iTunes

iTunes can play DTS (Digital Theater Systems) encoded audio files through the optical audio out port on a PowerMac G5 or an AirPort Express Base Station connected to an amplifier (or powered speaker set) with a DTS decoder.
This article has been archived and is no longer updated by Apple.
DTS decoding can only work if the digital DTS stream passes through iTunes completely unmodified. Otherwise, you will just hear static from your speakers. To make sure the sound is unmodified, follow the four steps below to make the appropriate settings.

Step 1: Drag the volume slider in iTunes to maximum.

Step 2: Set the volume adjustment of the audio file (in the Options section of the info for the file) to None.

To access this setting:

1. Click once to select a song.
2. Choose **Get Info** from the **File** menu.
3. Click the Options tab if necessary.

Step 3: Turn off these preferences:

- Sound Enhancer
- Crossfade playback
- Sound Check

To access these preferences, choose **Preferences** from the **iTunes** menu (**Edit** menu in Windows) and click the Audio button. Then deselect each of the items listed above.

Step 4: Turn off the Equalizer.

1. Click the Equalizer button.

2. Make sure the Equalizer is off.

Important: Information about products not manufactured by Apple is provided for information purposes only, and does not constitute Apple's recommendation or endorsement. Please contact the vendor for additional information.

TA47850_Playing_DTS_audio_files_with_iTunes.pdf

Published Date: Feb 18, 2012

AppleTalk LaserWriter: Connection Setup

This article covers these topics:

- Basic preparations for networking and background printing
- Connecting to AppleTalk LaserWriters
- Selecting background printing
- System 7.x hints and help
- Where to get more information

This article has been archived and is no longer updated by Apple.

Before You Connect

To connect to AppleTalk LaserWriters, you need the following items installed in the System Folder:

LaserWriter or LaserWriter 8 (With LaserWriter 8 Print Driver you also need the PPD files from the installer disk.)

LaserWriter Prep (under System 6.0.x only)

To use background printing, PrintMonitor also must be installed in the System Folder (under System 7.x, in the Extensions folder within the System Folder). If you need to install any of these items, use your set of system disks to do so. Under System 7.x, use the copy of the Installer on the Printing disk.

Connecting to AppleTalk LaserWriters

Follow these steps to connect to AppleTalk LaserWriters:

1) From the Apple menu, select Chooser. The Chooser window appears. AppleTalk must be set to Active in the lower-right part of the Chooser window.

2) In the upper-left part of the Chooser window, click the icon of the type of printer you want (this must be an AppleTalk LaserWriter, for example LaserWriter).

3) Scroll the list of AppleTalk Zones to find the one you want.

4) Click the name of the AppleTalk Zone to select it. A list of printers and print spoolers in that zone appears in the right-hand window.

5) Click on the name of a printer or print spooler to select it. If you use LaserWriter 8, you must click the "Setup..." button and setup the printer. You may either use Auto Setup, or chose More Choices to select a specific PPD.

6) From the File menu, select Close, or click on the close box in the upper-left corner of the Chooser window.

Selecting Background Printing

With PrintMonitor, you can print on an AppleTalk LaserWriter while continuing to work with other programs (this is called background printing). Follow these steps to select background printing:

1) From the Apple menu, select Chooser. The Chooser window appears.

2) Click the LaserWriter icon in the upper-left part of the Chooser window.

3) Click the On radio button in the Background Printing section (below the list of LaserWriters).

4) From the File menu, select Close, or click on the close box in the upper-left corner of the Chooser window.

System 7.x Hints and Help

To move between sections of the Chooser, press the Tab key.

To move to an item quickly within any section of the Chooser, type one or more characters that begin the name of the desired item.

Where to Get More Information

Macintosh Networking Reference by Apple Computer, Inc. (030-3936-A)
Macintosh Reference (System 6.0.x) by Apple Computer, Inc. (030-4015-A)
Macintosh Reference (System 7) by Apple Computer, Inc. (030-3934-A)
Published Date: Feb 18, 2012

iPod (Click Wheel) shows low battery indicator during sync and iTunes "freezes"

iTunes for Mac OS X may stop responding or "freeze" if you try to sync an iPod (Click Wheel) that doesn't have enough charge. In Windows, iTunes may continue to work, but your iPod doesn't appear in the Source list.
This article has been archived and is no longer updated by Apple.
This can happen when your iPod (Click Wheel) is connected to your computer over USB 2.0. While songs or files are transferred using USB 2.0, the iPod loses charge. Transferring songs or files when iPod isn't sufficiently charged can cause incomplete transfer, loss of the information being transferred, and may require a restore. It's best to charge iPod before transferring songs or files.

To prevent this symptom, make sure your iPod is fully charged before syncing. To charge the battery, either leave it connected to the USB port without performing a sync. Or you can connect iPod to the iPod Power Adapter using the iPod Dock Connector-to-FireWire Cable. Then connect the adapter to an electrical outlet. Either way, the built-in battery is 80 percent charged in about 2 hours, and fully charged in about 4 hours.

If iTunes is not responding in Mac OS X because of this, follow these steps:

1. Force Quit iTunes.
2. Open iTunes.
3. Eject iPod.
4. Make sure iPod is charged using the power adapter or consider using FireWire to sync if the battery indicator appears low.
5. Connect iPod to your Mac and try syncing again.

In Windows:

1. Quit iTunes.
2. Eject iPod.
3. Make sure iPod is charged using the power adapter or consider using FireWire to sync if it available to you.
4. Connect iPod to your computer and try syncing again.

Published Date: Feb 18, 2012

Creating Font/DA Backups Under System 6 and System 7

This article list the steps to create a backup font/DA file.
This article has been archived and is no longer updated by Apple.

CREATE EMPTY SUITCASE FILES WITH VERSIONS OF SYSTEM 7

If your Macintosh has a version of System 7 installed, follow these steps to create an empty suitcase:

1) Click an existing font suitcase file to select it.

2) Choose Duplicate from the File menu, or press Command-D.

3) Double-click the duplicate file to open it.

4) Drag the contents to the Trash.

5) Choose Empty Trash from the Special menu.

6) Duplicate this empty suitcase as many times as you need.

CREATE FONT BACKUPS WITH SYSTEM 7.0

This section explains two ways to create font backups under System 7.0 or 7.0.1.

Copy to Another Folder

1) Choose New Folder from the File menu.

2) Type a name for the folder (Font backup folder, for example).

3) Double-click the System Folder to open it.

4) If you want to back up your entire System file (fonts and sounds), hold down the Option key, then click and drag the System file to the folder you created. Your System file is copied (not moved) to that folder.

5) If you want to back up only some of the fonts, double-click the System file to open it. A window appears, displaying individual fonts installed in the System.

6) Select the fonts you want to copy by using either the selection rectangle or Shift-clicking.

7) Hold down the Option key and drag the font files to the folder you created. The fonts are copied (not moved) to that folder.

Copy to a Suitcase

1) Double-click the System Folder to open it.

2) Double-click the System file. A window appears, displaying individual fonts installed in the System.

3) Select the fonts you want to copy to the backup file, by either the selection rectangle or Shift-clicking.

4) Hold down the Option key and drag the fonts to one of the empty suitcases you created. Your fonts are copied (not moved) to the suitcase file.

CREATE DA BACKUPS UNDER SYSTEM 7

Copy to a Folder

1) Choose New Folder from the File menu (or press Command-N).

2) Type a name for the folder (DA backup folder, for example).

3) Double-click the System Folder to open it.

4) To back up your entire Apple Menu Items folder, hold down the Option key, then click and drag the Apple Menu Items folder to the folder you created. Your Apple Menu Items folder is copied (not moved) to that folder.

5) To back up only some of the DAs, double-click the Apple Menu Items folder to open it. A window appears, displaying individual DAs installed.

6) Select the DAs you want to copy by either the selection rectangle or Shift-clicking.

7) Hold down the Option key and drag the DA files to the folder you created. The DAs are copied (not moved) to that folder.

CREATE FONT/DA BACKUPS WITH SYSTEM 6.0.X

1) If you don't already have Font/DA Mover 4.1 on your hard drive, copy the application to your hard drive before proceeding.

Note: If you have older versions of Font/DA Mover on your hard drive, drag them to the Trash. Using an older version can damage your System file!

2) Double-click the Font/DA Mover application. The Font/DA Mover screen appears. The left-hand scroll box shows the fonts currently installed in your System file. The title below the scroll box shows the location of the fonts.

3) Click the right-hand Open... button. A standard file selection dialog box appears.

4) Click the New button. A dialog box appears so you can name the new file.

5) Type the name of the new file. Click the Create button. You are taken back to the Font/DA Mover screen.

6) Select the fonts you want to back up by dragging over the list (or you can hold down the Shift key and click each font). The selected fonts are displayed in reverse type (white letters on a black background). Arrows appear on the Copy button to show the installation direction.

7) Click the Copy button. To create a backup file of desk accessories during the same session, click the Desk Accessory radio button. The left-hand scroll box then shows the DAs currently installed in your System file. Follow steps 3-7, substituting DA(s) wherever you see font(s).

8) When you're finished, click the Quit button to go back to the Desktop (Finder).

6.0.x Hints and Help
Hold down the Option key before launching Font/DA Mover 4.1 to display DAs first rather than fonts.
Published Date: Feb 18, 2012

Where to find the iPod Updater 2004-07-15 in Windows

The "Using iPod Updater 2004-07-15" document on the iPod (Click Wheel) CD says to "Open Setup.exe on the iPod CD" to install and use the iPod Updater.
This article has been archived and is no longer updated by Apple.
If you haven't opened the Setup.exe installer and installed the updater, go ahead and do that. If you've already done it, you don't need to do it again.

To open the updater after it's been installed:

1. Click the **Start** button, then point to **All Programs.**
2. Point to **iPod** and click **iPod Updater 2004-07-15**.

You can also find the update in this path:

```
C:\\Program Files\\iPod\\iPod Update 2004-07-15\\
```

Published Date: Feb 18, 2012

iTunes opens iPod Updater 2004-04-28 instead of iPod Updater 2004-07-15

When you connect an iPod that does not have the latest iPod software installed, iTunes 4.6 offers to open the updater for you.
This article has been archived and is no longer updated by Apple.
If both iPod Updater 2004-04-28 and iPod Updater 2004-07-15 are in your Utilities folder, iTunes 4.6 opens iPod Updater 2004-04-28.

You can use this updater if you want. The two are essentially the same. iPod Updater 2004-07-15 only includes support for the iPod (Click Wheel). Earlier iPod models, including iPod mini, can use either updater.
Published Date: Feb 18, 2012

Quick Reference: Font/DA Mover for System 6.0.x

Font/DA Mover is a utility that installs fonts and desk accessories (DAs) in your System file. Once installed, you can use these fonts and desk accessories with any application. This quick reference covers:

- Installing Font/DA Mover

- Using Font/DA Mover

- Hints and help

- Where to get more information

Important: Make sure you use Font/DA Mover 4.1. If you have older versions of Font/DA Mover on your hard drive, drag them to the Trash. Using an older version can damage your System file.

Note: You don't need Font/DA Mover at all if your Macintosh is running System 7.0 or later.

This article has been archived and is no longer updated by Apple.

Installing Font/DA Mover

To install Font/DA Mover, copy the Font/DA Mover 4.1 application to your hard drive. You may want to keep it in the folder where you keep your other utility programs. (You don't need to keep it in your System Folder.)

Using Font/DA Mover

The steps below show you how to install fonts. The same steps apply to installing DAs. Follow these steps:

1) Double-click the Font/DA Mover application.

Once Font/DA Mover is launched, you'll see two boxes. The left one shows the fonts currently installed in your System file.

2) Click the Open... button on the right side to go to the fonts you want to install. A standard file selection dialog box appears.

3) Find the font file with the fonts you want to install, select it, and click the Open button (or press Return). You'll be taken back to the Font/DA Mover dialog box. Its window shows the contents of the font file selected for installation.

4) Select the fonts you want to install by dragging over the list on the right (or you can Shift click each font size). When you've selected the fonts, their names appear in white letters on a black background. The Copy button highlights automatically. Arrows on the button show the direction in which you're installing.

5) Click the Copy button to install the fonts. If you're in MultiFinder, you'll get a message saying that the fonts and DAs installed.

6) Click the OK button.

7) When you're finished, click the Quit button to return to the desktop (Finder). If you're in MultiFinder, restart your Macintosh.

To install desk accessories during the same session, click the Desk

Accessory radio button. The left scroll box then shows the DAs currently installed in your System file. Follow steps 3-6, substituting the word "DA(s)" wherever you see "font(s)" in the instructions.

Hints and Help

To display DAs first, rather than Fonts, hold down the Option key while launching Font/DA Mover.

Where to Get More Information

If you want to explore more, read The Macintosh Bible, Third Edition, pages 483-486.

The information in this article is brought to you by ATC Services.

Published Date: Feb 18, 2012

Your iPod has a sticky residue on it after removing the protective shipping materials

After removing the clear, protective shipping material from your iPod mini or iPod (Click Wheel), there may be some sticky residue left on the click wheel.
This article has been archived and is no longer updated by Apple.
Follow these steps to remove the residue:

1. Slide the iPod's Hold switch to the "Hold" position.
2. Take a piece of clear adhesive tape and stick it on the click wheel. Carefully pull the tape off making sure to remove some of the residue with it. Repeat this process until the majority of the residue is gone. Standard household tape will work fine.

3. Put a few drops of isopropyl alcohol on a soft, lint-free cloth.
    - Do not put the cleaning solution directly on the iPod.
    - Do not use paint thinner of any kind.
    - Do not use nail polish remover of any kind.
    - Do not use denatured alcohol.
    - Do not use any ammonia-based cleaner, such as glass cleaner.
4. To prevent excess alcohol from getting inside the iPod while cleaning it, hold your iPod upside down so that the click wheel is facing the floor.

5. Gently rub the iPod's affected areas (from the center to the edges) to remove any sticky residue. Avoid excessive contact with the screen area. Repeat as necessary.
6. Use a soft, dry, lint-free cloth to remove any finger prints or smudges.
7. When you've finished cleaning, slide the iPod's Hold switch out of the locked position.

If your iPod doesn't respond or seems unresponsive when you wake it from sleep and turn off the Hold switch, wait about 30 seconds, then see if your iPod recovers and works normally.

If iPod does not start working normally after about 30 seconds, take these steps:

1. Slide the Hold switch to the locked position (toward the headphones port).
2. Slide the Hold switch to the unlocked position (away from the headphones port).

TA47857_Your_iPod_has_a_sticky_residue_on_it_after_removing_the_protective_shipping_m

Published Date: Feb 18, 2012

Why is the iPod and iPod mini CD called iPod 3.0.1 CD?

The name that appears below the icon for the iPod and iPod mini CD reflects the version of the CD, not the version of the iPod Software on it.
This article has been archived and is no longer updated by Apple.
It appears this way in the Mac Finder:

And this way in the Windows Explorer:

3.0.1 is the version of the iPod and iPod mini CD, not the version of the iPod Software that it contains.

The iPod and iPod mini CD that has the name "iPod 3.0.1 CD" contains:

- iPod mini 1.1
- iPod Software 3.0
- iPod Software 2.2
- iPod Software 1.4

To verify which software a certain version of iPod Updater application installs, see "About the universal iPod Updater."
Published Date: Feb 18, 2012

AppleShare Print Server: Error -120 Is "directory not found"

I am having problems with an AppleShare Print Server IINTX. When any of the workstations try to print to the network LaserWriter, the print server instantly aborts the print job. After this, the printer must be reset to be re-captured.

A message comes up on the screen stating that the computer is trying to clear the print buffer. I also get a message stating that error number -120 has occurred.

This article has been archived and is no longer updated by Apple.
The -120 error is a "directory not found" error that could relate to a hardware failure on the server. ?If you can print to the LaserWriter IINTX via the bypass feature of the AppleShare Print Server, then there is a problem at the server level. It is most important to determine that the workstations can print to the LaserWriter IINTX on bypass to verify the integrity of the hardware.

Here are two things to try on the server:

1) If you reinstalled the software over the old files, trash the old files first, then re-install.

2) Consider backing up the server in a file-by-file manner, re-initializing the drive, and restoring the files. The print server may be running into some bad sectors which inhibit its ability to spool the files.

Published Date: Feb 18, 2012

System 7: Application Cannot be Found Error/Fix

I have been using System 6 on my Macintosh and putting my applications on the Desktop (as opposed to within any folder). After installing System 7, I rebuilt the Desktop and "lost" these applications. However, they appeared again in their correct place, when I opened the hard disk icon.

The issue is that when I try to open a document created by any one of these applications, I get an error message that says, "The application cannot be found."

This article has been archived and is no longer updated by Apple.

The fix is to move the application to the hard disk window. Then, if you want, move it back to the Desktop. This seems to "force" the Finder to update the Desktop correctly.

Published Date: Feb 18, 2012

Song titles scroll differently after updating an iPod (click wheel)

Song titles that are too long to fit on the iPod screen scroll across the screen so you can read the whole title.
This article has been archived and is no longer updated by Apple.
iPod Updater 2004-08-06 enhances the power-conserving features of the iPod (click wheel) by changing the way long song titles scroll.

If you have trouble reading the scrolling text, from the main menu, select Settings > Contrast and try lowering the contrast.
Published Date: Feb 18, 2012

LaserWriter IIf & IIg: PhotoGrade, RAM, and Image Size (3/95)

When we print to the LaserWriter IIg, there is a half-inch margin around the outside of each page. We've been printing closer to the edge of the page with the LaserWriter IINT and IINTX. How can we adjust this on the LaserWriter IIg?

This article has been archived and is no longer updated by Apple.
These margin differences are caused by the memory requirements of PhotoGrade. The LaserWriter IIg defaults to using PhotoGrade enhancement unless told otherwise. Because a letter-size image -- with PhotoGrade enabled -- needs a frame buffer four times larger than an unenhanced image, the LaserWriter reduces the image size as required. It reduces a letter-size buffer, which would use 3935376 bytes, to a lettersmall buffer that uses 3511296 bytes. This can lead to the cropping of images when printing with non-Apple drivers (as on a Sun workstation), since the printer will crop any part of the image that falls within the larger margins.

As shipped, the LaserWriter IIg has only enough memory for an a4small frame buffer with PhotoGrade enhancement. Without PhotoGrade enabled, it can easily handle a full legal-sized image, but must be explicitly instructed to do so. You can do this in a couple of ways:

- Disable Photograde
If the PostScript operator for the required page size is included in the print job, the LaserWriter will disable PhotoGrade to maintain compatibility.

- Modify the Default Parameter
You can modify the persistent parameter that forces the PhotoGrade default. This is probably not a good idea unless you find it easier than modifying the printing code. It is inconvenient, and modifies the persistent memory. You can modify the persistent memory a limited number of times before it wears out.

To request a specific page size and override PhotoGrade, include a reference to the required page size in the beginning of the print job. The different page size operators are listed below, along with their memory requirements with and without PhotoGrade enhancement.

.	PhotoGrade	
Page Size	Off	On
b5	741888	2967552
lettersmall	877824	3511296
a4small	924420	3697680
letter	983844	3935376
a4	1015872	4063488
legal	1257344	5029376

If you print a job with no requested page size, the LaserWriter IIf and IIg use the default size of lettersmall. If the job specifies a size, the LaserWriter will try to honor it as closely as possible within its memory limitations. The following table depicts the page size substitution order.

Frame Buffer Substitution Order
lettergray -> lettersmallgray -> letter -> lettersmall
legalgray -> legal -> lettersmall
a4gray -> a4smallgray -> a4 -> a4small
b5gray -> b5

With the Apple LaserWriter IIf as shipped with 2MB, a request for a letter-size frame buffer results in a lettersmall buffer, the default. Requesting an a4 page results in an a4small buffer. The next table shows the maximum page size available for each memory configuration.

MB	Largest Page Size
2	a4small, PhotoGrade disabled
4	legal, PhotoGrade disabled
5	a4small, PhotoGrade enabled
8	legal, PhotoGrade enabled

In summary, prepending the letter operator to the documents would be adequate. Or you can disable PhotoGrade one time, and leave it alone until you need it again later. Note that the non-volatile RAM used in both the LaserWriter IIf and IIg has a limit to the number of times it can be modified: approximately 50000 writes. While this is a large number, you could rapidly exceed it if the modification were sent with each page or job. Once this part wears out, the factory defaults will be used each time the LaserWriter is powered on.

The following three code segments show, respectively:

- The letter operator at the start of a job
- Code to disable PhotoGrade
- Code to enable PhotoGrade

Caution:

If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

- code segment 1

```
%=============================================================
% Begin PostScript Code
%
%some sample PostScript with the letter operator prepended
letter
/Helvetica findfont 12 scalefont setfont
72 720 moveto
(This is a test) show
%
% end PostScript Code
%=============================================================
```

- code segment 2

```
%=============================================================
% Begin PostScript Code
%
%Disable PhotoGrade.ps D.W. 11/91
%This code disables PhotoGrade enhancement after a couple of checks:
% Verifies that it's running on a LaserWriter IIg or IIf.
% Checks if PhotoGrade is already disabled - prevents NVRAM fatigue.
% (The memory device is limited to approximately 50000 writes.)
statusdict /product get dup
(LaserWriter IIf) ne exch (LaserWriter IIg) ne and
{ (Not a IIf or IIg and may not support PhotoGrade. Canceling.) =
stop
} if
currentpagedevice /PreRenderingEnhance get not
{ (PhotoGrade is already disabled on this LaserWriter) = }
{ serverdict begin 0 exitserver }
ifelse
vmstatus pop pop 0 eq
{ (Disabling PhotoGrade.) =
<</PreRenderingEnhance false>> setpagedevice
} if
%
% end PostScript Code
%=============================================================
```

- code segment 3

```
%=============================================================
% Begin PostScript Code
%
%Enable PhotoGrade.ps D.W. 11/91
%This code enables PhotoGrade enhancement after a couple of checks:
% Verifies that it's running on a LaserWriter IIg or IIf.
% Checks if PhotoGrade is already enabled - prevents NVRAM fatigue.
% (The memory device is limited to approximately 50000 writes.)
% Also, let the user know if there isn't enough RAM for PhotoGrade.
```

```
statusdict /product get dup
(LaserWriter IIf) ne exch (LaserWriter IIg) ne and
{ (Not a IIf or IIg and may not support PhotoGrade. Canceling.) =
stop
} if
currentpagedevice /PreRenderingEnhance get
{ (PhotoGrade is already enabled on this LaserWriter.) = }
{ serverdict begin 0 exitserver }
ifelse
vmstatus pop pop 0 eq
{ statusdict /ramsize get exec 5242880 lt
{ (Enabling PhotoGrade, but it won't be used - 5MB required.) = }
{ (Enabling PhotoGrade.) = }
ifelse
<</PreRenderingEnhance true>> setpagedevice
} if
%
% end PostScript Code
%=================================================================
```

Article Change History:
21 Mar 1995 - Added information on using non-Apple LaserWriter drivers.
22 Feb 1995 - Added PostScript caution and reformatted.

Support Information Services
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LaserWriter IIf and IIg: Changing Passwords

How do I change passwords on the LaserWriter IIf and IIg?

This article has been archived and is no longer updated by Apple.
Because the LaserWriter IIf and IIg use implementations of Level 2 PostScript, setting their passwords is a bit different from previous models. This is primarily because Level 2 uses two different passwords -- one to secure system parameters, and another to secure use of the startjob operator. You will probably want to change both. This will achieve similar functionality to the Level 1 setpassword operator. Here is sample code to change both passwords:

```
<</Password (0) /StartJobPassword (2)>> setsystemparams
<</Password (0) /SystemParamsPassword (2)>> setsystemparams
```

In both cases, the string following the /Password name must equal the current SystemParamsPassword. This password is required in order to change either the StartJobPassword or the SystemParamsPassword. Once these two have been redefined, the level of security is identical to that available through the setpassword operator in a Level 1 implementation. The two passwords need not be equal, and can be strings of up to 32 non-null characters. You can use an integer instead (as with Level 1), but internally it will be converted to a string containing the ASCII representations of each digit. Here is a version of the above code that changes both passwords, each to a different integer.

```
<< %Push a mark on the stack.
/Password 0 %Push key/value pairs for current password,
/StartJobPassword 2 %the new StartJobPassword, and the new
/SystemParamsPassword 4 %SystemParamsPassword on the stack.
>> %Create dictionary of the kv pairs up to mark.
setsystemparams %Use the dictionary to set system params.
```

Once this is sent, the value 4 or string (4) will be required as a password to change settings.

Level 2 introduces many new concepts to the PostScript world, and a complete STARTDISCUSSsubject. The current reference is available from Addison Wesley as the PostScript Language Reference Manual, 2nd Edition, by Adobe Systems Incorporated.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Macintosh Quadra 700, 900 & 950: SCSI Termination

This article addresses SCSI termination issues with the Macintosh Quadra 700, 900 and 950 computers.
This article has been archived and is no longer updated by Apple.

What is SCSI?

SCSI (Small Computer System Interface) is a standard by which one connects a device to the CPU. This device can be an external hard drive, CD ROM, Printer, Scanner, etc. The SCSI bus needs to be terminated at both ends to eliminate signal reflections.

How is the Quadra 700 Terminated?

There are termination resistors on the internal drive. This would terminate the internal end of the bus.

If the internal hard drive is removed, an internal SCSI terminator must be installed (Apple Part Number 630-0408). This part was originally designed for the Macintosh Classic computer, and a service provider can locate this part listing in the Macintosh Classic section of the Service Source CD; Technical Procedures or Macintosh Service Guide book. Apple US Service Administration can help a service provider order this part by overriding the standard minimum order.

Floppy only system

Apple will install a plug-in terminator (Apple Part Number 630-0408) into the internal SCSI connector on the main logic board; thereby terminating one end of the bus as an internal drive would do. As external devices are added the last device should have an external terminator installed (Gray Terminator, Apple Part Number 658-8032). This way the bus is terminated at both ends.

How is the Quadra 900 and Quadra 950 Terminated?

The Quadra 900/950 has two SCSI buses, Internal and External.

The Internal Bus is terminated on both ends (one termination on the logic board and the other at the other end of the internal SCSI cable). This means that any internal device should not have termination resistors. Therefore, confirm the termination resistors have been removed before installing a device inside the Quadra 900/950!

Note: All prior Macintosh computer required the internal hard disk drives to have termination resisters on them. Hence, most hard disk drives' vendors ship their internal disk drives with termination resistors installed. With the Quadra 900/950, the terminators need to be removed since the internal bus is already terminated at both ends.

External SCSI is terminated on the logic board. As external devices are added, the last device should have an external terminator installed (Gray Terminator- Apple Part Number 658-8032).

Though the Quadra 900/950 has two independent SCSI buses, system software views the two as a single logical bus. Like with other Macs, the CPU ID is 7. This allows a total of 7 SCSI devices (IDs 0-6) to be added internally and externally. Users must be careful not to use the same ID on more than one device (internal or external).

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Applesoft: Auto RUN byte and protecting programs

This article has been archived and is no longer updated by Apple.
A byte in memory causes any Applesoft command entered from command mode to be interpreted as a RUN command.

POKE 82,213
SAVE

causes this automatic RUN byte to be set when the program is loaded from tape. This "protection" scheme is very easy to defeat, and is not widely used. It does not protect the program from DOS commands.

POKE 214,128
sets the auto-run byte from command mode or from within a program. Take care with this POKE because there is no way to reverse it from command mode because the next POKE will RUN the program.

POKE 214,0
from within a program will return the auto-run byte to normal.
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VideoSync: Avoiding Flicker when Video Taping a Macintosh (3/95)

This article desbribes VideoSync, a product which eliminates flicker when video taping the image on a Macintosh monitor.

This article has been archived and is no longer updated by Apple.
VideoSync is a utility designed to allow the video recording of Macintosh monitor images with consumer or professional video camera equipment. VideoSync supports the Macintosh Display Card 4*8, 8*24, 8*24 GC, Apple High Resolution Video Card, and the Macintosh II Video Cards when connected to an AppleColor High Resolution RGB or monochrome monitor or Macintosh 12-inch RGB Display.

The utility is an extension to the Monitors control panel that adjusts the timing of the Apple display card so that the monitor image appears stable when viewed by an external NTSC camera. VideoSync does not create RS-170A timing for directly recording Macintosh screens to VCR. VideoSync can be licensed as a stand-alone utility for video integration applications, or serve as a platform on which to add other video timing alternatives.

The VideoSync utility is not compatible with Power Macintosh and Quadra AV computers. See the Tech Info Library article titled "VideoSync: Not Supported on Power Macintosh" for additional information on compatibilty with the Power Macintosh and Quadra AV computers.

VideoSync is available through online services Apple publishes software updates on.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
28 Mar 1995 - Changed filming to video taping in title.
03 Mar 1995 - Added where to locate VideoSync.

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Macintosh 16-Inch Color Display: Features and Benefits

This article describes the features and benefits of the Macintosh 16-inch Color Display.

This article has been archived and is no longer updated by Apple.

The Macintosh 16-inch Color Display works with modular Macintosh systems such as the Macintosh Quadra 700 and 900 personal computers. You can organize your work more effectively using the Macintosh 16-inch Color Display, because its 16-inch diagonal screen gives you 70 percent more work area than standard monitors. Not only can you see multiple windows of text and color graphics at the same time, you can also access disk volumes and the Trash while a full page-width document is open.

The Macintosh 16-inch Color Display uses a Sony Trinitron picture tube with a high-contrast screen. This combination ensures sharp focus, high brightness, and uniform image clarity across the entire screen. A tilt-and-swivel base adjusts easily to a comfortable viewing angle, and an anti-glare, anti-static screen reduces glare and eliminates dust build-up.

The display's brightness, contrast, and power controls are located on the front panel, and several built-in ports allow easy connection to Apple Desktop Bus devices (such as keyboard or mouse), microphone, and headphones.

Display Quality

- 16-inch screen, 832 horizontal by 624 vertical pixels (at 70 dots per inch) for 70% more work area than standard monitors

- Trinitron color picture tube for high brightness, sharp focus, and uniform color

- Complements high-performance systems such as the Macintosh Quadra 700 and Quadra 900

Ergonomic Features

- Tilt-and-swivel base for adjustment to comfortable viewing angle

- Anti-glare, anti-static screen

- 75 hertz refresh rate and degaussing capability eliminate flicker and distortion

- Meets Swedish MPR recommendations for low-frequency magnetic emissions

Ease of Use

- Plug-and-play simplicity with most modular Macintosh computers

- Easy access to brightness, contrast, and power controls

- Built-in ports for ADB devices (such as keyboard or mouse), microphone, headphones, or external speakers

Power Controls

Built-in ports for ADB devices (such as keyboard or mouse), microphone, headphones, or external speakers

System Requirements

- a modular Macintosh computer with on-board video support, such as a Macintosh Quadra personal computer, or
- any NuBus-capable modular Macintosh such as the Macintosh IIsi or IIci.

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Macintosh: Troubleshooting System Bombs (1 of 3)

Most system bomb error messages are due to software problems. This article provides troubleshooting tips for four major types of software.

This article has been archived and is no longer updated by Apple.

THE FOUR MAJOR TYPES OF SOFTWARE

System Software

System software includes all the files in the System Folder that make up the Operating System.

- The files named System and Finder are the main components of the operating system and are loaded into RAM when you turn on or reset the computer.

- INITs (Extensions) are startup programs and initialization resources stored in the System Folder (with System 7, they are inside the Extensions folder). They are memory resident files that are loaded into RAM when you turn on or reset the computer. Examples: QuickMail and Easy Access.

- cdevs are control panel devices. These files appear as scrollable icons in the Control Panel desk accessory window under System 6, or as separate, launchable programs in a Control Panels folder under System 7. They are loaded into RAM when you turn on or reset the computer. You may change options from within each Control Panel. Examples: Pyro, After Dark, Adobe Type Manager, and Sound Master.

- RDEVs are remote devices or Chooser files. These files appear in the Chooser under the Apple menu. Examples: ImageWriter, LaserWriter, DeskWriter, CD-ROM, and AppleShare. Under System 7, they belong in the Extensions folder.

- Preferences files keep default or current settings for programs. Examples: Word Settings, MsWorksPref, PM4 Defaults, and Excel Settings.

- Some files are combinations of the above. Examples: Pyro (INIT/CDEV) and StyleWriter (INIT/RDEV).

NOTE: To simplify the description of INITs, cdevs and RDEVs, this document will use the collective term INIT to describe any file that contains INIT code to be executed at startup time.

Application Programs

Examples of application programs: Microsoft Word, Microsoft Excel, Microsoft Works, FileMaker Pro, MacPaint, MacWrite, and Aldus PageMaker.

Program Files

Program files are the files that contain data or instructions a program may need during its use. Examples: printer definition files, import/export filter files, and data files.

Data Files

Your files are the documents created when you choose "Save" in a program. Examples: word processing, spreadsheet, communication, database, drawing, and page layout files you created.

TROUBLESHOOTING SYSTEM BOMBS

Here are some troubleshooting tips for the various types of software.

System File & System Folder Procedures

- Put a Disk Tools or System Startup diskette in the floppy drive and turn on your computer. This prevents the INITs in the System Folder from running, and eliminates them as a possible cause of the problem. This is a quick way to determine if a major problem which occurs near startup time is related to your System Folder. If the problem is resolved, then continue on with the next step. If the computer still bombs right away and you know your System Disk is good, then you may have a hardware problem.

- Move all INITs and non-Apple files* (Preferences files, screen fonts, and so on) to a separate folder outside the System Folder and restart. If you're no longer getting system bombs, replace the INITs one at a time, and restart your computer following each replacement until you get the error again. The last one put in is likely the cause of the crashes. It may be corrupted or incompatible with the System or other INITs and/or programs. If you still get a system bomb after removing all INITs and non-Apple files from the System Folder, try the next step.

* Non-Apple files are any files that AREN'T found on the original Apple Macintosh System Disks that come with your computer.

- Start up from your Disk Tools or System Startup disk. Open the System Folder and drag your current System and Finder files to the trash. (For System 6, consult your user's manual on the use of the Font/DA Mover program to copy your fonts and desk accessories out of the System file first.) Reinstall a new copy of the system using the Installer on your System Tools or Install 1 disk. If this doesn't work, try the next step.

- The Preference files may be corrupted. You can drag some to the trash and the programs will recreate the files the next time you run those programs (settings saved in these files will be lost). You will have to copy some Preference files using the program installation procedure. Consult your program manual or call the manufacturer of the program to find out what is necessary. If the system doesn't work once the new Preference files have been created, try the next step.

- Start up from your Disk Tools or System Startup disk. Drag the entire System Folder to the trash (be sure you have all INITs, preference files, fonts, desk accessories, and any other non-Apple files on floppy disks or in another folder on the hard drive before this procedure. For System 6, consult the manual on the use of the Font/DA Mover program to copy your fonts and desk accessories out of the System file.) Restart from the installation disk (Install 1 under System 7) and run the Installer to place a new copy of the System Folder on your drive. Check the system before re- installing your INITs, preference files, fonts, desk accessories and any other non-Apple files. If it works, re-install them one at a time until the System Folder is back to its original state. If this does not work, continue.

Programs, Program Files, Data Files

Programs or files may be the cause of problems. Here are some suggestions.

- You may (if possible) run the program from a floppy disk instead of the hard drive to determine if it is the cause of the problem. This is likely if you get the bomb in one program and no others. If this is not possible then try dragging the program's folder to the trash (saving any files you may have created first). Also throw away any preference files or folders associated with the program in the System Folder. Re-install the program from the original diskettes. If this does not work, try the next step.

- A file that you have created may cause a bomb each time it is loaded or while you are using or editing it. Sometimes you can make a new file and copy the contents of the old file to it to solve the problem. In most cases you will need to restore the file from your backup if you have one or re-create the file if you don't.

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Macintosh: Troubleshooting System Bombs (2 of 3)

This article lists some of the common causes of system bombs.

This article has been archived and is no longer updated by Apple.

Incompatible Software

Many pieces of software (System, INITs, Applications) are loaded into memory and run at the same time. System bombs occur if the versions of the software aren't compatible. You may call the application's manufacturer to find out if the software is compatible with your system and the other software you are running. You can find versions of programs, INITs, and the System file by selecting the file's icon at the Finder and choosing Get Info from the File menu.

Corrupt Software

Sometimes a piece of software may become corrupted. Events that can corrupt files include:

- Not choosing Shut Down before turning off your Macintosh.

- SCSI data line problems can corrupt software or even the format of your hard disk.

Viruses

A virus is seldom destructive, but can do any of the following:
- Display messages.
- Corrupt software.
- Change software or hardware settings.
- Cause system bombs.

The Tech Info Library contains several articles about viruses and their symptoms.

Hardware Problems

In a few cases, certain hardware problems may cause system bombs. Using peripherals or expansion cards that aren't fully compatible with the computer can cause bombs. Bad or insufficient memory may also cause bombs.

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Macintosh: Troubleshooting System Bombs (3 of 3)

Here are some troubleshooting tips regarding the major causes of system bombs.

This article has been archived and is no longer updated by Apple.

Incompatibility in Software

Verify that your application is the most current version available and fully compatible with your Macintosh model. Check with the software manufacturers for information on the latest revisions, what version of the system should be used with what version of the application, and incompatibilities.

All INITs, programs, and System files must be compatible with each other. You need to know the EXACT version of applications and INITs. For example, Microsoft uses version numbers in the following sequences: 2.0; 2.00a; 2.00b; 2.00c; 2.00d. These represent Microsoft Works versions. Microsoft Works 2.00a is a problem in the System 6.0.7 environment. Microsoft Works 2.00b is compatible with System 6.0.7. It isn't enough to state that Microsoft Works 2.0 is a problem. The version numbers need to be EXACT.

Corrupt Files

Any type of software may become corrupted. It can be very difficult to find out which piece of software may be causing your problem. Following the steps outlined in the "Troubleshooting System Bombs" section may be the only way to discover the corrupted software.

Viruses

The best way to combat viruses is with one of the many virus detection and correction programs available today. Viruses haven't caused problems on computers with the latest copy of a virus protection program installed. You'll need to start your computer from a floppy disk containing a virus detection program to fully check and "vaccinate" your hard disk. The System file and other software may not be diagnosed or fixed if they are running when the hard drive is checked. Once the hard drive has been checked and cleared of any offending viruses, an INIT file that scans each floppy disk as it is inserted will keep your system virus free. See the discussion of "Co-processor not installed!" errors for some information on the WDEF virus.

Hardware

If hardware is the problem, you should take your system to an authorized Apple dealer for a thorough diagnostic check. If problems continue after you've explored all software situations, look at hardware -- particularly memory or memory management.

It could be RAM or the logic board. RAM problems can show up after warm-up. For example, a marginal SIMM's speed may be fine when cool but slow down after warming up. All SIMMs do this to a certain extent, but you may have a SIMM that crosses the Macintosh computer's tolerance threshold when warm. The only fix for this is to replace the offending SIMM or SIMMs. A similar problem could be happening within the memory manager's circuitry on the logic board; the only possible fix is a complete logic board replacement.

You may also have a SCSI problem, particularly if you have external SCSI devices attached. This problem occurs most often when you have external SCSI devices attached, but not turned on. You must turn on all SCSI devices before starting the Macintosh, and you must leave them on until you

turn the Macintosh off. If you don't take these precautions, you can introduce garbage onto the SCSI data line.

Improper termination of the SCSI chain also causes this problem. If your SCSI chain is the source of your problem, be aware that the garbage on the SCSI chain may have corrupted the hard drive's format. You'll need to reformat your hard drive with either all the external SCSI devices removed or all of them turned on.

Published Date: Feb 18, 2012

Super Serial Card: Cable for Qume Sprint 5 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a Qume Sprint 5 printer.

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1 .....(FG)
Transmit Data (Tx) ..... 2 <-----> 3 .....(Rx)
Receive Data (Rx) ..... 3 <-----> 2 .....(Tx)
Request to send (RTS) .... 4 <-----> 8 .....(DCD)
Clear To Send (CTS) .... 5 <-----> 8 .....(DCD)
Data Set Ready (DSR) .... 6 <-----> 20 ....(TDR)
Signal Ground .....(SG)..... 7 <-----> 7 .....(SG)
Data Carrier Detect (DCD) .... 8 <-----> 4 & 5 .(RTS) & (CTS)
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) .... 20 <-----> 6 .....(DSR)

Article Change History:
21 Nov 1996 - Reviewed for technical accuracy, revised formatting.
Published Date: Feb 18, 2012

Radius Multimedia Products: Support for Apple QuickTime

Radius, Inc. is upgrading RadiusTV and ImpressIt to take advantage of the new features in QuickTime. QuickTime provides a standard architecture and interface for multimedia hardware and software applications on the Macintosh. QuickTime compatibility allows integration of Radius multimedia products with QuickTime-compatible hardware and software products from other vendors, increasing the range of multimedia options available.

This article has been archived and is no longer updated by Apple.
Radius has rewritten the software for RadiusTV and ImpressIt to take advantage of QuickTime features, including:

- A time-management control system for synchronizing data
- Interface guidelines for hardware products
- Drivers for multimedia peripherals such as CD-ROM drives
- Built-in video editing

By supporting QuickTime, RadiusTV will be compatible with all other QuickTime compatible multimedia software applications. Previously, software applications required a special driver for compatibility with RadiusTV. Now, an application software developer can write a single QuickTime-compatible driver for a program to obtain compatibility with all QuickTime compatible multimedia hardware products like RadiusTV.

ImpressIt, Radius' still-image compression software, has been designed to integrate seamlessly with QuickTime. Users may elect to have ImpressIt automatically compress images when saved to a hard disk, rendering the entire compression process transparent.

RadiusTV

RadiusTV is a multimedia hardware and software platform that blends an array of audio and visual sources on the computer. RadiusTV features a video processing engine and an external audio-video input processor and television tuner -- to bring television functionality into the Macintosh environment.

RadiusTV is capable of displaying and digitizing live 16-bit video images in real-time (30 frames/sec) in a resizable window of up to 640 x 480 pixels. RadiusTV also digitizes sound in real time and provides access to information included in the television signal's vertical retrace interval (such as closed captions and calibration settings), making complete Macintosh control and processing possible. RadiusTV also includes Theatrics, a software package that allows image processing on captured images.

ImpressIt

ImpressIt is a Macintosh software compression product for color and grayscale still images. The fastest software solution available today, ImpressIt can compress images by up to 100 times. ImpressIt is based on the JPEG (Joint Photographic Experts Group) standard. A 24-bit 750K color image can be compressed to 25K in under 3 seconds when run on a Macintosh IIfx.

Published Date: Feb 18, 2012

QuickTime: How Movies Work

The most important thing about QuickTime is that it allows users to create, play, and edit sets of time-based data. If you want to capture new video footage, you will need extra equipment -- a digitizer card, video camera or controllable VCR, and associated components. But you will be able to play and edit movies and other time-based data without extra hardware.

This article describes the movie feature of QuickTime, and provides some human-interface suggestions.
This article has been archived and is no longer updated by Apple.

Movies, Tracks, and Media

A movie file contains a resource of type 'moov' (pronounce it "moo-vee"), which describes the movie in terms of its tracks, its media, and its references to the raw data the movie is to play.

Assume the movie contains all the knowledge needed to run the movie (the tracks and the media), but not the actual contents of the movie (the data). The data can easily run into multiple megabytes, whereas the movie itself is short enough to fit on the 2 Clipboard. By factoring out the large amount of data needed to play a movie, Apple engineers have made the movie file small enough to be moved, edited, cut, copied, or pasted easily.

You can think of a QuickTime movie as a container for tracks. The movie starts at time 0 and plays until it is finished. Depending on how they are defined, one or more tracks (each containing one kind of data: video, animation, or sound, for example) are active and playing at any instant.

To keep the concept of a QuickTime media general enough to be useful with vastly different data types, a media contains not the data but a one-to-one, linear mapping between itself and the data. (Yes, we do call it "a media," largely because QuickTime documentation, routine names, and variables exclusively use the word media instead of medium.) The data, for now, is always in a file somewhere on the network. Someday the data may be outside the Macintosh and its network -- for example, on a videotape in a VCR the Macintosh controls.

Each track has exactly one media associated with it, and vice versa. The track, through the media and code called the media handler, points to whatever data should be playing at any given time. This means that a track can omit part of the media, play segments out of sequence, play the same segment multiple times, or even play sequences that overlap within the media. This means that a movie-editing program can rearrange or delete movie footage simply by adding or changing a handful of pointers within a track. (If such a program had to cut and paste the actual footage, the program would be prohibitively slow and the delay would be proportional to the amount of footage moved.)

Movies, tracks, and media all have time scales; and they can all be the same, or they can be different. If the time scale of a track is 10, then ten such units make one second of playing time, and the track can start at any 1/10-second interval. Fortunately, QuickTime takes care of synchronizing all these time scales with the others.

Human Interface Suggestions

For QuickTime to be successful, movies must have certain basic behavior that users can learn (or, better, already know) and then forget. A program should be able to select a movie, cut or copy it to the Clipboard, and paste it from the Clipboard into a document.

A program should also implement an easy, common-sense way of playing and stopping movies and controlling the sound output (a sound-mute control is mandatory, but a volume control is even better). Apple created a new Macintosh human-interface element, the standard movie controller.

The standard movie controller can give basic movie control to users in the same way every other QuickTime program will. With a few Movie Toolbox routines, the standard movie controller gives users basic control of the movie's playback.

Here are some enhancements to movie behavior to implement:

- A poster is a single image that best represents the movie. It might be used when the movie is visible in its document but isn't playing or when the document containing the movie is printed. The poster can come from one of the movie's video tracks (that is, the frame at time t from track x), or it can be an arbitrary image in its own track. (Apple recommends that you store a poster as a PICT with an uncompressed pixmap so that the user can see it in the Preview dialog box even if the proper decompressor isn't present.)

- A preview is a short subsequence of the movie that also represents the movie in an appropriate context; it might play, for example, when a user is previewing a long movie file.

- Another useful option for movies is that of alternate tracks. With them, you can specify alternative representations of the same data, with the understanding that only one is active at a time. A simple example is an instructional movie that has vocal instructions in Spanish, English, and French, only one of which the user chooses when playing the movie.

Another example is a movie that contains two alternative video tracks, one (of lower quality) meant to be played by a software-only decompressor and the other (of higher quality) requiring hardware decompression. The program playing the movie could then automatically show the movie at the best quality level available to the program and its hardware.

TA47873_QuickTime_How_Movies_Work_(TIL09415).pdf

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QuickTime: Image Compression Details

Apple supports all compression schemes through QuickTime's Component Manager and Image Compression Manager services.

Here is a brief overview of compression characteristics and the initial Apple-supplied compressors.
This article has been archived and is no longer updated by Apple.

Characteristics

There are four main characteristics of image compression algorithms:

- Compression ratio
- Image quality
- Compression/ decompression speed
- Spatial/temporal compression

Compression Ratio

The compression ratio is equal to the size of the original image divided by the size of the compressed image. This ratio gives an indication of how much compression is achieved for a particular image. Most algorithms have a typical range of compression ratios that they can achieve over a variety of images. Because of this, it is usually more useful to look at an average compression ratio for a particular method.

The compression ratio typically affects the picture quality. Generally, the higher the compression ratio, the poorer the quality of the resulting image. The tradeoff between compression ratio and picture quality is an important one to consider when compressing images.

Furthermore, some compression schemes produce compression ratios that are highly dependent on the image content. For example, a highly detailed image of a crowd at a football game may produce a very small compression ratio, whereas an image of a pure blue sky may produce a very high compression ratio.

Image Quality

Compression schemes can be lossy or lossless. Lossless schemes preserve the original data. Lossy schemes don't preserve all the original data; you can't recover lost picture information after compression. Lossy schemes attempt to remove picture information the viewer won't notice. As more and more picture information is removed, the picture quality decreases.

Compression/Decompression Speed

Compression and decompression time is defined as the amount of time required to encode and decode a picture, respectively.

Compression/decompression speed depends on:

- The complexity of the compression algorithm
- The efficiency of the implementation of the algorithm
- The speed of the processor hardware

Generally, the faster that both operations can be performed, the better. Fast compression time speeds up the material creation. Fast decompression time speeds up display and user interaction with images.

Spatial and Temporal Compression

Spatial compression removes information from within a single still image. Temporal compression removes information between frames.

Apple-Supplied Compressors

Apple supplies a basic set of three image compression algorithms for the first release of QuickTime:

- The Photo Compressor
- The Animation Compressor
- The Video Compressor

It's important to note that these compressors represent only a portion of Apple's overall compression strategy, which includes both hardware and software-based schemes. Software-based video compression provides users with a starting point that meets the minimum requirements of many applications while allowing room for additional schemes.

The following paragraphs discuss each of these compressors in greater detail.

Photo Compressor

The Photo Compressor implements the Joint Photographic Experts Group (JPEG) algorithm for image compression. JPEG is an international standard for compressing still images. The technique is based on the use of the Discrete Cosine Transform (DCT). The version of JPEG supplied with QuickTime complies with the ISO baseline standard.

The general character of DCT-based compression schemes is that they perform best on images that vary smoothly, or that don't have a large percentage of their areas devoted to edges or other sharp detail. Most natural images fall into this category. For such 24 bits per pixel images, the Photo Compressor will produce a reconstructed image which is visually indistinguishable from the original at a compression ratio of 10:1. In practice, you will find that compression ratios are highly dependent on image content, but generally range from 5:1 to 100:1, with excellent picture quality resulting from compression ratios between 10:1 and 20:1. Compression time is equal (or very nearly equal) to decompression time.

On a Macintosh IIcx, it takes approximately 10 seconds to decompress images at 640 x 480 pixel resolution. The compression speed scales with CPU performance, so on a Macintosh IIfx, the same operation would require approximately 4 seconds. Photo quality is generally very good to exceptional and is often sufficient for use in demanding desktop publishing applications. Very high resolution images obtained through the use of 24-bit color scanners would best be compressed using the Photo Compressor.

Animation Compressor

Apple developed the Animation Compressor algorithm, based on run-length encoding techniques. This algorithm is best suited to animation and computer generated content. In addition, the Animation Compressor can compress sequences of screen-recorded images, such as those created by Farallon's ScreenRecorder product.

Like any QuickTime compressor, the Animation Compressor can compress input video images from all bit depths (1, 2, 4, 8, 16 and 24-bit color depths), and can decompress to all bit depths.

The Animation Compressor compression method can be considered an extension of the PICT image format to the temporal domain. A PICT image is stored in run-length encoded format and is lossless. Animation Compressor is also stored in run-length encoded format. However, Animation Compressor can work a lossy or lossless mode, and can support both spatial and temporal compression. Both modes maintain picture content precisely, storing an animation as a series of run-length encoded images. The lossy mode loses some quality, storing the difference between certain frames rather than the frames themselves, but is fast enough for real-time playback.

The Animation Compressor can play back images at up to 30 frames per second at full-screen resolutions, but its performance and achieved compression ratios are highly dependent on the type of images in a scene.

Video Compressor

Apple developed the Video Compressor image compression to permit fast decompression while maintaining good picture quality. This rapid decompression also displays 24-bit still images very quickly.

The Video Compressor should generally be used for digitized video content rather than for synthetically generated images. This compressor supports both spatial and temporal compression. If you use only spatial compression, then you will obtain compression ratios from 5:1 to 8:1 with reasonably good quality. If you use both spatial and temporal compression,
the compression ratio range extends from between 5:1 to 25:1.

On a Macintosh IIcx, it takes half a second to decompress an image at full-screen resolution, and about three seconds to compress the same image. The compression speed scales with CPU performance, so on a Macintosh IIfx compressing a full-screen image requires one second, and decompress time is 1/5 second.
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TA47875_Electronic_Arts_(TIL09418).pdf

Electronic Arts

Electronic Arts
This article has been archived and is no longer updated by Apple.
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Web site: **http://www.ea.com/**

Company Profile:
Software, specializing in application software for the Macintosh including the Studio/1 animation program.
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TA47877_Super_Serial_Card_Cable_for_Teletype__(TIL00942).pdf

Super Serial Card: Cable for Teletype 43 (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a Teletype 43.

This article has been archived and is no longer updated by Apple.

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      Super Serial Card (SSC)     Pin     Cable   Pin    Printer Connector

Frame Ground .............(FG)..... 1     <----->   1.....(FG)
Transmit Data             (Tx) ..... 2     <----->   3.....(Rx)
Receive Data              (Rx) ..... 3
Request to send           (RTS) .... 4
Clear To Send             (CTS) .... 5
Data Set Ready            (DSR) .... 6     <----->   20....(DTR)
Signal Ground ............(SG)..... 7     <----->   7.....(SG)
Data Carrier Detect       (DCD) .... 8
Secondary Clear To Send   (SCTS) ... 19
Data Terminal Ready       (DTR) .... 20
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SNAps 1.1: Host Prnting to 3287 Devices & Apple Printers

Will the 1.1 version of SNA*ps include support for host printing on LAN based printers?

This article has been archived and is no longer updated by Apple.

The SNA*ps version 1.1 release will support host based printing to 3287 type devices using Apple's network printers. It will support LU type 1 and LU type 3 devices. SNA*ps 1.1 is REQUIRED for the Apple 4/16 Token Ring card AND all Quadra computers!

Published Date: Feb 18, 2012

Apple Token Ring 4/16 NB Card: Compared to TokenTalk Card

1) What are the differences between the Token Ring card and the earlier TokenTalk card?

2) Is an upgrade available?

3) Why did Apple change the name from TokenTalk Card to Token Ring Card?

4) What kind of speed increases can I expect at 16Mbps?

This article has been archived and is no longer updated by Apple.
1) There are three main differences between Apple's previous Token Ring card and this one:

- Transmission speed
The old card supported only 4 Mbps transmission, and the new card supports both 4 and 16 Mbps.

- On-board memory capacity
The old card came with 512K RAM on the card, but there was no expansion capability. The new card comes with 512K standard, expandable to 1 or 2.5MB.

- Token Ring technology
The old card used the Texas Instruments TMS380 Token Ring chip set. The new card uses the industry-standard IBM Token-Ring chip set.

2) There's no upgrade program at this time.

3) Both of the cards are based on IEEE 802.5 standards for Token Ring, and will therefore work in all standard Token Ring environments. You can use multiple protocol stacks with the cards, including SNA and AppleTalk. In fact, because both cards are based on the Macintosh Coprocessor Platform architecture, you can run multiple network protocols simultaneously. Still, some customers found the name TokenTalk confusing, thinking that the card only supported AppleTalk protocols. We have changed the name to reflect the broad range of applications possible with the card, and to complement its standards-based design.

4) That depends on your network configuration. We find that in low-traffic situations, the increase in throughput is not astronomical. Generally, this is because the bottleneck is not how much information can be transferred over the wire, but how much can be processed in and out of the Macintosh. As the total amount of traffic on the ring increases, the capacity of the network becomes more important and 16Mbps token ring begins to perform better than 4Mbps Token Ring.

Operation at 16 Mbps also provides a feature called "Early Token Release," whereby more than one frame may exist on the ring at once. This provides an additional improvement in throughput, especially on large rings carrying a significant number of small frames.

Published Date: Feb 18, 2012

Apple Token Ring 4/16 NB Card: Hardware Q & A

1) How do I set the transmission speed on the card?

2) Why would I want more memory on the card?

3) Can I buy my own memory chips and install them myself?

4) Why would I care about IBM technology?

5) Does the card require special cabling?

This article has been archived and is no longer updated by Apple.

1) The speed setting is software selectable. In fact, the card ships with a Token Ring Control Panel Device (CDEV) that allows you to set the speed setting, the locally-administered address, and timer settings for Response, Acknowledge, and Inactivity. All of these settings can be password protected so users can't change them inadvertently. The settings are saved in a .PREFS file.

2) You might need more memory depending on what applications you want to run on the card.

With the standard configuration of 512K, you can run either TokenTalk 2.4 (for connection to AppleTalk services such as AppleShare file servers or LaserWriter printers) or the SNA*ps 1.1 gateway. In this configuration, SNA*ps can support 8 or fewer 3270 sessions or 4-6 APPC sessions, depending on SNA frame size.

With 1MB of memory on the card, you can support both TokenTalk 2.4 and SNA*ps 1.1. The number of SNA*ps sessions you can support will vary depending on several factors, including the frame size you are using and the number of 3270 vs APPC sessions. As a rule of thumb, 32 3270 sessions or 16 APPC sessions with TokenTalk 2.4 should fit with 1MB of RAM.

With 2.5MB of memory on the card, you will be able to support TokenTalk 2.4 and SNA*ps 1.1 with up to 64 sessions.

3) Yes. The memory is socketed, and specifications for the memory chips are included in the manual.

4) Because the card is built with IBM technology, it's 100% compatible with IBM Token Ring cards. You can mix and match Macintosh and PS/2 computers on a Token Ring without worrying about compatibility. In addition, Token Ring products from other vendors are generally tested for compatibility with IBM Token Ring cards, so the same level of interoperability is afforded Apple's card.

5) No. The card has a standard DB-9 connector for attaching to IBM Type 1 cabling. In addition, media filters are available from third parties so that the card can be used to connect to IBM Type 3 (unshielded twisted pair) cabling. Because the ring interface is made by IBM, the card will operate within the same cabling guidelines as IBM's own products.

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Apple Token Ring 4/16 NB Card: Software Q & A

Article Change History

06/28/93 - REVISED
* To include MacTCP Token Ring Extension.

1) Can I use AppleTalk Remote Access with Token Ring now?

2) Does the card still ship with SMB File Transfer software?

3) The new card uses the IBM Token Ring chip set, whereas the TokenTalk NB Card used the Texas Instruments TMS380. Does that mean that I can't run the same software on both cards?

4) What version of SNA*ps runs on the card?

5) Do I need to keep the installer for both the old and the new card? Or will the new TokenTalk installer install a driver for the older card too?

6) Can I run MacTCP over Token Ring now?

This article has been archived and is no longer updated by Apple.
1) Yes. The TokenTalk installer that ships with the Token Ring 4/16 NB Card will include AppleTalk version 57, which is required for AppleTalk Remote Access.

2) No. The SMB software that Apple was shipping prior to June 1991 was incompatible with the latest version of IBM's LAN Server and with System 7.0. Additionally, the Apple/IBM Enterprise Networking Initiative specifies the availability of native AppleTalk AFP support on IBM LAN server products in the future.

3) No. Although the two cards use different hardware, the interface to the LLC task on the cards is the same, so software can be written to run on both cards. For example, you can run the same version of Apple's TokenTalk software, which provides Token-Ring users with access to AppleTalk services, on both the TokenTalk NB Card and the Token Ring 4/16 NB Card. The common TokenTalk software version is 2.4.

4) SNA*ps 1.0 doesn't work on the Token Ring NB Card. You need SNA*ps v1.1. If you are using both TokenTalk 2.4 and SNA*ps v 1.1, you will need at least 1MB of memory on the card. You should order the Apple Macintosh Coprocessor Platform Memory expansion kit (P/N M0145LL/A), or compatible third-party memory, if you are running SNA*ps 1.1.

5) The new software will install drivers for both cards. In fact, the AppleTalk Network Software Installer disk that ships with the card will also install drivers for Apple's Ethernet LC and Ethernet NB cards, as well as the latest version of AppleTalk. This will make it easier for network administrators to manage software for AppleTalk networks because it's all in one place.

6) Yes. Use the MacTCP Token Ring Extension.

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SNAps 1.1: Allows Font and Orientation Selection

Does SNA*ps 1.1 printing let me specify the orientation and font for host jobs?

This article has been archived and is no longer updated by Apple.
The user manual for SNA*ps 3287 tells you how to print data that is wider than the page to a LaserWriter. Use the Landscape option in the printing dialogue at 76 percent to allow printing 132 columns by 66 rows. This is the normal 3287 printer paper size.

The "Use custom formatting" option in the Session menu lets you to choose font, size, lines/inch, and other parameters to get the output format as close as possible to your ideal.

Print preview, in the Session menu, lets you preview your output in a separate window.

The font that ships with SNA*ps 3287, called Noiro, is designed to mimic the look of IBM fonts; the custom formatting and preview options should enable you to diverge from the IBM look.

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AppleTalk Remote Access: Data Compression

How is compression handled with AppleTalk Remote Access, and is there a way to control it?

This article has been archived and is no longer updated by Apple.

AppleTalk Remote Access does all data compression on the Macintosh. The CCL scripts specifically turn off all data compression in the modem.

AppleTalk Remote Access uses the V.42bis scheme, and the user can't control it.

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AppleShare 3.0: Doesn‘t Run Under A/UX 3.0

Can I run A/UX 3.0 and AppleShare 3.0 on the same computer at the same time?
This article has been archived and is no longer updated by Apple.
No, AppleShare 3.0 won't run under A/UX 3.0.
Published Date: Feb 18, 2012

TA47885_AUX_Limits_File_Sharing_to_Users_(TIL09427).pdf

A/UX 3.0: Limits File Sharing to 10 Users

Does A/UX 3.0 limit the number of File Sharing users to 10?

This article has been archived and is no longer updated by Apple.
A/UX 3.0 limits File Sharing to 10 users, just as the Macintosh operating system does.

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AppleShare 3.0: Upgrading a Users & Groups File

Using AppleShare 3.0 on a Quadra 900, I want to convert the Users & Groups file from a 2.0 server. Putting the old file in the new server's folder isn't sufficient. How can I get AppleShare 3.0 to recognize the old file?
This article has been archived and is no longer updated by Apple.
We suggest you follow this procedure:

1) Move the Users & Groups file from the Preferences folder to the root level.

2) Put the old AppleShare 2.0 file inside the System Folder, but outside the Preferences folder.

3) Run the Admin program.

4) Enter a new password when the program prompts you for a new Administrator password.

That should convert the old file to the new format.
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AppleShare 3.0: Doesn‘t Terminate Idle Connections Automatically

Does AppleShare 3.0 terminate connections after a certain idle period?

This article has been archived and is no longer updated by Apple.

AppleShare 3.0 doesn't disconnect idle users on its own. However, the API allows developers to write a module that disconnects idle users.

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Super Serial Card: Cable for TI 810 Printer (11/96)

Listed below are the cable pinouts for connecting the Super Serial card to a TI 810 printer.

This article has been archived and is no longer updated by Apple.

Super Serial Card (SSC) Pin Cable Pin Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Printer settings
---
* 1200 baud, Odd Parity, 7 Data Bits and 1 Stop Bit.

* Jumper Pins 6, 8, and 9 together on the printer but not connect them to the Super Serial card.

* Switch 1 2 3 4 5 6 7 (The switch is located inside the access cover.)
1 1 0 1 1 1 1

Super Serial card settings

Switch Settings: 1 = On = Closed; 0 = Off = Open

Switch 1 2 3 4 5 6 7
SW1: 0 1 1 1 1 1 1
SW2: 1 0 1 0 1 0 0

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AppleShare 3.0: Can‘t Log On to the Same Server Multiple Times

I would like to log on to a single AppleShare server, signing on with user name and password to a user's private data volume, but have them log on as "Guest" to a general application volume. The employees here move around to different Macintosh computers frequently, and would like to have a consistent method of accessing information. They have to get to their own "home folders" where ever they are over the internet, but would like to always access an application's volume from the closest local server. Having Guest access available on this computer considerably reduces administration overhead. However, if a user connects to the local server as Guest for an application volume, and their personal "home folder" is on that same server, they can't log on with a different user ID.

Is there any way around this?
This article has been archived and is no longer updated by Apple.
It isn't possible to mount different volumes of a single server with a different user ID and password using AppleShare 3.0. This is a difficult approach using AppleShare 3.0, since it's possible for a physical volume to have multiple mounting points for users, and folders can be share points.

We suggest that users mount their "home folder" first. Then if they need access to a Guest folder on the same server they can easily add it to the existing mounted volume without logging off.

Another possibility is to make each "home folder" user owned. The other folders should have Guest access. When a person logs on as a registered user, they'll also have access to Guest folders.
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AppleShare 3.0: No Utility to Import/Export User Lists

Is it possible to import/export lists of user names and passwords?
This article has been archived and is no longer updated by Apple.
No, there is no utility to import/export lists of user names and passwords. However, for information on how to copy usesr and group list see the following article:

Tech Info Library article 9541: "**AppleShare 3.0: Using Users & Groups File on Multiple Servers**"
Published Date: Feb 18, 2012

AppleTalk Remote Access: Don‘t Use at 1200 bps

Is it true that Apple doesn't recommend 1200 bps for AppleTalk Remote Access, and won't provide a 1200 bps script for that product?
This article has been archived and is no longer updated by Apple.
Apple doesn't support 1200 bps because the delay is right at the threshold for timing out.
Published Date: Feb 18, 2012

AppleShare 3.0: Maximum of 346 Open File Control Blocks

AppleShare 2.0.1 limits the maximum number of opened File Control Blocks (FCBs) to 160. This is a problem with some multiuser databases (such as FoxBASE). They open a file for every related database for each user accessing the database from the file server. To allow the maximum number of FCBs, the server had to have a 68O20 or a 68030 processor and have 8MB of RAM.

Does AppleShare 3.0 increase the maximum number of FCBs allowed on the file
server? What is the new maximum number of FCBs? Do the same answers apply to File Sharing?

This article has been archived and is no longer updated by Apple.
AppleShare 3.0's limit is the limit on the number of simultaneous open files under HFS. This is 346 files for both AppleShare and File Sharing.
Published Date: Feb 18, 2012

AppleTalk Remote Access: Uses Portions of Comm Toolbox

I understand that AppleTalk Remote Access doesn't use the Comm Toolbox because of speed issues. Is it possible to change AppleTalk Remote so that it recognizes the extra ports Comm Toolbox allows access to?

I noticed that in the "Remote Access Setup" CDEV that I can see the extra ports, but can't select them. Could you allow the user to select these serial ports? If not, the extra ports should be hidden.

This article has been archived and is no longer updated by Apple.

AppleTalk Remote Access does use portions of the Comm Toolbox. At least one serial card was tested with AppleTalk Remote Access that allows you to select the serial ports on the card. The card is the QuadraLink from Applied Engineering.

Published Date: Feb 18, 2012

PowerBook: Lightning Bolt Indicates Battery is Charging

What's the meaning of the lightning bolt over the battery icon in the Menu bar?
This article has been archived and is no longer updated by Apple.
The lightning bolt over the battery icon in the menu bar indicates the AC adapter is charging the battery or batteries installed in your PowerBook. If you have the Control Strip installed, you will also notice the lightning bolt in the Battery Monitor portion.

Figure 1. Control Strip Charging Indication

Figure 2. Menu Bar Indication

When the battery is fully charged, the lightning bolt will disappear from the menu bar battery icon. The Control Strip Battery Monitor portion will indicate the presence of the AC adapter by showing a small power plug through the battery as shown below.

Figure 3. Control Strip AC Adapter Indication

Published Date: Feb 18, 2012

Apple III Serial Port: Cables for the Anadex DP-9500 and DP-9501

This article has been archived and is no longer updated by Apple.

III SERIAL PORT Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 19....(SCTS)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

NOTE: Check Parity, Baud Rate, Stop Bits...

Published Date: Feb 18, 2012

QuickTime: Hardware Products Will Have QuickTime Component

Will hardware vendors provide QuickTime components with their products?
This article has been archived and is no longer updated by Apple.
Many companies with hardware products such as video boards, video laser discs, VCRs, compressor boards, and so on, will provide QuickTime components (drivers meeting QuickTime's API specifications). These components provide QuickTime with the code needed to control the device. To some extent, this is similar to how the AppleTalk Manager needn't "know" how to interact with a specific hardware layer because the Link Access Protocol (LAP), and sometimes AppleTalk Address Resolution Protocol (AARP) layers handle it.

Just as AppleTalk programmers aren't concerned with the details of sending and receiving packets over LocalTalk, Ethernet, Token Ring, and so on, software that supports QuickTime isn't concerned with the details of controlling a Sony EVO 9650 Hi8 Edit VCR, or a Truevision NuVista+ video board. These applications only have to know that they're interacting with devices having certain functional characteristics. Some examples of those characteristics include:

- Playing a video segment, stopping, pausing, putting in fast forward or fast rewind mode, and possessing addressable frames.

- Capturing frames (single or sequence).

- Supporting actions such as fade in, fade out, chroma-keying, and so on.

Although all of this information relates to video and video equipment, please note that QuickTime isn't limited to video and/or audio applications. Controlled devices could include scientific and manufacturing equipment.

The important thing to remember about QuickTime is that it is a developer-level technology. It provides software developers with a high-level API for dealing with time-dependent data and devices. It also provides a flexible file format for storing time-dependant data.
Published Date: Feb 18, 2012

QuickTime: Computer Speed Affects Playback

We have noticed with QuickTime a wide disparity of playback caused by dropping of video frames to remain synchronized with sound when moving from one computer to another. Only when we get to Macintosh IIfx speeds do we seem to maintain frame integrity.
This article has been archived and is no longer updated by Apple.
The QuickTime engineers deliberately designed QuickTime to do exactly what you describe. Each computer has limitations of how many instructions it can process in a given amount of time. For QuickTime, this imposes certain performance limitations.

When performance needs exceed performance limitations, adjustments must be made to preserve timing and synchronization. When playing a movie with one or more video and audio tracks, QuickTime drops video frames to preserve timing and synchronization. This solution is much less damaging to the presentation than dropping audio segments.

There are several factors that contribute to the performance that you observe when playing QuickTime movies. Some of them are:

- The CPU (68020, 68030, 68040, or PowerPC) and its clock speed

- The number of tracks played at one time

- The precision of the data within each track (examples: bits/pixel, pits/audio sample)

- The background processes that run at playback time (examples: VBL tasks, drivers, file sharing, and so on)

- AppleTalk network traffic. (Each Macintosh partially inspects EVERY packet that comes by to determine whether the packet was addressed to it.)

Published Date: Feb 18, 2012

QuickTime: Writing a Compressor/Decompressor

Does the QuickTime architecture (specifically PICTCompressor) support/import/export TIFF or TARGA images? I need to work with these files in addition to PICT file format, and would like to see the current compression ratios under QuickTime.

Could a TIFF or TARGA Compressor be written using the QuickTime Toolbox, or is it PICT specific?

This article has been archived and is no longer updated by Apple.

One of the benefits of QuickTime is that it was designed to be a very open-ended developer technology. So when you ask if QuickTime is PICT specific, the answer is a strong NO. However, any given compressor/decompressor (CoDec) component will usually be specific to a specific data format such as PICT, TIFF, TARGA, and so on. You could write a TIFF or TARGA CoDec, provided you have the expertise to do so.

Published Date: Feb 18, 2012

QuickTime: Application Can Choose Sound Track, or Choose None

Can I turn off the sound as something plays back?
This article has been archived and is no longer updated by Apple.
Each QuickTime movie file can have any number of tracks within the file. When the file is played, the application software explicitly "tells" QuickTime which tracks to play. For example, you could have a movie file with one video track and one audio track for English narration, one audio track for Spanish, another for German, and so on.

On playback, the application could check to see what language the System is in, and play only the appropriate audio track. The application could also play NO audio tracks if desired. This functionality is an application feature; QuickTime just offers the support for achieving it.
Published Date: Feb 18, 2012

Apple Keyboard II: How It Differs from Previous Apple Keyboard

The Apple Keyboard II (M0487LL/A) replaces the stand-alone Apple Keyboard (M0116). This article describes the differences between them.

This article has been archived and is no longer updated by Apple.
The Apple Keyboard II, which has been shipping with the Macintosh Classic and Macintosh LC, is fully ANSI and ISO compliant.

New Key Layout

Several keys were relocated. The caps lock and control key exchanged places. The tilde key is now where the escape key was. The vertical line key was moved to a new location above the new return key, and the escape key took the vertical line's old spot. The return key was made smaller, and the space bar was enlarged.

The international ISO version has a new key with ▒ and ñ characters and the escape key replaced the right-hand side command key. The space bar was enlarged.

Both keyboard's numeric keypads have the + and - keys reversed. It is the same as the extended keyboard. In addition, this is the same arrangement as a 10-key adding machine.

With the exception of the arrow and escape keys, Apple Keyboard II has a layout which is identical to the comparable parts of the Apple Extended Keyboard II.

Tilt Legs

At the ends on the back, the keyboard has two legs the user can extend to provide a greater tilt.

Published Date: Feb 18, 2012

PowerBook: Making Cable Connections While In Sleep Mode (3/95)

Is it safe to make cable connections, such as ADB, Serial, SCSI, or SCSI Disk Mode, to a PowerBook when it is in Sleep mode?

This article has been archived and is no longer updated by Apple.

ADB

It is safe to make ADB connections to a PowerBook when in Sleep mode.

Serial

It is safe to make a serial connection to a PowerBook when in Sleep mode though it may require a restart to recognize the device.

SCSI

It is safe to make SCSI connections to a PowerBook when in sleep mode. However, you may need to restart the PowerBook or use a utility such as SCSI Probe to force the PowerBook to recognize the device.

SCSI Disk Mode

If you accidentally connect the SCSI disk adapter to a PowerBook while it's in sleep mode, you'll get a warning dialog box when you wake it.

You must first turn off the PowerBook when connecting the SCSI disk adapter. The SCSI disk mode firmware is only executed from a cold start.
NOTE: All PowerBook models support SCSI Disk Mode with the exception of the PowerBook 140, 145, 150, and 170.

If you connect the cable while the system is in sleep mode, there will be conflicting SCSI IDs on the bus and potential data loss. There are two methods to exit this state:

-You can shut down the system by pressing the reset and interrupt (programmer's) switch

-If there's data in RAM that you need to save, you can disconnect the SCSI disk adapter to resume normal operations (that is, the dialog box will go away).

Note: The PowerBook 100 User's Manual incorrectly advises the user to shut down the system using the Shut Down command from the Special menu. It is not possible to do this since the menu bar is disabled when the warning dialog box is showing.

Article Change History
29 Mar 1995 - Updated to include all cable connections to PowerBook.
18 May 1994 - Clarified PowerBooks which do NOT support SCSI disk mode.
30 Jun 1993 - Updated to include all PowerBook models to date.

Support Information Services
Published Date: Feb 18, 2012

TA47903_Apple_III_Serial_Port_Cables_for_the_Axiom_EX_and_EX_(TIL00945).pdf

Apple III Serial Port: Cables for the Axiom EX-801 and EX-820

This article has been archived and is no longer updated by Apple.

Apple III SERIAL PORT Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Published Date: Feb 18, 2012

PowerBook 100: Deactivate AppleTalk if Modem Uses Printer Port

You can use the printer port to connect an external modem. However, remember to deactivate AppleTalk in the Chooser before using the external modem.

This article has been archived and is no longer updated by Apple.
You may use the PowerBook 100 printer port to connect to a printer or LocalTalk network, and also to add external serial devices such as a modem. However, when disconnecting from a LocalTalk network and connecting a device like an external modem, be sure to deactivate AppleTalk in the Chooser. If you don't, you'll typically get some kind of serial port error message.

Support Information Services

Published Date: Feb 18, 2012

PowerBook 100: RAM Expansion Card Compatibility 8/92

What memory cards can I use in the PowerBook 100?

This article has been archived and is no longer updated by Apple.
You can use Apple PowerBook memory cards (2MB or 4MB cards) in any of the Macintosh PowerBooks.

However, third party cards designed for the Macintosh PowerBook 140 and 170 are not necessarily compatible with the PowerBook 100 because the 68000 has a 16-bit data path, whereas the 68030 can handle 32 bits. The PowerBook 100 requires additional signal lines on the memory card to do addressing correctly. In addition, the physical form factor may not be the same.

Support Information Services
Published Date: Feb 18, 2012

System 7 Tune-Up 1.1.1 Feature Summary

This article describes the changes made to System 7 with Tune-Up.
This article has been archived and is no longer updated by Apple.
This version of System 7 Tune-Up addresses the issue of disappearing files and folders reported by some users running version 7.0 and 7.0.1. It also includes LaserWriter driver version 7.1.1.

LaserWriter 7.1.1 driver provides the following benefits:

* Support for the Personal LaserWriter NTR
* It fixes an issue that causes a compatibility issue between the current driver (7.1) and the LaserWriter Plus.
* A workaround for a bug in the LaserWriter IIf and IIg ROM that causes PostScript errors (under certain conditions) when printing TrueType.

Improved System Behavior In Low Memory Situations

* Fewer Memory Size Alerts
When you open an application, if the available memory is less than the application prefers, but more than its minimum requirement, the application will use the available memory. Memory size alerts such as "Application prefers 1024K of memory, 900K is available, do you want to open using available memory?" won't appear.

* Closed Applications Quit Automatically When More Memory Is Needed
Users commonly get into low memory situations by closing a document window without quitting the application, letting the application remain in memory. With the System 7 Tune-Up installed, the Finder offers to quit such applications automatically to make enough memory available when opening another application.

* Automatic Printing Without Quitting The Application
This helps when you choose "Print ╔" with background printing on, and there isn't enough memory available to use PrintMonitor. System 7 Tune-Up will print the document immediately, without making you quit the application.

* Reduced System Software Memory Consumption When AppleTalk Is Off
If you turn off AppleTalk with the Chooser and then restart, AppleTalk networking code won't be loaded into system memory. This frees up 100K to 125K, depending on the Macintosh model. If AppleTalk is turned on again with the Chooser, you must restart to use networking services.

* Reduced System Software Memory Fragmentation
As you open applications, desk accessories, and control panels, the amount of memory used by system software increases. Issues in the System 7.0 and 7.0.1 Memory and Process managers prevent some of that memory from being released when those programs quit. System 7 Tune-Up fixes those issues, so more memory is released when applications and desk accessories quit.

Performance Enhancements

* Faster LaserWriter Performance When Printing TrueType Fonts
LaserWriter driver version 7.1 doesn't download software or fonts to the LaserWriter IIf, IIg, IINT, and IINTX if the software or fonts are already in the printer's ROM. This speeds printing of both TrueType and Type 1 fonts. It also doesn't download TrueType software and fonts to the LaserWriter and LaserWriter Plus. Instead, it converts TrueType fonts to Type 1 format and downloads those.

* Faster StyleWriter Performance
StyleWriter driver version 7.2.2 is nearly twice as fast as version 7.1, because it was rewritten based on the Personal LaserWriter LS driver rather than the ImageWriter driver. Now StyleWriter users need the MS Word TrueType Printer INIT from Microsoft to print Microsoft Word documents correctly on the StyleWriter printer.

* Better Font Memory Management
TrueType software uses an area of system software memory to store the most recently used font images. System 7.0 and 7.0.1 clears this area out whenever any new file is opened. TrueType must then refill this memory, slowing performance (especially when printing). With the System 7 Tune-Up, the system clears this memory area only when a new font file is opened, increasing font performance in general and TrueType printing in particular.

* Faster Chooser Performance
Chooser 7.1 displays device names faster. Keyboard shortcuts in the Chooser also select devices more quickly. Improvements are most noticeable in network zones with many devices.

* Faster Finder Copying Of Large Files
System 7 Tune-Up improves the performance of Finder "move" and "duplicate" operations by up to 20% on files over 200K.

Bug Fixes

* Reduced Possibility Of Data Corruption With Shared Files
An issue in System 7.0 and 7.0.1 makes it possible for File Sharing files to become corrupted when two or more users access the file simultaneously. File Sharing Extension 7.0.2 fixes this issue.

* Increased PrintMonitor Reliability
System 7 Tune-Up makes Print Monitor more reliable and much less prone to crashes.

* Bitmapped Fonts In the System File Marked As Purgeable
System 7 Tune-Up allows the Font Manager to unload certain fonts in the System 7.0 System File from system software memory when not in use.

* Aliases to the Trash
System 7 Tune-Up fixes occasional strange behavior of aliases to the Trash.

* SCSI Manager
With System 7.0 and 7.0.1, using serial communications devices during heavy File Sharing activity can cause the SCSI bus to become confused and seem busy when the bus is free. This causes the computer to hang. System 7 Tune-Up fixes this issue.

* Sleeping Keyboard
At startup, the System 7 Tune-Up repeatedly resets Apple Desktop Bus keyboards, preventing an issue in which some keyboards occasionally fail to wake up. System 7.0.1 includes this fix as well.
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TA47907_Apple_Inch_Color_Display_Compatibility_(TIL09454).pdf

Apple 16-Inch Color Display: Compatibility

The Apple 16-inch Color Display works with Quadra 700 and 900 internal video. Other Macintosh II systems require a display card.

This article has been archived and is no longer updated by Apple.

Quadra Built-in Video

The Quadra 700 and 900 built-in video provides 256 colors in the base configuration, and 16.7 million colors with expanded VRAM.

Display Cards

The Apple 16-inch Color Display works with the Macintosh Display Cards 8*24 and 8*24 GC, version B or later. (If you have one of these cards and it's earlier than version B, you can have the ROMs upgraded.)

The number of colors provided by the Macintosh Display Cards are as follows:

Macintosh Display Card 8*24 256 colors
Macintosh Display Card 8*24 GC 32,000 colors

Published Date: Feb 18, 2012

Macintosh Communications Toolbox: Software That Uses It

We want an application that uses the Communications Toolbox. We've considered MicroPhone and HyperCard. Do you know if the Macintosh Communications Toolbox works with MPW C? Will it work with any other development environments particularly well?

This article has been archived and is no longer updated by Apple.

Applications

Many applications that use the Communication Toolbox are available. Terminal emulator programs such as PacerTerm and VersaTerm-Pro use the Communications Toolbox. Software Ventures told us that the current MicroPhone II v3.0 doesn't support the Communications Toolbox. The future release (v4.0) will support the Communications Toolbox Connection Manager.

HyperCard

For HyperCard development, APDA has the HyperCard Macintosh Communications Toolbox Toolkit v1.0b2. This toolkit contains everything you need to access the facilities of the Communications Toolbox from HyperCard. In addition to the external commands (XCMDs) and external functions (XFCNs), the toolkit provides a complete set of documentation, and the full source code for the XCMDs and XFCNs.

NOTE: This product is compatible with HyperCard 2.0, with one known exception. When you open a window, the second window can't open any larger than the first window because of the way both applications allocate memory. This is the only known incompatibility. This is a restricted product. Please call APDA for more information.

MPW

MPW 3.0 and later development platforms support the Macintosh Communications Toolbox. MPW 3.2 supports the Macintosh Communications Toolbox interface files for System 7 and includes the Communications Tools Scripting Interfaces. You can also use third-party platforms that convert MPW interface files and object files.

To locate a vendor's address and phone number, use the vendor's name as a search string in the Tech Info Library.

Published Date: Feb 18, 2012

TA47909_KanjiTalk_Printing_to_StyleWriter_(TIL09459).pdf

KanjiTalk: Printing to StyleWriter

Article Change History

09/22/92 - UPDATED
* To include information on Kanji TrueType.

Can I print Kanji to a StyleWriter using a Macintosh Classic with 2MB or 4MB RAM, KanjiTalk system software, and a serial connection to a StyleWriter?

Specifically:

1) Can I print Kanji and Roman characters on the StyleWriter?

2) Will the quality be bitmapped (72 dpi) or TrueType (300+ dpi)?

3) Is this possible and/or practical on a 2MB Classic?

This article has been archived and is no longer updated by Apple.
1) Yes, you can print Kanji and Roman characters on the StyleWriter.

2) Without an outline font technology, such as Kanji TrueType, The output isn't pretty due to bitmap fonts (Adobe's ATM-J can help improve the output). Kanji TrueType, is also available in the U.S. through KanjiTalk authorized dealers.

3) A Macintosh Classic with 2MB RAM is fine for the current release of KanjiTalk, 6.0.7. However, you will need 4MB if you install Kanji TrueType or ATM-J.

For a list of authorized KanjiTalk dealers in the U. S, search the Tech Info Library under "KanjiTalk and dealers", or contact the Apple Dealer Location Operator at 800-538-9696.

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the Centronics 737

This article has been archived and is no longer updated by Apple.

Apple III SERIAL PORT Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) .... 4 <-----> 6 & 8..(DSR) & (DCD)
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 11
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Published Date: Feb 18, 2012

MacTerminal and Macintosh-to-VAX Connectivity

I need to connect approximately 300 Macintosh workstations (on LocalTalk) to a VAX/VMS system using FastPath 5 routers. Only 50 or so simultaneous sessions need be supported. I am looking for software that will allow this to happen.

Currently, all the Macintosh computers have MacTerminal 3.0 and are accessing through a serial connection. I would like to retain the substantial investment we have in MacTerminal.

A product like TSSnet sounds like it will do the job. Are there comparable products that do not include a terminal emulation package (as TSSnet does)?

This article has been archived and is no longer updated by Apple.
There are many options to connect Macintosh computers on LocalTalk to a VAX. However, since you already own MacTerminal 3.0 and want to retain that investment, this list narrows down a bit. One option is software from Synergy described here:

VersaTermServer is a Macintosh CommToolBox-based application which allows any Macintosh to act as terminal server. It supports 24 output ports, and two different input methods. Inputs can be AppleTalk ADSP Tool over LocalTalk, VersaTerm Telnet Tool over Ethernet, and Apple Modem Tool over serial line. Outputs can be LAT Tool to VAX hosts, Telnet Tool to UNIX hosts, or Modem and Serial Tools. Your Macintosh computers on LocalTalk can use the AppleTalk ADSP Tool to the VersaTermServer, and then LAT from the Server to the VAX. Each supports 24 output ports so you will need two servers running.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

DAL for MVS/VTAM: SNAps Over Token Ring

We run SNA*ps over a Token Ring connection to an MVS/VTAM host. We'd like a DAL Server for MVS/VTAM to access through the Token Ring network with LU6.2 protocols (APPC).

Will the Token Ring connection work for DAL access with SNA*ps to an MVS/VTAM environment?

This article has been archived and is no longer updated by Apple.
DAL engineering lab is using this exact configuration, and it should work. We recommend defining a larger RU size in the Mode Table Entry so you can send a larger block size. You should be using SNA*ps version 1.0.1 or later. See the member READ ME in the DAL.RUN.JCL library on the installation tape for additional information.
Published Date: Feb 18, 2012

Direct-To-1: Translation Between All-in-1 and MacWrite

We're running a VAX-based server with PCs and terminals, and plan to add Macintosh clients. We communicate worldwide over a VAX network using All-in-1 mail and word processors. We're considering PATHWORKS for Macintosh to turn the VAX into a server for the Macintosh.

One of our major requirements is to download All-in-1 documents to use in a Macintosh word processor such as MacWrite. After some tailoring with MacWrite, we need to load the document back to the VAX as an All-in-1 document.

I understand MacLink Plus/Translators from Dataviz contain a translator called WPS-Plus VMS. Will this translator work between an All-in-1 and MacWrite document?
This article has been archived and is no longer updated by Apple.
Digital confirmed that WPS-Plus format is different and the translator won't work with All-in-1.

We found the following product information:

Direct-To-1 allows users to send Macintosh files to other All-In-1 users with a Macintosh 512KE or later; Reflection V3.4 or later; Digital VAX All-In-1.

Direct-To-1 is a utility for the Digital VAX that allows Reflection users to send Macintosh files to other All-In-1 users. When used with Walker Richer & Quinn's Reflection 2 for the Macintosh, users can send a variety of file formats over any supported asynchronous or network connection to a VAX host. Direct-To-1 offers convenience and security features that make All-In-1 a effective communications tool for business users.
Published Date: Feb 18, 2012

DAL: No Record Size Limit

What is the byte limit for the length of a variable-byte-length record in DAL? Where can I get answers to similar questions?
This article has been archived and is no longer updated by Apple.
There is no limit to the size of record support by the DAL server. VARCHAR data types (as with a column of type VARCHAR) can be of any length. However, DAL can't return to the DAL client a VARCHAR larger than 255 characters. Using the @substr function, you can return a very large VARCHAR in several substrings.

This information isn't in the current manuals. For similar questions, refer to the DAL Programmer's Reference, or the DAL Application Developer's Guide.
Published Date: Feb 18, 2012

MacTerminal 3.0: 3278 Terminal Emulation Tool

I have MacTerminal 3.0, and want to connect, via coax, to a 3174 controller in the building. MacTerminal 2.3 and its built-in 3278 emulation did this easily in the past.

Can I get 3270 terminal and connection tools and, simply by adding them to "vanilla" MacTerminal, get my 3270 access?

This article has been archived and is no longer updated by Apple.
The only Tool we are aware of is asc3270 from Advanced Software Concepts, which offers 3270 terminal emulation via the CommToolBox. Currently, it only supports telnet connections over TCP/IP using their TCP/IP connection Tool called TCPack.

Since you already have coax to a 3174 controller, SNA*ps is a better solution since it provides better keyboard mapping and terminal emulation. If you insist on using MacTerminal, you will have to wait for the SNA connection Tool from Advanced Software Concepts.

Other 3270 connection solutions are also available in the Technical Info Library. Search using keyword "Macintosh and 3270."

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

TA47929_System_Compatibility_with_Display_Card_GC_Software_(TIL09479).pdf

System 7: Compatibility with Display Card 824 GC Software

The Macintosh Display Card 8*24 GC software version 1.0 isn't compatible with System 7.0 or 7.0.1 in the accelerated mode.

This article has been archived and is no longer updated by Apple.
Version 7.0.1 or higher of the Macintosh Display Card 8*24 GC software is compatible with System software version 7.0 and 7.0.1.

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the C. Itoh F10

This article has been archived and is no longer updated by Apple.
Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1 .....(FG)
Transmit Data (Tx) ..... 2 <-----> 3 .....(Rx)
Receive Data (Rx) ..... 3 <-----> 2 .....(Tx)
Request to send (RTS) .... 4 <-----> 8 .....(DCD)
Clear To Send (CTS) .... 5 <-----> 8 .....(DCD)
Data Set Ready (DSR) .... 6 <-----> 20 ....(TDR)
Signal Ground .....(SG)..... 7 <-----> 7 .....(SG)
Data Carrier Detect (DCD) .... 8 <-----> 4 & 5 .(RTS) & (CTS)
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) .... 20 <-----> 6 .....(DSR)

NOTE: This is the standard Apple Modem Eliminator cable part # A3M0019.

NOTE: Use printer at 1200 Baud.
Published Date: Feb 18, 2012

TA47931_LaserWriter_IIfIIg_Peripheral_Interface_Guide_Corrections_(TIL09481).pdf

LaserWriter IIf/IIg: Peripheral Interface Guide Corrections

This article provides corrections to the October 1991 Peripheral Interface Guide.

This article has been archived and is no longer updated by Apple.

Page 8 of the Peripherals tab shows the settings for Diablo emulation for the Apple LaserWriter IIf and IIg printers. The LaserWriter IIf and IIg printers do not support Diablo emulation.

Incorrect: 25-pin serial, switch 2, 9600 baud serial, Diablo Emulation
Correct: 25-pin serial, switch 2, 19200 baud, PostScript

Incorrect: 25-pin serial, switch 4, 9600 baud, PostScript
Correct: 25-pin serial, switch 4, 1200 baud, PostScript

Incorrect: SCSI, switch 0-9, SCSI, Not affected by switch
Correct: SCSI, switch 0-9, SCSI, For external disk only

Published Date: Feb 18, 2012

LaserWriter IIf & IIg: Configuration and Parameter Info Sheet

When I upgraded the RAM in a LaserWriter IIf from 2MB to 5MB, the LaserWriter Serial Number changed. Why is this?

This article has been archived and is no longer updated by Apple.
The LaserWriter Serial Number on the Printer Configuration and Parameter Information sheet is random, and changes every time a LaserWriter IIf or IIg is turned off and on.

Published Date: Feb 18, 2012

LaserWriter IIf: Needs 4MB RAM to Print All Page Sizes

The manual for the LaserWriter IIf and LaserWriter IIg states that there is a non-printable margin around the page of 5mm. All of the LaserWriter IIf printers I've printed on have an unprintable area of: top=10mm, bottom=10mm, left=10mm, right=6mm.

This article has been archived and is no longer updated by Apple.
The LaserWriter IIf and LaserWriter IIg have a non-printable margin of 5mm around the page. The problem you have is due to a lack of memory in the LaserWriter IIf. The largest page size a 2MB LaserWriter IIf can print is a4small, which is 7.68 by 11 inches. The default page size that is used is lettersmall, which is 7.89 by 10.30 inches. A 2MB LaserWriter IIf can't print a letter size (8.11 by 10.79 inches), or legal size (8.11 by 13.79 inches) page. The only way around this is to upgrade the memory of the LaserWriter IIf to 4MB.

A 4MB LaserWriter IIf can print any of the following page sizes:

legal: 8.11 by 13.79 inches
a4: 7.89 by 11.44 inches
letter: 8.11 by 10.79 inches
a4small: 7.68 by 11 inches
lettersmall: 7.89 by 10.30 inches
b5: 6.72 by 9.81 inches

Published Date: Feb 18, 2012

CloseView: Not Compatible with Some RasterOps Video Cards

My system locks up as the Closeview INIT is being loaded. CloseView is the only INIT loaded. Virtual memory and 32-bit addressing are off.
Configuration: - Quadra 900 - RasterOps GSXL ROM Version 1.4 - System 7.0.1 - Closeview
This article has been archived and is no longer updated by Apple.
RasterOps Tech Support tested CloseView with their cards, and reports the following:

Many RasterOps video cards contain code called Pan and Zoom that provides functionality similar to CloseView. This RasterOps code is incompatible with CloseView.

RasterOps recommends removing CloseView when using their video cards, and using Pan and Zoom, accessible through the Monitor extension under options, instead.

Published Date: Feb 18, 2012

3M DC2000 Tape Cartridges: Storage and Longevity

What is the storage life of DC2000 tape cartridges? How long we can safely store a cartridge without losing the data?
This article has been archived and is no longer updated by Apple.
Our answer is from the 3M Recording Products Division Hotline. They don't state the probable maximum life-span of data stored on a DC2000 tape cartridge. They advise that the tape be retensioned every year, and to rewrite the data out onto the tape every 5 years.

Note: To rewrite the data onto a tape cartridge, you'll probably need to restore the data to a hard disk, then back up that hard disk again. All previous mention of how to properly store the tape applies.

Backups
The tape cartridge life-span can be greatly influenced by the environment you store and use it in, as well as whether you back up the tapes by volume or by file.

Volume:
If you back up tapes by volume, your cartridge may last for a couple thousand backups. This estimate isn't based on any controlled study. It's based on the assumption that during a volume backup, after the initial tensioning of the tape, the drive will generally record information on the tape from the beginning to wherever it stops once it completes transferring all of the information. This is usually in one or two continuous passes. Incidentally, the noise (pitch and volume changes) the drive makes when performing a volume backup isn't from the drive stopping the tape, rewinding it, then proceeding forward. The drive generates this noise when it switches tracks.

File:
Backing up onto the tapes by file is much more stressful on the tape. When the files are fragmented on the drive, the drive may have to reverse direction of the tape many times to lay the files down sequentially on the tape. We are unable to predict the longevity of a tape used for file backups. These three factors influence longevity:

- The great variation in the quantity of files backed up
- The differences in file size
- Degree that files are fragmented

However, prudence should dictate practice when archiving data.

Operating Environment
The operating environment also influences the tape life. Before using the cartridge, allow it to acclimate to your operating environment for eight hours, or for the amount of time it has been exposed to dissimilar conditions -- whichever is less. Recommended operating environment:

Temperature: 41 to 113 degrees F (5 to 45 degrees C)
Relative Humidity: 20 to 80% non-condensing
Maximum Wet Bulb Temperature: 79 degrees F (26 degrees C)

Store tapes out of the direct sunlight and where they won't be exposed to high temperatures.
Published Date: Feb 18, 2012

SNAps 3270: Macintosh Quadra Installation and Compatibility

I'm unable to get the SNA*ps software to run on a Macintosh Quadra 900. I turned off all the INITs except the SNA INITs and still can't get the program to run without crashing. I have turned 32 mode off/cache off and every combination in between. Is there a known problem? If so, is there a fix in the works?

This article has been archived and is no longer updated by Apple.
SNA*ps 3270 v1.0.1 (the client software) is compatible with the Macintosh Quadra computers. However, you may have done an Easy Install or a Custom Install, and selected SNA*ps CUT and SNA*ps NLCA. In this case, you must remove the extensions, SNA*ps CUT, and SNA*ps NLCA from the Extensions folder. These extensions aren't compatible, and SNA*ps 3270 will hang when you launch it.

The preferred way to install SNA*ps 3270 on a Macintosh Quadra is to do a Custom Install and Choose "SNA*ps 3270 Client, System 7."

The original Macintosh Quadra compatibility booklet distributed with the Macintosh Quadra computers and the compatibility report posted on AppleLink say that both SNA*ps Gateway and SNA*ps 3270, versions 1.0 and later, are compatible with Macintosh Quadra computers. Only SNA*ps 3270 is compatible if you follow the above guidelines.

Note that only a few copies of SNA*ps 3270 version 1.0 were distributed before SNA*ps 3270 was revised to version 1.0.1. There are no functional differences, only a cosmetic one with one dialog.

Published Date: Feb 18, 2012

System 7.0.1: Change Overview

Article Change History

09/25/92 - REVIEWED
* For technical accuracy.

This article describes the differences between System 7.0 and 7.0.1. They fall under two main headings:

- cdevs/Extensions

- System File

This article has been archived and is no longer updated by Apple.

CDEVs/Extensions

Memory

RAM Disk Support on Quadra and PowerBook Computers Support for RAM Disk on the Macintosh Portable was moved from the Portable control panel to the Memory control panel. Minor internal changes were made to all of the "panels" inside memory. Specifically, the virtual memory and RAM Cache "panels" were updated to work correctly with the new RAM disk and to work with the existing RAM disk on Macintosh Portable computers. The previous version of the Memory control panel would let users reduce the size of the virtual memory backing store (by reducing virtual memory). This change would take effect before restarting. This was corrected under 7.0.1 to occur at restart.

Portable

The screen brightness and contrast sliders previously found in Portable were removed. The PowerBook family has hardware controls on the front to control contrast and brightness. For the Classic family, Macintosh Portable, and PowerBook 100, a dedicated control panel called "Brightness" provides control of the overall screen brightness. RAM disk controls for the Macintosh Portable previously found in Portable have moved to Memory.

Portable supports internal modems in PowerBook 140 and 170 as well as in the Macintosh Portable.

Brightness

The brightness control panel supports Macintosh Portable, Classic, Classic II, and PowerBook 100 computers. The control panel is a simple slider that controls overall screen brightness.

Network

Minimal Network changes support on-board Sonic Ethernet for the Quadra family.

Battery

Battery was updated to work with the PowerBook family. Battery now

provides users with a button to put the computer to sleep immediately.

Caps Lock

The Caps lock indicator panel places a visual indicator of the state of the Caps Lock key on the right end of the menu bar. Available only on PowerBooks.

File Sharing Extension

An internal 4K file sharing buffer was increased to 5K. With the increased performance of the Quadra family's built-in Ethernet, a slightly larger buffer increased the file sharing throughput by 2 times on those computers.

Cache Switch

There's a new control panel for the Quadra computers to disable or enable the 68040 cache. The control panel simply sets a PRAM byte and the System does all the work at the next startup.

A/ROSE and DAL

General 68040 compatibility changes.

HD SC Setup

Minor changes to support new hardware and to change a format-time mode select.

System File

OS

- Keyboard patch wakes up sleeping Putter (Macintosh Classic) keyboards.

- Supports the 53C96 SCSI chip found in the Quadras and PowerBooks 140 and 170. At startup, a linked patch was added to wait for all SCSI drives connected at the previous startup to spin up before continuing the launch. This is for Macintosh Quadras and PowerBooks 140 and 170 only.

- Minor LocalTalk changes for 68040 compatibility.

- Minor changes to Gestalt 'lram', 'ram ', and 'kbd ' selectors for RAM disk/PowerBook keyboard support.

- Updated _hwPriv CPU cache management and dispatch routines.

- Updated keyboard maps for Key Caps (PowerBook keyboard).

- Supports the new Macintosh PowerBook 140/170 power manager.

- Startup code inhibits 68040 cache depending on setting of Cache Switch CDEV.

- Bitmapped system fonts were marked unpurgeable in System 7.0. These are now marked purgeable under 7.0.1.

ToolBox

- SANE (Standard Apple Numerics Environment) performance was improved via backpatching. The new SANE is functional on all computers with a IIci class universal ROM and a Floating Point Unit. It's occasionally noticeable in applications that use SANE on computers with a FPU.

- The Disk Initialization Package now creates an MFS disk when the size of the volume is exactly 800 blocks (400K), instead of doing so on sizes less than or equal to 800 blocks. This is to prevent RAM disks that are smaller than 800 blocks from being formatted as MFS volumes. It is impossible to create a RAM disk with exactly 800 blocks.

- The Notification Manager has been changed to call IdleUpdate when NMInstall is called (on portables) to wake the system up when a notification is about to be posted.

- Enables powerdown messages on Quadra 900 and RAM disk. The warning code, "has files on it and will be erased if you shut down" was added to the Shutdown Manager. Also, all open video drivers are closed before the power is killed at _Shutdown.

- Support for Quadra and PowerBook sound hardware and internal sound input source selection was added to the Sound Manager.

- The backlight driver was upgraded to work with the PowerBook family.

- SetHandleSize was fixed for all 32-bit memory managers.

General

- Various strings and dialogs, required in the support of the new systems, were added.

- Several minor changes that reduce the overall size of the run time system heap were made to compensate for the memory required by the new CPU support.

- The Installer script file has been substantially revised to address the needs of the new systems.

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the Comprint 912

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

NOTE: Check printer option jumpers.

Published Date: Feb 18, 2012

Macintosh Quadra: How On-board Ethernet Differs from Ethernet NB

Does the built-in EtherTalk capability on the Quadra systems have the same functionality as the Ethernet NB Card?

This article has been archived and is no longer updated by Apple.
The Quadra's on-board Ethernet has the same functionality as the Ethernet or EtherTalk NB card. But it's about 15-20% faster because it uses DMA, doesn't rely on NuBus data transfers, and the chip is operating at the faster system bus clock rate.

The Quadra's on-board Ethernet is implemented using the National DP83932 SONIC Ethernet controller chip. This device includes an IEEE 802.3 encoder/decoder (ENDEC), media access control (MAC) unit, separate 32-byte send and receive FIFOs, and DMA controller in one device. SONIC is housed in a 132-pin PQFP package. A small ROM provides the Ethernet global address (which provides a unique 48-bit identity for each Quadra built). The SONIC controller includes DMA capability. It will request the bus and transfer data between its internal registers and main memory.

The Apple AUI (AAUI) connector provides outside connection. The AAUI connector is compatible with any of the FriendlyNet drop boxes that provide transceivers for thick net, thin net, or 10BaseT networks.

Published Date: Feb 18, 2012

MacX: Difficulty Sending Application from HP Server

I'm having a problem sending a MacX application to a Macintosh with the new HP 730 (75 Mip server).

Configuration:

- Macintosh IIci
- 8MB memory
- 80MB disk
- Ethernet over twisted pair
- System 7 with MacX 1.1.7
- MacTCP 1.1
- MacTCP Tool 1.1.7

I've tested the above system with a DEC VMS system and it works fine. I can even Telnet into the HP server from the Macintosh. I can send the MacX application to an HP X terminal. But I can't send it to MacX. I've used the standard commands such as "setenv DISPLAY 1.1.1.1:0" and "xterm 1.1.1.1:0" and almost anything else I can think of.
This article has been archived and is no longer updated by Apple.
After a Macintosh successfully sends to the HP server, try the following command (assuming that X.X.X.X is the Macintosh IP address).

root#	/usr/bin/X11/xterm -display X.X.X.X:0.0
root#	setenv DISPLAY X.X.X.X:0.0; xterm (root is running csh)
root#	env DISPLAY=X.X.X.X:0.0 /usr/bin/X11/xterm (root is running sh)

In MacX, try running any of the above commands from the Remote menu. If it works from the HP server to the MacX, but fails from the MacX to the HP server, then you must have a networking permission related problem from MacX to the HP server. We've seen this scenario in a SunOS host which implemented a feature in the "rexecd" code that doesn't allow a host that isn't listed in the /etc/hosts file or YP (now called NIS) name server to execute the "rexecd" command. The solution for it is to add the Macintosh IP address and host name to the Sun's /etc/hosts file or the NIS name server. We suggest that you check this with the HP server to see if it has the same problem.
Published Date: Feb 18, 2012

A/UX: Increasing Maximum Open Files per Process

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

Is there a way to increase the maximum number of files that one A/UX process can open simultaneously?

Normally the maximum is 32 (and this includes stdin, stdout, and stderr). In stdio.h we found the identifier FOPEN_MAX, but modifying this isn't sufficient. We also found the identifiers OPEN_MAX in limits.h and NOFILE in sys/params.h. However, modifying these identifiers to a higher value (for example 40) in our own source doesn't work either.

Is it possible that these values are fixed in certain system libraries or in the object code of the system calls (open, creat)? Is there an easy way to change this, both in A/UX 2.0.1 and 3.0?

This article has been archived and is no longer updated by Apple.
There is no way to adjust the number of open files available to each process without recompiling the kernel, because it was hard-coded in the kernel. If you try to use "adb" to change this value, other kernel structures will be affected and mixed. You won't be able to recompile the kernel without kernel sources.

The upcoming A/UX 3.0 release increases the maximum number of open files per process to 128. These defined constants, OPEN_MAX (in /usr/include/limits.h) and NOFILE (in /usr/include/sys/param.h), are in A/UX 3.0

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CodexEvents Library: Apple Events For UNIX

On November 18, 1991, Codex Software Development Pty. Ltd. of Melbourne, Australia announced the development of CodexEvents. This is an Apple event style library for providing interapplication communications facilities between Macintosh, UNIX, and Microsoft Windows systems.

This article has been archived and is no longer updated by Apple.
Developers can use the CodexEvents library to send messages between independent programs running on different computers. The library is compatible with the Apple events API defined by Apple Computer, Inc. for use with the Apple events messaging protocol. For each Apple event call there is a corresponding CodexEvent call. Thus, it requires very little effort to convert code that uses Apple events to use CodexEvents instead.

"For the first time, we have a truly platform independent messaging protocol which is high level enough to be useful." said J. Matthew Pryor, Director of Software Technology at Codex. "CodexEvents makes writing cross-platform software feasible, by providing a standardized, high level messaging protocol for programmers on Macintosh, UNIX or Windows platforms."

Codex has also developed a background application for the Macintosh which allows a non-Macintosh application to send Apple events to applications running on the Macintosh. This application acts as a protocol converter for incoming CodexEvents, translating them into Apple events which Apple event-aware applications, such as the Macintosh Finder or Microsoft Word, can respond to directly.

CodexEvents is currently available for SunOS, NeXT and Macintosh. The Macintosh library operates under both System 7.0 and also under System 6.0.5 or later. So developers can use CodexEvents to add interapplication messaging facilities to their non-system 7.0 applications.

CodexEvents currently requires MacTCP to be installed on each Macintosh and TCP/IP protocols to be available on the non-Macintosh computers. CodexEvents is engineered to be network independent however, and versions which use Novell, 3Com and AppleTalk are under development.

Parties interested in licensing CodexEvents should contact Brett Adam of Codex.

Codex Software Development was founded in 1989 with the express purpose of developing cross-platform software technology and innovative software products for the general marketplace.

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On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

A/UX: Changing Slice Number with dp (8/94)

I have a problem with my A/UX hard drive (Micronet 400MB with all the database software). The drive was partitioned into 11 partitions, for example:

Swap : slice 1
Ingres : Slice 2
Oracle : Slice 3
Informix : Slice 4

Now I have several different partitions with the same slice number: slice=3. The partitions map seems to be OK (blocks, type of partition, and so on), except the slice number. Do you know if it's possible to change the slice number of a partition by using the dp command, and without losing the information?

This article has been archived and is no longer updated by Apple.
First, make sure all partitions' physical starting locations don't overlap.

Suppose your Micronet disk drive's SCSI ID is 5, and has two disk partition entries (5 and 6) with the same slice number 3, and you want to change entry 6 with the new slice number 8. Log in as root and do the following:

```
# dp /dev/rdsk/c5d0s31
--->Command? p6 <===== Your input # view partition entry 6
--->Command? c6 <===== Your Input # change partition entry 6
--->DPME Field? b <===== Your Input # change BZB
--->BZB Field? s <===== Your Input # change slice number
--->Slice number + 1 [3]: 9 <===== Your Input # assign slice number 8
Note: [3] indicates the current slice number
--->BZB Field? q <===== Your Input # quick BZB mode
--->DPME Field? q <===== Your Input # quick DPME mode
--->COmmand? w <===== Your Input # write changes
--->Command? q <===== Your Input # quick dp
#
```

Note that the s slice number (bzb_slice) command in the BZB-field mode isn't documented in either dp(1M) hard copy document or the dp(1M) on-line manual pages.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

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Applesoft: Commas and printing

The following information applies to the Apple II Plus with a 40-column screen.
This article has been archived and is no longer updated by Apple.
The third comma tab field is only available if there is nothing beyond column 23. The first character in the third comma field can print outside the text window.

HTAB can force the cursor outside the text window which can kill a program on the next PRINT statement.

VTAB ignores the text window. VTABbing below the text window will cause all output to be on one line. VTABbing above the text window will scroll into the window but the area above the window won't scroll.
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Apple III Serial Port: Cable pinouts for the DEC LA34

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

NOTE: Use at 300 Baud.

Published Date: Feb 18, 2012

Macintosh: Files Required to Play Audio CDs

Every time I insert an audio CD into the AppleCD attached to my Macintosh computer, a dialog appears asking if I want to initialize the CD.
This article has been archived and is no longer updated by Apple.
You are missing one or more of the system extensions needed to play audio CDs.

With System 7.1 and later, these files must in the Extensions folder:

- Apple CD-ROM
- Audio CD Access
- Foreign File Access

The AppleCD Audio Player is an application, so it can go anywhere on your hard disk. However, if it is in the Apple Menu Items folder, you can easily access the AppleCD Audio Player from within any application.

If you have an AppleCD 600, you need to use v5.0.4 or later of the Apple CD-ROM extension.
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System 7.x: Limitations on Use of 400k Disks

This article contains the following questions and answers.

1) What is meant by MFS disks?
2) What are HFS disks?
3) With the introduction of HFS disks was it still possible to format disks as MFS?
4) How did the introduction of System 7 affect the ability to read and write to MFS disks?
This article has been archived and is no longer updated by Apple.
1) Question: What is meant by MFS disks?

Answer: The first Macintosh computers used only 400k single-sided disks, formatted as MFS (Macintosh File System) volumes which used a flat file structure, and no subdirectories (folders in Macintosh vocabulary). Although you could create and place documents and folders into folders, they existed only in the Finder's view of the disk.

2) Question: What are HFS disks?

Answer: With the introduction of HFS (hierarchical file system) and 800k, double-sided disks, the concept of subdirectories (folders) came to the Macintosh.

3) Question: With the introduction of HFS disks was it still possible to format disks as MFS?

Answer: Yes. The default format for a single-sided disk was MFS. Although by holding down the Option key when selecting the Erase option you could create a 400k HFS volume. In systems prior to System 7, when viewing the window of a volume in Icon view, an HFS volume would have one black pixel at the far left-hand side of the double horizontal lines that appear below the title bar.

4) Question: How did the introduction of System 7 affect the ability to read and write to MFS disks?

With the introduction of System 7, the ability to read and write files to MFS volumes was retained to maintain compatibility. However, there are some limitations:

* You can still create an MFS volume on a single-sided disk by holding down the Option key (and keeping it held down until the formatting is complete) when selecting Erase Disk under some versions of System 7, including System 7.0x and System 7.1. However, you cannot create an MFS disk under System 7.5.

* With the PC Exchange control panel or ProDOS extension installed, you cannot format disks as single-sided disks. Although you can still write to and read from single-sided disks, both MFS and HFS. So, you must disable this control panel and/or extension if you want to format 400k disks.

* Folders that you see on MFS disks under pre-System 7 systems are no longer visible because the Finder in System 7.x ignores folders created by older versions of the Finder on an MFS disk. A file in such a folder appears in the root level of the disk, but has the same relative position in the window that it has in the MFS folder.

* All the files appear at the root level.

* You cannot rename existing MFS volumes.

* You cannot create new folders on these volumes.

* The Finder does not use or save window position or size information about files located on an MFS disk.

* If you select the single-sided option when formatting a disk, it will be formatted as an MFS volume.

* MFS disks cannot have comments. However, files located within MFS disks can have comments.

* You cannot create an alias for an MFS volume. More generally, Alias Manager functions and the FSMakeFSSpec function do not work if their target is an MFS volume. You can, however, create aliases for files on an MFS volume. Similarly, you can use the new File Manager functions that use FSSpec records on files on an MFS volume.

* You should not call the File Manager function PBGetFCBInfo on MFS volumes.

* The Process Manager's GetProcessInformation function may not return correct results about the location of the application file if the application file resides on an MFS volume.

*If you rename an edition located on an MFS volume, the Edition Manager may not be able to find that edition for any document that publishes to or subscribes to it. Also, if you open an edition in the Finder that is located on an MFS volume and updates the edition, the Finder window closes.

Note: Many of these limitations listed here are documented in Inside Macintosh VI, chapter 25, page 25-9:
Published Date: Feb 18, 2012

System 7: Opening Documents by Dragging them Over an Application

Article Change History

08/25/92 - CORRECTED
* To show the correct documentation reference.

What rules does System 7 use to decide whether I can drop a document on an application icon to have the application open it?

The System frequently doesn't highlight the icon I'm trying to drop the document onto. This is a potentially useful feature. I don't think I've ever done it with an alias of an application.

This article has been archived and is no longer updated by Apple.
The application determines what documents to open when they are dropped on the application icon. There is an FREF resource which now has two main functions for an application:

- Associates the icons defined with file types used by that application.

- Allows you to drag document icons to an application icon to open the documents from that application.

An application should create an FREF resource for the application file itself, and create separate FREF resources for each file type that the application can open. Each FREF resource specifies a file type. The file type can be defined for:

- Files created by that application only

- Files created by other applications that the application supports

- Files of the existing general types, such as TEXT or PICT

When you drag a document icon to an application icon, the Finder checks a list of that application's FREF resources. If the document's file type appears in the FREF resource list, the Finder launches that application with a request to open that document. It's up to the application to open the files according to the needs of the user.

An alias should act the same way as the original it was created from, as the file type will be the same. If you're having problems launching a document alias created by the application you're dragging the alias to, rebuild the Desktop.

There is further information in Chapter 9 (Finder Interface) of Inside Macintosh VI.

Published Date: Feb 18, 2012

PowerBook: External ADB Devices and Wake Up Function

Can an external ADB device be used to wake up a Macintosh PowerBook computer from the Sleep mode?

This article has been archived and is no longer updated by Apple.

No. ADB devices draw a significant amount of power and would drain the Macintosh PowerBook battery. They are disabled when in sleep mode as a power-saving feature.

Published Date: Feb 18, 2012

PowerBook: How To Print From External Modem Port

I have been trying to print directly from my PowerBook 160's modem port to a StyleWriter and an ImageWriter II. Sometimes I get the message that the job is printing, but the job does not print. Other times, I get error messages. I do not have this problem with the printer port.
This article has been archived and is no longer updated by Apple.
This information only pertains to PowerBook models that have two serial ports rather than a single serial port. PowerBook models that have two serial ports include most of the PowerBook 100 series computers (140, 145, 145b, 170, 160, 165, 165c, 180 and 180c).

For information detailing serial printing from PowerBooks that have a single serial port search for the article titled "PowerBook: Printing to Serial Printer-Single Serial Port."

TO USE THE EXTERNAL MODEM PORT TO PRINT TO A SERIAL PRINTER

PowerBook With No Internal Modem

- Select the desired printer driver in the Chooser (such as the StyleWriter II) on the left side of the window.
- On the right side of the Chooser window where it says, "Select a port," select the modem port instead of the printer port.

Even though you will have one of the control panels described below in your Control Panels folder you will not see the choices described (internal/external, compatible/normal, use Express Modem/use External Modem) in your control panel because your PowerBook has no internal modem and external modem to choose between.

PowerBook With Internal Modem

- Change the default setting in the one of the following control panels: Portable, PowerBook, PowerBook Setup, or Express Modem. The specific control panels and settings that need to be changed are listed below under each specific software version.
- Select the desired printer driver in the Chooser (such as the StyleWriter II) on the left side of the window.
- On the right side of the Chooser window where it says, "Select a port," select the modem port instead of the printer port.

System 7.0.1

- Change the default setting in the Portable control panel from Internal Modem to External Modem.
- Use the StyleWriter driver version 7.2.2 to correct a problem with the Portable control panel that occurred when selecting the Internal/External Modem setting.

System 7.1

- Change the default setting in the PowerBook control panel from Internal Modem to External Modem.

System 7.1 w/System Update 3.0, 7.1.1 or 7.5

- Change the default setting in the PowerBook Setup control panel from Compatible to Normal.
- Normal versus Compatible
  In the Normal mode, the modem is addressed via the System 7 Communication Toolbox, and the external port is available for usage.

  If your communication program is NOT compatible with the Communication Toolbox, set the PowerBook Setup control panel to Compatible. This mode prevents the external serial port from being addressed by other programs, as well as preventing communication with a serial printer.

Express Modem Software v1.5 or Later Installed

- Change the default setting in the Express Modem control panel from Express Modem to External Modem.

Apple Telecom 2.0

In the Express Modem control panel, remove the "x" in the box for the selection "use internal modem instead of external Modem Port".

Published Date: Feb 18, 2012

QuickDraw-Based Printers: Not Compatible With DOS or Windows-based PC

How can I connect a Personal LaserWriter LS to an IBM-compatible PC?
This article has been archived and is no longer updated by Apple.
The QuickDraw printer language protocol is not supported under the DOS or Windows operating systems. The following printers use the QuickDraw printer language to reproduce images and text, and therefore are not compatible with DOS/Windows-based computers.

LaserWriter II SC
LaserWriter Select 300

Personal LaserWriter LS
Personal LaserWriter SC
Personal LaserWriter 300

StyleWriter I, II
StyleWriter 1200, 1500, 2200, 2400, 2500, 4100, 4500

Color StyleWriter Pro

IBM-to-LaserWriter connectivity requires a PostScript-based printer, like the Personal LaserWriter NT, LaserWriter IINT/IINTX, and LaserWriter IIf/IIg printers.

Note: The StyleWriter 6500 printer does allow printing via parallel connection from the Windows operating system. However, the printer does not support concurrent QuickDraw/PCL sessions. For printing to the StyleWriter 6500 under Windows from the Apple PC Compatibility card, use the Epson LQ compatible driver.
Published Date: Feb 18, 2012

PowerBook Series: Carrying Case Manufacturers

Do you know of any companies that manufacture carrying cases for the Macintosh PowerBook computers?
This article has been archived and is no longer updated by Apple.
Several companies manufacture carrying cases for the Macintosh PowerBook computers. They include ComputerAid Inc., I/O Design, Inc., Isis International, Inc., Kensington Microware, Ltd., Madson Line, Magenta Seven, Inc., and TCC.

To locate a vendor's address and phone numbers, use the vendor name as a search string.
Published Date: Feb 18, 2012

Macintosh: System 7 and More than 8MB of RAM

My Macintosh Quadra 700 with 20MB of RAM, has only 7MB available. The system software takes up 13MB of RAM.

This article has been archived and is no longer updated by Apple.
If you have more than 8MB of RAM installed in a Macintosh, you can access only 8MB of that RAM unless you have 32-bit addressing turned on in System 7 or you're using A/UX. With 32-bit addressing turned on, you can access up to 128MB of physical RAM. under System 7.

To turn 32-bit addressing on, turn 32-Bit Addressing on in the Memory control panel and restart.

If you're running System 7 in 24-bit addressing mode, or any version of system software before 7.0, any RAM beyond 8MB is treated as if it is already being used by the System heap, and is unavailable for your use.

In your case, a Macintosh Quadra 700 has 20MB of RAM, 12MB of which is automatically allocated to the System heap and is unused. If the System is reported as using 13MB, then the System is actually occupying 1MB of the available 8MB of RAM.

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the DEC LA120

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1 .....(FG)
Transmit Data (Tx) ..... 2 <-----> 3 .....(Rx)
Receive Data (Rx) ..... 3 <-----> 2 .....(Tx)
Request to send (RTS) .... 4 <-----> 8 .....(DCD)
Clear To Send (CTS) .... 5 <-----> 8 .....(DCD)
Data Set Ready (DSR) .... 6 <-----> 20 ....(TDR)
Signal Ground .....(SG)..... 7 <-----> 7 .....(SG)
Data Carrier Detect (DCD) .... 8 <-----> 4 & 5 .(RTS) & (CTS)
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) .... 20 <-----> 6 .....(DSR)

NOTE: This is the standard Apple Modem Eliminator cable part # A3M0019.

Published Date: Feb 18, 2012

AppleColor Composite Monitors: Compatible With Both IIGS and IIe

There are two AppleColor Composite Monitors shown on the Apple II Products price sheets:

- AppleColor Composite Monitor (IIGS) (part number A2M6020)
- AppleColor Composite Monitor IIe (part number A2M6021)

What are the differences? Are both compatible with both the Apple IIGS and the Apple IIe?

This article has been archived and is no longer updated by Apple.
Both composite monitors work with either computer. The main difference is in the outside designs to better match the case of the computer with which the particular monitor is associated.

Support Information Services

Published Date: Feb 18, 2012

ImageWriter II: Condensed Print Problem is Driver Related

I have an ImageWriter II connected to my Macintosh. It's printing condensed mode for no apparent reason.

This article has been archived and is no longer updated by Apple.
The condensed printing problem is printer driver related. The Macintosh prints everything in graphics when Best or Faster mode is selected. Check the Page Setup in the File menu first. If it still prints in the condensed mode, replace the printer driver.

Published Date: Feb 18, 2012

TA47961_Macintosh_Where_To_Get_Information_About_Math_Coprocessors_(TIL09513).pdf

Macintosh: Where To Get Information About Math Coprocessors

Where can I get information about the math coprocessors used in some Macintosh models?

This article has been archived and is no longer updated by Apple.
This information is in:

- the Apple Numerics manual, available through APDA. It has a chapter on the math coprocessors.

- the math coprocessor manuals published by Motorola.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Published Date: Feb 18, 2012

TA47962_System_Video_Memory_Allocation_(TIL09514).pdf

System 7: Video Memory Allocation

Article Change History

08/25/92 - REVISED
* To make clear that holding down the option key still has a role in the System 7 Monitors control panel.

I recently upgraded my Macintosh IIci to system software version 7.0. Under version 6.0.X, when I wanted to change the memory allocation for the built-in video, I used this procedure:

1) In the Control Panel, I selected the Monitors cdev.

2) I pressed the Option key and clicked the "Options..." button.

A dialog box appeared, and in the bottom portion of the dialog box, labeled "Memory Allocation For Built-In Video", there were radio buttons for setting how much memory to allocate to video.

Is this still the correct method for System 7?

This article has been archived and is no longer updated by Apple.
Under system software version 7.0, you no longer need to press the Option key. Just click the "Option..." button in the Monitors control panel to display the dialog box.

If you do hold down the Option key when clicking the "Option..." button in the Monitors control panel, you are presented with an option to "Use Special Gamma" for applications where accurate color representations are essential, or in situations where two differernt types of monitors are used whose colors must match.

Published Date: Feb 18, 2012

Personal LaserWriter LS: Performance Varies with Computer Speed

Article Change History

04/13/93 - UPDATED
* To give clearer examples

Printing time is slower when I print from a Macintosh Plus to a Personal LaserWriter LS than it is when I print from a Macintosh Classic II or Macintosh IIci to the same Personal LaserWriter LS.

This article has been archived and is no longer updated by Apple.
Because the speed of the Macintosh computer's CPU affects the printing time, printing from a Macintosh Plus to the Personal LaserWriter LS is slower than from a higher-speed computer, like the Macintosh Classic II or Macintosh IIci.

The Personal LaserWriter LS has a high-speed RS-422 serial interface, externally clocked at 909KB/sec. At optimum performance, it prints four pages per minute.

Published Date: Feb 18, 2012

System 7: If Mouse Control Is Lost During Upgrade From System 6

I tried to upgrade my Macintosh IIcx to system software version 7.0. During the upgrade, I lost mouse control. I swapped the keyboard and mouse from my Macintosh IIfx, which I successfully upgraded to version 7.0, and tried them with the Macintosh IIcx. I still lost mouse control during the upgrade.

This article has been archived and is no longer updated by Apple.
You may be experiencing an INIT conflict. First, make a backup copy of your System Folder. Then remove the System Folder from your hard drive and try the installation again.

Also, if you are using any third-party ADB devices, contact the manufacturer and ask if there are any known or reported compatibility problems with their product and version 7.0.

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the Diablo 630

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) .... 4 <-----> 6 & 8.(DSR) & (DCD)
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Published Date: Feb 18, 2012

Macintosh II and IIx: 16MB SIMMS, MODE32, and RAM (9/95)

According to the "Macintosh Memory Guide" from Connectix, Page 17, second paragraph:

"3) On standard Macintosh II computers Bank A cannot use SIMMs larger than 2MB. 4, 8, and 16MB SIMMs must only be put in Bank B. Also, Bank A must be filled with SIMMs of 2MB or less if Bank B is to be used. Bank A is the set of four sockets to the right as you face the front of the Macintosh. This is a problem unique to the Macintosh II, and is caused by problems in the Macintosh II ROMs which are not overcome by adding MODE32 or MAXIMA. However, you can fix this one problem by installing the FDHD Apple SuperDrive Upgrade kit, which includes a set of Macintosh IIx ROMs. As a result of this limitation, the largest memory configuration on unmodified Macintosh II computers using 1MB and 4MB SIMMs is 20MB: four 1MB SIMMs in Bank A and four 4MB SIMMs in Bank B. When Macintosh IIx ROMs are added the maximum memory the computer will support is 128MB, eight 16MB SIMMs."

Is this information accurate? I was under the impression that the Macintosh II and Macintosh IIx could physically support only 4MB SIMMs.

This article has been archived and is no longer updated by Apple.
Below is an excerpt from another article describing MODE32. The excerpt describes Macintosh II RAM issues. To see the full article, search under MODE32.

"The Macintosh II and Macintosh IIx require special 4MB SIMMs. Be sure
to specify your Macintosh model when ordering these SIMMs and ensure
that the vendor is aware of the difference. The Macintosh II requires
the Macintosh II FDHD Upgrade to use 4MB SIMMs.

This upgrade has been discontinued.

To take advantage of more than 8MB of physical RAM, the Macintosh II
MUST have a PMMU installed, so that MODE32 can expand the system's
memory map.

The Macintosh II will not start up if you install 4MB SIMMs in bank A.
You'll hear musical chimes at startup, indicating a hardware failure.
Install 4MB SIMMs in bank B, and use 256K or 1MB SIMMs in bank A."

If you read the part about the Macintosh II carefully, you will see that it cannot have greater than 1MB SIMMs in Bank A, or you will get musical chimes. Since this happens so early in the boot process, there is nothing that can be done in software to remedy this. This means that a Macintosh II can have a maximum of 68MB of RAM installed (using a PMMU and MODE32). To achieve this amount, you would have 4MB in Bank A, and 64MB in Bank B (using 16MB SIMMs).

A final, but very important issue here concerns the part discussing the special SIMMs required by the Macintosh II and Macintosh IIx. There is nothing to say that vendors will actually make 16MB SIMMs using this configuration.

Article Change History:
15 Sep 1995 - Revised to show discontinued upgrade.
02 Apr 1995 - Updated for clarity.
02 Mar 1994 - Emphasized the need for a PMMU to utilize more memory.

Support Information Services
Published Date: Feb 18, 2012

PowerBook: How to Eliminate Clicking Noise (5/95)

I hear random clicks from my PowerBook 170. Adjusting the volume to zero doesn't eliminate the problem.

This article has been archived and is no longer updated by Apple.
The click is the power manager shutting down the amplifier to extend battery life. It happens approximately thirty minutes after the last sound is played. It's not a bug, but it can be annoying.

For the PowerBook 100, 140, 145, and 170, you can disable the speaker by inserting a mini plug in the sound out port. When you want sound, unplug it. This way you can eliminate sound and turn on the system in a meeting without disturbing others.

For newer PowerBook computers (the 160 and newer, as well as the Duo series), if you want to shut off sound entirely, set the volume in the Sound control panel to zero and the PowerBook will not make any sound, at startup or any other time.

Article Change History:
15 May 1995 - Updated for clarity.
10 Aug 1993 - Rewrote for new models.

Support Information Services
Published Date: Feb 18, 2012

LaserWriter: PageMaker 4.2 Uses PPD, Not APD Files (8/95)

There's a problem printing Aldus PageMaker 4.0 documents to a LaserWriter. Any suggestions?

This article has been archived and is no longer updated by Apple.
To print publications, Aldus PageMaker 4.2 uses PostScript Printer Description files (PPD files) in much the same way as earlier versions of PageMaker used Aldus Printer Description (APD files). PageMaker 4.2 doesn't use APD files. Therefore, when you open a PageMaker 4.0 or 4.0.1 publication in PageMaker 4.2, you must choose Print ╔ to specify a new printer (by selecting a PPD). When you first choose Print ╔ you will receive an error message indicating that PageMaker failed to find a PPD. The message is misleading:

* First, the PPD it refers to corresponds to the APD you last specified in
the 4.0 or 4.0.1 publication
and
* Second, it implies that it searched and didn't find the PPD in the PPDs
folder when this is not actually the case.

Simply click Continue, to open the Print dialog box. Choose the PPD you want from the Printer type pop-up menu.

It's a good idea to save the publication after selecting the PPD, otherwise you'll get the message each time you print.

NOTE: When you open a PageMaker 4.2 publication in PageMaker 4.0 or 4.0.1, you must open the Print dialog box and select an APD.

The following is a list of PPD files shipped with PageMaker 4.2 for Apple printers:

Apple LaserWriter IIf v2010.113
Apple LaserWriter IIg v2010.113
Apple LaserWriter v23.0
Apple LaserWriter Plus v38.0
Apple LaserWriter Plus v42.2
Apple LaserWriter IINTX v47.0
Apple LaserWriter IINTX v51.8
Apple LaserWriter IINT v47.0
LaserWriter Personal NT v51.8

The following is a list of PostScript versions from the Tech Info Library article, "Postscript: Versions in LaserWriter ROMs."

Revision #
Displayed on ROM PostScript
Printer Test Print Size Version
_____
LaserWriter 1.0 256K 23.0
LaserWriter 2.0 512K 38.0
LaserWriter Plus 2.0 512K 38.0
LaserWriter Plus 3.0 512K 47.0
LaserWriter IINT 1.0 1MB 47.0
LaserWriter IINTX 1.0 1MB 47.0
LaserWriter IINTX 3.0 1MB 51.8
Personal LaserWriter NT 1.0 1MB 51.8
LaserWriter IIf 1.0 2MB 2010.113
LaserWriter IIg 1.0 2MB 2010.113
Personal LaserWriter NTR 1.0 2MB 2010.129

The LaserWriter Plus with revision 3.0 ROMs reports back that it has PostScript version 42.2. This is an error in revision 3.0 ROMs. PostScript version 47.0 is the actual version in the revision 3.0 ROMs.

The LaserWriter IIf, LaserWriter IIg, and Personal LaserWriter NTR have PostScript Level 2 in ROM. All other LaserWriter printers have PostScript Level 1 in ROM.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
22 Aug 1995 - Made minor corrections.
11 Nov 1992 - Updated to include current information about PPD files.

Support Information Services
Published Date: Feb 18, 2012

TA47970_LaserWriter_Apple_IIe_Card_Only_Prints_inch_Page_(TIL09529).pdf

LaserWriter: Apple IIe Card Only Prints 11-inch Page

Article Change History

11/04/92 - REVIEWED
* For technical accuracy.

I have a LaserWriter connected to a Macintosh LC with an Apple IIe Card. The LaserWriter uses the multipurpose tray. I configure the IIe Card software to use the Printer Port (slot 1) to print to the LaserWriter.

When printing a legal-size document in AppleWorks 3.0, I run into printing anomalies. If I specify a 14-inch page in AppleWorks and print the document on an ImageWriter II, the document prints on one page. If I print to the LaserWriter with legal-size paper in the tray, it prints 11 inches only and finishes the document (2 more lines) on the second page. The margin settings are .5-inch left and right, and 0 top and bottom.

This article has been archived and is no longer updated by Apple.
We've confirmed this anomaly and anticipate it will be corrected in a future release of the software.

At this point we can suggest no workaround.

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for Epson MX-70 and MX-80

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 11
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

NOTE: Use at 9600 Baud.

Published Date: Feb 18, 2012

System 7 LaserWriter Driver: How to Shrink PostScript Files

With System 6, I could use Command-K to dump a PostScript image with Laser Prep, or Command-F to dump a PostScript file without Laser Prep.

With System 7, I can't seem to find a way to dump the PostScript file without the Laser Prep. Now an option in the print dialog allows me to select "Postscript File." This provides the same function as Command-K. But is there a way I can exclude Laser Prep as I did with Command-F?

Also, is there any way to make the generated PostScript file any smaller than it is?
This article has been archived and is no longer updated by Apple.
There is no Apple solution yet for generating PostScript files without headers under System 7. The latest improvement is the version 7.1 LaserWriter driver, which improves printing performance. But we don't have a solution to the problem of extremely large saved files.

The large saved file situation is caused by two major changes from the driver versions prior to 7.0 (excluding 6.1, which is really an old version of 7.0.):

- The addition of TrueType, and

- The need to prevent "laser wars."

TrueType fonts require the TrueType scaler on the destination printer. Because the driver doesn't know anything about the final destination when saving to a file, it saves everything that might be necessary. This can add several hundred kilobytes to the file's size, and that's with only a couple of fonts. The scaler itself adds well over 100K.

Laser war problems at customer sites with several different driver versions motivated a change in the prep dictionary downloading. Prior to System 7, the first user to print downloaded their version of Laser Prep semi-
permanently (outside of the server loop; remaining until a power cycle). Subsequent print jobs from other users would query the LaserWriter and see that the prep information already existed. If the query found an incompatible version, their prep dictionary replaced the existing one. If the existing version was compatible, everything worked fine. The prep dictionary is referenced from the LaserWriter driver's output as a library of procedures. If the referenced routines don't exist the print job will fail.

The System 7 method sends the prep information along with each print job. Since it isn't downloaded semi-permanently, it's always saved with a file because the information is still required. In addition to increasing the file size, this conflicts with non-Apple laser printers (usually connected to workstations or minis) that use substitute prep dictionaries. Since the prep dictionary isn't always present in the LaserWriter, the Command-F option wouldn't work anyway without adding the header code.

A shareware program called Trimmer allows you to select fonts you want excluded from saved files. It also allows the exclusion of the TrueType scaler. Trimmer also provides an option of excluding the Laser Prep header from the PostScript file, simulating the Command-F option from System 6.x. It provides a good way to eliminate unneeded data from saved files. But it's an unsupported non-Apple solution.
Published Date: Feb 18, 2012

LaserWriters: Changing EtherTalk Default Zone

Does the utility software that comes with the LaserWriter IIg (which connects directly to Ethernet) allow the user to change the zone that the printer resides in?

Also with the LaserWriter Pro 630, Pro 810, and 16/600 PS is there a utility that can be used to change the zone?
This article has been archived and is no longer updated by Apple.
There are two utilities that will enable you to change the zones the printers are located in. Use the "Apple Print Utility" for the LaserWriter 16/600 PS, and place the printer's configuration switch in the up position for the zone change to be persistent between restarts. For the LaserWriter IIg, Pro 630 and Pro 810, use "LaserWriter Utility" v7.4.1 or later.

If you don't have LaserWriter Utility v7.4.1 or later, the utility included with the LaserWriter IIg doesn't have an option to select a zone when connected to an EtherTalk network that has more than one zone associated with it. You can change the zone that the LaserWriter IIg appears in with this PostScript code:

```
---Cut Here---
currentfile statusdict begin product (LaserWriter IIg) eq
version (2010.113) eq and end not
{save exch 291 string readstring pop pop restore} if
/ASCIIHexDecode filter /SystemPatch statusdict /emulate get exec
85f6ba98b8147bdb3c41fc154e390200521caba043febd65f48e008d42590001cd0f62e
4c9f2b841c6c1c85660f30002ba262234d72494f203c119951000000376b481858e01bff2
db172cf2ecfe000446e2f3ddca7b1fb2d27814e1c22e000598f64cae7bb9897afb760a5d8
1ac0106>
serverdict begin 0 exitserver
(%EtherTalk%) <</EtherTalkZone (YourZoneGoesHere)>> setdevparams
---Cut Here---
```

1) Copy all information between the "---Cut Here---" lines.

2) Paste the information into a text document.

3) Change the text "YourZoneGoesHere" in the last line to the new zone name.

4) Save the text document as a file.

5) Download the file with the LaserWriter Utility.

After sending this code, the LaserWriter IIg should appear in the new zone. If the zone name requested isn't valid for the EtherTalk network, the LaserWriter IIg uses "*" as the zone name and appears in the default zone. A valid zone name is a string of up to 32 characters, excluding the ":" and "@" characters.

Notes

For a LaserWriter to be in a particular zone:

1) The LaserWriter must be directly connected to an EtherTalk Phase 2 network via the built-in Ethernet port.

2) The zone in which the LaserWriter is to appear must be in the zone list for the physical cable (network) to which the LaserWriter is attached -- which, in this case, must be Ethernet. This is defined by the router for the physical cable.

Tip for Sending PostScript Code to a LaserWriter

An easy way to send PostScript code to a LaserWriter is to enter it into a TeachText or SimpleText document and download it using the LaserWriter Utility's Download PostScript File option. TeachText or SimpleText is included with Macintosh system software, and the LaserWriter Utility is included with the LaserWriter.
Published Date: Feb 18, 2012

TA47974_AppleTalk_Using_Multiple_Versions_on_Same_Network_(TIL09538).pdf

AppleTalk: Using Multiple Versions on Same Network

How many versions of AppleTalk can we run on a 20-Macintosh network? We currently have version 56 on most of the computers.

This article has been archived and is no longer updated by Apple.
There should be no incompatibilities between various versions of AppleTalk.
It's important to know that AppleTalk phase 2 was introduced with AppleTalk version 53.

AppleTalk version 56 introduced many bug fixes and should be the minimum version in use on any network with highly utilized servers or routers.
Most of the bug fixes included in version 56 were related to crashes and other problems with nodes operating in a high stress environment.

Published Date: Feb 18, 2012

Ethernet Transceivers: Require Hub Termination

We have problems selecting EtherTalk with the NB card, LC card, or built-in Quadra cards. The usual message is "An error occurred while trying to install the selected AppleTalk connections. The built-in LocalTalk port will be used instead."

We know that we have to plug in the transceiver before starting the Macintosh. Do twisted pair transceivers also require hub termination?

This article has been archived and is no longer updated by Apple.
The Ethernet NB card driver performs three loopback tests before enabling user services. If any one of these tests fail, the card won't allow you to use the attached network. The initial two tests check the card's internal communications paths. However, the third test performs a loopback test using external parts of the network. If any part of the external network fails to function properly (this includes 10baseT links), the test fails and your port switches to the built-in LocalTalk port.

Concerning 10baseT hub termination, you definitely need to have hub termination before the driver allows you to select user services.

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the Epson MX-100

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Published Date: Feb 18, 2012

System 7.0.1: Installing the Ethernet Driver

Article Change History

09/25/92 - REVIEWED
* For technical accuracy.

We've had problems installing system software version 7.0.1 with a NEW Apple Ethernet board installed in the Macintosh. Here's what happens:

1) Upon clicking the installer, we don't get the list of EtherTalk drivers, and we have to choose customize.

2) After completing the installation, the system doesn't work with the new board. We then use the disk that comes with the Ethernet board to install the drivers and A/ROSE.

3) The driver from this disk doesn't work with version 7.0.1, so we must again use the 7.0.1 disk to install the correct Ethernet driver.

Can you suggest a better way to do this?

This article has been archived and is no longer updated by Apple.
To get the Ethernet NB card installed and working:

1) Install system software version 7.0.1.

Note: You must have the Macintosh connected to a working network before the driver lets the user services become active.

2) Then use the disk that ships with the Ethernet NB card (version 2.5.1) to install the Ethernet driver.

3) Restart the Macintosh.

Published Date: Feb 18, 2012

AppleShare 3.0: Using a Users & Groups File on Multiple Servers

I'm setting up several AppleShare 3.0 servers, and I'm having problems copying the Users & Groups File. I have an existing AppleShare 3.0 server up and running with over 100 users and groups in the database. This server is a Macintosh SE/30.

I'd like to use the Users & Groups file on a Macintosh IIci from the Macintosh SE/30 server. I can copy the file without problems. When I open up AppleShare Admin, it shows me the first server's name and asks me for the admin key. After I type the correct admin key, I get a list all of the users and groups. If I quit the Admin application and reopen it, I get the
message, "The Users and Groups file is damaged."

How can I successfully copy the file?
This article has been archived and is no longer updated by Apple.
Following are the procedures to use the same Users & Groups file for multiple servers:

1) Install and configure an AppleShare 3.0 server with a complete Users & Groups list.

2) Copy the saved Users and Groups file to a spare floppy disk.

3) Open the Preferences folder, located in the System Folder of the next system to have the server software installed. Drag the Users & Groups file to the Trash. **Note:** It won't let you delete the file from the Trash, but that's OK.

4) Copy the saved Users & Groups file from the floppy disk to the Preferences folder.

5) Insert the AppleShare 3.0 server disk and double click the installer icon to start the installation.

6) After server installation, you must restart the Macintosh.

7) Start the Admin program to automatically read in and use the saved Users & Groups file. In a short time you'll see the complete Users and Groups lists appear, and you can then proceed with any other specific server administration that you need to do.

You can quit the admin program and relaunch it with no problem. Once you're satisfied with the configuration, you can start the server by double clicking on the server application.
Published Date: Feb 18, 2012

Macintosh System Software: Correct Responder Versions

I support 2,500 Macintosh computers, and I'm using Inter*Poll to monitor the various systems. I can only access printer driver information on some of the computers.

It seems that only Responder version 2.0.2 works with system software version 6.0.7, and that only Responder 2.0 works with system software version 7.0.

I'm not sure where the various versions of Responder extensions are coming from on the System 7 computers. The Responder is built into the system, and I followed the same installation on all of the computers.
This article has been archived and is no longer updated by Apple.
Responder version 1.1.1 doesn't report any information for printer drivers if the 7.0 drivers have been installed on a System 6 Macintosh. Responder versions 2.0.2, 2.0.3, and 2.0.4 are the correct versions to use with this configuration (System 6 using 7.0 drivers), and will report back the correct printer driver information to Inter*Poll.

Before any Macintosh will report the printer driver information, you must first select a printer (driver) from the Chooser. You don't actually have to select a printer, just a printer type (that is, LaserWriter, ImageWriter, and so on), and then restart the Macintosh.

Another anomaly is that the 2.0.1 Responder is built in to System 7 and must be removed before any of the stand-alone versions (2.0.2, 2.0.3, and 2.0.4) will load and function. There's no real reason to remove the built- in Responder; this information is for education and possibly future testing purposes only. None of the current N&C installers will remove the 2.0.1 Responder resource from the System file. You must remove it manually before any of the stand-alone versions of Responder will load on a System 7 computer.

A good indication that the 2.0.1 Responder is installed as well as a stand- alone version is that the Responder icon will be X'ed out when the INITs (extensions) display their icons at startup time. The built-in Responder in System 7 is located in the AINI resource in the System file, resource number is 32000.

Here's a matrix that describes where each version of Responder comes from. This should help sort out why so many different versions are showing up on the BNR Internet and help you to get the correct versions installed on the systems.

Product	Responder Version
6.x	1.1.1 (This includes 6.0.8)
7.0	2.0.1 Built in to the System (Inter*poll reports it as 2.0)
7.0.1	2.0.1 (same notes as 7.0)
7.1	2.0.3 (same notes as 7.0)
Ethernet NB 2.5.1	2.0.2
ARA 1.0	2.0.3
NSI 1.0	2.0.3
NSI 1.1	2.0.3
NSI 1.2	2.0.3
NSI 1.2.1	2.0.3
NSI 1.3	2.0.4
NSI 1.4	2.0.4

Published Date: Feb 18, 2012

InterPoll: System 7.0.1 and Printer Drivers

After I installed System 7.0.1 on a networked Macintosh, Inter*Poll 1.0.1 is unable to see or identify the LaserWriter driver on the 7.0.1 system. Is there a workaround for this?

To test:

1) Install 7.0.1 on a Macintosh on the network.
2) Start Inter*Poll on another Macintosh.
3) Choose System Information under the Special menu.
4) Click on the LaserWriter Driver Version radio button.

The 7.0.1 system won't show a LaserWriter Driver installed.

This article has been archived and is no longer updated by Apple.
This isn't a problem. System 7.0.1 reports back the correct printer driver information without any modification or update to any system resources. Please read the information below.

Responder Information

Version 1.1.1 of Responder doesn't report back any information for printer drivers if the 7.0 drivers have been installed on a 6.x system. Responder versions 2.0.2 and 2.0.3 are the correct versions to use and will report back the correct printer driver information to Inter*Poll when installed on a system 6.x Macintosh that is using the 7.0 print drivers. Before any Macintosh will report the printer driver information, you must first select a printer (driver) from the Chooser. (You don't actually have to select a printer just a printer type, such as LaserWriter, ImageWriter, and so on.) Then restart the Macintosh.

Another anomaly is that the 2.0.1 Responder is built into System 7 and must be removed before any of the stand-alone versions (2.0.2, 2.0.3) will load and function. None of the current N&C installers will remove the 2.0.1 Responder resource from the system. You must remove it manually before any of the stand-alone versions of Responder will load on a System 7 Macintosh. A good indication that the 2.0.1 Responder is installed as well as a stand-alone version is that the responder icon will be X'ed out when the INITs (extensions) are displaying their icons at startup time. The built-in responder in System 7 is located in the AINI resource. The resource number is 32000, size 4104.

Here is a matrix that describes where each version of Responder comes from. This should help to sort out why so many different versions are showing up on the BNR internet and help to get the correct versions installed on the correct systems.

Product Responder Version

6.x | 1.1.1 (This includes 6.0.8)

7.0 | 2.0.1 Built in to the System (Inter*Poll reports it as 2.0)

7.0.1 | 2.0.1 (same notes as 7.0)

Ethernet NB
2.5.1 | 2.0.2

ARAP 1.0 | 2.0.3

Published Date: Feb 18, 2012

PowerBook Fax/Data Modem: Doesn‘t Pass Break Signal

If you attempt to send a break signal to a remote host with the Macintosh PowerBook Fax/Data Modem, it won't pass the break signal to the host. Instead, it causes the modem to go back to command state.

How do you pass a break signal to the host without putting the modem into its command state?
This article has been archived and is no longer updated by Apple.
Unfortunately, any attempt to transmit a break signal with the Macintosh PowerBook Fax/Data Modem always results in the modem going into command state. It won't send the break signal to the host.

Many modems allow you to change break handling so you can determine whether the modem enters command state or simply passes the break signal. The PowerBook Fax/Data Modem doesn't do this.
Published Date: Feb 18, 2012

PowerBook: Modem Connections After Using Fax

After I send a fax with Apple's fax software v1.0.1, I'm unable to connect with on-line services like America Online with White Knight v11.12. In White Knight, I dial the number, the modems handshake, the dialing window clears, then I get a no connection message. Then I have to type a return several times to get any activity. When connecting via an external modem with the same software, I do not have this issue.
This article has been archived and is no longer updated by Apple.
After sending a fax, the PowerBook modem is left with the Connection Mode set to "error control mode" (the modem's factory default, "&Q5"). This instructs the modem to make a connection using V.42/MNP. If the remote modem doesn't offer V.42/MNP, the modem falls back to standard asynchronous mode. During the fallback process, some remote modems, depending on how they're configured, may disconnect.

You can eliminate this problem by setting the PowerBook modem's connection mode to asynchronous mode, with no error correction protocol, via "AT" commands. From White Knight, MacTerminal, or any other terminal emulation program, simply enter AT&Q0 (zero, not the letter "O"), and press return.

From America Online, under the Go To menu, choose Customize Network Setup. In the Modem String field, enter &Q0. America Online will automatically insert the Modem String between the modem attention AT command and the dialing sequence. For example, assume you've configured America Online for tone dialing, you've entered the phone number 555-1212, and you've entered &Q0 as the modem string. The software would use the full dialing sequence AT&Q0DT555-1212.
Published Date: Feb 18, 2012

PowerBook 170: Specifications (Discontinued)

This article gives technical specifications for the Macintosh PowerBook 170 notebook computer.

This article has been archived and is no longer updated by Apple.

Microprocessor

- 68030, running at 25 MHz
- 68882 math coprocessor, running at 25 MHz

Memory

- Comes with 4MB pseudostatic RAM, 2MB on the logic board and 2MB on a RAM expansion card that fits into a card slot.

- Expand to 8MB of RAM by replacing the 2MB expansion card with either a 4MB or 6MB RAM expansion card.

Disk Storage

- One built-in 1.4MB drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.

- One internal 40MB hard disk

Display

- 10 inch (254 mm) diagonal

- Backlit active-matrix liquid crystal display

- 640 by 400 pixels

Battery

- NiCad, 2.5 ampere-hours, provides 2 to 3 hours of use before recharging is necessary

- Recharge time: 100% recharged after 5 hours; 80% recharged after 3 hours

Keyboard

- Built-in keyboard with standard Macintosh layout

- Two-level tilt adjustment

Trackball

- dual button trackball, 30 mm diameter

Clock/Calendar

- CMOS custom chip with long-life lithium battery

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices using a low-speed, synchronous serial bus

- Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices

- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices

- One sound output port for external audio amplifier

- One sound-in port

Modem

- Internal 2400-baud modem with fax send at 9600 baud; includes fax send software

- Error correction and compression: MNP 4,5 and V.42, V.42bis

Sound Generator

- Apple Sound Chip provides 8-bit sound capable of driving stereo headphones or other stereo equipment through the sound port.

Sound Input

- 8-bit sound, sampled at 11 or 22 kHz

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disability.

ADB Power Requirements

- Maximum current draw for all ADB devices is 50 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 110 to 220 volts

- Frequency: 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)

- Storage temperature: -40 to +149 degrees F (-40 to +65 degrees C)

- Relative humidity: 20% to 80% noncondensing

- Altitude: Operating: 3048 m (10,000 ft.) maximum
Shipping (non-operating) 0 to 15,000 ft. (0 to 4,722 m)

Size and Weight

- Height: 2.25 inches (5.7 cm)
- Width: 11.25 inches (28.6 cm)
- Depth: 9.3 inches (23.6 cm)
- Weight: 6.8 lb. (3.08 kg)

Noise Level

Noise free except for floppy or hard disk use.

Article Change History:

22 Mar 1995 - Updated altitude information.
27 Aug 1993 - Revised to reflect correct storage temperatures.

Support Information Services
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Apple III Serial Port: Cable pinouts for the Heathkit H-14

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 4.....(RTS)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Published Date: Feb 18, 2012

PowerBook: Fax/Data Modems

I read that the Macintosh PowerBook Fax/Data Modem is only a SEND modem. Is it possible that clients can use it as a SEND/RECEIVE (Fax) modem? Can they use some third-party Fax software, such as Abaton, to do a SEND/RECEIVE function?
This article has been archived and is no longer updated by Apple.
The Macintosh PowerBook Fax/Data Modem is limited to Fax send only. It's a hardware -- not software -- limitation.

There are several third-party modems that support both Fax send and Fax receive. Here are some PowerBook Fax/Data Modem suppliers:

- Global Village Communication, Inc.

- PSI Integration, Inc.

- Lifetime Memory Products, Inc.

To locate a vendor's address and phone numbers, use the vendor name as a search string.
Published Date: Feb 18, 2012

AppleTalk Remote Access: Network Install from Hard Disk

Can we install AppleTalk Remote Access from a hard disk and/or over the network instead of from the floppy disk? We've tried but have been largely unsuccessful.

This article has been archived and is no longer updated by Apple.

One 1.44MB Disk

Here's how you create a "Net Install" version of AppleTalk Remote Access from one 1.44MB disk:

1) Create a folder called "ATRA Net Install" on your Macintosh hard drive.

2) Insert the AppleTalk Remote Access Installer disk.

3) Drag the floppy disk icon on top of the "ATRA Net Install" folder icon. This will create a folder called "Installer" within the "ATRA Net Install" folder and a copy of the contents of the floppy to the "Installer" folder.

4) Open the "ATRA Net Install" folder.

5) Open the "Installer" folder.

6) Change the name of the application inside from "Installer" to "Install"

7) Drag the files "Install" and "Remote Access Script" out of the "Installer" folder, to the root level of the "ATRA Net Install" folder.

Two 800K Disks

Here's how you create a "Net Install" version of AppleTalk Remote Access from two 800K disks:

1) Create a folder called "ATRA Net Install" on your Macintosh hard drive.

2) Insert the AppleTalk Remote Access Installer Disk 1.

3) Drag the floppy disk icon on top of the "ATRA Net Install" folder icon. This creates a folder called "Installer Disk 1" within the "ATRA Net Install" folder and a copy of the contents of the floppy to the "Installer Disk 1" folder.

4) Insert the AppleTalk Remote Access Installer Disk 2.

5) Drag the floppy disk icon on top of the "ATRA Net Install" folder icon. This creates a folder called "Installer Disk 2" within the "ATRA Net Install" folder and a copy of the contents of the floppy to the "Installer Disk 2" folder.

6) Open the "ATRA Net Install" folder.

7) Open the "Installer Disk 1" folder.

8) Drag the files "Installer" and "Remote Access Script" out of the "Installer Disk 1" folder, to the root level of the "ATRA Net Install" folder.

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AppleTalk Remote Access: Need Phase 2 EtherTalk to Answer Calls

At home, I have a (host) Macintosh IIci with Practical Peripherals 2400 baud modem attached to a LocalTalk network. It's running System 7, with file sharing enabled (one user belonging to one a group called Remote Developers). This user has remote dial-in, connect and link privileges.

At work: I have a (host) Macintosh with a Practical Peripherals 2400 baud modem (modem port) attached to a Phase I Ethernet network using a Technology Works Ethernet (thin) card. It's running System 7 and has a direct Ethernet connection. This network consists of five Ethernets terminating at a cisco router. A number of KBoxes with LocalTalk networks are attached to some Ethernet segments. This Ethernet routes AppleTalk Phase I, IP and IPX packets. This network contains one AppleShare server, one QuickMail Server, and four Novell NetWare file servers.

When the host computer at home is set up to answer the modem, the computer at work can dial in, log on to file servers, and so on. This works fine with and without the call-back features enabled.

But when I attempt to configure the work computer to answer the modem, an error message says: "Sorry, the network connection you have chosen doesn't support AppleTalk Remote Access."
This article has been archived and is no longer updated by Apple.
Technology Works Ethernet Cards (TechWorks NuBus cards) ship with Apple's EtherTalk software, both AppleTalk Phase 1 and Phase 2.

On a Phase 1 EtherTalk network, AppleTalk Remote Access allows you to place calls, but it WON'T allow you to answer calls.

You need to upgrade to Phase 2 EtherTalk to enable the Answer Calls or server option within AppleTalk Remote Access.
Published Date: Feb 18, 2012

Macintosh: Troubleshooting Modem Connect Problems

I installed public domain telecommunications software on my Macintosh to use with my modem. After initiating a connection, the call is answered, but my system locks.

Can you give me some general troubleshooting tips to locate the problem?

This article has been archived and is no longer updated by Apple.
Here are some general troubleshooting tips:

- Ensure that the baud rate is set correctly.

- Ensure that the bit and parity settings are set correctly.

- Ensure that you're using a clean line.

- Try connecting to other services. Does this problem happen only with one service or with several?

- Try using a commercial telecommunications software package. Do you still have the problem?

Published Date: Feb 18, 2012

PowerBook: How To Tell When Caps Lock Function Is Active

Some of the Macintosh PowerBook series keyboards do not appear to have a Caps Lock function. How can this be? Is there any visual indication of when the Caps Lock function is active? What is the Caps Lock extension and do I need it?
This article has been archived and is no longer updated by Apple.

Macintosh Portable

The original Macintosh Portable has a locking Caps Lock key. It clicks and locks into place in the down position when active like the keyboard used with most desktop computers. The Caps Lock extension does not work on the Macintosh Portable.

Macintosh PowerBook Computers

None of the Macintosh PowerBook computers have a locking Caps Lock key. The Caps lock keys on these computers do not make an audible click when you press the Caps Lock key.

- Some PowerBook models have a green LED (light) on the Caps Lock key. If this LED is illuminated, the Caps Lock function is active.
- Some PowerBook models do not have an LED on the Caps Lock key. On these computers, when the Caps Lock function is active, an "up" arrow is displayed in the upper right corner of the Menu Bar next to the Balloon Help icon. If this arrow does not appear in the Menu Bar, the Caps Lock extension is probably not properly installed in the Extensions folder of the System Folder.

Connectix PowerBook Utilities

If you want another indicator in addition to the light on the Caps Lock key itself, you can get a piece of software called Connectix PowerBook Utilities (CPU) which gives an audible clicking sound from the speaker when the Caps Lock key is pressed (it also provides may other features).

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for any content pertaining to non-Apple products. Please contact the vendor (Connectix) for additional information.

The article 17159: **Locating Vendor Information** can help you search for a particular vendor's address and phone number.

Published Date: Feb 18, 2012

Apple III Serial Port: Pinouts: IDS 125, 225, 440, 445, 460, 560

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Published Date: Feb 18, 2012

PowerBook: Fax Software Sends Faxes in Background

If I use my Macintosh PowerBook with the internal Fax/Data Modem and the software provided, can I send faxes in the background?

This article has been archived and is no longer updated by Apple.

Yes. After specifying the "Send" information in the FaxSender dialog and clicking "Send", a FaxMonitor takes control and sends the fax in the background.

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Macintosh Quadra: Using Macintosh LC VRAM SIMMs

Can I use the VRAM (two 128K by 8 chips) from a Macintosh LC in a Macintosh Quadra?

This article has been archived and is no longer updated by Apple.

Yes, the VRAM from the Macintosh LC can be used in the Macintosh Quadra. Note, though, if you use the 512K VRAM SIMMs from a Macintosh LC, the Macintosh Quadra sees it as only 256K.

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LaserWriter IIf/IIg: RAM Configurations

What are the different RAM configurations for the Apple LaserWriter IIf/IIg?
This article has been archived and is no longer updated by Apple.
The Apple LaserWriter IIf/IIg can use 256K, 1MB, and 4MB SIMMs.

The configurations are:

.

RAM	Bank 0	Bank 1
2MB (1)	Four 256K SIMMs	Four 256K SIMMs
4MB (1)	Four 1MB SIMMs	None
5MB	Four 1MB SIMMs	Four 256K SIMMs
8MB	Four 1MB SIMMs	Four 1MB SIMMs
16MB	Four 4MB SIMMs	None
17MB	Four 4MB SIMMs	Four 256K SIMMs
20MB	Four 4MB SIMMs	Four 1MB SIMMs
32MB	Four 4MB SIMMs	Four 4MB SIMMs
Table Notes (1) These configurations are for the Apple LaserWriter IIf only.		

Published Date: Feb 18, 2012

LaserWriter: Troubleshooting Print Jobs That Don‘t Print

I am printing from a Macintosh on a network to a LaserWriter with Background Printing turned on. Intermittently, when I send a print job to the printer, it doesn't print. If I reselect the LaserWriter in the Chooser, the job prints.
This article has been archived and is no longer updated by Apple.
Here are some troubleshooting tips to help you locate the problem:

- Check the network for proper termination.
- Check the equipment and network for frayed or damaged wires and cables.
- If other Macintosh computers on the network are not having these printing problems, move your Macintosh to one of these known-good locations and try printing from there. If you still have the same problem, it's likely to be associated with your Macintosh.
- If other Macintosh computers on the network are having the same problem, try to eliminate the network as the source first. Connect the LaserWriter directly to a Macintosh (other than yours) and try printing from there.
- If the problem persists, troubleshoot your LaserWriter.
- If the problem is corrected, troubleshoot your network.
- If you are using a non-LocalTalk LaserWriter, such as the LaserWriter Select 310, make sure AppleTalk is turned off in the chooser. Also make sure that you are using a peripheral-8 cable (M0197LL/B) and not a LocalTalk or PhoneNet connetor.
- When using a serial LaserWriter check the chooser and verify that the proper port is selected.

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TA47995_ResEdit_Where_To_Get_Current_Version_(TIL09568).pdf

ResEdit: Where To Get Current Version

Where can I get a current version of ResEdit?

This article has been archived and is no longer updated by Apple.
The current version of ResEdit is available on AppleLink in the Developer Support Folder. Search BB Pathfinder under "ResEdit" for the path.

ResEdit is also available from APDA. For contact information on APDA, search the Tech Info Library under "APDA".

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Apple III Serial Port: Cable pinouts for NEC printers

This article has been archived and is no longer updated by Apple.
These pinouts are for the NEC 5510/7710, 5515/7715, 5520/7720, and 5525/7725.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) .... 4 <-----> 5.....(CTS)
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 19....(SCTS)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) .... 20 <-----> 6 & 8.(DSR) & (DCD)

NOTE: Printer dip switches need to be set as shown;

SW1 1 - OPEN
2 - CLOSED
3 - OPEN
4 - OPEN
5 - CLOSED
6 - OPEN
7 - CLOSED
8 - OPEN

Published Date: Feb 18, 2012

Macintosh IIsi: Troubleshooting NuBus Card Installation Problems

I am having a problem installing TokenTalk and EtherTalk NB cards on our Macintosh IIsi computers. We have not been able to get any of the systems up on the network.

This article has been archived and is no longer updated by Apple.
Without more detailed information about the problems you are experiencing, we can offer only some troubleshooting measures:

- Ensure that the network is properly terminated.

- If you are running System 6.0.7, ensure that the Network Product Installer is used to installed the Network CDEV and TokenTalk/EtherTalk drivers.

- If you have the Macintosh IIsi NuBus Adapter Card installed and the EtherTalk NB Card is properly installed, ensure that the jumper on the EtherTalk NB Card is set for BNC.

Published Date: Feb 18, 2012

Macintosh: Troubleshooting Non-Functioning Mouse Control Panel

I have a Macintosh Plus running system software version 7.0. I recently upgraded the RAM from 2.5MB to 4MB, and the Mouse control panel stopped functioning -- I no longer can change the tracking speed.

This article has been archived and is no longer updated by Apple.
Increasing the RAM should not affect system software version 7.0. This problem may be related to a third-party system extension (INIT) conflict.

Try removing all third-party system extensions (INITs), control panels (CDEVs), and DAs from your System Folder for testing purposes. Then reinstall the system software. If the problem is corrected, isolate the conflicting software by reinstalling the system extensions, control panels, and DAs one at a time until the problem reappears. Remember to allow an appropriate testing time between each installation.

If the problem persists, try zapping the PRAM by pressing and holding the Option-Command-P-R keys and restart your Macintosh.

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Video Monitors: Why Some Screens Have Squared Corners

I'm using a Macintosh SE/30 to which I added an AppleColor High-Resolution RGB Monitor. I noticed something unusual about the monitor's display area: all corners, except the lower left, are rounded. The lower left has a squared (right-angle) corner. Is this a defect?

This article has been archived and is no longer updated by Apple.
This is not a defect nor is it peculiar to the AppleColor High-Resolution RGB Monitor -- we have seen these squared corners on other Apple and third-party monitors. It's just cosmetic and is more likely to happen when multiple monitors are connected to the computer.

Published Date: Feb 18, 2012

Macintosh: Where To Find "Cache Switch"

Where can I get a copy of Cache Switch Control Panel for the Macintosh Quadra?
This article has been archived and is no longer updated by Apple.
The Cache Switch is designed for any of the 68040 computers. This includes certain models of the Macintosh LC, Centris, Quadra, and Performa computers. It is distributed on the Tidbits disk of System 7 and System 7.1.

The Cache Switch is not installed by the Installer, so you must drag a copy to the System Folder to install it.
Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for Okidata 82A and 83A

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 11
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

NOTE: Printer dip switches need to be set as shown;

FRONT 1 - OPEN BACK 1 - CLOSED
2 - OPEN 2 - CLOSED
3 - OPEN 3 - OPEN
4 - OPEN 4 - CLOSED
5 - CLOSED 5 - OPEN
6 - OPEN 6 - CLOSED
7 - OPEN
8 - CLOSED

NOTE: Jumper blocks should be in position A.
Published Date: Feb 18, 2012

PowerBook 170: How To Switch Processing Speed to 16 MHz 8/92

Can you switch the processing speed of the Macintosh PowerBook 170?

This article has been archived and is no longer updated by Apple.
Yes. The Battery DA has a handle similar to the Alarm Clock DA that activates a power-saving mode dialog box. Select the Power Saver mode, and restart the system to slow down the processor to 16 MHz.

Support Information Services
Published Date: Feb 18, 2012

ADB Mouse: Apple Has No Teflon Pad Replacement Kit

Is there a replacement kit for the teflon pads on the bottom of an ADB mouse?

This article has been archived and is no longer updated by Apple.
As of July 1991, Apple no kit for replacing the teflon pads on the ADB mouse. We are not aware of any third party that offers these items.

Published Date: Feb 18, 2012

Extended 80-Column Text Card: Function of Jumper J1 (11/96)

What is the function of jumper J1 on the Apple IIe Extended 80-Column Text Card?

This article has been archived and is no longer updated by Apple.

Jumper J1 on the Extended 80-Column Text Card enables the use of double high-resolution graphics on the Apple IIe Rev.B main logic board.

Changes to Extended 80-Column Card Instructions

The instruction sheet that comes with the Extended 80-Column card states that a "small plastic jumper" should not be installed on the 80-Column card if the number on the back of any Apple IIe main circuit board ends in an "A".

This is incorrect. The jumper should always be installed on the 80-Column card UNLESS the number on the main circuit board ends in "...0064-A". Other than this instance, every Extended 80-Column Card should have the jumper installed.

Article Change History:
14 Nov 1996 - Reviewed for technical accuracy, revised formatting.

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Macintosh: Troubleshooting a Corrupted Desktop File

I have a Macintosh II with a corrupted Desktop file that I cannot rebuild.

This article has been archived and is no longer updated by Apple.
A damaged directory structure on the hard drive could cause this and other problems.

We suggest that you do a file-by-file backup of the hard drive. Then reinitialize the drive and restore the files.

Published Date: Feb 18, 2012

PhoneNET vs LocalTalk: Maximum Nodes & Cable Length

What are the maximum number of nodes and the maximum cable length for a PhoneNET and a LocalTalk network?
This article has been archived and is no longer updated by Apple.

Maximum nodes

- LocalTalk: maximum number of nodes is 32 per zone.
- PhoneNET: maximum number of nodes is 50 per zone.

Maximum cable length

- LocalTalk: maximum 1000-foot distance.
- PhoneNET: maximum 3000-foot distance.

Published Date: Feb 18, 2012

PowerBook: Keyboard and Keypad Sequences

How do I send VT-100 keypad sequences to my mainframe application from the Macintosh PowerBook keyboard?
This article has been archived and is no longer updated by Apple.
If you are using the VT-102 tool (part of the Communications Toolbox) and MacTerminal 3.0, you can issue the keypad commands from the Keys menu. If you are using a Communications Toolbox-compliant application, you should be able to issue the commands from the menu the application provides for keypads.

If you are not using a Communications Toolbox-compliant application, you may need an application revision that works with the PowerBook. That is, the PowerBook keyboard has a new identifier* inside the Macintosh Operating System, and some applications may not map the mainframe key sequences from the keyboard.

You can use ResEdit to get the ASCII codes for the keypad, but more than likely, you want the key sequences that the mainframe requires. You could then create macros to issue them, or remap them to different keys if the application supports that.

*In particular, the PowerBook keyboards return selector identification codes of:

gestaltPwrBkADBKbd = 12; {PowerBook Keyboard}
gestaltPwrBkISOKbd = 13; {PowerBook Keyboard (ISO)}

for the Gestalt "kbd" selector. If your application uses Gestalt to determine the keyboard type, it may not check for this result (since it is new with the PowerBook) and may not do the correct mappings for the mainframe key sequences.
Published Date: Feb 18, 2012

LaserWriter IIf and IIg: Require Black Terminator

Do the Apple LaserWriter IIf and LaserWriter IIg require a black terminator when a hard drive is attached to the SCSI port?

This article has been archived and is no longer updated by Apple.

Yes. The LaserWriter IIf and LaserWriter IIg require the same black terminator that is used with the Macintosh IIfx.

Published Date: Feb 18, 2012

TA48013_LaserWriter_IIf_and_IIg_Black_Terminator_Part_Number__(TIL09589).pdf

LaserWriter IIf and IIg: Black Terminator Part Number (11/94)

Do the Apple LaserWriter IIf and LaserWriter IIg require a black terminator when a hard drive is attached to the SCSI port?

This article has been archived and is no longer updated by Apple.
Yes. The LaserWriter IIf and LaserWriter IIg require the same black terminator that is used with the Macintosh IIfx.

The finished goods part number for the Apple Terminator II (Black) is M5871G/A.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy, added finished goods part number.

Support Information Services

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the Qume Sprint 5

This article has been archived and is no longer updated by Apple.
Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1 .....(FG)
Transmit Data (Tx) ..... 2 <-----> 3 .....(Rx)
Receive Data (Rx) ..... 3 <-----> 2 .....(Tx)
Request to send (RTS) .... 4 <-----> 8 .....(DCD)
Clear To Send (CTS) .... 5 <-----> 8 .....(DCD)
Data Set Ready (DSR) .... 6 <-----> 20 ....(TDR)
Signal Ground .....(SG)..... 7 <-----> 7 .....(SG)
Data Carrier Detect (DCD) .... 8 <-----> 4 & 5 .(RTS) & (CTS)
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) .... 20 <-----> 6 .....(DSR)

NOTE: This is the standard Apple Modem Eliminator cable part # A3M0019.
Published Date: Feb 18, 2012

LaserWriter Printers: Where To Find Paper Specifications

Where can I find information about the recommended paper types for the LaserWriter printers?

This article has been archived and is no longer updated by Apple.

Apple provides general guidelines and specifications for paper used with LaserWriter printers in the LaserWriter User's Guide that accompanies each printer. This information is also available in the Tech Info Library's individual LaserWriter specifications articles. Search the library under "LaserWriter and Specifications".

Published Date: Feb 18, 2012

Apple HDI-30 SCSI Disk Adapter: Cable Pinouts

Here are the pinouts for the Apple HDI-30 SCSI Disk Adapter (M2539LL/A) (service part number 590-0718).
This article has been archived and is no longer updated by Apple.
Apple's SCSI cables are built to tight specifications to minimize electrical noise on the SCSI bus. The wires are laid out to provide minimal signal degradation. Poor quality cable construction may lead to intermittent SCSI operation and potential system crashes.

HDI-30 plug pin layout
(found on SCSI Disk Adapter Cable M2539LL/A)

```
   30 29 28 27 26 25
   24 23 22 21 20 19
   18 17 16 15 14 13
   12 11 10  9  8  7
    6  5  4  3  2  1
```

BR-50 connector pin layout (found on SCSI Disk Adapter Cable M2539LL/A)

```
25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10  9  8  7  6  5   4   3   2   1

 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26
```

HDI-30	BR-50	Name	Signal Description
2	26	/DB0	SCSI data bit 0
1,3	19	GND	Ground, Pin 1 enables SCSI disk mode
4	27	/DB1	SCSI data bit 1
5	38	TERMPWR	Termination power (not supplied by PowerBook 100)
6	28	/DB2	SCSI data bit 2
7	29	/DB3	SCSI data bit 3
8	1,4	GND	Ground
9	44	/ACK	SCSI acknowledge
10	5	GND	Ground
11	30	/DB4	SCSI data bit 4
12	2,3,8	GND	Ground
13	11,9,6	GND	Ground
14	31	/DB5	SCSI data bit 5
15	24	GND	Ground
16	32	/DB6	SCSI data bit 6
17	7	GND	Ground
18	33	/DB7	SCSI data bit 7
19	34	/DBP	SCSI data bit parity
20	23,16,20	GND	Ground
21	49	/REQ	SCSI request
22	21,22	GND	Ground
23	43	/BSY	SCSI busy
24	25	GND	Ground
25	41	/ATN	SCSI attention
26	48	/C/D	SCSI control/data
27	45	/RST	SCSI bus reset
28	46	/MSG	SCSI message
29	47	/SEL	SCSI select
30	50	/I/O	SCSI input/output

Published Date: Feb 18, 2012

Batteries: Apple‘s Lithium Batteries Meet CFR 173.206

I need Materials Safety Data Sheets for all lithium batteries used in Apple products. Our shipper is refusing to ship products until we provide this information.

This article has been archived and is no longer updated by Apple.

The backup batteries used in Apple products contain less than 0.5 g of lithium. Therefore, they meet CFR 173.206 (Code of Federal Regulations) requirements and are considered nonrestricted articles in transportation and should not need Materials Safety Data Sheets.

Published Date: Feb 18, 2012

TA48019_LaserWriter_IIfIIg_MB_RAM_Configuration_(TIL09597).pdf

LaserWriter IIf/IIg: 20MB RAM Configuration

Does the Apple LaserWriter IIf/IIg support a 20MB RAM configuration?

This article has been archived and is no longer updated by Apple.
Yes. Here is the RAM configuration:

Bank 0	Bank 1
16MB	4MB
(Four 4MB SIMMs)	(Four 1MB SIMMs)

Refer to the Apple LaserWriter IIf/IIg User's Guide for detailed RAM expansion information.

Published Date: Feb 18, 2012

ImageWriter LQ: Rev. A & B Owner‘s Guides Are Identical

What are the differences between the Rev. A and Rev. B ImageWriter LQ Owner's Manual?

This article has been archived and is no longer updated by Apple.
There are no differences between these owner's guides. The revision letter indicates where the guide was printed.

Published Date: Feb 18, 2012

AppleWorks: Converting PFS File & PFS Write Files

Here are several ways to convert Pascal-based PFS:Write and PFS:File files to AppleWorks.
This article has been archived and is no longer updated by Apple.
PFS:Write

The ProDOS version of PFS:Write includes a conversion program called PFS:Convert, which lets you convert Pascal-based PFS files to the new ProDOS PFS:Write format. Once you've made this conversion, start the ProDOS version of PFS:Write and load the file you want to transfer to AppleWorks. From the PFS:Write Main Menu, save the file using the suffix ".TXT." PFS:Write will now save the file as a standard ASCII file stripped of formatting commands except line breaks. Now you can start AppleWorks, and use the "Make a new document for the Word Processor" function and type in the file's pathname. You will have to reformat the document.

The Pascal PFS Conversion Disk also converts Pascal PFS:Write and PFS:File documents to ProDOS (ASCII) files. Jim Luther, 5716 Forest, Kansas City MO 64110.

The March 1986 issue of Call-A.P.P.L.E. contains a conversion program that you can either type yourself, or download from the A.P.P.L.E. Crate Bulletin Board (206) 251-0543. Call-A.P.P.L.E., 290 S. W. 43rd Street, Renton WA 98055, 206/251-5222.

PFS:File

If your PFS:File records fit within AppleWorks' limits (number of categories and fields) no special preparation is necessary. If you have more categories, than AppleWorks allows, you'll have to decide which are not vital and delete them. If you have fields longer than 76 characters, AppleWorks should truncate the additional characters, but AppleWorks versions earlier than 1.3 don't always do so.

After using the PFS:Convert program that comes with the ProDOS version of PFS:File, use the "Copy Selected Forms to An ASCII File" in the ProDOS PFS:File program, enter the prefix and file name for the new ASCII text file. When the ASCII options menu is displayed, choose a number between 1 and 30 for the "End of item code" and a different number for your "End of form code." PFS:File will convert the file, although somewhat slowly. Now you can start AppleWorks, Make a New file for the Data Base, and Make a new file from a text (ASCII) file. Enter the path name for the file you are about to import. At the prompt, tell AppleWorks how many categories were in each PFS:File record. Give the file you are creating a name and Press Return; AppleWorks will create a database. A word of caution: if you are working with 5.25" disks, you must split PFS files larger than 30K into smaller files.

Jim Luther's Pascal PFS Conversion Disk performs the conversion, but it has some limitations: it takes data only from the first page of PFS:File form, drops any categories after the 30th, and truncates any entries in a category in excess of 78 characters.

The June 1986 issue of Call-A.P.P.L.E. contains another program by Wes Felty, PFS:File to ProDOS ASCII Converter, which you can type yourself or download from the A.P.P.L.E. Crate Bulletin Board.

A commercial program called Bridge converts Pascal PFS:File documents to a DOS 3.3 DIF sequential text file, or to one formatted for DOS 3.3 AppleWriter II. It converts entire PFS:File forms without limitations by the page or the form or the number or length of the categories. Once the file is converted to standard DOS 3.3, you must bring it over to ProDOS with Apple's ProDOS Utilities, System Utilities, or other conversion program. Sun Microsystems, Inc., P. O. Box 1388, Fort Lauderdale, FL 33302, 305/486-6115.

Another Pascal PFS:File to ProDOS conversion method involves the ProFiler program. There are two ProFiler utility programs used to convert PFS:File records to ProFiler records. One program works with Pascal PFS:File records, the other with ProDOS PFS:File records. You can batch process the conversion from PFS by using an Exec file adapted for your own use from a public domain diskette (No. 34) available from TAWUG, The AppleWorks Users Group, P. O. Box 24789, Denver, CO 80224-0869, or you can write to Don Lancaster c/o Computer Shopper for a hardcopy of the program (include a self-addressed stamped envelope). ProFiler is from PM Software, P. O. Box 1788, 17610 Beach Boulevard, Suite 29, Huntington Beach CA 92647, 714/963-2221.
Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the Teletype 43

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) 4
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 20....(DTR)
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Published Date: Feb 18, 2012

StyleWriter: Troubleshooting Ink Cartridge Problems

These print quality problems have been reported when replacing the StyleWriter Ink Cartridge:

- No print
- Light print
- White lines
- Smudging

This article has been archived and is no longer updated by Apple.
If your StyleWriter exhibits any of these symptoms, here are some things to check:

- Ensure that the orange tape and orange cap have been removed from the ink cartridge.

- Ensure that the black rubber boot isn't missing or twisted.

The rubber boot is located below the home position of the ink cartridge.

- Ensure that you have powered down the StyleWriter using the Power button.

Powering down the StyleWriter with the Power button caps the ink cartridge. Removing the Power Adapter Cord from the back of the printer will not cap the ink cartridge and may result in poor print quality.

- Ensure that you purge the ink cartridge five times before swapping the cartridge and/or modules.

Apple now recommends purging the ink cartridge five times to relieve any obstructions that may have worked their way into the nozzles during transit.

To perform a manual purge:

1) Turn the StyleWriter off with the Power button. (The printer must be turned off.)

2) Press and hold the Ready button.

3) Press the Power button once and release both buttons at the same time.

Published Date: Feb 18, 2012

Macintosh Quadra 900: Supported Drive Configurations

What are the supported drive configurations for the Macintosh Quadra 900?

This article has been archived and is no longer updated by Apple.
These are the supported drive configurations for the Macintosh Quadra 900:

- 1 Apple SuperDrive drive and up to 3 half-height SCSI drives

- 1 Apple SuperDrive drive, 1 full-height SCSI drive, and 1 half-height SCSI drive

The following configurations are supported, but not recommended because the Apple SuperDrive must be removed, which makes system administration and software upgrades difficult:

- 2 removable-media drives and 1 full-height SCSI drive

- 2 removable-media drives and up to 2 half-height SCSI drives

Published Date: Feb 18, 2012

Apple III Serial Port: Cable pinouts for the TI 810

This article has been archived and is no longer updated by Apple.

Apple III Serial Port Cable Printer Connector

Frame Ground .....(FG)..... 1 <-----> 1.....(FG)
Transmit Data (Tx) ..... 2 <-----> 3.....(Rx)
Receive Data (Rx) 3
Request to send (RTS) .... 4 <-----> 6 & 8.(DSR) & (DCD)
Clear To Send (CTS) 5
Data Set Ready (DSR) .... 6 <-----> 11
Signal Ground .....(SG)..... 7 <-----> 7.....(SG)
Data Carrier Detect (DCD) 8
Secondary Clear To Send (SCTS) ... 19
Data Terminal Ready (DTR) 20

Published Date: Feb 18, 2012

Wang and Macintosh: Document Transfer

This article describes different ways to transfer documents between Wang and Macintosh Systems.

This article has been archived and is no longer updated by Apple.

INTRODUCTION

The Macintosh can be connected to the Wang VS or OIS systems to provide two basic functions: document transfer and translation and terminal emulation.

Document transfer involves the sending of files between the Wang and the Mac. This process also involves translation -- that is, conversion of formatting attributes (like boldfacing, centering, tabs, and underlining) in the Wang documents to their equivalents in the Microsoft Word documents.

As for terminal emulation, the Macintosh can act just like a Wang 2110 VS terminal as long as it is connected to an Enhanced Asynchronous Device Controller (EADC) port on the Wang. This lets the user open a window, on the Macintosh, which is MultiFinder compatible and looks just like a Wang terminal screen. The Wang keyboard is mapped to the Macintosh keyboard, with some Macintosh user interfaces (mouse, pull-down menus, and so on) added for additional ease of use.

The following products provide 2110 terminal emulation: MacLink Plus/Wang VS and VsCom/Macintosh.

Physical Connections

Connections between the Wang system and its dedicated terminals are made via a Wang proprietary coaxial cable. Although this cable is also usable by IBM-compatible PCs, it remains unusable by Macintosh computers.

To connect a Macintosh to the Wang system, use the RS-232 port on the Macintosh side (which can be connected directly to an RS-232 cable if within 50 feet of the Wang system, or via a modem if farther away).

On the Wang side, a number of ports are available:

- Asynchronous Device Controller (ADC): An 8- or 16- port RS-232 device designed for communication with Wang VS terminals.

- Enhanced Asynchronous Device Controller (EADC): Similar to the ADC, except that it also supports word processing.

- Telecommunications Input/Output Processor (TC-IOP): Provides limited access to Wang software applications, is less sophisticated.

- Multi-Line Telecommunications Controller (MLTC): Similar to the ADC, except that it is used on large Wang VS systems.

- Wang Asynchronous Controller System (WACS): Similar to the EADC, except that it is used on large Wang VS systems.

All these ports support most Wang functions, like communications with the Wang system, file transfer and conversion, and so on, but only the EADC and the WACS support Wang word processing on the Macintosh.

CONNECTIVITY SOFTWARE AVAILABLE

This section describes five transfer products (an asterisk indicates

terminal emulation capability):

- MacLink Plus/Wang VS* and MacLink Plus/Wang OIS

- VsCom/Macintosh*

- Converse

- Smart Kid

MacLink Plus/Wang VS

Strengths

- Two-way file transfer and translation between Wang WP and Microsoft Word on the Macintosh

- VS 2110 terminal emulation (supports all Wang characters in the ADC/EADC version)

- Bidirectional copy/paste between Macintosh and Wang

- Multiple document transfer and conversion

- Includes a full set of PC-to-Macintosh translators

- Also includes the Allegro Server/VS FeaturePack, which provides:

- Security subsystem to prevent unauthorized access to files

- Document indexing subsystem to enable users to search for files on the basis of author, title, and other fields from the document summary (similar to the Wang summary)

- Wang Office interface module that provides access to the mail and messaging functions in the Wang OFFICE. Note that it does not provide access to OFFICE's calendar and bulletin board capabilities.

Limitations

MacLink Plus/Wang VS does not support:

- Headers, footers, and footnotes during document conversion

- Background transfer/conversion of files

MacLink Plus/Wang OIS

Strengths

- MacLink Plus/Wang OIS transfers/converts files between Wang OIS and MS-Word on the Macintosh

- It includes a full set of PC-to-Macintosh translators.

Limitations

MacLink Plus/Wang OIS does not support:

- Headers, footers, and footnotes during document conversion

- Direct conversion to/from Wang WP Plus

- Background transfer/conversion of files

For details on MacLink Plus products, contact DataViz, Inc. You can find contact information in the Third Party Company Directory folder in the Tech Info Library.

VsCom/Macintosh

Strengths

- Provides basic document transfer/translation between Wang VS and Microsoft Word on the Macintosh: Supports both WP and WP Plus,

- Direct Wang Office interface: Simple one-step transfer of documents in and out of Wang Office mailboxes

- VS 2110 terminal emulation (supports all Wang characters)

- Bidirectional copy/paste between Macintosh and Wang

- Multiple document transfer and conversion

- Headers and footers supported in document conversion

Limitations

VsCom/Macintosh does not support:

- Background document transfer and conversion

- Footnote conversions

- No TC-IOP port version

For details on VsCom/Macintosh, contact M/H Group. You can find contact information in the Third Party Company Directory folder in the Tech Info Library.

Converse

Strengths

Converse provides simple document conversion and terminal emulation capabilities.

Limitations

Converse does not support:

- Multiple document transfer and conversion capability

- Terminal emulation

- Background transfer and conversion of documents

For details on VsCom/Macintosh, contact MacSoft. You can find contact information in the Third Party Company Directory folder in the Tech Info Library.

Smart Kid

Strengths

- Permits almost 100 percent file conversion including headers, footers, and footnotes.

- Very versatile: Works with a variety of systems and word processing formats.

- Toll-free telephone support.

Limitations

- Requires a Wang operator to send or receive files.

- Does not support background transfer and conversion of documents.

Comments

Smart Kid is a hardware and software product that handles file conversion between Wang VS or Wang OIS and a host of other computer systems, including Macintosh, IBM Displaywriter, Digital VAX, Xerox Memorywriter, and NBI OASys. It is a more expensive option, but, because of its sophisticated file conversion capabilities, it is sometimes chosen by companies that use long, heavily formatted documents.

For details on VsCom/Macintosh, contact MacSoft. You can find contact information in the Third Party Company Directory folder in the Tech Info Library.

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Apple III Serial Cable: Anderson Jacobson Printers

Description of cable for Anderson Jacobson Printer Models 832, 833, 841.

This article has been archived and is no longer updated by Apple.

```
Apple III Serial Port             Cable       Printer Connector
---------------------             -----       -----------------
Frame Ground .............(FG)...... 1  <-----> 1 .....(FG)
Transmit Data            (Tx) ..... 2  <-----> 3 .....(Rx)
Receive Data             (Rx) ..... 3  <-----> 2 .....(Tx)
Request to send          (RTS) .... 4  <-----> 8 .....(DCD)
Clear To Send            (CTS) .... 5  <-----> 8 .....(DCD)
Data Set Ready           (DSR) .... 6  <-----> 20 ....(TDR)
Signal Ground ............(SG)...... 7  <-----> 7 .....(SG)
Data Carrier Detect      (DCD) .... 8  <-----> 4 & 5 .(RTS) & (CTS)
Secondary Clear To Send  (SCTS) ... 19
Data Terminal Ready      (DTR) .... 20 <-----> 6 .....(DSR)

NOTE: This is the standard Apple Modem Eliminator cable part # A3M0019.

NOTE: Install printer jumper at location "F"
```

Published Date: Feb 18, 2012

System 6.0.x Installation (10/94)

To install System 6, follow these instructions in the order presented. These instructions apply to all versions of System 6 (6.0.1, 6.0.5, 6.0.7, and so on).

This article has been archived and is no longer updated by Apple.

REQUIRED DISKS

System 6 software comes as a set of 800K (double-density) disks or a set of 1.44MB (high-density) disks:

The set of four 800K disks includes System Tools, Utilities 1,

Utilities 2, and Printing Tools.

The set of two 1.44MB disks includes System StartUp and System

Additions.

The instructions in this document give the name of the 800K disk first, followed by the name of the 1.44MB disk in parentheses.

BACK UP FONTS AND DESK ACCESSORIES

Before you install System 6, back up your fonts and desk accessories. You can back up fonts and desk accessories using the Font/DA Mover. Or you can make a copy of the System file on a floppy disk, and remove the fonts and desk accessories later, using the Font/DA Mover.

PREPARE FOR A CLEAN INSTALLATION

---

1) Start up with the System Tools (or System Startup) disk. To do

this, turn on your Macintosh computer. If your Macintosh is already

on, choose Restart from the Special menu.

2) Put the System Tools (or System Startup) disk into the startup

floppy drive right after you hear the chime. The floppy disk icon

appears in the upper-right corner of the desktop above the hard

disk's icon.

If it doesn't appear there, choose Restart from the Special menu.

The disk ejects push it back into the drive immediately.

3) Double-click your hard-disk icon to open it.

4) Double-click your System Folder to open it.

5) Drag the Finder and System files to the Trash, and choose Empty Trash from the Special menu.

INSTALL SYSTEM 6

---

1) Double-click the System Tools (or System StartUp) disk icon.

2) Double-click the Installer icon (not the Installer script). A welcome message appears.

3) Click the OK button. The Easy Install screen appears.

At this point you have two options:

Easy Install, which installs the Macintosh system software and printer software recommended for your computer model.

Customize Install, which lets you override the recommended software and choose exactly what items to install.

Note: You must use the Customize option to install AppleShare workstation software.

Easy Install

---

1) Click the Switch Disk button to select the disk where you want to install System 6.

2) Click the Install button to do the Easy Install.

3) Follow the instructions on the screen. Messages appear to prompt you for the proper disks. When installation finishes, a message appears.

4) Click the Quit button.

5) Choose Restart from the Special menu.

Customize Install

---

1) Click the Customize button. A screen appears.

2) Click the Switch Disk button to select the disk where you want to install System 6.

3) Select the items you want to install from the scrolling window. Hold the Shift key and click to select multiple items. Your selections appear beneath the scrolling window.

4) When you've made your selections, click the Install button.

5) Follow the instructions on the screen. Messages appear, prompting you for the proper disks. When installation finishes, a message appears.

6) Click the Quit button.

Article Change History:

17 Oct 1994 - Reviewed for consistency, changed format, and changed title.

22 Feb 1994 - Reviewed and edited.

Support Information Services

Published Date: Feb 18, 2012

System 6 MultiFinder (10/94)

MultiFinder lets you have several programs open simultaneously, making it fast and easy to switch between them. You can print in the background and get the use of your Macintosh computer back faster. And you can allocate memory to programs, so you can get the most out of your available RAM.

With versions of System 6, the Finder is one of these programs. This means you don't have to quit the program you're running to work in the Finder.

This article has been archived and is no longer updated by Apple.

Setting up MultiFinder

You need at least 2 megabytes (MB) of Random Access Memory (RAM) to take advantage of MultiFinder. To run MultiFinder, the MultiFinder file must be in your System Folder. If not, copy it from your Utilities 1 disk to the System Folder on your hard disk.

You can launch MultiFinder from the Finder in System 6 by opening the System Folder and double-clicking on the MultiFinder icon. To set your system to launch MultiFinder each time you start your Macintosh computer, follow these steps:

1) Choose Set Startup... from the Special menu. A dialog box appears.

2) Click the MultiFinder radio button.

3) Click the OK button.

4) Choose Restart from the Special menu.

How to Tell If MultiFinder Is Running

To find out if you're running MultiFinder, open the Apple menu. If you're in MultiFinder, you'll see About MultiFinder... at the bottom of the menu. You'll also see application names below the desk accessories if they're loaded into memory.

Another way to tell is by looking at the far right of the menu bar. If you're in MultiFinder, you'll see either a small Macintosh icon, or an application icon. In addition, the About the Finder... window changes when you're running MultiFinder. It not only shows memory allocated to the System and Finder, but also to other programs loaded in RAM. You always want to see some white space for applications on this graphic barometer.

Switching Between Applications

MultiFinder lets you switch between applications in several ways:

Choose the application name from the Apple menu.

Click the small icon at the far right of the menu bar. Repeated

clicking cycles through all the open programs.

Click the visible portion of another application's window.

Double-click an application icon, even if it's dimmed.

Memory Allocation

In MultiFinder, each application gets its own portion of memory that belongs solely to that application. Every application comes with a default amount of memory assigned to it, but sometimes you'll get a message that there isn't enough memory to run the program, or that the application has unexpectedly quit. You can fix this by changing the program's memory allocation.

1) Quit the application (no need to do this if the application has

already quit).

2) At the desktop, select the application icon.

3) Choose Get Info from the File menu (or press Command-I). The Get

Info window appears.

4) Select the Application Memory Size box.

5) Type a new number in the box. Make sure the number you use isn't

less than the Suggested Memory Size. It's best to increase the

memory size by only 50K to 100K at a time. You can always repeat

the procedure if it isn't enough.

6) Close the Get Info window.

You can now launch the application again. The application will get this new memory size until you change it.

Note: When using MultiFinder with System 6, the Finder should get 250K as the minimum size. Use the Memory Allocation procedure to increase the Finder's memory. Restart so the new memory allocation takes effect.

Article Change History:

17 Oct 1994 - Reviewed for uniformity, changed format, and changed title.

24 Feb 1994 - Made text-only version available.

Support Information Services

Published Date: Feb 18, 2012

TA48031_Apple_III_Serial_Port_Pinouts__(TIL00963).pdf

Apple III Serial Port: Pinouts (6/94)

This article provides the pinouts and signal descriptions for the Apple /// serial port.

This article has been archived and is no longer updated by Apple.

DB 25
Connector Signal Name

1 ..... Frame Ground
2 ..... Transmit Data (Tx)
3 ..... Receive Data (Rx)
4 ..... Request to send (RTS)
5 ..... Clear To Send (CTS)
6 ..... Data Set Ready (DSR)
7 ..... Signal Ground
8 ..... Data Carrier Detect (DCD)
19 ..... Secondary Clear To Send (SCTS)
20 ..... Data Terminal Ready (DTR)

Article Change History:
27 Jun 1994 - Revised formatting, revised title.

Support Information Services
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Desktop Network Troubleshooting

This quick reference will help you diagnose common connectivity problems in your Local Area Network (LAN). With this information, you can fix the problem yourself, or give support personnel the most helpful information.

The topics include:
* Overview
* LAN defined
* LocalTalk/PhoneNET hardware
* Checking LocalTalk connections
* Checking the Chooser
* LocalTalk hints and help
* EtherTalk hardware
* Checking Ethernet connections
* Checking the Network Control Panel Device (System 6.0.x)
* Checking the Network Control Panel Device (System 7.x)
* EtherTalk hints and help
* Where to get more information

This article has been archived and is no longer updated by Apple.

LAN Defined

A Local Area Network, or LAN, is made up of computers and shared devices that are physically connected in a limited area. A shared device can be a LaserWriter printer, modem, file server, or print spooler. The two major network types discussed here are LocalTalk/PhoneNET (PhoneNET is a LocalTalk cabling system by Farallon Computing, Inc.) and EtherTalk.

LocalTalk/PhoneNET Hardware

A LocalTalk/PhoneNET network uses the following hardware:

1) Connector module

2) Standard phone cable

3) Terminating resistor

Checking LocalTalk Connections

Follow these steps to check LocalTalk connections:

1) Each Macintosh on the LocalTalk network should have the 8-pin (round) end of the connector module plugged into the Printer port.

2) Each shared device on the LocalTalk network should have the 8-pin (round) end of the connector module plugged into the Network (»¡) port.

3) Standard phone cables connect the computers and shared devices in a LocalTalk network. The box end of the connector module has two phone jacks. Either two phone cables, or one phone cable and one terminating resistor, should be attached.

Checking the Chooser

The Chooser can give you valuable information about the network. This section includes a list of questions to help you collect worthwhile information for support personnel. Select Chooser from the Apple menu, and the Chooser window appears. Here are the questions:

1) Is the AppleTalk Active radio button selected?

2) Do you see the AppleShare icon in the (upper-left) box?

3) Do you see any names in the file server (upper-right) box?

4) Do you see the name of the file server or shared disk you want in the file server (upper-right) box?

5) Do you see any zone names in the AppleTalk Zones (lower-left) box?

6) Do you see only a few zone names in the AppleTalk Zones (lower-left) box?

7) Do you see your zone name in the AppleTalk Zones (lower-left) box?

LocalTalk Hints and Help

If you're having problems, try these tips:

* Select Shut Down (not Restart) from the Special menu, wait 30 seconds, and then power on. This simple procedure often fixes the problem.

* Try swapping out the various hardware components (terminating resistor, connector module, and phone cable) one at a time.

WARNING: ALWAYS SHUT DOWN BEFORE MAKING ANY HARDWARE CHANGES.

* Re-install the AppleShare Workstation (System 6.0.x) or File Sharing (System 7.x) software.

Ethernet Hardware

An Ethernet network uses the following hardware:

* Ethernet NB Interface Card -or- built in Ethernet AUI (Attachment Unit Interface) port

* Ethernet (coaxial) cable -or- twisted pair (telephone) cable

* BNC T-connector -or- an Apple Ethernet NB Transceiver, often referred to as a "friendly-net connector". Apple Ethernet NB Transceivers are available in two varieties:

Apple Ethernet Thin Coax Transceiver (M0329LL/A)
Apple Ethernet Twisted Pair Transceiver (M0437LL/A)

Checking Ethernet Connections

Make sure the basic Ethernet connections are correct:

1) Does each Macintosh on the EtherTalk network have an EtherTalk Interface Card installed -or- is using the built Ethernet AUI port?

2) Does each Macintosh on the EtherTalk network have the BNC T-connector plugged into the round connector on the installed on the older EtherTalk NB Card -or- a Transceiver plugged into the AUI port on the newer Ethernet NB Card.

3) Check the jumper on the EtherTalk NB Card to ensure that the EtherTalk signals go out the right port (preset for AUI). The jumper area is located near the bottom end of the card near the connectors. There are three pins of which the jumper sets over two. With the EtherTalk NB Card face up, and the connectors to your right, when the jumper is on the left two pins the signal goes out the AUI port, and when the jumper is on the right two pins the signal goes out the BNC port.

* EtherTalk NB Cards are shipped with the AUI port as the default.

* The Apple AUI port, which looks similar to a video card port is slightly larger.
* The BNC port. This is a round port, similar to a cable television cable plug.

4) Do the network LaserWriters and ImageWriter printers still use LocalTalk? (The EtherTalk network is joined to the LocalTalk network to access these printers by using either a bridge, or router.) See steps 2 and 3 in the "Checking LocalTalk Connections" section.

5) Are coaxial cables connecting the computers and devices in the EtherTalk network? There should be a cable attached to each end of the BNC T-connector -or- the Ethernet Thin Coax Transceiver. If the computer is last on a particular Ethernet segment, the BNC T-connector a cable attached to one end, and a terminator attached to the other end.

6) Is the latest Networking software installed? Update your AppleTalk EtherTalk, or TokenTalk software using the latest version of the Network Software Installer disk.

IMPORTANT: You cannot use the older EtherTalk NB Card in a Macintosh Quadra or later. You MUST use either the on-board AUI port or the newer Ethernet NB Card.

Checking the Network Control Panel Device (System 6.0.x)

If you're running System 6.0.x, follow these steps to check your Control Panel device:

1) From the Apple menu, select Control Panel.

2) Click the Network icon and the Network window appears.

3) Is the EtherTalk icon selected? If not, click the icon name to select it.

4) Close the Control Panel window.

Checking the Network Control Panel Device (System 7.x)

If you're running System 7.x, follow these steps to check your Control Panel device:

1) From the Apple menu, select Control Panel.

2) Double-click the Network icon. The Network window appears.

3) Is the EtherTalk icon selected? If not, click the icon name to select it.

4) Close the Network window.

5) Close the Control Panels window.

EtherTalk Hints and Help

Keep these tips in mind when troubleshooting:

* Select Shut Down (not Restart) from the Special menu, wait 30 seconds, then power on again. This simple procedure often fixes the problem.

* Check that the Ethernet Interface Card is seated properly.

WARNING: ALWAYS SHUT DOWN BEFORE MAKING ANY HARDWARE CHANGES.

* Try swapping out the Ethernet Interface Card.

* Re-install the EtherTalk software from the latest version of the
Network Software Installer disk.

Where to Get More Information
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* "Apple EtherTalk NB User's Guide" by Apple Computer, Inc. (030-2216-A)

* "Apple LAN Literacy" by Apple Computer, Inc.

* "Apple Network System Overview" by Apple Computer, Inc.

* "Macintosh Networking Reference" (System 7.0) by Apple Computer, Inc.
(030-3936-A)

* "Understanding Computer Networks" by Apple Computer, Inc.

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How to Use SCSI Probe (5/97)

SCSI Probe is a utility program that gives you information on each SCSI device (like hard disks, CD-ROM drives, tape backup drive, removable drives) connected to your system. For each device, SCSI Probe includes the SCSI number, the manufacturer, and version.

SCSI Probe also lets you mount and unmount devices. That is, you can make the Macintosh aware of a SCSI device (mount) or unaware of a device (unmount). If your hard disk icon doesn't appear on the desktop after you start your Macintosh, SCSI Probe can sometimes get it to work. SCSI Probe can also help you track down SCSI address conflicts.

This quick reference covers the following topics:

- Installation and use

- Hints and help

- Where to get more information

This article has been archived and is no longer updated by Apple.

Installation and Use

Follow these steps to install and use SCSI Probe:

1) Drag SCSI Probe to your System Folder. It will be placed in the Control Panels folder.

2) Select Control Panel from the Apple menu.

3) In the Control Panel, select the SCSI Probe icon. A window appears.

4) Click the Update button to update the device list for your current configuration.

5) To mount a SCSI device, click the Mount button. If SCSI Probe is successful in mounting the device, its icon will appear on your desktop.

Hints and Help

If you've had to use SCSI Probe to mount a hard drive, be aware that it's only a temporary fix. Make sure you back up the data on that hard disk before shutting down again. Then determine if your hard disk drive needs to be reinitialized or repaired.

Where to Get More Information

The Macintosh Bible by Naiman, Dunn, McCallister, and Kadyk - Fourth Edition has some additional information about SCSI Probe and other shareware utilities.

These articles can help you locate software updates mentioned here:

* Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

* Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History
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16 Sep 1994 - Updated installation description. Removed binary file.
02 Feb 1993 - UPDATED.

Support Information Services
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Quick Reference: Using SmartForm Assistant

This quick reference describes how to use Claris' SmartForm Assistant program. Use this application to print professional-looking forms with high-quality graphics and legible, accurate data. SmartForm Assistant forms are organized so you can enter data easily.

A form designer can program SmartForm Assistant forms to calculate automatically, to check the data you enter, and to provide help when you're filling in a form -- things you can't do with paper forms. You can also export the data in your forms to a database or spreadsheet application.

This quick reference is based on SmartForm Assistant 1.1v2, and covers these
- Getting started

- Filling in a form

- Printing a form

- Using support features

- Managing a form set

- Where to find more information

This article has been archived and is no longer updated by Apple.

Getting Started with SmartForm Assistant 1.1v2

There are four ways to begin filling in a form using SmartForm Assistant:

- Double-click a form.

- Highlight the SmartForm Assistant application icon, pull down the File Menu and select the Open option.

- Double-click the application icon. SmartForm Assistant displays the Open file dialog box. Select the form you want to fill in from this list.

- If you have a set of forms already open, you can pull down the Edit menu and select Add Blank Form to create a blank form. Use this method if you need to fill in multiple copies of the same form in a single session. Also, use this method to create forms requiring unique form numbers.

Note: Throughout this quick reference document, Command-key equivalents are shown in parentheses ( ). You can press these instead of going to menus to select options.

Filling in a Form

Here's how to fill in a form:

1) After you have gotten started with SmartForm Assistant, choose the appropriate form.

2) Once the form set is open, pull down the Edit menu and select Add Blank

Form (Command-A). This adds a blank form to your set of forms.

3) Type in the required information. Use the Tab and Shift-Tab (backwards tab) to move from field to field. If you have any difficulties, see the section below, "Using Support Features" for on-line help.

4) When you complete the form, save the information to your hard disk or floppy for archiving purposes. You are ready to print your form(s).

Printing a Form

1) Pull down the File Menu and select Print (Command-P). If a form requires you to print multiple copies, click the "Print with part labels" option in the print dialog box.

2) You can print The Current Form, All Forms, or Visible Forms. Make your selection by using the pop-up menu on the print dialog box. The choice defaults to Print Current Form.

Using Support Features

This section explains two categories of Support Features:

- Intelligent Assistance, which deals with things you need to know immediately.

- General forms Assistance, which contains information needed by more advanced users.

Intelligent Assistance

SmartForm Assistant provides three types of intelligent assistance. These are menu items that help you fill in forms quickly and accurately. These include Format Help, Support window, and Choices window.

- Format Help dialog box. This feature describes the different types of entry formats. SmartForm Assistant provides Format Help on all forms. The form designer must provide Support and Choices, which vary among forms.

Format Help dialog box. The Format Help dialog box provides a concise explanation of the correct entry formats for each data type. The form designer can define a field as one of ten data types: text, decimal, integer, date, time, name, phone, international phone, logical, or picture. To display the Format Help dialog box, pull down the View menu and select Format Help... (Command-?) after you open a form.

- Support window. This feature describes the type of information to enter. The form designer can also provide custom help messages and custom error messages for each field in a form. These messages apply to the selected field and appear in the Support window. To display the Support window, pull down the Windows menu and select Show Support (Command-H).

- Choices window. This feature lists choices for the selected field. After selecting or tabbing to a field, you can enter data into it by typing, by pasting from the Clipboard, or by selecting an option from the Choices window. As with the Support window's help and error messages, choices are not built into all forms; the form designer must

provide them. Some forms, or fields in a form, may not have choices associated with them.

To display the Choices window, pull down the Windows menu and select Show Choices (Command-Y). You can select items from the Choices window by:

- Selecting an item in the choice list and then clicking the Select button.

- Double-clicking an item in the choice list.

- Pressing the Command-key equivalent corresponding to the choice you want (Command-key equivalents for the first 10 choices are always Command-1 through Command-9, then Command-0).

General Forms Assistance

Beyond the intelligent assistance provided by Format Help, Support, and Choices, the following features help ease data entry and provide information about the form or its data. These include Name Options..., the Form Info window, the Form Set Info window, and the Auxiliary window.

- The Name Options... dialog box shows prefixes and suffixes (like Mister and Senior) that help SmartForm Assistant interpret acceptable entries in a Name field. It also controls how SmartForm Assistant displays your accepted entry. Some prefixes and suffixes also have abbreviations (Mr. and Sr., for example) and alternate abbreviations (Mr and Sr), which you can view in the Name Options dialog box.

To display the Name Options dialog box, pull down the View menu and select Name Options... The "Built-in" card displays name options for all forms; the "User-defined" card displays them for a specific form set; the "Library" card displays a list of name options that you define (for example, making Research Engineer, Researcher, or R.E. acceptable).

- The Form Info window displays data about the form with which you're working. The Form Info window displays the Form Name, number, and the creation and last modified dates for the current form. It also includes a field into which you can enter comments about the current form. To display the Form Info window, pull down the Windows menu and select Show Form Info (Command-T).

- The Form Set Info window, displays data about the current form set. The Form Set Info window displays the date the Form Set was created and last modified and information about the Source Form (the form created in SmartForm Designer). It also includes information about the total number of forms in the set, number of visible forms, and number of hidden forms. To display the Form Set Info window, pull down the Windows menu and select Show Form Set Info (Command-M).

- The Auxiliary window is an extra page, consisting of information that will not be printed with the rest of the form. The Auxiliary window contains extra information that SmartForm Assistant does not print. To display the Auxiliary window, pull down the Windows menu and select Show Auxiliary (Command-U).

Managing a Form Set

When you have a number of forms to keep straight -- as with numerous weekly expense reports in the same file -- you can search through old forms and manage forms more easily with the controls First Form, Next Form, Previous Form, and Last Form. These items are in the View Menu. When you want to

view a different form in the set, use these menu items to move through the form set.

Find Forms...

This is used to find a specific form. To find a form, pull down the View Menu and select Find Forms... (Command-F) and a blank form will appear. Determine which field you want to search on and enter the search criteria into that field. To find a form that was created on 7/25/88, you'd enter 7/25/88 as the search criteria in the date field and then click Find in the find dialog box. To find a Facilities Work Request form for reconfiguration of cubicles, you would open the Facilities set of forms, pull down the View menu and select Find Forms..., and enter "reconfigure cubes" in the comments field. The program would find the form in which you entered "reconfigure cubes" in the comments field.

Hide Current Form, Swap Hidden-Visible, or Show All Forms

These menu options are used to manipulate forms in a set after you have searched for a form(s). Suppose you fill in forms for John Doe and Sally Smith. There are 10 forms in the set with John's name, and 5 with Sally's name. Sally has just asked you to print all of her forms. You would pull down the View Menu, select Find Forms..., enter = Smith and click Find on the dialog box. You'd now have 5 forms visible and 10 forms hidden. Now you pull down the File Menu, select print and choose Print Visible Forms from the pop-up menu.

If you wanted to see all of John's forms, you'd pull down the View Menu and select Swap Hidden-Visible (Command-J). John's 10 forms would be visible and Sally's 5 forms would be hidden.

Collect...

The Collect feature lets you take a form that you've already filled out and collect all similar forms to create a form set. For example, if you created 15 Vacation Leave forms, you have 15 different files. If you wanted to examine the one you filled out last week, you'd have to search through your hard drive and open that file. But, using SmartForm Assistant 1.1v2, you open one of those Vacation Leave forms, pull down the File menu and select Collect. Select the folder that has the 15 vacation forms in it and Collect forms into "the current [front-most] set". Watch the dialog box compare each file and collect the ones that match the type of form that is open. This gives you a set of 15 vacation forms.

You can also collect forms by launching SmartForm Assistant, pulling down the File Menu, selecting Collect, choosing the file you want to collect, and clicking Collect forms into "a new set of forms". The application will search for all the files that match the chosen form type.

Where to Find More Information

About SmartForm Assistant 1.1v2

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Kanji: LaserWriter IINTX-J Is Recommended Solution

Article Change History

09/22/92 - UPDATED
* To include information on Kanji TrueType and ATM-J fonts.

Is a Japanese version of the LaserWriter IIg available?

This article has been archived and is no longer updated by Apple.
As of 2/8/92, a Japanese version of the LaserWriter IIg is not available. When Kanji Postscript is required, the LaserWriter IINTX-J is the recommended LaserWriter solution. Kanji TueType and ATM-J fonts are also available and will enable high quality printing to QuickDraw printers.

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MacX 1.1.7 Font Error

I've encountered a problem using MacX 1.1.7 and MacTCP 1.1 on a Macintosh IIfx using system software versions 6.0.5 and 7.0. I used it to display the Euclid program (CAD 2D and 3D). After launching the program, I got the message:

"X Toolkit Warning: Cannot convert string "-*-MENU-MEDIUM-R-Normal--*-120-*-*-P-*ISO8859-1" to type FontList, using fixed point."

Do you have any suggestions?

This article has been archived and is no longer updated by Apple.
Here are some possible causes of this problem:

- The proportional font "-*-MENU-MEDIUM...." doesn't exist in the Font Directory file or MacX Fonts folder. Select Fonts from the Edit menu to verify that this font exists.

- The Font Directory file might be out of sync due to improper removal of fonts or font aliases.

We suggest that you reload the MacX fonts from the MacX 1.1.7 distributed disks, (especially the "Font Directory"), and launch MacX again.

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AppleTalk Remote: Troubleshooting Inability to Reach TCP/IP Host

We're using MacTCP with a Macintosh on Ethernet configured for TCP/IP (as opposed to AppleTalk - encapsulating IP with DDP). This works fine. When using AppleTalk Remote Access however, the Macintosh that is dialing in must use AppleTalk (since the link is AppleTalk only).

When we configured MacTCP on the PowerBook, we chose AppleTalk and the LocalTalk side of a FastPath 4 that was configured to route TCP/IP. This K-box works fine for Macintosh computers on LocalTalk. With AppleTalk Remote Access, however, we can't reach a TCP/IP host. We get a "host not found" message. In addition, when we configured MacTCP on the host Macintosh (sitting on Ethernet) for AppleTalk encapsulation of IP, we couldn't reach the host either.

Since I always used just the TCP/IP configuration of MacTCP before, I'm not sure what is going wrong. Is there something in the K-box we need to change? Something in the MacTCP configuration?

Configuration:
- Macintosh IIci
- MacTCP 1.1
- System 7
- Apple Ethernet (old) card
- Shiva FastPath 4

This article has been archived and is no longer updated by Apple.
First you should make sure the FastPath is running either K-Star or KIP. If it's using the default ROM code, you won't be able to use it as a DDP/IP gateway.

Next you should verify the configuration:

- Check to see if the DDP/IP gateway was configured at all. You should see a startup message in the log or diagnostics windows that begins with "KSTAR FastPath ..."

- Check that there are IP addresses assigned for either static or dynamic allocation, or both. Verify that the IP address, default router, and subnet mask fields are configured properly.

- Verify that option 7 is turned on; this allows the Fastpath to respond to NBP lookups for "IPGATEWAY" from both the LocalTalk and Ethernet interfaces. We suspect that option 7 may be your culprit. KSTAR 8.1.1 hard wires option 7 on, so you don't have to worry about it if you're using 8.1.1.

You could use Inter*Poll to verify that the FastPath was advertising DDP/IP services. Perform a lookup for all nodes of type "IPADDRESS" Every node assigned a DDP/IP address will respond including the FastPath itself. The router should respond with something like:

Net	Node	Name	Type	Zone
1	220	192.11.0.200	IPADDRESS	LocalTalk

If you then do a lookup for all nodes of type "IPGATEWAY" you should see only the router respond, no end nodes, and hopefully only one router per zone.

Net	Node	Name	Type	Zone
1	220	192.11.0.200	IPGATEWAY	LocalTalk

By default it will only respond to lookups that are directed from the LocalTalk port. If option 7 is enabled, the FastPath will respond to lookups from the Ethernet port, but only if they are directed to the zone for which the LocalTalk port is configured. For example, assume you have a FastPath, with the LocalTalk port configured for zone "LocalTalk," and the Ethernet port configured for zone "EtherTalk." You must select the zone "LocalTalk" when you configure the DDP/IP gateway location in the MacTCP control panel from an Ethernet attached Macintosh, or from a remote LocalTalk attached Macintosh. If you don't select "LocalTalk," the FastPath won't respond to lookups for "IPGATEWAY." The key here is to select the correct zone, the zone configured for LocalTalk interface of the FastPath.

In their documentation, Shiva is a little more restrictive. They specify that the Ethernet port of the FastPath must have the same zone included in its zone list as the zone configured on the LocalTalk interface. They also specify that all nodes managed by a single gateway MUST be in the same zone as the LocalTalk interface for this gateway. The DDP/IP gateway as a whole isn't a documented standard. As long as you use only dynamic assignment, you shouldn't have any problem with the scheme outlined above. With version 8.1.1 of K-STAR, it looks like you should be able to use this type of scheme with static addresses as well. I haven't tested this, but the documentation included with 8.1.1 seems to indicate that they've made some significant improvements to address assignment.

From the K-STAR 8.1.1 release notes:

Changes made to K-STAR to avoid dynamic IP addresses that are still in use from being given away are:

a. IP in AppleTalk traffic from each Macintosh is used to reset the aging timer.

b. While entries idle (those which have not sent an NBP reply for its IPADDRESS, or any IP traffic) for over 5 minutes will be considered for reuse; the FastPath will send directed IPADDRESS NBP lookups to the Macintosh for 10 minutes after the last response was seen.

c. The FastPath performs a wild card IPADDRESS lookup in the local (LocalTalk) zone every 30 minutes.

d. Previously, the FastPath would hold an IP packet for an address in its client range for up to 30 minutes in the hope that the client would respond to the (initial) NBP ARP. The FastPath no longer holds such packets.

e. Previously, the FastPath stopped keeping track of how old entries were after 30 minutes. Now times are kept up to 2^15 seconds (over 9 hours) to better distinguish between old and very old entries when deciding which entry to reuse.

f. The FastPath will only respond to "NBP PROXY ARPs" (Mac sends an IP ARP request by doing an NBP lookup for type IPDARESS, name xx.xx.xx.xx) if they originate from a Macintosh which is a registered client. This enables two FastPath IPGATEWAYs to coexist in the same zone. Since 2 IPGATEWAYS can coexist, the FastPath now always responds to IPGATEWAY lookups; this is as if option 7 was always enabled.

Finally, take a look at the TCP/IP configuration of the remote Macintosh as well as the Ethernet based Macintosh that also failed. What do they have in the way of configuration data? What zone are they pointed to for the DDP/IP gateway lookup? Are they configured for "Server" node address access? What zone do they reside in? Have you tried static address assignment?
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Personal LaserWriter NT: Minimum Margin Reduces Lines Per Page

I have a Macintosh LC with 2MB RAM and an HD40 SC running system software version 6.0.8. I have an Apple IIe Card installed and am printing to a Personal LaserWriter NT from AppleWorks and Publish It.

When printing, the print starts an extra half-inch down the page, thereby misaligning subsequent pages -- the last page of one print job I measured had a top margin of 4 inches.

Is there a compatibility problem with the Apple IIe Card and the Personal LaserWriter NT?

This article has been archived and is no longer updated by Apple.
This indicates that software is not properly configured for the correct number of lines per page. The Personal LaserWriter NT has a minimum margin that reduces the number of available lines per page to 61 from the usual 66 lines for an 8.5x11 page. Configure your software accordingly.

The Apple IIe Card version 2.0 software uses the printer driver in the Macintosh System Folder. Ensure that you have the Courier 10-point font installed.

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Lisa 7/7: Installing OS 3.1 & Pascal Workshop 3.0 on Hard Disk

This article has been archived and is no longer updated by Apple.
To install Lisa 7/7 Office System 3.1 or 3.0 and Pascal Workshop 3.0 on a hard disk:

1. Backup any Office System or Macintosh documents from the hard disk.

2. Install the 7/7 Office System (release 3.0 or 3.1) as detailed in Chapter 6 of the Lisa Office System manual.
a. Select Erase when prompted.
b. Select Share if you wish to store Macintosh software on the hard disk

3. Install the Pascal Workshop as described in Chapter 1 of the Lisa Workshop manual. Select Don't Erase when prompted.

4. If you installed release 3.0 in step 2 above and want to upgrade to 3.1,
a. Get into the Workshop environment and insert the Release 3.1 Office System 2 diskette into the microdrive.
b. From the Workshop command line, type R.
c. When asked which file you wish to run, type: <-lower-StartUpdate.
d. Press the RETURN key.
e. You are then guided through the process of updating the system libraries. After answering a series of questions, follow the prompts to insert the necessary disks.
f. Since the update process changes the libraries on the startup disk,
1. Restart the Lisa when you've completed step 4e.
2. Replace the LisaWrite and LisaProject tools and stationary pads on the hard disk with the updated versions.
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System 7: File Sharing Is Not the Same as AppleShare File Server

Article Change History

09/10/92 - REVIEWED
* For technical accuracy.

I have a Macintosh running system software version 7.0 and sharing one folder. No one uses this computer; it acts as a file server only. The folder sharing function works fine with up to 10 users logged on. However, when an eleventh user tries to log on, one of these two messages appears:

- File server will not allow any users to log in. Try again later.
- Too many AppleTalk connections in use. Try again later.

The documentation says that up to 250 users are allowed per System 7 server.

This article has been archived and is no longer updated by Apple.
Your Macintosh SE/30 is not a dedicated server. It is a system running the system software version 7.0 file sharing option. With that configuration, you are limited to 10 users.

To make the Macintosh SE/30 a dedicated file server, you need to install and run the AppleShare File Server software.

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Apple File Exchange: Available on System 6.0.X and 7.0 Disks

Where can I get a copy of Apple File Exchange software to transfer MS-DOS files to my Macintosh SE?

This article has been archived and is no longer updated by Apple.
Apple File Exchange is included on the system software version 6.0.X and 7.0 disks:

System Software Version	Disk
6.0.3 and earlier	Utilities 2
6.0.4 and later	System Additions
7.0	Install 2

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Apple IIGS: Apple GS/OS 6.0 Supports the StyleWriter (7/94)

Can I use the StyleWriter with an Apple IIGS?

This article has been archived and is no longer updated by Apple.
To use Apple GS/OS with the StyleWriter you need GS/OS 6.0, a hard drive and at least 1 megabyte of memory (more is preferred).

Earlier versions of Apple GS/OS do NOT support the StyleWriter.

Known Problem
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* AppleWorks GS prints to the StyleWriter printer with GSOS 6.0. At full resolution of 360 dpi, however, full justification will not work and causes problems with spacing between words.

Work Around
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* Choose half resolution (180 dpi), then full justification works.

Article Change History:
6 July 1994 - Added known problem.
5 May 93 - Revised to include hard disk and memory information.

Support Information Services
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LaserWriter/LaserWriter Plus: External Pinouts (7/94)

What are the external signals associated with the DB-25 and DB-9 connectors on the LaserWriter and LaserWriter Plus?

This article has been archived and is no longer updated by Apple.
Here are the pinouts and signal names for the LaserWriter and LaserWriter Plus.

DB-25
Connector Signal Name

1 ..... Frame Ground
2 ..... Transmit Data (Tx)
3 ..... Receive Data (Rx)
4 ..... Request to Send (RTS)
7 ..... Signal Ground
20 ..... Data Terminal Ready (Tx)

NOTE: The other signals are not used.

DB-9
Connector Signal Name

1 ..... Chassis Ground
3 ..... Signal Ground
4 ..... Transmit Data (Dx+)
5 ..... Transmit Data (Tx-)
7 ..... Data Set Ready (DSR)
8 ..... Receive Data (Rx+)
9 ..... Receive Data (Rx-)

NOTE: RTS and DTR are only present for the convenience of the computer that the LaserWriter is attached to. You should use Xon/Xoff for flow control.

Article Change History:
12 Jul 1994 - Revised formatting, reviewed for technical accuracy.

Support Information Services
Published Date: Feb 18, 2012

Apple Daisy-Wheel Printer: Pinouts for IBM PC, XT, PS/2

Can I connect an Apple Daisy-Wheel Printer to an IBM PS/2/30? If yes, what are the cable pinouts?

This article has been archived and is no longer updated by Apple.
Yes, you can connect an Apple Daisy-Wheel Printer to an IBM PS/2/30. You may have a problem with a driver, though. Try setting your applications to print to a Qume-type printer.

Here's the cable pinout information for connecting an Apple Daisy-Wheel Printer to an IBM PC, XT, or PS/2 series:

IBM RS-232 Serial Apple Daisy-Wheel Printer
(DB-25 -- Female Connector) (DB-25 -- Male Connector)

1 ---------- 1
2 ---------- 3
3 ---------- 2
4,5 ---------- 8
6 ---------- 20
7 ---------- 7
8 ---------- 4,5
20 ---------- 6
22 ---------- N.C.

Reference:

RS-232 Signal (DB-25 .. DTE)
1 - Sig Gnd - Normally Shield or Chassis Ground
2 - TXD - Transmit Data
3 - RXD - Receive Data
4 - RTS - Request to Send
5 - CTS - Clear to Send
6 - DSR - Data Set Ready
7 - GND - SIGNAL Ground
8 - DCD - Data Carrier Detect
20 - DTR - Data Terminal Ready
22 - RI - Ring Indicate

Published Date: Feb 18, 2012

HyperCard: Which Version for Which System

I need to know what version of HyperCard to use with my version of system software.
This article has been archived and is no longer updated by Apple.
The following guide can help you find the correct version of HyperCard to use with your version of system software.

System	HyperCard
5.0	1.2.2
5.1	1.2.2
6.0.2	1.2.2
6.0.3	1.2.2
6.0.4	1.2.2, 1.2.5
6.0.5	1.2.2, 1.2.5, 2.0, 2.0v2, 2.1, 2.2, 2.3, 2.4
6.0.7	1.2.5, 2.0, 2.0v2, 2.1, 2.2, 2.3, 2.4
7.0	2.1, 2.2, 2.3, 2.4
7.0.1	2.1, 2.2, 2.3, 2.4
7.1	2.1, 2.2, 2.3, 2.4
7.5	2.1, 2.2, 2.3, 2.4
7.5.1	2.1, 2.2, 2.3, 2.4
7.5.2	2.1, 2.2, 2.3, 2.4

Notes

- System 7.0 or later is required for any stacks using Color Paint Tools or QuickTime 3.
- System 7.1 or later is required for any stacks using AppleScript, HyperCard Button Tasks or the Standalone Application builder.

Published Date: Feb 18, 2012

LaserWriter Plus: Uses Canon LBP-8 Engine

What engine does the LaserWriter Plus use?

This article has been archived and is no longer updated by Apple.
The LaserWriter Plus uses a Canon LBP-8 Engine.

Published Date: Feb 18, 2012

Macintosh: External Floppy Drive Connector Pinouts

What are the pinouts for the External Disk Drive Connector?
This article has been archived and is no longer updated by Apple.

The external floppy disk drive connector is featured on the Macintosh 128K, 512K, 512K enhanced, Plus, SE, SE/30, Classic, Classic II, IIcx, IIci, IIsi, Portable, and Performa 200.

A Macintosh 400K External Drive can be connected to the Macintosh 128K, 512K, 512K enhanced, Plus, SE, and Portable.

A Macintosh 800K External Drive or an Apple 3.5 Drive can be connected to the Macintosh 512K enhanced, Plus, SE, SE/30, Classic, Classic II, IIcx, IIci, IIsi, and Performa 200.

An Apple SuperDrive can be connected to the Macintosh SE (with SuperDrive upgrade), SE/30, Classic, Classic II, IIcx, IIci, IIsi, and Performa 200

An Apple Hard Disk 20 can be connected to a Macintosh 512K, 512K enhanced, Plus, and SE.

Connector type: DB-19.

Pin Name Description/Notes

. 1 CGND Chassis ground

. 2 CGND Chassis ground

. 3 CGND Chassis ground

. 4 CGND Chassis ground

. 5 -12V

. 6 +5V

. 7 +12V

. 8 +12V

. 9 N/C Not connected

. 10 PWM Regulates speed of the drive

. 11 PH0 Control line to send commands to drive

. 12 PH1 Control line to send commands to drive

. 13 PH2 Control line to send commands to drive

. 14 PH3 Control line to send commands to drive

. 15 WrReq- Turns on the ability to write data to the drive

. 16 HdSel Control line to send commands to the drive

. 17 Enbl2- Enables the Rd line (else Rd is tristated)

. 18 Rd Data actually read from the drive

. 19 Wr Data actually written to the drive
Published Date: Feb 18, 2012

Macintosh LC: Upgraded VRAM Improves Monitor Color Depth

Will you explain the advantages of increasing the VRAM on Macintosh LC from 256K to 512K?

This article has been archived and is no longer updated by Apple.
The advantage of increasing the VRAM on the Macintosh LC is an improvement in the color depth.

Here's a chart that shows the improved color depth:

Monitor	With 256K VRAM	With 512K VRAM
Macintosh 12" RGB Display	256 colors/grays	32,768 colors
AppleColor Hi-Res RGB Monitor	16 colors/grays	256 colors/grays
Apple Hi-Res Monochrome Monitor	16 shades of gray	256 shades of gray

Published Date: Feb 18, 2012

Pers LaserWriter LS: Minimal Gain From Memory Upgrade (11/94)

I recently had the RAM in my Personal LaserWriter LS upgraded from 512K to 1MB, and I haven't noticed any performance improvement. When I added RAM to my Texas Instruments MicroLaser printer, there was a definite performance improvement.

What does the RAM upgrade do for the Personal LaserWriter LS?

This article has been archived and is no longer updated by Apple.
Upgrading the Personal LaserWriter LS RAM does not provide a quantum improvement in performance because there is no processing capability on the printer I/O board, this is all handled by the computer to which the printer is connected.

The Personal LaserWriter LS I/O board only unbands the image as it is sent from the computer. Adding more RAM allows the printer to accept slightly larger documents.

A better way to improve Personal LaserWriter LS performance is to add RAM to or increase the performance of the computer to which the printer is connected.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

TA48053_Pers_LaserWriter_LS_No_Upgrade_to_Personal_LW_NT__(TIL09662).pdf

Pers LaserWriter LS: No Upgrade to Personal LW NT (11/94)

Can I upgrade my Personal LaserWriter LS to a Personal LaserWriter NT by changing a board?

This article has been archived and is no longer updated by Apple.
No. The Personal LaserWriter LS cannot be upgraded to a Personal LaserWriter NT because of engineering changes in the DC Controller and other circuits as well as FCC regulations.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

MacTCP Developer‘s Kit: Available from APDA

Is there a developer's kit for using MacTCP via the Macintosh Comm ToolKit?

This article has been archived and is no longer updated by Apple.
APDA, who distributes MacTCP, has a developer's kit. Contact them directly for information on the product.

For APDA contact information, search the Tech Info Library under "APDA".

Published Date: Feb 18, 2012

TA48055_AUX_Memory_and_Storage_Requirements_(TIL09669).pdf

A/UX 3.0: Memory and Storage Requirements

What is the minimum memory requirement to run A/UX 3.0?

This article has been archived and is no longer updated by Apple.
We recommend 8MB RAM for A/UX 3.O. It requires at least an 80MB hard disk, and 160MB is recommended.

Published Date: Feb 18, 2012

Macintosh 128K,512K,Plus: Keyboard connector pinouts

What are the pinouts for the RJ-11 connector used to connect the keyboard on the Macintosh 128K, 512K, and Plus?
This article has been archived and is no longer updated by Apple.
Early Macintosh models used an RJ-11 (phone) connector for the keyboard.
Note that all models since the Plus use the Apple Desktop Bus instead, and
are incompatible with these cables and connectors.

Pin Name Comments

1 CGND Chassis Ground
2 KBD1 Keyboard Clock
3 KBD2 Keyboard Data
4 +5V

Connector Type: RJ-11 Connector, 4 pin male

WARNING: Macintosh Keyboard cable connectors are just like those used in
modular telephones, but the cables themselves are not. Never connect
these cables to your telephone, and never connect a phone cable to
your Macintosh.

Published Date: Feb 18, 2012

A/UX 3.0: Installer Update Feature

This article explains the A/UX 3.0 Installer update feature.

This article has been archived and is no longer updated by Apple.
With A/UX 3.0, you can do an automatic update of A/UX from version 2.0 or version 2.0.1 if your disk has a minimum of 30MB of free space, and if your partitioning scheme matches that of A/UX 3.0. The free space accommodates the increased size of the A/UX file systems. If your system doesn't meet these two criteria, then we offer two updating utilities. These are similar to the utilities provided with earlier versions of A/UX to find files that need updating and to help you back up those files. Then when you install A/UX 3.0, it repartitions your disk and copies back your system and user files.

The A/UX 3.0 Installer updates existing A/UX 2.0 and 2.0.1 installations to 3.0 in the same manner as the installer used in A/UX 2.0.1. Basically, if the target disk is already set up for A/UX, it skips the disk formatting stage. During the UNIX package installation, outdated 2.x files are REPLACED by their newer 3.0 counterparts. The sizes of these replaced files are used in the free space calculation so that an enormous amount of free space isn't required.

As always, the installer IS NOT a substitute for backing up your disk drive. Make a habit of backing up daily or weekly to ensure the protection of your user files, and any changes you make to the system software.

In addition, A/UX 3.0 continues to support the Autorecovery feature. This feature allows you to recover key system files and get the A/UX computer back into a stable state.

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TA48058_AUX_Spooling_to_QuickDraw_Printers_(TIL09671).pdf

A/UX 3.0: Spooling to QuickDraw Printers

I can set A/UX up to spool LPR requests to an AppleTalk-based LaserWriter. Can A/UX 3.0 spool files to Personal LaserWriter LS, ImageWriter, and so on?

This article has been archived and is no longer updated by Apple.

No. You can spool from UNIX to PostScript devices (either serial or AppleTalk) and to ImageWriters, but not other QuickDraw printers such as the Personal LaserWriter LS and StyleWriter.

Published Date: Feb 18, 2012

AWS 95 & A/UX : Does Not Work with Apple Remote Access (4/95)

Will Apple Remote Access (ARA) work with A/UX?

This article has been archived and is no longer updated by Apple.
Both AppleTalk Remote Access 1.0 and Apple Remote Access 2.0 do NOT work with any version of A/UX. This includes the Apple Workgroup Server (AWS) 95 which uses the A/UX operating system.

Article Change History:
14 Apr 1995 - Added the AWS 95.
15 Mar 1994 - Added both versions of ARA.
18 Feb 1993 - Reviewed for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

Macintosh LC: No NTSC Video-Out with Apple IIe Card

I have a Macintosh LC with an Apple IIe Card. My problem is that the Macintosh LC doesn't have any composite video-out equivalent to the Apple IIGS and Apple IIe systems that I need for projection.

Do you know of any RGB-to-NTSC converters for the Macintosh LC in Apple IIe mode?

This article has been archived and is no longer updated by Apple.
There is no way to have NTSC-out on a Macintosh LC if an Apple IIe Card is installed. RasterOps, Truevision, or the Computer Video RGB-to-NTSC converters won't work because they require an RGB signal with NTSC timing. The Macintosh LC doesn't have this kind of video port (that is, it doesn't have NTSC sync timing rate built into the board).

Here are two workarounds:

* Use an Apple IIe or Apple IIGS as your NTSC projection system.

* Use an LCD overhead projection panel compatible with the Macintosh LC. Any panel compatible with the 12-inch monochrome or 13-inch RGB monitor will work with the Macintosh LC video port. This solution has the advantage of being a Macintosh environment projection device. We are unaware of any LCD projection panels compatible with the 12-inch RGB monitor.

Another option is using a video card such as the Spectrum/8 LC Card. You have used the slot, but now have a video board that supports not only large screen monitors, but also supports video-out with the addition of the RasterOps video expander or the Computer Video NTSC encoder. It gives you 256-color graphics for the Macintosh LC. This still doesn't allow for both the Apple IIe card and NTSC video-out.

The Spectrum/8 LC Card supports the following displays:

- SuperMac 19-inch Platinum Display
- 21-inch Platinum Two Page Display
- 16-inch Trinitron Display
- 19-inch Dual-Mode Trinitron Display
- 19-inch SuperMatch Color Display
- 21-inch SuperMatch Two Page Color Display
- Apple 12-inch RGB
- Apple Color 13-inch
- Apple Macintosh Portrait Display
- Apple 21-inch Monochrome
- RasterOps 19-inch
- Radius 19-inch (1152 x 882)

Published Date: Feb 18, 2012

LaserWriter IIf/IIg: Using with Ergofeed Sheet Feeder

Is there a way to configure the RS-232 port on the LaserWriter IIf/IIg so that we have the same functionality as we had with the LaserWriter IINT/IINTX? We're experiencing difficulties with the Ergofeed sheet feeders from BDT Products, Inc. They won't work, even if we put the thumb switch on position 3 (RS-232 not arbitrated for input).

This article has been archived and is no longer updated by Apple.
BDT has a new PROM and driver for their Ergofeed sheet feeders that make them compatible with the LaserWriter IIf and LaserWriter IIg.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

A/UX 3.0: Archive Tape Backup Drives

With A/UX 3.0, is it possible to back up to tapes as large as 250MB?

This article has been archived and is no longer updated by Apple.
The MaxStream 250Q tape drive from Archive works under A/UX 2.0 and later.
It can store up to 250MB of data on a DC6250 cartridge.

A/UX 3.0 Peripheral Compatibility Testing found that the other three
Archive drives worked under A/UX 3.0. These three drives are listed here:

- Archive ST2000 (2GB) 4mm DAT

- Archive 150 (150MB) 1/4-inch cartridge drive

- Archive 525 (525MB) 1/4-inch cartridge drive

Published Date: Feb 18, 2012

MacX: Compile Font from BDF File to Make It Usable

We're using MacX with AIX on an RS6000. Our environment includes NDC X Terminals and PCs running X-Vision from VisionWare. We use WordPerfect on the RS6000.

Some of the fonts are causing problems. In particular, MacX erroneously interprets lines as bogus characters. Here is an example of a font description:

bld17.500.snf -ibm--bold-r-block--23-16-100-100-m-110-ibm-pc850

Does Apple have anything that corresponds to these fonts? How do we map in to them?

This article has been archived and is no longer updated by Apple.
Apparently, the MacX client is requesting a font that doesn't exist in the MacX server.

We suggest the following:

- Use software called "snftobdf" to convert an SNF (Server Natural Format) file into a BDF (Bitmap Distributed Format) file.

- After converting the file to Bitmap Distributed Format, compile it by Font Directory under MacX. It will produce a font in a format the MacX server can use. For more detailed information on how to compile a BDF file within MacX, see page 101 of Apple MacX User's Guide, "Compiling fonts from BDF files."

You must store all available fonts in the MacX Fonts folder, and the MacX Fonts folder must reside either in the System Folder or in the same folder as the MacX application.

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MacX 1.1.7: How to Bypass Standard Colormap Initialization

How can I modify the MacX 1.1.7 application with ResEdit to bypass the standard colormap initialization?

This article has been archived and is no longer updated by Apple.
Follow these steps:

1) Back up the golden master of MacX 1.1.7 before doing the change.

2) Open MacX 1.1.7 golden master with ResEdit and open CODE #4 resource.

3) Change the 0x4E56 at 0x2952 offset to be 0x4E75 (RTS instruction). This removes the standard colormap initialization.

Published Date: Feb 18, 2012

MacX: Default Font When Client Software Doesn‘t Specify

What is the default font that MacX uses if the client software doesn't specify a font?

This article has been archived and is no longer updated by Apple.
If the X client application doesn't specify any font to use, the MacX server looks for the "fixed" font. See page 115 of "Apple MacX User's Guide" for details.

Note that even if the X client doesn't specify the font name on the client's command line, the client can still look for some default places in the client host (like .Xdefaults file in user's home directory and the /usr/lib/X11/app-defaults file) for resources. These files store application and machine-specific resources. The details about how the X resources are referenced can be found in most X11 reference documents, such as the one on page 10 of X(1) manual pages in "X11 Reference for A/UX."

Published Date: Feb 18, 2012

A/UX: FMbackup Utility Restores .fs_cache After Crash (5/97)

This article describes the FMbackup utility you can use with A/UX.

This article has been archived and is no longer updated by Apple.

FMbackup.sit is a useful utility. It keeps a current backup copy of your .fs_cache (in compressed form) so that after a crash (toolbox or A/UX), it restores the backup copy before you restart the Macintosh. You don't have to manually relocate icons, windows, and so on.

You can find FMbackup.sit posted on A/UX Support Server (aux.support.apple.com). Here is the path:

```
aux.support.apple.com (130.43.6.2)
   /usr/spool/ftp/aux.patches/unsupported/2.0
```

This version of FMbackup utility works under A/UX 2.0.1 and A/UX 3.0, but doesn't work properly under A/UX 2.0. The README file included in the package gives the details.

Published Date: Feb 18, 2012

StyleWriter: Use Driver 7.1 with IIe Card Software 2.0 and 2.0.1

We installed the new StyleWriter drivers and they work great on the Macintosh. However, we can no longer print from an Apple IIe card. We have a Macintosh LC 4/80 running AppleWorks 3.0 on the IIe card. We had no problems printing until we installed our driver update. The computer seems to communicate with the printer, then the computer locks up, and we have to restart.

This article has been archived and is no longer updated by Apple.
If the new StyleWriter drivers are version 7.2 or 7.2.2, the recommendation is to use version 7.1 StyleWriter drivers with the Apple IIe Card software version 2.0 and 2.0.1. The 7.2 and 7.2.2 versions of the StyleWriter drivers haven't been tested with the Apple IIe Card software versions 2.0 and 2.0.1.

Published Date: Feb 18, 2012

ImageWriter & Excel 3.0: Fix for Problem Printing from Finder

I'm having problems printing multiple documents from a Macintosh Classic to an ImageWriter II. I'm using Excel 3.0 . In the Macintosh Reference Guide, on page 123, it tells how to print multiple documents.

After selecting all documents and choosing Print from the File menu, I select the ImageWriter II settings, which are: Faster/ All/ 1 Copy and Automatic. From the Desktop, each document opens, prints, and then closes in the order selected.

After each page, the top margin drops and continues to drop on every page. Also, after the first document prints, a dialog box asks you to insert the next sheet of paper. After clicking OK, the next page prints. The dialog box doesn't come up after every document, and randomly comes up when printing a multiple page document.

I reloaded system software, ImageWriter driver, and Excel 3.0. This doesn't help. I then printed the multiple documents to a LaserWriter II rather than to an ImageWriter II. Each document opened, printed, and closed in the order selected without a problem.

This article has been archived and is no longer updated by Apple.
We called Microsoft Tech Support and found that the same result is to be expected when printing from the Finder to an ImageWriter (or ImageWriter II) from any Macintosh under System 6 or 7.

The problem has been isolated and fixed in Excel version 3.0a. Registered users can call Microsoft Support for Excel on the Macintosh. Tell them that printing from the Finder to an ImageWriter causes problems, and they will send the updated software.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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LW Driver and System SW: Recommended Combinations

This article discusses system software and LaserWriter driver compatibility.
This article has been archived and is no longer updated by Apple.
On the early Macintosh computers (128K and 512K), Apple Computer recommends using the LaserWriter driver 5.2 with System 3.2 and Finder 5.3.

On later Macintosh computers, Apple recommends the combinations of system software and LaserWriter driver indicated in the table with YES.

Items marked with an 'X' indicate that the combinations are compatible. However, you should use the recommended combinations.

System Software							
LW Driver	Driver Notes	Pre 6.0.7	6.0.7	6.0.8	7.0.x	7.1.x	7.5.x
6.0.2		YES	X	X			
7.1.x			YES	X			
7.2				YES	X	X	X
8.0						X	
8.1.x			X	YES	X	X	X
8.2	5					X	X
8.2.2						X	X
8.2.3f					X	X	X
8.3	6,7				YES (3)	YES	YES
8.3.4							X
8.4	6,8				YES (3)	YES	YES
8.4.3						X	X
8.5.1						X	X
8.6							
Software Notes			10	2		4	

This table is currently being revised, please check back later.

System Software							
LW Driver	Driver Notes	7.6	7.6.1	8.0	8.1	8.5	8.5.1
6.0.2							
7.1.x							
7.2							
8.0							
8.1.x							
8.2							
8.2.2		X	X	X	X	X	
8.2.3f		X	X	X	X	YES	
8.3		X	X	X	X		
8.3.4		X	X	X	X		
8.4							
8.4.3		X	X	X	X		
8.5.1		X	X	X	X	YES	
8.6			X		X	YES	X
Software Notes							

Notes	Description
1	The LaserWriter 8.1.2 driver was the last version of the LaserWriter 8.x driver tested with any version of System 6.x. |
2	System 6.0.8 should use the LaserWriter 7.2 or 8.1.2 driver.

3	System 7.0.x should use the LaserWriter 8.3.4 or LaserWriter 8.4 driver WITHOUT the Desktop Printing extension.
4	Desktop Printing requires System 7.1 or greater.
5	LaserWriter 8.2 requires System 7.0 or greater.
6	LaserWriter 8.3 and greater with Desktop Printing requires System 7.1 or greater.
7	LaserWriter 8.3.4 can be found on Apple SW Updates and resolves the PCI Macintosh printing problem.
8	LaserWriter 8.4 is available on Apple SW Updates. It has many new features. If you have problems using the LaserWriter 8.4 driver.
9	LaserWriter 7.2 seems to work properly on newer version of the Mac OS, such as System 7.5.3. Although Apple has not received reports of incompatibilities, LaserWriter 7.2 was not tested with recent versions of Mac OS.
10	Apple recommends that customers who want to continue using System 6.0.x, upgrade to System 6.0.8.

Published Date: Feb 18, 2012

NetWare for Macintosh VAP 1.1: Phase 1/2 Conflict & Workaround

I have a 386 server running NetWare 2.15c and NetWare for Macintosh VAP v1.1 on an Ethernet network. The Ethercard in the file server is a Western Digital Star/Ethercard Plus (with AppleTalk) v3.07. There is also a Dayna AppleTalk PC card v1.22 to support a LaserWriter NT for the network. A Macintosh LC connects to the network with an Apple Ethernet card.

I have installed the VAP program three times and still can't get the LaserWriter or the file server to show up in the Macintosh Chooser. I'm running the driver for Phase II on the Macintosh LC.

I know that the Ethernet connection is good, because I also have Insignia Solutions SoftPC Universal v2.5 and SoftNode v1.0 running on the Macintosh LC. I can access the file server and run all the loaded applications (DOS and Netbios).

This article has been archived and is no longer updated by Apple.
You most likely have an AppleTalk Phase 1 versus Phase 2 conflict. The NetWare for Macintosh VAP 1.1 only supports Phase 1. This prevents any Phase 2 client from using the services.

Novell recommended a workaround. Upgrade to NetWare 2.2, and to the Macintosh VAP version 2.2. This will provide the NetWare server with AppleTalk Phase 2, and allow it to publish a LaserWriter printer queue that Macintosh clients can use.

Published Date: Feb 18, 2012

MacX: Problem with Ultrix Xlib Library

I have a problem using MacX 1.1.7 and Ultrix dxcalendar. The DECwindow client Calendar on Ultrix hangs when using the client EDIT menu. The problem produces the error message:

Xlib: sequence lost (0x108b9 > 0x8ba) in reply type 0x1c!

This problem doesn't occur when using Calendar for the first time. Once I make a calendar entry, I see the problem. It works fine with White Pine's eXodus or with an NCD16 X Terminal.

Configuration:

- Macintosh IIci
- 8MB memory
- 13-inch Apple High Resolution RGB
- Built-in video card
- Ethernet Controller type 3Com Ethernet card, Revision L
- System software version 7.0
- MacX 1.1.7

This article has been archived and is no longer updated by Apple.
This is a known bug in the Ultrix version of the Xlib library which applications use to get access to the X protocol. It exists in Ultrix 4.0 and 4.1 and possibly later versions as well. This ISN'T a MacX bug; it happens under similar circumstances with Sun and other 68K-based X servers. MacX seems to have the problem more often than other servers due to the built-in conversion of the Clipboard to Macintosh Clipboard; this aggravates the problem.

Published Date: Feb 18, 2012

Modems overseas: Power, protocol and legal considerations

This article has been archived and is no longer updated by Apple.

-- Power for a modem overseas

This is not a problem. Buy a grounded isolation transformer in the country of use, plug the modem's wall outlet transformer into this converter, and the modem's power supply regulates the voltage internally. You should thoroughly investigate the voltage and frequency of the power source, however.

-- Different Protocols

A number of overseas countries use the French standard "CCITT" protocol for modem communications. The systems of some countries may not be suitable for clean data transmission or may not allow communication except on specially conditioned lines.

-- Special Laws restricting data communication

German law, for example, requires a permit to use a communications device. You should acquaint yourself with any national, regional, or local laws or conditions on using modems.

Published Date: Feb 18, 2012

PATHWORKS: Problem Escalation Process

I have a PATHWORKS question about problem escalation and the interface to Apple. Since DEC now owns all the code except DAL and MacX, should we just push all escalations up the "normal" DEC path?
This article has been archived and is no longer updated by Apple.
PATHWORKS for Macintosh has always been a Digital product. It's sold and supported by Digital. Report all problems with PATHWORKS-related components to Digital support.

- In the U.S., this is Digital Customer Support Center (CSC).

- From other countries, report problems to the local Digital office; they will escalate to Digital in the U.S. if necessary.

Apple Engineering has trained Digital engineering on the transitioned components. The process for escalation hasn't changed. If Digital CSC can't handle a problem, they will escalate it to the PCSG Engineering Maintenance Organization (PCSGEM). Should that component be something Apple developed and maintained, Digital PCSGEM will notify Apple Tech Comm.
Published Date: Feb 18, 2012

Macintosh: DQDB (Distributed Queue Dual Bus) and MANs

Is a card available for Macintosh computers to connect to Distributed Queue Dual Bus (DQDB) Metropolitan Area Networks (MANs)?
This article has been archived and is no longer updated by Apple.
A MAN data transport mechanism is the intended use of a Distributed Queue Dual Bus (DQDB), and DQDB MANs are meant to function as connectionless networks that link multi-megabit LANs together. Because of this, a Macintosh isn't a likely first candidate end-node device for design and manufacture of DQDB interface cards.

It's more likely that DQDB networks will connect to devices such as routers and bridges. Routers and bridges (interconnect devices) will be the first to have DQDB interfaces, and it may be a year or more before those come into real use. There have been some SMDS/DQDB trials, and Bell Atlantic is presently offering SMDS service to a limited area. Wide use of this technology is still several years away.

If you need to put your Macintosh computers on a MAN today, you can use a router to attach to the MAN and then a LAN (of your choice) to attach to the Macintosh end nodes. There may eventually be an SMDS/DQDB interface for the Macintosh when the service becomes a real commercial product.

Here's some background information on DQDB to help understand what it is.

DQDB Background Information

Metropolitan area networks (MANs) could offer answers to the demand for communications with anyone, anywhere, cheaply and reliably. The ideal answer is a system that can support high speeds and geographical distances of hundreds of kilometers and be available for everyone.

FDDI is a popular backbone technology capable of high-speed communications and allows extended distances between networked sites. Presently FDDI is considered suitable for high-speed workstation networking.

The telephone industry supports a proposed MAN implementation called Queued Packet Synchronous eXchange (QPSX). The IEEE 802.6 committee changed the name to Distributed Queue Dual Bus (DQDB) in order to avoid confusion with an Australian company. MANs have implications that apply to corporate use and to the entertainment industry for advanced video and voice services.

The Distributed Queue Dual Bus (DQDB) standard was adopted as IEEE 802.6 in late 1990. DQDB describes a physical layer and Medium Access Control (MAC) sublayer to support packet and isochronous (time-sensitive) data transport over a metropolitan area. DQDB describes a transport network, not a MAN service.

Bellcore's description of a MAN service is SMDS. As currently specified, SMDS will provide the MAN service using DQDB as the underlying transport network. The first in a series of TAs defining the requirements for SMDS was released in October 1989. These documents include specifications for the user interface, service structures, network components, billing elements, and network management. SMDS TRs started to appear this year, and SMDS demonstrations, trials, industry groups, and related standards have also started to appear. SMDS will be very important in the RBOCs' future deployment plans for MANS, particularly as an initial step to offering Broadband ISDN (B-ISDN) services.

AT&T's competition comes from QPSX Systems of Perth, Australia, which backs Distributed Queue Dual Bus (DQDB). QPSX is a joint venture of Telecom Australia and the University of Western Australia, the developer of DQDB.

Communications industry analysts said there's little difference between AT&T's SMDS and QPSX Systems' DQDB beyond the initials. "SMDS is AT&T's

implementation of DQDB," said Stuart Gavurin, a network analyst at Ernst & Young.

In 1987, IEEE decided to use DQDB as the basis for MANs, and a year later QPSX announced an agreement to allow AT&T to manufacture DQDB-compliant products. Shortly after that, however, AT&T decided to pursue its own implementation of MAN.

Gavurin said that the point for potential users to note is SMDS and DQDB adhere to the 802.6 standard and are compatible with each other. Users can buy products based on one implementation and know the products will work with those based on the other implementation.

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Apple Ethernet NB Card: No Option to Disable Link Beat Signal

I want to install a new Apple NuBus Card, but I have two types of HP hubs. The newer one supports Link Beat and the old one requires Link Beat to be off.

If a hub requires Link Beat to be off, does the Apple NuBus card or software have a way to turn it off? I've heard of third-party cards that have jumpers on the cards to do this.

This article has been archived and is no longer updated by Apple.
The new Ethernet NB card doesn't have options to enable or disable the Link Beat signal. Some early twisted pair Ethernet hubs didn't use Link Beat and can't function with transceivers that use it. It's true that some third-party cards have the option to disable this signal. They're trying to be compatible with all hubs (pre- and post-10baseT). Apple designed the cards to be compatible with the true 10baseT specification, which requires Link Beat.

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AppleTalk and IBM 8209 Bridges Don‘t Mix

I have a lab with 24 Macintosh LCs and one Macintosh IIci on Ethernet. The file server is attached to an IBM 8209 bridge which is a hardware component that bridges Token Ring networks and Ethernet networks. Some of the Macintosh LC computers randomly won't show the file server in the Chooser, but the Macintosh IIci always shows the file server.

If we restart the IBM 8209 bridge, the Macintosh LCs show the file server again. All the workstations, Macintosh LCs, and Macintosh IIci run system software version 6.0.7. The file server on the other side of the 8209 bridge is a Macintosh IIci running System 7.0 and AppleShare 3.0. We tried System 7.0 on all the computers, and AppleShare 2.0 with system software version 6.0.7 on the server.

This article has been archived and is no longer updated by Apple.
Here is some information that should help you understand why the IBM 8209 bridge and AppleTalk aren't compatible.

IBM 8209 and AppleTalk

Ideally, with the 8209 providing Token Ring to Ethernet bridging services, Macintosh computers on both transports would see the bridged network as a single logical network. Unfortunately, for a number of reasons, this isn't true.

Phase 1 EtherTalk

The first problem stems from the 8209 bridge's generosity in forwarding all datalink (MAC) broadcasts and multicasts. When you run ANY Phase 1 EtherTalk, adding an 8209 bridge into the network automatically generates Phase 1 TokenTalk. This is useless traffic, because the TokenTalk drivers expect Phase 2 protocols. As far as we can tell, it isn't dangerous traffic; it's safely ignored by all nodes. But it does take up bandwidth, and if the Phase 1 Ethernet is large and has many routers, there can be significant broadcast traffic forwarded onto the Token Ring. The answer here is to filter Phase 1 EtherTalk at the 8209 bridge.

Address Bit-Flipping

Token Ring and Ethernet don't agree on the order of bits. So, the 8209 bridge flips the bits of the datalink (MAC) level addresses when it forwards the packets. Normally, this affects only the destination and source addresses in the packet header. However, address resolution protocols such as TCP/IP ARP and AppleTalk's AARP also carry MAC level addresses as a part of the data portion of the packet. The 8209 bridge is specially programmed to look for TCP's ARP, and to go down inside the data, flipping the bits of the embedded MAC address. Later, when a Token Ring host wants to talk with an Ethernet node, it uses the flipped version of the MAC address. When encountered by the 8209 bridge, the address is flipped back and thus delivered correctly.

The 8209 bridge ISN'T specially programmed to assist AARP. Thus, the AARP address is stored in the Token Ring AppleTalk node in its "unflipped" form. Then, should it be used later to address a packet, the 8209 bridge will flip the bits when forwarding back to Ethernet. Now the packet is incorrectly addressed, and can't be delivered.

In short, when using an IBM 8209 to bridge Token Ring and Ethernet, AppleTalk nodes on the ring and Ethernet can't communicate because they can never use AARP correctly.

Configuration Workarounds

Curiously, if the you use Token Ring only as a backbone, and a Macintosh on Ethernet wants to talk to a Macintosh on another Ethernet, with both Ethernets attached by 8209 bridges, this connection WILL work. In fact, as long as you go through an EVEN number of 8209 bridges, connection succeeds. When there's an odd number, connection fails. Note that this makes some extremely bizarre network configurations possible, such as a system of alternating Token Rings and Ethernets connected by 8209 bridges. In this case, all the Ethernets would have AppleTalk connectivity, and all the Token Rings would have AppleTalk connectivity, but the rings and Ethernets would have AppleTalk connectivity between them!

Address Ranges

You may remember that under AppleTalk Phase 2, we use multicast addressing for all protocol "overhead" packets, such as RTMPs, NBPs, and ZIPs. You may also recall that we have a range of 254 addresses used in Ethernet, and 19 different addresses in Token Ring available for multicasts.

Our use of different address ranges, in addition to the bit flipping described previously, ensures that AppleTalk nodes can't interoperate across an 8209 bridging Ethernet and Token Ring. Just look at the startup process.

A node begins by sending an AARP probe for a protocol address (multicast). The 8209 bridge forwards this AARP message, but because the bits are flipped, a response to the AARP probe gets lost on the return trip. So, the node assumes that its protocol address is unique, and then proceeds to check for a router by multicasting (protocol broadcasting) a ZIP GetNetInfo request. If there is an AppleTalk router present on the cable (whether on Ethernet or Token Ring), it will work. The router hears the request, provides the needed information about the cable, and sends another AARP if necessary.

However, if the router is on the other side of the 8209 bridge, the multicast is forwarded. Even if the bit-flipping wasn't a problem (that is, if IBM were to change the 8209 software to support AARP), you will still NOT MAKE CONNECTION with the router. This is because a TokenTalk router expects multicast addresses in a different range than an EtherTalk node can send, and vice versa. The only answer is to use an AppleTalk router, which manages protocol and zone multicast addresses for each data link appropriately.

In short, AppleTalk and 8209 bridges don't mix. We advise you NOT to use bridging strategies between AppleTalk Token Ring and Ethernet networks.

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Network Monitoring: Tools that Identify Missing Zones

We use Inter*Poll to get a list of all our AppleTalk zones on the network. We printed a list, generated another list, and we found that two zones were missing. Is there a utility available that will check the network, and give us a complete list, including the zones that are down?

This article has been archived and is no longer updated by Apple.

If you want an automated network monitoring tool that specifically looks for zones that are missing or have been added without authorization, here are two applications that might help you:

- Network Vital Signs, from Dayna Communications

- NetWatchman, from Neon Software

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Macintosh: RPC-Based Tools

We developed an RPC implementation for OS/2, and would like the same functionality on the Macintosh. Is there an equivalent product for the Macintosh operating system?

This article has been archived and is no longer updated by Apple.
Netwise offers the only RPC-based tools we're aware of for the Macintosh operating system. Netwise has developed some RPC monitors and end-user applications based on RPC for the PC market, but it offers only a developers' toolkit for the Macintosh.

Also, IPT developed a peer-to-peer (Macintosh to Sun) network communications application that maintains the native user environments on both platforms.

Netwise RPC TOOL

The Netwise RPC TOOL for Macintosh computers on TCP/IP networks provides remote procedure call technology for Apple platforms. The RPC TOOL allows developers to build client/server applications for a wide variety of hardware, operating systems, and network transport environments. RPC TOOL for Macintosh supports Macintosh System 6.0 or later, and Symantec Corporation's C development environment, THINK C, version 4.0.

The Macintosh RPC TOOL allows Macintosh applications to interoperate across a TCP/IP network with applications running on diverse systems, including DEC VAX computers running VMS and ULTRIX, PCs running DOS and OS/2, Sun workstations, Unisys, Hewlett-Packard, and Data General hardware, and many other systems running UNIX variations.

Information Presentation Technologies Sun-Partner

Sun-Partner symmetrically maps network protocols and operating system commands between graphical user interfaces. Sun SPARCstations look like Macintosh computers to Macintosh users, and Macintosh computers look like Sun workstations in the OpenLook or SunView environments. Users can share and exchange data from their own user interfaces. All networked devices are available simultaneously to Sun and Macintosh users.

Sun-Partner supports LocalTalk, EtherTalk Phases 1 and 2, AppleTalk Filing Protocols, and the Apple Data Stream Protocol (ADSP) for Macintosh computers and TCP/IP ARP, RARP, and NFS protocols for Sun SPARCstations.

Each SPARCstation on a SunPartner LAN must have version 4.1 or later of Sun's operating system and an Ethernet-to-LocalTalk connection to run on Ethernet, or an sBus LocalTalk card from IPT to run on LocalTalk. An optional sBus LocalTalk card is available. Without Macintosh System 7.0, each Macintosh on a Sun-Partner network requires IPT's Personal Server Network (PSN) software. A Sun and a Macintosh connection are required for bidirectional networking.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Applesoft: Using the monitor MOVE Routine

This article has been archived and is no longer updated by Apple.

The MOVE subroutine in the monitor will not work directly from an Applesoft CALL because Applesoft doesn't assure the presence of a zero in the 6502's Y register and the MOVE subroutine must have the zero there to work. Here is a program that shows a way around this problem:

```
10 DEF FN M(X) = X - INT (X/256) * 256
20 POKE 768,160 (LDY #0 )
30 POKE 769,0
40 POKE 770,76 (JMP MOVE)
50 POKE 771,44
60 POKE 772,254
100 REM DO THE MOVE
110 START = 20000 Start of memory to be moved
120 QUIT = 21000 End of memory to be moved
130 DEST = 30000 Start of destination
140 POKE 60,FN M(START)
150 POKE 61,START / 256
160 POKE 62,FN M(QUIT)
170 POKE 63,END / 256
180 POKE 66,FN M(DEST)
190 POKE 67,DEST / 256
200 CALL 768
```

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TA48082_AUX_Glossary_of_Terms__(TIL09707).pdf

A/UX: Glossary of Terms (8/94)

This document contains an edited version of the September 1989 A/UX Glossary.

This article has been archived and is no longer updated by Apple.

/usr/group. An organization of UNIX users.

/usr/tmp. The /usr subdirectory that serves as storage for temporary files that many utilities produce.

AIX. Advanced Interactive Executive; IBM's UNIX operating system.

Archer Group. The former name of UNIX International (AT&T-aligned companies).

autoconfiguration. A/UX capability to automatically configure the smallest possible kernel by checking for installed NuBus cards.

autorecovery. A/UX capability to reinstall critical system files from duplicate copies on disk. in the event of a system corruption. This is unique to Apple.

B-Net. UNISOFT's port of Berkeley Networking Services; BSD software to provide TCP/IP communication.

background processing. The ability to run programs in the background (behind the scenes) while freeing the display screen for other tasks.

Berkeley Networking Services. B-Net; a utility to provide TCP/IP communication.

binary file. Any executable file.

Bourne shell. The command shell that Steven Bourne developed at AT&T.

BSD. Berkeley Software Distribution, the University of California (Berkeley) version of UNIX. The most common versions are 4.2 and 4.3.

C. A high-level language with few hardware dependencies; ?he UNIX operating system is written in C.

C Shell. The command interpreter developed by U.C. Berkeley programmers

CASE. Computer-aided software engineering.

commands. See Utilities or command name

DECWindows. DEC's proprietary windowing system; the programming interface for DECwindows is incorporated in OSF's standard windowing system. It is based on X Window System from MIT.

directory. A collection of subdirectories and files; a Macintosh folder.

Federal Information Processing. The U.S. federal government's standard for computer purchases; FIPS 151 is based on IEEE's POSIX 1003.1 standard (currently based on Draft 12, Standard (FIPS) of POSIX 1003.1).

FIPS. See Federal Information Processing Standard.

GOSIP. The U.S. federal government's version of the OSI standard.

HFX. Hierarchical File Exchange; a file-translation utility to transport files between A/UX and Macintosh file systems, so users can work in either

environment and transfer information

IEEE. See Institute of Electrical and Electronic Engineers

IEEE POSIX 1003. IEEE's standard for development of vendor-independent applications.

Inside Macintosh. A series of Apple documents that define standards for Macintosh application programming.

Institute of Electrical and Electronic Engineers. The organization that (among other things) creates POSIX standards.

kernel. That portion of the operating system that communicates directly with the hardware to allocate software and hardware resources.

korn shell. A revised command interface that contains features of its two predecessors, the Bourne and C shells for AT&T and Berkeley, respectively

man page. A reference manual page, available on-line with most UNIX systems.

MOTIF. OSF's windowing system. A hybrid of Microsoft's Presentation Manager, HP's New Wave, and DECwindows; It is built on the X Window System from MIT.

multitasking. The ability of a CPU to perform multiple tasks simultaneously by rapidly switching among them.

multiuser. The capability that lets more than one user at a time use the computer.

netnews. The global UNIX user bulletin board with over 500 interest groups and over 8000 recipient systems. It also includes an electronic forum for stating opinions, sharing ideas, requesting, receiving, and providing information, and posting public-domain software

Network File System (NFS). The defacto standard from Sun Microsystems for transparent file sharing. This facility enables a user on one vendor's computer to access files on another vendor's computer.

New Wave. The HP windowing system. Portions of New Wave are incorporated in OSF's standard windowing system

NFS. See Network File System

Open Software Foundation (OSF). A standard-development consortium of companies including DEC, Hewlett-Packard (Apollo), and IBM. It grew out of the so-called "Hamilton Group."

OSF1. OSF's UNIX operating system, based on IBM's AIX operating system

operating system. Software that manages a system's resources -- such as CPU, memory, I/O, disk storage, and networks.

OSF. See Open Software Foundation

OSI. A networking standard. OSI is an emerging set of communications protocols (an alternative to TCP/IP) primarily of interest to Europe and the U.S. Federal Government.

pipe. A feature of UNIX command shells that lets tools (known as filters) to be chained together to create new utilities. Piping causes the output of the first command to become the input of the second.

portability. The ability of software to move from one environment with a particular computer and operating system to another environment; transferability from one computer to another. There are two kinds: Source-level portability requires recompilation. Object-level portability requires only moving the file to the new machine.

POSIX. A set of standards formulated by IEEE as guidelines to allow for development of vendor-independent applications. POSIX 1003.1 defines the UNIX-based operating system interface standard.

Presentation Manager. Microsoft's windowing system. Its human interface constructs have been incorporated in OSF's MOTIF standard windowing system.

SASH. Stand Alone Shell of A/UX; A Macintosh application that shuts down the Macintosh OS to start A/UX. It also allows limited access to A/UX files without starting A/UX.

SCCS. See Source Code Control System.

Serial Line/Internet Protocol (SL/IP). A communications protocol that provides features of TCP/IP over slower, longer distance serial lines. Capabilities like NFS and Telnet Virtual Terminal are available over SL/IP.

shell. A specialized UNIX utility that serves as a character oriented, command-line user interface. C, Bourne, and Korn are three shells available with A/UX.

shellscript. A file containing a list of commands to be executed sequentially; a batch file.

Single-tasking. Allowing only one operation at a time. Contrast with multitasking.

single-user. Allowing only one person at a time to use the computer. Contrast with multiuser.

SL/IP. See Serial Line/Internet Protocol

Source Code Control System (SCCS). A utility developed to control versions of software source code, so they can be safely accessed by multiple programmers and writers on a large project.

superuser. System administrator on a UNIX system who has special privileges like changing file permissions, reassigning its ownership, or deleting.

SVID. See System V Interface Definition

SVVS. See System V Verification Suites

System V Interface Definition (SVID). The AT&T standard that defines core elements of the System V operating system. SVID-1 describes AT&T V.2, and SVID-2 describes AT&T V.3.

System V Verification Suites (SVVS). AT&T software that runs on a UNIX system to test whether that system meets the SVID. SVVS 1 and 2 correspond to and test for compliance with SVID 1 and 2 and V.2 and V.3, respectively.

TCP/IP. See Transmission Control Protocol/Internet Protocol.

Transfer Control Protocol/Internet Protocol (TCP/IP). A communications protocol and defacto standard protocol for Ethernet networks used by most UNIX environments. TCP/IP is typically the underlying protocol with NFS, Telnet, and X Window System.

Trusted systems. The U.S. federal government's graded approach to

security standards. Also known as "Orange Book." It defines a series of levels of Trust. C1 to A1 where C2 will be the basic requirement for government security in the near future, B1 is a greater level of security and is expected to be the level typically requested for secure government bids.

UI. See UNIX International.

UNIX International (UI). A consortium of companies that follow the AT&T standard for UNIX systems. Originally created to counteract OSF's efforts (previously called Archer group)

usenet. Global Unix mail service sponsored by various universities and large corporations. It tends to be the primary method for UNIX users to share information.

utility. A program that does most operating services, like listing, copying, renaming, and removing files.

uucp. The UNIX to UNIX Copy command is a utility that enables file transfers between UNIX systems and allows automatic transmission of mail messages.

X Window System Consortium. A group originated by MIT that defines X Window System standards for future versions. Apple is a member.

X Window System. A device-independent multitasking environment, originally designed by MIT, for windowing and graphics. It operates across heterogeneous networks.

X/OPEN Standards Committee. A group begun in Europe that sets standards for UNIX and related tools. It focuses primarily on user needs and includes UI and OSF in its membership.

Yellow Pages. A distributed network database service that makes available to workstations copies of files maintained on the server. Usually used in conjunction with NFS. Licensed and developed by Sun Microsystems

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Support Information Services

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MacX 1.1: Using with System 7.0.x (6/94)

Can I run MacX 1.1 under the Macintosh System Software 7.0.x?
This article has been archived and is no longer updated by Apple.
MacX 1.1 is designed for use with Macintosh System software version 6.0.x. You can also use MacX 1.1 with System 7.0.x with limitations, by following the steps in this document. (You do not need to perform these procedures if you want to use MacX 1.1 on System software version 6.0.x.)

IMPORTANT: MacX version 1.1.7 is compatible with System 7.0.x, and MacX version 1.2 is compatible with System 7.1.x. It is recommended to upgrade MacX.

If you're using MacTCP to connect your Macintosh computer to a host computer, you can use MacX 1.1 with System 7.0.x by following several setup procedures. These procedures describe several guidelines that let you use MacTCP version 1.0.2 with System 7.0.x.

Note: If you're using a connection tool other than MacTCP, the instructions in this document don't apply. For more information, contact the vendor of your connection tool.

To use MacX 1.1 with System 7.0.x, install MacX 1.1 and MacTCP 1.0.2 on your computer and then follow the instructions below.

1) Don't use Virtual Memory under System 7.0.x. Open the Memory Control Panel and make sure Virtual Memory is turned off.

2) Connect via Ethernet with MacTCP. For Token Ring access you must use MacTCP 1.1 or later with the MacTCP Token Ring extension.

3) Open the MacTCP control panel to make sure that the Ethernet icon is present and selected. (You cannot use a DDP/IP gateway via EtherTalk, LocalTalk, or TokenTalk.)

4) Make sure the MacTCP control panel, the AdminTCP control panel, and the Hosts files are in your System Folder and NOT in the Control Panels folder.

To copy these files to your System Folder, drag the icons for the three files to the open System Folder window. Do not drag the icons to the System Folder icon; the Finder will put them in the wrong place.

5) Restart your Macintosh computer to put these changes into effect.

You are now ready to use MacX 1.1 on your Macintosh computer running System 7.0.x. You may want to store this document in your MacX binder for quick reference.

Note: MacTCP 1.0.2 is not fully compatible with System 7.0.x. Apple Computer, Inc. does not therefore guarantee 100 percent compatibility and functionality.
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MacX 1.1.7: Needed for System 7, Not for A/UX

I use both System 7 and A/UX. Do I need to update to MacX 1.1.7?

This article has been archived and is no longer updated by Apple.
If you are running MacX with A/UX, you do not need to upgrade to MacX 1.1.7. MacX has been included in A/UX since version 2.0.1 (March 1991). The next version of A/UX, which will include support for System 7, will incorporate MacX 1.1.7.

MacX 1.1.7 is the latest version of Apple's X Window System display server for the Macintosh operating system. It provides X Window System access and functionality for Macintosh computers in multivendor environments. MacX 1.1.7 provides an integrated computing environment with simultaneous access to Macintosh and X applications and the ability to cut and paste color graphics and text between them.

MacX 1.1.7 provides support for System 7. MacX users can take advantage of System 7 functionality, like Virtual Memory. This new capability expands the computer's memory through software, so that Macintosh users can run more and larger applications. MacX 1.1.7 is required for running MacX with System 7.

In addition, X11 for A/UX, Apple's complete X development environment replaces X Window System for A/UX, which used to incorporate MacX. You can use this product, which includes client applications, libraries, and tools for X Window System development. X11 for A/UX includes the software on both floppy disks and CD-ROM discs.

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MacX25 1.0.1: Overview

What is the latest version of MacX25, and what are its features?
This article has been archived and is no longer updated by Apple.
MacX25 version 1.0.1 is updated software for linking Macintosh computers to packet-switched data networks (PSDN) supporting the international OSI and CCITT X.25 recommendation for enterprise-wide communication.

Apple's MacX25 1.0.1 runs on Macintosh computers running System 6 or System 7, supporting any Macintosh as an X.25 client and all Macintosh II computers as servers. System 7 offers a range of services for networking, including file sharing and interapplication communication. To ease your transition to using X.25 in the newer system software environment, MacX25 version 1.0.1 retains the same set-up configuration and does not alter the interface used in MacX25 version 1.0. Access to host computers and end-user services on the PSDN is distributed from a MacX25 server to Macintosh computers over the AppleTalk network system.

For improved communication with European networks, MacPAD (the client side of MacX25) now supports 8-bit characters. Support for 8-bit characters -- in which such symbols as the German umlaut, French cedilla, and Spanish tilde are encoded -- enables businesses on both sides of the Atlantic to transfer data files transparently and to communicate in the appropriate European languages.

The new MacPAD also offers new features for flexibility in communicating across the X.25 network, including the ability to negotiate throughput parameters and the size of packet windows. In addition, because it is implemented as a connection tool for the Communications Toolbox, MacPAD lets third-party applications, including terminal emulators, connect to host systems over the X.25 networks.

The MacX25 Programming Library, available separately for third-party developers, works in conjunction with the MacX25 server to provide X.25 access to applications. This enables developers to create Macintosh solutions giving users access to PSDNs. The library, which remains unchanged in the new version of MacX25, consists of a toolkit for such routines as initiating and terminating contact with the MacX25 server, establishing and closing down a virtual circuit, and passing data across an established circuit.

For example, an application developed in Italy uses tools in the MacX25 Programming Library to provide Macintosh-to-host access across an X.25 network. List SpA developed a cost-effective interbank trading network for the Italian banking system that enables Macintosh computers in each bank to connect to the system's mainframe over the X.25 network.

Apple's MacX25 conforms to the Open Systems Interconnect (OSI) model and Consultative Committee on International Telephone and Telegraph's (CCITT) X.25 recommendation for communication with packet-switched data networks (PSDN). Because of their cost-effective use of leased lines to transmit information over long distances, X.25 PSDNs offer an increasingly popular means for electronic communication internationally.

MacX25 consists of server and client software. The MacX25 server software lets a Macintosh on an AppleTalk network be set up as a single entry point to the PSDN. Server-based access reduces the cost of global connectivity by maximizing use of expensive resources, like leased lines. MacPAD client software works in conjunction with the server software to provide packet assembler/disassembler connectivity to the PSDN.

MacX25 features a graphics-based administrator's application that facilitates configuration and administration of the server. An address service lets administrators set addressing details on the Macintosh server.

Running the server component of MacX25 1.0.1 under System 7 requires 4MB of RAM; the client side needs 2MB. To run MacX25 1.0.1 server software with System 6.0.7 requires 2MB of RAM; the client side needs 1MB.

MacX25 supports the following standards and recommendations: CCITT X.25 1980 and 1984 versions and Packet Assembler/Disassembler (CCITT X.3, X.28 and X.29).
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TA48087_AUX_Purpose_of_X_Windows__(TIL09713).pdf

A/UX: Purpose of X Windows (9/94)

Who would purchase X window system for A/UX?

This article has been archived and is no longer updated by Apple.
People who want to run the X11 native environment on a Macintosh or need to develop X Window System applications should use X Window System for A/UX. It includes X11 Release 4 with libraries, toolkits, and clients for development.

If you need access to X Window System applications, you do not need to purchase X Window System for A/UX. A/UX 3.0 includes MacX and the X Window System display server software.

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A/UX 2.0.1: Compatibility with Macintosh Applications

Which Macintosh applications run on A/UX?

This article has been archived and is no longer updated by Apple.

With A/UX, users have access to the wide range of Macintosh applications available at local dealers -- the same application binaries that run on the Macintosh OS. There is only one restriction: Applications must follow the "Inside Macintosh" development guidelines for 32-bit cleanliness.

This is also a requirement for applications that run with virtual memory on Macintosh System 7. All key industry software developers are moving in this direction. Many already offer mainstream applications which are 32-bit clean and thus run on A/UX 2.0.1. This group includes Microsoft, Claris, Aldus, and Informix. A complete list of applications is included in the A/UX Third Party List on AppleLink under the A/UX icon.

As a transitional step, A/UX 2.0.1 also includes a 24-bit environment which allows users to run many applications which are not yet 32-bit clean.

All applications that run on A/UX 2.0 also run on A/UX 2.0.1. The applications categories include Macintosh, UNIX, X Window System, Motif (from Integrated Computer Solutions) and MS-DOS applications (using SoftPC from Insignia Solutions).

Published Date: Feb 18, 2012

TA48089_AUX_Compatible_UNIX_Applications__(TIL09716).pdf

A/UX: Compatible UNIX Applications (9/94)

Which UNIX applications run on A/UX?

This article has been archived and is no longer updated by Apple.
The UNIX application community has expressed a lot of interest in porting UNIX and X Window System applications to A/UX and for new development work. A good example is Oracle; they have ported their UNIX database to A/UX and have provided Macintosh tools to access this data easily.

Many UNIX development tools have also been ported to A/UX. Refer to the Redgate Library on AppleLink for a list of compatible third party products. In addition, many of our largest A/UX customers are asking these application developers to support A/UX.

Article Change History:
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

AppleTalk Remote Access: AppleEvents Support

What AppleEvents does the Remote Access application support? I'm looking for a capability to request a connect and/or disconnect from the AppleTalk Remote Access application via AppleEvents.
This article has been archived and is no longer updated by Apple.
Remote Access supports only the AppleEvents from the required suite:

- Open Application
- Open Document
- Quit Application

It doesn't support Print Document because AppleTalk Remote Access doesn't have a print option.

After installing AppleTalk Remote Access, if you launch Remote Access without configuring Remote Access Setup, a dialog box appears asking if you would like to do so. At that point, AppleTalk Remote Access sends the Finder an "Open" Remote Access Setup AppleEvent.

As an alternative, you may want to use the AppleTalk Remote Access Application Programming Interface (API). It would be possible to have your application access the API directly, or to have your application send an AppleEvent to a program that accesses the API directly.

Details of the API external reference specifications are available from APDA in the AppleTalk Remote Access Developer's Toolkit. Part number R0128LL/A.
Published Date: Feb 18, 2012

Macintosh 16" Color Display: Compatibility and Bit Depth Info

This article provides compatibility and bit depth information for the Macintosh 16" Color Display when used with Macintosh computers and Apple's video cards.

This article has been archived and is no longer updated by Apple.

Model	Card	Bit Depth
Macintosh IIci	On-board Video	Not Compatible
Macintosh IIsi	On-board Video	Not Compatible
Macintosh LC	On-board Video	Not Compatible
Macintosh II Series	Macintosh II Video Card	Not Compatible
Macintosh II Series	Macintosh II Hi-Res Video Card	Not Compatible
Macintosh II Series	Macintosh Display Card 4*8	8-bitã
Macintosh II Series	Macintosh Display Card 8*24	8-bitã
Macintosh II Series	Macintosh Display Card 8*24 GC	8-bit*
Macintosh II Series	Macintosh Display Card 8*24 GC (Rev B)	8-bit/16-bit

ã The original Macintosh Display Card 8*24 and Macintosh Display Card 4*8 require a ROM upgrade kit (service part #076-0548). The new ROM (part #341-0868) provides support for the Macintosh 16" Color Display.

** The original Macintosh Display Card 8*24 GC requires a ROM upgrade kit (service part #076-1019). The new ROM (part #341-0266) provides support for the Macintosh 16" Color Display.

Note: All current Finished Goods for the Macintosh Display Card 8*24 and Macintosh Display Card 8*24 GC are shipping with Macintosh 16" Color Display support (new ROMs).

Macintosh Quadra Series

Model	Bit Depth
Macintosh Quadra 700	8-bit/32-bit**
Macintosh Quadra 900	8-bit/32-bit**

** The 32-bit support includes 24-bit support (16.7M colors) as well as an 8-bit alpha channel.

Published Date: Feb 18, 2012

Mac Video Cards: Older Versions Compatible With Mac II Series

Are the older versions of the Macintosh video cards compatible with all Macintosh II series computers?

This article has been archived and is no longer updated by Apple.

Yes. The older 4-bit and 8-bit Macintosh video cards (661-0376 and 661- 0492, respectively) are compatible with all Macintosh II series computers, including the Macintosh IIfx. They're also compatible with the Macintosh Quadra computers.

Here's some additional information that might be useful. The older style video cards do not have sense line capabilities. This means that, when more than one older type video card is installed, the Macintosh will start up to the card nearest the power supply NuBus slot. Or, when older type video cards are used in combination with later version video cards, the Macintosh will always start up to the older version video card, regardless of NuBus slot positioning.

The older style video card takes precedence because of its lack of sense line capability.

Published Date: Feb 18, 2012

Service Source CD-ROM: DART 1.4 - Erroneous Virus Warning

When I try to run DART from my Service Source CD, I get a warning message that the DART program is infected with a virus and I should quit the program as soon as possible and load new software from backups.

Is the Service Source CD infected with a virus?
This article has been archived and is no longer updated by Apple.
The Service Source CD does not have a virus on it. The DART application on the CD is an older version (1.4). When DART 1.4 is launched on some systems (Macintosh IIfx and Macintosh Quadra series) running system software version 7.0.1, it presents a dialog box stating that there is a virus. This seems to be a problem with DART 1.4.

The latest version of DART (1.5) does not exhibit this problem. The Service Source group is aware of the problem and will be removing the DART application from future releases of the Service Source CD.
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TA48097_LaserWriter_Using_in_a_Classified_Environment_(TIL09742).pdf

LaserWriter: Using in a Classified Environment

Article Change History

08/25/92 - REVIEWED
* For technical accuracy.

I use my LaserWriter II in a classified environment. Does the LaserWriter II contain any non-volatile RAM that can be used to store classified information?

This article has been archived and is no longer updated by Apple.
It would be very difficult to store a user program or data in the LaserWriter printer's EEROM or ZPRAM. The only documented way to write information to non-volatile memory is to use the PostScript operators as defined in the "PostScript Language Reference Manual". There is a way to write directly to non-volatile memory, but Adobe does not make this information available to the public.

Here's a list of LaserWriter printers and the amounts and locations of non-volatile memory:

Printer	Amount & Location of Non-Volatile Memory
LaserWriter	512 bytes of EEROM
LaserWriter Plus	512 bytes of EEROM
LaserWriter IISC	none
LaserWriter IINT	512 bytes of EEROM
LaserWriter IINTX	2048 bytes of ZPRAM
LaserWriter IIf	8192 bytes of EEROM
LaserWriter IIg	8192 bytes of EEROM
Personal LaserWriter LS	none
Personal LaserWriter SC	none
Personal LaserWriter NT	2048 bytes of EEROM

The EEROM and ZPRAM components are soldered into place and cannot be removed easily for servicing. There is no way to erase the non-volatile memory via PostScript.

Most sites operating in a classified environment have a designated security officer who is responsible for ensuring that no equipment with non-volatile RAM or other storage capabilities is released from the classified area. Providing the EEROM and ZPRAM information listed above should be sufficient for the security officer to determine whether the board can be released from a classified environment.

Published Date: Feb 18, 2012

No One-Keystroke Way to Change Desktop Color

What is the key combination to change the desktop color of my Macintosh?

This article has been archived and is no longer updated by Apple.
There is no Apple-provided key combination that changes the color of your Macintosh desktop. If you've seen someone change the desktop color this way, it was most likely with a product that was used to automate the process of using a control panel to change the desktop color. Look for third party macro programs like QuicKeys which may be able to accomplish this for you.

For more information, search on "CE Software" and "3rd".

Published Date: Feb 18, 2012

Personal LaserWriter LS: Use 100 ns or Faster DRAM (8/95)

Can I use 60 ns 256K x 4-bit DRAM to upgrade a Personal LaserWriter LS?

This article has been archived and is no longer updated by Apple.

Yes. The Personal LaserWriter LS specifications state that you can use RAM rated at 100 ns or faster, and 60 ns RAM is faster than 100 ns RAM. Although the RAM is rated faster than 100 ns, it still will be accessed at the 100-ns rate.

Article Change History:
22 Aug 1995 - Corrected type of DRAM used.

Support Information Services
Published Date: Feb 18, 2012

HDI-30 SCSI System Cable: Connects PowerBook to a SCSI Device

Is the Apple HDI-30 SCSI Disk Adapter Cable for the Macintosh PowerBook 100 compatible with the Dayna EZ-10BASE T SCSI interface, and can I use this cable to connect the Dayna product to the PowerBook 100?

This article has been archived and is no longer updated by Apple.
No. The Apple HDI-30 SCSI Disk Adapter Cable cannot be used as you describe. This cable is used to connect a PowerBook 100 to another Macintosh, which enables the PowerBook 100 to be used as an external hard drive on the other Macintosh system.

The Apple HDI-30 SCSI System Cable is used to connect any Macintosh PowerBook to an external SCSI device that conforms to SCSI standards. This cable is 19 inches long and has a standard 50-pin male SCSI connector. We don't have any specific compatibility information about the Dayna product at this time.

Support Information Services
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PowerBook: Two Sources for Internal Video Adapter Cards

Do you know of any companies that make internal video adapter cards for the Macintosh PowerBook computers?

This article has been archived and is no longer updated by Apple.
ComputerCare, Inc. and Envisio, Inc. manufacture internal video adapter cards for the Macintosh PowerBook computers.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Support Information Services

Published Date: Feb 18, 2012

TA48103_Apple_III_Apple_II_Emulation_mode_and_RGB_Video_(TIL00975).pdf

Apple III: Apple II Emulation mode and RGB Video

This article has been archived and is no longer updated by Apple.

The Apple III's RGB color video outputs do NOT generate a color signal for High-Resolution Graphics in the Emulator. Apple II High-Resolution images are available only on the NTSC black and white and color video outputs.

On the left border of the high-resolution graphics screen, the dots flicker uncontrollably.

Published Date: Feb 18, 2012

PowerBook Modem: Some AT Command Usage Differences From Hayes

I have noted a problem with the Macintosh PowerBook Fax/Data Modem. It appears to get confused and is unable to take a phone line "Off Hook" when a program tries to place a call. All I hear is a clicking sound.

This article has been archived and is no longer updated by Apple.
The PowerBook Fax/Data Modem is mostly Hayes compatible; however, there are some differences with AT command usage. One command that was changed is the escape sequence. To take it "Off Hook", use +++AT<cr> without any wait delay. This is documented in the Macintosh PowerBook manual.

Support Information Services
Published Date: Feb 18, 2012

Macintosh: AppleTalk Remote Access Has Priority Over Modem

Here's a helpful hint when using your Macintosh with AppleTalk Remote Access installed.
This article has been archived and is no longer updated by Apple.
If you have AppleTalk Remote Access installed on your Macintosh, and you are having a problem establishing an outgoing connection when sending a fax, trying to log onto an online service and so on, check the AppleTalk Remote Access Setup and ensure that the "Answer Calls" option is turned off.

AppleTalk Remote Access has priority over the modem. If the modem is set to answer an incoming call in the AppleTalk Remote Access Setup, the modem port is disabled from placing an outgoing call.
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LaserWriter IIg: How Printer Handles Three Communication Ports

How does the Apple LaserWriter IIg handle print jobs among the three communication ports?

This article has been archived and is no longer updated by Apple.
The LaserWriter IIg has three communication ports that can be active simultaneously. Special arbitration logic controls the activity between the three ports. The port arbitration has nothing to do with the LocalTalk or EtherTalk PAP layer connection arbitration.

Because PostScript can process only one job at a time, only one port can have access to the printer at any given time. The ports are polled in a round-robin fashion until activity is sensed in one of the three ports. Polling is then terminated as a connection is established and execution of a job begins. A connection, in this sense, refers to the dedication of the printer to a communication port while PostScript jobs are received from a host. AppleTalk ports may process multiple jobs during a single connection while the other serial port connections consist of only one job. A non-AppleTalk connection is considered terminated when an EOF (end-of-file indicated end-of-job) character is received.

The port arbitration cycle begins whenever a connection is terminated by a host. The polling order is determined by starting with whichever port has gone unpolled for the longest period of time. The port waiting the next longest is the next to be polled, with the last active port being the last to be polled again. This procedure ensures that one port will not dominate the printer. If a port is opened directly by an active PostScript job, that port is excluded from arbitration until it is again closed. An example of this type of port activity is when a serially connected sheet feeder is opened by a PostScript job.

All three ports respond to status request, with current printer status, unless they are excluded from the port arbitration cycle due to being opened directly by a PostScript job or just configured inactive. Directly opened ports may either respond with stale status or not respond at all. Ports that are not arbitrated due to configuration may not respond or even appear on the network.

Polling an AppleTalk Port

Printer AppleTalk Port Driver
------- ---------------------
inquire-> Any Open Conn on this port since last inquire or last closed connect (which ever occurred last)?

YES = True
NO = False

If True-> GetNextjob - uses PAP connect arbitration to get oldest of valid OpenConn request for this port.*

If no OpenConn is received by 5 second time-out, GetNextJob cancelled and port arbitration cycle resumed.

If OpenConn is received in time, connection established and PostScript job is read and executed.

At end of job, close connection and resume port arbitration

cycle.

If False-> Poll next port

*GetNextJob is active on only one AppleTalk port at a time and never for more than 5 second timeout.

Polling a Serial Port

inquire-> Any characters received on this port since last inquire or last EOF (whichever occurred last?)

Yes = True
No = False

If True-> Open connection established and PostScript job is read and executed from that port.

At end of job, close connection and resume port arbitration cycle.

If False-> poll next port

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Macintosh: Correcting ID -127 Internal File System Error

I have a Macintosh II running system software version 6.0.5 and AppleShare 2.0.1 as a network server.

Using the AppleShare Admin program, I tried to change a group of nested folders from locked to unlocked. When I clicked the Locked box and selected the Change All Enclosed Folders option, I got error ID -127. I don't get this error message if I unlocked the folders individually.

This article has been archived and is no longer updated by Apple.
Error ID -127 is an internal file system error. You may have a damaged directory tree.

Here are some corrective measures to try:

- Start up the Macintosh from the System Tools Disk and run Disk First Aid to repair any minor damage.

- Rebuild the desktop. To rebuild the desktop, press and hold the Option and Command keys while starting up the Macintosh until you see the message asking whether you want to rebuild the desktop.

- Reinstall the system software and the AppleShare software.

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LOGO: No Boot on IIc or Enhanced IIe

There are some disks of Apple LOGO with DOS that don't boot on the Apple IIc or Enhanced IIe. The problem stems from the scheme used to protect the disks from illegal copying.

This article has been archived and is no longer updated by Apple.

You can recognize these disks by the sign between the words Apple and Logo. The sign is the registered trademark sign, the R in a circle: Apple (R) Logo. Disks so labeled will not work. Send them to Media Exchange for replacement.

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TA48110_LaserWriter_IIf_and_IIg_Controller_Board_Slot_Is_for_Testing_(TIL09761).pdf

LaserWriter IIf and IIg: Controller Board Slot Is for Testing

I noticed that on the LaserWriter IIg controller board there is a socket that looks like the usual processor-direct slot (not the SIMM slots). What is it for?

This article has been archived and is no longer updated by Apple.
This slot is used by test fixtures at the factory and Level 2 service repair center to test the LaserWriter IIf and IIg logic boards. It is analogous to the edge connector on the Macintosh II logic board.

Published Date: Feb 18, 2012

Macintosh: Spacing and Font Substitution

I'm using system software version 6.0.7 and printing text in Geneva. Instead of getting the bitmapped font, I want to substitute it for Helvetica. I checked the Font Substitution box in Page Setup ╔, but the printout isn't exactly the same size and spacing as the one printed in Helvetica. Shouldn't it be the same in both Helvetica and Geneva?

This article has been archived and is no longer updated by Apple.
When using font substitution (in this case substituting Helvetica for Geneva), the font used in place of Geneva (Helvetica) will use the Geneva spacing, not the Helvetica spacing. The point size, however, should be the same (that is, Geneva 12 point will substitute Helvetica 12 point). Only the spacing will be different.

Two versions of the same document (one using Geneva on screen and one using Helvetica on screen) would look different when printed, even though you print both documents in the same font (Helvetica).

Published Date: Feb 18, 2012

OneScanner: Not Recognized at Startup

I've had an ongoing issue with a Macintosh Quadra 700 and the Apple OneScanner. The OneScanner worked once, then failed. I checked the Macintosh Quadra and scanner for proper drive termination, and reseated/replaced the SCSI cable.
This article has been archived and is no longer updated by Apple.
All Apple OneScanners with ROM version 2.02 could have a SCSI ID recognition issue when connected to any Macintosh Quadra or Power Macintosh computer. The Apple OneScanner is not recognized on the SCSI bus if the OneScanner is powered on before the Macintosh.

Workaround:

Using the OneScanner with a Quadra or Power Macintosh
---
1) Power on the Macintosh, and let it start up to the Finder.

2) Power on the Apple OneScanner.

The OneScanner has, approximately, a 12 to 13 second power-on sequence. This power-on sequence consists of a variety of audible motor calibrations. The sequence is complete when you hear the last sound -- about 12 seconds after switching on the power.

Using the OneScanner With a Quadra Running A/UX
---
1) Power on the Apple OneScanner.

The OneScanner has, approximately, a 12 to 13 second power-on sequence. This power-on sequence consists of a variety of audible motor calibrations. The sequence is complete when you hear the last sound -- about 12 seconds after switching on the power.

2) Power on the Quadra.

3) Start up A/UX, and wait for the Log-in screen. DO NOT log in.

4) Turn off the Apple OneScanner, wait a few seconds, and turn the Apple
OneScanner back on.

5) Log in to A/UX.

The Apple OneScanner should be recognized now. If not, try the process again.

Notes
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* Use the standard gray terminator with the OneScanner and the Quadra or Power Macintosh.

* Apple has tested these workarounds, and they seem to work in most instances. However, Apple makes no guarantee that these workarounds are successful100% of the time.

* This Apple OneScanner recognition problem applies only to the Macintosh Quadra and Power Macintosh series. No other Macintosh models are affected.

* The Apple OneScanner ROM version 2.03 corrects the recognition problem, and Apple Service inventory consists of the upgraded boards.

If you are unsure which ROM revision your Apple OneScanner (or any other SCSI device) has, connect the SCSI device to a Macintosh computer and launch SCSI Probe 3.4 or later. SCSI Probe provides the SCSI ID, device type, vendor info, product name, and version information.

* Apple OneScanner owners with Macintosh Quadra computers who want to upgrade to ROM version 2.03, instead of using the workaround, should contact their Apple Authorized Service Provider for a replacement board.
Published Date: Feb 18, 2012

QuickTime: Guidelines for Using Compressors

We are a little confused about compression alternatives, and uncertain about how we might accelerate compression. When does JPEG make sense?

This article has been archived and is no longer updated by Apple.

Below is a section from the QuickTime Developer's Guide that is included on the QuickTime 1.0 Developer's CD. It gives specific information about each of the compressors that Apple has included in QuickTime, including guidelines on when each should be used.

Photo Compressor

The photo compressor implements the Joint Photographic Experts Group (JPEG) algorithm for image compression. JPEG is an international standard for compressing still images. The version of JPEG supplied with QuickTime complies with the baseline International Standards Organization (ISO) standard bitstream, version 9R9. This algorithm is best suited for use with still images.

The photo compressor performs best on images that vary smoothly or that do not have a large percentage of their areas devoted to edges or other types of sharp detail. This is the case for most natural images. In practice, you will find that compression ratios are highly dependent on source images, but they generally range from 5:1 to 50:1 at 24 bits-per-pixel, with good picture quality resulting from compression ratios between 10:1 and 20:1.

Picture quality is generally very good to exceptional and is often good enough for use in demanding desktop publishing applications. Very high-resolution images obtained through the use of 24-bit color scanners would best be compressed using the photo compressor.

On a Macintosh IIsi using a compression ratio of 10:1, the photo compressor can compress a 24-bit 640-by-480 pixel image at a normal quality setting in 7.5 seconds. Decompressing the same image takes 7 seconds.

Video Compressor

The video compressor employs an image-compression method developed by Apple. This method was designed to permit very fast decompression times while maintaining reasonably good picture quality. This algorithm's rapid decompression allows applications to display 24-bit images at interactive speeds. This algorithm is best suited for use with sequences of video data.

The video compressor is best suited to digitized video content rather than synthetically generated images. This compressor supports both spatial and temporal compression. If you use only spatial compression, you obtain compression ratios from 5:1 to 8:1 with reasonably good quality at 24-bit pixel depths. If you use both spatial and temporal compression, the compression ratio range extends from between 5:1 to 25:1.

The video compressor can be used for computer animation as well as digitized video, but you obtain higher image quality using the animation compressor. Similarly, the animation compressor can be used for digitized video as well as animation, though you obtain higher compression ratios from the video compressor.

On a Macintosh IIsi using a compression ratio of 6.5:1, the video compressor can compress a 24-bit 640-by-480 pixel image at a normal quality setting in 3.5 seconds. Decompressing the same image takes 1.0 second.

Animation Compressor

The animation compressor employs a compression algorithm developed by Apple. This technique is best suited to animation and computer-generated video content. In addition, the animation compressor can be used to compress sequences of screen images, as might be generated for a training application.

The algorithm employed by the animation compressor is similar to applying the PICT image format to the temporal domain. A PICT image is stored in run-length encoded format and is lossless. The animation compressor also stores images in run-length encoded format. However, the animation compressor can work in either a lossy or lossless mode. The lossless mode maintains picture content precisely, storing an animation as a series of run-length encoded images. The lossy mode loses some quality, but is fast enough for real-time playback.

The animation compressor's performance and achieved compression ratios are highly dependent on the type of images in a scene. The animation compressor is very sensitive to picture changes, and works best on a clean image that has been generated synthetically. Images captured from videotape generally have considerable visual noise, which can corrupt the inherent similarity of the pixels and make it more difficult for the animation compressor to achieve good compression.

On a Macintosh IIsi using a compression ratio of 1.3:1, the animation compressor can compress a 24-bit 640-by-480 pixel image at a normal quality setting in 2.0 seconds. Decompressing the same image takes 1 second.

Graphics Compressor

The graphics compressor employs a compression algorithm developed by Apple. This compressor is best suited to 8-bit still images and image sequences in applications where compression ratio is more important than decompression speed.

The graphics compressor is a good alternative to the animation compressor whenever performance is less important than compression ratio. In

general, the graphics compressor generates a compressed image that is one-half the size of the same image compressed by the animation compressor. However, the graphics compressor can decompress the image at only half the speed of the animation compressor. Therefore, you should consider using the graphics compressor with relatively slow storage devices, such as CD-ROM. In these circumstances, the graphics compressor has sufficient time to decompress the image or image sequence.

On a Macintosh IIsi using a compression ratio of 2.5:1, the graphics compressor can compress a 24-bit 640-by-480 pixel image that has been dithered to 8-bit pixel depth at a normal quality setting in 17.0 seconds. Decompressing the same image takes 1.0 second.
Published Date: Feb 18, 2012

Qume QVT101 Emulation on Macintosh

Can the Macintosh emulate a Qume QVT101 terminal (a superset of VT100)? When I use standard VT100 emulation on the Qume QVT101, I can't do some operations. The Qume QVT101 has some extra features on top of the normal VT100, and applications on the mini want to see the QVT100 and use those additional features.

This article has been archived and is no longer updated by Apple.

We checked with Qume and found that the Qume QVT 101 emulated the Hazeltine 1500, TeleVideo 910 and Lear/Seigler 3A5 terminals. The Qume QVT 101 is an obsolete product.

MacEmulate from Cornerstone Data Systems emulates both the Hazeltine 1500 and the Televideo 910.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder. Or search on "Cornerstone".

Published Date: Feb 18, 2012

MacWorks XL: Error on Hard Disk Startup

This article has been archived and is no longer updated by Apple.
A problem with the released version of MacWorks XL can be worked around, even though the exact cause is not clear as yet.

After installing MacWorks on a hard disk dedicated only to Macintosh files, you may get the following error during the boot process: the expansion card icon appears with an X through it and a 2 inside it. There may also be the number 90 below it.

At this point, you have a choice of starting up from one of two disks: hard or floppy. The system will start up fine after you click on the hard disk icon; however, you must make this choice each time for start up. If you unplug the Macintosh XL to clear parameter memory and then reboot, it works fine, directly booting from the hard disk. But the same error message appears the next time you boot.

There are two workarounds: the first takes more time and the second takes more equipment.

First workaround:

1. Install Lisa office system.
2. Set preferences to boot from the hard disk.
3. Re-install MacWorks.

Second workaround:

1. Install a parallel card.
2. Boot Lisa.
3. Set Preferences to Boot from the internal hard disk.

Published Date: Feb 18, 2012

DEC VT100, 101, and 102 Terminals: Have No Function Keys

We're installing MacTerminal 3.0 on a Macintosh SE/30 with an extended keyboard II to do VT100, 101, or 102 emulation on a SCO Xenix 2.3.4 system. The function keys 1 through 5 don't operate.

This article has been archived and is no longer updated by Apple.
Because you're trying to emulate DEC VT100, VT101, or VT102 terminals, we assume you're using the VT102 Tool rather than VT320.

This isn't a problem with MacTerminal 3.0, or the VT102 Tool. If you look at the real DEC VT100, 101, or 102 terminals, they don't have any Function Keys such as F1 through F20. They only have the PF keys, PF1 through PF4 -- the top four keys on the keypad. The VT102 Tool maps these keys to the Keys menu, or the Macintosh keyboard keypad:

Key Pad Keys

PF1 Num lock/Clear
PF2 =
PF3 /
PF4 *

So, since the VT102 Tool emulates the VT102 terminal, it doesn't have to provide the function keys F1 through F5, which don't exist on the real terminal.

On the real VT320 keyboard, F1 through F5 are Hold Screen, Print Screen, Set Up, F4, and Break, respectively. The VT320 emulates all except the F4 keys in the VT320 Tool using the File Menu, Settings Menu, Session Menu, or Option Keys combination.

You will have to reprogram your application to accept other keys, if that's possible. The VT320 Tool will allow mapping of function keys F6 through F20.

Published Date: Feb 18, 2012

AppleTalk, TCP/IP, and IPX: Simultaneous Routing

Are there any third-party software products that allow simultaneous routing of TCP/IP, IPX, and AppleTalk?

This article has been archived and is no longer updated by Apple.

Novell

There's a Novell router-only product -- basically a Novell 3.11 server without the server capabilities. The product name is Novell Multiprotocol Router 1.0. It supports the routing of IPX, TCP/IP, AppleTalk, and Arcnet.

The NetWare Multi-Protocol Router v1.0 provides customers with a standalone router solution that includes the AppleTalk router. The Multi-Protocol Router provides routing of AppleTalk packets across a Novell network.

IBM

The IBM 6611 Network Processor routes AppleTalk protocol. The IBM 6611 -- which also supports routing for TCP/IP, DECnet, NetBIOS, IPX and XNS networks and SNA data link switching -- enables AppleTalk users to connect to a wide variety of local and remote communications resources located on their network.

AppleTalk

AppleTalk, Apple's local area network protocol suite, is built into every Macintosh computer and networked LaserWriter, and provides users with easy access to network resources. The dynamic nature of AppleTalk allows easy growth, change and automatic reconfiguration of networks. AppleTalk ensures resources are viewed in a consistent manner, independent of the computing platform on which the resources reside. AppleTalk protocols are broadly licensed and supported by leading equipment manufacturers.

Published Date: Feb 18, 2012

FriendlyNet: Fiber-Optic Transceivers

I need to know if anyone manufactures a fiber transceiver for the Macintosh to plug into the Quadra (Friendly Net connector). We're running fiber instead of twisted/thin/thick Ethernet cable. It will be at Ethernet speed, but the cable type is fiber. Do you know of any companies that have such a product?

This article has been archived and is no longer updated by Apple.

There are no FriendlyNet compatible fiber-optic transceivers available at this time. The Ethernet specification (10BASE-F) for data transmission using fiber hasn't yet been approved as a final specification. There are several vendor-specific implementations of fiber-based Ethernet, but most are incompatible with each other and with the proposed 10BASE-F specification. Several vendors have fiber-optic transceivers you can attach to the FriendlyNet thicknet transceiver option.

```
[Mac]-----------------[FTT]-------------------------[FT]------ENET--
AAUI              FriendlyNet                    Std. AUI   Fiber
Cable             Thicknet transceiver           Cable      Transceiver
```

If you have a fiber plant installed with an Ethernet running, you should have access to these types of transceivers from the vendor who originally supplied the fiber network components. Allied Telesis, BlackBox, and Canary all sell fiber transceivers.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

PowerBook Modem: Workaround for 40-Char Command Buffer Limit

Does the PowerBook modem have a data register of 40 characters? I'm trying to dial a Sprint number, and the modem cuts off characters after 40 digits. I'm using White Knight, and can't send the whole string of characters. Is there a workaround? Is this a limitation of the modem?

This article has been archived and is no longer updated by Apple.
Yes, there is a 40-character command buffer limit in the PowerBook modem, but there is a workaround.

By using the ; (semicolon) command, you can enter phone numbers (or any command for that matter) longer than 40 characters. You will need to break the phone number up into two separate commands, each less than 40 characters. The semicolon (;) command returns the modem to local command state after dialing. You must put the semicolon (;) at the end of the dialing command.

For example, if you want to dial (408) 555-1212, follow these steps:

1) Enter: ATDT408555;
2) Press RETURN.
3) Wait for OK.
4) Enter: ATDT1212
5) Press RETURN.

Support Information Services

Published Date: Feb 18, 2012

System 7 Finder: Repairing Preferences File that Loses Settings

We have Macintosh computers (PowerBook 170 and IIcx) running System 7. They will not retain default settings, such as changes to Views (like font size) or the Trash warning. After a restart or shut down, the settings return to default. Resetting the PRAM does not help.
This article has been archived and is no longer updated by Apple.
It sounds like you might have a corrupted Finder Preferences file, found by following this path:

System Folder
- Preferences
--Finder Preferences

Try the following procedure:

- Put the existing Finder Preferences file in the Trash can .
- Restart your computer. (This will automatically create a new Finder Preferences file.)
- Empty the Trash can.

Published Date: Feb 18, 2012

MacTCP: Syntax of Hosts File

I have a question about the Host file for MacTCP used in the remote commands to edit/create in MacX. With the Host... button I can select the connection method and the host. The MacX documentation specifies that the Host List will contain the names in the Hosts file of the System Folder.

How is the Host file created and what is the format? I haven't been able to get any names to appear in this list, so I use the network dot address for testing. I've tried creating a Host file like the /etc/hosts file on A/UX with TeachText (format <dot address> <host name>), but with no success.
This article has been archived and is no longer updated by Apple.
Note: The syntax for a Hosts file under Open Transport TCP/IP is different. See Technical Information Library article, "Open Transport 1.1/TCP Supports HOSTS File", for Open Transport.

The syntax of the Hosts file used with MacTCP conforms to the master file syntax specified in RFC (Request For Comment) 1035. Here is the syntax:

name type data [;comment]

name = the name assigned to a host or domain on the internet.

type = the type is one of the three below:

- "A" for address
- "NS" for Name Server
- "CNAME" for Canonical name

data = determined by the type specified

comment = this is optional and begins with a semicolon (;)

The syntax of /etc/hosts file in A/UX is not compatible with the syntax of RFC 1035.

You can use a sample Hosts file which is included in the MacTCP software distribution to edit/add/delete entries and create a new Hosts file for your network.

Here are sample entries in a Hosts file:

roland1 A 130.252.11.27 ; Mike Berg

bruce A 130.252.11.30 ;

windx A 130.252.11.31 ; Rudy Martin

rizzi A 130.252.11.32 ; John Rizzi

scoodt A 130.252.11.33 ; Rudy Martin

renee1 A 130.252.11.34 ; Renee Gibson

paul A 130.252.11.35 ;

wendy A 130.252.11.36 ;

frank A 130.252.11.37 ;

setlab A 130.252.11.38 ; Craig Adams

dick A 130.252.11.39 ; Dick Mahoney

xshare A 130.252.11.40 ; Rudy Martin

rudy A 130.252.11.41 ; Rudy Martin

eagle A 130.252.11.42 ;

Note: You have to restart your computer after making changes to the Hosts file. The file should be named "Hosts" and should be in the system folder, not in any other folder.

For more information on the syntax of MacTCP Hosts file, refer to Appendix A, Name-to-Address Mapping, in the "MacTCP Administrator's Guide."

Published Date: Feb 18, 2012

A/UX: TCP/IP Routing Via Ethernet and SL/IP (8/94)

I know that A/UX supports the routing of TCP/IP protocols and services between two Ethernet networks when the A/UX system is properly configured and has two Ethernet adapters in it.

I also know that A/UX supports SL/IP connections for providing TCP/IP protocols and services over direct or dial-up serial connections.

Can A/UX support TCP/IP routing between two networks, one via an Ethernet connection, and the other via SL/IP?

This article has been archived and is no longer updated by Apple.
Yes, A/UX supports TCP/IP routing among networks. In A/UX, however, the "ipforwarding" parameter was turned off when it is installed, so that a host can't arbitrarily become a gateway.

You can turn the "ipforwarding" parameter back on by doing the following adb (kernel debugger) command:

```
# adb -w /unix
====> a.out file = /unix (COFF format)
====> cannot open core
====> ready
ipforwarding?D
====> ipforwarding: 0
ipforwarding?W 1
====> ipforwarding: 0x0 = 0x1
$w
$q
====> #
```

Then restart A/UX so that the change will take effect. You might also want to make the same change to the /etc/install.d/boot.d/bnet_dr file (adb -w bnet_dr) in case you build a new kernel via newconfig at some later date.

If you would rather not restart, do this:

```
# adb -w -w /unix /dev/kmem
====> a.out file = /unix (COFF format)
====> core file = /dev/kmem
====> ready
ipforwarding/W 1
====> ipforwarding: 0x0 = 0x1
$w
$q
```

This changes the running kernel (/dev/kmem) without affecting what will happen after the next start. You can do both changes in one session. The "-k" flag is recommended when working on standalone programs such as the kernel (that's why it's named "-k").

Article Change History:
23 Aug 1994 - Reviewed and updated.
30 Apr 1992 - REVIEWED for technical accuracy.

Support Information Services

Published Date: Feb 18, 2012

A/UX: When It Builds a New Kernel

Article Change History

04/30/92 - REVIEWED
* For technical accuracy

Sometimes A/UX automatically builds a new kernel when I change the hardware configuration (different CPU type, more memory, new Ethernet card). Other times it doesn't, and just starts fine on the new configuration.

When and why does A/UX decide to build a new kernel?

This article has been archived and is no longer updated by Apple.
In general, A/UX rebuilds a new kernel for the following reasons:

- Someone has removed the existing NuBus card (which has driver like ae6 in kernel) such as Ethernet or EtherTalk card, or SuperMac Comm Card, and replaces it into a DIFFERENT slot.

- Someone adds a new NuBus card (with the driver that came with A/UX) onto the system.

- Someone issues a "newconfig" command.

If you move an A/UX drive onto a different CPU and the NuBus card matches the one in A/UX, then A/UX won't rebuild its kernel when it starts. Otherwise, it should rebuild a new kernel to match the existing hardware.

Adding or removing memory doesn't require a new kernel rebuild. A/UX automatically recognizes its available memory size at startup.

Adding or removing video cards doesn't require a new kernel either since there is no new driver in A/UX to configure.

Published Date: Feb 18, 2012

A/UX: C++ Compiler

Article Change History

04/30/92 - REVIEWED
* For technical accuracy

Is there a version of C++ for A/UX?

This article has been archived and is no longer updated by Apple.
The A/UX Developer's Tools Version 1.0, available from APDA, includes a C++ compiler which is based on AT&T technology and enables object-oriented code development. The part number for A/UX Developer's Tools Version 1.0 is B0596LL/A.

Published Date: Feb 18, 2012

TA48136_MacX_Isnt_OSF_Compliant_(TIL09793).pdf

MacX: Isn‘t OSF Compliant

Is MacX OSF compliant, as opposed to complying, to the International UNIX standards?

A 1989 Tech Info article, "A/UX: X Windows Questions and Answers," states that Integrated Computer Solutions offers an OSF compliant X Window by providing a MOTIF Window Manager. Is this still the case?

This article has been archived and is no longer updated by Apple.
MacX isn't OSF compliant. It's based on X11 Release 4 Window System Protocols; it has nothing to do with OSF or UNIX International's UNIX standards. OSF (Open Software Foundation) and UNIX International are two major UNIX organizations trying to set their standards for the UNIX industry; they aren't particularly discussing X Windows. The X Consortium is the one that defines and sets all the standards for X Window system. Apple is a member of all three organizations.

MOTIF is an X Window Manager, developed by OSF. (It follows X protocols of course.) The product is sometimes called MOTIF/OSF, since it's an OSF product. ICS (Integrated Computer Solutions) is a company that ported in the MOTIF Window Manager for A/UX.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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TA48137_Alysis_Systems_Compatibility_INIT_How_it_Works_on_the_Quadra_(TIL09794).pdf

Alysis Systems‘ Compatibility INIT: How it Works on the Quadra

How does the Alysis Systems Compatibility INIT for the Quadra series work?

This article has been archived and is no longer updated by Apple.

Alysis Systems Cache Switch INIT on Quadra

The Alysis Compatibility INIT 2.2 automatically toggles the cache on the Quadra 700 and 900, on-the-fly without having to restart. It also toggles the cache between compatible and non-compatible applications while you are multi-tasking. Unlike earlier versions, version 2.2 will also recognize non-compatible Apple Menu Items (DAs). Users may add names of programs they find to be incompatible with the Quadra or delete them as they become compatible. Businesses and resellers are required to contact Alysis Software for licensing and distribution rights.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Apple's Internal Cache Switch on Quadra

Don't change the caches on or off without restarting a Quadra 700, or you may encounter LocalTalk network problems. When the Quadra 700 starts, the system determines its effective processor speed (this has nothing to do with the 68040's clock speed, and everything to do with the mode of the processor's caches), and sets certain internal timings according to this effective processor speed.

Two of the more important timings are for the floppy disk drive and LocalTalk. Therefore, when the Quadra 700's caches are switched without restarting, the timings set at startup are no longer valid, and the floppy disk drive and LocalTalk won't work (or won't work properly). We monitored a Quadra 700 after switching the caches on the fly. It transmitted an inordinate amount of fragmented packets and never successfully registered itself on the network, or registered and never located network services.

The Quadra 900 features the Peripheral Interface Controllers (PIC chips) of the Macintosh IIfx. These I/O processors seem to work OK after having the caches switched on/off on the fly, but we have a lot more testing to do before we recommend this procedure.

Note the third-party cache switches routinely switch the caches on or off on the fly, whereas the cache switch Apple distributes on the Tidbits disk will only turn on or off the caches immediately if you hold down the option key when changing the cache setting.

Published Date: Feb 18, 2012

MacX: Which Macintosh Models Support It

Does the Quadra 700 support MacX?

This article has been archived and is no longer updated by Apple.
Yes, Quadra 700 supports MacX. Basically, all Macintosh computers from Macintosh Plus up to the Quadra 900 and PowerBooks with at least 2MB of RAM and with system software version 6.0.5 or later supports MacX.

The Macintosh 512K may run MacX too if you can upgrade the third-party RAM to at least 2MB. For color display, we recommend at least 4MB.

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A/UX: Converting from Apple Single to Apple Double Format

Article Change History

05/07/92 - REVIEWED
* For technical accuracy
01/06/93 - REVISED
* To expand information about the fcnvt utility.

Is there a utility that will convert from Apple Single format to Apple Double format (Resource and Data Fork) and back?

This article has been archived and is no longer updated by Apple.
A utility program called 'fcnvt' comes with A/UX, and is a hybrid application with A/UX and Macintosh Toolbox calls. Under A/UX the 'fcnvt' utility converts a file in one storage format to a corresponding file in a different storage format.

We suggest you upload files to A/UX and make any conversion there, then download to the Macintosh operating system.

The formats supported are:

AppleDouble
AppleSingle
MacBinary
BinHex
Plain Pair
Plain Triple

A/UX also provides the utility 'setfile' that lets you set a file TYPE and CREATOR. It also lets you set file attributes (that is, invisible, locked, and so on).

For more information on either of these commands look in the A/UX manual pages or use the A/UX man program.

Published Date: Feb 18, 2012

A/UX: Only One Macintosh Environment Allowed (9/94)

I would like to run two copies of the Finder of A/UX 2.0.1 or 3.0 so that I then can run two copies of AppleShare on a computer. Is it possible to have two Macintosh environments running under A/UX?

This article has been archived and is no longer updated by Apple.
No, it isn't possible for two Macintosh environments to run simultaneously under A/UX 2.0.1 or A/UX 3.0. Only one Macintosh environment is allowed under A/UX. When the "mac32" or "mac24" process is invoked, it actually starts up the "startmac" or "startmac24" program to create a Macintosh environment. Then the Finder in the System Folder will be executed. This operation is running under Macintosh Toolbox File Manager control; it isn't a re-entrant type of program.

Note that A/UX is capable of supporting Macintosh File Sharing (in A/UX 3.0) and AppleShare CLIENT functionality. The AWS 95 can run AppleShare Pro.

Support Information Services
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TA48141_Applesoft_Shape_Tables_(TIL00098).pdf

Applesoft: Shape Tables

This article has been archived and is no longer updated by Apple.

Applesoft allows you to draw shape number zero with unexpected results. It ends up interpreting part of the shape table as the address of the desired shape and trys to draw what it finds there. Since this isn't a shape table, Applesoft produces a random assortment of lines.

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TA48142_LaserWriter_Form_feeds_and_blank_pages_(TIL00980).pdf

LaserWriter: Form feeds and blank pages

This article has been archived and is no longer updated by Apple.

In Diablo 630 Emulation mode, the LaserWriter prints a page under two conditions: (1) when it reaches the end of a page, or (2) when it receives a form feed. The LaserWriter cannot detect the end of a document; it simply assumes that the document has come to an end when data stops arriving.

If the last page of a document isn't full and doesn't end with a form feed, the printer doesn't print it immediately; instead, it waits for a printer timeout, which occurs (1) as soon as the next document arrives, or (2) after 30 seconds, if no document arrives before that. You can avoid this delay by being careful to include a form feed at the end of your document's last page.

During printing there is a step called data preparation. In this step, the Laserwriter determines how many pages it takes to print the document. There is a possibility that one character, even a carriage return, will force the generation of a blank page at the end of the document. With MacWrite documents, the Laserwriter prints this last page first.

Published Date: Feb 18, 2012

Ethernet NB Card: Install EtherTalk 2.5.1 or Later

We have a Macintosh IIsi with an Ethernet NB card, and we're having problems installing EtherTalk software from the System 7.0.1 disks. When we choose EtherTalk, the software appears to be installed, but it doesn't work.

However, when we first install System 7.0.1, and then install the EtherTalk software from the EtherTalk 2.5.1 disk, everything works correctly.

This article has been archived and is no longer updated by Apple.
The EtherTalk software that ships with System 7.0 and System 7.0.1 was written prior to the introduction of the Ethernet NB board. In this case, the software was written with System 7.0 and carried forward to System 7.0.1, so it doesn't install an Ethernet driver for the Ethernet NB board. It only installs a driver for the older EtherTalk NB board and the built-in Ethernet on the Macintosh Quadras.

You can find the most current versions of Ethernet software for all of our boards on the NSI 1.1 disk. You can find an image of this disk in the Software Updates folder on AppleLink.

Published Date: Feb 18, 2012

Macintosh Parity-Equipped: Parity Bits Reset Between RAM and VM

Will a parity-equipped Macintosh (with virtual memory enabled), such as the Macintosh IIci, maintain parity when paging information between RAM and virtual memory?

This article has been archived and is no longer updated by Apple.
The question implies a loss of functionality if the parity bits aren't written out to virtual memory. Actually, this isn't the case. Virtual memory has no need to keep track of the RAM parity bits in parity-equipped Macintosh computers.

The reason is that the parity bits are set when you write to RAM. When virtual memory pages information back into RAM, the parity bits are set once again as appropriate. Since the parity bits are for handling data corruption in RAM, once you write to disk, it's up to the disk, its driver, and the file system to ensure data integrity rather than using the same mechanism used in "parity" RAM.

Also, when virtual memory reads the information in RAM, it doesn't have access to the parity bits. It reads a byte; it gets that byte's value.

Finally, imagine the excess overhead associated with moving around and storing that additional information. If you had 16MB set for virtual memory, you would need an extra 2MB of disk space just to handle the parity bits.

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Mac OS System Error Codes: Uncommon Codes

The following list provides an explanation of uncommon system errors. These lists are maintained with SysErr.a and in the Inside Macintosh programmer's documentation.

This document applies to Mac OS 9 and earlier.
This article has been archived and is no longer updated by Apple.

Note: Items listed in [brackets] are old result code meanings.
Note: ???? This information wasn't available.

```
Internal File System Errors
1     chNoBuf         no free cache buffers (all in use)
2     chInUse         requested block in use
3     chnotfound      requested block not found
4     chNotInUse      block being released was not in use
16    fxRangeErr      file position beyond mapped range
17    fxOvFlErr     extents file overflow
32    btnotfound    record not found
33    btexists      record already exists
34    btnospace     no available space
35    btnoFit       record doesn't fit in node
36    btbadNode     bad node detected
37    btbadHdr      bad BTree header record detected
48    cmnotfound    CNode not found
49    cmexists      CNode already exists
50    cmnotempty    directory CNode not empty (valence = 0)
51    cmRootCN      invalid reference to root CNode
52    cmbadnews     detected bad catalog structure
53    cmFThdDirErr thread belongs to a directory not a file
54    cmFThdGone    file thread doesn't exist
64    dsBadRotate   bad BTree rotate

Slot Declaration ROM Manager Errors
1     siInitSDTblErr  slot int dispatch table could not be initialized.
2     siInitVBLQsErr  VBLqueues for all slots could not be initialized.
3     siInitSPTblErr  slot priority table could not be initialized.
10    sdmJTInitErr    SDM Jump Table could not be initialized.
11    sdmInitErr      SDM could not be initialized.
12    sdmSRTInitErr   Slot Resource Table could not be initialized.
13    sdmPRAMInitErr  Slot PRAM could not be initialized.
14    sdmPriInitErr   Cards could not be initialized.

HD20 Driver Errors
16    wrtHsLw         HSHK low before starting
17    wrtHSLwTO       Time out waiting for HSHK to go low
19    wrtHSHighTO     Time out waiting for HSHK to go high
32    rdHsHi          HSHK high before starting
33    rdSyncTO        Time out waiting for sync ($AA) bye
34    rdGroupTO       Time out waiting for group
36    rdHoffSyncTO    Time out waiting for sync after holdoff
37    rdHsHiTO        Time out waiting for HSHK high
38    rdChksumErr     Checksum error on response packet
48    invalidResp     First byte in response packet was wrong
49    sqncNumErr      Sequence number in response packet was wrong
50    dNumberErr      Drive number in response packet was wrong
64    noResp          No response packet ever received

SCSI Manager Errors
2     scCommErr       Communications error (operations timeout)
3     scArbNBErr      Arbitration failed during SCSIGet - Bus busy
4     scBadparmsErr   Bad parameter or TIB opcode
5     scPhaseErr      SCSI bus not in correct phase for operation
6     scCompareErr    SCSI Manager busy with another operation when
                    SCSIGet was called
```

```
7     scMgrBusyErr    SCSI Manager busy with another operation when
                      SCSIGet was called
8     scSequenceErr   Attempted operation is out of sequence - e.g.,
                      calling SCSISelect before doing SCSIGet
9     scBusTOErr      Bus timeout before data ready on SCSIRBlind and
                      SCSIWBlind
10    scComplPhaseErr SCSIComplete failed - bus not in Status phase


Serial Driver Error Masks
1     swOverrunErr    Serial Driver overrun error
16    parityErr       Serial parity error
32    hwOverrunErr    Serial hardware overrun
64    framingErr      Serial framing error

Miscellaneous Result Code
1     evtNotEnb       Event not enabled at PostEvent

CDev Errors
0     cdevMemErr      Memory shortfall; alert user please
1     cdevResErr      Couldn't get a needed resource; alert
3     cdevUnset       cdevValue is initialized to this
-1    cdevGenErr      General error; gray cdev w/o alert

Script Manager Errors
0     smNotTruncated  No truncation was necessary
1     smTruncated     Truncation performed
-1    smTruncErr      General error

Communications Toolbox Errors
0     ctbuNoErr        ????
-1    ctbuGenericError ????

Communications Resource Manager Errors
0     crmNoErr        ????
-1    crmGenericError ????

Connection Manager Errors
0     cmNoErr            ????
1     cmRejected         ????
2     cmFailed           ????
3     cmTimeOut          ????
4     cmNotOpen          ????
5     cmNotClosed        ????
6     cmNoRequestPending ????
7     cmNotSupported     ????
8     cmNoTools          ????
9     cmUserCancel       ????
11    cmUnknownError     ????
-1    cmGenericError     ????

File Transfer Manager Errors
0     ftNoErr           ????
1     ftRejected        ????
2     ftFailed          ????
3     ftTimeOut         ????
4     ftTooManyRetry    ????
5     ftNotEnoughDSpace ????
6     ftRemoteCancel    ????
7     ftWrongFormat     ????
8     ftNoTools         ????
9     ftUserCancel      ????
10    ftNotSupported    ????
11    ftUnknownError    ????
-1    ftGenericError    ????
```

```
Midi Manager MIDIPacket Errors
1     midiOverflowErr ????
2     midiSCCErr      ????
3     midiPacketErr   ????
255   midiMaxErr      all command words less than this are errors

Terminal Manager Errors
0     tmNoErr           ????
1     tmNotSent         ????
2     tmEnvironsChanged ????
7     tmNotSupported    ????
8     tmNoTools         ????
11    tmUnknownError    ????
-1    tmGenericError    ????

AppleTalk Errors
-1    overrunErr      ???? (returned by ReadPacket & ReadRest routines)
-2    crcErr          ????
-3    underrunErr     ????
-4    lengthErr       ????

System Errors to put up msg dialogs
-10   dsMacsBugInstalled       say "MacsBug Installed"
-11   dsDisassemblerInstalled  say "Disassembler Installed"
-12   dsHD20Installed          say "HD20 Startup"
```

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TA48146_AUX_Support_for_QuickTime_(TIL09809).pdf

A/UX 3.0: Support for QuickTime

Does A/UX 3.0 support QuickTime?

This article has been archived and is no longer updated by Apple.
Yes, A/UX 3.0 supports QuickTime. A/UX 3.0 fully integrates QuickTime into the Macintosh environment running under UNIX. This is one of the first UNIX-based systems that integrates dynamic data such as sound, video, and animation into documents.

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QuickTime: Creating and Distributing Movies

How do I create and distribute QuickTime movies?
This article has been archived and is no longer updated by Apple.
You can create QuickTime animation movies by saving your animation as a QuickTime Movie from a wide variety of upgraded QuickTime-savvy applications. A utility in the QuickTime Starter Kit will also let you convert appropriate Macintosh and DOS file formats to QuickTime movies. Utilities in the Movie Exchange Toolkit will also let you convert content on other platforms to QuickTime movies.

If you want to create a video QuickTime movie, the easiest way is by using one of the new QuickTime digitizer cards, such as VideoSpigot from SuperMac. For higher-quality capture, there are several tools in the QuickTime Developer's Kit, that allow for controlled capture from laserdiscs and professional video equipment.

A QuickTime movie is just a regular Macintosh file -- you can distribute it as you would any ordinary Macintosh file. But because QuickTime movies are typically large, you'll usually use storage media such as CD-ROM, removable mass storage, or networks. You can also record your presentations, including QuickTime movies, to videotape using any number of third-party RGB-to-NTSC/PAL hardware solutions.
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QuickTime: System Requirements and Installation

What are the system requirements for QuickTime, and what else do I need to do before installing it? Will it work with a SCSI-based graphics adapter?

This article has been archived and is no longer updated by Apple.

QuickTime requires a Macintosh computer with a 68020 or later microprocessor, with system software version 6.0.7 or later. Apple recommends at least 4MB of memory when using QuickTime with System 7. QuickTime relies on the capabilities of 32-bit QuickDraw, which only runs on 68020 or later Macintosh computers.

With System 6.0.7, the 32-Bit QuickDraw file is located on the Printing Tools disk in the Apple Color folder and isn't automatically installed. You must install it manually. With System 7 and later versions, 32-bit QuickDraw is built into the system software, and a separate file for 32-bit QuickDraw is no longer required.

If you want to use QuickTime on an older Macintosh, you might be able to upgrade the unit or use a third-party board to bring it up to a 68020 CPU or higher. QuickTime will then work with System 7 installed, or with the 32-bit QuickDraw file installed in system 6.0.5 or 6.0.7.

In regards to QuickDraw working on a SCSI-based graphic adapter, we don't have any testing information on its functionality with such a device. We have heard reports of these devices being significantly slower in the screen drawing process. Based on this information, we would expect QuickTime to have a very poor performance when compared to operation with direct video through a video board or built-in video.

To install, simply drag the QuickTime extension to your System Folder and restart. Please note that the Installer for QuickTime Starter Kit 1.0 will replace QuickTime version 1.5 with 1.0. Just reinstall the QuickTime 1.5 extension.

Published Date: Feb 18, 2012

QuickTime: Movie Exchange Toolkit

What is the QuickTime Movie Exchange Toolkit?
This article has been archived and is no longer updated by Apple.
This toolkit consists of utilities, sample code, and documentation to allow developers to incorporate the QuickTime Movie file format into their non-Macintosh applications. The utilities support popular models of computers running MS-DOS, Windows, Cray, Silicon Graphics, Sun, DEC, and IBM computers.

For example, a user creating an animation in MS-DOS will have the option of converting that animation to a QuickTime movie. The animation can then be shared with Macintosh users over a network or via floppy disk, but only played back on a Macintosh.
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QuickTime: Video Window Size

Why is the video window so small?

This article has been archived and is no longer updated by Apple.

There is no limit in QuickTime to the size or frame rate you can have for a movie -- the only limitation is hardware. On existing Macintosh computers, and using Apple's Video Compressor, you can run 160 x 120 pixel movies at an average of 15 frames per second. The new Macintosh Display Card 8*24 GC can provide larger video windows by decompressing the video from its AMD2900 RISC processor.

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TA48152_Apple_Inch_Color_Display_GC_and_Quadra_Support_(TIL09815).pdf

Apple 16-Inch Color Display: 824, 824 GC, and Quadra Support

What are the bit depths with the Apple 16-Inch Color Display and the Macintosh Display Cards 8*24 and 8*24 GC?

What support do the Quadra 700 and 900 give the Apple 16-Inch Color Display with their various VRAM configurations?

This article has been archived and is no longer updated by Apple.
The Macintosh Display Cards 8*24, 8*24 GC, Quadra 700, and Quadra 900 offer the following support for the Apple 16-Inch Color Display:

8*24 (rev B) - 1, 2, 4, and 8 bits/pixel (up to 256 colors)

8*24 GC (rev B) - 1, 2, 4, 8, and 16 bits/pixel (up to 32,768 colors)

Quadra 700 - .5MB VRAM: 1, 2, 4, and 8 bits/pixel (up to 256 colors)
1MB VRAM: 1, 2, 4, and 8 bits/pixel (up to 256 colors)
2MB VRAM: 1, 2, 4, 8 and 24 bits/pixel (up to 16.7 colors)

Quadra 900 - 1MB VRAM: 1, 2, 4, and 8 bits/pixel (up to 256 colors)
2MB VRAM: 1, 2, 4, 8 and 24 bits/pixel (up to 16.7 colors)

Published Date: Feb 18, 2012

AppleTalk Remote Access: Manual Dialing (1/96)

I have a question about using a PowerBook 170 to communicate with a remote computer long distance. If I use a special discount phone service and have to talk to an operator to get access to the this line, when would I connect with the remote modem with Remote Access? Or can I even communicate using a phone service like this?

This article has been archived and is no longer updated by Apple.

Yes, it's possible to dial manually and still connect using AppleTalk Remote Access 1.0. The "Apple Modem 2400 with X1" Remote Access Script allows this. You can download this script from Apple's ARA Server at 512-908-8118 (connect as a Guest). Also, Apple Remote Access 2.0, the version with Dial Assist, has the ability to manually dial through the Setup Menu in the Apple Remote Access program. Upgrading to ARA 2.0 is probably easier than trying to modify the CCL script for your modem.

Background Information

The PowerBook Modem normally waits to detect a dial tone before dialing. When dialing manually it's necessary to disable this feature so the modem will attempt to "dial without a number" and connect immediately.

The only change to the original Apple Modem 2400 script was the addition of "X1" within the dial command:

```
 !
 ! The modem is ready so enable answering, or originate a call
 !
 ! To accommodate manual dialing,
 ! added X1 command to disable
 ! "wait for dial tone". - PDF 2/5/92
 !
 @LABEL 8
 pause 5
 ifANSWER 30
 note "Dialing ^1" 3
 write "ATX1DT^1\\13"
```

To use the new script, follow these steps:

Step 1

Put the script in the Extensions folder.

Step 2

Open the Remote Access Control Panel and select "Apple Modem 2400 with X1."

Step 3

Open Remote Access and enter a single space in the Phone field. (If you leave the Phone field blank, a dialog box indicates "The connection attempt has failed. You have not specified a phone number in the connection document." Entering a space gets around it.)

Step 4

Enter Name and Password as necessary.

Step 5

Place the call manually (or through your operator).

Step 6

The moment you hear the remote phone number ring, click "Connect" in the Remote Access window. (It takes about 5 seconds for the script to execute from the time you click "Connect" and when the modem goes off hook and actually tries to connect.)

Step 7

The moment you see the "Communicating at xxxx bps" message in the Remote Access Status window, hang up.

Article Change History:

29 Jan 1996 - Updated information on ARA 2.0 and update format.

15 Sep 1994 - Removed binary file. Updated to include ARA 2.0 info.

TA48155_AppleTalk_Remote_Access_Manual_Dialing__(TIL09819).pdf

02 Feb 1993 - Updated.

Support Information Services

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DuoDisk: Shield service and support notice

This article has been archived and is no longer updated by Apple.
Currently, all Duodisk mechanical assemblies are NOT being made with threaded screw holes in the bottom of the casing.

However, the first 5,000 Duodisks had those screw holes; they were used to mount the Duodisk mechanisms to the bottom case.

If one of the original mechanisms is replaced with a new mechanism that has no screw holes, the following parts will have to be ordered:

Part Number Description Quantity to Order

400-1604 Screw 4
415-1410 Screw 4
805-5000 Shield 1
860-0053 Washer, lock 4
860-0242 Washer 4

Whether or not the unit is covered by warranty or AppleCare, Apple will reimburse the Level I Service Center for the parts used in this action. In order to receive credit, please note 'Duodisk Installation' in the comments section of the SRO form.

If the Duodisk is out of warranty and is not covered by AppleCare, the 'Other' line in the warranty section of the SRO should be marked and 'Duodisk Installation' should be noted.
Published Date: Feb 18, 2012

Environment Settings for MacX to OpenLook

What are the environment settings for connecting to a Sun OpenLook platform when using MacX?

This article has been archived and is no longer updated by Apple.

```
1)  setenv OPENWINHOME /usr/openwin
   setenv LD_LIBRARY_PATH /usr/openwin/lib

2) Add the next line to your path string:

   $OPENWINHOME /bin: $OPENWINHOME /bin/Xview: $OPENWINHOME /demo


3) Command to start OpenLook Window Manager (don't start "openwin"):

   setenv DISPLAY "¿display"; /(root directory)/****/olwm
```

Published Date: Feb 18, 2012

TA48158_LaserWriter_IIfIIg_TrueType_Font_nd_Document_Wont_Print_(TIL09823).pdf

LaserWriter IIf/IIg: TrueType Font, 2nd Document Won‘t Print

Article Change History

10/15/92 - UPDATED
* New driver with fix available.

When I print the same document twice in a row to either the Apple LaserWriter IIf or IIg, using TrueType fonts, the second document doesn't print.

This article has been archived and is no longer updated by Apple.
This problem has been fixed, update to the most current version of the driver.
Published Date: Feb 18, 2012

LaserWriter II Series: Possible Causes of Card Stock Jams

A customer reported that he uses his LaserWriter IINTX to print employee records onto card stock. After printing about 350 cards, the printer jams.

Are there any recommended guidelines for printing on card stock? Are there any adjustments that I can make to the printer to correct the problem?

This article has been archived and is no longer updated by Apple.
You can use up to 36-pound card stock via manual feed in the LaserWriter II series printers. However, higher weight stock has a higher content of cotton rag or other dust-producing material. This may be causing paper dust to build up on the paper pickup roller and/or separation pad, which may be causing the jam conditions.

Try cleaning the paper pickup roller with a printer platen cleaner. DO NOT use alcohol. Alcohol removes an oil compound in the rubber, causing it to shrink and damage the roller.

Note that the roller and separation pad are subject to wear. Ensure that these parts are in good working condition.

Search on LaserWriter II and specifications for more information on recommended printing material.

Published Date: Feb 18, 2012

Macintosh: Troubleshooting Bus Error Messages

I have a Macintosh IIsi running system software version 6.0.7 and Quark 3.0. I'm getting bus error messages when I open the Chooser to select a different printer.

This article has been archived and is no longer updated by Apple.
We've had other problem reports like this and found that most were caused by the WDEF virus or a corrupt System.

To eliminate the WDEF virus as the cause, follow the instructions in the Tech Info Library article titled "WDEF" Virus: Information.

If the problem persists:

1) Remove all items from the System Folder that you want to save, like third-party INITs, CDEVs, and DAs.

2) Trash the System Folder.

3) Reinstall the system software from locked, known-good disks.

Published Date: Feb 18, 2012

LaserWriter IIf/IIg/Pro: Switching PostScript to HP Emul (9/94)

How do I set a LaserWriter IIf, IIg, or LaserWriter Pro for LaserJet emulation, and return it to standard Apple PostScript mode?

I'm using my printer on an IBM network and need to send the commands via text file.

This article has been archived and is no longer updated by Apple.

Switching to HP Emulation for the Current Job

Below is PostScript code that will switch the LaserWriter IIf, IIg, and LaserWriter Pro PostScript interpreter into HP LaserJet IIP emulation mode for the duration of the current job. It requires first configuring the port to be used for PostScript "Binary" mode (versus Normal), or a rangecheck error will be generated.

currentfile /LaserJetIIP statusdict /emulate get exec

The code must precede each job that will use HP LaserJet IIP emulation, and only works on the LaserWriter IIf, IIg, and LaserWriter Pro printers. The emulate operator is currently specific to these printers. The emulator will exit, returning to PostScript, if either of the following conditions occur:

The current job ends.

This is defined as when the printer receives a control-D or when the

emulator's 30-second wait timeout expires. Note that this 30-second

timer can't be changed, and overrides the normal WaitTimeout value while

the emulator is in control.

The printer receives the ASCII sequence ESC-DEL-Zero (Decimal ASCII 27,

127, 48).

This causes the emulator to exit to PostScript, where more printing can

occur before the end of job. However, when the emulator exits, it ejects

the current page. This prevents any mixing of PostScript and HP LaserJet

data on a single page.

Permanently Switching to HP Emulation

A communications port can also be configured for HP LaserJet IIP emulation so that the setting persists across jobs and power cycles. This is just as if the setting were made from the LaserWriter Utility's Configure Communication feature, and requires that the push-wheel mode switch be in one of positions 6 through 9.

To configure the serial port, download this PostScript code to your LaserWriter:

```
(%Serial_NV4%)
<< /Protocol /Binary
/Interpreter /LaserJetIIP
>> setdevparams
```

The first line tells the setdevparams operator which parameter set is to be

changed. Possible values here are:

(%Serial_NV%) for push-wheel position 6

(%Serial_NV2%) for 7

(%Serial_NV3%) for 8

(%Serial_NV4%) for 9

If the mini-DIN 8 port is being used, substitute "SerialB" into the string for all instances of "Serial."

Note: If you remove the "_NV" portion from "(%Serial_NV4%)", such as (%Serial4%), the settings will not persist and the printer will return to PostScript mode under the conditions mentioned above.

To configure the parallel port, download this PostScript code to your LaserWriter:

```
%%Begin (%Parallel_NV3%) %Modifies the 3rd changeable pos.(setting 8)
<< /Enabled true %Mark a dictionary on the stack with key/value
/HasNames false %pairs for the various settings.
/Protocol /Raw
/Interpreter /LaserJetIIP
```

/On true >> setdevparams %Create the dictionary and execute setdevparams

%(which uses it to modify the parameter set.)

%%End

The first line tells the setdevparams operator which parameter set is to be

changed. Possible values here are:

(%Parallel_NV%) corresponds to 6

(%Parallel_NV2%) " " to 7

(%Parallel_NV3%) " " to 8

(%Parallel_NV4%) " " to 9

Note: If you remove the "_NV" portion from "(%Parallel_NV3%)", such as

(%Parallel3%), the settings will not persist and the printer will return to

PostScript mode under the conditions mentioned above.

Switching Back to PostScript

Switching a communications port back to PostScript mode requires sending the following variation of the above code to a port that is still configured for PostScript:

(%Use the same parameter set here as used in the previous code%)

<< /Protocol /Binary

/Interpreter /PostScript

>> setdevparams

If all available ports have been configured for HP LaserJet IIP emulation, returning to PostScript will require changing the push-wheel switch to one of positions 0 through 5.

Article Change History

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28 Sep 1994 - Revised formatting, reviewed for technical accuracy.

12 Apr 1993 - Updated to include information about the LaserWriter Pro.

Support Information Services

Published Date: Feb 18, 2012

TA48162_LaserWriter_IIf_IIg_EPROM_Wear_(TIL09828).pdf

LaserWriter IIf & IIg: EPROM Wear

Are there any concerns about writing to an EPROM in the LaserWriter IIf and IIg? (With the LaserWriter NT or NTX, there's a limit to the number of changes before it becomes worn out.)

This article has been archived and is no longer updated by Apple.
Unlike the LaserWriter IINTX, which uses battery backed nonvolatile RAM to store settings, the LaserWriter IIf and IIg use a device much like that in the LaserWriter IINT. But where the IINT is limited to approximately 10,000 writes, the newer device allows approximately 50,000. The LaserWriter IINTX has no such limit, but the battery within the memory device will eventually fail -- resulting in the same symptoms.

Published Date: Feb 18, 2012

PostScript Level 2: Doesn‘t Check for Device-Specific Operators

I upgraded from a LaserWriter IINTX to a LaserWriter IIg, to print jobs made by Sun workstations. Files that printed on the LaserWriter IINTX now fail to print on the LaserWriter IIg. The problem file generates a calendar for 1992. Examining a log shows that the "load" command isn't finding a key entry and causes the error. This is somewhere in the following PostScript extract:

"/a4 [[300 72 div 0 0 -300 72 div -72 3436] 292 3365
{statusdict /jobstate (printing) put 0 setblink
margins exch 142 add exch 256 add 8 div round cvi frametoroket
statusdict /jobstate (busy) put 1 setblink} /framedevice load
60 45 {dup mul exch dup mul add 1.0 exch sub} /setscreen load
{} /settransfer load /initgraphics load /erasepage load] cvx
statusdict begin bind end readonly def"

Is the software that creates the Postscript doing "unapproved" things to the statusdict dictionary? Or are the problems due to a change from Level 1 to Level 2 Postscript in the LaserWriter IIf and IIg?

This article has been archived and is no longer updated by Apple.
After a quick look at the CAL code, we noticed at least a couple of device-specific operators.

The first, framedevice, is the one causing the failure on your LaserWriter IIg. The framedevice operator no longer exists in PostScript Level 2 implementations. It wasn't included in a number of Level 1 implementations either. Nearly every mention of the operator in Adobe documentation warns about its use, all pointing out that the code should definitely understand the environment it's used on. It's interesting that an application is generating code that uses it without first verifying its existence on the printer.

The second problem operator is setblink. It actually occurs first in the code, but is in a deferred procedure and therefore doesn't get a chance to cause problems because it's never executed. (More on this later.) It's also device-specific to some printers that allow program control over the user indicator panel.

Finally, both of the problem operators are in a definition of the a4 paper size. This is the same segment you included in your question. What's almost humorous is that nothing in the rest of the code refers to this definition. It isn't used. (That's why the setblink operator never has a chance to fail.) Commenting out the a4 definition doesn't affect the program's operation or output. Also, a4 is already defined in many PostScript implementations. It certainly doesn't need to be redefined for the LaserWriter IIg. If the Sun generated this by a "prep" file, you should be able to comment it out to prevent causing further problems with other files.

In any case, the program that generated the PostScript should have first checked for the existence of these operators. The problem is showing up because of changes from PostScript Level 1 to Level 2, but the real culprit is the PostScript code itself. It fails to test adequately the environment it's running in.

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Monitor II: Wavy display and voltage regulation

This article has been archived and is no longer updated by Apple.

When a Monitor II starts to exhibit a wavy display, it may be attributed to overheating of the voltage regulator, IC601, mounted on the heat sink near the power transformer. If a voltage check shows the voltage regulator to be good, it may only fail while hot. Apple's Quality Assurance reports have indicated that this failure is directly related to the mounting screw that secures the voltage regulator to the heat sink. If the screw is loose, there is inadequate heat transfer between the heat sink and the voltage regulator and it fails prematurely.

When servicing the Monitor II, insure that the IC601 mounting screw is secured.

If you replace the IC601, be sure to use thermal compound or an insulator pad (P/N 725-0006) between the IC601 and the heat sink.

Published Date: Feb 18, 2012

MACLAN: Printing AS/400 Jobs to LaserWriter IIf Via PS/2 (5/97)

We are looking for a software package running on a DOS-based PS/2 model 35sx that allows printing jobs coming from an AS/400 on a LaserWriter IIf
over LocalTalk. The PS/2 has both an SDLC card and a Farallon LocalTalk PC card installed, providing communication via leased line to the AS/400 for administrative duties, and connection to the AppleShare server.

This article has been archived and is no longer updated by Apple.

MACLAN Connect F/P from Miramar Systems might work for you. After successful connection between the AS/400 and the PS/2, MACLAN Connect F/Prunning PS/2 provides an AFP File Server and Print Server to the network. PC and Macintosh computers can share PostScript printers and files.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Published Date: Feb 18, 2012

MacTerminal: Macintosh-to-UNIX File Transfer

We have a Motorola 147 microcomputer system running UNIX 568, release 5, version 6. We would like to use some Macintosh Plus or SE computers as terminals and need to know if there is something that will work with MacTerminal or some other emulator to allow file transfers between the computers.

This article has been archived and is no longer updated by Apple.
See if your UNIX host has one of the standard file transfer protocols such as Xmodem, Kermit, or FTP. Most UNIX systems have support for file transfer using these protocols. MacTerminal 3.0 comes with an XMODEM Tool for file transfer. Other terminal emulators such as PacerTerm or VersaTerm-Pro provide other file transfer Tools such as PacerFT, and VersaTerm FTP Tool.

Published Date: Feb 18, 2012

DAL: For VM/CMS, DOS, Windows, and NetWare SQL

I have some questions about DAL:

1) Is it possible to buy DAL Server for VM/CMS directly from Apple, instead of Computer Associates?
2) Is DAL available for DOS? For Windows?
3) Is DAL for NetWare shipping?
This article has been archived and is no longer updated by Apple.
1) Yes, customers can buy DAL products directly from Apple buy sending an order to APDA.

2) Blyth software has shipped DAL for DOS and DAL for Windows since November 1991.

3) Novell is shipping DAL for Netware SQL.
Published Date: Feb 18, 2012

DAL: How to Access Database on Remote VAX

We have some VAX systems running VAX/VMS. What logical names are required for DAL on one VAX to access an ORACLE RDBMS on the other VAX? We were able to run SQLPlus, but we've customized it so the access required a few logical names.
This article has been archived and is no longer updated by Apple.
If the VAX systems are part of a VAXcluster, you must connect to a node that is running the DAL Server and AppleTalk for VMS. If the DAL Server and AppleTalk for VMS has been licensed for each node on the VAXcluster, then you may access a shared database via DAL from any node running the DAL Server and AppleTalk for VMS.

If the VAX systems aren't part of a VAXcluster, you still can access the remote database, if the database is set up for remote access. ORACLE, Ingres, and Sybase all have mechanisms to support remote database access.

For example, if you have the DAL Server and AppleTalk for VMS installed on VAX A and the ORACLE database installed on VAX B, you can allow users on VAX A to access the database on VAX B in this way:

1) Select either the Async Driver, the DECnet Driver, or the TCP Driver for SQL*Net during ORACLE installation.

2) Create a database link for each database. This database link contains enough information to uniquely identify a path to the remote database. It normally contains the following information:

- Network protocol
- Nodename
- Dbname
- Username/password
- Protocol options

If the users on VAX A can access the database on VAX B, then the DAL Server has access, too. The database application handles the Async, DECnet or, TCP/IP communications between VAX A and VAX B, not DAL.
Published Date: Feb 18, 2012

DAL: Protocols for NetWare SQL, Btrieve Hooks

What protocols support DAL for NetWare SQL? What pieces of NetWare, if any, must be co-resident? Are there hooks into Btrieve?
This article has been archived and is no longer updated by Apple.
The DAL Server NLM (NetWare loadable module) supports AppleTalk via ADSP. You can connect the Macintosh to any segment of the network (LocalTalk, Ethernet, Token Ring, and Arcnet). DAL for NetWare SQL uses hosts.cl1 or DAL Preferences file with the familiar syntax:

ServerName:atalk:ServerName.AppleTalkZone

Files required for the NetWare File Server side:

NetWare v3.11 or later
Mac.NAM v3.4
BTRIEVE.NLM v6.0 or later
NWSQL.NLM v3.0 or later
APPLETLK.NLM v3.01
TLI.NLM v3.11
DALSVR.NLM v1.0

NetWare SQL uses NetWare Btrieve as its record manager. Consequently, front-end DAL applications running on the Macintosh can share files created and maintained by the thousands of Btrieve applications already on the market.
Published Date: Feb 18, 2012

DAL: Blyth DAL/DOS Client Software

What protocols are supported in the DAL/DOS client software from Blyth?

This article has been archived and is no longer updated by Apple.

Blyth Software's DAL for DOS and DAL for Windows support asynchronous connections to VAX and UNIX systems, Irma, and AttachMate EXTRA HLLAPI for 3270 connection to mainframes.

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PowerBook: Don‘t Make Direct Calls to Serial Chip 2/92

We're using a PowerBook 170 with software we developed. This software accesses a serial device attached to the external serial port.

When we use the same software under System 7.0.1 on a Macintosh IIci, it works fine. When we attempt to use it on a PowerBook 170, the program bombs out and the serial ports lock up. The internal modem on the PowerBook 170 doesn't appear to be interfering. All settings seem correct.

What could be the source of this problem? Were there any changes to the serial port on the PowerBook 170 that might require some sort of special serial switch?

This article has been archived and is no longer updated by Apple.
It sounds like the application is making serial communication calls directly to the PowerBook 170's serial chip. An application should use normal communications calls to talk to the serial driver; it should never attempt to get direct access to the SCC hardware.

The serial chip is turned off when not in use (in order to conserve power). If your application makes normal serial communications calls, the serial driver knows how to turn the serial chip back on. However, an application that attempts to go directly to the serial chip will wind up talking to the chip when it's turned off, resulting in a loss of communication.

Support Information Services

Published Date: Feb 18, 2012

AppleWorks IIe: LaserWriter Interface

The following describes the connection between AppleWorks on the Apple IIe and LaserWriter.
This article has been archived and is no longer updated by Apple.

I. Apple IIe

1. Super Serial Card (SSC)

A. Circuit Configuration

Near the internal cable (Part 590-0021) of the SSC there is a removable block of pins with a triangle on its top face. Make sure this jumper block is plugged into its socket so that the triangle points to the word TERMINAL printed on the card.

This configuration, called modem elimination, compensates for the standard RS-232-C pin assignments so that the internal cable through the appropriate pins.

B. Install the SSC in Slot 1 of the IIe Motherboard.

C. SSC DIP Switch Settings

Switch 1	1	2	3	4	5	6	7
ON	-	-	-	X	-	X	X
OFF	X	X	X		X	-	-
Switch 2	1	2	3	4	5	6	7
ON	X	-	-	X	X	-	-
OFF	-	X	X	-		X	X

These switch settings are for:
Switch 1:
9600 baud (SW1: 1-4)
Printer Mode (5-6)
Normal Clear To Send (7)

Switch 2:
8 data bits and 1 stop bit (SW2: 1)
no delay after CR (2)
video off (3)
132 character line (4)
auto-LF after CR (5)
Disabled ACIA-CPU interrupts (6)
Normal Clear To Send (7).

No parity is set automatically in the Printer Mode.

II. The Connection

1. Cable
Serial and Communications Cable (Part 590-0037)

Cable Pinout:

Super Serial Card IIe Back panel DB-25 connector		Wiring	LaserWriter DB-25 connector	
signal	pin	<->	pin	signal
Frame Ground	1	<->	1	Frame Ground
Tx (Transmit Data)	2	<->	2	Tx (Transmit Data)
Rx (Receive Data)	3	<->	3	Rx (Receive Data)
RTS (Ready To Send)	4	<->	4	RTS (Ready To Send)
Signal Ground	7	<->	7	Signal Ground
DTR	20	<->	20	DTR

1. Levels from Super Serial Card:

a. True (asserted): 0 volts
b. False: +5 volts

III. Apple LaserWriter Printer

1. Set the Selector Switch on the LaserWriter to "Special", which can be done without turning off the printer. In Diablo 630 emulation mode, the LaserWriter uses 9600 baud, XON/XOFF protocol, and no parity.

2. Check

To verify the connection, turn on the IIe, video monitor, and LaserWriter. Boot AppleWorks and choose "Other Activities" from the Main Menu. Add a custom printer, naming it LaserWriter. Use these settings for this custom printer:

Needs line feeds after each Return	No
Accepts top-of-page commands	Yes
Stop at end of each page	No
Platen width	8.0 inches
Interface cards	Control-I 80N Control-I X space E^
Printer codes	Yes

The printer codes for the Diablo Emulation are in the LaserWriter Technical Description. If you specifiy no printer codes, the typeface will default to Courier standard, 12 characters per inch, monospaced.

Return to the Main Menu and try to print a document.

Note: When you use the AppleWorks command Open-Apple-H for hard copy, you will have to print a document using Open-Apple-P before you may use the Open-Apple-H command again. This is because the command Open-Apple-H does not issue the form feed the LaserWriter needs to output the last page and clear its Diablo emulation settings.
Published Date: Feb 18, 2012

PowerBook Fax/Data Modem: How Escape Sequence Differs from Hayes

I'm reluctant to believe that the PowerBook internal modem is fully compatible with Hayes' patented guard time escape sequence. Is this a serious issue?

This article has been archived and is no longer updated by Apple.
The issue relates to the different ways the escape sequence is implemented by Hayes and Apple. The primary difference is that Hayes implements a guard time and Apple doesn't. And no, it isn't a serious issue.

Background

You can use an escape sequence when the modem is on-line and you need to enter commands to the modem, but you don't want to disconnect from a call. The escape sequence ensures that you won't lose the modem connection or data while the modem is off line in the command state. Because of the escape sequence, modems can provide reliable transmission of data, distinguishing the predetermined escape sequence characters from the random occurrence of like characters in user data.

Hayes' Implementation

To enter the escape sequence, follow these steps:

1) Pause 1 second (Hayes calls this the guard time) or longer.

2) Enter +++ (3 plus characters), and pause 1 second or longer.

3) The "OK" from the modem acknowledges that it has escaped from the on-line data state, and you may begin entering AT commands.

When you're ready to resume your call to a remote system, enter ATO, and press RETURN. This is the command to return on-line.

Apple's Implementation

There are two ways to enter into the command state while on line:

- Send a BREAK to the modem (refer to the ATYn command on page 100 of the Macintosh PowerBook Fax/Data Modem User's Guide for more details), and it will immediately drop into command state, or

- Enter the appropriate escape sequence.

The following strings are recognized as valid escape sequences:

+++ATxxx....xxx<CR>
+++<CR>ATxxx....xxx<CR>

<CR> is RETURN.
xxx....xxx is a character string consisting of 0 to 13 ASCII characters.

After the escape command is recognized and executed, the modem sends an OK result code.

NOTE: This escape sequence is only based on character recognition, regardless of any guard time before, during, or after the DTE sends the string to the modem. This command isn't recognized in command mode.

Support Information Services
Published Date: Feb 18, 2012

System 7: Modifying the Keyboard Layout Switching Command

Under System 7.x, I can switch keyboard layouts by pressing the Command-Option-Space Bar keys. This feature is probably not well known in the U.S., where normally only one keyboard layout is installed. However, in most European countries you may have at least two keyboard layouts installed.

In Norway we have three: two different Norwegian (only one key is different) and the U.S. keyboard layout. The ability to change keyboard layouts in environments with employees from different countries is appreciated. And with the Keyboard menu (between the Help menu and the Application menu) enabled with a little help from ResEdit, it's very easy to find the keyboard layout in use.

Many heavy users in the graphics business have upgraded to System 7.x, or bought Macintosh Quadra systems. The keyboard layout switch shortcut causes issuess in some common graphics applications such as Adobe PhotoShop, Adobe Illustrator, and Quark XPress.

Adobe PhotoShop and Adobe Illustrator use the Command, Option, and Space Bar sequence to zoom the picture in, while Quark XPress uses this sequence to get a special space character called em-space (used a lot among professional typographers).

We've found a workaround with PhotoShop and Illustrator. If we press the Space key before the Command and Option keys, the keyboard layout won't change. The Quark XPress issue is more difficult, since the Command, Option, and Space Bar sequence displays a special character, rather than executing a command.

Do you have any solutions for this?
This article has been archived and is no longer updated by Apple.
Note: System 7.5 comes pre-installed with many keyboard layouts. Also, if a System 7.5 Easy Install is performed, all the European keyboard layouts are installed as a default. The user can limit the keyboard layout installation to only the U.S. keyboard layout if a Custom Install is performed. For more information about workarounds and alternatives to using ResEdit see the following article: "System 7.5: Command-Option-Spacebar Application Conflict"

WARNING: The following instructions refer to using ResEdit to alter your system software. Apple Computer, Inc., is not liable for any damage done to your software through the use of ResEdit to alter the software.

The entries in the 'KSWP' system resource (ID = 0) control the switching of the keyboard layouts. Actually, the entries in the 'KSWP' resource control more than that. Inside Macintosh Volume VI fully documents this resource on pages 14-43 to 14-44, and pages 14-98 to 14-99.

The standard U.S. 'KSWP' resource looks like this:

```
FFFF 3101 FFFC 3109
FFFE 4601 0000 4201
0000 0000
```

Each long word entry controls a separate function. The first two bytes (integer) form the verb that the KeyScript procedure will act upon. The third byte is the virtual key code for the key that you must press, and the fourth byte is the modifier state that must exist when you press the key.

Table 14-3 on page 14-44 of Inside Macintosh Volume VI outlines the verbs for the KeyScript procedure.

You can find most of the virtual key codes on pages 191 and 192 of Inside Macintosh Volume V, or by using ResEdit on the 'KCHR' resource in the System file.

Note on modifier state: Option key down is equal to 8; Shift key down is equal to 2; and Command key down is equal to 1. If you press multiple modifier keys at the same time, their values are added together for the modifier state entry.

The second entry in the standard U.S. 'KSWP' resource (FFFC 3109) is the one that causes the problems you describe. The first two bytes, $FFFC or -4, form the verb "smKeyNextKybd" which means "Switch to next keyboard in active script." The third byte, $31, is the virtual key code for space. The fourth byte is Command key down (1) plus the Option key down (8) which equals $09.

There are three ways to solve the problem. The first method is rather limiting and not very flexible. The second is the most straightforward, and probably the best. The third is the most flexible, but the most complicated from a user's point of view.

- Delete the entry that causes the issue.
The 'KSWP' resource would then look like this:

```
FFFF 3101 FFFE 4601
0000 4201 0000 0000
```

- Change the virtual key code to something other than $31.
Changing it to $4C would allow the Command-Option-Enter key sequence to switch keyboard layouts. The 'KSWP' resource would look like this:

```
FFFF 3101 FFFC 4C09
FFFE 4601 0000 4201
0000 0000
```

- Add two new entries to the 'KSWP' resource.
One would disable switching from the current keyboard (verb "smKeyDisableKybdSwitch") and the other would enable keyboard switching (verb "smKeyEnableKybds"). Command, Option, and Enter disable switching, and Command, Option, and Return enable switching. The 'KSWP' resource would look like this:

```
FFFF 3101 FFFC 3109
FFFE 4601 0000 4201
FFF4 4C09 FFF9 2409
0000 0000
```

Note: The four bytes of zeroes at the end of the resource are filler and must be present.
Published Date: Feb 18, 2012

LaserWriter IIg: Link Signals on 10Base-T

I'm testing a LaserWriter IIg on a Banyan network. I'm using a twisted pair transceiver. In my network environment and a variety of vendor equipment, I can't have equipment sending out any "Link signals" between networking components. It appears the transceiver is emitting some sort of link signal. Is there any way I can turn off this signal?

This article has been archived and is no longer updated by Apple.
There isn't an option to turn off the "link beat" signal on the Apple Ethernet NB cards or the LaserWriter IIg when using the 10Base-T transceivers. The "link beat" signal is part of the 10Base-T standard. The cards are designed for use on 10Base-T compliant networks only, and no provisions have been made to accommodate any non-standard Ethernet configuration.

One possible solution, Asante's 10T MAU (medium access unit), allows any computer with a thick Ethernet port to connect to a 10BaseT twisted-pair network. The device, which resembles an external modem, contains two ports:

- A 15-pin AUI port for a thick coaxial connection, and

- An eight-pin RJ-45 port for connection to twisted-pair cable.

The 10T MAU unit also provides four LED status displays and two switches that enable or disable the link integrity and SQE signals. The device is compatible with any thick-cable Ethernet card. You could use this device in addition to an Apple Ethernet NB card with the thicknet transceiver option.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

Macintosh Quadra: No Way to Disable DRAM Tests

Is there a way to reduce the time it takes for a Quadra with a large amount of RAM to perform its RAM tests on startup? A Quadra 900 with 128MB of RAM takes 86 seconds to access the hard drive; a Quadra 700 with 68MB of RAM takes about half the time.

Is there a key combination we can use on startup to bypass the RAM tests?

This article has been archived and is no longer updated by Apple.
You can't defeat the startup RAM test without installing new ROMs having a different startup sequence.

Published Date: Feb 18, 2012

Lisa 7/7: Compatibility with other released products

This article has been archived and is no longer updated by Apple.
Released products compatible with Lisa 7/7:

Software:	By:	Compatible with:	Status:
Lisa Workshop	Apple Computer	*OS 3.0, 3.1	Released
Brock Keystroke	Brock SW Products	OS 3.0, 3.1	
Relational Database			Released
BPI Accounting	BPI Systems	*WS 2.0, 3.0, 3.1	
General Ledger			Released
Accounts Receivable			Released
Accounts Payable			Released
Payroll			Released
Desktop Calendar	Videx	OS 3.0, 3.1	Released
BASIC	Pterodactyl SW	WS 3.0,3.1	Released

We will update this list periodically to keep you abreast of new developments.
Published Date: Feb 18, 2012

A/UX: Can Mount and Use AppleShare Volumes (9/94)

Can I mount AppleShare volumes under A/UX? Can I then manipulate files?
If so, how does A/UX handle filenames with blanks in them?

This article has been archived and is no longer updated by Apple.
Yes, A/UX mounts any AppleShare volume in the AppleTalk network on your desktop. A/UX 3.0 can also do Macintosh File Sharing as in Macintosh System 7.0. It can export any volume from your A/UX computer to be shared in the AppleTalk network. (Note that AppleShare SERVER functionality isn't supported under A/UX.)

The A/UX File Manager handles all files, including A/UX file systems (BSD and System V file systems) and Macintosh HFS (Hierarchical File System) without any problem. This, of course, includes handling file format conversion and copy between different file systems, file permission, and filenames with blanks. As a matter of fact, UNIX is capable of creating filenames with blanks, for example:

% touch "This Is Mine"

Support Information Services
Published Date: Feb 18, 2012

A/UX: Remove Temp Files On Unsuccessful adduser Command (8/94)

I've just set up a server with A/UX. Everything works until I add a new user with the adduser command. I get the reply, "File busy, try again later."

Now I can't change passwd for anyone. I can login and logout as root, edit the /etc/passwd, and modify it with vi, but not with vipw. I can't change my own passwd as root with passwd command. I've even replaced /etc/passwd by /etc/opasswd, and still nothing has changed. I've also restarted the computer twice. I've changed all the privileges, and even changed the file by a user other than root.

I'm NOT running yellow pages (NIS), just networking with NFS, telnet, and so on.

This article has been archived and is no longer updated by Apple.
You probably had an UNSUCCESSFUL attempt using the adduser command. The "vipw" may have incorrectly set the user password. In turn, it created two locked file called "ptmp" (password temp file), and "gtmp" (group temp file) in the /etc directory.

Removing the /etc/ptmp and /etc/gtmp locked files should take care of your problem.

Article Change History:
22 Aug 1994 - Added the reference to gtmp file.

Support Information Services

Published Date: Feb 18, 2012

A/UX: HoneyDanBer (BNU 1) UUCP (9/94)

I'd like to have this information on UUCP under A/UX 3.0:

- What are the main differences between BNU UUCP and A/UX 2.0 UUCP?

- What is f-protocol in BNU UUCP?

This article has been archived and is no longer updated by Apple.
Basically, the HoneyDanBer UUCP is a well-known UUCP implementation in the UNIX community. Its overall performance with A/UX 3.0 is better than the one we used in A/UX 2.0.1 and before. These are the differences:

- It supports TCP as well as serial links.

- The file structure of the UUCP system files under /usr/lib/uucp directory are organized differently (new files and new formats).

- It adds more parameters and features for better control on dialers and login checking sequence.

- Almost all the files (for example, Devices, Sysfiles, Systems, and so on) in the /usr/lib/uucp directory have new formats.

- The new A/UX Network System Administration document for A/UX 3.0 describes more details.

The original HoneyDanBer UUCP didn't include the f-protocol. Because of requests for the f-protocol, A/UX 3.0 adds it in the HoneyDanBer UUCP.

The f-protocol is a UUCP protocol used to communicate over X.25 networks. The PAD dialer is a "real" dialer used to set up connections to remove X.25 destinations using MICOM or Motorola PADS, and will probably work on most other PADS.

Article Change History:
13 Sep 1994 - Reviewed.

Support Information Services
Published Date: Feb 18, 2012

MacX: Iconified Windows Can‘t Be Animated

We're trying to provide a mail program that, when iconified, will change icons to show incoming mail and/or incoming files. But when we iconify windows in MacX, the iconified window can no longer update the icon to show changes in window status.

This article has been archived and is no longer updated by Apple.
The built-in MacX Window Manager doesn't support the window animation after the window has been iconified. In other words, all iconified icons become inactive until de-iconified.

However, other window managers, such as "twm," support this feature even if the client has been iconified. The icon still does animation as it is in the regular window. For example, the "kalaid" client under "twm" demonstrates this capability.

We suggest that you run the client under your favorite window manager.

Published Date: Feb 18, 2012

System 7: Lost "Get Info" Comments

Article Change History

12/16/92 - UPDATED
* To report System 7.1 has the same problem.

When I insert a floppy disk and choose Get Info, I can type comments. When I eject and reinsert the floppy disk, the comments are gone. I can also reproduce this by leaving the floppy disk inserted, using NoFinder to kill the Finder, and then relaunching the Finder. This is true for System 7.0 and 7.0.1 (both with and without Tune Up).

This article has been archived and is no longer updated by Apple.
This problem with SuperDrive (FDHD) disks has been reported to Engineering and to the System 7 team. We don't have a workaround yet but can duplicate it with System 7.0, 7.01 and 7.1.

Published Date: Feb 18, 2012

System 7: Does Not Support Non-SCSI Hard Drives

I am using an old HD20 (pre-SCSI disk from a Macintosh 512K) with a Macintosh Classic running System 7. The disk gets corrupted. Is it impossible to use HD20 with System 7?

This article has been archived and is no longer updated by Apple.
System 7 requires a SCSI hard drive. The Non-SCSI HD20 is therefore not supported by System 7.
Published Date: Feb 18, 2012

PowerBook: Using External Device to Discharge NiCad Battery

When using an external discharge device to discharge the NiCad battery in a PowerBook, is there any adverse effect on the hardware or internal lithium battery?

This article has been archived and is no longer updated by Apple.

There should be no issues using an external discharge device to discharge and then recharge a the NiCad battery in a PowerBook 140, 145, 160, 170, or 180.

Note: This should NOT be done, however, with a PowerBook 100 or PowerBook Duo, which do not have a NiCad battery.

Published Date: Feb 18, 2012

Macintosh Display Cards 824 & 824 GC: Rev A/B Differences

Why doesn't the ROM upgrade to the Macintosh Display Card 8*24 GC Rev A allow 16-bit color on the Macintosh 16-inch Color Monitor? What is the difference between an upgraded Rev A card and the Rev B card?

Also, why doesn't the Macintosh Display Card 8*24 support 16-bit color on the Macintosh 16-inch Color Monitor?

This article has been archived and is no longer updated by Apple.
Although the ROM upgrade for the Rev A 8*24 GC card allows this card to work with the Macintosh 16-inch Color Monitor, the ROM version isn't the only difference between the Rev A and Rev B 8*24 GC cards. The Rev B card includes a new CLUT/DAC chip that supports a 16-bit color lookup table that is necessary for 16-bit color support. Because this chip isn't available on the Rev A card, this card won't support 16-bit color.

Similarly, since the 8*24 card doesn't have a CLUT chip that supports 16-bit color, this card won't provide 16-bit color support. However, just like the 8*24 GC, you will need to upgrade the ROMs on older versions of this card if you wish to use a Macintosh 16-inch Color Monitor.

Published Date: Feb 18, 2012

Macintosh 16-inch, 21-inch Color Displays: Chromaticity Values

I am trying to set up Macintosh 16-inch and 21-inch Color Displays with Adobe PhotoShop. I need to get the Phosphor Color settings in order to calibrate the monitors. Adobe said that these must be obtained by the maker of the monitor. What are the chromaticity values?

This article has been archived and is no longer updated by Apple.

Here are the chromaticity values for the two displays.

Macintosh 16-inch Color Display		
	X	**Y**
Red	.625 * .020	.340 * .020
Green	.280 * .020	.595 * .020
Blue	.155 * .015	.070 * .020
The CIE coordinates for white are: X = .283 * .020 Y = .298 * .020		

Macintosh 21-inch Color Display		
	X	**Y**
Red	.635 * .020	.333 * .020
Green	.280 * .020	.595 * .020
Blue	.152 * .015	.063 * .020
The CIE coordinates for white are: X = .281 * .020 Y = .311 * .020		

Published Date: Feb 18, 2012

AppleWorks: Printing Forms from the Database or Word Processor

Some Appleworks printing jobs have a page length less than 11 inches for continuous tractor-feed envelopes or mailing labels.

With data base documents, most users define the page length from the printer options menu in each "Print a report" format (OA-O) of the database document that contains the label text.
This article has been archived and is no longer updated by Apple.
Follow these steps:

1. Choose the data base document you want to print.

2. Press OA-P, choose a label report format, and then press OA-O. You're now in the Printer Options Menu.

a. Type PL (Paper Length). Enter a value equal to the vertical length, in inches, of a single form. Many labels are 1.0, 1.5, or 3.5 inches high; Appleworks accepts all these values as paper lengths.

b. Set the options PH (Print Header) and OM (Omit Line) to NO by typing the two letter code until the option reads NO.

With word processor documents, however, there are a few additional parameterss you must control in order to produce acceptable results when printing continuous forms:

(1) automatic top and bottom margins
(2) form feeds.

Unless you take care to control these two parameters properly, the printer will usually produce documents that are either badly printed or altogether blank.

To avoid these problems, do the following:

1. Choose the word processor document you want to print.

2. Press the OA-O. This gets you to the Printer Options Menu.

a. Type PL (Paper Length). Type a single form's vertical length in inches. Many labels are 1.0, 1.5, or 3.5 inches high; Appleworks accepts these values as page lengths.

b. Make sure the Top and Bottom Margins are zero.

3. From the main menu, select item number 5, "Other Activities". This selection will display a menu with 7 items.

4. Select item number 7, "Specify information about your printer(s)". This displays a menu entitled "Printer Information".

5. Under the heading "Change printer specifications" you will find one or two printer names. Select the name of the printer you want to use.

6. Change item number 2 ("Accepts top-of-page commands") to NO.

AppleWorks will now print using the page length you defined in the printer options menu.
Published Date: Feb 18, 2012

Sys 7: AppleShare 3.0 Print Server Print File Limits

Can the AppleShare 3.0 Print Server handle very large (for example, 60MB) print files?

This article has been archived and is no longer updated by Apple.

Theoretically, there are no limits on how large a print file can be -- you are limited only by the available disk space on the server. However, if a client Macintosh has background printing turned on, PrintMonitor may not be able to handle such large files. If that should happen, the workaround is to spool the document to the server with background printing turned off.

Published Date: Feb 18, 2012

System 7: MacroMaker Is Not Supported

Article Change History

09/02/92 - REVIEWED
* For technical accuracy.

In the compatibility listing I have for system software version 7.0, it says that MacroMaker is "unnecessary". This seems to indicate that System 7 somehow does macros, but I can't find anything on this in the manuals.

This article has been archived and is no longer updated by Apple.
"Unnecessary" was a poor word choice. It should have stated that MacroMaker was "not compatible". MacroMaker is not supported in version 7.0, and there are no plans to revise it for version 7.0 compatibility.

There are several third-party macro products that are compatible with version 7.0, including QuicKeys 2 by CE Software.

For more information, search on CE Software.

Published Date: Feb 18, 2012

Macintosh: Using System 7 on HD and Earlier Version on Floppy

I upgraded my Macintosh hard drive to system software version 7.0, but I have some programs that are not version 7.0 compatible that I'd still like to use. Can I start up my Macintosh from a floppy startup disk that is running system software earlier than version 7.0 and use those programs?

This article has been archived and is no longer updated by Apple.
Yes. You can start up from a system software version 6.0.X startup floppy disk, provided that the Macintosh doesn't require version 7.0.1 or later to run. The Macintosh Classic II, Macintosh PowerBook series, and Macintosh Quadra series do not support system software version 6.0.X.

Note

Version 6.0.X does not recognize the version 7.0 desktop file. When you first start up from the version 6.0.X floppy disk, a dialog will appear reporting that the version 7.0 hard drive is damaged and asking if you want to repair it. (Your hard drive is not damaged.) Click the "OK" button, to create the version 6.0.X desktop file.

The next time you start up from the version 7.0 hard drive, the system software will update the version 7.0 desktop file for any changes that were made during the version 6.0.X operation.

Published Date: Feb 18, 2012

PowerBook: Battery Recharger Properties

This article contains information about the Macintosh PowerBook battery rechargers?
This article has been archived and is no longer updated by Apple.
The PowerBook battery recharger does not provide just a bulk charge to the NiCad batteries. The sophisticated power circuitry within the recharger assists in preventing NiCad battery "memory" problems by monitoring the battery levels and adjusting the charge appropriately.
Published Date: Feb 18, 2012

LaserWriter IINT Manual Feed: Why Paper-Out Light Stays Lit

When I print from the manual-feed tray on my LaserWriter IINT, the paper-out status light stays lit. I can still print from the tray without any problem, but the only way I can clear the status light is to open and shut the printer cover.

This article has been archived and is no longer updated by Apple.
There is a bug in the LaserWriter IINT ROM that causes this. If you have a piece of paper in the manual-feed tray when you issue a manual-feed print job, the status light stays on after the print cycle. The workaround is to send the manual-feed print job, then wait until the status light is blinking before you insert the piece of paper.

There is no other workaround for this problem, and none is planned because it is a cosmetic problem and does not affect the actual operation of the printer.

Published Date: Feb 18, 2012

PowerBook: Using AppleTalk Remote Access with Internal Modem

How do I configure AppleTalk Remote Access to use my Macintosh PowerBook 170 internal modem? There is no option in the AppleTalk Remote Access Setup to choose the internal modem.

This article has been archived and is no longer updated by Apple.
You need to configure both the AppleTalk Remote Access Setup and the Macintosh PowerBook Portable control panel to use the internal modem.

1) In the AppleTalk Remote Access Setup, select the Modem port.

2) From the Apple menu, choose Control Panels and select the Portable control panel.

3) In the Portable control panel, you have the option to set the serial port for either the external or internal modem. Set the port for the internal modem (note that this will disable the external serial modem port).

Support Information Services
Published Date: Feb 18, 2012

PowerBook: To Send Fax, Hard Drive Must Be Up to Speed 1/96

I am having intermittent problems staying connected to Fax machines from my Macintosh PowerBook 170 Fax/Data Modem. I have checked my configurations; I am sending to a known-compatible Fax machine; and I am using a clean phone line.

This article has been archived and is no longer updated by Apple.

If the PowerBook hard drive has been spun down, and you try sending a Fax before the hard drive is fully spun up, the PowerBook it will be able to make the connection. However, while the hard drive is in the process of spinning up, the Fax/Data modem in unable to send any data even though it is connected. This will cause the receiving Fax machine to detect this call as a "No Carrier" and it will disconnect.

A workaround you can try is to configure the Portable (or PowerBook) control panel so that the hard drive will not spin down. To do this:

Step 1

Choose Control Panels from the Apple menu.

Step 2

Select the Portable (or PowerBook) control panel.

Step 3

Hold the Option key while you click the minutes option, and set it so that the hard drive will not go into the sleep state.

Note

If you are running your PowerBook computer from the battery, doing this will reduce the operational time of the battery because the hard drive will not go spin down, therefore it will always be drawing power. If you are running from the battery, we suggest that you reset the Portable control panel minutes option for the hard drive to spin down after you send the Fax.

Article Change History:

06 Jan 1996 - Reworded for clarity.

Support Information Services

Published Date: Feb 18, 2012

TA48201_Lisa_Boot_ROM_Versions_(TIL00987).pdf

Lisa: Boot ROM Versions

This article has been archived and is no longer updated by Apple.
Many users have received notices telling them that they must upgrade to Rev. H CPU ROMs to run Pascal 3.0. THAT NOTICE WAS IN ERROR! Acceptable ROM versions include:

Lisa 2: D/A8 or H/A8
Lisa 2/10: F/88 or H/88

--The first (alphabet) character indicates the revision of the CPU ROM; the following two characters identify the I/O ROM.

Other CPU ROM versions, such as A, B, C, E and G, should definitely be upgraded. If a user insists on Rev. H CPU ROMs, or if you need to upgrade old CPU or I/O ROMs, order them from your Apple Regional Service Center. The part numbers are:

CPU ROMs	I/O ROM
Lisa 2: 341-0175, 341-0176	341-0290
Lisa 2/10: 341-0175, 341-0176	341-0281

NOTE: The ROM versions are both stamped on the chip itself and displayed in the upper right corner of the Lisa's screen when you boot the system.
Published Date: Feb 18, 2012

Apple 5.25 Drive: Macintosh Compatibility (5/97)

Is the Apple 5.25 Drive compatible with the Macintosh IIsi?

This article has been archived and is no longer updated by Apple.

No. Support for the Apple 5.25 Drive was discontinued when Apple started implementing the FDHD ROMs. This means that the Apple 5.25 Drive is compatible with only the Macintosh SE (800K drives) and Macintosh II (800K drives).

We suggest that you research third-party solutions; for example, DaynaFile from Dayna Communications.

Published Date: Feb 18, 2012

System 6: Memory Errors Under MultiFinder 2/93

Article Change History

02/02/93 - REVISED
* To indicate that this is valid for System 6 only.

I am often asked by Macintosh users running MultiFinder what causes these types of error messages:

- Application has unexpectedly quit (2)
- Not enough Finder memory ...

This article has been archived and is no longer updated by Apple.
In most cases, these error messages appear when there isn't enough memory allocated to the Finder when running under MultiFinder.

When you are running in Finder only, the Macintosh allocates all available memory to the Finder until an application is run. When you are running under MultiFinder, the Finder is treated as an application and is given a set amount of memory to work with.

To determine if your problem is insufficient memory allocated to the Finder when you are running under MultiFinder, restart your Macintosh in Finder only mode. Then try the same function that resulted in the error message. If you don't get the error message, you need to increase the memory allocated to the Finder when you are running in MultiFinder.

How To Increase Finder Memory Allocation
---
1) Start up your Macintosh in Finder only mode.

2) Open the System Folder of the startup disk, and click the Finder file.

3) From the File menu, choose Get Info (or simply press Command-I on the keyboard).

4) In the Get Info window, increase the amount of memory shown in the Application Memory Size box. Note that any additional memory that is allocated to the Finder will not be available to applications. A good starting point is to increase the memory allocation by 100K.

Published Date: Feb 18, 2012

Farallon StarController: Specifies One Node per Port

I have a Farallon PhoneNET StarController and a Farallon punch-down block. Can I punch down four nodes per channel on the punch-down block; that is, can I daisy-chain at the block instead of at the Macintosh end?

This article has been archived and is no longer updated by Apple.
The Farallon StarController specifies one node per port. Exceeding this limit may cause network traffic and/or termination problems.

We suggest that you contact Farallon Technical Support for further information.

Published Date: Feb 18, 2012

Macintosh Portable: Can Be Used Without Internal Hard Drive

I have a Macintosh Portable that I use with an external hard drive. Will the Macintosh Portable operate properly if I disconnect the internal hard drive?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable operates properly without an internal hard drive. The Macintosh Portable does not provide termination power; therefore, an internal hard drive is not required.

The modification you're suggesting is often used in secure environments to ensure that storage media are not transported to unsecured areas.

Note

Because the Macintosh Portable is sensitive to ESD damage, this or any other modification must be done by an authorized Service Provider.

Published Date: Feb 18, 2012

StyleWriter: Apple vs. Third-Party Ink Cartridge (1/95)

I have been using standard Canon ink cartridges with my StyleWriter printer. An Apple technician told me that using non-Apple StyleWriter Ink Cartridges voids Apple's warranty on the StyleWriter.

Is this true?

This article has been archived and is no longer updated by Apple.
Apple StyleWriter Ink Cartridges (M8041G/B) are made by Canon for Apple and meet Apple's rigid specifications.

Physical damage to the printer caused by the use of a third-party printhead cartridge or ink refill kits that DO NOT meet Apple's rigid standards WILL void the warranty.

Although not supported by Apple, the use of Canon, third-party cartridges, or ink refill kits that meet the rigid specifications WILL NOT void the Apple warranty. For best print quality, Apple recommends using the Apple StyleWriter Ink Cartridges for the orignal StyleWriter and StyleWriter II.

Article Change History:
3 Jan 1995 - Replaced discussion with new discussion.

Support Information Services

Published Date: Feb 18, 2012

Sonnet Technologies, Inc.

Sonnet Technologies, Inc.
This article has been archived and is no longer updated by Apple.
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Web site: **http://www.sonnettech.com/**

Company Profile: Hardware, specializing in upgrade cards for Macintosh computers from the Quadra to the Power Macintosh G3.
Published Date: Feb 18, 2012

Macintosh LC with Apple IIe Card: Copying ProDOS Disks and Files

I have a Macintosh LC with an Apple IIe Card installed and an Apple 5.25 Drive connected to the card.

1) Can I disk copy a 5.25-inch disk to a 3.5-inch disk in the Macintosh LC SuperDrive?

2) How do I make a disk copy of a 5.25-inch disk?

This article has been archived and is no longer updated by Apple.
1) No, you can't do a disk copy because you can't copy from one size disk to another size disk. You need to copy individual files from the 5.25-inch disk to the 3.5-inch disk. The ProDOS utilities can be used to do this.

Another problem is that some disks may be in the older DOS 3.3 format, which is not supported on the higher-density disks. Though ProDOS will read DOS 3.3 disks, and you can copy DOS 3.3 files to ProDOS, some programs will not run because of operating system differences.

2) To copy standard a 5.25-inch disk with the Apple IIe Card and one Apple 5.25 Drive, use the ProDOS utilities, which provide a copy function. You need to specify the same device for both the original and duplicate. The software prompts you when you need to insert and remove disks. Note that some disks cannot be copied because they are protected.

Published Date: Feb 18, 2012

ProDOS Assembler Tools: Startup Sequence

The ProDOS Assembler Tools disk doesn't start up exactly as described on page 15 of the manual. What is the problem?
This article has been archived and is no longer updated by Apple.
When an Apple II starts up, it looks for a file named PRODOS. After it finds and loads PRODOS, it runs the first file on the disk that has the suffix .SYSTEM in its name. On the ProDOS Assembler Tools disk, the first such file is BASIC.SYSTEM, but the one needed is EDASM.SYSTEM.

Here's how to change the name of BASIC.SYSTEM so that EDASM.SYSTEM gets loaded first:

1. Make a copy of the ProDOS Assembler Tools disk.
2. Start up from the new disk.
3. When the Applesoft] prompt appears, type the following, pressing Return after each line:

```
] UNLOCK BASIC.SYSTEM
] RENAME BASIC.SYSTEM,BASIC.SYS
```

4. Either restart the system, or type the following to start the assembler:

```
] -EDASM.SYSTEM
```

This tells BASIC.SYSTEM to load and run EDASM.SYSTEM. ProDOS Assembler Tools now starts up, as described in the manual.
Published Date: Feb 18, 2012

PowerBook: International Keyboards 2/92

What international keyboards are available for the Macintosh PowerBook series? I am particularly interested in a Swedish keyboard for one of my international customers.

This article has been archived and is no longer updated by Apple.
In the United States, the only keyboard available for purchase through service is the U.S. version. All other keyboards listed are on a like-by- like exchange basis only.

Keyboards available for exchange on the Macintosh PowerBook 100 are Canadian, Spanish, and Japanese. Keyboards available for exchange on the Macintosh PowerBook 140/170 are British, French Canadian, German, Spanish, French, Japanese, Swedish, and Italian.

Customers who want to obtain a keyboard for a specific language need to contact a reseller or distributor in that particular country to order the part.

Support Information Services
Published Date: Feb 18, 2012

Macintosh Portable:Upgrade to Backlit Doesn‘t Require RAM Change

I would like to upgrade my original Macintosh Portable to the Backlit Macintosh Portable. I heard that these two computers use different types of RAM.

If I upgrade to the Backlit Macintosh Portable, will I also have to change the RAM?

This article has been archived and is no longer updated by Apple.
The Macintosh Portable uses Static RAM, and the Backlit Macintosh Portable uses Pseudo-Static RAM. RAM is not interchangeable between the two models.

However, since the upgrade to the Backlit Macintosh Portable requires a modification only to the main logic board, a change in RAM is unnecessary.

Published Date: Feb 18, 2012

ADB Devices: Can Be Used with both Macintosh and Apple IIGS

Can I use a Macintosh ADB keyboard with the Apple IIGS?

This article has been archived and is no longer updated by Apple.
ADB devices that follow ADB standards, like the mouse and keyboards, can be used with the Apple IIGS and all Macintosh models that use the ADB standards.

Published Date: Feb 18, 2012

Macintosh LC w/Apple IIe Card: SCSI Ethernet Box & AppleTalk

I have a Macintosh LC with the Apple IIe Card connected to Ethernet via a SCSI Ethernet box. Can I use ProDOS software to access AppleTalk services?

This article has been archived and is no longer updated by Apple.
Our driver is designed to use the Apple Ethernet LC Card and not to look for the Ethernet connection from the SCSI port. If the vendor of the SCSI Ethernet box included a driver for the Apple IIe Card side, that setup should work.

We suggest that you contact the vendor of the SCSI Ethernet box for confirmation.

Published Date: Feb 18, 2012

Macintosh: Difference Between PMMU and FPU

How does the PMMU (Paged Memory Management Unit) differ from the FPU and how can I tell if my computer has one?
This article has been archived and is no longer updated by Apple.
The PMMU and math coprocessor (also known as FPU) perform very different functions. The PMMU handles memory management, while the math coprocessor handles arithmetic functions handed off to it from the microprocessor.

To tell if your computer has a PMMU installed, you must run a diagnostic utility which has this capability. Apple Personal Diagnostics, MacEnvy or other similar utility can inform you if your computer has a PMMU installed.
Published Date: Feb 18, 2012

Lisa 7/7: Problems printing proportional-spaced fonts on a DWP

This article has been archived and is no longer updated by Apple.
Printing your Lisa 7/7 document in a proportional-spaced (PS) font, such as 12 Point, will yield the following results:

A. If you're using a standard "fixed" printwheel, characters such as "w", "m" and "r" will be oddly spaced.

B. If you're using a proportional-spaced print wheel, such as the Apple Modern 10/12 PS Printwheel, the odd spacing will be less apparent.

You can eliminate the odd spacing entirely by selecting a fixed pitch, such as 12 Point-15 Pitch, and using a fixed pitch printwheel, such as the Prestige Elite Printwheel.
Published Date: Feb 18, 2012

Macintosh: TrueType INIT Scrambled at Startup

I have a Macintosh LC, running system software version 6.0.7, and a StyleWriter printer. At startup, the TrueType INIT is scrambled.

I trashed the System Folder, reinstalled the version 6.0.7 system software, and removed all other INITs. I also ran Disinfectant 2.4 and rebuilt the desktop, but I am still having the problem.
This article has been archived and is no longer updated by Apple.
Since we haven't had other reports of this problem, we suspect that your version of TrueType is corrupted. Try installing TrueType from another known-good disk.

For information on downloading the latest version of Disinfectant refer to:
TIL aritcle 30487: "**Disinfectant: Macintosh Anit-Viral Utility**"
Published Date: Feb 18, 2012

Macintosh 512K: Upgrade to Macintosh 512Ke Was a ROM Swap

Are there any differences between an Apple-sold Macintosh 512Ke and Macintosh 512K upgraded to a Macintosh 512Ke?

This article has been archived and is no longer updated by Apple.
There should be no differences between the two, whether the Macintosh 512Ke came from Apple in that configuration or if it was done as an upgrade. The Apple upgrade was a ROM swap from 64K ROMs to 128K ROMs from the Macintosh Plus, and the most significant change was support for the Apple 800K floppy drive.

The only possible difference is that the upgrade didn't include the 800K floppy drive, although this is unlikely because that was the main reason for the upgrade. Every Macintosh 512Ke shipped from Apple had an 800K floppy drive installed.

Published Date: Feb 18, 2012

System 7: Error -199 Is "Map Inconsistent with Operation"

I'm running system software version 7.0 on my Macintosh, and I got the message Error -199 message. What does it mean?

This article has been archived and is no longer updated by Apple.
Error -199 is a "Map Inconsistent with Operation" error. The most common cause of this error is corruption within the System file.

Our recommendation is to trash the System file and rerun the Installer to install a clean System file.

Published Date: Feb 18, 2012

System 7: Has Bad-Sector-Checking Mechanism for Floppy Disks

System software version 7.0 seems to have a floppy disk formatting feature that I haven't seen before.

If I format a new disk -- or reformat a previously used disk -- with the "Erase Disk" option and the formatting is successful, there is a "Verifying Format" function before "Creating Directory" appears. The boot blocks and data space are filled with the pattern F6F6.

If the formatting fails part way through the process, and I try to format again and it's successful, there is a "Re-verifying Format" function and the pattern is PKKT.

I also noticed on some floppy disks, which I've reformatted several times with the "Erase Disk" option, that the amount of disk space available decreases, even though there are no files on the disk except the Desktop file. I checked and there was a problem with some of the sectors. These bad sectors showed zeros, while the rest of the disk had the PKKT pattern.

This article has been archived and is no longer updated by Apple.
There is a bad-sector-checking mechanism for floppy disks in version 7.0, and it is that mechanism that is using up the disk space.

The "Re-verifying Format" message indicates that there was a problem during the first format attempt (a media failure was found on the floppy disk). Most floppy disks don't exhibit this behavior. Any that show the "Re-verifying Format" message multiple times would be suspect. You would most likely find more and more problem sectors with the zero pattern as the system tries to keep the floppy disk usable.

Published Date: Feb 18, 2012

Chooser: Disappearing Printer May Be Termination Problem

What causes printer names to appear and disappear in the Chooser?

This article has been archived and is no longer updated by Apple.
Printer names appearing and disappearing in the Chooser is indicative of a termination problem.

Published Date: Feb 18, 2012

TA48224_AppleTalk_Phase_EtherTalk_Driver_on_Network_Product_Installer_(TIL09897).pdf

AppleTalk Phase 2: EtherTalk Driver on Network Product Installer

What EtherTalk driver is recommended for a Macintosh IIci running system software version 6.0.7 on an AppleTalk Phase 2 network?

This article has been archived and is no longer updated by Apple.
The latest version of the EtherTalk driver is 2.0.1, which is the version needed for an AppleTalk Phase 2 network. This driver is available on the Network Product Installer disk that comes with the version 6.0.7 system software disks.

Published Date: Feb 18, 2012

TA48225_LaserWriter_IISC_Is_a_SCSI_Device_and_Cannot_Be_Networked_(TIL09899).pdf

LaserWriter IISC: Is a SCSI Device and Cannot Be Networked

I have a LaserWriter IISC that I'd like to connect to a small AppleTalk network. What do I need to do?

This article has been archived and is no longer updated by Apple.
The LaserWriter IISC is a SCSI device and cannot be used as a network printer.

Apple offers upgrades for the LaserWriter IISC to the LaserWriter IIf or IIg, which have AppleTalk capabilities built in.

Published Date: Feb 18, 2012

Applesoft: Tips on error handling

When using ONERR GOTO, you have two correct ways to leave your ONERR routine.
This article has been archived and is no longer updated by Apple.
1. You can use RESUME; with this, Applesoft re-executes the statement that caused the error

- or -

2. you may use a GOTO after executing a CALL -3288. For details on this call and on error handling in general, please refer to pages 66 and 67 of the Applesoft BASIC Programmer's Reference Manual, Vol. 2 (p/n A2L4031).
Published Date: Feb 18, 2012

MacWorks: Dot Matrix Printer Installation

This article has been archived and is no longer updated by Apple.
The Parallel Printer Installation Utility enables a Macintosh XL to send print files to a parallel printer, such as an Apple Dot Matrix printer. This utility is distributed on the MacWorks XL System Disk (part number 682-0103-B).

The utility installs the driver on whichever disk contains it, so you should:

1. Copy the utility to the application disk you wish to print to the DMP from.

2. Run the disk's Parallel Printer Installation Utility and follow the instructions.

Published Date: Feb 18, 2012

3.5" 160MB HDA: Designed for Specific Computers, Not LaserWriter

I'm trying to use an Apple 3.5-inch, 160MB HDA from a Macintosh Quadra 900 in an Apple external case with my LaserWriter IINTX.

The drive works fine when connected to a Macintosh system, but it isn't recognized by the LaserWriter IINTX. I can successfully use another drive with the same cables and terminator with the LaserWriter IINTX.

I am using LaserWriter Utility 7.0 to access the printer.

This article has been archived and is no longer updated by Apple.
All drives manufactured by Apple must conform to certain specifications, which the 3.5-inch, 160MB drive does. However, the 3.5-inch, 160MB drive was designed and tested to work ONLY in these Macintosh models:

- Macintosh Quadra 700
- Macintosh Quadra 900
- Macintosh IIfx
- Macintosh IIci

Many times Apple Engineering, Service, and Marketing decide to ship products in certain configurations based on availability, pricing, and technical specifications (such as Term Power, Power Draw, and so on). Keeping this in mind, it is important to use and/or order the correct part for the corresponding Macintosh system. Apple drives are not to be used in systems other than those for which they were originally intended.

Published Date: Feb 18, 2012

System 7: Use CMS SCSI Utility INIT 7.0.2e or Later

I have a Macintosh PowerBook 140 with an internal hard drive running system software version 7.0.1. I am trying to connect a Syquest SCSI removable drive running CMS SCSI Utility 5.6, but the Syquest drive will not start up.

I had the same problem with the Syquest drive when I tried to connect it to a Macintosh PowerBook 170; however, the Syquest drive works fine with my Macintosh II and Macintosh IIfx.

This article has been archived and is no longer updated by Apple.
CMS Enhancements has a new CMS SCSI Utility INIT (7.0.2e) to use in conjunction with the CMS SCSI Utility software, which allows a removable SCSI drive to run on a version 7.0.1 system. Since the Macintosh PowerBook series require version 7.0.1, I assume that the Macintosh II and IIfx configurations worked because they have system software versions earlier than 7.0.1 installed.

Note that CMS Enhancements has released a new version (7.0.2) of the CMS SCSI Utility software. However, it is not mandatory that you upgrade to this version because the new CMS SCSI Utility INIT 7.0.2e is backward compatible with other versions of the utility software.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

Published Date: Feb 18, 2012

Tulin Hermit Crab Drive: Compatibility w/ Macintosh LC, Classic

I have a Tulin Corporation Hermit Crab external hard drive that uses power from the external floppy port of the Macintosh. I can use the drive with a Macintosh Plus, but it won't work with a Macintosh Classic.

Is there a known compatibility problem with this hard drive and the Macintosh Classic?

This article has been archived and is no longer updated by Apple.
Tulin Corporation is aware of a problem. Apparently, when the older version of the Hermit Crab drive is connected to a Macintosh Classic or a Macintosh LC, it does not spin up properly. Tulin indicated that the problem is related to the amount of power the drive draws from the Macintosh (12 watts).

Tulin does have a version of the Hermit Crab drive that works with the Macintosh Classic and Macintosh LC. Contact them directly for more details.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

Published Date: Feb 18, 2012

Macintosh 21" Color Display: Pinouts

Here are the pinouts for the Macintosh 21-inch Color Display.

This article has been archived and is no longer updated by Apple.

Pin	Function
A1	Blue Video
A2	Green Video
A3	Red Video
1	Horiz. sync return
2	Vert. sync return
3	Sense #3
4	Sense ground
5	Csync
6	Horiz. sync
7	Vert sync
8	Sense #2
9	Sense #1
10	Csync return
Shell	Shell ground

For the 21-inch color sense line configuration, sense lines 1, 2, and 3 (pins 3, 8, and 9) must all be tied to sense ground (pin 4).

Published Date: Feb 18, 2012

TA48235_LisaTerminal_Record_Separator_function_(TIL00991).pdf

LisaTerminal 7/7: Record Separator function

This article has been archived and is no longer updated by Apple.

LisaTerminal's Record Separator (RS) function doesn't work as documented in the manual: neither pressing "CTRL-6" nor the tilde key (upper left corner of keyboard) will send an RS.

Published Date: Feb 18, 2012

Material Safety Data Sheets: General Information

This article provides general information about, and a discussion of, Material Safety Data Sheets -- commonly known as MSDS.
This article has been archived and is no longer updated by Apple.
A Material Safety Data Sheet is an occupational safety and health document. State and federal law requires the manufacturer, importer, and distributor of any chemical substance used in a workplace to provide Material Safety Data Sheets along with the first shipment of that substance. The law also requires employers that use chemical substances to keep the MSDS on file and train employees in their use. An MSDS contains physical, chemical, and health- and safety-related information about the chemical substance.

The law does not require MSDS for everything used in a workplace setting. For example, you will not find MSDS for your pencils or pencil sharpeners. The law exempts any "article" that does not release hazardous substances under conditions of normal use from the MSDS requirements.

Despite this legal exemption, some companies routinely demand MSDS for everything they buy. In some companies, provision of MSDS is a standard purchasing contract term. To satisfy this demand, some of our vendors (but not all) routinely prepare MSDS for whatever they make and are available for the asking.

Apple maintains a list of MSDS for Apple Printer cartridges at:

Laser Printers: http://www.apple.com/about/environment/use/msds/laserprinters.html

Ink-jet Printers: http://www.apple.com/about/environment/use/msds/inkjetprinters.html

If the MSDS for the product you own is not listed at the Web addresses above, contact Apple technical support for information on availability.

Published Date: Feb 18, 2012

Display Card 8■24 & 8■24 GC: Identifying Rev & Upgrade ROM

How can I tell whether a Macintosh Display Card 824 or Macintosh Display Card 824 GC is Rev A or Rev B?

This article has been archived and is no longer updated by Apple.

Macintosh Display Card	REV	Card Service P/N	P/N on ROM
Display Card 824	A	661-0608	
Display Card 824	B	661-0678	341-0868
Display Card 824 GC	A	661-0606	
Display Card 824 GC	B	661-1642	341-0266

Upgrading Rev A to Rev B ROMs

Macintosh Display Card	Upgrade P/N
Display Card 824	076-0548
Display Card 824GC	076-1019

The Rev B ROMs provides Page-White correction for the Macintosh 21-in. Color Display and Macintosh 16-in. Color Display support.

Published Date: Feb 18, 2012

LaserWriter: Printing Bold Characters from VAX

I'm using a Quadra and Microphone II (version 4) to dial into All-in-One on a VAX. It works great, my screens look good, I can use PF keys, and so on. However, when I print to the LaserWriter IINT, anything that was bold prints out on 2 lines. I assume that it is doublestriking the line to get the bold effect, not realizing it's a LaserWriter image-based printer. The LaserWriter is connected to the Quadra.

Do you know of any drivers that would let the printer know what it's doing? Do you think Microphone would? Could I use the PATHWORKS printer drivers without installing PATHWORKS?

This article has been archived and is no longer updated by Apple.
Your problem is caused by the VAX sending the LaserWriter control characters that are understood only by DEC laser printers or third-party printers with DEC emulation. On a DEC LN03, for example, in order to bold a string, you have to enclose the string with 2 control characters, one at each end. You also have to do this twice, for the top half and the bottom half of the string. When not interpreted, this prints out as two lines, sometimes with extra characters at the beginning or at the end of the string.

PATHWORKS uses a print symbiont called VAXshare symbiont to convert VMS text into PostScript data before sending it to the LaserWriters. Another symbiont, called the PostScript printer symbiont, transfers data to a Digital PostScript printer.

You'll need to send VMS text to the VMS queue system, and need a similar "symbiont" to do the translation to PostScript. Unfortunately, no vendor is selling just the VAX queue symbiont alone. They all come as part of the package. You might want to contact Pacer and Alisa to see if they sell the VAX print service separately.

MicroPhone won't solve this problem for you. And you can't use PATHWORKS' VAXshare print service without purchasing PATHWORKS for Digital.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Published Date: Feb 18, 2012

Personal LaserWriter: No Refurbishment Kit

Why doesn't Apple offer a refurbishment kit for the Personal LaserWriter printers?

This article has been archived and is no longer updated by Apple.
The Personal LaserWriter engine life is rated at a minimum of 150,000 pages. The pick-up roller and separation pad each have a minimum rated life of 50,000 pages. However, since most users use the cassette tray, these parts will most likely last well beyond their 50,000-page rating. Also, the fuser assembly, laser scanner assembly, and other moving parts are expected to last the life of the engine. Therefore, there is no need for a refurbishment kit.

The LaserWriter and LaserWriter II engines have engine-life ratings that exceed the working life of several of their major modules (such as the fuser, cassette pick-up assembly, and transfer guide assembly). Therefore, refurbishment programs were created to ensure that proper maintenance is performed at the proper intervals.

Published Date: Feb 18, 2012

Lisa 1/2-MB System: Error 815/315 while installing OS 3.0

This article has been archived and is no longer updated by Apple.
Error 815/315 indicates your system is out of memory. This error appears when you initialize your hard disk before installing Lisa Office System Release 3.0 software on a 1/2 meg system. You will need to obtain a 512K Add-On Memory Board before you can successfully install the software; alternatively, you could obtain Lisa Office System Release 3.1, which allows you to install the Office System using 1/2 megabyte.
Published Date: Feb 18, 2012

LaserWriter IIf and IIg: Function of Jumper J11

On the Apple LaserWriter IIf and IIg I/O controller board, near the ROM chips, is a set of jumper pins labeled J11. What is their function?

This article has been archived and is no longer updated by Apple.
The jumper pins labeled J11 are at board position L7. The jumper pins allow the use of 8-megabit ROM chips, providing a total of 4MB of ROM space.

The jumper is factory set at the 2MB setting to allow the use of four 4-megabit ROMs, providing a total of 2MB of ROM space. There are no existing Apple or third-party upgrades that use the 4MB setting.

All Apple LaserWriter IIf and IIg printers should be set at the 2MB setting.

Published Date: Feb 18, 2012

StyleWriter Sheetfeeder: Paper Pickup Ratcheting Noise Is Normal

My StyleWriter sheetfeeder makes a ratcheting noise during the paper pickup process. Is this noise normal?

This article has been archived and is no longer updated by Apple.
The StyleWriter printer sheetfeeder does make a racheting noise during the paper pickup process. This noise is normal and is no cause for concern.

The sheetfeeder mechanism is powered by a single drive gear, which mates to the StyleWriter printer. The sheetfeeder contains no sensors or other feedback devices for the StyleWriter to gather paper status information. The paper pickup sequence consists of a carefully orchestrated set of forward and reverse paper-feed motor movements. These movements allow the paper pickup rollers to pick up a single sheet of paper and return to their home position. The ratcheting sound is created by an integral one-way clutch mechanism inside the sheetfeeder.

Published Date: Feb 18, 2012

ImageWriter LQ:Testing Sheetfeeder/Tractor-Feed Paper-Out Sensor

The ImageWriter LQ has two paper-out sensors; however, the Technical Procedures Manual has information for testing only the least-used bottom-feed sensor.

How can I test the other paper-out sensor used for the sheetfeeder and tractor-feed paper?

This article has been archived and is no longer updated by Apple.
To test the paper-out sensor used for everything except bottom-feed paper, follow these steps:

1) Using standard procedures, remove the printer top cover.

2) Power on the printer without any paper inserted.

3) Configure a multimeter to measure between 0-5 volts DC.

4) Locate connector C9 on the logic board.

5) Connect the GND lead to pin 5 and the positive lead to pin 3. Without any paper inserted in the printer, the measured voltage should be approximately 4-5 volts.

6) Insert a piece of paper in the printer and monitor the multimeter. As paper is inserted, the voltage should drop from 4-5 volts to almost zero volts. Repeat this process several times to ensure proper operation of the sensor.

If this change does not occur, the paper-out sensor is probably defective and should be replaced.

Published Date: Feb 18, 2012

PowerBook Fax Sender: Configure Receiving Fax to Print Header

The Fax/Data Modem for the PowerBooks doesn't allow the receive modem to date stamp the top of the page as other fax machines do when they send faxes. After testing it here I've come to the conclusion that this has to be something in the software and not the fax itself that is dropping this date stamp from the top of the page.

This article has been archived and is no longer updated by Apple.
Depending upon how a fax machine is configured:

- It can generate a header, which may include the date and time as a part of the fax image it sends, or

- Automatically print a header on the fax image it receives.

The PowerBook Fax Sender software doesn't include a header in the fax it generates. It does however send its Station ID. It's the responsibility of the receiving fax machine to shape and include it in the fax image it prints. The receiving fax machine needs to be configured to do this.

So, if you have your fax machine configured to generate headers on sent faxes but not on received ones, this would explain why you aren't seeing headers printed on faxes received from PowerBooks.

Support Information Services

Published Date: Feb 18, 2012

AppleColor High-Res RGB Monitor: Voltage Range Label Error

Later model 13-inch AppleColor High-Res RGB Monitors no longer designate on the back panel that they are compatible with voltages from 100 to 240. They show only 110-120 volts. Have there been any engineering changes to this monitor?

If the monitor is being driven from the power output on the back of a Macintosh, will the correct voltage be delivered to the monitor even when the Macintosh is plugged into a European power source?

This article has been archived and is no longer updated by Apple.
The current specification sheet states that the AppleColor Hi-Res RGB Monitor (model number M1297) supports a voltage range from 85 to 270 VAC, and a power frequency range of 47 to 63 Hz.

There were some internal design changes in the revision B monitor, but the voltage and frequency range remained the same. Most of the changes were made to meet the Swedish guidelines for ELF emissions.

The back panel identification was an oversight when the labels were printed, and the voltage range information was left off the label. Our engineers are aware of the problem and this should be rectified in future shipments of the monitor.

In regard to the power out of the back of a Macintosh II, the power supply switches the power from the wall to the output plug. No voltage processing takes place. Any device that has the power plugged into the back of a Macintosh must meet the power requirements of that country.

Article Change History
2 September 1993 - Updated to reflect that these monitors are no longer in production

Published Date: Feb 18, 2012

A/UX: Remote Dump to Magnetic Tape Drive

I'm trying to do a remote dump (rdump) from a Macintosh IIfx on an Ethernet network to a 1/4-inch cassette tape drive on a Concurrent computer on the same network. The device file for the tape drive is /dev/rctp. The address on the network and in the /etc/NETHOSTS is mdsaero. I think everything is set up properly now since the dump process begins. The following is the command I issued:

```
macunix.root 1 # rdump 0usf 28800 mdsaero:/dev/rctp /dev/dsk/c5d0s3
DUMP: Date of this level 0 dump: Mon Feb 24 15:33:14 1992
DUMP: Date of last level 0 dump: the epoch
DUMP: Dumping /dev/rdsk/c5d0s3 (/users) to /dev/rctp on host mdsaero
DUMP: mapping (Pass I) [regular files]
DUMP: mapping (Pass II) [directories]
DUMP: estimated 201945 blocks on 0.41 tape(s).
DUMP: Protocol to remote tape server botched (code /etc/rmt: Command not
found.
?).
rdump: Lost connection to remote host.
DUMP: Bad return code from dump: 1
macunix.root 2 #
```

Note: slice 3 is a 400MB (approximately) partition and the tape cassette is a 525MB tape. The procedure also won't work with a 120MB tape.

This article has been archived and is no longer updated by Apple.

According to the above error message, "... remote tape server botched (code /etc/rmt: Command not found," the problem is apparently on the remote host.

The /etc/rmt can't be found in the mdsaero host. The /etc/rmt is a remote magtape protocol program used by the remote dump (rdump) and remote restore (rrestore) programs in manipulating a magnetic tape drive through an IPC (Inter Process Communication) connection. The /etc/rmt is normally started up with an rexec() and rcmd() call.

Check the mdsaero host to see if it supports the remote procedure call for a remote magnetic tape drive. A/UX and most BSD UNIX systems support this facility.

Published Date: Feb 18, 2012

MacX: snftobdf Utility Converts SNF Fonts to BDF (9/94)

On the Tech Info Library, an article mentions a public domain software utility called 'snftobdf' converter for X-Window fonts. Is this a UNIX- based product that compiles on the X client or at the MacX end?

We need to send Adobe, BDF, and SNF fonts to MacX from a Motorola X- Window/Motif client that's running Word Perfect and FrameMaker for UNIX.

This article has been archived and is no longer updated by Apple.
Yes, the "snftobdf" is a public software utility for converting SNF (Server Normal Format) fonts into the BDF (Bitmap Distribution Format) fonts. It's UNIX-based, and runs at the X client end. Basically, you may convert SNF fonts on a UNIX-based X11 client host, and transfer them to a Macintosh OS computer. Then under MacX, you can use the Font Director facility to compile the BDF fonts into the X fonts that the MacX server can use.

For more detailed information on how to compile BDF files within MacX, see page 101 of Apple MacX User's Guide, "Compiling fonts from BDF files."

You can find a copy of snftobdf on AppleLink.

These articles can help you locate software updates mentioned here:

* Where To Find Apple Software Updates
Lists online services for "free" Apple software updates

* Obtaining Apple Product Support in the USA
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
15 Sep 1994 - Removed binary file.

Support Information Services
Published Date: Feb 18, 2012

AppleColor Monitor 100: Power Supply Board Fuse And Logic Board

This article has been archived and is no longer updated by Apple.

--> If you receive an AppleColor Monitor 100 that has no power or no raster, a blown fuse, F601, on the Power Supply board may have caused the failure. This easily detected problem may be corrected by installing the 250V, 2A, slow-blow fuse which has been added to the AppleColor Monitor Service Price List under Replacement Parts (Service Programs Manual, Page 7.10.3). This fuse, part number 740-0204, is available immediately. Refer to the March Technical Procedures update for instructions for replacing the fuse.

--> In March 1985, Apple sent out AppleColor 100 Monitors with Rev. O of the service stock logic board. Later that month, though, the logic board was revised, and subsequent monitors were sent out with this new logic board--Rev. A. Rev. O and Rev. A logic boards are NOT interchangable: a Rev. O logic board cannot be used to repair a Rev. A system, and vice versa. Dealers should therefore purchase Rev. A logic boards in order to be able to support the new monitors. Instructions for recognizing and replacing boards have been included in the AppleColor Monitor March 1985 Technical Procedures. The Rev. A logic board has been added to the AppleColor Monitor Service Price List under Service Stock and Exchange Modules.

NOTE: You will be reimbursed for repairs involving both fuses and logic boards in systems covered under warrranty or AppleCare.

Published Date: Feb 18, 2012

DOS PC-to-LaserWriter IIf,IIg: Troubleshootg Print Problem(3/94)

We have a Macintosh LC and an AST Premium II (386-PC compatible) connected to an Apple LaserWriter IIf. We have no problem printing from the Macintosh to the LaserWriter, but we can't print from the AST to the LaserWriter.

We added these mode statements to the autoexec.bat:

mode com1:9600,n,8,1
mode lpt1:=com1:

which redirects the print command to com1.

When we tried to print screen, nothing happened. When we tested with CheckIt (PC diagnostics), we got a print error.

We tried to print from WordPerfect 5.1 using HP emulation, and it won't print. We set the printer select switch to 1 and ran the self-test, which showed RS-232C, 9600, Raw Input. We had a cable made to the specifications in the Tech Info Library article titled "LaserWriter IINT to IBM PC: Pinouts for DB-25 Connection. We tried it both with HW handshaking (DTR) and SW handshaking (XON/XOFF) -- WordPerfect 5.1 has a setup for XON/XOFF, and we set it to on.

Can you help us troubleshoot the problem?

This article has been archived and is no longer updated by Apple.
Are you sending PostScript or HP emulation? For both the Macintosh and the PC to be connected at the same time, both have to send PostScript to the printer. The printer cannot switch between HP emulation and PostScript on the fly.

This configuration requires the printer select switch to be set to either 0 or 5.

Here's a test you can run to determine if this is a hardware or software problem:

1) Turn off the printer and set the select switch to 1 (HP LaserJet Emulation).

2) Ensure that you are using a Null Modem Cable.

3) Issue the appropriate Mode Commands:

Mode Com1: 96,8,1,n,p

Mode LPT1: = Com1:

4) Issue a CTRL-P. This redirects the screen output to the list device.

5) Perform a few DIR commands. You should see the light on the LaserWriter blink.

6) Issue a CTRL-L. This sends a form feed to the printer and ejects the page.

7) Issue a CTRL-P. This redirects the output back to the screen.

If the keyboard hangs or the light doesn't blink during this procedure, you have a hardware problem. The likely causes are the cable, the serial port on the IBM, or the logic board on the printer.

If you get output, the problem is most likely in software. Check the configurations of the applications you are using on the PC side.

Note that this only tests the hardware configuration. You should set the printer back to PostScript, so that the Macintosh can print to it.

Article Change History:
10 March 1994 - Added keyword and reformatted article.

TA48257_DOS_PCtoLaserWriter_IIfIIg_Troubleshootg_Print_Problem_(TIL09930).pdf

Support Information Services
Published Date: Feb 18, 2012

RAM: Faster-than-Required SIMMs Don‘t Improve Performance

Will performance on my Macintosh Quadra 700 increase if I use SIMMs rated at 60 ns instead of the recommended 80 ns?

This article has been archived and is no longer updated by Apple.
Performance will not increase if you install SIMMs rated at 60 ns in a Macintosh Quadra because the SIMMs still will be accessed at the 80-ns rate.

A problem with incorrect SIMM speeds is encountered when the SIMMs are too slow for the system in which they are installed. For example, if you put 120-ns SIMMs in a system that requires 80-ns SIMMs, the CPU accesses the 120-ns SIMMs at the faster 80-ns rate. This causes those slower SIMMs to overheat, produce random errors, and eventually fail completely.

Published Date: Feb 18, 2012

Personal LaserWriter NTR: Communication Arbitration

The Personal LaserWriter NTR has three communication ports that can be active simultaneously. Special arbitration logic controls the activity among the three ports.

This article has been archived and is no longer updated by Apple.

Because PostScript processes one job at a time, only one port can have access to the printer at any given time. Arbitration logic polls the ports in a round-robin fashion until it senses activity in one of the three ports. It terminates polling at connection and the beginning of job execution. A connection, in this sense, refers to the dedication of the printer to a communication port while receiving PostScript jobs from a host. AppleTalk ports may process multiple jobs during a single connection while the other serial port connections have only one job. Receiving an EOF (end-of-file indicated end-of-job) character terminates a non-AppleTalk connection.

The port arbitration cycle begins whenever a host terminates a connection. It determines polling order by always polling the port that has gone unpolled for the longest time. This procedure ensures that one port won't dominate the printer. If an active PostScript job opens a port directly, that port is excluded from arbitration until the job closes it again. A PostScript job opening a serially connected sheet feeder is an example of this type of port activity.

All three ports respond to status request, with current printer status, unless excluded from the port arbitration cycle as previously explained, or just configured inactive. Directly opened ports may either respond with stale status or not respond at all. Ports not arbitrated due to configuration may not respond or even appear on the network.

Published Date: Feb 18, 2012

TA48262_Personal_LaserWriter_NTR_Utility_Software__(TIL09938).pdf

Personal LaserWriter NTR: Utility Software 7.2

This article describes the Utility software, version 7.2, used with the Personal LaserWriter NTR.

This article has been archived and is no longer updated by Apple.
The LaserWriter Utility software provided with the Personal LaserWriter NTR is a slightly revised version of the utility that shipped with the LaserWriter IIf and IIg. The updated version includes some bug fixes and some minor changes to handle port configuration. These are the supported functions:

- Disable Start
You can disable/enable the printing of the page Start Page when you turn the printer on.

- Configuration
You can set the parameters for user-defined switch settings (emulation, baud rate, data length, hand shaking, port, and cut sheet feeder).

- Naming
You can change the printer's name.

- Download Fonts
You can download PostScript and TrueType fonts to DRAM.

Published Date: Feb 18, 2012

Macintosh LC II: Connecting a VGA Monitor

What are the pinouts for connecting a VGA monitor to the Macintosh LC II computer?

This article has been archived and is no longer updated by Apple.
To recognize a VGA monitor, you must wire pins 10 and 7 together. Since Macintosh LC II always grounds ID bit 2, this wire will cause ID3 to be grounded and will make the VGA ID appear.

Macintosh LC VGA Connector
DB-15

2 ---------- Red Video ---------- 1
1 ---------- Red Ground ---------- 6
9 ---------- Blue Video ---------- 3
13 ---------- Blue Ground ---------- 8
5 ---------- Green Video ---------- 2
6 ---------- Green Ground ---------- 7
15 ---------- Hsync ---------- 13
12 ---------- Vsync ---------- 14
14 ---------- Sync Ground ---------- 10
10 ----------|
7 ----------| Connect 7 and 10 so the sense pin ID will equal VGA

A few issues to keep in mind:

- VGA monitors may vary, depending on the vendor. Check with the vendor about Macintosh LC II compatibility before buying.

- Vendors have different image quality specifications. There may be significant differences between Apple monitors and VGA monitors. Do a side-by-side comparison of a VGA monitor with an Apple monitor before buying.

- When a VGA monitor is connected as described in the pinout above, the resolution is 640 x 480. The bit-depth supported depends on the amount of VRAM installed. For example, if a 256K VRAM SIMM is installed, 4-bit color (16 colors) is supported. If the 512K VRAM SIMM is installed, 8-bit (256 colors) is supported.

Published Date: Feb 18, 2012

Macintosh LC II: RAM Configuration and 10 MB Limit (7/96)

Is there a technical reason for the 10 MB limit on RAM for the Macintosh

LC II and Performa 400, 405, and 430 computers?

This article has been archived and is no longer updated by Apple.

The Macintosh LC II and Performa 400, 405, and 430 computers have 4 MB of DRAM soldered onto the logic board. In addition, there are two 30-pin SIMM slots that accept 1, 2, and 4 MB SIMMs, which results in 4, 6, 8, and 10 MB configurations. SIMMs should be fast-paged mode, 100 nanoseconds (ns) RAM access time, or faster.

Although you would physically have 12 MB of DRAM installed in the computer if you populated each SIMM slot with 4 MB SIMMs, the total amount of addressable RAM is limited to 10 MB. As a result, when you populate your board with two 4 MB SIMMs, the lower 2 MB of DRAM on the logic board cannot be accessed.

This 10 MB addressable RAM limit on these computers is because the hardware only uses 24 address lines to select addresses, regardless whether it is in 24- or 32-bit mode. This means the hardware can access only $xx00 0000 - $xxFF FFFF, or 16 MB of address space. The hardware ignores the upper 8 bits of the address.

A distinction must be made between what the hardware looks at and what the software looks at. In 32-bit mode the software looks at all 32 bits of the address, but when the software tries to read a value from the memory location $40A0 0000, for example, the hardware, ignoring the upper 8 bits of this address, reads a value from $00A0 0000 instead.

In addition, since the ROM is mapped by the hardware to $00A0 0000 in both 24- and 32-bit modes and RAM needs to be contiguous, the largest contiguous amount of memory is from 0 -$9F FFFF, which is 10MB.

Article Change History:

02 Jul 1996 - Changed wording.

07 Jul 1992 - Added Performa.

Published Date: Feb 18, 2012

TA48265_Macintosh_LC_II_Software_Compatibility_(TIL09943).pdf

Macintosh LC II: Software Compatibility

Are there any software compatibility problems with the Macintosh LC II?

This article has been archived and is no longer updated by Apple.
Software compatibility test results show no new software compatibility problems.

Some cards need latest drivers:

- The LC Ethernet card requires a ROM revision (Service upgrade).

- The Apple IIe card requires 2.1 driver (on networks, and so on).

An expansion card compatibility list ships in the Macintosh LC II box. This list indicates the versions required to run properly on the Macintosh LC II. Since we found no new software compatibility problems, no software compatibility list will be included.

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Macintosh LC II: LC Ethernet Card Requires New Driver

I heard that the Macintosh LC Ethernet card works in the Macintosh LC II, but requires a driver upgrade.

This article has been archived and is no longer updated by Apple.
For use in the Macintosh LC II, the Ethernet card requires a ROM upgrade that contains a new driver.

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Macintosh LC II: Doesn‘t Support 65.5K Colors

Why doesn't the Macintosh LC II support 2^16 (= 65.5K, or 65,536) colors?

This article has been archived and is no longer updated by Apple.
All video timing modes use a 256 x 24 Color Look-Up Table (CLUT). Monochrome mode also uses the CLUT, driving the R, G, and B with the same signal. When you select the thousands of colors mode in the monitor CDEV, you are selecting 16 bit/pixel format. The 16 bit/pixel assigns the uppermost bit to an Alpha Channel and 5 bits each for Red, Green, and Blue.

Selecting thousands mode divides the 256 x 24 CLUT into three 32 x 8 tables, allowing display of 32 levels of each color from a selection of 256. The 555 data is applied to each of these tables, resulting in 888 output values. The CLUT is used so that gamma correction can be applied, even in the direct color mode. Therefore, you will get 2^16-1 = 32^3 = 32.7K color selections from a palette of 2^24 = 16.7 million color choices.

Published Date: Feb 18, 2012

TA48268_Macintosh_LC_II_Logic_Board_Upgrade_(TIL09948).pdf

Macintosh LC II: Logic Board Upgrade

Can a Macintosh LC be upgraded to a Macintosh LC II?

This article has been archived and is no longer updated by Apple.
Yes, the Macintosh LC II logic board upgrade kit (M1710SC/A) includes 2 MB DRAM, System software 7.0.1, documentation (but not HyperCard), and a new plastic top cover.

Article Change History:
29 Jul 1994 - Correct service part number for logic board upgrade kit.

Support Information Services

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Macintosh LC II: Video (7/93)

Article Change History

07/12/93 - REVISED
* To include Performa

This article describes the video capabilities and expansions available for the Macintosh LC II, and Performa 400, 405 and 430.

This article has been archived and is no longer updated by Apple.
Macintosh LC II comes with either a 256K or 512K VRAM SIMM. The VRAM is installed in a 32-pin SIMM slot. There are three possible SIMMs you can use:

* NO VRAM (a SIMM containing two transparent latches)
- monochrome on Macintosh 12-inch Monochrome Display
- monochrome on 13-inch AppleColor High-Resolution RGB Monitor
- monochrome on VGA
* 256K VRAM SIMM option (Performa 405)
- 16 grays on Macintosh 12-inch Monochrome or VGA
- 256 colors on Macintosh 12-inch RGB Display
- 16 colors on 13-inch AppleColor High-Resolution RGB Monitor or VGA
* 512K VRAM SIMM option (Performa 400 and 430)
- 256 greys on Macintosh 12-inch Monochrome or VGA
- 32,000 colors on Macintosh 12-inch RGB Display
- 256 colors on 13-inch AppleColor High-Resolution RGB Monitor or VGA

Timing Modes

The Macintosh LC II supports the following four video timing modes:

Resolution	Supported	Vertical	Horizontal	Bandwidth
512 x 384	Macintosh 12-inch RGB	60.15	24.48	15.67
640 x 480	Macintosh 12-inch Monochrome AppleColor 13-inch	66.62	34.98	31.33
540 x 384	Macintosh 12-inch RGB Macintosh 12-inch Monochrome AppleColor 13-inch	60.15	24.48	17.23
	VGA	59.94	31.47	25.18

All video timing modes use a 256 x 24 Color Look-Up Table (CLUT). Monochrome mode also uses the CLUT, driving the R, G, and B with the same signal. When you select "thousands of colors" in the Monitors control panel, you're selecting 16 bit/pixel format. The 16 bit/pixel assigns the uppermost bit to an Alpha Channel and 5 bits each for Red, Green, and Blue. Selecting thousands mode divides the 256 x 24 CLUT into three 32 x 5 tables. Therefore, you get 2^15 = 32^3 = 32.7K color selections.

Monitor Video Connectors

Macintosh LC II uses a DB-15 female connector to connect to the video monitor. Here's the pin-out:

Pin	Signal	Description
1	RED.GND	Red Video Ground
2	RED.VID	Red Video
3	CSYNC~	Composite Sync.
4	MON.ID1	Monitor ID, Bit 1
5	GRN.VID	Green Video
6	GRN.GND	Green Video Ground
7	MON.ID2	Monitor ID, Bit 2
8	nc	(No Connection)
9	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3
11	CSYNC.GND	CSYNC Ground
12	VSYNC~	Vertical Sync.
13	BLU.GND	Blue Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC~	Horizontal Sync.
Shell	S.GND	Chassis Ground

Three of the 15 pins (pin 10, 7, and 4) are used to send a signal to identify the monitor type. Once identified, Macintosh LC II synchronizes the correct video timing.

The monitor IDs are:

Connector pins 10,7,4	Monitor ID bits 321
Macintosh 12-inch Monochrome	110
Macintosh 12-inch RGB Display	010
Apple IIe mode	010
AppleColor 13-inch RGB	110
VGA	011
No Monitor	111

When no monitor (111) is attached, 512 x 384 video timing is selected. Macintosh LC II performs a special function of always returning a 1 to the Monitor Parameters Register when reading Monitor ID bit 2. By performing this special function, various monitors can select the correct video timing schemes. The VGA monitor (011) has the same monitor ID as the two-page monochrome. Neither the Two-Page nor the Portrait monitor can be attached to Macintosh LC II.

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AppleWorks: Daisy Wheel Printer Setup

To use the Daisy Wheel Printer with AppleWorks, set the switches as follows.
This article has been archived and is no longer updated by Apple.
Front Switch:

Position	1	2	3	4	5	6	7	8
Closed (On)	X	-	-	-	-	X	-	-
Open (Off)	-	X	X	X	X		X	X

Rear Switches:
Switch 2

Position	1	2	3	4	5	6	7	8
OFF	X	X	X	X	-	X	X	-
ON	-	-	-	-	X	-	-	X

Switch 1

Position	1	2	3	4	5	6	7	8
OFF	-	-	-	X	X	-	-	-
ON	X	X	X	-	-	X	X	X

The diagrams of these switches are presented as seen from the back of the Daisy Wheel Printer or Letter Quality Printer. The front switches are rocker switches; X means that that side of the switch is down. The rear switches are toggle switches; X marks the toggle.

The front switch settings are for 12 characters per inch (1-2), 11 inch form length (3-6), no carriage return line feed (7), and 6 lines per inch (8).

SUPER SERIAL CARD:

Switch 1

Position	1	2	3	4	5	6	7
ON	-	-	-	X	-	X	X
OFF	X	X	X	-	X	-	-

Switch 2

Position	1	2	3	4	5	6	7
ON	X	-	-	X	-	-	-
OFF	-	X	X	-	X	X	X

AppleWorks sends a carriage return code to the printer as part of the setup command. When the SSC sees this code and you have configured the SSC to add a line feed, the printed page gets one line more than AppleWorks has calculated for the page. This can lead to misprints, often called paper creep, which get worse with each successive page.

To work around this problem, set the SSC for no <lf> after <cr>: Switch 2: Position 5 -> ON
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Macintosh LC II: Virtual Memory

The Macintosh LC II supports a demand paged virtual memory environment -- a distinct advantage over its predecessor, the Macintosh LC. The 68030 microprocessor comes equipped with the MC68851 PMMU (page memory management unit).

This article has been archived and is no longer updated by Apple.

Addressing Scheme

The Macintosh LC II can generate either 24-bit or 32-bit virtual addresses.

The 24-bit mode allows a total of 11MB virtual memory. In 24-bit mode the total addressing space is 16MB. In this address space, 2MB is reserved for ROM, 1MB for I/O, 1MB for video, and 1MB is just reserved for a total of 5MB used in this 16MB space. The PDS slot also takes up 1MB. So when a card isn't installed, virtual memory can use this space. With a PDS card present, 10MB of virtual memory is available.

In 32-bit mode, because the ROM is 32-bit clean (that is, the ROM code has the ability to use the full 32 bits of address space), the total addressing space is 232, or 4 gigabytes. Of this 4 gigabytes, 3 gigabytes is used for ROM, I/O, slot space, and expansion, leaving a maximum of 1 gigabyte for virtual memory.

Virtual Memory

With the Macintosh LC II, limited RAM expandability and the cost of RAM SIMMs makes virtual memory an attractive option. Virtual addressing allows the Macintosh LC II to address data on a disk drive as if it were in main memory. That means that you can launch more applications and data on the Macintosh LC II than the amount of installed RAM can contain.

The 68030 and its PMMU provide the hardware support for virtual memory. PMMU performs memory paging, a technique where a needed page of memory is transferred (swapped) into main memory from the disk. In addition, the PMMU swaps out of main memory, a page that isn't currently needed. The PMMU keeps track of 64 pages in memory.

With 32-bit addressing on and enough space available to allocate on hard disk, you can create a very large virtual memory address space. However, it's best for performance reasons to limit the size of your virtual memory to twice the size of installed RAM. By limiting the size of your virtual memory, you'll help eliminate excessive paging activity known as thrashing.

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Macintosh LC II: Not Capable of Running A/UX

Can the Macintosh LC II run A/UX 3.0?

This article has been archived and is no longer updated by Apple.
No, the Macintosh LC II cannot run A/UX, which puts heavier demands on hardware resources than the Macintosh operating system does.

The Macintosh LC II is not a suitable A/UX platform for the following reasons:

- The Macintosh LC II lacks an FPU.

- It has limited RAM expansion and internal hard disk space.

- It has a 16-bit data path.

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Macintosh LC II: How It Differs from Macintosh LC

This article lists the ways the Macintosh LC II differs from the Macintosh LC.

This article has been archived and is no longer updated by Apple.

- Processor: 68030 (instead of 68020)
- 4MB RAM minimum soldered onto the logic board.
- No second floppy-disk drive
- Improved VGA support (multisync).
- ASIC changes
- 030 support (related to data cache use)
- 4MB RAM on board support
- ROM space reduced to 2MB (from 4MB); allows 2MB for cards
- LOR (low-res special effect/pixel doubler)
- Removed speaker/fan plastic assembly.
- Removed second floppy connector.
- Reduced voltage sensitivity for VGA conformance.

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Macintosh LC II: No NTSC Video Out

Why doesn't the Macintosh LC II have NTSC video out?

This article has been archived and is no longer updated by Apple.
NTSC video, unlike standard composite, is based on half-lines, not full lines of video. Standard Macintosh video starts at the top LEFT of the screen. The Macintosh then increments down the screen one line at a time, ending the scan at the bottom right. The NTSC scan starts at the top and MIDDLE of the screen, counts down every other line, and then ends only halfway across the screen on the bottom, again in the MIDDLE of the screen.

Now, the problem is that the current Macintosh LC and LC II video architecture is based on routines with the basic unit as one full line across. In order to do NTSC, the Macintosh LC II video architecture would have to understand half-lines.

The Macintosh Display Card 4*8 and 8*24 use a completely programmable timing logic, which can do NTSC timing quite easily. However, to implement this logic on the Macintosh LC II logic board would require 3 to 5 thousand more gates on video ASIC, which are just not available in the current package. Additional video circuitry would be required.

Published Date: Feb 18, 2012

Macintosh LC II: No Support for 16" or 21" Monitors (2/93)

Article Change History

02/26/93 - UPDATED
* To include information on products that provide larger monitor support.

Can the Macintosh LC II support the Apple Macintosh Portrait Display, Macintosh 16" Color Display, Apple 21-inch Two-Page Monochrome Monitor, or the Macintosh 21" Color Display?

This article has been archived and is no longer updated by Apple.
The Apple Macintosh Portrait Display, Macintosh 16" Color Display, Apple 21-inch Two-Page Monochrome Monitor, and the Macintosh 21" Color Display are not directly supported on the Macintosh LC II.

Like the Macintosh LC, Macintosh LC II supports four different resolutions:
- 512 x 384
- 640 x 480
- 560 x 384 (Apple II resolution)
- VGA

The Apple Macintosh Portrait Display resolution is 870 x 640.
The Macintosh 16" Color Display resolution is 832 x 624.
The resolution on the 21-inch displays is 1152 x 870.

The Macintosh LC II on-board video is the same as the LC. The Macintosh LC II supports 256 colors on the 12-inch, and 16 colors on the 13-inch monitor.

There are third-party products that can provide the Macintosh LC and LC II with the capability of driving the larger monitors. Two such companies are Lapis and Aura Systems. You can find more information on these companies by searching on their names in the Technical Information Library and in the Redgate Products Library.

Published Date: Feb 18, 2012

Macintosh LC II: Why No Two-Floppy Configuration

Why is a two floppy drive configuration not offered on Macintosh LC II?

This article has been archived and is no longer updated by Apple.
The second floppy drive was removed to save cost and space on the logic board. In addition, the two-floppy configuration is an undesirable System 7 platform.

Published Date: Feb 18, 2012

TA48278_Macintosh_LC_II_RAM_Expansion__(TIL09957).pdf

Macintosh LC II: RAM Expansion (7/93)

Article Change History

07/12/93 - REVISED
* To include Performa

When 4MB RAM resides on the logic board, how do I populate the two SIMM slots to get 10MB in the Macintosh LC II or Performa 400, 405, and 430?

This article has been archived and is no longer updated by Apple.
In the case of 4MB soldered on the printed circuit board (PCB), you need an 8MB RAM expansion kit to get 10MB. This configuration has 12MB of RAM present in the system. However, the Memory Map reserves only the first 10MB of address space for RAM. Therefore, the lower 2MB on the PCB can't be accessed when a 4MB base system is fully expanded. Even though, 32-bit addressing allows up to 1GB address space for RAM, there are only 24 address lines. Hence Macintosh LC II can see only 10MB of physical RAM.

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Macintosh Pascal 1.0: creating and accessing data files

This article has been archived and is no longer updated by Apple.
Open data files with the Reset, Rewrite and Open commands listed on pages 9-3 thru 9-5 of the Pascal Reference Manual. When accessing your data file, be sure to use a proper name. The correct format for "title" is "VolumeName: FileName", where VolumeName is the name of the diskette on which your file resides and FileName is the name of the file (see page 9-25).

If you do not know the name of the volume or file, use the OldFileName function to search for the file; alternatively, create a new file with NewFileName. OldFileName allows you to choose from a dialog box the existing files on any number of diskettes. The returned string value from these routines can then be used in a Reset, Rewrite, or Open command. Refer to page 9-26 for additional descriptions of these functions.

A possible area of confusion is with the variable-reference parameter in the Reset, Rewrite and Open commands, "f". This variable-reference is a reference to the file being accessed--for example, the command Open(TheFile, "Volume1:Inventory") opens the file "Inventory" on the diskette named "Volume1" and sets the variable-reference "TheFile" so that it refers to that particular file. Commands such as Get(TheFile), Put(TheFile) and Close (TheFile), all access this file.
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OneScanner for Windows: Using Its SCSI Card with Other Devices

The SCSI card bundled with Apple OneScanner for Windows can be used with other SCSI devices, such as a hard drive. Note: Apple does not support other SCSI configurations, cards, or devices.

To use the card with a SCSI device other than OneScanner, you need the driver software that is available from Adaptec, the card's manufacturer.

This article has been archived and is no longer updated by Apple.
Using the SCSI card for other devices can be tricky. Sometimes SCSI IDs must be set with a jumper on the card and the software must be reconfigured to use another address for the card.

Similarly, the scanner will theoretically operate with other SCSI cards or some built-in SCSI implementations, but different drivers will be required -- and Apple will not support other SCSI cards. (Note that this rules out all Microchannel-equipped IBM PS/2s as supported configurations.)

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OneScanner for Windows: Hardware Compatibility

Apple OneScanner for Windows has been confirmed compatible with many IBM PC models and with PC-compatible systems from other manufacturers.

This article has been archived and is no longer updated by Apple.

Compatible

It would be impossible to test OneScanner for Windows with every brand of Windows-compatible hardware. It should work on most of them. These are the ones we've tested to date:

- ALR PowerFlex 386sx
- ALR486
- AST 486
- Compaq 386/33
- Compaq 486 EISA
- Dell System 325
- Gateway 386/25
- HP Vectra 386/25c
- IBM PS/2 Model 40
- NEC PowerMate 386/25s

Not Compatible

OneScanner for Windows is incompatible with the built-in SCSI implementation found on the IBM PS/2 model 95.

OneScanner for Windows is incompatible with all current Northgate PCs.

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OneScanner for Windows: Performance Tip

Apple Support has found that some modifications to the default CONFIG.SYS file can significantly improve the performance of OneScanner for Windows on some machines.

This article has been archived and is no longer updated by Apple.

The default settings for FILES and BUFFERS are too low for optimum performance with Ofoto.

Here is a sample file:

```
FILES=40
BUFFERS=30
DEVICE=C:\\DOS\\HIMEM.SYS
DEVICE=C:\\DOS\\SETVER.EXE
rem DEVICE=C:\\DOS\\EMM386.EXE 6496
DEVICE=C:\\DOS\\SMARTDRV.SYS 4096 1024
DOS=HIGH

DEVICE=C:\\OFOTO\\ASPI2DOS.SYS /Z /U-
```

Article Change History:

23 May 1996 - Reviewed for technical accuracy.

Published Date: Feb 18, 2012

TA48283_Apple_IIGS_System_Software_and_HyperCard_IIGS__(TIL09966).pdf

Apple IIGS: System 6.0 Software and HyperCard IIGS 1.1

This article describes Apple IIGS System 6.0 software and an upgraded version of HyperCard IIGS.

This article has been archived and is no longer updated by Apple.
Apple IIGS System 6 software offers an enhanced user interface, greater speed and performance, and data exchange capabilities not available on previous Apple IIGS operating systems. HyperCard IIGS version 1.1 has been upgraded to include a Media Control stack for operating CD ROMs and videodisc players, and new HyperTalk scripting capabilities. As with original HyperCard IIGS, version 1.1 is also in color.

Apple IIGS System 6 provides similar ease-of-use and functionality now available with the System 7 Finder for the Macintosh.

Features and Benefits of Apple IIGS System 6

- Three New File System Translators
These provide easy access to Macintosh disks, Pascal disks, and Apple II DOS 3.3 disks

- Control Panel and Desk Accessory Enhancements
You can open control panels directly from the desktop. The software incorporates Find File and Calculator desk accessories.

- Finder Help
You can access Finder Help through pop-up menus and keep it on screen while stepping through procedures.

- Enhanced Window Handling and Window Appearance
It's easier to move between and manage multiple windows on a single screen.

- Two New Applications: Teach and Archiver
Teach is a desktop text processor that enables you to jot down notes, read disk files, and create formatted or unformatted text documents. Teach also provides file import capability from ASCII, AppleWorks version 3.0, AppleWorks GS, MacWrite version 5.0 formats, and AppleWriter. Archiver offers flexible hard disk backup functions to save and restore either individual files or entire volumes.

- Media Control Toolset
This is a new tool/driver/control panel/desk accessory combination that allows you to integrate, configure, and manage highly sophisticated multimedia effects. Use it in conjunction with HyperCard IIGS version 1.1 to optimize the toolset's performance.

- The Universal Access Suite
This suite (also available on Macintosh System 7 software) opens the Apple IIGS to disabled users via Video Keyboard, Easy Access, and Closeview programs.

- As with the System 5 series, Apple IIGS System 6 users can network their Apple IIGS computers with each other and with Apple IIe, Macintosh, and MS-DOS computers. However, System 6 improves networking functionality via EasyMount, a new feature that allows users to mount a network server with a simple double-click command.

- Apple IIGS System 6 replaces Apple IIGS System 5.0.4 for the stand-alone Apple IIGS, providing a consistent graphical interface and high performance for both the individual and networked user.

Speed and Feature Enhancements for HyperCard IIGS 1.1

- Media Control Stack
This allows control of external media devices such as laserdisc players and CD-ROM drives from within the stack. A common interface to two external devices provides control, using standard buttons or floating control panels for "Play," "Fast Fwd," and so on.

- Tune Builder Stack
This allows you to create short original tunes by simply clicking the mouse on the stack's music staff. You can play notes in variable time, and with the voices of a large collection of instruments. You can use these tunes as enhancements to other original stacks by cutting and pasting.

- Features from Macintosh HyperCard Versions 2.0 and 2.1
- HyperTalk extensions
- X Windows

- The Apple IIGS SuperDrive Controller Card
Available for the enhanced Apple IIe and Apple IIGS, this allows users to use Apple's SuperDrive, which permits the use of 1.4MB floppy disks. The SuperDrive card also operates all other Apple II 3.5 disk drives.

System Requirements

- Apple IIGS personal computer with at least 1MB of RAM, ROM version 01 or 03 and one 3.5-inch disk drive, although configurations of 2MB of RAM and a hard drive is recommended for optimal performance.

- Networked systems require Apple IIGS computers with at least 768K RAM, ROM version 01 or 03, and appropriate LocalTalk cables.

- HyperCard IIGS version 1.1 requires an Apple IIGS personal computer with 1.5MB RAM, one 800K disk drive and hard disk or connection to a networked environment, and system software 5.0.3 or subsequent version.

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Macintosh Pascal: Printing

This article has been archived and is no longer updated by Apple.
To print from your Pascal program, open the printer with the command Rewrite (f,"printer:"). The commands Write(ThePrinter,p1[p2,...,pn]) and WriteLn (ThePrinter,p1[p2,...,pn]) cause the values represented by p1, p2, etc., to be sent to the printer (See pages 9-16 thru 9-20 of the Macintosh Pascal Reference Manual.). Since Pascal considers every peripheral device to be an external file, a program never directly accesses a driver.

From within a program, printing sends data to the printer via the serial port selected in the Chooser. A Laserwriter in the Diablo 630 mode (NOT over AppleTalk) can print the text as can any printer that functions serially on the Macintosh. Simply send the appropriate ASCII "escape" sequences for the specific printer and then send the ASCII text.

To print the width of the 15" ImageWriter, the user should determine how many characters are sent before sending a CR/LF, which in turn determines the length of the line.

A good example would be the "PRINTTEXTFILE" sample included on the Pascal disk, which includes a technique for setting up the printer so that it skips page breaks.
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TA48285_Personal_LaserWriter_LS_Software_Upgrade_(TIL09970).pdf

Personal LaserWriter LS: Software Upgrade

This article describes a software upgrade for the Personal LaserWriter LS.

This article has been archived and is no longer updated by Apple.
The software upgrade for the Personal LaserWriter LS includes seven new font families and improved installation software. The new fonts are: ITC Avant Garde, ITC Bookman, New Century Schoolbook, Helvetica Narrow, Palatino, ITC Zapf Chancery, and ITC Zapf Dingbats. The new font set is fully compatible with System 7, and with virtually all software applications.

Apple has also improved the installation of fonts, driver, and printer software with a new installer. This new installer enables users to install or remove fonts, and add new printer software by clicking a button.

Published Date: Feb 18, 2012

MacTCP 1.1: Communicating with SGI Indigo UNIX Computer

I'm having problems communicating with an SGI Indigo UNIX computer using a Macintosh with MacTCP 1.1

Here's the scenario:

I'm connected to an Ethernet network with two Indigo boxes. We've isolated this segment; only our three computers are on it.

- Indigo #1 - 192.100.2.2
- Indigo #2 - 192.100.2.4
- Mac IIfx - 192.100.2.43 (MacTCP, version 1.1)

The Indigos "ping" each other successfully.

I boot a computer with system 7.0.1, but I don't respond to an Indigo's attempt to "ping" me.

I use Etherpeek on the same Macintosh IIfx, and I see their "ping" request packets on the network (even the one addressed to me). Etherpeek gets information, and confirms that I have configured the proper MacTCP address.

I open MacTCP SPY, and I suddenly begin to respond to the "pings." I can then use VersaTerm Pro with the Telnet Comm Tool drivers to log on to the Indigo with no problems. By the way, I continue to respond to the "ping," even when I close MacTCP SPY.

Rebooting with System 6.0.7 on the hard drive, I still don't respond to a "ping," even when I use MacTCP SPY to "kick start."

In short, I need to enable the 6.0.7 Macintosh IIfx to communicate, preferably without a MacTCP Spy "kick start." If the solution is to upgrade to System 7, then I need to have this same capability on this platform as well.

This article has been archived and is no longer updated by Apple.
The actions you describe are exactly the way MacTCP was designed to operate. The driver isn't loaded until the first TCP/IP application is launched. This is true for both 6.0.7 and 7.0, or we should say MacTCP 1.0 and 1.1.

You shouldn't have to kick-start MacTCP unless you want it to respond to ICMP messages before you run a MacTCP application. If this is the functionality you desire, just set MacTCP Spy as a startup application. This will work under both System 6.x and System 7.x.

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AppleTalk: DDP Encapsulated in IP (IP Tunneling)

Is there any way to encapsulate an AppleTalk packet (DDP) into an IP packet to send over an IP protocol only network?
This article has been archived and is no longer updated by Apple.
What you describe is known as IP tunneling, where a gateway/router connected to both an AppleTalk network and an IP network wraps a DDP packet inside a UDP packet. It then transmits that packet across the IP network to another gateway/router that is capable of de-encapsulating the packet.

The IP Extension to the Apple Internet Rounter (AIR) does just that. When talking to another AIR running the IP Extension, you can tunnel AppleTalk through an IP network, including the Internet.
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AMP Thinnet and FriendlyNet

I have AMP's Thinnet tap system for Thinwire Ethernet. AMP uses a special vampire-style plug in the wall and a cable running to the user's workstation that plugs into the coax port on the interface card.

We had a problem with FriendlyNet. Since we have two ends, we either get too many terminations on the network (two existing plus one automatic from the transceiver), or reflections (if we open one end up by using a barrel connector). Neither case led to a healthy network.

This article has been archived and is no longer updated by Apple.

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You need to use a 222814-1 Test Cable Assembly.  This device provides two
coax cables that plug into either side of the FriendlyNet transceiver.  AMP
is 802.3 compliant (the run from the faceplate to the user contains both
"ends" of the network).
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AppleTalk Phase 2: OUI in Ethernet to FDDI Bridges

I have a question about the bridging problem with AppleTalk Phase 2 and FDDI. I found some information that says the IEEE 802.1 committee is currently formalizing the use of OUI in Ethernet to FDDI bridges that will define what to do if a bridge encounters SNAP headers with OUI=0. What is the status of this?

This article has been archived and is no longer updated by Apple.
The IEEE 802.1 committee has adopted the proposal which we, in conjunction with DEC, brought before them to resolve the conflict in using OUI 0. The 802.1 committee has moved the 802.1h specification to the "recommended practice" status which is just short of being a fully adopted and ratified standard.

The 802.1h specification defines how an Ethernet to FDDI translational bridge should operate in the presence of packets that use OUI 0. This is basically a simple filter mechanism which is implemented in the bridge that checks the packets OUI:

- If it's 0, it then checks to see if the packet type is AppleTalk.

- If it's an AppleTalk packet, then it doesn't do any translation.

The key here is to make sure that any potential FDDI bridge vendors have implemented the 802.1h specification.

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TA48293_Macintosh_Pascal_Accessing_the_Toolbox_(TIL00998).pdf

Macintosh Pascal: Accessing the Toolbox

This article has been archived and is no longer updated by Apple.
Apple does not support any Toolbox routine that is not a built-in Macintosh Pascal function or procedure documented in either the Reference Manual or the Technical Appendix. We can only refer you to the Inside Macintosh documentation. A brief description of "Inline", a routine which enables you to access the Toolbox, may be found on the Macintosh Pascal diskette in the text file named "InLines". Note: careless or erroneous use of the "InLine" facility can be fatal to your diskettes or data.
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AAUI: Pinout Equivalents to AUI

What are the pinout equivalents of the AAUI (Apple Attachment Unit Interface) to the standard AUI (Attachment Unit Interface)?

What pin connections are needed for a cable to connect an Apple AAUI to DB15 connector (vampire clip) coming off of a thicknet cable?

What is the maximum length for this cable?
This article has been archived and is no longer updated by Apple.
Here are the pinouts for the AUI interface per 802.3 and the matching AAUI pin number:

1 - Shield (Control In shield)
-- Not mandatory and not implemented on AAUI

2 - Collision Presence (+) (Control In circuit A)
-- AAUI pin 5

3 - Transmit (+) (Data Out circuit A)
-- AAUI pin 9

4 - Reserved (Data In shield)
-- AAUI Shell

5 - Receive (+) (Data In circuit A)
-- AAUI pin 2

6 - Power Return (Voltage Common)
-- AAUI pin 4

7 - Reserved (Control Out circuit A)
-- Not mandatory and not implemented on AAUI

8 - Reserved (Control Out shield)
-- AAUI Shell

9 - Collision Presence (-) (Control In circuit B)
-- AAUI pin 6

10 - Transmit (-) (Data Out circuit B)
-- AAUI pin 10

11 - Reserved (Data Out shield)
-- AAUI Shell

12 - Receive (-) (Data In circuit B)
-- AAUI pin 3

13 - Power (Voltage Plus)
-- AAUI pin 1

14 - Reserved (Voltage shield)
-- AAUI Shell

15 - Reserved (Control Out circuit B)
-- Not mandatory and not implemented on AAUI

You can use the same specifications as apply to the AUI cable to compute the maximum length of the AAUI cable when used to interface to a 10BASE-5 network. Hence the AAUI cable could be up to 50 meters long. When attaching to other 802.3 compliant networks, the length of the AAUI cable has different characteristics. When used to attach to a 10BASE-2 network the AAUI cable length should be limited to 1.33 meters.

The biggest problem you're going to face in putting this type of cable together is that all Macintosh computers don't have +12 volts available to drive the AUI transceiver. The transceiver needs an external power supply.

10BASE-2 AAUI Notes
FriendlyNet can support a maximum of 40 nodes per network segment. This is more than the maximum of 30 nodes described in the 10BASE2

specification. This is achieved through use of more stringent design specifications for both the MAU and the Apple Coaxial cables, and by using a fixed, short cable connecting host to drop box. (This doesn't preclude the use of standard RG-58 C/U cables, but reduces the recommended node count to 30.)

General AAUI Interface Notes

Except for the pins that supply power, each AAUI signal has the same description, function, and electrical requirements as the AUI signal of the same name. This is detailed in IEEE Standard 802.3-1988 CSMA/CD, paragraph 7.6.3, P. 105.

To allow connection of Apple AAUI-equipped hosts to standard 802.3 MAUs, possibly accessing different media, an AAUI to AUI converter shall be provided. Because all Apple equipment isn't capable of supplying the +12 VDC @ 500 mA necessary to power a standard AUI as specified in the IEEE 802.3 standard, the converter requires external power.

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A/UX 3.0: Requires MultiFinder to Run Macintosh Applications

Is it possible (and supported) to run individual Macintosh Toolbox off-the-shelf applications under A/UX 3.0 WITHOUT launching 7.0 MultiFinder? In other words, will A/UX 3.0 support A/UX 1.1 functionality, allowing me to launch individual applications from the command line, and return to the command line after I quit each application?

This article has been archived and is no longer updated by Apple.
A/UX 3.0 doesn't allow Macintosh applications to run without MultiFinder.
System 7 relies on the existence of MultiFinder.

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A/UX 3.0: Booting to a Known Good Kernel

Using A/UX 3.0, when I run newconfig or autoconfig, the kernel becomes unusable, and I have to reinstall. On other UNIX platforms, it's relatively painless to boot to a known good kernel, and then reconfigure the kernel. Is this possible on the Macintosh?

This article has been archived and is no longer updated by Apple.
The 3.0 newconfig is essentially the same as 2.0. The way to boot to a known good kernel is to "launch /newunix" from A/UX Startup. Then try /etc/newconfig.

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A/UX 3.0: Mac Apps Don‘t Need Recompile; A/UX Hybrids Do (9/94)

Has anything changed between A/UX 2.0.1 and A/UX 3.0 that would require users or developers to recompile their UNIX applications to get them to run?

This article has been archived and is no longer updated by Apple.
You don't need to recompile Macintosh applications.

You do need to recompile A/UX Hybrids.

Straight UNIX applications SHOULDN'T need recompiling if they're using shared libraries. The only changes to the kernel are for NFS.

Article Change History:
22 Sep 1994 - Reviewed.

Support Information Services
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TA48298_AUX_and_System_TuneUp__(TIL09984).pdf

A/UX 3.0 and System 7 Tune-Up (9/94)

Will the System 7 Tune-up work under A/UX 3.0?

This article has been archived and is no longer updated by Apple.
System 7 Tune-up 1.0 is pre-installed on A/UX 3.0, but the files are modified from the Macintosh operating system versions. Tune-up 1.1.1 should not be installed because it is not needed. Don't replace A/UX System 7 Tune-up items with the Macintosh OS versions. However, you may install the new LaserWriter driver, if desired.

Article Change History:
14 Sep 1994 - Added information about Tune-up 1.1.1.

Support Information Services
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TA48299_AUX_ISO_CDs_(TIL09985).pdf

A/UX 3.0: ISO 9660 CDs

Will ISO 9660 CDs with UNIX file systems operate under A/UX 3.0?

This article has been archived and is no longer updated by Apple.
ISO 9660 CDs aren't directly accessible through the UNIX file system under A/UX 3.0. They're mountable through the Finder as under the Macintosh OS, but they aren't accessible from the UNIX command line.

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PowerBook Fax Sender 1.1.2 or Later: Fixes Page Length

When I send a fax from my PowerBook, the pages print out at the receiving fax machine with an extra 1/2 inch of white space at the top and bottom. The pages tear off in a non-standard size.

This article has been archived and is no longer updated by Apple.

The issue you refer to is a known issue with early Fax Sender versions. You should upgrade to Fax Sender 1.1.2 or later to correct this. Fax Sender 1.1.2 is installed from the Express Modem 1.0.4 disk and is backward compatible with the PowerBook Fax/Data Modem.

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PowerBook: Fax Monitor Status Prevents Sleep

When Fax Monitor Status is the foreground application, the PowerBook won't go to sleep, even if the status is idle.
This article has been archived and is no longer updated by Apple.
This has been corrected so that the PowerBook will enter sleep mode if the Fax Monitor status is Idle. If, however, it is waiting for a call, the PowerBook will not go into sleep mode.
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Macintosh Pascal: Memory Use by Programs

This article has been archived and is no longer updated by Apple.
About 35K of memory is available not only for your program text, but for program variables, the program's pseudo-code representation, debugging information and libraries. The majority of your Macintosh memory is used to keep as much of Macintosh Pascal resident in RAM as possible in order to minimize disk I/O. On a 512K Macintosh or Lisa, only 64K is available, due to pointer size limitations.

Version 2.0 of Macintosh Pascal lets you write larger programs, depending on the contents of the program, of approximately 750 lines on a 128K Macintosh and 2,000 on a 512K Macintosh.

Inside Macintosh provides a brief introduction to memory management in the Macintosh in the chapter "Macintosh Memory Management: An Introduction". Macintosh Pascal uses the Macintosh memory in a slightly different way.

The 2.0 version of Macintosh Pascal includes new predefined procedures for manipulating relocatable objects. (A relocatable object is an object that can be moved within memory and is referred to indirectly by means of a handle.) Anyone using these procedures needs to have a basic understanding of how Macintosh Pascal uses memory.

Macintosh Pascal uses two main run-time data structures: the machine stack and the general stack. The machine stack grows downward from high memory. From the bottom of the application heap just above the master pointer area, the general stack grows upward. The second stack is actually a pointer object that has a base fixed throughout a Macintosh Pascal session. When either the interpreter or the user interface is running, its code segments are moved to the top of the application heap and locked. Thus, programmers who cause objects to be allocated in the heap must be very careful not to cause the objects to be locked down just above the general stack. This will almost always cause the interpreter to run out of memory and exit to the Finder. Similarly, objects should not be allowed to be locked down just below the code segments that are locked high.
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DAL 1.3.5: AsyncCTB (X.25) Only for VAX or A/UX DAL Servers

A DAL 1.3.5 document indicated that X.25 support is available for DAL to VTAM and TSO servers. Is this true?
This article has been archived and is no longer updated by Apple.
The AsyncCTB (X.25) network adapter will only go to VAX or A/UX DAL servers.

The only "async-type" input that IBM mainframe servers accept is dial-in to a Protocol Converter that supports VT100 terminal-type access.
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Older Apple software downloads

This article has been archived and is no longer updated by Apple.

Apple no longer distributes the following software or documentation:

Apple_IIGS_System_6.0.1/Apple_IIGS_6.0.1_Info.txt
Apple_IIGS_System_6.0.1/Disk_1_of_7-Install.sea.bin
Apple_II/Apple_IIGS_System_6.0.1/Disk_2_of_7-System.Disk.sea.bin
Apple_IIGS_System_6.0.1/Disk_3_of_7-SystemTools1.sea.bin
Apple_IIGS_System_6.0.1/Disk_4_of_7-SystemTools2.sea.bin
Apple_IIGS_System_6.0.1/Disk_5_of_7-Fonts.sea.bin
Apple_IIGS_System_6.0.1/Disk_6_of_7-synthLAB.sea.bin
Apple_IIGS_System_6.0.1/Disk_7_of_7-Apple_II_Setup.sea.bin
Apple_II_Supplemental/Apple_IIGS_CD_Setup_5.1.sea.bin
Apple_II_Supplemental/Apple_IIGS_CD_Setup_5.1_Info.txt
Apple_II_Supplemental/Apple_II_SCSI_Utilities.sea.bin
Apple_II_Supplemental/Apple_II_SCSI_Utilities_Info.txt
Apple_II_Supplemental/Apple_II_System_Disk_3.2.sea.bin
Apple_II_Supplemental/Apple_II_System_Disk_3.2_Info.txt
Apple_II_Supplemental/Apple_II_Video_Overlay_Card.sea.bin
Apple_II_Supplemental/Apple_II_Video_Overlay_Info.txt
Apple_II_Supplemental/ShrinkIt1.1.SEA.bin
Apple_II_Supplemental/ShrinkIt1.1_Info.txt
For_Macintosh/Apple_IIe_Card_2.2.1.sea.bin
Apple_II/For_Macintosh/Apple_IIe_Card_2.2.1_Info.txt
Apple_II/For_Macintosh/IIe_Startup_2.2.2d1.sea.bin
Apple_II/For_Macintosh/IIe_Startup_2.2.2d1_Info.txt
Apple_II/HyperCard_IIGS_1.1/HCIIGS_1.1-1of6.sea.bin
Apple_II/HyperCard_IIGS_1.1/HCIIGS_1.1-2of6.sea.bin
Apple_II/HyperCard_IIGS_1.1/HCIIGS_1.1-3of6.sea.bin
Apple_II/HyperCard_IIGS_1.1/HCIIGS_1.1-4of6.sea.bin
Apple_II/HyperCard_IIGS_1.1/HCIIGS_1.1-5of6.sea.bin
Apple_II/HyperCard_IIGS_1.1/HCIIGS_1.1-6of6.sea.bin
Apple_II/HyperCard_IIGS_1.1/HCIIGS_1.1.txt
Apple_II/HyperCard_IIGS_1.1/HyperMover.sea.bin
Apple_II/HyperCard_IIGS_1.1/HyperMover_Info.txt

DOS-Windows Software Downloads

DOS-Windows/Application_Updates/ClarisDraw/cdraw1v3.exe
DOS-Windows/Application_Updates/ClarisDraw/cdraw1v3.txt
DOS-Windows/Application_Updates/ClarisImpact/CIUP202.EXE
DOS-Windows/Application_Updates/ClarisImpact/CIUP202.TXT
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_3.x/clw30v2.txt
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_3.x/clw30v2.zip
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_4.x/cwup40v2.exe
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_4.x/cwup40v2.txt
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_4.x/cwup40v3.exe
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_4.x/cwup40v3.txt
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_5/AW503Updater.zip
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_5/AW503Updater_Info.txt
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_5/CWv2update.exe
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_5/CWv2update_Info.txt
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_File_Converter/cwcnvtr.exe
DOS-Windows/Application_Updates/ClarisWorks/ClarisWorks_File_Converter/cwcnvtr.txt
DOS-Windows/DOS_and_PC_Compatibility_SW/APPLEVDO.TXT
DOS-Windows/DOS_and_PC_Compatibility_SW/DOS_Compatibility_1.5.sea.bin
DOS-Windows/DOS_and_PC_Compatibility_SW/DOS_Compatibility_1.5.txt
DOS-Windows/DOS_and_PC_Compatibility_SW/PC_Compatibility_1.6.4-1of2.img.bin
DOS-Windows/DOS_and_PC_Compatibility_SW/PC_Compatibility_1.6.4-2of2.img.bin
DOS-Windows/DOS_and_PC_Compatibility_SW/PC_Compatibility_1.6.4_Info.txt
DOS-Windows/DOS_and_PC_Compatibility_SW/PC_Setup_1.0.2.sea.bin
DOS-Windows/DOS_and_PC_Compatibility_SW/PC_Setup_1.0.2.txt

DOS-Windows/Printing/LaserWriter_for_Windows_3.1/LW31_v31.ZIP
DOS-Windows/Printing/LaserWriter_for_Windows_3.1/LW_Win_3.1_v3.1-1of2.img.bin
DOS-Windows/Printing/LaserWriter_for_Windows_3.1/LW_Win_3.1_v3.1-2of2.img.bin
DOS-Windows/Printing/LaserWriter_for_Windows_3.1/LW_Win_3.1_v3.1_Info.txt
DOS-Windows/Printing/LaserWriter_for_Windows_95/LW95_422.ZIP
DOS-Windows/Printing/LaserWriter_for_Windows_95/LW_Win_95_4.2.2-1of3.img.bin
DOS-Windows/Printing/LaserWriter_for_Windows_95/LW_Win_95_4.2.2-2of3.img.bin
DOS-Windows/Printing/LaserWriter_for_Windows_95/LW_Win_95_4.2.2-3of3.img.bin
DOS-Windows/Printing/LaserWriter_for_Windows_95/LW_Win_95_4.2.2_Info.txt
DOS-Windows/Printing/LaserWriter_for_Windows_NT/LWNT_10.ZIP
DOS-Windows/Printing/LaserWriter_for_Windows_NT/LW_Win_NT_1.0-1of3.img.bin
DOS-Windows/Printing/LaserWriter_for_Windows_NT/LW_Win_NT_1.0-2of3.img.bin
DOS-Windows/Printing/LaserWriter_for_Windows_NT/LW_Win_NT_1.0-3of3.img.bin
DOS-Windows/Printing/LaserWriter_for_Windows_NT/LW_Win_NT_1.0_Info.txt
DOS-Windows/Printing/Older_Printers/LWPR0810.txt
DOS-Windows/Printing/Older_Printers/LWPR0810.zip
DOS-Windows/Printing/Older_Printers/LWSEL310.txt
DOS-Windows/Printing/Older_Printers/LWSEL310.zip
DOS-Windows/Printing/Older_Printers/LWSW102.txt
DOS-Windows/Printing/Older_Printers/LWSW102.zip
DOS-Windows/Printing/Older_Printers/LW_Pro_810_For_Windows.sea.bin
DOS-Windows/Printing/Older_Printers/LW_Pro_810_For_Windows.txt
DOS-Windows/Printing/Older_Printers/LW_SW_For_Win_1.0.2.sea.bin
DOS-Windows/Printing/Older_Printers/LW_SW_for_Win_1.0.2.ReadMe.txt
DOS-Windows/Printing/Older_Printers/LW_Select_310_For_Win.sea.bin
DOS-Windows/Printing/Older_Printers/LW_Select_310_For_Win.txt
DOS-Windows/Printing/Older_Printers/PLWNTR.txt
DOS-Windows/Printing/Older_Printers/PLWNTR.zip
DOS-Windows/Printing/Older_Printers/PLW_NTR_For_Windows.sea.bin
DOS-Windows/Printing/Older_Printers/PLW_NTR_For_Windows.txt
DOS-Windows/Printing/PANTONE_for_Color_LW.exe
DOS-Windows/Printing/PANTONE_for_Color_LW.sea.bin
DOS-Windows/Printing/PANTONE_for_Color_LW.txt
DOS-Windows/QuickDraw_3D/QD3D153.TXT
DOS-Windows/QuickDraw_3D/QD3D153.ZIP
DOS-Windows/QuickTime/IndeoVideo5.zip
DOS-Windows/QuickTime/QT412Patch.exe

Claris Applications

Macintosh/Application_Updates/ClarisDraw/ClarisDraw1.0v4_Upd_Info.txt
Macintosh/Application_Updates/ClarisDraw/ClarisDraw1.0v4_Update.img.bin
Macintosh/Application_Updates/ClarisDraw/Convert2DOS.smi.bin
Macintosh/Application_Updates/ClarisDraw/Convert2DOS_Info.txt
Macintosh/Application_Updates/ClarisImpact/ClarisImpact_1.0v4/ClarisImpact_1.0v4_Upd.sea.bin
Macintosh/Application_Updates/ClarisImpact/ClarisImpact_1.0v4/ClarisImpact_1.0v4_Upd.txt
Macintosh/Application_Updates/ClarisImpact/ClarisImpact_2.0v3/ClarisImpact_2.0v3_Info.txt
Macintosh/Application_Updates/ClarisImpact/ClarisImpact_2.0v3/ClarisImpact_2.0v3_Updater.img.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_1.0v4/ClarisWorks1.0v4..txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_1.0v4/ClarisWorks1.0v4.sea.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_2.x/CW2.0-2.1v4_Updater.sea.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_2.x/CW2.0-2.1v4_Updater.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_2.x/CW2.1-2_1v4_Updater.sea.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_2.x/CW2.1-2_1v4_Updater.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_4.x/CW4.0v2Converter.sea.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_4.x/CW4.0v2Converter.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_4.x/ClarisWorks4.0v5-Edu.img.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_4.x/ClarisWorks4.0v5-Edu.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_4.x/ClarisWorks4.0v6.img.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_4.x/ClarisWorks4.0v6.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_4.x/ClarisWorks_4.0v5.img.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_4.x/ClarisWorks_4.0v5.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_5/AppleWorks_5.0.3_Updt.smi.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_5/AppleWorks_5.0.3_Updt_Info.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_5/ClarisWorks_5.0-3of9.img.bin

Macintosh/Application_Updates/ClarisWorks/ClarisWorks_5/ClarisWorks_5.0-3of9.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_5/ClarisWorks_5.0v2_Updater.smi.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_5/ClarisWorks_5.0v2_Updater_Info.txt
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_5/Text_Preview_1.0.img.bin
Macintosh/Application_Updates/ClarisWorks/ClarisWorks_5/Text_Preview_1.0_Info.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_1.x/ClarisEmailer1.1v2Updater.sea.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_1.x/ClarisEmailer1.1v2Updater_Info.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_1.x/ClarisEmailer1.1v3.img.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_1.x/ClarisEmailer1.1v3_Info.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_1.x/Clarisemailerxtnd.sit.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_1.x/EmailerXTND_Info.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_2.x/AOL3_0Addressextractor.sea.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_2.x/AOL3_0Addressextractor_Info.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_2.x/Emailer2.0Gettingstart_Info.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_2.x/Emailer2.0Gettingstartd.sea.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_2.x/Emailer2.0to2.0v2.sea.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_2.x/Emailer2.0to2.0v2__Info.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_2.x/Emailer_2.0_Users_Guide.sea.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_2.x/Emailer_2.0_Users_Guide_Info.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_Lite/ClarisEmailerLite1.1v3.img.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_Lite/ClarisEmailerLite1.1v3.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_Lite/ClarisEmailerLite1.1v3tov4.img.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_Lite/ClarisEmailerLite1.1v3tov4.txt
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_Lite/ClarisEmailerLite1.1v4.img.bin
Macintosh/Application_Updates/Claris_Emailer/Claris_Emailer_Lite/ClarisEmailerLite1.1v4.txt
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_1.x/COrgholidays-1996to2000.sea.bin
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_1.x/COrgholidays-1996to2000.txt
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_1.x/Claris_Organizer_68K/COrganizer_1.0v1-_v3.sea.bin
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_1.x/Claris_Organizer_68K/Updater_Instructions_1.0v1-_v3.txt
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_1.x/Claris_Organizer_68K/Updater_Instructions_1.0v2-_v3.txt
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_1.x/Claris_Organizer_PPC/COrganizerPPC_1.0v2-_v3.sea.bin
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_1.x/Claris_Organizer_PPC/Updater_Instru._PPC_1.0v2-_v3.txt
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_2.x/COrgWinterHolidayDecor.sea.bin
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_2.x/COrgWinterHolidayDecor.txt
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_2.x/COrganizer2.0v2.sea.bin
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_2.x/COrganizer2.0v2.txt
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_2.x/COrgholidays-MartinL.King.sea.bin
Macintosh/Application_Updates/Claris_Organizer/Claris_Organizer_2.x/COrgholidays-MartinL.King.txt

Display and Peripheral Software Downloads

Macintosh/Display-Peripheral/Apple_Displays/AppleVision_1.6.1.smi.bin
Macintosh/Display-Peripheral/Apple_Displays/AppleVision_1.6.1_Info.txt
Macintosh/Display-Peripheral/Apple_Displays/Apple_Displays_1.5.5-1of2.img.bin
Macintosh/Display-Peripheral/Apple_Displays/Apple_Displays_1.5.5-2of2.img.bin
Macintosh/Display-Peripheral/Apple_Displays/Apple_Displays_1.5.5_Info.txt
Macintosh/Display-Peripheral/Apple_Displays/Apple_Displays_1.6.img.bin
Macintosh/Display-Peripheral/Apple_Displays/Apple_Displays_1.6_Info.txt
Macintosh/Display-Peripheral/Apple_Displays/Apple_Displays_1.7.1.smi.bin
Macintosh/Display-Peripheral/Apple_Displays/Apple_Displays_1.7.1_Info.txt
Macintosh/Display-Peripheral/Apple_Displays/Theater_Mode_Update.smi.bin
Macintosh/Display-Peripheral/Avid_Cinema/Avid_Cinema_1.1.5_Update.sea.bin
Macintosh/Display-Peripheral/Avid_Cinema/Avid_Cinema_1.1.5_Update_Info.txt
Macintosh/Display-Peripheral/Avid_Cinema/Avid_Cinema_1.1_Upd-NetInst.sea.bin
Macintosh/Display-Peripheral/Avid_Cinema/Avid_Cinema_1.1_Update-1of3.sea.bin
Macintosh/Display-Peripheral/Avid_Cinema/Avid_Cinema_1.1_Update-2of3.sea.bin
Macintosh/Display-Peripheral/Avid_Cinema/Avid_Cinema_1.1_Update-3of3.sea.bin
Macintosh/Display-Peripheral/Avid_Cinema/Avid_Cinema_1.1_Update_Info.txt
Macintosh/Display-Peripheral/CD-ROM/Apple_CD-ROM_5.0.4.sea.bin
Macintosh/Display-Peripheral/CD-ROM/Apple_CD-ROM_5.0.4.txt
Macintosh/Display-Peripheral/CD-ROM/Apple_CD-ROM_5.4.img.bin
Macintosh/Display-Peripheral/CD-ROM/Apple_CD-ROM_5.4_Info.txt
Macintosh/Display-Peripheral/CD-ROM/PowerCD_Setup_1.0.1.sea.bin
Macintosh/Display-Peripheral/CD-ROM/PowerCD_Setup_1.0.1.txt
Macintosh/Display-Peripheral/CD-ROM/iTunes.txt

Macintosh/Display-Peripheral/CD-ROM/iTunes1.1.txt
Macintosh/Display-Peripheral/Older_Displays/8-24_GC_Software.sea.bin
Macintosh/Display-Peripheral/Older_Displays/8-24_GC_Software.txt
Macintosh/Display-Peripheral/Older_Displays/AppleVision_1.0.2.img.bin
Macintosh/Display-Peripheral/Older_Displays/AppleVision_1.0.2_Info.txt
Macintosh/Display-Peripheral/Older_Displays/AppleVision_1.5.3-1of3.img.bin
Macintosh/Display-Peripheral/Older_Displays/AppleVision_1.5.3-2of3.img.bin
Macintosh/Display-Peripheral/Older_Displays/AppleVision_1.5.3-3of3.img.bin
Macintosh/Display-Peripheral/Older_Displays/AppleVision_1.5.3_Info.txt
Macintosh/Display-Peripheral/Older_Displays/AppleVision_Fix_1.1_Info.txt
Macintosh/Display-Peripheral/Older_Displays/Basic_Color_Monitor_1.0.sea.bin
Macintosh/Display-Peripheral/Older_Displays/Basic_Color_Monitor_1.0.txt
Macintosh/Display-Peripheral/Older_Displays/Display_Card_24AC_1.2.sea.bin
Macintosh/Display-Peripheral/Older_Displays/Display_Card_24AC_1.2.txt
Macintosh/Display-Peripheral/Older_Displays/Display_Software_2.0.2.sea.bin
Macintosh/Display-Peripheral/Older_Displays/Display_Software_2.0.2.txt
Macintosh/Display-Peripheral/Older_Displays/Monitor_Energy_Saver_1.1.sea.bin
Macintosh/Display-Peripheral/Older_Displays/Monitor_Energy_Saver_1.1.txt
Macintosh/Display-Peripheral/QuickTake/PhotoFlash_2.0_to_2.0.1.sea.bin
Macintosh/Display-Peripheral/QuickTake/PhotoFlash_2.0_to_2.0.1.txt
Macintosh/Display-Peripheral/QuickTake/QuickTake_for_Power_Mac_1.0.sea.bin
Macintosh/Display-Peripheral/QuickTake/QuickTake_for_Power_Mac_1.0.txt
Macintosh/Display-Peripheral/Scanner/About_This_Software.txt
Macintosh/Display-Peripheral/Scanner/AppleScan_1.0.2.sea.bin
Macintosh/Display-Peripheral/Scanner/AppleScan_1.0.2_Info.txt
Macintosh/Display-Peripheral/Scanner/Dispatcher-Ofoto_Drvr_4.2.sea.bin
Macintosh/Display-Peripheral/Scanner/Dispatcher-Ofoto_Drvr_4.2_Info.txt
Macintosh/Display-Peripheral/Scanner/HyperScan_2.0.1.sea.bin
Macintosh/Display-Peripheral/Scanner/HyperScan_2.0.1_Info.txt
Macintosh/Display-Peripheral/Scanner/Scanner_2.0.sea.bin
Macintosh/Display-Peripheral/Scanner/Scanner_2.0_Info.txt
Macintosh/Display-Peripheral/Scanner/Scanner_3.0.sea.bin
Macintosh/Display-Peripheral/Scanner/Scanner_3.0_Info.txt
Macintosh/Display-Peripheral/Scanner/Scanner_4.3.smi.bin
Macintosh/Display-Peripheral/Video/Apple_Video_Player_1.7.2.smi.bin
Macintosh/Display-Peripheral/Video/Apple_Video_Player_1.7.2_Info.txt
Macintosh/Display-Peripheral/Video/DVD-ROM_Firmware.smi.bin
Macintosh/Display-Peripheral/Video/GeForce2_MX.smi.bin
Macintosh/Display-Peripheral/Video/GeForceGraphics2.1.1.smi.bin
Macintosh/Display-Peripheral/Video/Multimedia_Update_1.0.smi.bin
Macintosh/Display-Peripheral/Video/Video_SW_Install_1.5.1-1of2.sea.bin
Macintosh/Display-Peripheral/Video/Video_SW_Install_1.5.1-2of2.sea.bin
Macintosh/Display-Peripheral/Video/Video_SW_Install_1.5.1.txt

Misc Macintosh Software Downloads

Macintosh/Misc/2400-3400_Graphics_Update.img.bin
Macintosh/Misc/2400-3400_Graphics_Update_Info.txt
Macintosh/Misc/AS_Custom_Settings_1.0.sea.bin
Macintosh/Misc/AS_Custom_Settings_1.0.txt
Macintosh/Misc/About_Miscellaneous_Software.txt
Macintosh/Misc/AppleScript/Drive_Locations.bin
Macintosh/Misc/AppleScript/Drive_Locations.txt
Macintosh/Misc/AppleScript/Install_DVD_SW.TXT
Macintosh/Misc/AppleScript/Install_DVD_SW.bin
Macintosh/Misc/AppleScript/Remove_Temp_Items.TXT
Macintosh/Misc/AppleScript/Remove_Temp_Items.bin
Macintosh/Misc/AppleShare_Client_Setup.smi.bin
Macintosh/Misc/AppleShare_Client_Setup_Info.txt
Macintosh/Misc/Apple_LAN_Utility_1.0b4.sea.bin
Macintosh/Misc/Apple_LAN_Utility_1.0b4.txt
Macintosh/Misc/Assistant_Toolbox_1.0.1d1.sea.bin
Macintosh/Misc/Assistant_Toolbox_1.0.1d1.txt
Macintosh/Misc/DOS_Format_Fixer_1.0.smi.bin
Macintosh/Misc/DOS_Format_Fixer_1.0_Info.txt

TA48312_Older_Apple_software_downloads.pdf

Macintosh/Misc/Emailer_2.0v3_Update/Emailer_2.0v3_Docs.smi.bin
Macintosh/Misc/Emailer_2.0v3_Update/Emailer_2.0v3_Docs_Info.txt
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Macintosh/Misc/Emailer_2.0v3_Update/Emailer_2.0v3_Update.smi.bin
Macintosh/Misc/Emailer_2.0v3_Update/Emailer_2.0v3_Update_Info.txt
Macintosh/Misc/GameSprockets_1.5.smi.bin
Macintosh/Misc/GameSprockets_1.5_Info.txt
Macintosh/Misc/Graphics_Accelerator_1.0.7.sea.bin
Macintosh/Misc/Graphics_Accelerator_1.0.7.txt
Macintosh/Misc/Ignore_Dialtone_1.0fc1.sea.bin
Macintosh/Misc/Ignore_Dialtone_1.0fc1.txt
Macintosh/Misc/MIDI_Management_Tools_2.0.2.sea.bin
Macintosh/Misc/MIDI_Management_Tools_2.0.2.txt
Macintosh/Misc/MacTCP_Ping_2.0.2.sea.bin
Macintosh/Misc/MacTCP_Ping_2.0.2.txt
Macintosh/Misc/MacintoshMgrSecurityBypass.smi.bin
Macintosh/Misc/Mercury_ATandT_GW_1.0C.sea.bin
Macintosh/Misc/Mercury_ATandT_GW_1.0C.txt
Macintosh/Misc/Mercury_Envoy_GW_1.0C.txt
Macintosh/Misc/Mercury_MCI_Mail_GW_1.0C.sea.bin
Macintosh/Misc/Mercury_MCI_Mail_GW_1.0C.txt
Macintosh/Misc/Modem_Script_Generator1.0a1.sea.bin
Macintosh/Misc/Modem_Script_Generator_1.0a1.txt
Macintosh/Misc/MovieShop_1.2.1.sea.bin
Macintosh/Misc/MovieShop_1.2.1.txt
Macintosh/Misc/Network_Assistant_3.5_Trial/Network_Asst_3.5_Trial.smi.bin
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Macintosh/Misc/PANTONE_for_AppleVision.sea.bin
Macintosh/Misc/PANTONE_for_AppleVision.txt
Macintosh/Misc/PB_3400_Modem_DriverUpdate_Info.txt
Macintosh/Misc/PB_3400_Modem_Driver_Update.img.bin
Macintosh/Misc/PCI_Token_Ring_1.0.1a2.img.bin
Macintosh/Misc/PCI_Token_Ring_1.0.1a2_Info.txt
Macintosh/Misc/PC_Setup_DIMM_Patch.sea.bin
Macintosh/Misc/PC_Setup_DIMM_Patch.txt
Macintosh/Misc/PS_Fax_Cover_Page_Utilities.sea.bin
Macintosh/Misc/PS_Fax_Cover_Page_Utilities.txt
Macintosh/Misc/PT_Mail_Folders_1.5.sea.bin
Macintosh/Misc/PT_Mail_Folders_1.5.txt
Macintosh/Misc/QDGX_Spooler_Patch_1.0.2.sea.bin
Macintosh/Misc/QDGX_Spooler_Patch_1.0.2.txt
Macintosh/Misc/QTTV_Broadcaster_1.0f1c6.img.bin
Macintosh/Misc/QTTV_Broadcaster_1.0f1c6_Info.txt
Macintosh/Misc/QTTV_Client_1.5b6.img.bin
Macintosh/Misc/QTTV_Client_1.5b6_Info.txt
Macintosh/Misc/Slow_SCSI_Extension.sea.bin
Macintosh/Misc/Slow_SCSI_Extension.txt
Macintosh/Misc/Streaming_Audio_Update_1.0.img.bin
Macintosh/Misc/Streaming_Audio_Update_1.0_Info.txt
Macintosh/Misc/Sys75_Upd2.0_Custom_Install.sea.bin
Macintosh/Misc/Sys75_Upd2.0_Custom_Install.txt
Macintosh/Misc/User_Contributed_CCLs/About_User_Contributed_CCLs.txt
Macintosh/Misc/User_Contributed_CCLs/CCL_Read_Me_Template.bin
Macintosh/Misc/User_Contributed_CCLs/ZyXEL_Modem_Scripts.sea.bin
Macintosh/Misc/User_Contributed_CCLs/ZyXEL_Modem_Scripts.txt
Macintosh/Misc/User_and_Group_Mgr._Lite.img.bin
Macintosh/Misc/User_and_Group_Mgr._Lite_Info.txt
Macintosh/Misc/VideoSyncII.sea.bin
Macintosh/Misc/VideoSyncII.txt
Macintosh/Misc/VideoSync_1.0.sea.bin
Macintosh/Misc/VideoSync_1.0.txt
Macintosh/Misc/Video_Monitor_1.0.1.sea.bin
Macintosh/Misc/Video_Monitor_1.0.1.txt
Macintosh/Misc/WBOFF.EXE.sea.bin

Macintosh/Misc/WBOFF.EXE_Info.txt
Macintosh/Misc/WiggleWorks_1.0.2_Patch.img.bin
Macintosh/Misc/WiggleWorks_1.0.2_Patch_Info.txt
Macintosh/Modem/About_This_Software.txt
Macintosh/Modem/Apple-GV_56K_Updaters.smi.bin
Macintosh/Modem/Apple-GV_56K_Updaters_Info.txt
Macintosh/Modem/Apple_Modem_Updater.smi.bin

Networking and Communications Software Downloads

Macintosh/Networking-Communications/ANAT/At_Ease/At_Ease_4.0.1_Updater.sea.bin
Macintosh/Networking-Communications/ANAT/At_Ease/At_Ease_4.0.1_Updater.txt
Macintosh/Networking-Communications/ANAT/At_Ease/At_Ease_5.0.1_Updater_Info.txt
Macintosh/Networking-Communications/ANAT/At_Ease/At_Ease_5.0.1_Web_Extras_Info.txt
Macintosh/Networking-Communications/ANAT/Network_Assistant/Network_Asst._2.0.1_Updater.sea.bin
Macintosh/Networking-Communications/ANAT/Network_Assistant/Network_Asst._2.0.1_Updater.txt
Macintosh/Networking-Communications/ANAT/Network_Assistant/Network_Asst_3.0.1_Updater.img.bin
Macintosh/Networking-Communications/ANAT/Network_Assistant/Network_Asst_3.0.1_Updater_Info.txt
Macintosh/Networking-Communications/ANAT/Network_Assistant/Network_Asst_3.0.2_Updater.smi.bin
Macintosh/Networking-Communications/ANAT/Network_Assistant/Network_Asst_3.0.2_Updater_Info.txt
Macintosh/Networking-Communications/ANAT/Network_Assistant/Network_Asst_4.0.2.smi.bin
Macintosh/Networking-Communications/ANAT/Network_Assistant/Network_Asst_4.0.3.smi.bin
Macintosh/Networking-Communications/ANAT/Network_Assistant/Remote_Install/About_This_Software.txt
Macintosh/Networking-Communications/ANAT/Network_Assistant/Remote_Install/NA_Remote_Install_8.5.1.smi.bin
Macintosh/Networking-Communications/ANAT/Network_Assistant/Remote_Install/NA_Remote_Install_8.5.smi.bin
Macintosh/Networking-Communications/ANAT/Network_Assistant/Remote_Install/NA_Remote_Install_8.6.smi.bin
Macintosh/Networking-Communications/AirPort/AirPort_1.3.1.smi.bin
Macintosh/Networking-Communications/AirPort/AirPort_with_Mac_OS_X.pdf
Macintosh/Networking-Communications/AirPort/AirPort_with_Mac_OS_X.smi.bin
Macintosh/Networking-Communications/AirPort/Designing_AirPort_Networks.pdf
Macintosh/Networking-Communications/AirPort/Designing_AirPort_Networks.smi.bin
Macintosh/Networking-Communications/AppleShare/7.5.5_SCSI_Server_Update.sea.bin
Macintosh/Networking-Communications/AppleShare/7.5.5_SCSI_Server_Update_Info.txt
Macintosh/Networking-Communications/AppleShare/AS_4.2.1_to_4.2.2_Updater.sea.bin
Macintosh/Networking-Communications/AppleShare/AS_4.2.1_to_4.2.2_Updater.txt
Macintosh/Networking-Communications/AppleShare/AS_4.2_to_4.2.1_Updater.sea.bin
Macintosh/Networking-Communications/AppleShare/AS_4.2_to_4.2.1_Updater.txt
Macintosh/Networking-Communications/AppleShare/AppleShare_3.0.3_Change_History.txt
Macintosh/Networking-Communications/AppleShare/AppleShare_3.0.3_Patch.sea.bin
Macintosh/Networking-Communications/AppleShare/AppleShare_3.0.3_Patch.txt
Macintosh/Networking-Communications/AppleShare/AppleShare_IP_Info.txt
Macintosh/Networking-Communications/AppleShare/AppleShare_Tune-Up_4.0.1.sea.bin
Macintosh/Networking-Communications/AppleShare/AppleShare_Tune-Up_4.0.1.txt
Macintosh/Networking-Communications/AppleShare/Apple_II_Setup_Disk_2.2.sea.bin
Macintosh/Networking-Communications/AppleShare/Apple_II_Setup_Disk_2.2.txt
Macintosh/Networking-Communications/AppleShare/PC_Net_Exchange_1.0.1.sea.bin
Macintosh/Networking-Communications/AppleShare/PC_Net_Exchange_1.0.1.txt
Macintosh/Networking-Communications/AppleShare_Client/AppleShare_Client_3.7.4.img.bin
Macintosh/Networking-Communications/AppleShare_Client/AppleShare_Client_3.7.4_Info.txt
Macintosh/Networking-Communications/AppleShare_Client/AppleShare_Client_3.8-1of5.smi.bin
Macintosh/Networking-Communications/AppleShare_Client/AppleShare_Client_3.8-2of5.part.bin
Macintosh/Networking-Communications/AppleShare_Client/AppleShare_Client_3.8-3of5.part.bin
Macintosh/Networking-Communications/AppleShare_Client/AppleShare_Client_3.8-4of5.part.bin
Macintosh/Networking-Communications/AppleShare_Client/AppleShare_Client_3.8-5of5.part.bin
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Macintosh/Networking-Communications/AppleShare_IP/ASIP_5.0.3_Updater_Info.txt
Macintosh/Networking-Communications/AppleShare_IP/ASIP_6.1_Update-01of11.smi.bin
Macintosh/Networking-Communications/AppleShare_IP/ASIP_6.1_Update-02of11.part.bin

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Macintosh/Networking-Communications/AppleShare_IP/ASIP_6.1_Update-10of11.part.bin
Macintosh/Networking-Communications/AppleShare_IP/ASIP_6.1_Update-11of11.part.bin
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Macintosh/Networking-Communications/AppleShare_IP/AppleShare_IP_9.0.4.smi.bin
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Macintosh/Networking-Communications/Apple_Remote_Access/ARA_1.0_User_Scripts/UDS_V.3227.txt
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Macintosh/Networking-Communications/Apple_Remote_Access/ARA_3.0.2/ARA_3.0.2_Client_Updater.smi.bin
Macintosh/Networking-Communications/Apple_Remote_Access/ARA_3.0.2/ARA_3.0.2_Server_Updater.smi.bin
Macintosh/Networking-Communications/Apple_Remote_Access/ARA_3.0.2/About_This_Software.txt
Macintosh/Networking-Communications/Apple_Remote_Access/ARA_3.1.3/ARA_Client_Only_3.1.3.smi.bin
Macintosh/Networking-Communications/Apple_Remote_Access/ARA_3.1.3/About_This_Software.txt
Macintosh/Networking-Communications/Apple_Remote_Access/ARA_Updates/ARA_Client_2.1_Updater.sea.bin
Macintosh/Networking-Communications/Apple_Remote_Access/ARA_Updates/ARA_Client_2.1_Updater.txt
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Macintosh/Networking-Communications/Apple_Remote_Access/Other_ARA/Security_Info.sea.bin
Macintosh/Networking-Communications/Apple_Remote_Access/Other_ARA/Security_Info.txt
Macintosh/Networking-Communications/Apple_Telecom/AT_Command_Set_US_33.6.sea.bin
Macintosh/Networking-Communications/Apple_Telecom/AT_Command_Set_US_33.6_Info.txt
Macintosh/Networking-Communications/Apple_Telecom/Fax_Cover_Pages_1.2.sea.bin
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Macintosh/Networking-Communications/Apple_Telecom/GeoPort-EM_3.0_Update-1of2.sea.bin
Macintosh/Networking-Communications/Apple_Telecom/GeoPort-EM_3.0_Update-2of2.sea.bin
Macintosh/Networking-Communications/Apple_Telecom/GeoPort-EM_3.0_Update.txt
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Macintosh/Networking-Communications/Open_Transport/Open_Transport_2.7.6.smi.bin
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Macintosh/Networking-Communications/Other_N-C/MacTCP_Token_Ring_Ext._1.0.txt
Macintosh/Networking-Communications/Other_N-C/MacX25_1.2_Patch.sea.bin
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Macintosh/Networking-Communications/Other_N-C/SerialDMA/SerialDMA_2.1_Update_Info.txt
Macintosh/Networking-Communications/Other_N-C/Telephone_Mgr_2.0.sea.bin
Macintosh/Networking-Communications/Other_N-C/Telephone_Mgr_2.0.txt
Macintosh/Networking-Communications/Other_N-C/TextEditor_1.3a1.sea.bin
Macintosh/Networking-Communications/Other_N-C/TextEditor_1.3a1.txt
Macintosh/Networking-Communications/Other_N-C/TokenTalk_Prep_2.5.3.sea.bin
Macintosh/Networking-Communications/Other_N-C/TokenTalk_Prep_2.5.3_Info.txt
Macintosh/Networking-Communications/Other_N-C/Using_EM_SW_With_Fax_Data_Modem.txt
Macintosh/Networking-Communications/Other_N-C/X11_Server_Update-A_UX_3.0.sea.bin
Macintosh/Networking-Communications/Other_N-C/X11_Server_Update_-_A_UX_3.0.txt
Macintosh/Networking-Communications/Personal_Web_Sharing/Personal_Web_Sharing_1.5.smi.bin
Macintosh/Networking-Communications/Personal_Web_Sharing/Personal_Web_Sharing_1.5_Info.txt

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Macintosh/PowerBook/Other_PB_SW/Battery_Tools_2.0.sea.bin
Macintosh/PowerBook/Other_PB_SW/Battery_Tools_2.0.txt
Macintosh/PowerBook/Other_PB_SW/Duo_Battery_Patch_1.0.sea.bin
Macintosh/PowerBook/Other_PB_SW/Duo_Battery_Patch_1.0.txt
Macintosh/PowerBook/Other_PB_SW/Intelligent_Battery_Update.sea.bin
Macintosh/PowerBook/Other_PB_SW/Intelligent_Battery_Update.txt
Macintosh/PowerBook/Other_PB_SW/Location_Manager_1.0.sea.bin
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Macintosh/PowerBook/Other_PB_SW/PB_2300c_Update_1.0.sea.bin
Macintosh/PowerBook/Other_PB_SW/PB_2300c_Update_1.0.txt
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Macintosh/PowerBook/Other_PB_SW/PC_Card_Software_2.0.sea.bin
Macintosh/PowerBook/Other_PB_SW/PC_Card_Software_2.0.txt
Macintosh/PowerBook/Other_PB_SW/Password_Security_1.0.6.img.bin
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Macintosh/PowerBook/Other_PB_SW/Trackpad_Climate_Control.sea.bin
Macintosh/PowerBook/Other_PB_SW/Trackpad_Climate_Control.txt
Macintosh/PowerBook/PB_1400/PB1400_ATA_Flash_1.0.sea.bin
Macintosh/PowerBook/PB_1400/PB1400_ATA_Flash_1.0_Info.txt
Macintosh/PowerBook/PB_1400/PB_1400_Floppy_Update_1.0.2.sea.bin
Macintosh/PowerBook/PB_1400/PB_1400_Floppy_Update_1.0.2.txt
Macintosh/PowerBook/PB_1400/PB_1400_HD_Updater_1.0.sea.bin
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Macintosh/PowerBook/PB_1400/PB_1400_PMU_Updater_1.0.1.sea.bin

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Macintosh/PowerBook/PB_3400/PB_3400_AT_Commands.sea.bin
Macintosh/PowerBook/PB_3400/PB_3400_AT_Commands_Info.txt
Macintosh/PowerBook/PB_3400/_Non-US_Customers_Read_First.txt
Macintosh/PowerBook/PB_5300_SW_Update/About_PB_5300_SW_Update.txt

Printing Software Downloads

Macintosh/Printing/LaserWriter/About_This_Software.txt
Macintosh/Printing/LaserWriter/Apple_Printer_Utility_2.2.img.bin
Macintosh/Printing/LaserWriter/Apple_Printer_Utility_2.2_Info.txt
Macintosh/Printing/LaserWriter/CLW_8.3.2-1of3.sea.bin
Macintosh/Printing/LaserWriter/CLW_8.3.2-2of3.sea.bin
Macintosh/Printing/LaserWriter/CLW_8.3.2-3of3.sea.bin
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System Software Downloads

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Macintosh/System/Older_System/PowerTalk/PowerTalk_Gateways.sea.bin
Macintosh/System/Older_System/PowerTalk/PowerTalk_Gateways.txt
Macintosh/System/Older_System/PowerTalk/PowerTalk_Guided_Tour_1.1.sea.bin
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Macintosh/System/Older_System/PowerTalk/PowerTalk_Manager_1.5.sea.bin

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Macintosh/System/OpenDoc/OpenDoc_1.2-3of3.img.bin
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Macintosh/System/System_7.5_Update_2.0/PowerTalk_1.2.3_Info.txt
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-01of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-02of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-03of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-04of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-05of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-06of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-07of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-08of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-09of14.sea.bin

Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-10of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-11of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-12of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-13of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0-14of14.sea.bin
Macintosh/System/System_7.5_Update_2.0/Sys_7.5_Update_2.0.txt
Macintosh/System/System_7.5_Update_2.0/Update_2.0_Late_Breaking_Tips.txt

Utilities Software Downloads

Macintosh/Utilities/2940U2B_Firmware_1.2.smi.bin
Macintosh/Utilities/AMK_Spinning_Cursor_Bug_Fix.sea.bin
Macintosh/Utilities/AMK_Spinning_Cursor_Bug_Fix.txt
Macintosh/Utilities/APD_1.1.3_Update.txt
Macintosh/Utilities/APD_1.1.3_Update_Pkg.sea.bin
Macintosh/Utilities/About_This_Software.txt
Macintosh/Utilities/Adobe_Acrobat_Reader_Info.txt
Macintosh/Utilities/AppleScript/About_This_Software.txt
Macintosh/Utilities/AppleScript/AppleScript_1.6.smi.bin
Macintosh/Utilities/AppleScript/AppleScript_Extras_1.1.smi.bin
Macintosh/Utilities/AppleScript/AppleScript_Update.smi.bin
Macintosh/Utilities/AppleShareSetup_1.0.1.sea.bin
Macintosh/Utilities/AppleShareSetup_1.0.1.txt
Macintosh/Utilities/Apple_DocViewer_1.1.1.sea.bin
Macintosh/Utilities/Apple_DocViewer_1.1.1.txt
Macintosh/Utilities/Apple_HD_SC_Setup_7.3.5.sea.bin
Macintosh/Utilities/Apple_HD_SC_Setup_7.3.5.txt
Macintosh/Utilities/Apple_Spec/Apple_Spec_8-98.smi.bin
Macintosh/Utilities/Apple_Spec/Apple_Spec_8-98_Info.txt
Macintosh/Utilities/Apple_Spec/Apple_Spec_app.smi.bin
Macintosh/Utilities/Apple_Spec/Apple_Spec_app_Info.txt
Macintosh/Utilities/Apple_System_Profiler/ASP_2.1.2.smi.bin
Macintosh/Utilities/Apple_System_Profiler/ASP_2.1.2_Info.txt
Macintosh/Utilities/Apple_System_Profiler/Apple_System_Profiler_1.0.1.sea.bin
Macintosh/Utilities/Apple_System_Profiler/Apple_System_Profiler_1.0.1.txt
Macintosh/Utilities/Backlight_Control_1.0.sea.bin
Macintosh/Utilities/Backlight_Control_1.0.txt
Macintosh/Utilities/ColorSync_2.0_Plug-ins.img.bin
Macintosh/Utilities/ColorSync_2.0_Plug-ins_Info.txt
Macintosh/Utilities/DART_Info.txt
Macintosh/Utilities/Disk_Copy/About_This_Software.txt
Macintosh/Utilities/Disk_Copy/Disk_Copy_4.2.sea.bin
Macintosh/Utilities/Disk_Copy/Disk_Copy_4.2.txt
Macintosh/Utilities/Disk_Copy/Disk_Copy_6.3.3.smi.bin
Macintosh/Utilities/Disk_Copy/Disk_Copy_6.3_Scripts.smi.bin
Macintosh/Utilities/Disk_Copy/Disk_Copy_6.3_Scripts_Info.txt
Macintosh/Utilities/Disk_Copy/Disk_Copy_Manual_6.1.2.img.bin
Macintosh/Utilities/Disk_Copy/Disk_Copy_Manual_6.1.2_Info.txt
Macintosh/Utilities/Disk_Copy/Disk_Image_CM_Plugin_1.3.img.bin
Macintosh/Utilities/Disk_Copy/Disk_Image_CM_Plugin_1.3_Info.txt
Macintosh/Utilities/Disk_First_Aid/Disk_First_Aid_7.2.2.sea.bin
Macintosh/Utilities/Disk_First_Aid/Disk_First_Aid_7.2.2.txt
Macintosh/Utilities/Disk_First_Aid/Disk_First_Aid_8.2.smi.bin
Macintosh/Utilities/Disk_First_Aid/Disk_First_Aid_8.2_Info.txt
Macintosh/Utilities/Disk_First_Aid/Disk_First_Aid_8.6.1.smi.bin
Macintosh/Utilities/Disk_First_Aid/_Disk_First_Aid_8.6.smi.bin
Macintosh/Utilities/Drive_Setup/About_This_Software.txt
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.0.5.sea.bin
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.0.5.txt
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.2.sea.bin
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.2.txt
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.3.1.img.bin
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.3.1_Info.txt
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.5.smi.bin
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.5_Info.txt

Macintosh/Utilities/Drive_Setup/Drive_Setup_1.6.1.smi.bin
Macintosh/Utilities/Drive_Setup/Drive_Setup_1.6.1_Info.txt
Macintosh/Utilities/Firmware_Utilities/1.2GB_Firmware_Utility_1.1.img.bin
Macintosh/Utilities/Firmware_Utilities/1.2GB_Firmware_Utility_1.1_Info.txt
Macintosh/Utilities/Firmware_Utilities/2-3-4-6_GB_Firmware_Util.img.bin
Macintosh/Utilities/Firmware_Utilities/2-3-4-6_GB_Firmware_Util_Info.txt
Macintosh/Utilities/Firmware_Utilities/About_Firmware_Update_Utilities.txt
Macintosh/Utilities/HyperCard/HC_2.3_Color_Stack_Repair.sea.bin
Macintosh/Utilities/HyperCard/HC_2.3_Color_Stack_Repair.txt
Macintosh/Utilities/HyperCard/HyperCard_2.4.1_Update/HyperCard_2.4.1_Update.smi.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4.1_Update/HyperCard_2.4.1_Update_Info.txt
Macintosh/Utilities/HyperCard/HyperCard_2.4.1_Update/Multiple_Parts/HC_2.4.1_Update-1of4.smi.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4.1_Update/Multiple_Parts/HC_2.4.1_Update-2of4.part.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4.1_Update/Multiple_Parts/HC_2.4.1_Update-3of4.part.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4.1_Update/Multiple_Parts/HC_2.4.1_Update-4of4.part.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4.1_Update/Multiple_Parts/HC_2.4.1_Update_Info.txt
Macintosh/Utilities/HyperCard/HyperCard_2.4_Update/HyperCard_2.4_Update.smi.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4_Update/HyperCard_2.4_Update_Info.txt
Macintosh/Utilities/HyperCard/HyperCard_2.4_Update/Multiple_Parts/HyperCard_2.4_Update-1of5.smi.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4_Update/Multiple_Parts/HyperCard_2.4_Update-2of5.part.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4_Update/Multiple_Parts/HyperCard_2.4_Update-3of5.part.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4_Update/Multiple_Parts/HyperCard_2.4_Update-4of5.part.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4_Update/Multiple_Parts/HyperCard_2.4_Update-5of5.part.bin
Macintosh/Utilities/HyperCard/HyperCard_2.4_Update/Multiple_Parts/HyperCard_2.4_Update_Info.txt
Macintosh/Utilities/HyperCard/HyperCard_Player_2.4.1.smi.bin
Macintosh/Utilities/HyperCard/HyperCard_Player_2.4.1_Info.txt
Macintosh/Utilities/HyperCard/HyperCard_Player_2.4.smi.bin
Macintosh/Utilities/HyperCard/HyperCard_Player_2.4.txt
Macintosh/Utilities/Internal_HD_Format_1.3.sea.bin
Macintosh/Utilities/Internal_HD_Format_1.3.txt
Macintosh/Utilities/Macintosh_Basics_5.0.3.sea.bin
Macintosh/Utilities/Macintosh_Basics_5.0.3.txt
Macintosh/Utilities/Macintosh_Tutorial.sea.bin
Macintosh/Utilities/Macintosh_Tutorial.txt
Macintosh/Utilities/MacsBug_Info.txt
Macintosh/Utilities/Mouse_Basics_4.5.sea.bin
Macintosh/Utilities/Mouse_Basics_4.5.txt
Macintosh/Utilities/Network_Access_Disk_7.5.sea.bin
Macintosh/Utilities/Network_Access_Disk_7.5.txt
Macintosh/Utilities/ResEdit_2.1.3.sea.bin
Macintosh/Utilities/Server_Remote_Control_Readme.txt
Macintosh/Utilities/Server_Remote_Control_v1.0.sea.bin
Macintosh/Utilities/SimpleSound_1.0.sea.bin
Macintosh/Utilities/SimpleSound_1.0.txt
Macintosh/Utilities/SimpleText_1.3.sea.bin
Macintosh/Utilities/SimpleText_1.3.txt
Macintosh/Utilities/memguide.pdf

Newton Software Downloads

Newton/For_DOS-Windows/MessagePad_System_Updates/MP345333.EXE
Newton/For_DOS-Windows/MessagePad_System_Updates/MP345333.txt
Newton/For_DOS-Windows/MessagePad_System_Updates/MP415333.EXE
Newton/For_DOS-Windows/MessagePad_System_Updates/MP415333.txt
Newton/For_DOS-Windows/MessagePad_System_Updates/MP445333.EXE
Newton/For_DOS-Windows/MessagePad_System_Updates/MP445333.txt
Newton/For_DOS-Windows/MessagePad_System_Updates/MP516263.EXE
Newton/For_DOS-Windows/MessagePad_System_Updates/MP516263.TXT
Newton/For_DOS-Windows/MessagePad_System_Updates/MP526205.TXT
Newton/For_DOS-Windows/MessagePad_System_Updates/MP526205.ZIP
Newton/For_DOS-Windows/MessagePad_System_Updates/MP717145.EXE
Newton/For_DOS-Windows/MessagePad_System_Updates/MP717145.TXT
Newton/For_DOS-Windows/MessagePad_System_Updates/MP717260.EXE
Newton/For_DOS-Windows/MessagePad_System_Updates/MP717260_Info.txt
Newton/For_DOS-Windows/Other_Newton_Updates/CISMAIL.EXE

TA48312_Older_Apple_software_downloads.pdf

Newton/For_DOS-Windows/Other_Newton_Updates/CISMAIL.TXT
Newton/For_DOS-Windows/Other_Newton_Updates/MDMENBLR.TXT
Newton/For_DOS-Windows/Other_Newton_Updates/MDMENBLR.ZIP
Newton/For_DOS-Windows/Other_Newton_Updates/NBU101EN.TXT
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Newton/For_DOS-Windows/Other_Newton_Updates/PRESS11.EXE_Info.txt
Newton/For_DOS-Windows/Other_Newton_Updates/PRNTPK20.EXE
Newton/For_DOS-Windows/Other_Newton_Updates/PRNTPK20.TXT
Newton/For_DOS-Windows/Other_Newton_Updates/TOUR_HWI.TXT
Newton/For_DOS-Windows/Other_Newton_Updates/TOUR_HWI.ZIP
Newton/For_DOS-Windows/Unsupported/About_Unsupported_Software.txt
Newton/For_DOS-Windows/eMate_System_Updates/EM737246.EXE
Newton/For_DOS-Windows/eMate_System_Updates/EM737246_Info.txt
Newton/For_Mac_OS/MessagePad_System_Updates/MP_100_1.3_415333.sea.bin
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Newton/For_Mac_OS/MessagePad_System_Updates/MP_2000_2.1_717260_US.sea.bin
Newton/For_Mac_OS/MessagePad_System_Updates/MP_2000_2.1_717260_US_Info.txt
Newton/For_Mac_OS/MessagePad_System_Updates/NewtonMail_Modules_1.0.1.sea.bin
Newton/For_Mac_OS/MessagePad_System_Updates/NewtonMail_Modules_1.0.1.txt
Newton/For_Mac_OS/MessagePad_System_Updates/Newton_System_Update_1.0.5.sea.bin
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Newton/For_Mac_OS/Other_Newton_Updates/CIS_Mail_2.0_v.1.0.2.sea.bin
Newton/For_Mac_OS/Other_Newton_Updates/CIS_Mail_2.0_v.1.0.2.txt
Newton/For_Mac_OS/Other_Newton_Updates/HP_IrDA_Printers_2.0.smi.bin
Newton/For_Mac_OS/Other_Newton_Updates/HP_IrDA_Printers_2.0_Info.txt
Newton/For_Mac_OS/Other_Newton_Updates/HideEworld.sea.bin
Newton/For_Mac_OS/Other_Newton_Updates/HideEworld.txt
Newton/For_Mac_OS/Other_Newton_Updates/MP120_Tour_and_Handwriting.sea.bin
Newton/For_Mac_OS/Other_Newton_Updates/MP120_Tour_and_Handwriting.txt
Newton/For_Mac_OS/Other_Newton_Updates/Modem_Enabler_1.0.sea.bin
Newton/For_Mac_OS/Other_Newton_Updates/Modem_Enabler_1.0_Info.txt
Newton/For_Mac_OS/Other_Newton_Updates/NBU_1.0.sea.bin
Newton/For_Mac_OS/Other_Newton_Updates/NBU_1.0.txt
Newton/For_Mac_OS/Other_Newton_Updates/NCU_1.0_Updater.img.bin
Newton/For_Mac_OS/Other_Newton_Updates/NCU_1.0_Updater_Info.txt
Newton/For_Mac_OS/Other_Newton_Updates/NIE_1.1.smi.bin
Newton/For_Mac_OS/Other_Newton_Updates/NIE_1.1_Info.txt
Newton/For_Mac_OS/Other_Newton_Updates/NIE_2.0.smi.bin
Newton/For_Mac_OS/Other_Newton_Updates/NIE_2.0_Info.txt
Newton/For_Mac_OS/Other_Newton_Updates/NPI_1.1.sea.bin
Newton/For_Mac_OS/Other_Newton_Updates/NPI_1.1_Info.txt
Newton/For_Mac_OS/Other_Newton_Updates/NTK_1.5.2b2_Updater.sea.bin
Newton/For_Mac_OS/Other_Newton_Updates/NTK_1.5.2b2_Updater.txt
Newton/For_Mac_OS/Other_Newton_Updates/Newton_Press_Updater_1.1.smi.bin

Newton/For_Mac_OS/Other_Newton_Updates/Newton_Press_Updater_1.1_Info.txt
Newton/For_Mac_OS/Other_Newton_Updates/Newton_Print_Pack_2.0.sea.bin
Newton/For_Mac_OS/Other_Newton_Updates/Newton_Print_Pack_2.0_Info.txt
Newton/For_Mac_OS/Other_Newton_Updates/eMate_Classroom_Exchange.img.bin
Newton/For_Mac_OS/Other_Newton_Updates/eMate_Classroom_Exchange_Info.txt
Newton/For_Mac_OS/eMate_System_Updates/eMate_2.1_737246_US.sea.bin
Newton/For_Mac_OS/eMate_System_Updates/eMate_2.1_737246_US_Info.txt

Power Computing Downloads

Power_Computing/PCI_Timing_Update_1.0.img.bin
Power_Computing/PCI_Timing_Update_1.0_Info.txt
Power_Computing/SCSI_Manager_Update_1.2.img.bin

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